

Thursday, January 07, 2010

**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: 10-1129  
Per Agreement Number: 126310011  
Project Cost Code: MR3A05529E00

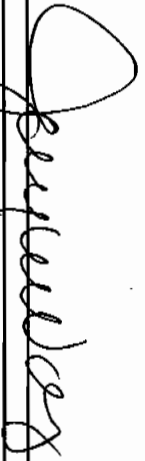
Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 1/7/2010  
TURNAROUND/REPORT DUE: 2/6/2010  
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Received  
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1		1	RE12-10-7617	R	1/4/2010	
		1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	

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**REQUEST NUMBER: 10-1129**

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	
	HASL-300:AM-241	1	RE12-10-7617	R	1/4/2010	
		1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	
		1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	

Thursday, January 07, 2010

REQUEST NUMBER: 10-1129

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
1		1	RE12-10-7618	R	1/4/2010	
1		1	RE12-10-7619	R	1/4/2010	
1		1	RE12-10-7620	R	1/4/2010	
1		1	RE12-10-7621	R	1/4/2010	
1		1	RE12-10-7622	R	1/4/2010	
1		1	RE12-10-7623	R	1/4/2010	
1		1	RE12-10-7624	R	1/4/2010	
1		1	RE12-10-7625	R	1/4/2010	
1		1	RE12-10-7626	R	1/4/2010	
1		1	RE12-10-7627	R	1/4/2010	
1		1	RE12-10-7628	R	1/4/2010	
1		1	RE12-10-7629	R	1/4/2010	
1		1	RE12-10-7630	R	1/4/2010	
1		1	RE12-10-7631	R	1/4/2010	
1		1	RE12-10-7632	R	1/4/2010	
1		1	RE12-10-7655	R	1/4/2010	
1		1	RE12-10-7656	R	1/4/2010	
1		1	RE12-10-7617	R	1/4/2010	
1		1	RE12-10-7618	R	1/4/2010	
1		1	RE12-10-7619	R	1/4/2010	
1		1	RE12-10-7620	R	1/4/2010	
1		1	RE12-10-7621	R	1/4/2010	
1		1	RE12-10-7622	R	1/4/2010	
1		1	RE12-10-7623	R	1/4/2010	
1		1	RE12-10-7624	R	1/4/2010	
1		1	RE12-10-7625	R	1/4/2010	
1		1	RE12-10-7626	R	1/4/2010	
1		1	RE12-10-7627	R	1/4/2010	

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REQUEST NUMBER: 10-1129

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	

Final Page of REQUEST NUMBER 10-1129



Thursday, January 07, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1129

**LOS ALAMOS**

REQUEST NUMBER: 10-1129

**NATIONAL LABORATORY**

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/6/2010

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
RE12-10-7619	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7618	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7623	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7622	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7621	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7617	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7620	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7624	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7630	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7628	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7632	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7629	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7626	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7631	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7627	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7625	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7656	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7655	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7617

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		10:51		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	12-610639			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		
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 12/14/10	None	Y	
1		Met+U+CLO4+CN	1 GAL POLY 1 L	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty sand, some roots

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-8 north west of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 22$  dpm  
 $\text{BY} \leq 1755$  dpm

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

HE negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Rolando Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. G. ... (Signature) <i>[Signature]</i>	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7618

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		A11h
TIME COLLECTED (HH:MM)		11:21		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610639			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	3.0		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	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 1/4/10	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, few rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 14-8, northwest of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

LE 38 dpm

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

BY 7618 dpm

COLLECTED BY (PRINT)

REVIEWED BY (PRINT)

TLMcFarland

Robenda Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature)	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Bruce (Signature)	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7619

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		Alh
TIME COLLECTED (HH:MM)		1243		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610640	↓		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		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 13m 1/4 1/10	None	Y	
1	↓	Met+U+CLO4+CN	1 L POLY 1 L	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Brown sandy silt, some roots, few rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-37, north of firing point

## FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 66$  dpm  
 $\beta \leq 2010$  dpm  
 PID ambient reading  $\frac{0.0}{0.0}$  ppm  
 HE negative

COLLECTED BY (PRINT)  
TLMcFarland

REVIEWED BY (PRINT) Rolanda Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <u>TLMcFarland</u>	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) <u>K. Bruce</u> (Signature) <u>[Signature]</u>	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7620

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010	MEDIA:	QBT3		Alh	
TIME COLLECTED (HH:MM)		1252	SUB-MEDIA:	TOFF1		NA	
PRS ID:	12-001(b)	ok	SAMPLE TECH CODE:	HA		ok	
LOCATION ID:	12-610640		FIELD QC TYPE:	NA			
LOCATION TYPE:	GENERIC		FIELD PREP:	NA			
TOP DEPTH:	0	2.0	SAMPLE USAGE:	INV			
BOTTOM DEPTH:	0	2.8	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

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-3Z north of firing point

FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 38$  dpm  
BY  $\leq 1707$  dpm

P10 ambient reading  $\frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)  
TLMcFarland

REVIEWED BY (PRINT) Roland Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Green (Signature) [Signature]	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7621

WORK ORDER:

AS PLANNED	AS COLLECTED	AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):	01/04/2010	MEDIA:	QBT3
TIME COLLECTED (HH:MM)	1300	SUB-MEDIA:	TUFF 1
PRS ID:	12-001(b)	SAMPLE TECH CODE:	HA
LOCATION ID:	12-610641	FIELD QC TYPE:	NA
LOCATION TYPE:	GENERIC	FIELD PREP:	NA
TOP DEPTH:	0	SAMPLE USAGE:	INV
BOTTOM DEPTH:	0	SCREEN/PORT DESC:	NA
FIELD MATRIX:	B	EXCAVATED: YES/NO/NA	NA
COMPOSITE TYPE:	NA	COMPOSITE TIME INTERVAL:	NA
		WATER FLOWING: YES/NO/NA	NA
BOREHOLE: YES/NO/NA	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 silty sand, some small rocks

FD: RE12-10-7656

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-40, west of firing point

## FIELD SCREENING/MEASUREMENT RESULTS:

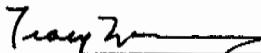
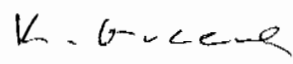

$\alpha \leq 38$  dpm  
 $\beta \leq 2090$  dpm  
PID  $\frac{\text{ambient}}{\text{reading}} = \frac{0.0}{0.0}$  ppm  
HE negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Refenda Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) 	Date/Time 6/10/10 1606	RECEIVED BY  (Printed Name) (Signature) 	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7622

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		A11h
TIME COLLECTED(HH:MM)		1310		SUB-MEDIA:	TUFF.1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610641			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	3.2		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	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 7am 1/04/2010	None	Y	
1		Met+U+CLO4+C N	1 L POLY 1 L	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Brown sandy silt, some rocks  
FR RE12-10-7662

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-40, west of firing pt

## FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 38$  dpm  
 $\beta \leq 1990$  dpm

PID  $\frac{\text{ambient}}{\text{rem-reading}}$   $\frac{0.0}{0.0}$  ppm  
7am 1/4/2010

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Rolanda Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature)	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. G. ... (Signature)	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7623

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1349		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610642			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 01/04/2010	None	Y	
1		Met+U+CLO4+CN	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

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-41, spring pt

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 46$  dpm $\beta \leq 1852$  dpmPID ambient reading  $\frac{0.0}{0.0}$  ppm  
HE negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Rolanda Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Z...	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Bruce (Signature) [Signature]	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



# SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7624

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
DATE COLLECTED(MM/DD/YYYY):		01/04/2010	MEDIA:	OBT3	Ahh
TIME COLLECTED (HH:MM)		1409	SUB-MEDIA:	TUFF 1	NA
PRS ID:	12-001(b)	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	12-610642	↓	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:	B	S	EXCAVATED: YES/NO/NA	NO/NA	
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA	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 12m 1/04/2010	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 sandy silt

SAMPLE COMMENTS:

NA

LOCATION DESC:

16-41, firing pt

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 11 dpm  
 BX ≤ 2000 dpm

PID ambient 0.0 ppm  
reading 0.0

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) TLMcFarland	01/04/10	(Printed Name) K. Bruce	1/4/10
(Signature) Tracy McFarland	1600	(Signature) [Signature]	4100
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7625

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		01/04/10 2010	MEDIA:	OBT3	ALLH
TIME COLLECTED (HH:MM)		10:52	SUB-MEDIA:	TUFF 1	N/A
PRS ID:	12-001(b)	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	12-610643	OK	FIELD QC TYPE:	NA	
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	✓
BOTTOM DEPTH:	0	0.6	SCREEN/PORT DESC:		N/A
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	N/A	
BOREHOLE: YES/NO/NA	NO		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	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY	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, few Rocks

SAMPLE COMMENTS:

N/A

LOCATION DESC: 1a-42 west of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 44$  dpm $\text{BY} \leq 1803$  dpm

ambient  
reading 0.0 ppm HE Neg

COLLECTED BY (PRINT)

Bolinda Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy McT	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Green (Signature) [Signature]	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7626

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		11:04		SUB-MEDIA:	TUFF 1		N/A
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610643	OK		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		✓
BOTTOM DEPTH:	0	3.0		SCREEN/PORT DESC:			N/A
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	None	X	
1		Met+U+CLO4+C N	1 GAL POLY	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	X	
1	✓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	X	

SAMPLE DESC: brown silt

FD; 12-10-7655

SAMPLE COMMENTS:

N/A

LOCATION DESC: 1a-42 west of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 27$  dpmPID ambient  $\frac{0.0}{0.0}$  ppm $\text{BY} \leq 1686$  dpm

COLLECTED BY (PRINT)

Theresa Saunders

REVIEWED BY (PRINT)

ThMcFarland

RELINQUISHED BY (Printed Name) ThMcFarland (Signature) <i>Theresa Saunders</i>	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Bruce (Signature) <i>K. Bruce</i>	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7627

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		11:28		SUB-MEDIA:	TUFF 1		N/A
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610644	↓		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:			N/A
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	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	✓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Dark brown sandy silt  
Some clay, few rocks, few roots

SAMPLE COMMENTS:

N/A

LOCATION DESC: 1a-43  
north of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 11 dpm

BY ≤ 1838 dpm

PID ambient  
reading 0.0 7 PM

HE Neg

COLLECTED BY (PRINT)

Rebecca Saunders

REVIEWED BY (PRINT)

TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) TLMcFarland	Date/Time 01/04/10 1600	RECEIVED BY K. Greene (Printed Name) (Signature) K. Greene	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7628

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	OBT3		ALLH
TIME COLLECTED (HH:MM)		1230		SUB-MEDIA:	TUFF1		N/A
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610644	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	2.5		SCREEN/PORT DESC:			N/A
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	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	X	
1	✓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	X	

SAMPLE DESC: Dark brown Sandy silt  
Some clay, few rocks, few roots

SAMPLE COMMENTS:

N/A

LOCATION DESC: 1a-43

North of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 60$  dpm

PID

 $\text{BY} \leq 1879$  dpmambient  
reading 0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Rolanda Saunders

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) TL McFarland	01/04/10	K. G. ...	1/4/10
(Signature) Tray ...	1600	(Signature) ...	4:00
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7629

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		01/04/2010	MEDIA:	QBT3	Allh
TIME COLLECTED (HH:MM)		1346	SUB-MEDIA:	TUFF1	NA
PRS ID:	12-001(b)	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	12-610645	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.4	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	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 12m 01/04/2010	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

SAMPLE COMMENTS:

NA

LOCATION DESC:

1a-39, south of firing pt

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 33$  dpm $\beta \leq 2080$  dpmPID  $\frac{\text{ambient}}{\text{reading}} \frac{0.0}{0.0}$  ppm

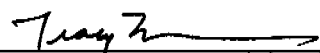
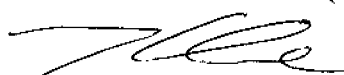
HE negative

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Rolanda Saunders

RELINQUISHED BY (Printed Name) TL McFarland (Signature) 	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Bruce (Signature) 	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

**SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7630

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1406		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610645			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			EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	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 12 m 01/04/2010	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

SAMPLE COMMENTS:

NA

LOCATION DESC:

1a-39, south of firing pt

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 88$  dpm $\beta \leq 2140$  dpmPID  $\frac{\text{ambient}}{\text{reading}} \frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Rolanda Saunders

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>Tracy McFarland</i>	Date/Time 01/04/10 1600	RECEIVED BY <i>K. Bruce</i> (Printed Name) (Signature) <i>[Signature]</i>	Date/Time 1/4/10 412
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7631

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	QBT3		Allh
TIME COLLECTED(HH:MM)		1445		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	12-610646	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		↓
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	0.6		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 12m 01/04/2010	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 Liter	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

## SAMPLE DESC:

Dark Brown moist silty sand, few roots and rocks 73m 01/04/2010

## SAMPLE COMMENTS:

NA

## LOCATION DESC:

1a-36, south of firing site

## FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 16 dpm

PID ambient reading 0.0  
0.0 ppm

BY ≤ 2030 dpm

HE negative

## COLLECTED BY (PRINT)

TL McFarland

## REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i>	Date/Time 01/04/10 600	RECEIVED BY <i>K. Gucce</i> (Printed Name) (Signature) <i>[Signature]</i>	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



**SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY**

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7632

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		01/04/2010	MEDIA:		QBT3
TIME COLLECTED (HH:MM)		1455	SUB-MEDIA:		TUFF 1
PRS ID:	12-001(b)	OK	SAMPLE TECH CODE:		HA
LOCATION ID:	12-610646	↓	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:		NA
TOP DEPTH:	0	2.0	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	3.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		NA
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES/NO/NA		NO
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 12m 1/4/2010	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 Liter	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

1a-36 South of firing Site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 27$  dpm  
 $\beta \leq 2050$  dpm

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

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

R. Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy M.	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Gucce (Signature) [Signature]	Date/Time 1/4/10 4100
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7655

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	OBT3		ALLH
TIME COLLECTED (HH:MM)		11:04		SUB-MEDIA:	TUFF 1		N/A
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	UNK	OK		FIELD QC TYPE:	ED		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	QC		✓
BOTTOM DEPTH:	0	3.0		SCREEN/PORT DESC:			N/A
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			N/A
COMPOSITE TYPE:	N/A			COMPOSITE TIME INTERVAL:	N/A		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	N/A		BOREHOLE DIRECTION: N/A

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	normal	72m 1/4/10 8082-NMED-HEXP	250 ML AMBER GLASS	Ice	✓	
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: QC Sample of brown silt

FD; REPS 01/04/10 RE12-10-7626

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-42

West of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 27$  dpm

PID ambient reading 0.0 ppm

BY  $\leq 1686$  dpm

COLLECTED BY (PRINT)

Rebecca Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 01/04/10 1600	RECEIVED BY <i>K. G. ...</i> (Printed Name) (Signature) <i>[Signature]</i>	Date/Time 1/4/10 4100
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7656

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	OBT3		Allh
TIME COLLECTED (HH:MM)		1300		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	UNK	12-610641		FIELD QC TYPE:	FD		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	QC		
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		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 13M 1/04/2010	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: QC Sample of RE12-10-7624

Brown silty sand, some small rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-40, west of firing pt

## FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 38 dpm  
BY 2090 dpm

PID ambient reading 0.0 ppm  
HE negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Rolenda Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 01/04/10 1600	RECEIVED BY <i>K. Bruce</i> (Printed Name) (Signature) <i>[Signature]</i>	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2490

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

SAMPLE ID: RE12-10-7662

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/04/2010		MEDIA:	NA		OK
TIME COLLECTED (HH:MM)		1318		SUB-MEDIA:	OTHER		
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	DC		
LOCATION ID:	UNK	12-G10641		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	W		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA				WATER FLOWING: YES/NO/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 RE12-10-7622

SAMPLE COMMENTS:

Ringside

LOCATION DESC:

1a-40 West of firing Point

FIELD SCREENING/MEASUREMENT RESULTS:

NA

COLLECTED BY (PRINT)

TLMcFarlane

REVIEWED BY (PRINT)

Robenda Saunders

RELINQUISHED BY (Printed Name) Th McFarlane (Signature) Tracy McFarlane	Date/Time 01/04/10 1600	RECEIVED BY (Printed Name) K. Green (Signature) [Signature]	Date/Time 1/4/10 4:00
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

## Rad Screening Data Release Form

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

RE12-10-7625  
7626  
7655  
7617  
7618  
7859  
7853  
7852  
7851  
7850  
7849

RE12-10-7848  
7627  
7622  
7656  
7621  
7620  
7619  
7628  
7624  
7629  
7630  
7623

RE12-10-7631  
7632

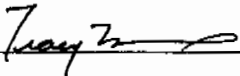
These samples will not be shipped until radiological screening data documentation arrives at the FSF. I understand that it is my responsibility to ensure this information arrives at the FSF in a timely manner. If holding times are missed because screening data does not arrive, I will pick up the samples.

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

RE12-10-7662

Reason: Rinsate

.....  
Print Last Name McFarland

Signature 

Date 01/04/2010

## DATA VALIDATION COVER SHEET

5119-1

## Data Validation Cover Sheet

Records Use only



## Section I.

REQUEST NUMBER: 10-1129 VALIDATION DATE: 02/16/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: John A. Bailey ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

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

## Section II. Completeness Check

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

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

- The gamma spec results that were rejected by the laboratory due to high peak width, interference, or low abundance were qualified R,R5a.
- The U-232 tracer %R was > the laboratory's UAL, but  $\leq 125\%$  for samples RE12-10-7619, -7617, -7630, and -7632. The U-235/236 result for sample -7617 was ND and, thus, was qualified UJ,R3a. All other associated sample results for U-233/234, U-235/236, and U-238 were detects and, thus, were qualified J-,R3a.

Reviewed by: Charissa Lewis


Level: 1

Date: 2/18/10


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

A handwritten signature in cursive script, appearing to read 'John A. Bailey'.

DATE: 02/16/10


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

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input 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	
<b>5119-2</b>  <b>Rad Analytical Data Validation Checklist</b>	Records Use only  

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



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

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

# GEL LABORATORIES LLC

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

## Certificate of Analysis

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

Report Date: January 28, 2010

Client Sample ID:	RE12-10-7619	Project:	LANL01004
Sample ID:	244148001	Client ID:	LANL010
Matrix:	R		
Collect Date:	04-JAN-10		
Receive Date:	08-JAN-10		
Collector:	Client		
Moisture:	16.2%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00458	0.0217	+/-0.00537	0.050	pCi/g		MXE1	01/16/10	1122	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0012	0.0198	+/-0.00268	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-1.43E-10	0.0227	+/-0.0017	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.26	J-R3a	0.0694	+/-0.101	0.100	pCi/g	MXE1	01/27/10	1223	944933	3
Uranium-235/236		0.0886	↓	0.0431	+/-0.0168	0.100	pCi/g					
Uranium-238		1.36		0.0403	+/-0.108	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.065		0.310	+/-0.0973	0.200	pCi/g	MXR1	01/20/10	1548	940268	6
Bismuth-211	UI	4.24	R,R5a	0.361	+/-0.346		pCi/g					
Bismuth-214		1.31		0.120	+/-0.110	0.200	pCi/g					
Cadmium-109	UI	2.67	R,R5a	1.50	+/-0.571		pCi/g					
Cerium-139	U	0.018		0.0548	+/-0.0159	0.050	pCi/g					
Cesium-134	U	0.0344		0.086	+/-0.0245	0.100	pCi/g					
Cesium-137	UI	0.157	R,R5a	0.0646	+/-0.0426	0.100	pCi/g					
Cobalt-60	U	0.0119		0.0696	+/-0.0204	0.100	pCi/g					
Europium-152	U	-0.0426		0.163	+/-0.061	0.200	pCi/g					
Lanthanum-140	U	-0.0485		0.143	+/-0.0467		pCi/g					
Lead-212		1.60		0.0972	+/-0.117	0.100	pCi/g					
Lead-214		1.47		0.126	+/-0.126	0.100	pCi/g					
Mercury-203	U	0.000599		0.0704	+/-0.0231	0.100	pCi/g					
Potassium-40		19.9		0.374	+/-1.21	1.00	pCi/g					
Radium-223	U	0.134		1.17	+/-0.385		pCi/g					
Radium-224	UI	4.61	R,R5a	1.11	+/-0.727		pCi/g					
Radium-226		1.31		0.120	+/-0.110		pCi/g					
Radium-228		1.81		0.214	+/-0.201	0.500	pCi/g					
Ruthenium-106	U	-0.0959		0.551	+/-0.166	0.800	pCi/g					
Sodium-22	U	-0.00287		0.0777	+/-0.0237	0.080	pCi/g					
Strontium-85	U	0.0425		0.0666	+/-0.0212		pCi/g					

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7619  
Sample ID: 244148001

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thallium-208		0.518	0.0609	+/-0.055	0.080	pCi/g					
Thorium-227	U	-0.129	0.653	+/-0.191		pCi/g					
Thorium-231	U	0.134	1.17	+/-0.385		pCi/g					
Thorium-234	U	1.51	2.36	+/-1.27	2.00	pCi/g					
Tin-113	U	0.00694	0.084	+/-0.0248	0.100	pCi/g					
Uranium-235	U	0.0808	0.386	+/-0.113	0.500	pCi/g					
Yttrium-88	U	0.00452	0.0585	+/-0.0173	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-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"	84.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	107 *	(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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated

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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 28, 2010

Client Sample ID: RE12-10-7618  
Sample ID: 244148002  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 18.9%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00732	0.0234	+/-0.00762	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00238	0.0197	+/-0.00239	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240		0.0286	0.0225	+/-0.00647	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.64	0.111	+/-0.139	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.129	0.0691	+/-0.0256	0.100	pCi/g						
Uranium-238		1.85	0.0646	+/-0.154	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0906	0.332	+/-0.110	0.200	pCi/g		MXR1	01/20/10	1549	940268	4
Bismuth-211	UI	4.18	R,R5a	0.420	+/-0.275	pCi/g						
Bismuth-214		1.32		0.140	+/-0.0993	0.200	pCi/g					
Cadmium-109	UI	4.40	R,R5a	1.70	+/-0.883	pCi/g						
Cerium-139	U	0.018		0.0599	+/-0.0175	0.050	pCi/g					
Cesium-134	UI	0.113	R,R5a	0.108	+/-0.0331	0.100	pCi/g					
Cesium-137		0.345		0.0758	+/-0.0437	0.100	pCi/g					
Cobalt-60	U	0.00514		0.0769	+/-0.0235	0.100	pCi/g					
Europium-152	U	-0.0349		0.180	+/-0.066	0.200	pCi/g					
Lanthanum-140	U	-0.0364		0.176	+/-0.0555	pCi/g						
Lead-212		1.65		0.115	+/-0.0879	0.100	pCi/g					
Lead-214		1.45		0.132	+/-0.103	0.100	pCi/g					
Mercury-203	U	0.0162		0.0854	+/-0.025	0.100	pCi/g					
Potassium-40		20.1		0.631	+/-1.09	1.00	pCi/g					
Radium-223	U	0.444		1.38	+/-0.448	pCi/g						
Radium-224	UI	3.95	R,R5a	1.31	+/-0.681	pCi/g						
Radium-226		1.32		0.140	+/-0.0993	pCi/g						
Radium-228		1.50		0.235	+/-0.161	0.500	pCi/g					
Ruthenium-106	U	-0.218		0.581	+/-0.187	0.800	pCi/g					
Sodium-22	U	0.0193		0.0903	+/-0.0267	0.080	pCi/g					
Strontium-85	UI	0.0864	R,R5a	0.0814	+/-0.0242	pCi/g						
Thallium-208		0.548		0.076	+/-0.0474	0.080	pCi/g					

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7618  
Sample ID: 244148002

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.404	0.769	+/-0.226		pCi/g					
Thorium-231	U	0.444	1.38	+/-0.448		pCi/g					
Thorium-234	U	2.46	2.80	+/-1.00	2.00	pCi/g					
Tin-113	U	0.00496	0.0944	+/-0.0278	0.100	pCi/g					
Uranium-235	U	-0.0628	0.417	+/-0.127	0.500	pCi/g					
Yttrium-88	U	-0.0126	0.0527	+/-0.0175	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	86.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.4	(50%-105%)

### Notes:

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

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- > Result is greater than value reported
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7623  
Sample ID: 244148003  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 15.4%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00389	0.0242	+/-0.00509	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0208	+/-0.00126	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00252	0.0239	+/-0.00253	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.50	0.118	+/-0.131	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0987	0.0731	+/-0.0226	0.100	pCi/g						
Uranium-238		1.82	0.0683	+/-0.154	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00846	0.185	+/-0.0595	0.200	pCi/g		MXR1	01/20/10	1549	940268	4
Bismuth-211	UI	4.14	R,R5a	0.334	+/-0.307	pCi/g						
Bismuth-214		1.37		0.113	+/-0.110	pCi/g						
Cadmium-109	UI	3.12	R,R5a	1.12	+/-0.402	pCi/g						
Cerium-139	U	0.00239	0.0489	+/-0.0149	0.050	pCi/g						
Cesium-134	U	0.0749	0.0975	+/-0.027	0.100	pCi/g						
Cesium-137		0.110	0.070	+/-0.0273	0.100	pCi/g						
Cobalt-60	U	-0.0332	0.0604	+/-0.0205	0.100	pCi/g						
Europium-152	U	0.0651	0.164	+/-0.0533	0.200	pCi/g						
Lanthanum-140	U	0.0378	0.168	+/-0.0489		pCi/g						
Lead-212		1.69	0.0909	+/-0.100	0.100	pCi/g						
Lead-214		1.44	0.117	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.0169	0.0729	+/-0.0211	0.100	pCi/g						
Potassium-40		21.3	0.438	+/-1.24	1.00	pCi/g						
Radium-223	U	-0.451	1.05	+/-0.328		pCi/g						
Radium-224	UI	4.79	R,R5a	1.03	+/-0.630	pCi/g						
Radium-226		1.37	0.113	+/-0.110		pCi/g						
Radium-228		1.62	0.215	+/-0.165	0.500	pCi/g						
Ruthenium-106	U	0.298	0.548	+/-0.151	0.800	pCi/g						
Sodium-22	U	0.00623	0.0689	+/-0.0205	0.080	pCi/g						
Strontium-85	UI	0.0812	R,R5a	0.0728	+/-0.0212	pCi/g						
Thallium-208		0.615	0.0589	+/-0.0523	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7623  
Sample ID: 244148003

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.185	0.632	+/-0.181		pCi/g						
Thorium-231	U	-0.451	1.05	+/-0.328		pCi/g						
Thorium-234		2.20	1.59	+/-0.774	2.00	pCi/g						
Tin-113	U	0.0314	0.0812	+/-0.0236	0.100	pCi/g						
Uranium-235	U	0.0419	0.359	+/-0.110	0.500	pCi/g						
Yttrium-88	U	0.0153	0.0538	+/-0.0146	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	79.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.0	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7622  
Sample ID: 244148004  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 8.99%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00221	0.0228	+/-0.00173	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00113	0.0187	+/-0.003	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-1.35E-10	0.0214	+/-0.0016	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.117	+/-0.100	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.103	0.0729	+/-0.0232	0.100	pCi/g						
Uranium-238		1.14	0.0681	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0275	0.380	+/-0.122	0.200	pCi/g		MXR1	01/20/10	1550	940268	4
Bismuth-211	UI	4.10	R,R5a	0.293	+/-0.264	pCi/g						
Bismuth-214		1.24		0.117	+/-0.0842	0.200	pCi/g					
Cadmium-109	UI	3.57	R,R5a	1.51	+/-0.581	pCi/g						
Cerium-139	U	-0.0134	0.0477	+/-0.0148	0.050	pCi/g						
Cesium-134	UI	0.0957	R,R5a	0.0885	+/-0.0255	0.100	pCi/g					
Cesium-137	U	-0.0517	0.0558	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	0.00153	0.0656	+/-0.0197	0.100	pCi/g						
Europium-152	U	0.0554	0.152	+/-0.0489	0.200	pCi/g						
Lanthanum-140	U	0.0325	0.173	+/-0.0508		pCi/g						
Lead-212		1.83	0.0816	+/-0.0894	0.100	pCi/g						
Lead-214		1.43	0.102	+/-0.0992	0.100	pCi/g						
Mercury-203	U	0.0383	0.0708	+/-0.0198	0.100	pCi/g						
Potassium-40		21.5	0.530	+/-1.21	1.00	pCi/g						
Radium-223	U	0.398	1.02	+/-0.326		pCi/g						
Radium-224	UI	4.53	R,R5a	0.928	+/-0.600	pCi/g						
Radium-226		1.24	0.117	+/-0.0842		pCi/g						
Radium-228		1.68	0.217	+/-0.186	0.500	pCi/g						
Ruthenium-106	U	-0.0925	0.474	+/-0.143	0.800	pCi/g						
Sodium-22	U	-0.019	0.0717	+/-0.0225	0.080	pCi/g						
Strontium-85	UI	0.0999	R,R5a	0.0698	+/-0.020	pCi/g						
Thallium-208		0.493	0.0569	+/-0.0404	0.080	pCi/g						



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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7622  
Sample ID: 244148004  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.0025	0.609	+/-0.177		pCi/g					
Thorium-231	U	0.398	1.02	+/-0.326		pCi/g					
Thorium-234	U	2.37	3.17	+/-1.17	2.00	pCi/g					
Tin-113	U	0.00153	0.069	+/-0.0206	0.100	pCi/g					
Uranium-235	U	0.0584	0.341	+/-0.103	0.500	pCi/g					
Yttrium-88	U	-0.0215	0.0409	+/-0.0156	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.1	(50%-105%)

### Notes:

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

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- D Results are reported from a diluted aliquot of the sample
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7621  
Sample ID: 244148005  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 7.57%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00315	0.0227	+/-0.00268	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00696	0.0192	+/-0.00569	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.0058	0.0219	+/-0.00349	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.27	0.118	+/-0.115	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0987	0.0732	+/-0.0227	0.100	pCi/g						
Uranium-238		1.43	0.0684	+/-0.127	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.138	0.241	+/-0.071	0.200	pCi/g		MXR1	01/20/10	1550	940268	4
Bismuth-211	UI	3.50	R,R5a	0.327	+/-0.234	pCi/g						
Bismuth-214		1.35		0.113	+/-0.0892	pCi/g						
Cadmium-109	UI	2.13	R,R5a	1.42	+/-0.515	pCi/g						
Cerium-139	U	-0.00929		0.0437	+/-0.0133	pCi/g						
Cesium-134	UI	0.226	R,R5a	0.092	+/-0.0458	pCi/g						
Cesium-137		0.117		0.0641	+/-0.0322	pCi/g						
Cobalt-60	U	0.00627		0.0577	+/-0.0171	pCi/g						
Europium-152	U	-0.0921		0.141	+/-0.0485	pCi/g						
Lanthanum-140	U	-0.142		0.0937	+/-0.041	pCi/g						
Lead-212		1.43		0.0813	+/-0.072	pCi/g						
Lead-214		1.22		0.114	+/-0.0874	pCi/g						
Mercury-203	U	0.0287		0.0665	+/-0.0211	pCi/g						
Potassium-40		21.0		0.380	+/-1.04	pCi/g						
Radium-223	U	-0.00837		1.02	+/-0.340	pCi/g						
Radium-224	UI	4.78	R,R5a	0.925	+/-0.624	pCi/g						
Radium-226		1.35		0.113	+/-0.0892	pCi/g						
Radium-228		1.40		0.219	+/-0.152	pCi/g						
Ruthenium-106	U	-0.136		0.528	+/-0.161	pCi/g						
Sodium-22	U	0.0268		0.0734	+/-0.0209	pCi/g						
Strontium-85	U	0.0463		0.0621	+/-0.0195	pCi/g						
Thallium-208		0.522		0.0542	+/-0.0419	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7621  
Sample ID: 244148005

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0511	0.601	+/-0.171		pCi/g						
Thorium-231	U	-0.00837	1.02	+/-0.340		pCi/g						
Thorium-234		2.16	1.98	+/-0.882	2.00	pCi/g						
Tin-113	U	-0.00181	0.0715	+/-0.0214	0.100	pCi/g						
Uranium-235	U	0.0603	0.332	+/-0.0973	0.500	pCi/g						
Yttrium-88	U	-0.0048	0.0545	+/-0.017	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	89.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(50%-105%)

### Notes:

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

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- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7617  
Sample ID: 244148006  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.24%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00182	0.0356	+/-0.00916	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00689	0.0228	+/-0.00632	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-0.00276	0.026	+/-0.00477	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.891	J,R3a	0.094	+/-0.081	0.100	pCi/g	MXE1	01/21/10	2007	940245	3
Uranium-235/236	U	0.0487	UJ,R3a	0.0583	+/-0.0149	0.100	pCi/g					
Uranium-238		0.828	J,R3a	0.0545	+/-0.0765	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0385		0.206	+/-0.069	0.200	pCi/g	MXR1	01/20/10	1551	940268	4
Bismuth-211	UI	4.02	R,R5a	0.259	+/-0.297		pCi/g					
Bismuth-214		1.25		0.093	+/-0.102	0.200	pCi/g					
Cadmium-109	UI	3.57	R,R5a	1.05	+/-0.441		pCi/g					
Cerium-139	U	-0.0014		0.0428	+/-0.0125	0.050	pCi/g					
Cesium-134	UI	0.0853	R,R5a	0.0816	+/-0.0212	0.100	pCi/g					
Cesium-137	U	-0.0193		0.0563	+/-0.0179	0.100	pCi/g					
Cobalt-60	U	-0.0214		0.052	+/-0.0175	0.100	pCi/g					
Europium-152	U	-0.0308		0.141	+/-0.0427	0.200	pCi/g					
Lanthanum-140	U	-0.0393		0.107	+/-0.0356		pCi/g					
Lead-212		1.60		0.0833	+/-0.108	0.100	pCi/g					
Lead-214		1.40		0.0903	+/-0.110	0.100	pCi/g					
Mercury-203	U	0.000506		0.0601	+/-0.0182	0.100	pCi/g					
Potassium-40		21.5		0.421	+/-1.20	1.00	pCi/g					
Radium-223	U	-0.0654		0.955	+/-0.333		pCi/g					
Radium-224	UI	4.00	R,R5a	0.948	+/-0.630		pCi/g					
Radium-226		1.25		0.093	+/-0.102		pCi/g					
Radium-228		1.75		0.172	+/-0.161	0.500	pCi/g					
Ruthenium-106	U	-0.116		0.446	+/-0.140	0.800	pCi/g					
Sodium-22	U	-0.000799		0.0613	+/-0.0189	0.080	pCi/g					
Strontium-85	U	0.00284		0.0522	+/-0.0175		pCi/g					
Thallium-208		0.489		0.0511	+/-0.0413	0.080	pCi/g					

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7617  
Sample ID: 244148006  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.218	0.521	+/-0.165		pCi/g					
Thorium-231	U	-0.0654	0.955	+/-0.333		pCi/g					
Thorium-234	U	1.13	1.80	+/-0.716	2.00	pCi/g					
Tin-113	U	-0.0131	0.0648	+/-0.0192	0.100	pCi/g					
Uranium-235	U	0.193	0.321	+/-0.092	0.500	pCi/g					
Yttrium-88	U	0.0164	0.0513	+/-0.014	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	55.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	109 *	(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
- 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/A RPD or %Recovery limits do not apply.

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7620  
Sample ID: 244148007  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 11.2%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00426	0.0208	+/-0.00678	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00875	0.0206	+/-0.00547	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00	0.0236	+/-0.00353	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.24	0.113	+/-0.112	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0858	0.0703	+/-0.0216	0.100	pCi/g						
Uranium-238		1.39	0.0656	+/-0.123	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.173	0.228	+/-0.0694	0.200	pCi/g		MXR1	01/20/10	1551	940268	4
Bismuth-211	UI	4.31	R,R5a	0.303	+/-0.318	pCi/g						
Bismuth-214		1.30		0.106	+/-0.109	0.200	pCi/g					
Cadmium-109	UI	3.27	R,R5a	1.20	+/-0.482	pCi/g						
Cerium-139	U	0.0118		0.0486	+/-0.0139	0.050	pCi/g					
Cesium-134	UI	0.121	R,R5a	0.0828	+/-0.0337	0.100	pCi/g					
Cesium-137	U	0.0214		0.0571	+/-0.0166	0.100	pCi/g					
Cobalt-60	U	-0.00386		0.0543	+/-0.0166	0.100	pCi/g					
Europium-152	U	-0.0161		0.145	+/-0.0495	0.200	pCi/g					
Lanthanum-140	U	-0.0721		0.122	+/-0.0406	pCi/g						
Lead-212		1.89		0.0886	+/-0.136	0.100	pCi/g					
Lead-214		1.50		0.106	+/-0.117	0.100	pCi/g					
Mercury-203	U	0.0133		0.067	+/-0.023	0.100	pCi/g					
Potassium-40		20.6		0.527	+/-1.14	1.00	pCi/g					
Radium-223	U	-0.126		1.03	+/-0.349	pCi/g						
Radium-224	UI	5.62	R,R5a	1.01	+/-0.686	pCi/g						
Radium-226		1.30		0.106	+/-0.109	pCi/g						
Radium-228		1.89		0.189	+/-0.174	0.500	pCi/g					
Ruthenium-106	U	0.127		0.471	+/-0.137	0.800	pCi/g					
Sodium-22	U	-0.00975		0.0631	+/-0.0194	0.080	pCi/g					
Strontium-85	UI	0.103	R,R5a	0.0706	+/-0.0225	pCi/g						
Thallium-208		0.650		0.0514	+/-0.052	0.080	pCi/g					

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7620  
Sample ID: 244148007  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.161	0.622	+/-0.185		pCi/g					
Thorium-231	U	-0.126	1.03	+/-0.349		pCi/g					
Thorium-234	U	0.860	1.83	+/-0.710	2.00	pCi/g					
Tin-113	U	0.0112	0.0697	+/-0.0205	0.100	pCi/g					
Uranium-235	U	0.0195	0.343	+/-0.101	0.500	pCi/g					
Yttrium-88	U	0.00382	0.0469	+/-0.0141	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7624  
Sample ID: 244148008  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 8.44%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00209	0.0219	+/-0.00306	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00141	0.0233	+/-0.00732	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00423	0.0266	+/-0.00316	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.20	0.114	+/-0.108	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0776	0.071	+/-0.0196	0.100	pCi/g						
Uranium-238		1.34	0.0664	+/-0.119	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00576	0.337	+/-0.106	0.200	pCi/g		MXR1	01/20/10	1551	940268	4
Bismuth-211	UI	4.02	R,R5a	0.339	+/-0.255	pCi/g						
Bismuth-214		1.22		0.122	+/-0.0979	pCi/g						
Cadmium-109	UI	3.01	R,R5a	1.42	+/-0.534	pCi/g						
Cerium-139	U	-0.00308	0.0521	+/-0.0153	0.050	pCi/g						
Cesium-134	U	0.0271	0.0907	+/-0.0294	0.100	pCi/g						
Cesium-137	U	0.0254	0.0732	+/-0.0212	0.100	pCi/g						
Cobalt-60	U	0.0289	0.071	+/-0.0199	0.100	pCi/g						
Europium-152	U	-0.0925	0.162	+/-0.0577	0.200	pCi/g						
Lanthanum-140	U	-0.0689	0.113	+/-0.0403		pCi/g						
Lead-212		1.51	0.0932	+/-0.0766	0.100	pCi/g						
Lead-214		1.40	0.111	+/-0.0959	0.100	pCi/g						
Mercury-203	U	0.0203	0.0739	+/-0.0206	0.100	pCi/g						
Potassium-40		17.7	0.320	+/-0.994	1.00	pCi/g						
Radium-223	U	-0.00645	1.09	+/-0.361		pCi/g						
Radium-224	UI	4.80	R,R5a	1.06	+/-0.560	pCi/g						
Radium-226		1.22	0.122	+/-0.0979		pCi/g						
Radium-228		1.53	0.220	+/-0.154	0.500	pCi/g						
Ruthenium-106	U	-0.225	0.509	+/-0.163	0.800	pCi/g						
Sodium-22	U	-0.02	0.0602	+/-0.0197	0.080	pCi/g						
Strontium-85	U	0.0366	0.0648	+/-0.0204		pCi/g						
Thallium-208		0.505	0.0575	+/-0.0382	0.080	pCi/g						



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID:  
Sample ID:

RE12-10-7624  
244148008

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.175	0.664	+/-0.205		pCi/g					
Thorium-231	U	-0.00645	1.09	+/-0.361		pCi/g					
Thorium-234	U	2.01	2.60	+/-0.989	2.00	pCi/g					
Tin-113	U	0.0048	0.0773	+/-0.0224	0.100	pCi/g					
Uranium-235	U	0.0633	0.387	+/-0.113	0.500	pCi/g					
Yttrium-88	U	0.0242	0.0685	+/-0.0186	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	81.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	80.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.5	(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
- 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/A RPD or %Recovery limits do not apply.

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7630  
Sample ID: 244148009  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 12.4%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.000287	0.0261	+/-0.003	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00122	0.0202	+/-0.00442	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00122	0.0231	+/-0.00212	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.862	J-R3a	0.104	+/-0.0819	0.100	pCi/g	MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0664	↓	0.0646	+/-0.0182	0.100	pCi/g					
Uranium-238		1.07	↓	0.0604	+/-0.0973	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0402		0.292	+/-0.0851	0.200	pCi/g	MXR1	01/20/10	1556	940268	4
Bismuth-211	UI	3.39	R,R5a	0.362	+/-0.324		pCi/g					
Bismuth-214		1.10		0.130	+/-0.108	0.200	pCi/g					
Cadmium-109	UI	2.06	R,R5a	1.61	+/-0.492		pCi/g					
Cerium-139	U	-0.0127		0.053	+/-0.0155	0.050	pCi/g					
Cesium-134	UI	0.134	R,R5a	0.109	+/-0.0373	0.100	pCi/g					
Cesium-137	U	-0.028		0.0615	+/-0.0196	0.100	pCi/g					
Cobalt-60	U	-0.0342		0.0603	+/-0.0206	0.100	pCi/g					
Europium-152	U	0.0108		0.192	+/-0.0591	0.200	pCi/g					
Lanthanum-140	U	0.0173		0.180	+/-0.0537		pCi/g					
Lead-212		1.82		0.101	+/-0.112	0.100	pCi/g					
Lead-214		1.18		0.136	+/-0.117	0.100	pCi/g					
Mercury-203	U	0.014		0.0787	+/-0.0229	0.100	pCi/g					
Potassium-40		19.5		0.557	+/-1.19	1.00	pCi/g					
Radium-223	U	-0.444		1.25	+/-0.389		pCi/g					
Radium-224	UI	4.58	R,R5a	1.15	+/-0.558		pCi/g					
Radium-226		1.10		0.130	+/-0.108		pCi/g					
Radium-228		1.69		0.249	+/-0.176	0.500	pCi/g					
Ruthenium-106	U	0.363		0.643	+/-0.176	0.800	pCi/g					
Sodium-22	U	-0.0187		0.0699	+/-0.0221	0.080	pCi/g					
Strontium-85	UI	0.104	R,R5a	0.0838	+/-0.0249		pCi/g					
Thallium-208		0.641		0.0618	+/-0.0551	0.080	pCi/g					

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7630  
Sample ID: 244148009  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.0764	0.699	+/-0.208		pCi/g					
Thorium-231	U	-0.444	1.25	+/-0.389		pCi/g					
Thorium-234	U	-0.585	2.57	+/-0.775	2.00	pCi/g					
Tin-113	U	0.0275	0.0896	+/-0.0262	0.100	pCi/g					
Uranium-235	U	0.0981	0.403	+/-0.117	0.500	pCi/g					
Yttrium-88	U	0.00273	0.0664	+/-0.0202	0.100	pCi/g					

**The following Analytical Methods were performed**

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	73.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	90.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	106 *	(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
- D Results are reported from a diluted aliquot of the sample
- 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/A RPD or %Recovery limits do not apply.

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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 28, 2010

Client Sample ID: RE12-10-7628  
Sample ID: 244148010  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.4%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>													
<i>AM241 "Dry Weight Corrected"</i>													
Americium-241	U	0.00119		0.0256	+/-0.00329	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>													
Plutonium-238	U	0.00725		0.0239	+/-0.00326	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-0.00145		0.0274	+/-0.00324	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>													
Uranium-233/234		1.16		0.107	+/-0.104	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0897		0.0665	+/-0.0214	0.100	pCi/g						
Uranium-238		1.01		0.0621	+/-0.0928	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>													
<i>GAMMA SPEC "Dry Weight Corrected"</i>													
Americium-241	U	0.149		0.173	+/-0.0512	0.200	pCi/g		MXR1	01/20/10	1556	940268	4
Bismuth-211	UI	4.27	R,R5a	0.258	+/-0.350		pCi/g						
Bismuth-214		1.21		0.0915	+/-0.0968	0.200	pCi/g						
Cadmium-109	UI	2.83	R,R5a	0.947	+/-0.455		pCi/g						
Cerium-139	U	0.00213		0.0418	+/-0.0119	0.050	pCi/g						
Cesium-134	U	0.0449		0.066	+/-0.0196	0.100	pCi/g						
Cesium-137	U	-0.0163		0.0496	+/-0.0157	0.100	pCi/g						
Cobalt-60	U	0.00808		0.0596	+/-0.0178	0.100	pCi/g						
Europium-152	U	0.0193		0.127	+/-0.0425	0.200	pCi/g						
Lanthanum-140	U	-0.0157		0.137	+/-0.0431		pCi/g						
Lead-212		1.69		0.0717	+/-0.129	0.100	pCi/g						
Lead-214		1.49		0.0898	+/-0.128	0.100	pCi/g						
Mercury-203	U	0.0103		0.0593	+/-0.0195	0.100	pCi/g						
Potassium-40		20.3		0.477	+/-1.12	1.00	pCi/g						
Radium-223	U	-0.19		0.913	+/-0.320		pCi/g						
Radium-224	UI	4.96	R,R5a	0.816	+/-0.679		pCi/g						
Radium-226		1.21		0.0915	+/-0.0968		pCi/g						
Radium-228		1.57		0.165	+/-0.154	0.500	pCi/g						
Ruthenium-106	U	-0.0533		0.442	+/-0.135	0.800	pCi/g						
Sodium-22	U	-0.0162		0.0537	+/-0.0174	0.080	pCi/g						
Strontium-85	U	0.0424		0.0563	+/-0.017		pCi/g						
Thallium-208		0.460		0.0462	+/-0.0445	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7628  
Sample ID: 244148010

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.091	0.542	+/-0.158		pCi/g					
Thorium-231	U	-0.19	0.913	+/-0.320		pCi/g					
Thorium-234		1.87	1.40	+/-0.698	2.00	pCi/g					
Tin-113	U	-0.01	0.0617	+/-0.018	0.100	pCi/g					
Uranium-235	U	0.00607	0.290	+/-0.0839	0.500	pCi/g					
Yttrium-88	U	-0.00419	0.0532	+/-0.0165	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE FML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.8	(50%-105%)

### Notes:

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

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- > Result is greater than value reported
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7632  
Sample ID: 244148011  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.24%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00182	0.0234	+/-0.00298	0.050	pCi/g		MXA1	01/22/10	1203	943139	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0264	+/-0.0032	0.050	pCi/g		MXE1	01/14/10	1750	940239	4
Plutonium-239/240	U	0.00	0.0303	+/-0.0032	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.825	J-R3a	0.0988	+/-0.0776	0.100	pCi/g	MXE1	01/21/10	2007	940245	5
Uranium-235/236		0.071	↓	0.0614	+/-0.0191	0.100	pCi/g					
Uranium-238		0.890	↓	0.0573	+/-0.0823	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0449		0.102	+/-0.0303	0.200	pCi/g	MXR1	01/20/10	1557	940268	6
Bismuth-211	UI	3.90	R,R5a	0.352	+/-0.280		pCi/g					
Bismuth-214		1.24		0.138	+/-0.112	0.200	pCi/g					
Cadmium-109	UI	3.20	R,R5a	1.01	+/-0.471		pCi/g					
Cerium-139	U	0.0391		0.0562	+/-0.0161	0.050	pCi/g					
Cesium-134	U	0.0866		0.112	+/-0.0306	0.100	pCi/g					
Cesium-137	U	-0.0142		0.077	+/-0.0237	0.100	pCi/g					
Cobalt-60	U	-0.00287		0.0777	+/-0.0245	0.100	pCi/g					
Europium-152	U	0.103		0.178	+/-0.0566	0.200	pCi/g					
Lanthanum-140	U	-0.0468		0.191	+/-0.0614		pCi/g					
Lead-212		1.51		0.093	+/-0.0894	0.100	pCi/g					
Lead-214		1.36		0.123	+/-0.104	0.100	pCi/g					
Mercury-203	U	0.0048		0.0748	+/-0.0217	0.100	pCi/g					
Potassium-40		18.6		0.730	+/-1.04	1.00	pCi/g					
Radium-223	U	-0.736		1.04	+/-0.387		pCi/g					
Radium-224	UI	4.80	R,R5a	1.06	+/-0.712		pCi/g					
Radium-226		1.24		0.138	+/-0.112		pCi/g					
Radium-228		1.75		0.276	+/-0.206	0.500	pCi/g					
Ruthenium-106	U	-0.114		0.617	+/-0.189	0.800	pCi/g					
Sodium-22	U	-0.02		0.0904	+/-0.0279	0.080	pCi/g					
Strontium-85	U	0.0413		0.0746	+/-0.0235		pCi/g					
Thallium-208		0.524		0.071	+/-0.0529	0.080	pCi/g					

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7632  
Sample ID: 244148011

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.348	0.691	+/-0.194		pCi/g						
Thorium-231	U	-0.736	1.04	+/-0.387		pCi/g						
Thorium-234	U	0.549	1.03	+/-0.539	2.00	pCi/g						
Tin-113	U	-0.0104	0.0853	+/-0.0261	0.100	pCi/g						
Uranium-235	U	0.0629	0.398	+/-0.119	0.500	pCi/g						
Yttrium-88	U	-0.00159	0.0624	+/-0.019	0.100	pCi/g						

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC 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"	82.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	69.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	109 *	(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
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- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7629  
Sample ID: 244148012  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 18.3%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>													
<i>AM241 "Dry Weight Corrected"</i>													
Americium-241	U	0.00331		0.0218	+/-0.00635	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>													
Plutonium-238	U	-0.00106		0.0175	+/-0.00281	0.050	pCi/g		MXE1	01/16/10	1107	940239	2
Plutonium-239/240	U	-0.00425		0.0201	+/-0.00451	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>													
Uranium-233/234		1.94		0.110	+/-0.160	0.100	pCi/g		MXE1	01/21/10	2007	940245	4
Uranium-235/236		0.127		0.068	+/-0.0252	0.100	pCi/g						
Uranium-238		2.07		0.0635	+/-0.170	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>													
<i>GAMMA SPEC "Dry Weight Corrected"</i>													
Americium-241	U	-0.281		0.504	+/-0.149	0.200	pCi/g		MXR1	01/20/10	1557	940268	5
Bismuth-211	UI	4.26	R,R5a	0.370	+/-0.303		pCi/g						
Bismuth-214		1.18		0.119	+/-0.095	0.200	pCi/g						
Cadmium-109	UI	2.29	R,R5a	1.95	+/-0.605		pCi/g						
Cerium-139	U	-0.0255		0.058	+/-0.0178	0.050	pCi/g						
Cesium-134	U	0.0555		0.0944	+/-0.026	0.100	pCi/g						
Cesium-137	U	0.0534		0.0718	+/-0.039	0.100	pCi/g						
Cobalt-60	U	-0.0209		0.0642	+/-0.0212	0.100	pCi/g						
Europium-152	U	0.0682		0.180	+/-0.0848	0.200	pCi/g						
Lanthanum-140	U	-0.117		0.0927	+/-0.0416		pCi/g						
Lead-212		1.45		0.108	+/-0.0859	0.100	pCi/g						
Lead-214		1.48		0.129	+/-0.112	0.100	pCi/g						
Mercury-203	U	0.0365		0.0832	+/-0.0264	0.100	pCi/g						
Potassium-40		20.5		0.538	+/-1.12	1.00	pCi/g						
Radium-223	U	0.238		1.33	+/-0.436		pCi/g						
Radium-224	UI	5.25	R,R5a	1.23	+/-0.819		pCi/g						
Radium-226		1.18		0.119	+/-0.095		pCi/g						
Radium-228		1.48		0.229	+/-0.200	0.500	pCi/g						
Ruthenium-106	U	0.154		0.617	+/-0.182	0.800	pCi/g						
Sodium-22	U	0.00361		0.0773	+/-0.0235	0.080	pCi/g						
Strontium-85	U	0.0505		0.0701	+/-0.0218		pCi/g						
Thallium-208		0.420		0.0661	+/-0.0481	0.080	pCi/g						



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID:  
Sample ID:

RE12-10-7629  
244148012

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.222	0.741	+/-0.219		pCi/g					
Thorium-231	U	0.238	1.33	+/-0.436		pCi/g					
Thorium-234	U	2.48	4.13	+/-1.17	2.00	pCi/g					
Tin-113	U	0.0115	0.0847	+/-0.0246	0.100	pCi/g					
Uranium-235	U	0.260	0.453	+/-0.132	0.500	pCi/g					
Yttrium-88	U	-0.0223	0.0492	+/-0.0175	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-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"	77.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.4	(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
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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
- 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

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7626  
Sample ID: 244148013  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.003	0.0204	+/-0.00458	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00967	0.020	+/-0.00513	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00121	0.0228	+/-0.0027	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.112	+/-0.0989	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236	U	0.0314	0.0698	+/-0.0121	0.100	pCi/g						
Uranium-238		1.15	0.0652	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0956	0.108	+/-0.0315	0.200	pCi/g		MXR1	01/20/10	1558	940268	4
Bismuth-211	UI	4.34	R,R5a	0.376	+/-0.333	pCi/g						
Bismuth-214		1.39		0.122	+/-0.128	pCi/g						
Cadmium-109	UI	4.34	R,R5a	0.972	+/-0.493	pCi/g						
Cerium-139	U	-0.0248	0.0497	+/-0.0155	0.050	pCi/g						
Cesium-134	U	0.0526	0.114	+/-0.0317	0.100	pCi/g						
Cesium-137	U	0.0154	0.0817	+/-0.0247	0.100	pCi/g						
Cobalt-60	U	0.0326	0.0822	+/-0.0223	0.100	pCi/g						
Europium-152	U	0.0177	0.183	+/-0.0529	0.200	pCi/g						
Lanthanum-140	U	-0.0585	0.178	+/-0.0594		pCi/g						
Lead-212		1.78	0.0966	+/-0.110	0.100	pCi/g						
Lead-214		1.51	0.131	+/-0.122	0.100	pCi/g						
Mercury-203	U	0.0166	0.0771	+/-0.0217	0.100	pCi/g						
Potassium-40		19.1	0.666	+/-1.27	1.00	pCi/g						
Radium-223	U	0.432	1.21	+/-0.381		pCi/g						
Radium-224	UI	5.09	R,R5a	1.10	+/-0.697	pCi/g						
Radium-226		1.39	0.122	+/-0.128		pCi/g						
Radium-228		1.47	0.284	+/-0.219	0.500	pCi/g						
Ruthenium-106	U	0.215	0.652	+/-0.189	0.800	pCi/g						
Sodium-22	U	0.0108	0.0942	+/-0.0286	0.080	pCi/g						
Strontium-85	U	0.0499	0.0782	+/-0.0243		pCi/g						
Thallium-208		0.603	0.0712	+/-0.0587	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7626  
Sample ID: 244148013  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.509	0.695	+/-0.201		pCi/g					
Thorium-231	U	0.432	1.21	+/-0.381		pCi/g					
Thorium-234		1.48	0.997	+/-0.519	2.00	pCi/g					
Tin-113	U	-0.0348	0.0808	+/-0.0252	0.100	pCi/g					
Uranium-235	U	-0.0144	0.380	+/-0.114	0.500	pCi/g					
Yttrium-88	U	0.000176	0.0791	+/-0.0244	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.4	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7631  
Sample ID: 244148014  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 16.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0031	0.0208	+/-0.00606	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00233	0.0193	+/-0.00618	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00117	0.022	+/-0.00387	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.80	0.126	+/-0.155	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.100	0.0779	+/-0.0235	0.100	pCi/g						
Uranium-238		2.21	0.0728	+/-0.185	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.108	0.197	+/-0.0625	0.200	pCi/g		MXR1	01/20/10	1558	940268	4
Bismuth-211	UI	4.93	R,R5a	0.323	+/-0.329	pCi/g						
Bismuth-214		1.31		0.109	+/-0.109	pCi/g						
Cadmium-109	UI	3.46	R,R5a	1.16	+/-0.452	pCi/g						
Cerium-139	U	0.00303	0.0483	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0811	0.0887	+/-0.0394	0.100	pCi/g						
Cesium-137		0.148	0.0657	+/-0.0362	0.100	pCi/g						
Cobalt-60	U	0.0126	0.0654	+/-0.0196	0.100	pCi/g						
Europium-152	U	0.0433	0.168	+/-0.0555	0.200	pCi/g						
Lanthanum-140	U	-0.0511	0.105	+/-0.0367		pCi/g						
Lead-212		1.81	0.0906	+/-0.113	0.100	pCi/g						
Lead-214		1.72	0.110	+/-0.123	0.100	pCi/g						
Mercury-203	U	0.0544	0.0665	+/-0.0337	0.100	pCi/g						
Potassium-40		22.5	0.430	+/-1.24	1.00	pCi/g						
Radium-223	U	-0.701	1.01	+/-0.376		pCi/g						
Radium-224	UI	5.18	R,R5a	1.03	+/-0.728	pCi/g						
Radium-226		1.31	0.109	+/-0.109		pCi/g						
Radium-228		1.77	0.203	+/-0.184	0.500	pCi/g						
Ruthenium-106	U	-0.00723	0.506	+/-0.158	0.800	pCi/g						
Sodium-22	U	-0.0193	0.0596	+/-0.0198	0.080	pCi/g						
Strontium-85	U	0.0347	0.0664	+/-0.0217		pCi/g						
Thallium-208		0.544	0.0571	+/-0.0484	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7631  
Sample ID: 244148014

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.224	0.601	+/-0.184		pCi/g					
Thorium-231	U	-0.701	1.01	+/-0.376		pCi/g					
Thorium-234	U	1.15	1.69	+/-0.750	2.00	pCi/g					
Tin-113	U	-0.0154	0.072	+/-0.0222	0.100	pCi/g					
Uranium-235	U	0.139	0.356	+/-0.108	0.500	pCi/g					
Yttrium-88	U	-0.00725	0.0507	+/-0.0163	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	81.7	(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

F Estimated Value

II Analytical holding time was exceeded

J Value is estimated

M M if above MDC and less than LLD

M Matrix Related Failure

N/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7627  
Sample ID: 244148015  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 23.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00941	0.0212	+/-0.00347	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00126	0.0207	+/-0.00126	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.0126	0.0237	+/-0.00592	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.30	0.101	+/-0.112	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0884	0.0625	+/-0.0198	0.100	pCi/g						
Uranium-238		1.46	0.0584	+/-0.123	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0463	0.0748	+/-0.026	0.200	pCi/g		MXR1	01/20/10	1559	940268	4
Bismuth-211	UI	4.22	R,R5a	0.311	+/-0.324	pCi/g						
Bismuth-214		1.31		0.106	+/-0.117	pCi/g						
Cadmium-109	UI	3.78	R,R5a	0.748	+/-0.409	pCi/g						
Cerium-139	U	0.00293	0.0425	+/-0.0125	0.050	pCi/g						
Cesium-134	UI	0.110	R,R5a	0.0981	+/-0.0351	pCi/g						
Cesium-137		0.284	0.0735	+/-0.043	0.100	pCi/g						
Cobalt-60	U	0.0266	0.0703	+/-0.0198	0.100	pCi/g						
Europium-152	U	0.0214	0.153	+/-0.0459	0.200	pCi/g						
Lanthanum-140	U	-0.0873	0.149	+/-0.0514		pCi/g						
Lead-212		1.65	0.0774	+/-0.108	0.100	pCi/g						
Lead-214		1.47	0.109	+/-0.119	0.100	pCi/g						
Mercury-203	U	0.0114	0.0623	+/-0.019	0.100	pCi/g						
Potassium-40		19.6	0.518	+/-1.16	1.00	pCi/g						
Radium-223	U	0.692	1.11	+/-0.345		pCi/g						
Radium-224	UI	4.38	R,R5a	0.881	+/-0.580	pCi/g						
Radium-226		1.31	0.106	+/-0.117		pCi/g						
Radium-228		1.55	0.225	+/-0.175	0.500	pCi/g						
Ruthenium-106	U	0.117	0.574	+/-0.165	0.800	pCi/g						
Sodium-22	U	-0.0023	0.0788	+/-0.0241	0.080	pCi/g						
Strontium-85	U	0.0334	0.0654	+/-0.0212		pCi/g						
Thallium-208		0.525	0.0563	+/-0.0524	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7627  
Sample ID: 244148015  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.23	0.553	+/-0.179		pCi/g						
Thorium-231	U	0.692	1.11	+/-0.345		pCi/g						
Thorium-234		2.41	0.739	+/-0.448	2.00	pCi/g						
Tin-113	U	-0.022	0.0708	+/-0.0218	0.100	pCi/g						
Uranium-235	U	-0.0618	0.303	+/-0.0919	0.500	pCi/g						
Yttrium-88	U	-0.00677	0.0591	+/-0.0188	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7625  
Sample ID: 244148016  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 17.6%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>													
<i>AM241 "Dry Weight Corrected"</i>													
Americium-241	U	-0.000546		0.0216	+/-0.00433	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>													
Plutonium-238	U	-0.00389		0.0214	+/-0.00259	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00389		0.0245	+/-0.0039	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>													
Uranium-233/234		1.66		0.132	+/-0.145	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0944		0.0816	+/-0.0233	0.100	pCi/g						
Uranium-238		1.85		0.0763	+/-0.159	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>													
<i>GAMMA SPEC "Dry Weight Corrected"</i>													
Americium-241	U	-0.0217		0.378	+/-0.107	0.200	pCi/g		MXR1	01/20/10	1627	940268	4
Bismuth-211	UI	4.15	R,R5a	0.343	+/-0.269		pCi/g						
Bismuth-214		1.24		0.105	+/-0.097	0.200	pCi/g						
Cadmium-109	UI	2.76	R,R5a	1.30	+/-0.539		pCi/g						
Cerium-139	U	0.00213		0.0483	+/-0.0144	0.050	pCi/g						
Cesium-134	U	0.047		0.0836	+/-0.0231	0.100	pCi/g						
Cesium-137		0.0995		0.0577	+/-0.035	0.100	pCi/g						
Cobalt-60	U	0.0127		0.0625	+/-0.0179	0.100	pCi/g						
Europium-152	U	-0.0839		0.145	+/-0.0456	0.200	pCi/g						
Lanthanum-140	U	-0.0401		0.156	+/-0.0534		pCi/g						
Lead-212		1.48		0.129	+/-0.0861	0.100	pCi/g						
Lead-214		1.44		0.113	+/-0.101	0.100	pCi/g						
Mercury-203	U	0.014		0.0657	+/-0.021	0.100	pCi/g						
Potassium-40		20.0		0.524	+/-1.04	1.00	pCi/g						
Radium-223	U	-0.253		1.01	+/-0.348		pCi/g						
Radium-224	UI	2.65	R,R5a	1.39	+/-0.481		pCi/g						
Radium-226		1.24		0.105	+/-0.097		pCi/g						
Radium-228		1.45		0.206	+/-0.148	0.500	pCi/g						
Ruthenium-106	U	0.102		0.521	+/-0.156	0.800	pCi/g						
Sodium-22	U	-0.0187		0.0708	+/-0.0222	0.080	pCi/g						
Strontium-85	U	0.0515		0.0618	+/-0.0187		pCi/g						
Thallium-208		0.488		0.0585	+/-0.045	0.080	pCi/g						



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7625  
Sample ID: 244148016

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.173	0.595	+/-0.177		pCi/g					
Thorium-231	U	-0.253	1.01	+/-0.348		pCi/g					
Thorium-234	U	1.40	3.11	+/-0.865	2.00	pCi/g					
Tin-113	U	-0.0035	0.0716	+/-0.0214	0.100	pCi/g					
Uranium-235	U	0.150	0.348	+/-0.101	0.500	pCi/g					
Yttrium-88	U	0.00199	0.0526	+/-0.0161	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	86.2	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7656  
Sample ID: 244148017  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 7.58%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00314	0.0231	+/-0.00272	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00125	0.0206	+/-0.00125	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.0112	0.0235	+/-0.00378	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.46	0.117	+/-0.199	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.191	0.0724	+/-0.0327	0.100	pCi/g						
Uranium-238		2.26	0.0676	+/-0.185	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.125	0.287	+/-0.0874	0.200	pCi/g		MXR1	01/20/10	1802	940268	4
Bismuth-211	UI	3.64	R,R5a	0.244	+/-0.205	pCi/g						
Bismuth-214		1.17		0.084	+/-0.0825	pCi/g						
Cadmium-109	UI	2.96	R,R5a	1.41	+/-0.484	pCi/g						
Cerium-139	U	-0.00228	0.041	+/-0.0117	0.050	pCi/g						
Cesium-134	UI	0.105	R,R5a	0.0705	+/-0.0333	pCi/g						
Cesium-137		0.126		0.0503	+/-0.0226	pCi/g						
Cobalt-60	U	-0.00404	0.0455	+/-0.0141	0.100	pCi/g						
Europium-152	U	0.0383	0.126	+/-0.0431	0.200	pCi/g						
Lanthanum-140	U	-0.0678	0.104	+/-0.0353		pCi/g						
Lead-212		1.52	0.0691	+/-0.0716	0.100	pCi/g						
Lead-214		1.27	0.0851	+/-0.0786	0.100	pCi/g						
Mercury-203	U	0.0164	0.0577	+/-0.0168	0.100	pCi/g						
Potassium-40		21.0	0.370	+/-0.989	1.00	pCi/g						
Radium-223	U	-0.0017	0.863	+/-0.299		pCi/g						
Radium-224	UI	4.74	R,R5a	0.785	+/-0.548	pCi/g						
Radium-226		1.17	0.084	+/-0.0825		pCi/g						
Radium-228		1.53	0.157	+/-0.154	0.500	pCi/g						
Ruthenium-106	U	0.174	0.428	+/-0.125	0.800	pCi/g						
Sodium-22	U	-0.0372	0.0462	+/-0.0158	0.080	pCi/g						
Strontium-85	UI	0.0863	R,R5a	0.0563	+/-0.0165	pCi/g						
Thallium-208		0.474	0.0437	+/-0.0382	0.080	pCi/g						

# GEL LABORATORIES LLC

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

## Certificate of Analysis

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7656  
Sample ID: 244148017  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.0456	0.501	+/-0.149		pCi/g					
Thorium-231	U	-0.0017	0.863	+/-0.299		pCi/g					
Thorium-234	U	1.63	2.22	+/-0.945	2.00	pCi/g					
Tin-113	U	0.0166	0.0594	+/-0.0169	0.100	pCi/g					
Uranium-235	U	-0.0156	0.306	+/-0.094	0.500	pCi/g					
Yttrium-88	U	-0.0219	0.0419	+/-0.0144	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	77.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.5	(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
- 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/A RPD or %Recovery limits do not apply.

**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 28, 2010

Client Sample ID: RE12-10-7655  
 Sample ID: 244148018  
 Matrix: R  
 Collect Date: 04-JAN-10  
 Receive Date: 08-JAN-10  
 Collector: Client  
 Moisture: 9.91%

Project: LANL01004  
 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>											
<i>AM241 "Dry Weight Corrected"</i>											
Americium-241	U	-0.00179	0.0195	+/-0.00242	0.050	pCi/g		MXE1	01/16/10	1129 940237	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	0.00129	0.0214	+/-0.0013	0.050	pCi/g		MXE1	01/14/10	1750 940239	2
Plutonium-239/240	U	0.00129	0.0245	+/-0.00224	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		1.06	0.114	+/-0.0982	0.100	pCi/g		MXE1	01/21/10	2007 940245	3
Uranium-235/236	U	0.0592	0.0708	+/-0.0181	0.100	pCi/g					
Uranium-238		1.13	0.0662	+/-0.103	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	0.0427	0.208	+/-0.0655	0.200	pCi/g		MXR1	01/20/10	1802 940268	4
Bismuth-211	UI	4.07	R,R5a	0.312	+/-0.308	pCi/g					
Bismuth-214		1.26		0.102	+/-0.104	pCi/g					
Cadmium-109	UI	3.80	R,R5a	1.08	+/-0.474	pCi/g					
Cerium-139	U	-0.013		0.0469	+/-0.0138	pCi/g					
Cesium-134	UI	0.105	R,R5a	0.0777	+/-0.0297	pCi/g					
Cesium-137	U	-0.0367		0.0523	+/-0.0169	pCi/g					
Cobalt-60	U	-0.00765		0.0578	+/-0.0178	pCi/g					
Europium-152	U	-0.112		0.135	+/-0.053	pCi/g					
Lanthanum-140	U	-0.0621		0.139	+/-0.0448	pCi/g					
Lead-212		1.75		0.0881	+/-0.126	pCi/g					
Lead-214		1.41		0.106	+/-0.113	pCi/g					
Mercury-203	U	-0.00321		0.0659	+/-0.0231	pCi/g					
Potassium-40		21.2		0.399	+/-1.14	pCi/g					
Radium-223	U	0.146		0.974	+/-0.323	pCi/g					
Radium-224	UI	5.36	R,R5a	1.00	+/-0.661	pCi/g					
Radium-226		1.26		0.102	+/-0.104	pCi/g					
Radium-228		1.92		0.175	+/-0.177	pCi/g					
Ruthenium-106	U	0.0245		0.497	+/-0.148	pCi/g					
Sodium-22	U	0.00433		0.0599	+/-0.0179	pCi/g					
Strontium-85	UI	0.133	R,R5a	0.0688	+/-0.0211	pCi/g					
Thallium-208		0.553		0.0496	+/-0.0457	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 28, 2010

Client Sample ID: RE12-10-7655  
Sample ID: 244148018

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.16	0.580	+/-0.179		pCi/g						
Thorium-231	U	0.146	0.974	+/-0.323		pCi/g						
Thorium-234	U	1.07	1.76	+/-0.769	2.00	pCi/g						
Tin-113	U	-0.0197	0.0654	+/-0.020	0.100	pCi/g						
Uranium-235	U	0.109	0.346	+/-0.101	0.500	pCi/g						
Yttrium-88	U	-0.0032	0.045	+/-0.014	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(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
- 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/A RPD or %Recovery limits do not apply.

Thursday, January 07, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1129

LOS ALAMOS

REQUEST NUMBER: 10-1129

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/6/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

244148%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7619	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7618	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7623	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7622	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7621	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7617	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7620	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7624	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7630	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7628	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7632	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7629	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7626	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7631	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7627	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7625	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7656	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7655	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Thursday, January 07, 2010

**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: 10-1129

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples  
according to the schedule indicated:

**SHIP DATE: 1/7/2010**

**TURNAROUND/REPORT DUE: 2/6/2010**

**TURNAROUND REQ'D: 30 Days**

**RAD SCREENING: Yes, Received**  
**LAB REQUEST COMMENTS:**

LANL RSMO CONTACT:

Signature: 

PRIORITY	METHOD CODE	CNTR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA-901.1						
1		1	RE12-10-7617	R	1/4/2010	
1		1	RE12-10-7618	R	1/4/2010	
1		1	RE12-10-7619	R	1/4/2010	
1		1	RE12-10-7620	R	1/4/2010	
1		1	RE12-10-7621	R	1/4/2010	
1		1	RE12-10-7622	R	1/4/2010	
1		1	RE12-10-7623	R	1/4/2010	
1		1	RE12-10-7624	R	1/4/2010	
1		1	RE12-10-7625	R	1/4/2010	

Thursday, January 07, 2010

Page 2 of 4

REQUEST NUMBER: 10-1129

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	
	HASL-300:AM-241	1	RE12-10-7617	R	1/4/2010	
		1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	
		1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	
	HASL-300:AM-241	1	RE12-10-7617	R	1/4/2010	



Thursday, January 07, 2010

Page 3 of 4

REQUEST NUMBER: 10-1129

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	
		1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	
	HASL-300:ISOU	1	RE12-10-7617	R	1/4/2010	
		1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	
		1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	

REQUEST NUMBER: 10-1129

Thursday, January 07, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	

Final Page of REQUEST NUMBER 10-1129



January 12, 2010

[www.gel.com](http://www.gel.com)

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

Re: LANL ER Project  
Work Order: 244148  
SDG: 10-1129

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on January 08, 2010, and analyzed for 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: 10-1129  
Enclosures

**Los Alamos National Laboratory (72733-001-09)**  
**LANL ER Project**  
**Work Order #: 244148**  
**SDG: 10-1129**

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# **Case Narrative**

**Case Narrative for  
Los Alamos National Laboratory (72733-001-09)  
LANL ER Project  
Workorder #: 244148  
SDG # : 10-1129**

**January 12, 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 January 08, 2010 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 9,13,14C temperatures. Shipping container temperature was within specification (0 - 6C).

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

<b><u>Laboratory ID</u></b>	<b><u>Client ID</u></b>
244148001	RE12-10-7619
244148002	RE12-10-7618
244148003	RE12-10-7623
244148004	RE12-10-7622
244148005	RE12-10-7621
244148006	RE12-10-7617
244148007	RE12-10-7620
244148008	RE12-10-7624
244148009	RE12-10-7630
244148010	RE12-10-7628
244148011	RE12-10-7632
244148012	RE12-10-7629
244148013	RE12-10-7626
244148014	RE12-10-7631
244148015	RE12-10-7627
244148016	RE12-10-7625
244148017	RE12-10-7656
244148018	RE12-10-7655

### 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: 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.

  
for  
Valerie Davis

Project Manager



**List of current GEL Certifications as of 12 January 2010**

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

# **Chain of Custody and Supporting Documentation**

Thursday, January 07, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1129

LOS ALAMOS

REQUEST NUMBER: 10-1129

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/6/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

244148%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7619	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7618	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7623	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7622	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7621	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7617	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7620	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7624	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7630	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7628	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7632	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7629	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7626	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7631	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7627	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7625	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7656	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7655	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Relinquished By:

Date Time

Received By:

Date Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Thursday, January 07, 2010

**LOS ALAMOS**  
NATIONAL LABORATORY

ATTN: Valerie Davis

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

Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 1/7/2010

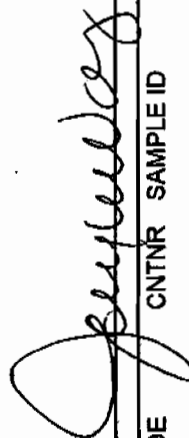
TURNAROUND/REPORT DUE: 2/6/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Received  
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



These Samples are on:  
LANL Request Number: 10-1129  
Per Agreement Number: 126310011  
Project Cost Code: MR3A05528E00

PRIORITY	METHOD CODE	CNTR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1					
		1	RE12-10-7617	R	1/4/2010	
		1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	

Thursday, January 07, 2010

Page 2 of 4

REQUEST NUMBER: 10-1129

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	
	HASL-300:AM-241	1	RE12-10-7617	R	1/4/2010	
		1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	
		1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	
	HASL-300:AM-241	1	RE12-10-7647	R	1/4/2010	

Thursday, January 07, 2010

REQUEST NUMBER: 10-1129

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	
		1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	
		1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	
	HASL-300:ISOU	1	RE12-10-7617	R	1/4/2010	
		1	RE12-10-7618	R	1/4/2010	
		1	RE12-10-7619	R	1/4/2010	
		1	RE12-10-7620	R	1/4/2010	
		1	RE12-10-7621	R	1/4/2010	
		1	RE12-10-7622	R	1/4/2010	
		1	RE12-10-7623	R	1/4/2010	
		1	RE12-10-7624	R	1/4/2010	
		1	RE12-10-7625	R	1/4/2010	
		1	RE12-10-7626	R	1/4/2010	
		1	RE12-10-7627	R	1/4/2010	

Thursday, January 07, 2010

REQUEST NUMBER: 10-1129

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7628	R	1/4/2010	
		1	RE12-10-7629	R	1/4/2010	
		1	RE12-10-7630	R	1/4/2010	
		1	RE12-10-7631	R	1/4/2010	
		1	RE12-10-7632	R	1/4/2010	
		1	RE12-10-7655	R	1/4/2010	
		1	RE12-10-7656	R	1/4/2010	

Final Page of REQUEST NUMBER 10-1129



## SAMPLE RECEIPT &amp; REVIEW FORM

Client: LANL			SDG/ARCOC/Work Order: 10-1129		
Received By: Greg Tyler			Date Received: 1/08/10		
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*: 20cpm	
Classified Radioactive II by RSO?			X		
COC/Samples marked containing PCBs?			X		
Shipped as a DOT Hazardous?			X	Hazard Class Shipped: UN#:	
Samples identified as Foreign Soil?			X		

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	X			Preservation Method: ice bags    blue ice    dry ice    none    other 1, 2C                   9, 13, 14C
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: <b>No time on Chain of Custody.</b>
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 4203 1C    7209 7849 4133 13C  
 7209 7849 4188 1C    7209 7849 4122 14C  
 7209 7849 4166 2C  
 7209 7849 4155 2C  
 7209 7849 4199 2C  
 7209 7849 4177 2C  
 7209 7849 4144 9C



JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP UNIT: 87JAN10  
ACTNGT: 58.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A05529E00

1c

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Express



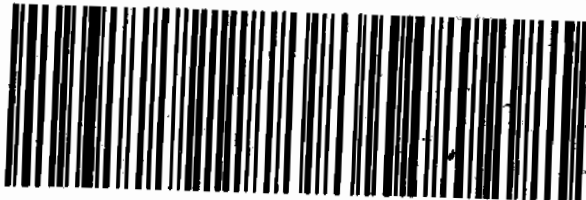
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2 of 2  
PS# 7209 7849 4203  
263  
str# 7209 7849 4199 0201

FRI - 08JAN A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



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2c

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FedEx  
Express



10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

2 of 2  
PS# 7209 7849 4166  
263  
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FRI - 08JAN A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



ORIGIN ID: SAFA (505) 665-9969  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 07JAN10  
ACTNGT: 58.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A05529E00

1c

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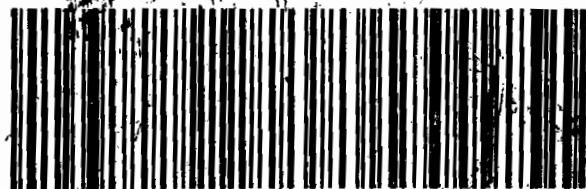
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2 of 2  
PS# 7209 7849 4188  
263  
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FRI - 08JAN A1  
PRIORITY OVERNIGHT

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SC-US  
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LOS ALAMOS, NM 87545  
UNITED STATES US

ACTNGT: 58.0 LB MAN  
CAD: 0014176/CAFE2449

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A05529E00

2c

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1 of 2  
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0201  
NN MASTER NN

FRI - 08JAN A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

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

SHIP DATE: 07JAN10  
ACTWGT: 55.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

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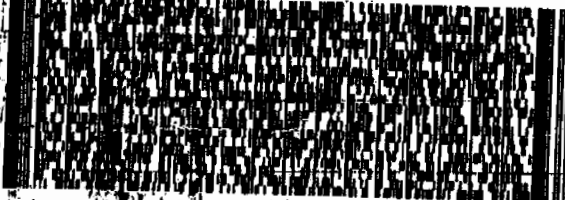
TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A05529E00

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

SHIP DATE: 07JAN10  
ACTWGT: 55.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
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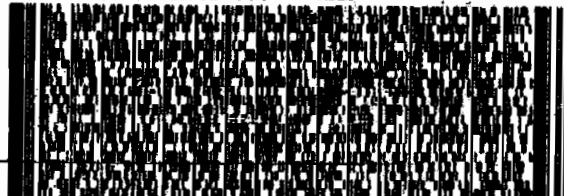
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GENERAL ENGINEERING LAB  
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TRK# 7209 7849 4177  
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ORIGIN ID: SAFA (505) 665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

ACTWGT: 23.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

BILL SENDER

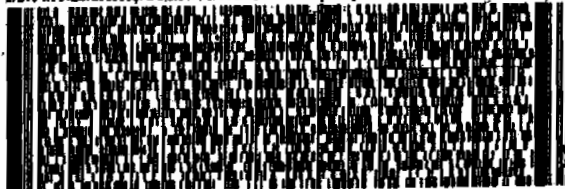
TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR2A0515BYDO

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TRK# 7209 7849 4144  
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PRIORITY OVERNIGHT

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SC-US  
CHS

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1 of 2  
TRK# 7209 7849 4177  
NN MASTER NN

FRI - 08JAN A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



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

SHIP DATE: 08JAN10  
ACTWGT: 65.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
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TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

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3 of 3  
TRK# 7209 7849 4133  
NN MASTER NN

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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.

# RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-1129  
Work Order 244148**

**Method/Analysis Information**

**Product:** AM241  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 940237  
**Prep Batch Number:** 939988

<b>Sample ID</b>	<b>Client ID</b>
244148001	RE12-10-7619
244148002	RE12-10-7618
244148003	RE12-10-7623
244148004	RE12-10-7622
244148005	RE12-10-7621
244148006	RE12-10-7617
244148007	RE12-10-7620
244148008	RE12-10-7624
244148009	RE12-10-7630
244148010	RE12-10-7628
244148012	RE12-10-7629
244148013	RE12-10-7626
244148014	RE12-10-7631
244148015	RE12-10-7627
244148016	RE12-10-7625
244148017	RE12-10-7656
244148018	RE12-10-7655
1202012062	Method Blank (MB)
1202012063	244148018(RE12-10-7655) Sample Duplicate (DUP)
1202012064	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 1202012062 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 244148018 (RE12-10-7655). The QC was from LANL work order 244148.

**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:** AM241  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 943139  
**Prep Batch Number:** 939988

<b>Sample ID</b>	<b>Client ID</b>
244148011	RE12-10-7632
1202019361	Method Blank (MB)
1202019362	244148011(RE12-10-7632) Sample Duplicate (DUP)
1202019363	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 1202019361 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 244148011 (RE12-10-7632). The QC was from LANL work order 244148.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank result is less than 1.65 times the CSU.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

Samples were repped due to low carrier/tracer yield.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>ISOPU</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	940239
Prep Batch Number:	939988

<b>Sample ID</b>	<b>Client ID</b>
244148001	RE12-10-7619
244148002	RE12-10-7618
244148003	RE12-10-7623
244148004	RE12-10-7622
244148005	RE12-10-7621
244148006	RE12-10-7617
244148007	RE12-10-7620
244148008	RE12-10-7624
244148009	RE12-10-7630
244148010	RE12-10-7628
244148011	RE12-10-7632
244148012	RE12-10-7629
244148013	RE12-10-7626
244148014	RE12-10-7631
244148015	RE12-10-7627
244148016	RE12-10-7625
244148017	RE12-10-7656
244148018	RE12-10-7655
1202012073	Method Blank (MB)
1202012074	244148018(RE12-10-7655) Sample Duplicate (DUP)
1202012075	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 1202012073 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 244148018 (RE12-10-7655). The QC was from LANL work order 244148.

**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 244148012 (RE12-10-7629) was recounted due to a negative result greater than three times the error. Second count being reported.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	940245
Prep Batch Number:	939988

<b>Sample ID</b>	<b>Client ID</b>
244148002	RE12-10-7618
244148003	RE12-10-7623
244148004	RE12-10-7622
244148005	RE12-10-7621
244148006	RE12-10-7617
244148007	RE12-10-7620
244148008	RE12-10-7624
244148009	RE12-10-7630
244148010	RE12-10-7628
244148011	RE12-10-7632
244148012	RE12-10-7629
244148013	RE12-10-7626
244148014	RE12-10-7631
244148015	RE12-10-7627
244148016	RE12-10-7625
244148017	RE12-10-7656
244148018	RE12-10-7655
1202012084	Method Blank (MB)
1202012085	244148018(RE12-10-7655) Sample Duplicate (DUP)
1202012086	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 1202012084 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 244148018 (RE12-10-7655). The QC was from LANL work order 244148.

#### **QC Information**

All of the QC samples met the required acceptance limits.

#### **CSU**

The U-233/234 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**

No manual integrations were performed on data in this batch.

##### **Additional Comments**

The MDCs are calculated using a blank population. Samples, 1202012084 (MB), 244148006 (RE12-10-7617), 244148009 (RE12-10-7630) and 244148011 (RE12-10-7632), 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**

<b>Product:</b>	<b>ISOU</b>
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	944933
Prep Batch Number:	939988

Sample ID	Client ID
244148001	RE12-10-7619
1202023628	Method Blank (MB)
1202023629	244148001(RE12-10-7619) Sample Duplicate (DUP)
1202023630	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 1202023628 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 244148001 (RE12-10-7619). The QC was from LANL work order 244148.

##### **QC Information**

All of the QC samples met the required acceptance limits.

##### **CSU**

The U233/234, U235/236, and U238 blank results 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**

Sample 244148001 (RE12-10-7619) was reprep'd due to high carrier/tracer yield.

### **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. Sample, 244148001 (RE12-10-7619), 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 U233/234 blank result is greater than the decision level but less than the MDC.

#### **Qualifier information**

Manual qualifiers were not required.

#### **Method/Analysis Information**

<b>Product:</b>	<b>GAMMA SPEC</b>
Analytical Method:	DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method:	Dry Soil Prep
Analytical Batch Number:	940268
Prep Batch Number:	939988



<b>Sample ID</b>	<b>Client ID</b>
244148001	RE12-10-7619
244148002	RE12-10-7618
244148003	RE12-10-7623
244148004	RE12-10-7622
244148005	RE12-10-7621
244148006	RE12-10-7617
244148007	RE12-10-7620
244148008	RE12-10-7624
244148009	RE12-10-7630
244148010	RE12-10-7628
244148011	RE12-10-7632
244148012	RE12-10-7629
244148013	RE12-10-7626
244148014	RE12-10-7631
244148015	RE12-10-7627
244148016	RE12-10-7625
244148017	RE12-10-7656
244148018	RE12-10-7655
1202012156	Method Blank (MB)
1202012157	244148001(RE12-10-7619) Sample Duplicate (DUP)
1202012158	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, August 2009, October 2009, November 2009, December 2009 and January 2010.

##### **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: 244148001 (RE12-10-7619). The QC was from LANL work order 244148.

#### **QC Information**

All of the QC samples met the required acceptance limits.

#### **CSU**

The blank 1202012156 (MB) result is greater than 1.65 times the CSU but less than the MDC for Cs-134 and Ra-228.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

#### **Miscellaneous Information:**

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

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

##### **Additional Comments**

Additional comments were not required for this sample set.

##### **Blank Decision Level**

The blank 1202012156 (MB) result is greater than the decision level but less than the MDC for Ra-228.

#### **Qualifier information**

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to high peak-width.	Cadmium-109	244148002	RE12-10-7618
		Cesium-137	244148001	RE12-10-7619
UI	Data rejected due to interference.	Bismuth-211	244148001	RE12-10-7619
			244148002	RE12-10-7618
			244148003	RE12-10-7623
			244148004	RE12-10-7622

	244148005	RE12-10-7621
	244148006	RE12-10-7617
	244148007	RE12-10-7620
	244148008	RE12-10-7624
	244148009	RE12-10-7630
	244148010	RE12-10-7628
	244148011	RE12-10-7632
	244148012	RE12-10-7629
	244148013	RE12-10-7626
	244148014	RE12-10-7631
	244148015	RE12-10-7627
	244148016	RE12-10-7625
	244148017	RE12-10-7656
	244148018	RE12-10-7655
	1202012157	RE12-10-7619(244148001DUP)
Cadmium-109	244148001	RE12-10-7619
	244148003	RE12-10-7623
	244148004	RE12-10-7622
	244148005	RE12-10-7621
	244148006	RE12-10-7617
	244148007	RE12-10-7620
	244148008	RE12-10-7624
	244148009	RE12-10-7630
	244148010	RE12-10-7628
	244148011	RE12-10-7632
	244148012	RE12-10-7629
	244148013	RE12-10-7626
	244148014	RE12-10-7631
	244148015	RE12-10-7627
	244148016	RE12-10-7625

			244148017	RE12-10-7656
			244148018	RE12-10-7655
			1202012157	RE12-10-7619(244148001DUP)
		Radium-224	244148001	RE12-10-7619
			244148002	RE12-10-7618
			244148003	RE12-10-7623
			244148004	RE12-10-7622
			244148005	RE12-10-7621
			244148006	RE12-10-7617
			244148007	RE12-10-7620
			244148008	RE12-10-7624
			244148009	RE12-10-7630
			244148010	RE12-10-7628
			244148011	RE12-10-7632
			244148012	RE12-10-7629
			244148013	RE12-10-7626
			244148014	RE12-10-7631
			244148015	RE12-10-7627
			244148016	RE12-10-7625
			244148017	RE12-10-7656
			244148018	RE12-10-7655
			1202012157	RE12-10-7619(244148001DUP)
UI	Data rejected due to low abundance.	Cesium-134	244148002	RE12-10-7618
			244148004	RE12-10-7622
			244148005	RE12-10-7621
			244148006	RE12-10-7617
			244148007	RE12-10-7620
			244148009	RE12-10-7630
			244148015	RE12-10-7627

	244148017	RE12-10-7656
	244148018	RE12-10-7655
Strontium-85	244148002	RE12-10-7618
	244148003	RE12-10-7623
	244148004	RE12-10-7622
	244148007	RE12-10-7620
	244148009	RE12-10-7630
	244148017	RE12-10-7656
	244148018	RE12-10-7655

**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:** PLD 1/28/10

# 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: 10-1129 GEL Work Order: 244148

**The Qualifiers in this report are defined as follows:**

- \* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- \*\* Indicates the analyte is a surrogate compound.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by



# GEL LABORATORIES LLC

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 28, 2010

Client Sample ID: RE12-10-7619  
Sample ID: 244148001  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 16.2%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00458	0.0217	+/-0.00537	0.050	pCi/g		MXE1	01/16/10	1122	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0012	0.0198	+/-0.00268	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-1.43E-10	0.0227	+/-0.0017	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.26	0.0694	+/-0.101	0.100	pCi/g		MXE1	01/27/10	1223	944933	3
Uranium-235/236		0.0886	0.0431	+/-0.0168	0.100	pCi/g						
Uranium-238		1.36	0.0403	+/-0.108	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.065	0.310	+/-0.0973	0.200	pCi/g		MXR1	01/20/10	1548	940268	6
Bismuth-211	UI	4.24	0.361	+/-0.346		pCi/g						
Bismuth-214		1.31	0.120	+/-0.110	0.200	pCi/g						
Cadmium-109	UI	2.67	1.50	+/-0.571		pCi/g						
Cerium-139	U	0.018	0.0548	+/-0.0159	0.050	pCi/g						
Cesium-134	U	0.0344	0.086	+/-0.0245	0.100	pCi/g						
Cesium-137	UI	0.157	0.0646	+/-0.0426	0.100	pCi/g						
Cobalt-60	U	0.0119	0.0696	+/-0.0204	0.100	pCi/g						
Europium-152	U	-0.0426	0.163	+/-0.061	0.200	pCi/g						
Lanthanum-140	U	-0.0485	0.143	+/-0.0467		pCi/g						
Lead-212		1.60	0.0972	+/-0.117	0.100	pCi/g						
Lead-214		1.47	0.126	+/-0.126	0.100	pCi/g						
Mercury-203	U	0.000599	0.0704	+/-0.0231	0.100	pCi/g						
Potassium-40		19.9	0.374	+/-1.21	1.00	pCi/g						
Radium-223	U	0.134	1.17	+/-0.385		pCi/g						
Radium-224	UI	4.61	1.11	+/-0.727		pCi/g						
Radium-226		1.31	0.120	+/-0.110		pCi/g						
Radium-228		1.81	0.214	+/-0.201	0.500	pCi/g						
Ruthenium-106	U	-0.0959	0.551	+/-0.166	0.800	pCi/g						
Sodium-22	U	-0.00287	0.0777	+/-0.0237	0.080	pCi/g						
Strontium-85	U	0.0425	0.0666	+/-0.0212		pCi/g						



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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 28, 2010

Client Sample ID: RE12-10-7619  
Sample ID: 244148001

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thallium-208		0.518	0.0609	+/-0.055	0.080	pCi/g					
Thorium-227	U	-0.129	0.653	+/-0.191		pCi/g					
Thorium-231	U	0.134	1.17	+/-0.385		pCi/g					
Thorium-234	U	1.51	2.36	+/-1.27	2.00	pCi/g					
Tin-113	U	0.00694	0.084	+/-0.0248	0.100	pCi/g					
Uranium-235	U	0.0808	0.386	+/-0.113	0.500	pCi/g					
Yttrium-88	U	0.00452	0.0585	+/-0.0173	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-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"	84.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	107 *	(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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated

# 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 28, 2010

Client Sample ID: RE12-10-7619  
Sample ID: 244148001

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

M M if above MDC and less than LLD

M Matrix Related Failure

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

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  
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Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7618  
Sample ID: 244148002  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 18.9%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00732	0.0234	+/-0.00762	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00238	0.0197	+/-0.00239	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240		0.0286	0.0225	+/-0.00647	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.64	0.111	+/-0.139	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.129	0.0691	+/-0.0256	0.100	pCi/g						
Uranium-238		1.85	0.0646	+/-0.154	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0906	0.332	+/-0.110	0.200	pCi/g		MXR1	01/20/10	1549	940268	4
Bismuth-211	UI	4.18	0.420	+/-0.275		pCi/g						
Bismuth-214		1.32	0.140	+/-0.0993	0.200	pCi/g						
Cadmium-109	UI	4.40	1.70	+/-0.883		pCi/g						
Cerium-139	U	0.018	0.0599	+/-0.0175	0.050	pCi/g						
Cesium-134	UI	0.113	0.108	+/-0.0331	0.100	pCi/g						
Cesium-137		0.345	0.0758	+/-0.0437	0.100	pCi/g						
Cobalt-60	U	0.00514	0.0769	+/-0.0235	0.100	pCi/g						
Europium-152	U	-0.0349	0.180	+/-0.066	0.200	pCi/g						
Lanthanum-140	U	-0.0364	0.176	+/-0.0555		pCi/g						
Lead-212		1.65	0.115	+/-0.0879	0.100	pCi/g						
Lead-214		1.45	0.132	+/-0.103	0.100	pCi/g						
Mercury-203	U	0.0162	0.0854	+/-0.025	0.100	pCi/g						
Potassium-40		20.1	0.631	+/-1.09	1.00	pCi/g						
Radium-223	U	0.444	1.38	+/-0.448		pCi/g						
Radium-224	UI	3.95	1.31	+/-0.681		pCi/g						
Radium-226		1.32	0.140	+/-0.0993		pCi/g						
Radium-228		1.50	0.235	+/-0.161	0.500	pCi/g						
Ruthenium-106	U	-0.218	0.581	+/-0.187	0.800	pCi/g						
Sodium-22	U	0.0193	0.0903	+/-0.0267	0.080	pCi/g						
Strontium-85	UI	0.0864	0.0814	+/-0.0242		pCi/g						
Thallium-208		0.548	0.076	+/-0.0474	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 28, 2010

Client Sample ID: RE12-10-7618  
Sample ID: 244148002

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.404	0.769	+/-0.226		pCi/g						
Thorium-231	U	0.444	1.38	+/-0.448		pCi/g						
Thorium-234	U	2.46	2.80	+/-1.00	2.00	pCi/g						
Tin-113	U	0.00496	0.0944	+/-0.0278	0.100	pCi/g						
Uranium-235	U	-0.0628	0.417	+/-0.127	0.500	pCi/g						
Yttrium-88	U	-0.0126	0.0527	+/-0.0175	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	86.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.4	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7618  
Sample ID: 244148002

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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 28, 2010

Client Sample ID: RE12-10-7623  
Sample ID: 244148003  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 15.4%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00389	0.0242	+/-0.00509	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0208	+/-0.00126	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00252	0.0239	+/-0.00253	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.50	0.118	+/-0.131	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0987	0.0731	+/-0.0226	0.100	pCi/g						
Uranium-238		1.82	0.0683	+/-0.154	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00846	0.185	+/-0.0595	0.200	pCi/g		MXR1	01/20/10	1549	940268	4
Bismuth-211	UI	4.14	0.334	+/-0.307		pCi/g						
Bismuth-214		1.37	0.113	+/-0.110	0.200	pCi/g						
Cadmium-109	UI	3.12	1.12	+/-0.402		pCi/g						
Cerium-139	U	0.00239	0.0489	+/-0.0149	0.050	pCi/g						
Cesium-134	U	0.0749	0.0975	+/-0.027	0.100	pCi/g						
Cesium-137		0.110	0.070	+/-0.0273	0.100	pCi/g						
Cobalt-60	U	-0.0332	0.0604	+/-0.0205	0.100	pCi/g						
Europium-152	U	0.0651	0.164	+/-0.0533	0.200	pCi/g						
Lanthanum-140	U	0.0378	0.168	+/-0.0489		pCi/g						
Lead-212		1.69	0.0909	+/-0.100	0.100	pCi/g						
Lead-214		1.44	0.117	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.0169	0.0729	+/-0.0211	0.100	pCi/g						
Potassium-40		21.3	0.438	+/-1.24	1.00	pCi/g						
Radium-223	U	-0.451	1.05	+/-0.328		pCi/g						
Radium-224	UI	4.79	1.03	+/-0.630		pCi/g						
Radium-226		1.37	0.113	+/-0.110		pCi/g						
Radium-228		1.62	0.215	+/-0.165	0.500	pCi/g						
Ruthenium-106	U	0.298	0.548	+/-0.151	0.800	pCi/g						
Sodium-22	U	0.00623	0.0689	+/-0.0205	0.080	pCi/g						
Strontium-85	UI	0.0812	0.0728	+/-0.0212		pCi/g						
Thallium-208		0.615	0.0589	+/-0.0523	0.080	pCi/g						

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Contact: Ms. Joylenc Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID:  
Sample ID:

RE12-10-7623  
244148003

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.185	0.632	+/-0.181		pCi/g						
Thorium-231	U	-0.451	1.05	+/-0.328		pCi/g						
Thorium-234		2.20	1.59	+/-0.774	2.00	pCi/g						
Tin-113	U	0.0314	0.0812	+/-0.0236	0.100	pCi/g						
Uranium-235	U	0.0419	0.359	+/-0.110	0.500	pCi/g						
Yttrium-88	U	0.0153	0.0538	+/-0.0146	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	79.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.0	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7623  
Sample ID: 244148003

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7622  
Sample ID: 244148004  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 8.99%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00221	0.0228	+/-0.00173	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00113	0.0187	+/-0.003	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-1.35E-10	0.0214	+/-0.0016	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.117	+/-0.100	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.103	0.0729	+/-0.0232	0.100	pCi/g						
Uranium-238		1.14	0.0681	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0275	0.380	+/-0.122	0.200	pCi/g		MXR1	01/20/10	1550	940268	4
Bismuth-211	UI	4.10	0.293	+/-0.264		pCi/g						
Bismuth-214		1.24	0.117	+/-0.0842	0.200	pCi/g						
Cadmium-109	UI	3.57	1.51	+/-0.581		pCi/g						
Cerium-139	U	-0.0134	0.0477	+/-0.0148	0.050	pCi/g						
Cesium-134	UI	0.0957	0.0885	+/-0.0255	0.100	pCi/g						
Cesium-137	U	-0.0517	0.0558	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	0.00153	0.0656	+/-0.0197	0.100	pCi/g						
Europium-152	U	0.0554	0.152	+/-0.0489	0.200	pCi/g						
Lanthanum-140	U	0.0325	0.173	+/-0.0508		pCi/g						
Lead-212		1.83	0.0816	+/-0.0894	0.100	pCi/g						
Lead-214		1.43	0.102	+/-0.0992	0.100	pCi/g						
Mercury-203	U	0.0383	0.0708	+/-0.0198	0.100	pCi/g						
Potassium-40		21.5	0.530	+/-1.21	1.00	pCi/g						
Radium-223	U	0.398	1.02	+/-0.326		pCi/g						
Radium-224	UI	4.53	0.928	+/-0.600		pCi/g						
Radium-226		1.24	0.117	+/-0.0842		pCi/g						
Radium-228		1.68	0.217	+/-0.186	0.500	pCi/g						
Ruthenium-106	U	-0.0925	0.474	+/-0.143	0.800	pCi/g						
Sodium-22	U	-0.019	0.0717	+/-0.0225	0.080	pCi/g						
Strontium-85	UI	0.0999	0.0698	+/-0.020		pCi/g						
Thallium-208		0.493	0.0569	+/-0.0404	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID:  
Sample ID:

RE12-10-7622  
244148004

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0025	0.609	+/-0.177		pCi/g						
Thorium-231	U	0.398	1.02	+/-0.326		pCi/g						
Thorium-234	U	2.37	3.17	+/-1.17	2.00	pCi/g						
Tin-113	U	0.00153	0.069	+/-0.0206	0.100	pCi/g						
Uranium-235	U	0.0584	0.341	+/-0.103	0.500	pCi/g						
Yttrium-88	U	-0.0215	0.0409	+/-0.0156	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.1	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7622  
Sample ID: 244148004

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7621  
Sample ID: 244148005  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 7.57%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00315	0.0227	+/-0.00268	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00696	0.0192	+/-0.00569	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.0058	0.0219	+/-0.00349	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.27	0.118	+/-0.115	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0987	0.0732	+/-0.0227	0.100	pCi/g						
Uranium-238		1.43	0.0684	+/-0.127	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.138	0.241	+/-0.071	0.200	pCi/g		MXR1	01/20/10	1550	940268	4
Bismuth-211	UI	3.50	0.327	+/-0.234		pCi/g						
Bismuth-214		1.35	0.113	+/-0.0892	0.200	pCi/g						
Cadmium-109	UI	2.13	1.42	+/-0.515		pCi/g						
Cerium-139	U	-0.00929	0.0437	+/-0.0133	0.050	pCi/g						
Cesium-134	UI	0.226	0.092	+/-0.0458	0.100	pCi/g						
Cesium-137		0.117	0.0641	+/-0.0322	0.100	pCi/g						
Cobalt-60	U	0.00627	0.0577	+/-0.0171	0.100	pCi/g						
Europium-152	U	-0.0921	0.141	+/-0.0485	0.200	pCi/g						
Lanthanum-140	U	-0.142	0.0937	+/-0.041		pCi/g						
Lead-212		1.43	0.0813	+/-0.072	0.100	pCi/g						
Lead-214		1.22	0.114	+/-0.0874	0.100	pCi/g						
Mercury-203	U	0.0287	0.0665	+/-0.0211	0.100	pCi/g						
Potassium-40		21.0	0.380	+/-1.04	1.00	pCi/g						
Radium-223	U	-0.00837	1.02	+/-0.340		pCi/g						
Radium-224	UI	4.78	0.925	+/-0.624		pCi/g						
Radium-226		1.35	0.113	+/-0.0892		pCi/g						
Radium-228		1.40	0.219	+/-0.152	0.500	pCi/g						
Ruthenium-106	U	-0.136	0.528	+/-0.161	0.800	pCi/g						
Sodium-22	U	0.0268	0.0734	+/-0.0209	0.080	pCi/g						
Strontium-85	U	0.0463	0.0621	+/-0.0195		pCi/g						
Thallium-208		0.522	0.0542	+/-0.0419	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 28, 2010

Client Sample ID: RE12-10-7621  
Sample ID: 244148005

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.0511	0.601	+/-0.171		pCi/g					
Thorium-231	U	-0.00837	1.02	+/-0.340		pCi/g					
Thorium-234		2.16	1.98	+/-0.882	2.00	pCi/g					
Tin-113	U	-0.00181	0.0715	+/-0.0214	0.100	pCi/g					
Uranium-235	U	0.0603	0.332	+/-0.0973	0.500	pCi/g					
Yttrium-88	U	-0.0048	0.0545	+/-0.017	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	89.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7621  
Sample ID: 244148005

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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 28, 2010

Client Sample ID: RE12-10-7617  
Sample ID: 244148006  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.24%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00182	0.0356	+/-0.00916	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00689	0.0228	+/-0.00632	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-0.00276	0.026	+/-0.00477	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.891	0.094	+/-0.081	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236	U	0.0487	0.0583	+/-0.0149	0.100	pCi/g						
Uranium-238		0.828	0.0545	+/-0.0765	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0385	0.206	+/-0.069	0.200	pCi/g		MXR1	01/20/10	1551	940268	4
Bismuth-211	UI	4.02	0.259	+/-0.297		pCi/g						
Bismuth-214		1.25	0.093	+/-0.102	0.200	pCi/g						
Cadmium-109	UI	3.57	1.05	+/-0.441		pCi/g						
Cerium-139	U	-0.0014	0.0428	+/-0.0125	0.050	pCi/g						
Cesium-134	UI	0.0853	0.0816	+/-0.0212	0.100	pCi/g						
Cesium-137	U	-0.0193	0.0563	+/-0.0179	0.100	pCi/g						
Cobalt-60	U	-0.0214	0.052	+/-0.0175	0.100	pCi/g						
Europium-152	U	-0.0308	0.141	+/-0.0427	0.200	pCi/g						
Lanthanum-140	U	-0.0393	0.107	+/-0.0356		pCi/g						
Lead-212		1.60	0.0833	+/-0.108	0.100	pCi/g						
Lead-214		1.40	0.0903	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.000506	0.0601	+/-0.0182	0.100	pCi/g						
Potassium-40		21.5	0.421	+/-1.20	1.00	pCi/g						
Radium-223	U	-0.0654	0.955	+/-0.333		pCi/g						
Radium-224	UI	4.00	0.948	+/-0.630		pCi/g						
Radium-226		1.25	0.093	+/-0.102		pCi/g						
Radium-228		1.75	0.172	+/-0.161	0.500	pCi/g						
Ruthenium-106	U	-0.116	0.446	+/-0.140	0.800	pCi/g						
Sodium-22	U	-0.000799	0.0613	+/-0.0189	0.080	pCi/g						
Strontium-85	U	0.00284	0.0522	+/-0.0175		pCi/g						
Thallium-208		0.489	0.0511	+/-0.0413	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID:  
Sample ID:

RE12-10-7617  
244148006

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.218	0.521	+/-0.165		pCi/g						
Thorium-231	U	-0.0654	0.955	+/-0.333		pCi/g						
Thorium-234	U	1.13	1.80	+/-0.716	2.00	pCi/g						
Tin-113	U	-0.0131	0.0648	+/-0.0192	0.100	pCi/g						
Uranium-235	U	0.193	0.321	+/-0.092	0.500	pCi/g						
Yttrium-88	U	0.0164	0.0513	+/-0.014	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	55.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	109*	(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
- 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/A RPD or %Recovery limits do not apply.



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7617  
Sample ID: 244148006  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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 28, 2010

Client Sample ID: RE12-10-7620  
Sample ID: 244148007  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 11.2%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00426	0.0208	+/-0.00678	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00875	0.0206	+/-0.00547	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00	0.0236	+/-0.00353	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.24	0.113	+/-0.112	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0858	0.0703	+/-0.0216	0.100	pCi/g						
Uranium-238		1.39	0.0656	+/-0.123	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.173	0.228	+/-0.0694	0.200	pCi/g		MXR1	01/20/10	1551	940268	4
Bismuth-211	UI	4.31	0.303	+/-0.318		pCi/g						
Bismuth-214		1.30	0.106	+/-0.109	0.200	pCi/g						
Cadmium-109	UI	3.27	1.20	+/-0.482		pCi/g						
Cerium-139	U	0.0118	0.0486	+/-0.0139	0.050	pCi/g						
Cesium-134	UI	0.121	0.0828	+/-0.0337	0.100	pCi/g						
Cesium-137	U	0.0214	0.0571	+/-0.0166	0.100	pCi/g						
Cobalt-60	U	-0.00386	0.0543	+/-0.0166	0.100	pCi/g						
Europium-152	U	-0.0161	0.145	+/-0.0495	0.200	pCi/g						
Lanthanum-140	U	-0.0721	0.122	+/-0.0406		pCi/g						
Lead-212		1.89	0.0886	+/-0.136	0.100	pCi/g						
Lead-214		1.50	0.106	+/-0.117	0.100	pCi/g						
Mercury-203	U	0.0133	0.067	+/-0.023	0.100	pCi/g						
Potassium-40		20.6	0.527	+/-1.14	1.00	pCi/g						
Radium-223	U	-0.126	1.03	+/-0.349		pCi/g						
Radium-224	UI	5.62	1.01	+/-0.686		pCi/g						
Radium-226		1.30	0.106	+/-0.109		pCi/g						
Radium-228		1.89	0.189	+/-0.174	0.500	pCi/g						
Ruthenium-106	U	0.127	0.471	+/-0.137	0.800	pCi/g						
Sodium-22	U	-0.00975	0.0631	+/-0.0194	0.080	pCi/g						
Strontium-85	UI	0.103	0.0706	+/-0.0225		pCi/g						
Thallium-208		0.650	0.0514	+/-0.052	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7620  
Sample ID: 244148007  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.161	0.622	+/-0.185		pCi/g					
Thorium-231	U	-0.126	1.03	+/-0.349		pCi/g					
Thorium-234	U	0.860	1.83	+/-0.710	2.00	pCi/g					
Tin-113	U	0.0112	0.0697	+/-0.0205	0.100	pCi/g					
Uranium-235	U	0.0195	0.343	+/-0.101	0.500	pCi/g					
Yttrium-88	U	0.00382	0.0469	+/-0.0141	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(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
- 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/A RPD or %Recovery limits do not apply.

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Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7620  
Sample ID: 244148007  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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 28, 2010

Client Sample ID: RE12-10-7624  
Sample ID: 244148008  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 8.44%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00209	0.0219	+/-0.00306	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00141	0.0233	+/-0.00732	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00423	0.0266	+/-0.00316	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.20	0.114	+/-0.108	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0776	0.071	+/-0.0196	0.100	pCi/g						
Uranium-238		1.34	0.0664	+/-0.119	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00576	0.337	+/-0.106	0.200	pCi/g		MXR1	01/20/10	1551	940268	4
Bismuth-211	UI	4.02	0.339	+/-0.255		pCi/g						
Bismuth-214		1.22	0.122	+/-0.0979	0.200	pCi/g						
Cadmium-109	UI	3.01	1.42	+/-0.534		pCi/g						
Cerium-139	U	-0.00308	0.0521	+/-0.0153	0.050	pCi/g						
Cesium-134	U	0.0271	0.0907	+/-0.0294	0.100	pCi/g						
Cesium-137	U	0.0254	0.0732	+/-0.0212	0.100	pCi/g						
Cobalt-60	U	0.0289	0.071	+/-0.0199	0.100	pCi/g						
Europium-152	U	-0.0925	0.162	+/-0.0577	0.200	pCi/g						
Lanthanum-140	U	-0.0689	0.113	+/-0.0403		pCi/g						
Lead-212		1.51	0.0932	+/-0.0766	0.100	pCi/g						
Lead-214		1.40	0.111	+/-0.0959	0.100	pCi/g						
Mercury-203	U	0.0203	0.0739	+/-0.0206	0.100	pCi/g						
Potassium-40		17.7	0.320	+/-0.994	1.00	pCi/g						
Radium-223	U	-0.00645	1.09	+/-0.361		pCi/g						
Radium-224	UI	4.80	1.06	+/-0.560		pCi/g						
Radium-226		1.22	0.122	+/-0.0979		pCi/g						
Radium-228		1.53	0.220	+/-0.154	0.500	pCi/g						
Ruthenium-106	U	-0.225	0.509	+/-0.163	0.800	pCi/g						
Sodium-22	U	-0.02	0.0602	+/-0.0197	0.080	pCi/g						
Strontium-85	U	0.0366	0.0648	+/-0.0204		pCi/g						
Thallium-208		0.505	0.0575	+/-0.0382	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 28, 2010

Client Sample ID: RE12-10-7624  
Sample ID: 244148008

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.175	0.664	+/-0.205		pCi/g						
Thorium-231	U	-0.00645	1.09	+/-0.361		pCi/g						
Thorium-234	U	2.01	2.60	+/-0.989	2.00	pCi/g						
Tin-113	U	0.0048	0.0773	+/-0.0224	0.100	pCi/g						
Uranium-235	U	0.0633	0.387	+/-0.113	0.500	pCi/g						
Yttrium-88	U	0.0242	0.0685	+/-0.0186	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	81.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	80.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.5	(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
- 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/A RPD or %Recovery limits do not apply.

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Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7624  
Sample ID: 244148008

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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 28, 2010

Client Sample ID: RE12-10-7630  
Sample ID: 244148009  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 12.4%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.000287	0.0261	+/-0.003	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00122	0.0202	+/-0.00442	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00122	0.0231	+/-0.00212	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.862	0.104	+/-0.0819	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0664	0.0646	+/-0.0182	0.100	pCi/g						
Uranium-238		1.07	0.0604	+/-0.0973	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0402	0.292	+/-0.0851	0.200	pCi/g		MXR1	01/20/10	1556	940268	4
Bismuth-211	UI	3.39	0.362	+/-0.324		pCi/g						
Bismuth-214		1.10	0.130	+/-0.108	0.200	pCi/g						
Cadmium-109	UI	2.06	1.61	+/-0.492		pCi/g						
Cerium-139	U	-0.0127	0.053	+/-0.0155	0.050	pCi/g						
Cesium-134	UI	0.134	0.109	+/-0.0373	0.100	pCi/g						
Cesium-137	U	-0.028	0.0615	+/-0.0196	0.100	pCi/g						
Cobalt-60	U	-0.0342	0.0603	+/-0.0206	0.100	pCi/g						
Europium-152	U	0.0108	0.192	+/-0.0591	0.200	pCi/g						
Lanthanum-140	U	0.0173	0.180	+/-0.0537		pCi/g						
Lead-212		1.82	0.101	+/-0.112	0.100	pCi/g						
Lead-214		1.18	0.136	+/-0.117	0.100	pCi/g						
Mercury-203	U	0.014	0.0787	+/-0.0229	0.100	pCi/g						
Potassium-40		19.5	0.557	+/-1.19	1.00	pCi/g						
Radium-223	U	-0.444	1.25	+/-0.389		pCi/g						
Radium-224	UI	4.58	1.15	+/-0.558		pCi/g						
Radium-226		1.10	0.130	+/-0.108		pCi/g						
Radium-228		1.69	0.249	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	0.363	0.643	+/-0.176	0.800	pCi/g						
Sodium-22	U	-0.0187	0.0699	+/-0.0221	0.080	pCi/g						
Strontium-85	UI	0.104	0.0838	+/-0.0249		pCi/g						
Thallium-208		0.641	0.0618	+/-0.0551	0.080	pCi/g						



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7630  
Sample ID: 244148009  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.0764	0.699	+/-0.208		pCi/g					
Thorium-231	U	-0.444	1.25	+/-0.389		pCi/g					
Thorium-234	U	-0.585	2.57	+/-0.775	2.00	pCi/g					
Tin-113	U	0.0275	0.0896	+/-0.0262	0.100	pCi/g					
Uranium-235	U	0.0981	0.403	+/-0.117	0.500	pCi/g					
Yttrium-88	U	0.00273	0.0664	+/-0.0202	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	73.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	90.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	106 *	(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
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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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7630  
Sample ID: 244148009  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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 28, 2010

Client Sample ID: RE12-10-7628  
Sample ID: 244148010  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.4%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00119	0.0256	+/-0.00329	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00725	0.0239	+/-0.00326	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	-0.00145	0.0274	+/-0.00324	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.16	0.107	+/-0.104	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0897	0.0665	+/-0.0214	0.100	pCi/g						
Uranium-238		1.01	0.0621	+/-0.0928	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.149	0.173	+/-0.0512	0.200	pCi/g		MXR1	01/20/10	1556	940268	4
Bismuth-211	UI	4.27	0.258	+/-0.350		pCi/g						
Bismuth-214		1.21	0.0915	+/-0.0968	0.200	pCi/g						
Cadmium-109	UI	2.83	0.947	+/-0.455		pCi/g						
Cerium-139	U	0.00213	0.0418	+/-0.0119	0.050	pCi/g						
Cesium-134	U	0.0449	0.066	+/-0.0196	0.100	pCi/g						
Cesium-137	U	-0.0163	0.0496	+/-0.0157	0.100	pCi/g						
Cobalt-60	U	0.00808	0.0596	+/-0.0178	0.100	pCi/g						
Europium-152	U	0.0193	0.127	+/-0.0425	0.200	pCi/g						
Lanthanum-140	U	-0.0157	0.137	+/-0.0431		pCi/g						
Lead-212		1.69	0.0717	+/-0.129	0.100	pCi/g						
Lead-214		1.49	0.0898	+/-0.128	0.100	pCi/g						
Mercury-203	U	0.0103	0.0593	+/-0.0195	0.100	pCi/g						
Potassium-40		20.3	0.477	+/-1.12	1.00	pCi/g						
Radium-223	U	-0.19	0.913	+/-0.320		pCi/g						
Radium-224	UI	4.96	0.816	+/-0.679		pCi/g						
Radium-226		1.21	0.0915	+/-0.0968		pCi/g						
Radium-228		1.57	0.165	+/-0.154	0.500	pCi/g						
Ruthenium-106	U	-0.0533	0.442	+/-0.135	0.800	pCi/g						
Sodium-22	U	-0.0162	0.0537	+/-0.0174	0.080	pCi/g						
Strontium-85	U	0.0424	0.0563	+/-0.017		pCi/g						
Thallium-208		0.460	0.0462	+/-0.0445	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7628  
Sample ID: 244148010

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.091	0.542	+/-0.158		pCi/g						
Thorium-231	U	-0.19	0.913	+/-0.320		pCi/g						
Thorium-234		1.87	1.40	+/-0.698	2.00	pCi/g						
Tin-113	U	-0.01	0.0617	+/-0.018	0.100	pCi/g						
Uranium-235	U	0.00607	0.290	+/-0.0839	0.500	pCi/g						
Yttrium-88	U	-0.00419	0.0532	+/-0.0165	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.8	(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 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
- 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/A RPD or %Recovery limits do not apply.

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Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7628  
Sample ID: 244148010  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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 28, 2010

Client Sample ID: RE12-10-7632  
Sample ID: 244148011  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.24%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00182	0.0234	+/-0.00298	0.050	pCi/g		MXA1	01/22/10	1203	943139	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0264	+/-0.0032	0.050	pCi/g		MXE1	01/14/10	1750	940239	4
Plutonium-239/240	U	0.00	0.0303	+/-0.0032	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.825	0.0988	+/-0.0776	0.100	pCi/g		MXE1	01/21/10	2007	940245	5
Uranium-235/236		0.071	0.0614	+/-0.0191	0.100	pCi/g						
Uranium-238		0.890	0.0573	+/-0.0823	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0449	0.102	+/-0.0303	0.200	pCi/g		MXR1	01/20/10	1557	940268	6
Bismuth-211	UI	3.90	0.352	+/-0.280		pCi/g						
Bismuth-214		1.24	0.138	+/-0.112	0.200	pCi/g						
Cadmium-109	UI	3.20	1.01	+/-0.471		pCi/g						
Cerium-139	U	0.0391	0.0562	+/-0.0161	0.050	pCi/g						
Cesium-134	U	0.0866	0.112	+/-0.0306	0.100	pCi/g						
Cesium-137	U	-0.0142	0.077	+/-0.0237	0.100	pCi/g						
Cobalt-60	U	-0.00287	0.0777	+/-0.0245	0.100	pCi/g						
Europium-152	U	0.103	0.178	+/-0.0566	0.200	pCi/g						
Lanthanum-140	U	-0.0468	0.191	+/-0.0614		pCi/g						
Lead-212		1.51	0.093	+/-0.0894	0.100	pCi/g						
Lead-214		1.36	0.123	+/-0.104	0.100	pCi/g						
Mercury-203	U	0.0048	0.0748	+/-0.0217	0.100	pCi/g						
Potassium-40		18.6	0.730	+/-1.04	1.00	pCi/g						
Radium-223	U	-0.736	1.04	+/-0.387		pCi/g						
Radium-224	UI	4.80	1.06	+/-0.712		pCi/g						
Radium-226		1.24	0.138	+/-0.112		pCi/g						
Radium-228		1.75	0.276	+/-0.206	0.500	pCi/g						
Ruthenium-106	U	-0.114	0.617	+/-0.189	0.800	pCi/g						
Sodium-22	U	-0.02	0.0904	+/-0.0279	0.080	pCi/g						
Strontium-85	U	0.0413	0.0746	+/-0.0235		pCi/g						
Thallium-208		0.524	0.071	+/-0.0529	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7632  
Sample ID: 244148011

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	0.348	0.691	+/-0.194		pCi/g					
Thorium-231	U	-0.736	1.04	+/-0.387		pCi/g					
Thorium-234	U	0.549	1.03	+/-0.539	2.00	pCi/g					
Tin-113	U	-0.0104	0.0853	+/-0.0261	0.100	pCi/g					
Uranium-235	U	0.0629	0.398	+/-0.119	0.500	pCi/g					
Yttrium-88	U	-0.00159	0.0624	+/-0.019	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC 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"	82.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	69.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	109*	(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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD

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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 28, 2010

Client Sample ID: RE12-10-7632  
Sample ID: 244148011

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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M Matrix Related Failure

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

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 28, 2010

Client Sample ID: RE12-10-7629  
Sample ID: 244148012  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 18.3%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00331	0.0218	+/-0.00635	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00106	0.0175	+/-0.00281	0.050	pCi/g		MXE1	01/16/10	1107	940239	2
Plutonium-239/240	U	-0.00425	0.0201	+/-0.00451	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.94	0.110	+/-0.160	0.100	pCi/g		MXE1	01/21/10	2007	940245	4
Uranium-235/236		0.127	0.068	+/-0.0252	0.100	pCi/g						
Uranium-238		2.07	0.0635	+/-0.170	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.281	0.504	+/-0.149	0.200	pCi/g		MXR1	01/20/10	1557	940268	5
Bismuth-211	UI	4.26	0.370	+/-0.303		pCi/g						
Bismuth-214		1.18	0.119	+/-0.095	0.200	pCi/g						
Cadmium-109	UI	2.29	1.95	+/-0.605		pCi/g						
Cerium-139	U	-0.0255	0.058	+/-0.0178	0.050	pCi/g						
Cesium-134	U	0.0555	0.0944	+/-0.026	0.100	pCi/g						
Cesium-137	U	0.0534	0.0718	+/-0.039	0.100	pCi/g						
Cobalt-60	U	-0.0209	0.0642	+/-0.0212	0.100	pCi/g						
Europium-152	U	0.0682	0.180	+/-0.0848	0.200	pCi/g						
Lanthanum-140	U	-0.117	0.0927	+/-0.0416		pCi/g						
Lead-212		1.45	0.108	+/-0.0859	0.100	pCi/g						
Lead-214		1.48	0.129	+/-0.112	0.100	pCi/g						
Mercury-203	U	0.0365	0.0832	+/-0.0264	0.100	pCi/g						
Potassium-40		20.5	0.538	+/-1.12	1.00	pCi/g						
Radium-223	U	0.238	1.33	+/-0.436		pCi/g						
Radium-224	UI	5.25	1.23	+/-0.819		pCi/g						
Radium-226		1.18	0.119	+/-0.095		pCi/g						
Radium-228		1.48	0.229	+/-0.200	0.500	pCi/g						
Ruthenium-106	U	0.154	0.617	+/-0.182	0.800	pCi/g						
Sodium-22	U	0.00361	0.0773	+/-0.0235	0.080	pCi/g						
Strontium-85	U	0.0505	0.0701	+/-0.0218		pCi/g						
Thallium-208		0.420	0.0661	+/-0.0481	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID:  
Sample ID:

RE12-10-7629  
244148012

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.222	0.741	+/-0.219		pCi/g						
Thorium-231	U	0.238	1.33	+/-0.436		pCi/g						
Thorium-234	U	2.48	4.13	+/-1.17	2.00	pCi/g						
Tin-113	U	0.0115	0.0847	+/-0.0246	0.100	pCi/g						
Uranium-235	U	0.260	0.453	+/-0.132	0.500	pCi/g						
Yttrium-88	U	-0.0223	0.0492	+/-0.0175	0.100	pCi/g						

### The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-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"	77.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.4	(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
- 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

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7629  
Sample ID: 244148012  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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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

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 28, 2010

Client Sample ID: RE12-10-7626  
Sample ID: 244148013  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.003	0.0204	+/-0.00458	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00967	0.020	+/-0.00513	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00121	0.0228	+/-0.0027	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.112	+/-0.0989	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236	U	0.0314	0.0698	+/-0.0121	0.100	pCi/g						
Uranium-238		1.15	0.0652	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0956	0.108	+/-0.0315	0.200	pCi/g		MXR1	01/20/10	1558	940268	4
Bismuth-211	UI	4.34	0.376	+/-0.333		pCi/g						
Bismuth-214		1.39	0.122	+/-0.128	0.200	pCi/g						
Cadmium-109	UI	4.34	0.972	+/-0.493		pCi/g						
Cerium-139	U	-0.0248	0.0497	+/-0.0155	0.050	pCi/g						
Cesium-134	U	0.0526	0.114	+/-0.0317	0.100	pCi/g						
Cesium-137	U	0.0154	0.0817	+/-0.0247	0.100	pCi/g						
Cobalt-60	U	0.0326	0.0822	+/-0.0223	0.100	pCi/g						
Europium-152	U	0.0177	0.183	+/-0.0529	0.200	pCi/g						
Lanthanum-140	U	-0.0585	0.178	+/-0.0594		pCi/g						
Lead-212		1.78	0.0966	+/-0.110	0.100	pCi/g						
Lead-214		1.51	0.131	+/-0.122	0.100	pCi/g						
Mercury-203	U	0.0166	0.0771	+/-0.0217	0.100	pCi/g						
Potassium-40		19.1	0.666	+/-1.27	1.00	pCi/g						
Radium-223	U	0.432	1.21	+/-0.381		pCi/g						
Radium-224	UI	5.09	1.10	+/-0.697		pCi/g						
Radium-226		1.39	0.122	+/-0.128		pCi/g						
Radium-228		1.47	0.284	+/-0.219	0.500	pCi/g						
Ruthenium-106	U	0.215	0.652	+/-0.189	0.800	pCi/g						
Sodium-22	U	0.0108	0.0942	+/-0.0286	0.080	pCi/g						
Strontium-85	U	0.0499	0.0782	+/-0.0243		pCi/g						
Thallium-208		0.603	0.0712	+/-0.0587	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7626  
Sample ID: 244148013  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.509	0.695	+/-0.201		pCi/g						
Thorium-231	U	0.432	1.21	+/-0.381		pCi/g						
Thorium-234		1.48	0.997	+/-0.519	2.00	pCi/g						
Tin-113	U	-0.0348	0.0808	+/-0.0252	0.100	pCi/g						
Uranium-235	U	-0.0144	0.380	+/-0.114	0.500	pCi/g						
Yttrium-88	U	0.000176	0.0791	+/-0.0244	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.4	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7626  
Sample ID: 244148013  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7631  
Sample ID: 244148014  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 16.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0031	0.0208	+/-0.00606	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00233	0.0193	+/-0.00618	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00117	0.022	+/-0.00387	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.80	0.126	+/-0.155	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.100	0.0779	+/-0.0235	0.100	pCi/g						
Uranium-238		2.21	0.0728	+/-0.185	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.108	0.197	+/-0.0625	0.200	pCi/g		MXR1	01/20/10	1558	940268	4
Bismuth-211	UI	4.93	0.323	+/-0.329		pCi/g						
Bismuth-214		1.31	0.109	+/-0.109	0.200	pCi/g						
Cadmium-109	UI	3.46	1.16	+/-0.452		pCi/g						
Cerium-139	U	0.00303	0.0483	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0811	0.0887	+/-0.0394	0.100	pCi/g						
Cesium-137		0.148	0.0657	+/-0.0362	0.100	pCi/g						
Cobalt-60	U	0.0126	0.0654	+/-0.0196	0.100	pCi/g						
Europium-152	U	0.0433	0.168	+/-0.0555	0.200	pCi/g						
Lanthanum-140	U	-0.0511	0.105	+/-0.0367		pCi/g						
Lead-212		1.81	0.0906	+/-0.113	0.100	pCi/g						
Lead-214		1.72	0.110	+/-0.123	0.100	pCi/g						
Mercury-203	U	0.0544	0.0665	+/-0.0337	0.100	pCi/g						
Potassium-40		22.5	0.430	+/-1.24	1.00	pCi/g						
Radium-223	U	-0.701	1.01	+/-0.376		pCi/g						
Radium-224	UI	5.18	1.03	+/-0.728		pCi/g						
Radium-226		1.31	0.109	+/-0.109		pCi/g						
Radium-228		1.77	0.203	+/-0.184	0.500	pCi/g						
Ruthenium-106	U	-0.00723	0.506	+/-0.158	0.800	pCi/g						
Sodium-22	U	-0.0193	0.0596	+/-0.0198	0.080	pCi/g						
Strontium-85	U	0.0347	0.0664	+/-0.0217		pCi/g						
Thallium-208		0.544	0.0571	+/-0.0484	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7631  
Sample ID: 244148014  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.224	0.601	+/-0.184		pCi/g						
Thorium-231	U	-0.701	1.01	+/-0.376		pCi/g						
Thorium-234	U	1.15	1.69	+/-0.750	2.00	pCi/g						
Tin-113	U	-0.0154	0.072	+/-0.0222	0.100	pCi/g						
Uranium-235	U	0.139	0.356	+/-0.108	0.500	pCi/g						
Yttrium-88	U	-0.00725	0.0507	+/-0.0163	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	81.7	(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 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
- 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/A RPD or %Recovery limits do not apply.



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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 28, 2010

Client Sample ID: RE12-10-7631  
Sample ID: 244148014  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7627  
Sample ID: 244148015  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 23.8%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00941	0.0212	+/-0.00347	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00126	0.0207	+/-0.00126	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.0126	0.0237	+/-0.00592	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.30	0.101	+/-0.112	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0884	0.0625	+/-0.0198	0.100	pCi/g						
Uranium-238		1.46	0.0584	+/-0.123	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0463	0.0748	+/-0.026	0.200	pCi/g		MXR1	01/20/10	1559	940268	4
Bismuth-211	UI	4.22	0.311	+/-0.324		pCi/g						
Bismuth-214		1.31	0.106	+/-0.117	0.200	pCi/g						
Cadmium-109	UI	3.78	0.748	+/-0.409		pCi/g						
Cerium-139	U	0.00293	0.0425	+/-0.0125	0.050	pCi/g						
Cesium-134	UI	0.110	0.0981	+/-0.0351	0.100	pCi/g						
Cesium-137		0.284	0.0735	+/-0.043	0.100	pCi/g						
Cobalt-60	U	0.0266	0.0703	+/-0.0198	0.100	pCi/g						
Europium-152	U	0.0214	0.153	+/-0.0459	0.200	pCi/g						
Lanthanum-140	U	-0.0873	0.149	+/-0.0514		pCi/g						
Lead-212		1.65	0.0774	+/-0.108	0.100	pCi/g						
Lead-214		1.47	0.109	+/-0.119	0.100	pCi/g						
Mercury-203	U	0.0114	0.0623	+/-0.019	0.100	pCi/g						
Potassium-40		19.6	0.518	+/-1.16	1.00	pCi/g						
Radium-223	U	0.692	1.11	+/-0.345		pCi/g						
Radium-224	UI	4.38	0.881	+/-0.580		pCi/g						
Radium-226		1.31	0.106	+/-0.117		pCi/g						
Radium-228		1.55	0.225	+/-0.175	0.500	pCi/g						
Ruthenium-106	U	0.117	0.574	+/-0.165	0.800	pCi/g						
Sodium-22	U	-0.0023	0.0788	+/-0.0241	0.080	pCi/g						
Strontium-85	U	0.0334	0.0654	+/-0.0212		pCi/g						
Thallium-208		0.525	0.0563	+/-0.0524	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7627  
Sample ID: 244148015

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.23	0.553	+/-0.179		pCi/g					
Thorium-231	U	0.692	1.11	+/-0.345		pCi/g					
Thorium-234		2.41	0.739	+/-0.448	2.00	pCi/g					
Tin-113	U	-0.022	0.0708	+/-0.0218	0.100	pCi/g					
Uranium-235	U	-0.0618	0.303	+/-0.0919	0.500	pCi/g					
Yttrium-88	U	-0.00677	0.0591	+/-0.0188	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	83.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7627  
Sample ID: 244148015

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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 28, 2010

Client Sample ID: RE12-10-7625  
Sample ID: 244148016  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 17.6%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.000546	0.0216	+/-0.00433	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00389	0.0214	+/-0.00259	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00389	0.0245	+/-0.0039	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.66	0.132	+/-0.145	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236		0.0944	0.0816	+/-0.0233	0.100	pCi/g						
Uranium-238		1.85	0.0763	+/-0.159	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0217	0.378	+/-0.107	0.200	pCi/g		MXR1	01/20/10	1627	940268	4
Bismuth-211	UI	4.15	0.343	+/-0.269		pCi/g						
Bismuth-214		1.24	0.105	+/-0.097	0.200	pCi/g						
Cadmium-109	UI	2.76	1.30	+/-0.539		pCi/g						
Cerium-139	U	0.00213	0.0483	+/-0.0144	0.050	pCi/g						
Cesium-134	U	0.047	0.0836	+/-0.0231	0.100	pCi/g						
Cesium-137		0.0995	0.0577	+/-0.035	0.100	pCi/g						
Cobalt-60	U	0.0127	0.0625	+/-0.0179	0.100	pCi/g						
Europium-152	U	-0.0839	0.145	+/-0.0456	0.200	pCi/g						
Lanthanum-140	U	-0.0401	0.156	+/-0.0534		pCi/g						
Lead-212		1.48	0.129	+/-0.0861	0.100	pCi/g						
Lead-214		1.44	0.113	+/-0.101	0.100	pCi/g						
Mercury-203	U	0.014	0.0657	+/-0.021	0.100	pCi/g						
Potassium-40		20.0	0.524	+/-1.04	1.00	pCi/g						
Radium-223	U	-0.253	1.01	+/-0.348		pCi/g						
Radium-224	UI	2.65	1.39	+/-0.481		pCi/g						
Radium-226		1.24	0.105	+/-0.097		pCi/g						
Radium-228		1.45	0.206	+/-0.148	0.500	pCi/g						
Ruthenium-106	U	0.102	0.521	+/-0.156	0.800	pCi/g						
Sodium-22	U	-0.0187	0.0708	+/-0.0222	0.080	pCi/g						
Strontium-85	U	0.0515	0.0618	+/-0.0187		pCi/g						
Thallium-208		0.488	0.0585	+/-0.045	0.080	pCi/g						

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7625  
Sample ID: 244148016

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.173	0.595	+/-0.177		pCi/g						
Thorium-231	U	-0.253	1.01	+/-0.348		pCi/g						
Thorium-234	U	1.40	3.11	+/-0.865	2.00	pCi/g						
Tin-113	U	-0.0035	0.0716	+/-0.0214	0.100	pCi/g						
Uranium-235	U	0.150	0.348	+/-0.101	0.500	pCi/g						
Yttrium-88	U	0.00199	0.0526	+/-0.0161	0.100	pCi/g						

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	86.2	(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
- 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/A RPD or %Recovery limits do not apply.

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Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7625  
Sample ID: 244148016

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

ND Analyte concentration is not detected above the detection limit

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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 28, 2010

Client Sample ID: RE12-10-7656  
Sample ID: 244148017  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 7.58%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>											
<i>AM241 "Dry Weight Corrected"</i>											
Americium-241	U	-0.00314	0.0231	+/-0.00272	0.050	pCi/g		MXE1	01/16/10	1129 940237	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	0.00125	0.0206	+/-0.00125	0.050	pCi/g		MXE1	01/14/10	1750 940239	2
Plutonium-239/240	U	0.0112	0.0235	+/-0.00378	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		2.46	0.117	+/-0.199	0.100	pCi/g		MXE1	01/21/10	2007 940245	3
Uranium-235/236		0.191	0.0724	+/-0.0327	0.100	pCi/g					
Uranium-238		2.26	0.0676	+/-0.185	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	0.125	0.287	+/-0.0874	0.200	pCi/g		MXR1	01/20/10	1802 940268	4
Bismuth-211	UI	3.64	0.244	+/-0.205		pCi/g					
Bismuth-214		1.17	0.084	+/-0.0825	0.200	pCi/g					
Cadmium-109	UI	2.96	1.41	+/-0.484		pCi/g					
Cerium-139	U	-0.00228	0.041	+/-0.0117	0.050	pCi/g					
Cesium-134	UI	0.105	0.0705	+/-0.0333	0.100	pCi/g					
Cesium-137		0.126	0.0503	+/-0.0226	0.100	pCi/g					
Cobalt-60	U	-0.00404	0.0455	+/-0.0141	0.100	pCi/g					
Europium-152	U	0.0383	0.126	+/-0.0431	0.200	pCi/g					
Lanthanum-140	U	-0.0678	0.104	+/-0.0353		pCi/g					
Lead-212		1.52	0.0691	+/-0.0716	0.100	pCi/g					
Lead-214		1.27	0.0851	+/-0.0786	0.100	pCi/g					
Mercury-203	U	0.0164	0.0577	+/-0.0168	0.100	pCi/g					
Potassium-40		21.0	0.370	+/-0.989	1.00	pCi/g					
Radium-223	U	-0.0017	0.863	+/-0.299		pCi/g					
Radium-224	UI	4.74	0.785	+/-0.548		pCi/g					
Radium-226		1.17	0.084	+/-0.0825		pCi/g					
Radium-228		1.53	0.157	+/-0.154	0.500	pCi/g					
Ruthenium-106	U	0.174	0.428	+/-0.125	0.800	pCi/g					
Sodium-22	U	-0.0372	0.0462	+/-0.0158	0.080	pCi/g					
Strontium-85	UI	0.0863	0.0563	+/-0.0165		pCi/g					
Thallium-208		0.474	0.0437	+/-0.0382	0.080	pCi/g					



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7656  
Sample ID: 244148017

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.0456	0.501	+/-0.149		pCi/g					
Thorium-231	U	-0.0017	0.863	+/-0.299		pCi/g					
Thorium-234	U	1.63	2.22	+/-0.945	2.00	pCi/g					
Tin-113	U	0.0166	0.0594	+/-0.0169	0.100	pCi/g					
Uranium-235	U	-0.0156	0.306	+/-0.094	0.500	pCi/g					
Yttrium-88	U	-0.0219	0.0419	+/-0.0144	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	77.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.5	(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
- 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/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 28, 2010

Client Sample ID: RE12-10-7656  
Sample ID: 244148017

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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

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

Report Date: January 28, 2010

Client Sample ID: RE12-10-7655  
Sample ID: 244148018  
Matrix: R  
Collect Date: 04-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.91%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00179	0.0195	+/-0.00242	0.050	pCi/g		MXE1	01/16/10	1129	940237	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00129	0.0214	+/-0.0013	0.050	pCi/g		MXE1	01/14/10	1750	940239	2
Plutonium-239/240	U	0.00129	0.0245	+/-0.00224	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.06	0.114	+/-0.0982	0.100	pCi/g		MXE1	01/21/10	2007	940245	3
Uranium-235/236	U	0.0592	0.0708	+/-0.0181	0.100	pCi/g						
Uranium-238		1.13	0.0662	+/-0.103	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0427	0.208	+/-0.0655	0.200	pCi/g		MXR1	01/20/10	1802	940268	4
Bismuth-211	UI	4.07	0.312	+/-0.308		pCi/g						
Bismuth-214		1.26	0.102	+/-0.104	0.200	pCi/g						
Cadmium-109	UI	3.80	1.08	+/-0.474		pCi/g						
Cerium-139	U	-0.013	0.0469	+/-0.0138	0.050	pCi/g						
Cesium-134	UI	0.105	0.0777	+/-0.0297	0.100	pCi/g						
Cesium-137	U	-0.0367	0.0523	+/-0.0169	0.100	pCi/g						
Cobalt-60	U	-0.00765	0.0578	+/-0.0178	0.100	pCi/g						
Europium-152	U	-0.112	0.135	+/-0.053	0.200	pCi/g						
Lanthanum-140	U	-0.0621	0.139	+/-0.0448		pCi/g						
Lead-212		1.75	0.0881	+/-0.126	0.100	pCi/g						
Lead-214		1.41	0.106	+/-0.113	0.100	pCi/g						
Mercury-203	U	-0.00321	0.0659	+/-0.0231	0.100	pCi/g						
Potassium-40		21.2	0.399	+/-1.14	1.00	pCi/g						
Radium-223	U	0.146	0.974	+/-0.323		pCi/g						
Radium-224	UI	5.36	1.00	+/-0.661		pCi/g						
Radium-226		1.26	0.102	+/-0.104		pCi/g						
Radium-228		1.92	0.175	+/-0.177	0.500	pCi/g						
Ruthenium-106	U	0.0245	0.497	+/-0.148	0.800	pCi/g						
Sodium-22	U	0.00433	0.0599	+/-0.0179	0.080	pCi/g						
Strontium-85	UI	0.133	0.0688	+/-0.0211		pCi/g						
Thallium-208		0.553	0.0496	+/-0.0457	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 28, 2010

Client Sample ID: RE12-10-7655  
Sample ID: 244148018

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.16	0.580	+/-0.179		pCi/g					
Thorium-231	U	0.146	0.974	+/-0.323		pCi/g					
Thorium-234	U	1.07	1.76	+/-0.769	2.00	pCi/g					
Tin-113	U	-0.0197	0.0654	+/-0.020	0.100	pCi/g					
Uranium-235	U	0.109	0.346	+/-0.101	0.500	pCi/g					
Yttrium-88	U	-0.0032	0.045	+/-0.014	0.100	pCi/g					

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.4	(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
- 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/A RPD or %Recovery limits do not apply.

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
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Report Date: January 28, 2010

Client Sample ID: RE12-10-7655  
Sample ID: 244148018

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
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 28, 2010

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**Client :** Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico  
**Contact:** Ms. Joylene Valdez  
**Workorder:** 244148

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch	940237									
QC1202012063	244148018	DUP								
Americium-241			U	-0.00179	U	0.00214	pCi/g	0.479	(0-1)	MXE1 01/16/1011:29
			TPU:	+/-0.00242		+/-0.00169				
			Yield:	90.0		80.7				
QC1202012064	LCS									
Americium-241		33.2				30.7	pCi/g	92.5	(75%-125%)	
			TPU:			+/-2.15				
			Yield:			97.1				
QC1202012062	MB									
Americium-241			U	0.00359		0.00359	pCi/g			
			TPU:	+/-0.00374		+/-0.00374				
			Yield:	88.2		88.2				
Batch	940239									
QC1202012074	244148018	DUP								
Plutonium-238			U	0.00129	U	-0.00134	pCi/g	0.229	(0-1)	MXE1 01/14/1017:50
			TPU:	+/-0.0013		+/-0.00445				
			Yield:	88.6		86.1				
Plutonium-239/240			U	0.00129	U	0.00	pCi/g	0.156	(0-1)	
			TPU:	+/-0.00224		+/-0.0019				
			Yield:	88.6		86.1				
QC1202012075	LCS									
Plutonium-238						7.95	pCi/g		(75%-125%)	
			TPU:			+/-0.573				
			Yield:			101				
Plutonium-239/240		41.8				37.6	pCi/g	90	(75%-125%)	
			TPU:			+/-2.33				
			Yield:			101				
QC1202012073	MB									
Plutonium-238			U	-0.00516		-0.00516	pCi/g			
			TPU:	+/-0.0062		+/-0.0062				
			Yield:	82.1		82.1				
Plutonium-239/240			U	0.00172		0.00172	pCi/g			
			TPU:	+/-0.00384		+/-0.00384				
			Yield:	82.1		82.1				
Batch	940245									
QC1202012085	244148018	DUP								
Uranium-233/234				1.06		1.03	pCi/g	0.0932	(0-1)	MXE1 01/21/1020:07
			TPU:	+/-0.0982		+/-0.0954				
			Yield:	93.4		96.6				
Uranium-235/236			U	0.0592		0.082	pCi/g	0.298	(0-1)	
			TPU:	+/-0.0181		+/-0.0202				
			Yield:	93.4		96.6				
Uranium-238				1.13		1.09	pCi/g	0.0792	(0-1)	
			TPU:	+/-0.103		+/-0.100				

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## QC Summary

Workorder: 244148

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Parmname		NOM		Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec													
Batch	940245												
			Yield:		93.4		96.6						
QC1202012086	LCS												
Uranium-233/234						5.70	pCi/g			(75%-125%)		01/20/1008:24	
			TPU:			+/-0.474							
			Yield:			101							
Uranium-235/236						0.443	pCi/g			(75%-125%)			
			TPU:			+/-0.0805							
			Yield:			101							
Uranium-238		5.75				5.46	pCi/g		95	(75%-125%)			
			TPU:			+/-0.457							
			Yield:			101							
QC1202012084	MB												
Uranium-233/234				U		0.0114	pCi/g					01/21/1020:07	
			TPU:			+/-0.00558							
			Yield:			107							
Uranium-235/236				U		0.00624	pCi/g						
			TPU:			+/-0.00467							
			Yield:			107							
Uranium-238				U		0.00336	pCi/g						
			TPU:			+/-0.00337							
			Yield:			107							
Batch	943139												
QC1202019362	244148011	DUP											
Americium-241			U	-0.00182	U	0.00214	pCi/g	0.361		(0-1)	MXA1	01/22/1012:03	
			TPU:	+/-0.00298		+/-0.00251							
			Yield:	82.0		89.1							
QC1202019363	LCS												
Americium-241		33.2				31.9	pCi/g		96.1	(75%-125%)			
			TPU:			+/-2.27							
			Yield:			95.0							
QC1202019361	MB												
Americium-241				U		-0.00556	pCi/g						
			TPU:			+/-0.00328							
			Yield:			82.8							
Batch	944933												
QC1202023629	244148001	DUP											
Uranium-233/234				1.26		1.40	pCi/g	0.329		(0-1)	MXE1	01/27/1012:23	
			TPU:	+/-0.101		+/-0.112							
			Yield:	107		97.2							
Uranium-235/236				0.0886		0.0747	pCi/g	0.213		(0-1)			
			TPU:	+/-0.0168		+/-0.0158							
			Yield:	107		97.2							
Uranium-238				1.36		1.28	pCi/g	0.189		(0-1)			
			TPU:	+/-0.108		+/-0.104							
			Yield:	107		97.2							
QC1202023630	LCS												
Uranium-233/234						6.00	pCi/g			(75%-125%)		01/27/1012:23	
			TPU:			+/-0.521							
			Yield:			98.4							



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## QC Summary

Workorder: 244148

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC %	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	944933										
Uranium-235/236				0.377	pCi/g			(75%-125%)			
		TPU:		+/-0.0818							
		Yield:		98.4							
Uranium-238	5.75			5.79	pCi/g		101	(75%-125%)			
		TPU:		+/-0.506							
		Yield:		98.4							
QC1202023628	MB										
Uranium-233/234			U	0.0236	pCi/g					01/27/10	12:24
		TPU:		+/-0.0056							
		Yield:		105							
Uranium-235/236			U	0.00689	pCi/g						
		TPU:		+/-0.00312							
		Yield:		105							
Uranium-238			U	0.00669	pCi/g						
		TPU:		+/-0.00319							
		Yield:		105							
<b>Rad Gamma Spec</b>											
Batch	940268										
QC1202012157	244148001	DUP									
Americium-241		U	-0.065	U	-0.084	pCi/g	0.0558	(0-1)	MXR1	01/20/10	18:04
		TPU:	+/-0.0973		+/-0.0728						
Bismuth-211		UI	4.24	UI	3.95	pCi/g	0.216	(0-1)			
		TPU:	+/-0.346		+/-0.321						
Bismuth-214			1.31		1.26	pCi/g	0.117	(0-1)			
		TPU:	+/-0.110		+/-0.103						
Cadmium-109		UI	2.67	UI	2.55	pCi/g	0.0562	(0-1)			
		TPU:	+/-0.571		+/-0.497						
Cerium-139		U	0.018	U	0.00104	pCi/g	0.289	(0-1)			
		TPU:	+/-0.0159		+/-0.0133						
Cesium-134		U	0.0344	U	0.082	pCi/g	0.505	(0-1)			
		TPU:	+/-0.0245		+/-0.0226						
Cesium-137		UI	0.157		0.105	pCi/g	0.394	(0-1)			
		TPU:	+/-0.0426		+/-0.0234						
Cobalt-60		U	0.0119	U	-0.00916	pCi/g	0.266	(0-1)			
		TPU:	+/-0.0204		+/-0.0191						
Europium-152		U	-0.0426	U	-0.0553	pCi/g	0.0592	(0-1)			
		TPU:	+/-0.061		+/-0.0461						
Lanthanum-140		U	-0.0485	U	-0.0775	pCi/g	0.159	(0-1)			
		TPU:	+/-0.0467		+/-0.0444						
Lead-212			1.60		1.74	pCi/g	0.305	(0-1)			
		TPU:	+/-0.117		+/-0.116						
Lead-214			1.47		1.37	pCi/g	0.205	(0-1)			
		TPU:	+/-0.126		+/-0.117						
Mercury-203		U	0.000599	U	0.0314	pCi/g	0.357	(0-1)			
		TPU:	+/-0.0231		+/-0.020						
Potassium-40			19.9		21.7	pCi/g	0.378	(0-1)			
		TPU:	+/-1.21		+/-1.21						
Radium-223		U	0.134	U	0.141	pCi/g	0.00426	(0-1)			
		TPU:	+/-0.385		+/-0.331						
Radium-224		UI	4.61	UI	5.43	pCi/g	0.298	(0-1)			

# GEL LABORATORIES LLC

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## QC Summary

Workorder: 244148

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	940268										
		TPU:	+/-0.727	+/-0.645							
Radium-226			1.31	1.26	pCi/g	0.117		(0-1)			
		TPU:	+/-0.110	+/-0.103							
Radium-228			1.81	1.71	pCi/g	0.133		(0-1)			
		TPU:	+/-0.201	+/-0.183							
Ruthenium-106		U	-0.0959	-0.0178	pCi/g	0.127		(0-1)			
		TPU:	+/-0.166	+/-0.142							
Sodium-22		U	-0.00287	-0.00484	pCi/g	0.0229		(0-1)			
		TPU:	+/-0.0237	+/-0.0195							
Strontium-85		U	0.0425	0.014	pCi/g	0.374		(0-1)			
		TPU:	+/-0.0212	+/-0.0168							
Thallium-208			0.518	0.487	pCi/g	0.160		(0-1)			
		TPU:	+/-0.055	+/-0.0421							
Thorium-227		U	-0.129	0.00306	pCi/g	0.183		(0-1)			
		TPU:	+/-0.191	+/-0.168							
Thorium-231		U	0.134	0.141	pCi/g	0.00426		(0-1)			
		TPU:	+/-0.385	+/-0.331							
Thorium-234		U	1.51	1.59	pCi/g	0.020		(0-1)			
		TPU:	+/-1.27	+/-0.813							
Tin-113		U	0.00694	0.00243	pCi/g	0.0494		(0-1)			
		TPU:	+/-0.0248	+/-0.0209							
Uranium-235		U	0.0808	0.125	pCi/g	0.107		(0-1)			
		TPU:	+/-0.113	+/-0.0931							
Yttrium-88		U	0.00452	0.0112	pCi/g	0.107		(0-1)			
		TPU:	+/-0.0173	+/-0.0138							
QC1202012158	LCS										
Americium-241	15.9			13.3	pCi/g		83.7	(75%-125%)		01/20/10	18:05
		TPU:		+/-0.646							
Bismuth-211				1.96	pCi/g						
		TPU:		+/-0.364							
Bismuth-214				0.764	pCi/g						
		TPU:		+/-0.110							
Cadmium-109				33.8	pCi/g						
		TPU:		+/-2.23							
Cerium-139		U		0.0281	pCi/g						
		TPU:		+/-0.023							
Cesium-134		U		0.0195	pCi/g						
		TPU:		+/-0.0484							
Cesium-137	5.57			5.71	pCi/g		103	(75%-125%)			
		TPU:		+/-0.277							
Cobalt-60	6.46			6.06	pCi/g		93.9	(75%-125%)			
		TPU:		+/-0.318							
Europium-152		U		0.0875	pCi/g						
		TPU:		+/-0.109							
Lanthanum-140		U		-0.0274	pCi/g						
		TPU:		+/-0.0462							
Lead-212				0.881	pCi/g						
		TPU:		+/-0.126							
Lead-214				0.682	pCi/g						
		TPU:		+/-0.128							
Mercury-203		U		0.000163	pCi/g						

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## QC Summary

Workorder: 244148

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	940268								
Potassium-40	TPU:		+/-0.0333						
			0.729	pCi/g					
Radium-223	TPU:	U	+/-0.309						
			-1.02	pCi/g					
Radium-224	TPU:		+/-0.649						
			6.46	pCi/g					
Radium-226	TPU:		+/-0.872						
			0.764	pCi/g					
Radium-228	TPU:		+/-0.110						
			1.10	pCi/g					
Ruthenium-106	TPU:	U	+/-0.247						
			0.0187	pCi/g					
Sodium-22	TPU:	U	+/-0.316						
			0.00375	pCi/g					
Strontium-85	TPU:	U	+/-0.0286						
			0.098	pCi/g					
Thallium-208	TPU:		+/-0.0409						
			0.299	pCi/g					
Thorium-227	TPU:	U	+/-0.0587						
			0.140	pCi/g					
Thorium-231	TPU:	U	+/-0.365						
			-1.02	pCi/g					
Thorium-234	TPU:	U	+/-0.649						
			-1.92	pCi/g					
Tin-113	TPU:	U	+/-1.25						
			0.0294	pCi/g					
Uranium-235	TPU:	U	+/-0.044						
			-0.229	pCi/g					
Yttrium-88	TPU:	U	+/-0.164						
			-0.0154	pCi/g					
	TPU:		+/-0.0262						
QC1202012156 MB									
Americium-241		U	-0.116	pCi/g					01/20/1018:03
	TPU:		+/-0.0479						
Bismuth-211		U	0.0237	pCi/g					
	TPU:		+/-0.0625						
Bismuth-214		U	-0.0107	pCi/g					
	TPU:		+/-0.0241						
Cadmium-109		U	-0.224	pCi/g					
	TPU:		+/-0.201						
Cerium-139		U	0.0037	pCi/g					
	TPU:		+/-0.00788						
Cesium-134		U	0.022	pCi/g					
	TPU:		+/-0.0119						
Cesium-137		U	-0.0163	pCi/g					
	TPU:		+/-0.0103						
Cobalt-60		U	0.00106	pCi/g					
	TPU:		+/-0.0105						
Europium-152		U	0.0354	pCi/g					
	TPU:		+/-0.0278						
Lanthanum-140		U	0.00682	pCi/g					

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## QC Summary

Workorder: 244148

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	940268										
		TPU:		+/-0.0183							
Lead-212			U	0.0232	pCi/g						
		TPU:		+/-0.0183							
Lead-214			U	0.00223	pCi/g						
		TPU:		+/-0.0217							
Mercury-203			U	-0.00626	pCi/g						
		TPU:		+/-0.00983							
Potassium-40			U	-0.107	pCi/g						
		TPU:		+/-0.135							
Radium-223			U	0.047	pCi/g						
		TPU:		+/-0.173							
Radium-224			U	0.00354	pCi/g						
		TPU:		+/-0.178							
Radium-226			U	-0.0107	pCi/g						
		TPU:		+/-0.0241							
Radium-228			U	0.0628	pCi/g						
		TPU:		+/-0.0318							
Ruthenium-106			U	-0.162	pCi/g						
		TPU:		+/-0.0913							
Sodium-22			U	0.00526	pCi/g						
		TPU:		+/-0.00994							
Strontium-85			U	-0.0592	pCi/g						
		TPU:		+/-0.0158							
Thallium-208			U	0.00307	pCi/g						
		TPU:		+/-0.0113							
Thorium-227			U	-0.119	pCi/g						
		TPU:		+/-0.115							
Thorium-231			U	0.047	pCi/g						
		TPU:		+/-0.173							
Thorium-234			U	0.120	pCi/g						
		TPU:		+/-0.408							
Tin-113			U	0.0107	pCi/g						
		TPU:		+/-0.0118							
Uranium-235			U	-0.0121	pCi/g						
		TPU:		+/-0.0593							
Yttrium-88			U	-0.0128	pCi/g						
		TPU:		+/-0.0114							

### 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

## GEL LABORATORIES LLC

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

### QC Summary

Workorder: 244148

Page 7 of 7

Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
D	Results are reported from a diluted aliquot of the sample								
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/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								
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								

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# 940237 Product: Am Date: 1/17/10

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.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hlt 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: JorLML - 1/19/10

Secondary Review Performed By: \_\_\_\_\_

2/5

LANL

## Am/Cm Que Sheet

11-JAN-10

Batch #: 940237 Analyst: MXE1 First Client Due Date: 05-FEB-10 Internal Due Date: 25-JAN-10 Comments:  
 Tracer(s): Am241/Cm244 Tracer Code: 445-96-2-55 Expiration Date: 5/11/10 Vol: 0.1  
 LCS Isotope(s): Am241/Cm244 LCS Code(s): Expiration Date: Vol(s):  
 Spike Isotope(s): Am241/Cm244 Spike Code(s): Expiration Date: Vol(s):  
 Prep Date: 1/13/10 Initials: MZ Pipet ID: 2411053 Balance ID: 50410272 Witness: gno 01/13/10

Sample ID	Client Description	Type	Hazard	Min	Code	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot (g/1/1)	Am/Cm Det #
244148001-1	RE12-10-7619	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	1	1	1,261	24
244148002-1	RE12-10-7618	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	2	2	1,258	25
244148003-1	RE12-10-7623	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	3	3	1,264	26
244148004-1	RE12-10-7622	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	4	4	1,251	27
244148005-1	RE12-10-7621	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	5	5	1,259	28
244148006-1	RE12-10-7617	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	6	6	1,256	29
244148007-1	RE12-10-7620	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	7	7	1,266	30
244148008-1	RE12-10-7624	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	8	8	1,278	31
244148009-1	RE12-10-7630	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	9	9	1,253	33
244148010-1	RE12-10-7628	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	10	10	1,255	35
244148011-1	RE12-10-7632	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	11	11	1,270	36
244148012-1	RE12-10-7629	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	12	12	1,262	37
244148013-1	RE12-10-7626	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	13	13	1,259	38
244148014-1	RE12-10-7631	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	14	14	1,273	39
244148015-1	RE12-10-7627	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	15	15	1,276	40
244148016-1	RE12-10-7625	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	16	16	1,255	41
244148017-1	RE12-10-7656	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	17	17	1,281	42
244148018-1	RE12-10-7655	SAMPLE	.05	pCi/g	SOIL	LANL010	LANL010	LANL010	04-JAN-10	18	18	1,274	43
1202012062-1	MB for batch 940237	MB	.05	pCi/g	QC ACCOUNT	QC ACCOUNT	QC ACCOUNT	QC ACCOUNT	04-JAN-10	19	19	1	44
1202012063-1	RE12-10-7655(244148018DUP)	DUP	.05	pCi/g	QC ACCOUNT	QC ACCOUNT	QC ACCOUNT	QC ACCOUNT	04-JAN-10	20	20	1,257	45
1202012064-1	LCS for batch 940237	LCS	.05	pCi/g	QC ACCOUNT	QC ACCOUNT	QC ACCOUNT	QC ACCOUNT	04-JAN-10	21	21	0.102	44

SRM 0244-B 4/30/20

Choose SOP Used: GL-RAD-A-011  
 GL-RAD-A-036

Solid Sample Dissolution by: LEACH or DIGESTION  
 Circle One

Data Reviewed By: J. L. AL-1/19/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1



# Blank Correction Report

**Batch ID 940237**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202012063	DUP	Americium-241	1.26 g	0.00214	0.00169	0.0224	.002849206	pCi/g	YES
1202012064	LCS	Americium-241	0.102 g	30.7	2.15	0.228	.035196078	pCi/g	NO
1202012062	MB	Americium-241	1.00 g	0.00359	0.00374	0.025	.00359	pCi/g	YES
244148001	RE12-10-7619	Americium-241	1.26 g	0.00458	0.00537	0.0217	.002849206	pCi/g	YES
244148002	RE12-10-7618	Americium-241	1.26 g	-0.00732	0.00762	0.0234	.002849206	pCi/g	YES
244148003	RE12-10-7623	Americium-241	1.26 g	0.00389	0.00509	0.0242	.002849206	pCi/g	YES
244148004	RE12-10-7622	Americium-241	1.25 g	0.00221	0.00173	0.0228	.002872	pCi/g	YES
244148005	RE12-10-7621	Americium-241	1.26 g	-0.00315	0.00268	0.0227	.002849206	pCi/g	YES
244148006	RE12-10-7617	Americium-241	1.26 g	-0.00182	0.00916	0.0356	.002849206	pCi/g	YES
244148007	RE12-10-7620	Americium-241	1.27 g	-0.00426	0.00678	0.0208	.002826772	pCi/g	YES
244148008	RE12-10-7624	Americium-241	1.28 g	0.00209	0.00306	0.0219	.002804688	pCi/g	YES
244148009	RE12-10-7630	Americium-241	1.25 g	-0.000287	0.003	0.0261	.002872	pCi/g	YES
244148010	RE12-10-7628	Americium-241	1.28 g	0.00119	0.00329	0.0256	.002849206	pCi/g	YES
244148012	RE12-10-7629	Americium-241	1.26 g	0.00331	0.00635	0.0218	.002849206	pCi/g	YES
244148013	RE12-10-7626	Americium-241	1.26 g	0.003	0.00458	0.0204	.002849206	pCi/g	YES
244148014	RE12-10-7631	Americium-241	1.27 g	0.0031	0.00606	0.0208	.002826772	pCi/g	YES
244148015	RE12-10-7627	Americium-241	1.28 g	0.00941	0.00347	0.0212	.002804688	pCi/g	YES
244148016	RE12-10-7625	Americium-241	1.26 g	-0.000546	0.00433	0.0216	.002849206	pCi/g	YES
244148017	RE12-10-7656	Americium-241	1.28 g	-0.00314	0.00272	0.0231	.002804688	pCi/g	YES
244148018	RE12-10-7655	Americium-241	1.27 g	-0.00179	0.00242	0.0195	.002826772	pCi/g	YES

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940237  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148001\_AM  
SAMPLE QTY: 1.261 G

DETECTOR NUMBER :76542  
AVERAGE %EFFICIENCY :33.2605  
% YIELD : 84.097

COUNT DATE:16-JAN-2010 11:22:19  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.45275 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B024.CNF;1092 BKG DATE : 10-JAN-2010 EFF FILE : W024.CNF;299 CAL DATE : 4-JAN-2010
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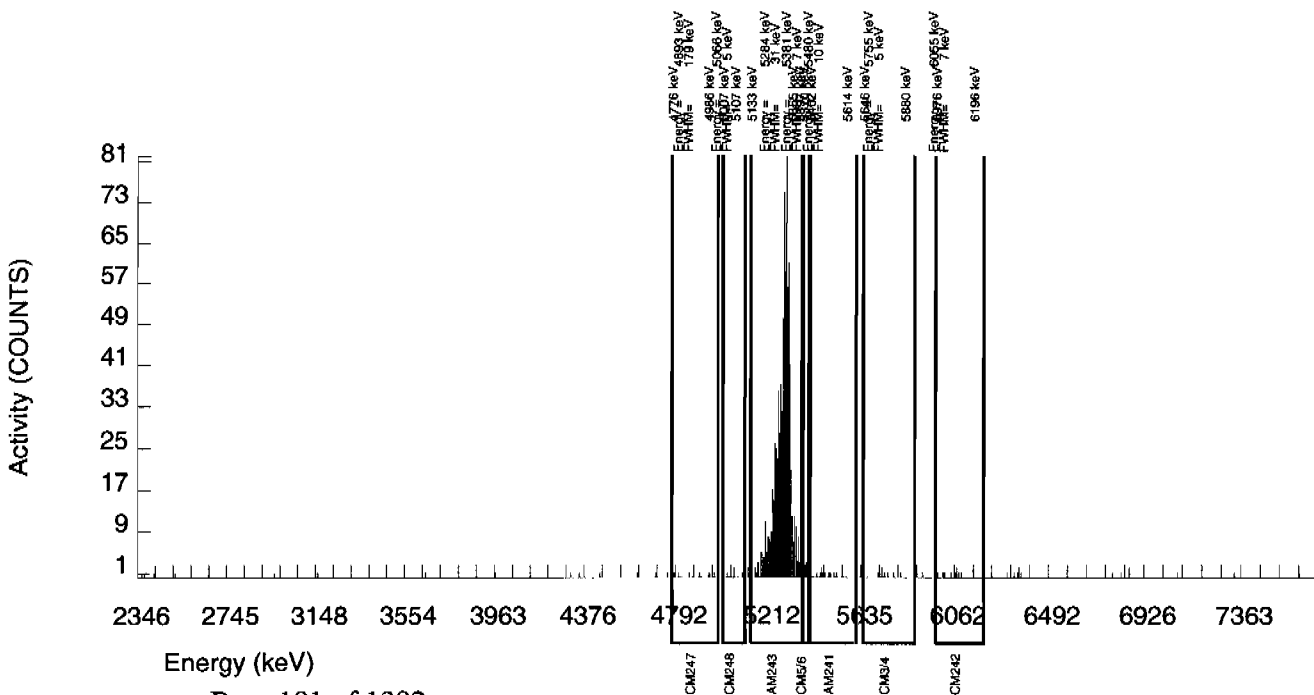
NUCLIDE ACTIVITY SUMMARY

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	-2.000	10.000	5.2338	100.0000	-2.56E-03	5.43E-03	1.55E-02	3.46E-02	5.43E-03
CM-5/6	5386.000	14.000	14.000	0.000	19.8463	86.09000	2.08E-02	5.69E-03	6.85E-02	1.41E-01	5.55E-03
AM-241	5479.150	12.000	3.583	7.000	3.0704	99.94000	4.58E-03	5.37E-03	9.13E-03	2.17E-02	5.36E-03
CM-242	6102.000	13.000	7.000	6.000	4.3186	100.0000	9.44E-03	5.91E-03	1.28E-02	2.91E-02	5.88E-03
AM243	5270.000	818.000	814.000	4.000	2.0000	99.78000	1.04E+00	7.30E-02	5.96E-03	1.54E-02	3.67E-02
CM-247	4946.000	7.000	5.000	2.000	15.3366	79.30000	8.05E-03	4.86E-03	5.75E-02	1.19E-01	4.83E-03
CM-248	5078.600	4.000	3.000	1.000	22.1555	91.00000	4.21E-03	3.15E-03	7.23E-02	1.48E-01	3.14E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148002_AM SAMPLE QTY: 1.258 G	
DETECTOR NUMBER :45-149AA5 AVERAGE %EFFICIENCY :32.4684 % YIELD : 80.222		COUNT DATE:16-JAN-2010 11:29:41 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.33973 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B025.CNF;1102 BKG DATE : 10-JAN-2010 EFF FILE : W025.CNF;326 CAL DATE : 4-JAN-2010

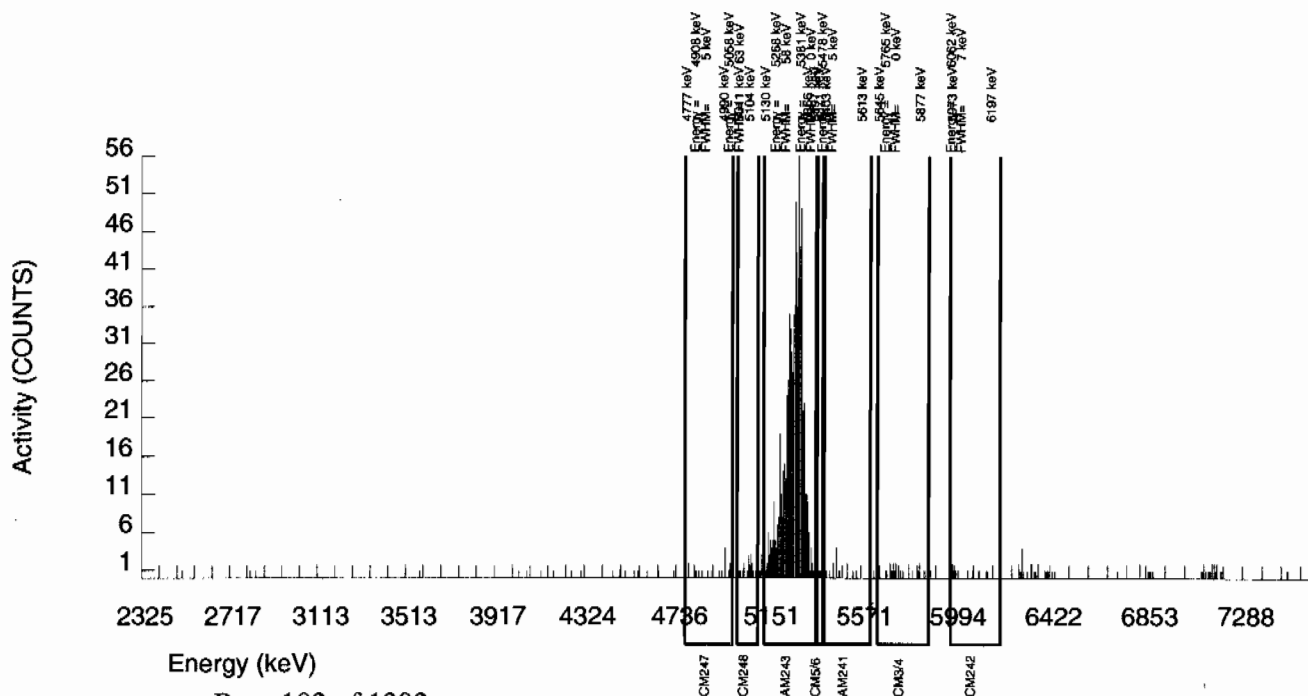
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	27.000	-5.000	32.000	5.2338	100.0000	-6.88E-03	1.06E-02	1.67E-02	3.72E-02	1.06E-02
CM-5/6	5386.000	10.000	7.000	3.000	19.8463	86.09000	1.12E-02	5.80E-03	7.37E-02	1.52E-01	5.76E-03
AM-241	5479.150	14.000	-5.319	18.000	3.0704	99.94000	-7.32E-03	7.62E-03	9.83E-03	2.34E-02	7.62E-03
CM-242	6102.000	13.000	9.000	4.000	4.3186	100.0000	1.31E-02	6.04E-03	1.38E-02	3.13E-02	5.99E-03
AM243	5270.000	762.000	758.000	4.000	2.0000	99.78000	1.04E+00	7.46E-02	6.41E-03	1.66E-02	3.81E-02
CM-247	4946.000	17.000	14.000	3.000	15.3366	79.30000	2.43E-02	7.89E-03	6.19E-02	1.28E-01	7.75E-03
CM-248	5078.600	19.000	19.000	0.000	22.1555	91.00000	2.87E-02	6.82E-03	7.79E-02	1.60E-01	6.58E-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: 940237  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148003\_AM  
SAMPLE QTY: 1.264 G

DETECTOR NUMBER :78204  
AVERAGE %EFFICIENCY :31.5763  
% YIELD : 79.332

COUNT DATE:16-JAN-2010 11:29:41  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.31379 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B026.CNF;1103  
BKG DATE : 10-JAN-2010  
EFF FILE : W026.CNF;300  
CAL DATE : 4-JAN-2010

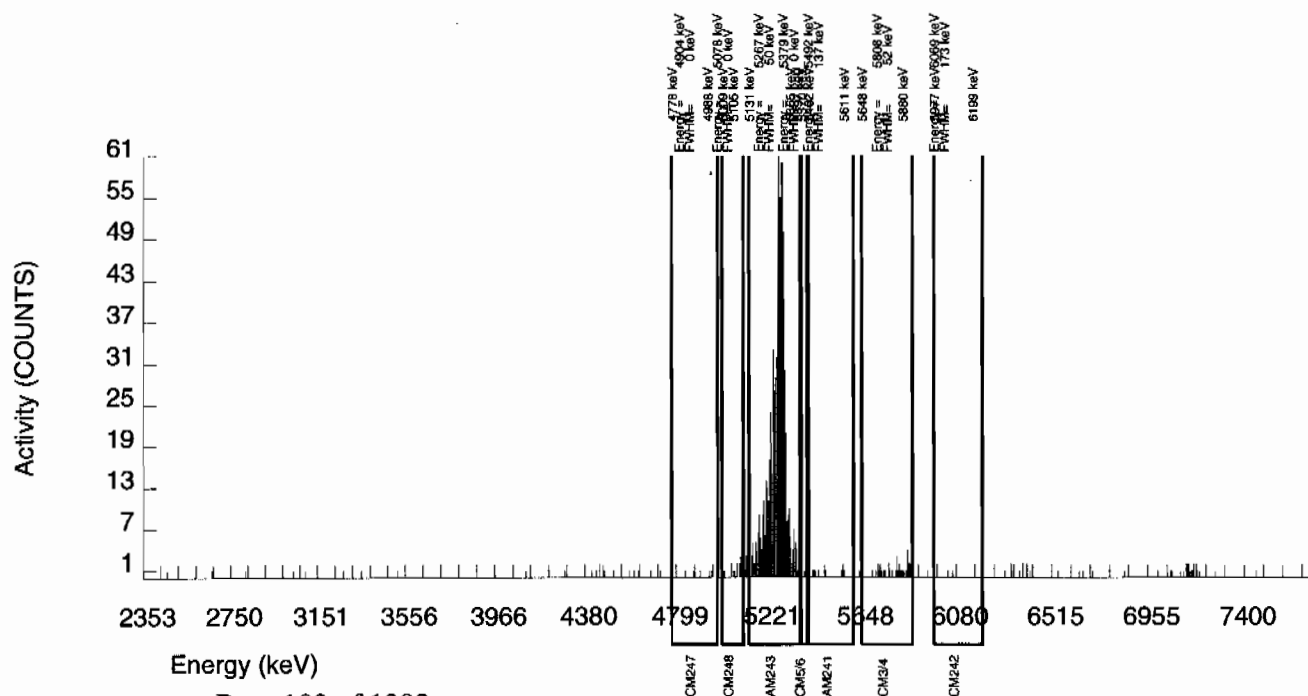
NUCLIDE ACTIVITY SUMMARY

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	33.000	15.000	18.000	5.2338	100.0000	2.14E-02	1.03E-02	1.73E-02	3.85E-02	1.02E-02
CM-5/6	5386.000	3.000	3.000	0.000	19.8463	86.09000	4.96E-03	2.88E-03	7.63E-02	1.57E-01	2.86E-03
AM-241	5479.150	9.000	2.731	5.000	3.0704	99.94000	3.89E-03	5.09E-03	1.02E-02	2.42E-02	5.08E-03
CM-242	6102.000	4.000	-2.000	6.000	4.3186	100.0000	-3.00E-03	4.75E-03	1.43E-02	3.24E-02	4.75E-03
AM243	5270.000	732.000	729.000	3.000	1.7321	99.78000	1.04E+00	7.64E-02	5.74E-03	1.54E-02	3.87E-02
CM-247	4946.000	8.000	7.000	1.000	15.3366	79.30000	1.26E-02	5.44E-03	6.40E-02	1.33E-01	5.38E-03
CM-248	5078.600	19.000	19.000	0.000	22.1555	91.00000	2.97E-02	7.07E-03	8.06E-02	1.65E-01	6.81E-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: 940237  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148004\_AM  
SAMPLE QTY: 1.251 G

DETECTOR NUMBER :42484  
AVERAGE %EFFICIENCY :33.2327  
% YIELD : 80.651

COUNT DATE:16-JAN-2010 11:29:41  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.35227 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B027.CNF;1109  
BKG DATE : 10-JAN-2010  
EFF FILE : W027.CNF;327  
CAL DATE : 4-JAN-2010

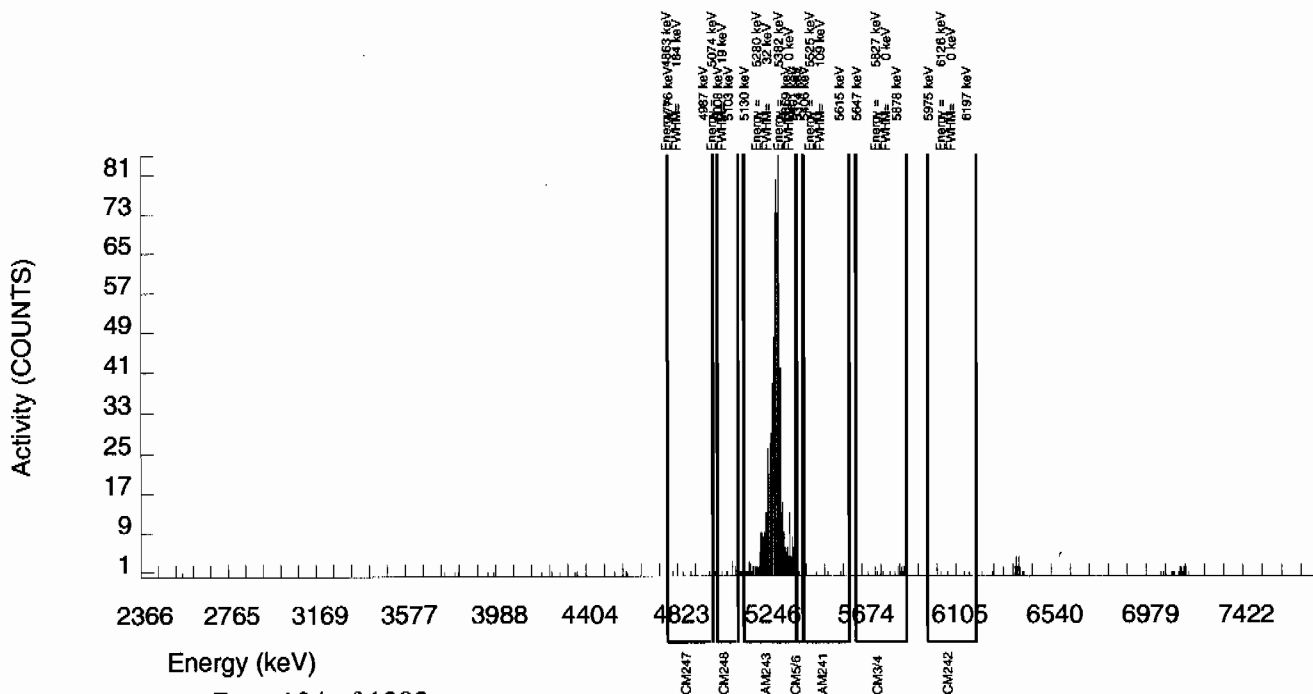
NUCLIDE ACTIVITY SUMMARY

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	19.000	-2.000	21.000	5.2338	100.0000	-2.69E-03	8.51E-03	1.64E-02	3.64E-02	8.51E-03
CM-5/6	5386.000	2.000	2.000	0.000	19.8463	86.09000	3.12E-03	2.22E-03	7.20E-02	1.48E-01	2.21E-03
AM-241	5479.150	3.000	1.643	0.000	3.0704	99.94000	2.21E-03	1.73E-03	9.60E-03	2.28E-02	1.72E-03
CM-242	6102.000	5.000	3.000	2.000	4.3186	100.0000	4.26E-03	3.76E-03	1.35E-02	3.06E-02	3.75E-03
AM243	5270.000	781.000	780.000	1.000	1.0000	99.78000	1.05E+00	7.57E-02	3.13E-03	9.91E-03	3.77E-02
CM-247	4946.000	5.000	3.000	2.000	15.3366	79.30000	5.08E-03	4.49E-03	6.04E-02	1.25E-01	4.48E-03
CM-248	5078.600	8.000	8.000	0.000	22.1555	91.00000	1.18E-02	4.24E-03	7.61E-02	1.56E-01	4.18E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148005_AM SAMPLE QTY: 1.259 G	
DETECTOR NUMBER :78792 AVERAGE %EFFICIENCY :30.5070 % YIELD : 87.745		COUNT DATE:16-JAN-2010 11:29:41 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.55915 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B028.CNF;1113 BKG DATE : 10-JAN-2010 EFF FILE : W028.CNF;319 CAL DATE : 4-JAN-2010

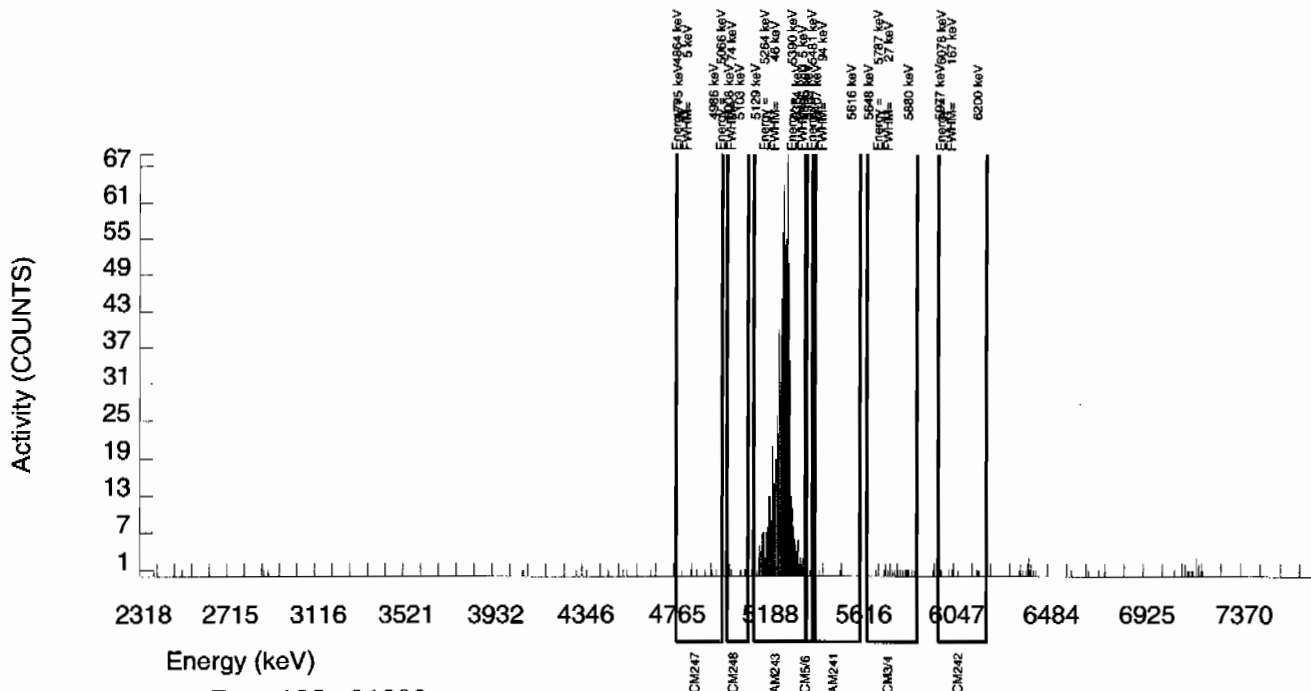
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	19.000	1.000	18.000	5.2338	100.0000	1.34E-03	8.14E-03	1.63E-02	3.62E-02	8.14E-03
CM-5/6	5386.000	1.000	0.000	1.000	19.8463	86.09000	9.25E-11	2.20E-03	7.17E-02	1.48E-01	2.20E-03
AM-241	5479.150	2.000	-2.356	3.000	3.0704	99.94000	-3.15E-03	2.68E-03	9.55E-03	2.27E-02	2.67E-03
CM-242	6102.000	9.000	8.000	1.000	4.3186	100.0000	1.13E-02	4.52E-03	1.34E-02	3.05E-02	4.46E-03
AM243	5270.000	781.000	779.000	2.000	1.4142	99.78000	1.04E+00	7.53E-02	4.41E-03	1.24E-02	3.75E-02
CM-247	4946.000	8.000	4.000	4.000	15.3366	79.30000	6.74E-03	5.85E-03	6.01E-02	1.25E-01	5.84E-03
CM-248	5078.600	6.000	5.000	1.000	22.1555	91.00000	7.34E-03	3.91E-03	7.57E-02	1.55E-01	3.89E-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: 940237  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148006\_AM  
SAMPLE QTY: 1.256 G

DETECTOR NUMBER :33454  
AVERAGE %EFFICIENCY :31.1998  
% YIELD : 54.958

COUNT DATE:16-JAN-2010 11:29:41  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 1.60290 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B029.CNF;1104  
BKG DATE : 10-JAN-2010  
EFF FILE : W029.CNF;318  
CAL DATE : 4-JAN-2010

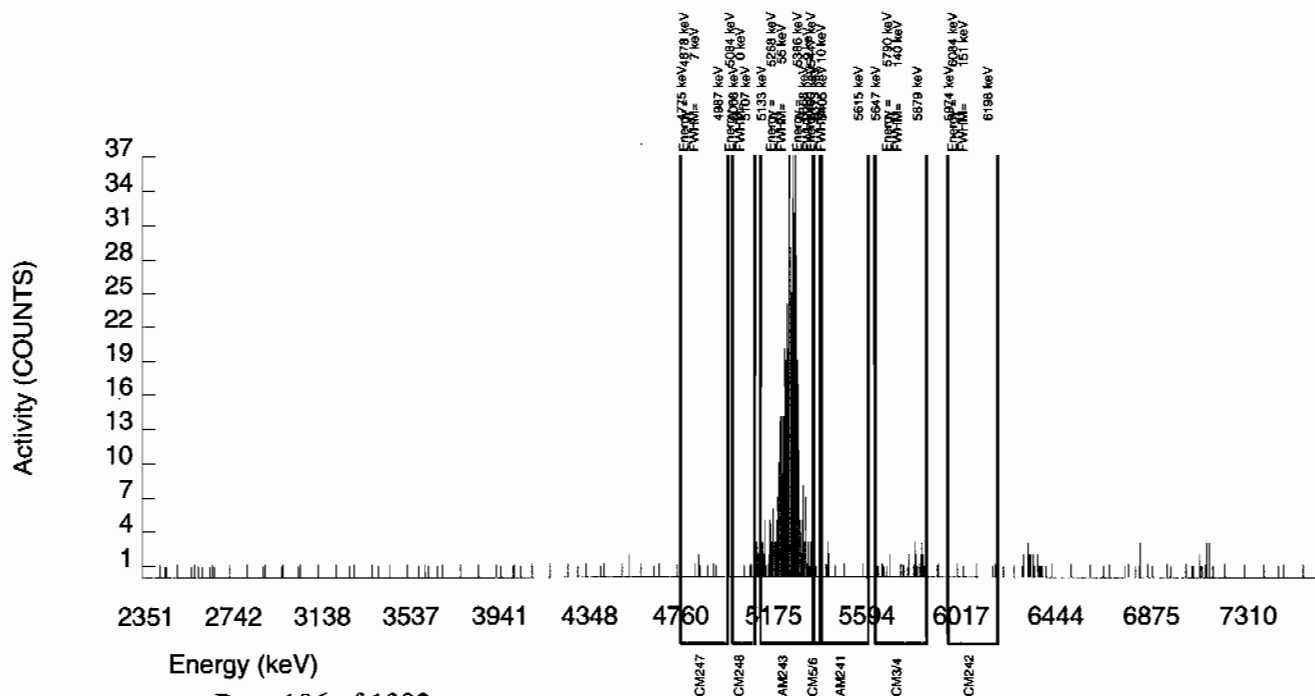
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	29.000	-11.000	40.000	5.2338	100.0000	-2.30E-02	1.74E-02	2.55E-02	5.66E-02	1.74E-02
CM-5/6	5386.000	2.000	-1.000	3.000	19.8463	86.09000	-2.43E-03	5.44E-03	1.12E-01	2.31E-01	5.43E-03
AM-241	5479.150	10.000	-0.868	10.000	3.0704	99.94000	-1.82E-03	9.16E-03	1.49E-02	3.56E-02	9.15E-03
CM-242	6102.000	3.000	-5.000	8.000	4.3186	100.0000	-1.10E-02	7.33E-03	2.10E-02	4.77E-02	7.33E-03
AM243	5270.000	499.000	499.000	0.000	0.0000	99.78000	1.05E+00	8.52E-02	0.00E+00	5.68E-03	4.68E-02
CM-247	4946.000	7.000	3.000	4.000	15.3366	79.30000	7.91E-03	8.76E-03	9.41E-02	1.95E-01	8.75E-03
CM-248	5078.600	7.000	5.000	2.000	22.1555	91.00000	1.15E-02	6.94E-03	1.18E-01	2.43E-01	6.90E-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: 940237  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148007\_AM  
SAMPLE QTY: 1.266 G

DETECTOR NUMBER :33447  
AVERAGE %EFFICIENCY :32.1103  
% YIELD : 90.426

COUNT DATE:16-JAN-2010 11:29:41  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.63736 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B030.CNF;1101  
BKG DATE : 10-JAN-2010  
EFF FILE : W030.CNF;303  
CAL DATE : 4-JAN-2010

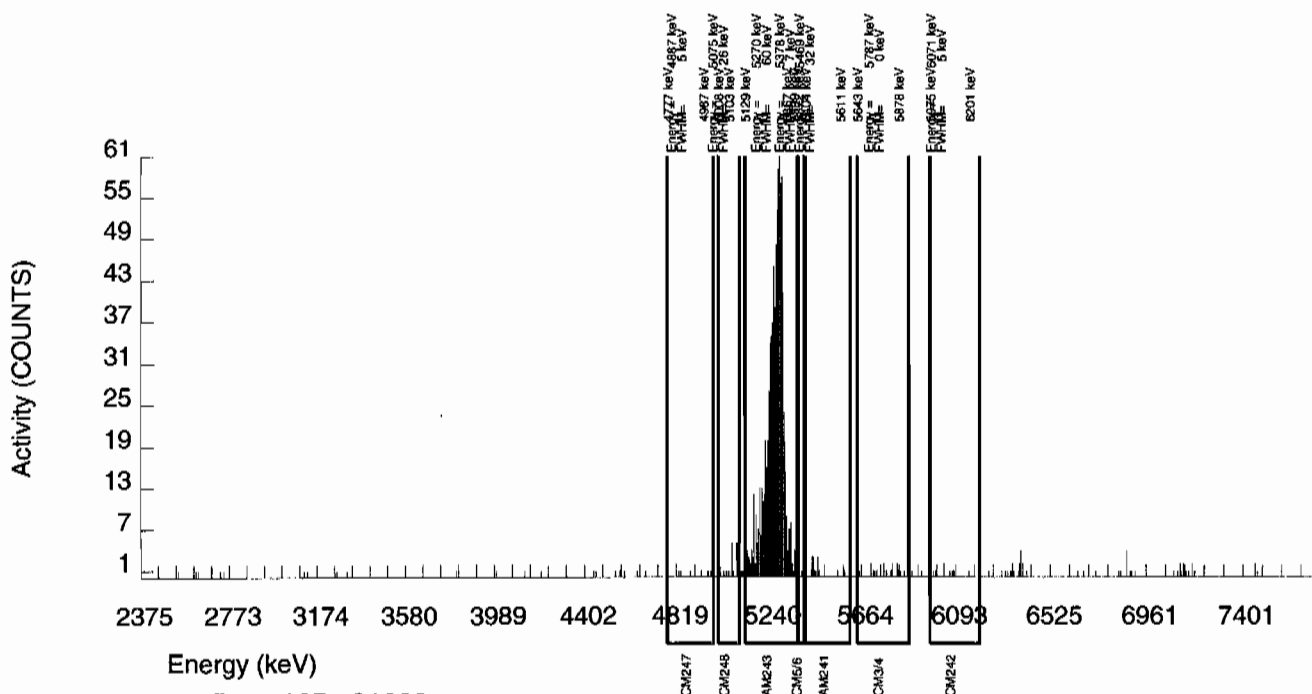
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	20.000	-5.000	25.000	5.2338	100.0000	-6.14E-03	8.23E-03	1.49E-02	3.32E-02	8.23E-03
CM-5/6	5386.000	7.000	6.000	1.000	19.8463	86.09000	8.54E-03	4.06E-03	6.57E-02	1.35E-01	4.03E-03
AM-241	5479.150	15.000	-3.471	17.000	3.0704	99.94000	-4.26E-03	6.78E-03	8.76E-03	2.08E-02	6.78E-03
CM-242	6102.000	11.000	5.000	6.000	4.3186	100.0000	6.47E-03	5.35E-03	1.23E-02	2.79E-02	5.34E-03
AM243	5270.000	847.000	845.000	2.000	1.4142	99.78000	1.04E+00	7.34E-02	4.04E-03	1.14E-02	3.58E-02
CM-247	4946.000	11.000	9.000	2.000	15.3366	79.30000	1.39E-02	5.64E-03	5.51E-02	1.14E-01	5.57E-03
CM-248	5078.600	19.000	18.000	1.000	22.1555	91.00000	2.42E-02	6.21E-03	6.94E-02	1.42E-01	6.02E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148008_AM SAMPLE QTY: 1.278 G	
DETECTOR NUMBER :79988 AVERAGE %EFFICIENCY :33.5512 % YIELD : 81.422		COUNT DATE:16-JAN-2010 11:29:47 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.37475 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B031.CNF;1099 BKG DATE : 10-JAN-2010 EFF FILE : W031.CNF;343 CAL DATE : 4-JAN-2010

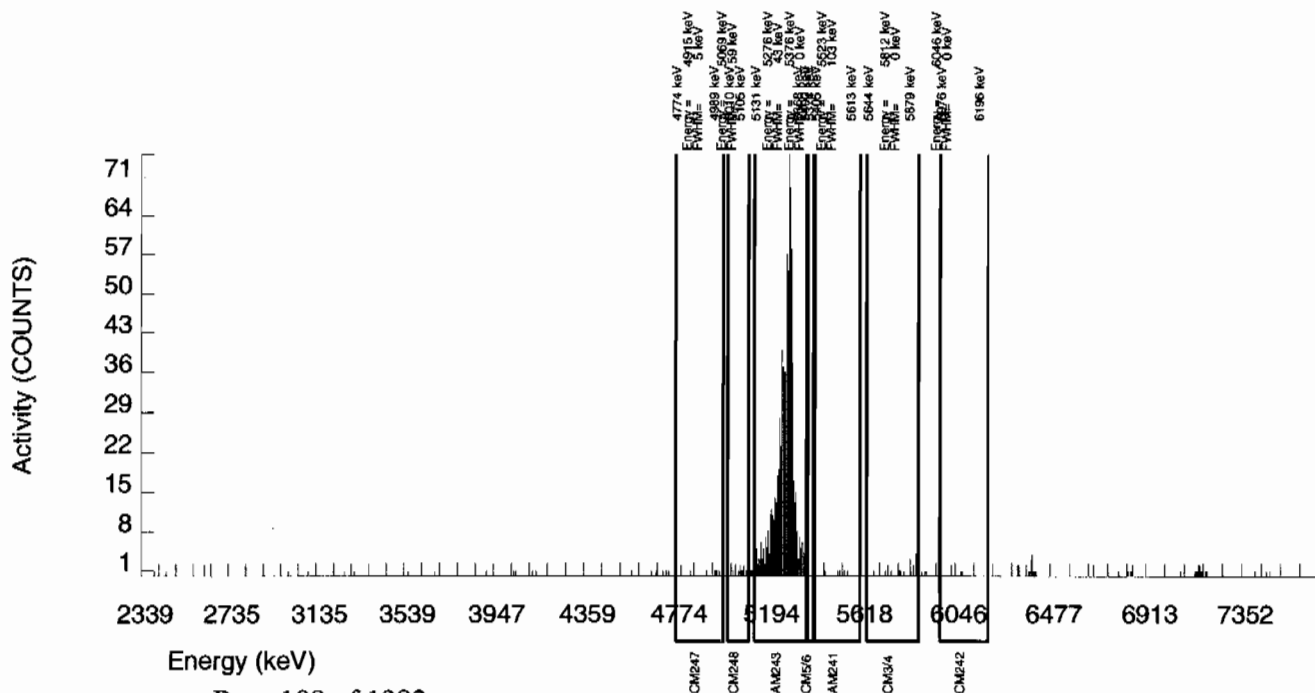
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	25.000	-2.000	27.000	5.2338	100.0000	-2.58E-03	9.32E-03	1.57E-02	3.49E-02	9.32E-03
CM-5/6	5386.000	8.000	8.000	0.000	19.8463	86.09000	1.20E-02	4.30E-03	6.92E-02	1.42E-01	4.24E-03
AM-241	5479.150	5.000	1.616	2.000	3.0704	99.94000	2.09E-03	3.06E-03	9.22E-03	2.19E-02	3.06E-03
CM-242	6102.000	8.000	5.000	3.000	4.3186	100.0000	6.81E-03	4.54E-03	1.30E-02	2.94E-02	4.52E-03
AM243	5270.000	798.000	795.000	3.000	1.7321	99.78000	1.03E+00	7.24E-02	5.21E-03	1.39E-02	3.66E-02
CM-247	4946.000	9.000	7.000	2.000	15.3366	79.30000	1.14E-02	5.44E-03	5.81E-02	1.21E-01	5.40E-03
CM-248	5078.600	14.000	10.000	4.000	22.1555	91.00000	1.42E-02	6.08E-03	7.31E-02	1.50E-01	6.02E-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: 940237  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148009\_AM  
SAMPLE QTY: 1.253 G

DETECTOR NUMBER :78785  
AVERAGE %EFFICIENCY :31.8010  
% YIELD : 73.693

COUNT DATE:16-JAN-2010 11:29:47  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.14932 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B033.CNF;1098  
BKG DATE : 10-JAN-2010  
EFF FILE : W033.CNF;328  
CAL DATE : 4-JAN-2010

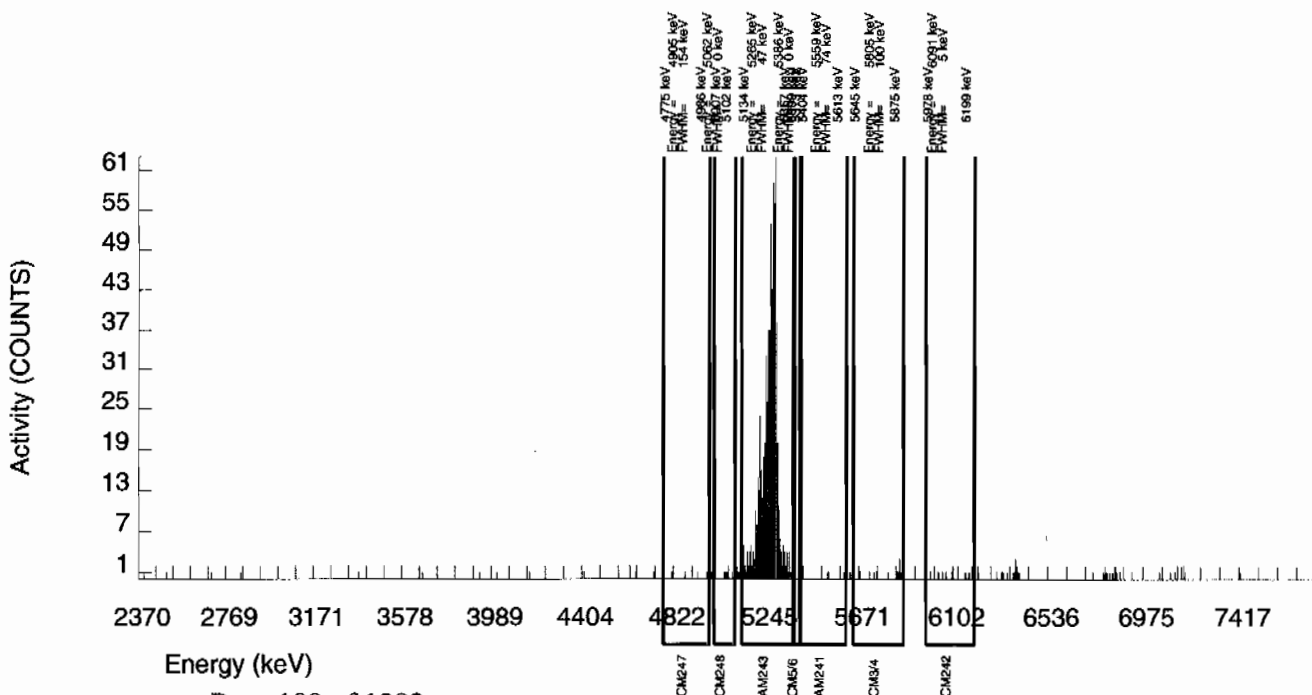
NUCLIDE ACTIVITY SUMMARY

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	14.000	-5.000	19.000	5.2338	100.0000	-7.68E-03	8.82E-03	1.87E-02	4.15E-02	8.82E-03
CM-5/6	5386.000	0.000	0.000	0.000	19.8463	86.09000	0.00E+00	1.79E-03	8.23E-02	1.69E-01	1.78E-03
AM-241	5479.150	3.000	-0.187	2.000	3.0704	99.94000	-2.87E-04	3.00E-03	1.10E-02	2.61E-02	3.00E-03
CM-242	6102.000	15.000	10.000	5.000	4.3186	100.0000	1.62E-02	7.32E-03	1.54E-02	3.50E-02	7.25E-03
AM243	5270.000	683.000	682.000	1.000	1.0000	99.78000	1.05E+00	7.69E-02	3.58E-03	1.13E-02	4.02E-02
CM-247	4946.000	4.000	2.000	2.000	15.3366	79.30000	3.87E-03	4.74E-03	6.90E-02	1.43E-01	4.74E-03
CM-248	5078.600	6.000	6.000	0.000	22.1555	91.00000	1.01E-02	4.18E-03	8.69E-02	1.78E-01	4.13E-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: 940237  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148010\_AM  
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :78202  
AVERAGE %EFFICIENCY :29.7838  
% YIELD : 80.184

COUNT DATE:16-JAN-2010 11:29:47  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_AM.N
ID : 0244-B	ID : 0244-B	ID : 445-96-2-SS	BKG FILE : B035.CNF;1096
ISOTOPE : AM-241	ISOTOPE : AM-241	ISOTOPE : AM243	BKG DATE : 10-JAN-2010
PCI/G : 3.316E+01	PCI/G : 3.316E+01	NOMINAL : 2.91659 dpm	EFF FILE : W035.CNF;317
		RESULTS : 2.33863 dpm	CAL DATE : 4-JAN-2010

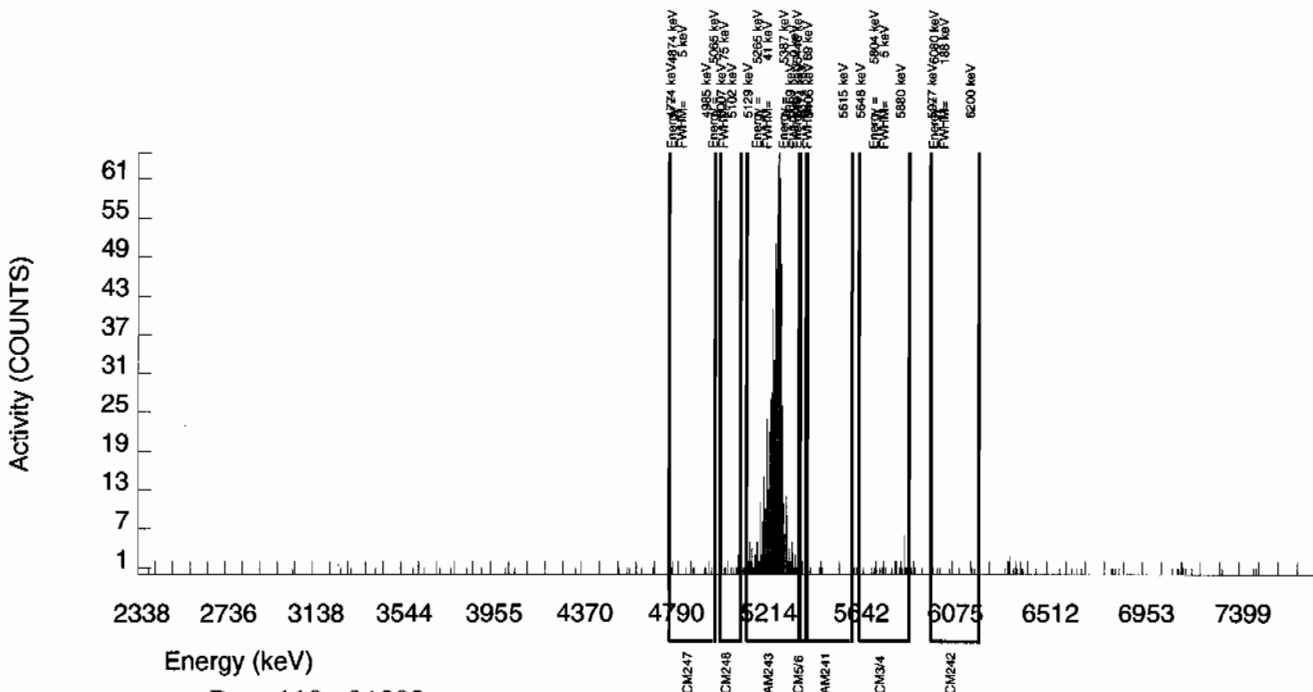
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	27.000	5.000	22.000	5.2338	100.0000	7.52E-03	1.05E-02	1.83E-02	4.07E-02	1.05E-02
CM-5/6	5386.000	1.000	0.000	1.000	19.8463	86.09000	-2.08E-10	2.47E-03	8.06E-02	1.66E-01	2.47E-03
AM-241	5479.150	4.000	0.790	2.000	3.0704	99.94000	1.19E-03	3.29E-03	1.07E-02	2.56E-02	3.29E-03
CM-242	6102.000	7.000	4.000	3.000	4.3186	100.0000	6.35E-03	5.03E-03	1.51E-02	3.43E-02	5.02E-03
AM243	5270.000	699.000	695.000	4.000	2.0000	99.78000	1.05E+00	7.65E-02	7.01E-03	1.81E-02	3.99E-02
CM-247	4946.000	11.000	4.000	7.000	15.3366	79.30000	7.58E-03	8.05E-03	6.76E-02	1.40E-01	8.04E-03
CM-248	5078.600	13.000	11.000	2.000	22.1555	91.00000	1.82E-02	6.50E-03	8.51E-02	1.75E-01	6.40E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.				SAMPLE ID : S0244148012_AM SAMPLE QTY: 1.262 G			
DETECTOR NUMBER :45-149BB5 AVERAGE %EFFICIENCY :35.8566 % YIELD : 77.816				COUNT DATE:16-JAN-2010 11:29:51 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1			
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01		LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01		TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.26957 dpm		LIB FILE : ENV_ALPHA_AM.N BKG FILE : B037.CNF;1106 BKG DATE : 10-JAN-2010 EFF FILE : W037.CNF;305 CAL DATE : 4-JAN-2010	

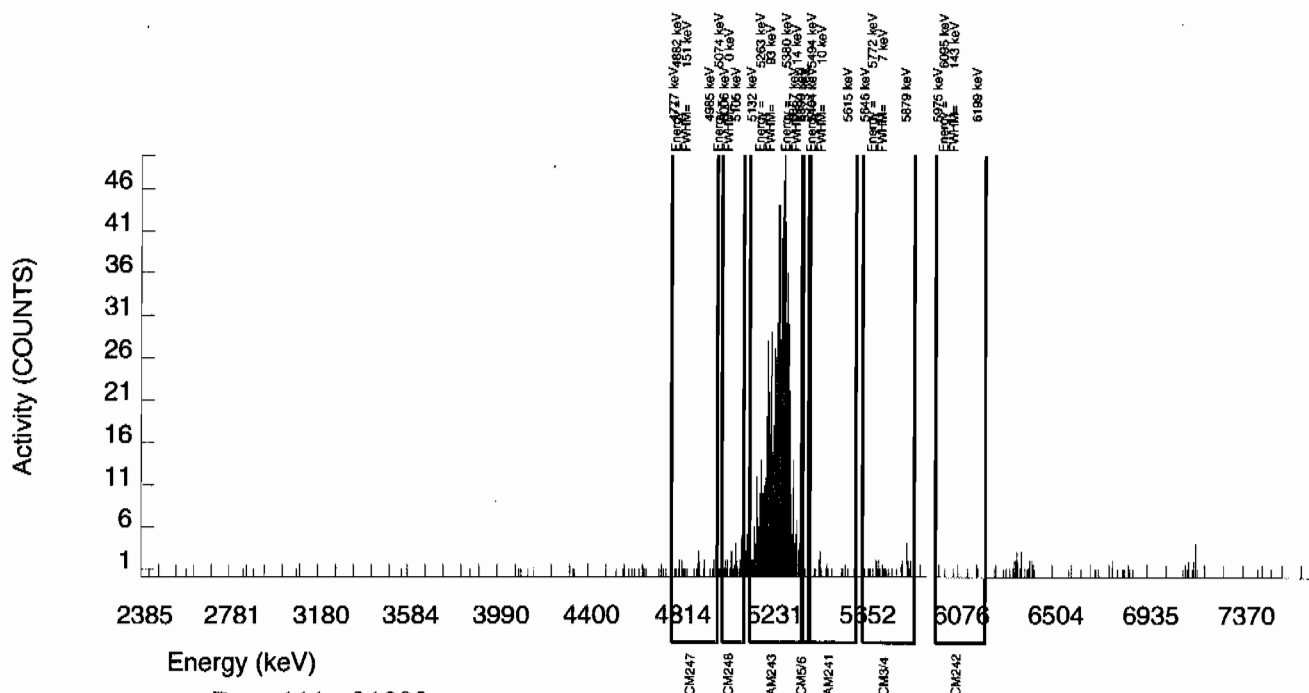
NUCLIDE ACTIVITY SUMMARY

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	30.000	-4.000	34.000	5.2338	100.0000	-5.12E-03	1.02E-02	1.56E-02	3.46E-02	1.02E-02
CM-5/6	5386.000	6.000	4.000	2.000	19.8463	86.09000	5.94E-03	4.22E-03	6.86E-02	1.41E-01	4.20E-03
AM-241	5479.150	15.000	2.587	11.000	3.0704	99.94000	3.31E-03	6.35E-03	9.14E-03	2.18E-02	6.35E-03
CM-242	6102.000	4.000	-8.000	12.000	4.3186	100.0000	-1.08E-02	5.40E-03	1.29E-02	2.92E-02	5.40E-03
AM243	5270.000	814.000	812.000	2.000	1.4142	99.78000	1.04E+00	7.29E-02	4.22E-03	1.19E-02	3.66E-02
CM-247	4946.000	24.000	17.000	7.000	15.3366	79.30000	2.74E-02	9.13E-03	5.76E-02	1.19E-01	8.98E-03
CM-248	5078.600	36.000	35.000	1.000	22.1555	91.00000	4.92E-02	9.05E-03	7.25E-02	1.49E-01	8.55E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148013_AM SAMPLE QTY: 1.259 G		
DETECTOR NUMBER :72532 AVERAGE %EFFICIENCY :33.8964 % YIELD : 87.790			COUNT DATE:16-JAN-2010 11:29:51 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.56049 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B038.CNF;1103 BKG DATE : 10-JAN-2010 EFF FILE : W038.CNF;319 CAL DATE : 4-JAN-2010		

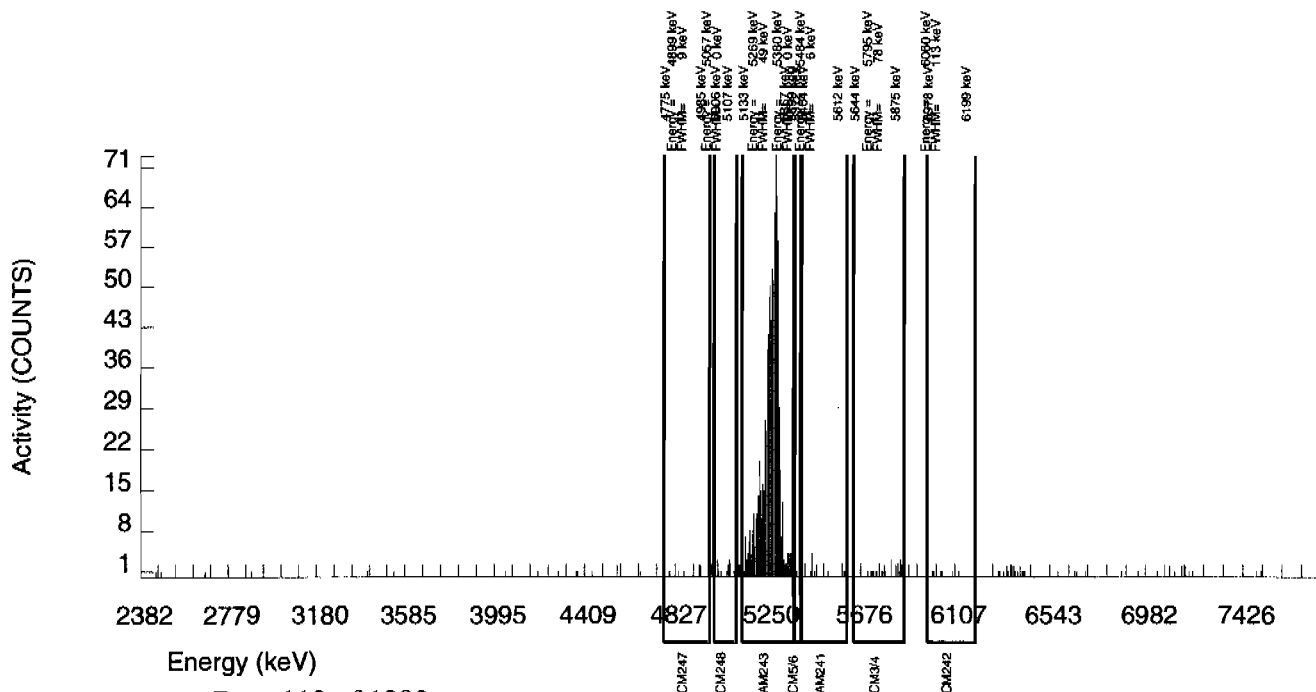
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	25.000	-1.000	26.000	5.2338	100.0000	-1.20E-03	8.60E-03	1.46E-02	3.25E-02	8.60E-03
CM-5/6	5386.000	2.000	2.000	0.000	19.8463	86.09000	2.79E-03	1.98E-03	6.45E-02	1.33E-01	1.98E-03
AM-241	5479.150	10.000	2.493	6.000	3.0704	99.94000	3.00E-03	4.58E-03	8.59E-03	2.04E-02	4.58E-03
CM-242	6102.000	6.000	5.000	1.000	4.3186	100.0000	6.35E-03	3.38E-03	1.21E-02	2.74E-02	3.36E-03
AM243	5270.000	870.000	866.000	4.000	2.0000	99.78000	1.04E+00	7.20E-02	5.61E-03	1.45E-02	3.56E-02
CM-247	4946.000	10.000	8.000	2.000	15.3366	79.30000	1.21E-02	5.30E-03	5.41E-02	1.12E-01	5.25E-03
CM-248	5078.600	22.000	22.000	0.000	22.1555	91.00000	2.91E-02	6.44E-03	6.81E-02	1.40E-01	6.20E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148014_AM SAMPLE QTY: 1.273 G		
DETECTOR NUMBER :45-149BB2 AVERAGE %EFFICIENCY :35.9356 % YIELD : 80.514			COUNT DATE:16-JAN-2010 11:29:51 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.34825 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B039.CNF;1103 BKG DATE : 10-JAN-2010 EFF FILE : W039.CNF;296 CAL DATE : 4-JAN-2010		

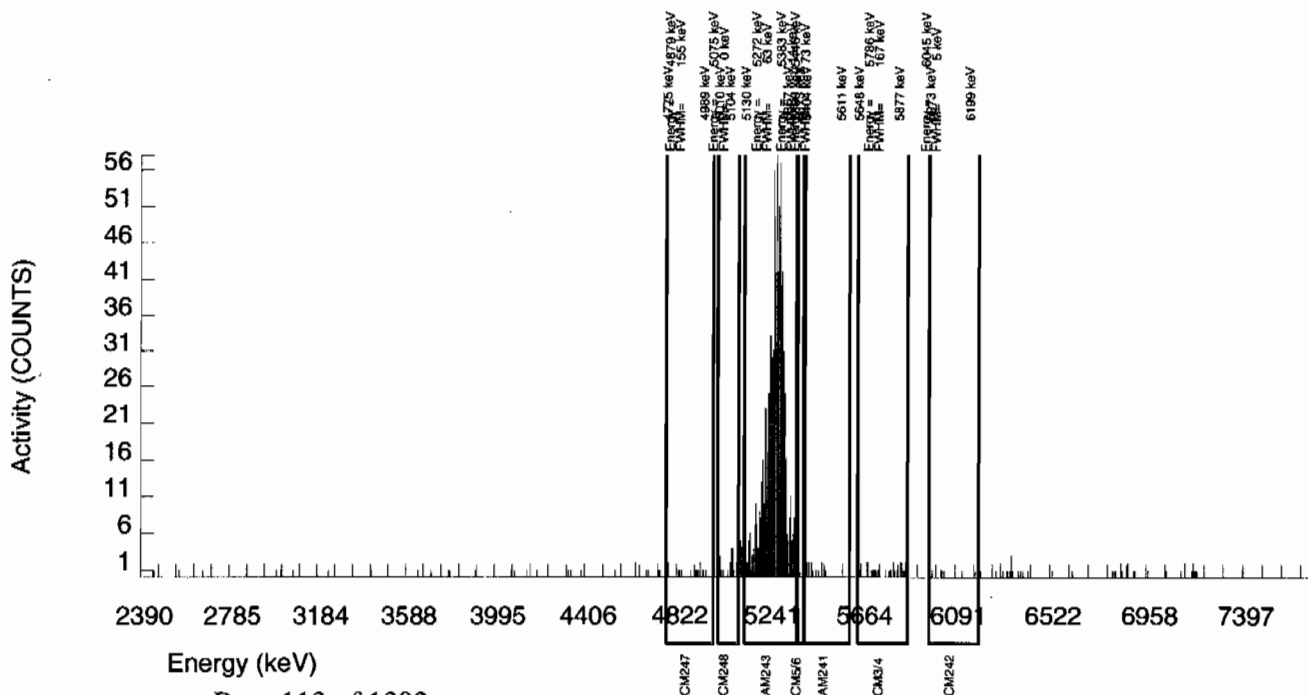
NUCLIDE ACTIVITY SUMMARY

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	27.000	5.000	22.000	5.2338	100.0000	6.12E-03	8.58E-03	1.49E-02	3.31E-02	8.57E-03
CM-5/6	5386.000	3.000	2.000	1.000	19.8463	86.09000	2.84E-03	2.85E-03	6.56E-02	1.35E-01	2.84E-03
AM-241	5479.150	15.000	2.535	11.000	3.0704	99.94000	3.10E-03	6.06E-03	8.74E-03	2.08E-02	6.06E-03
CM-242	6102.000	9.000	4.000	5.000	4.3186	100.0000	5.17E-03	4.84E-03	1.23E-02	2.79E-02	4.83E-03
AM243	5270.000	847.000	842.000	5.000	2.2361	99.78000	1.03E+00	7.17E-02	6.38E-03	1.61E-02	3.58E-02
CM-247	4946.000	18.000	18.000	0.000	15.3366	79.30000	2.78E-02	6.75E-03	5.50E-02	1.14E-01	6.54E-03
CM-248	5078.600	24.000	23.000	1.000	22.1555	91.00000	3.09E-02	6.97E-03	6.93E-02	1.42E-01	6.72E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148015_AM SAMPLE QTY: 1.276 G	
DETECTOR NUMBER :78773 AVERAGE %EFFICIENCY :32.1969 % YIELD : 88.155		COUNT DATE:16-JAN-2010 11:29:51 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.57113 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B040.CNF;1106 BKG DATE : 10-JAN-2010 EFF FILE : W040.CNF;315 CAL DATE : 4-JAN-2010

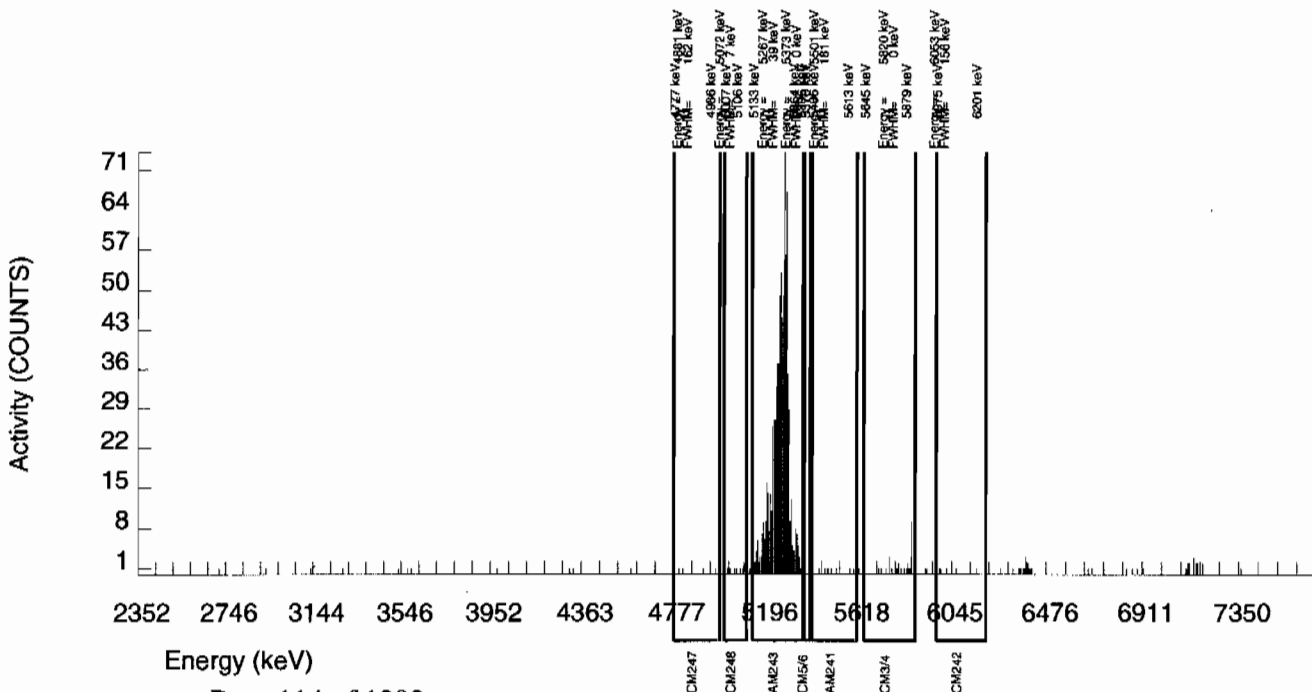
NUCLIDE ACTIVITY SUMMARY

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	24.000	5.000	19.000	5.2338	100.0000	6.23E-03	8.18E-03	1.51E-02	3.37E-02	8.17E-03
CM-5/6	5386.000	4.000	3.000	1.000	19.8463	86.09000	4.33E-03	3.24E-03	6.67E-02	1.37E-01	3.23E-03
AM-241	5479.150	9.000	7.562	0.000	3.0704	99.94000	9.41E-03	3.47E-03	8.89E-03	2.12E-02	3.42E-03
CM-242	6102.000	5.000	0.000	5.000	4.3186	100.0000	0.00E+00	4.15E-03	1.25E-02	2.84E-02	4.15E-03
AM243	5270.000	827.000	826.000	1.000	1.0000	99.78000	1.03E+00	7.18E-02	2.90E-03	9.18E-03	3.59E-02
CM-247	4946.000	4.000	4.000	0.000	15.3366	79.30000	6.27E-03	3.16E-03	5.60E-02	1.16E-01	3.14E-03
CM-248	5078.600	8.000	8.000	0.000	22.1555	91.00000	1.09E-02	3.92E-03	7.04E-02	1.45E-01	3.87E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.				SAMPLE ID : S0244148016_AM SAMPLE QTY: 1.255 G			
DETECTOR NUMBER :78205 AVERAGE %EFFICIENCY :32.6825 % YIELD : 86.320				COUNT DATE:16-JAN-2010 11:29:51 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1			
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01		LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01		TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.51759 dpm		LIB FILE : ENV_ALPHA_AM.N BKG FILE : B041.CNF;1099 BKG DATE : 10-JAN-2010 EFF FILE : W041.CNF;319 CAL DATE : 4-JAN-2010	

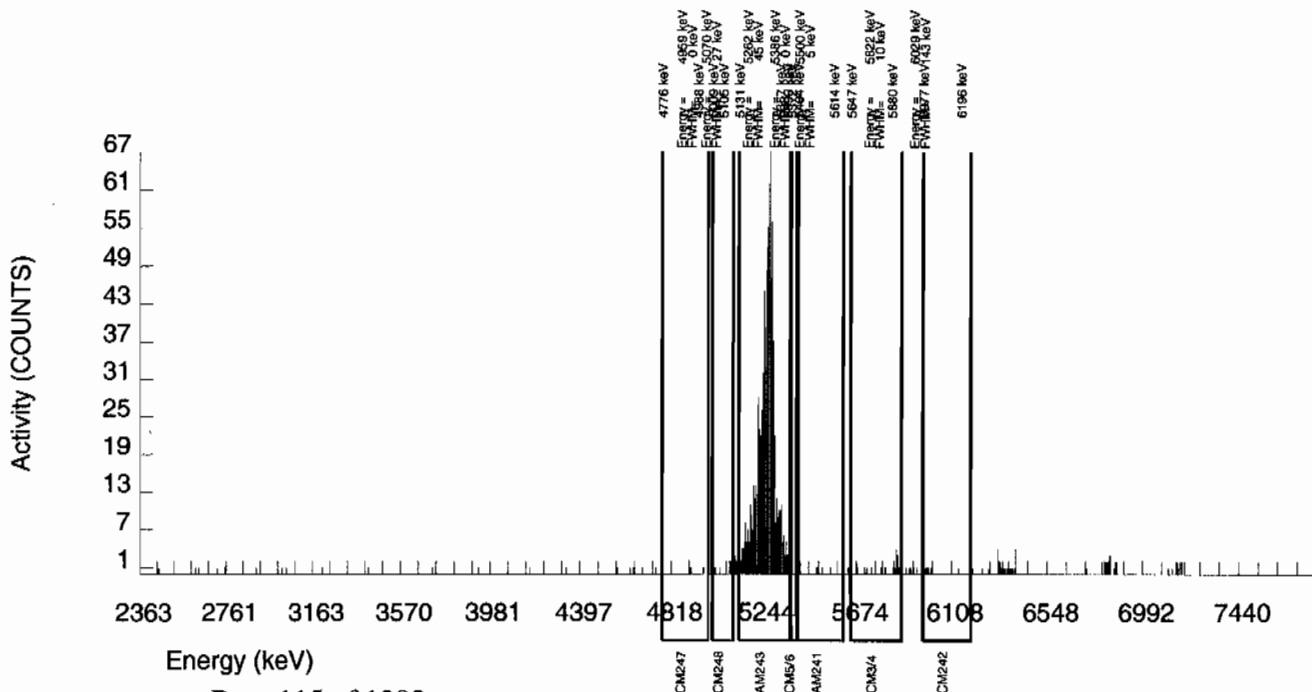
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	21.000	-3.000	24.000	5.2338	100.0000	-3.82E-03	8.55E-03	1.55E-02	3.44E-02	8.55E-03
CM-5/6	5386.000	1.000	1.000	0.000	19.8463	86.09000	1.48E-03	1.48E-03	6.82E-02	1.40E-01	1.48E-03
AM-241	5479.150	7.000	-0.429	6.000	3.0704	99.94000	-5.46E-04	4.33E-03	9.09E-03	2.16E-02	4.33E-03
CM-242	6102.000	6.000	4.000	2.000	4.3186	100.0000	5.37E-03	3.81E-03	1.28E-02	2.90E-02	3.80E-03
AM243	5270.000	823.000	821.000	2.000	1.4142	99.78000	1.05E+00	7.31E-02	4.19E-03	1.18E-02	3.66E-02
CM-247	4946.000	6.000	6.000	0.000	15.3366	79.30000	9.63E-03	3.97E-03	5.72E-02	1.19E-01	3.93E-03
CM-248	5078.600	11.000	10.000	1.000	22.1555	91.00000	1.40E-02	4.92E-03	7.21E-02	1.48E-01	4.84E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148017_AM SAMPLE QTY: 1.281 G		
DETECTOR NUMBER :78793 AVERAGE %EFFICIENCY :33.4897 % YIELD : 77.262			COUNT DATE:16-JAN-2010 11:29:51 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.25342 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B042.CNF;1098 BKG DATE : 10-JAN-2010 EFF FILE : W042.CNF;292 CAL DATE : 4-JAN-2010		

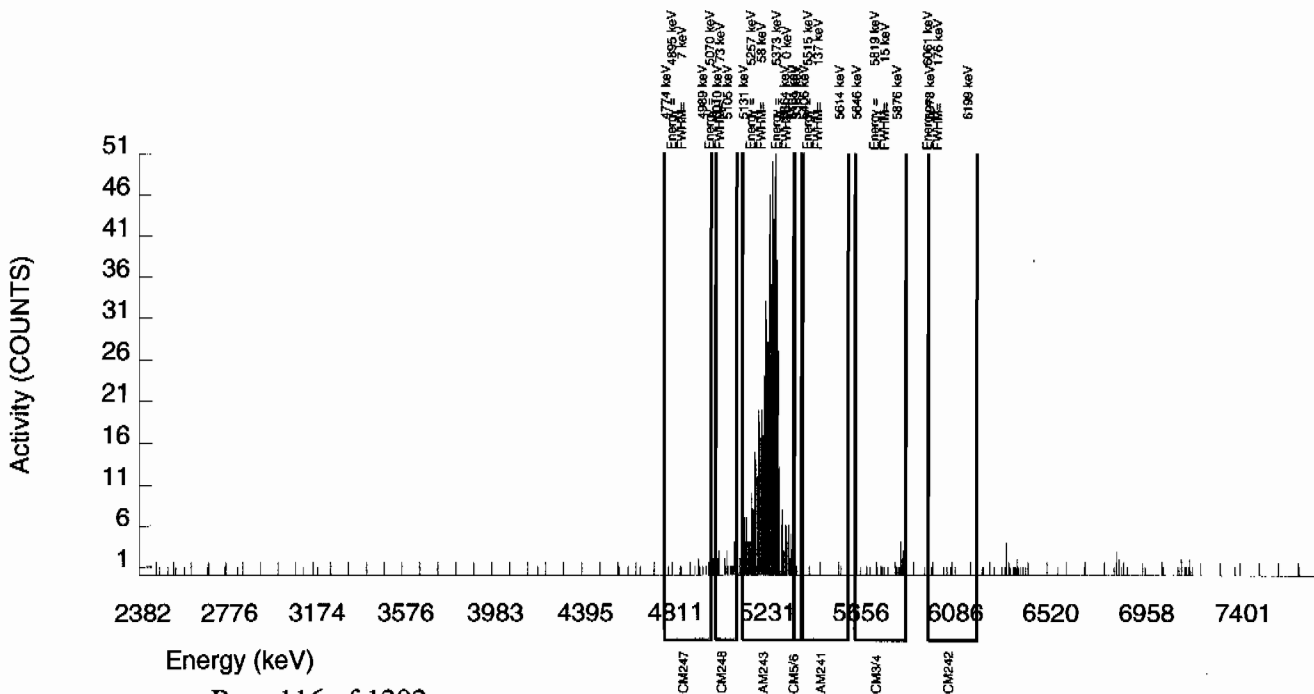
NUCLIDE ACTIVITY SUMMARY

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	22.000	2.000	20.000	5.2338	100.0000	2.72E-03	8.82E-03	1.65E-02	3.68E-02	8.82E-03
CM-5/6	5386.000	4.000	4.000	0.000	19.8463	86.09000	6.31E-03	3.18E-03	7.29E-02	1.50E-01	3.16E-03
AM-241	5479.150	2.000	-2.311	3.000	3.0704	99.94000	-3.14E-03	2.72E-03	9.71E-03	2.31E-02	2.72E-03
CM-242	6102.000	8.000	7.000	1.000	4.3186	100.0000	1.00E-02	4.35E-03	1.37E-02	3.10E-02	4.31E-03
AM243	5270.000	756.000	753.000	3.000	1.7321	99.78000	1.03E+00	7.33E-02	5.49E-03	1.47E-02	3.75E-02
CM-247	4946.000	10.000	10.000	0.000	15.3366	79.30000	1.71E-02	5.52E-03	6.11E-02	1.27E-01	5.42E-03
CM-248	5078.600	21.000	20.000	1.000	22.1555	91.00000	2.99E-02	7.24E-03	7.70E-02	1.58E-01	7.00E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148018_AM SAMPLE QTY: 1.274 G		
DETECTOR NUMBER :76543 AVERAGE %EFFICIENCY :34.3031 % YIELD : 89.955			COUNT DATE:16-JAN-2010 11:29:55 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.62362 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B043.CNF;1096 BKG DATE : 10-JAN-2010 EFF FILE : W043.CNF;284 CAL DATE : 4-JAN-2010		

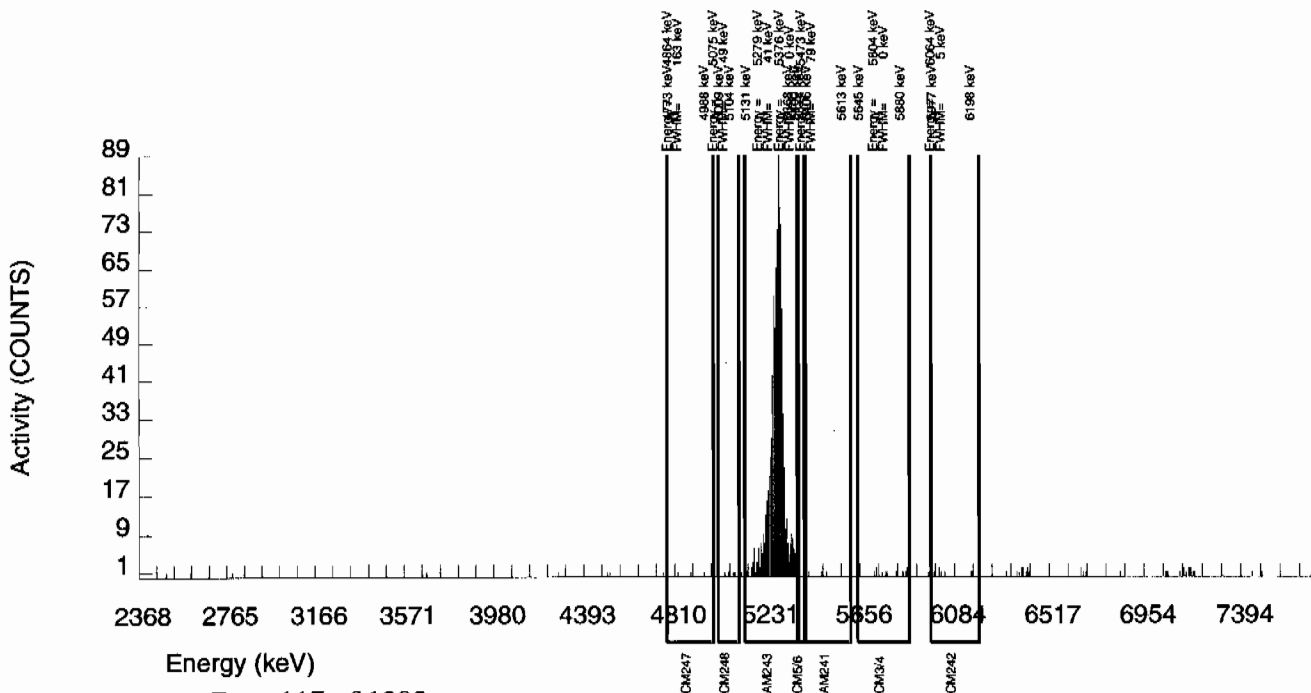
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	17.000	-4.000	21.000	5.2338	100.0000	-4.59E-03	7.07E-03	1.40E-02	3.10E-02	7.07E-03
CM-5/6	5386.000	7.000	7.000	0.000	19.8463	86.09000	9.32E-03	3.56E-03	6.15E-02	1.27E-01	3.52E-03
AM-241	5479.150	3.000	-1.563	3.000	3.0704	99.94000	-1.79E-03	2.42E-03	8.19E-03	1.95E-02	2.42E-03
CM-242	6102.000	7.000	3.000	4.000	4.3186	100.0000	3.63E-03	4.02E-03	1.15E-02	2.61E-02	4.01E-03
AM243	5270.000	899.000	898.000	1.000	1.0000	99.78000	1.03E+00	7.04E-02	2.67E-03	8.46E-03	3.45E-02
CM-247	4946.000	4.000	2.000	2.000	15.3366	79.30000	2.89E-03	3.54E-03	5.16E-02	1.07E-01	3.54E-03
CM-248	5078.600	5.000	4.000	1.000	22.1555	91.00000	5.04E-03	3.10E-03	6.49E-02	1.33E-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: 940237 SAMPLE DATE : 13-JAN-2010 00:00:00		SAMPLE ID : S1202012062_AM SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :79459 AVERAGE %EFFICIENCY :34.8103 % YIELD : 88.151		COUNT DATE:16-JAN-2010 11:29:55 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91658 dpm RESULTS : 2.57099 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B044.CNF;1106 BKG DATE : 10-JAN-2010 EFF FILE : W044.CNF;305 CAL DATE : 4-JAN-2010

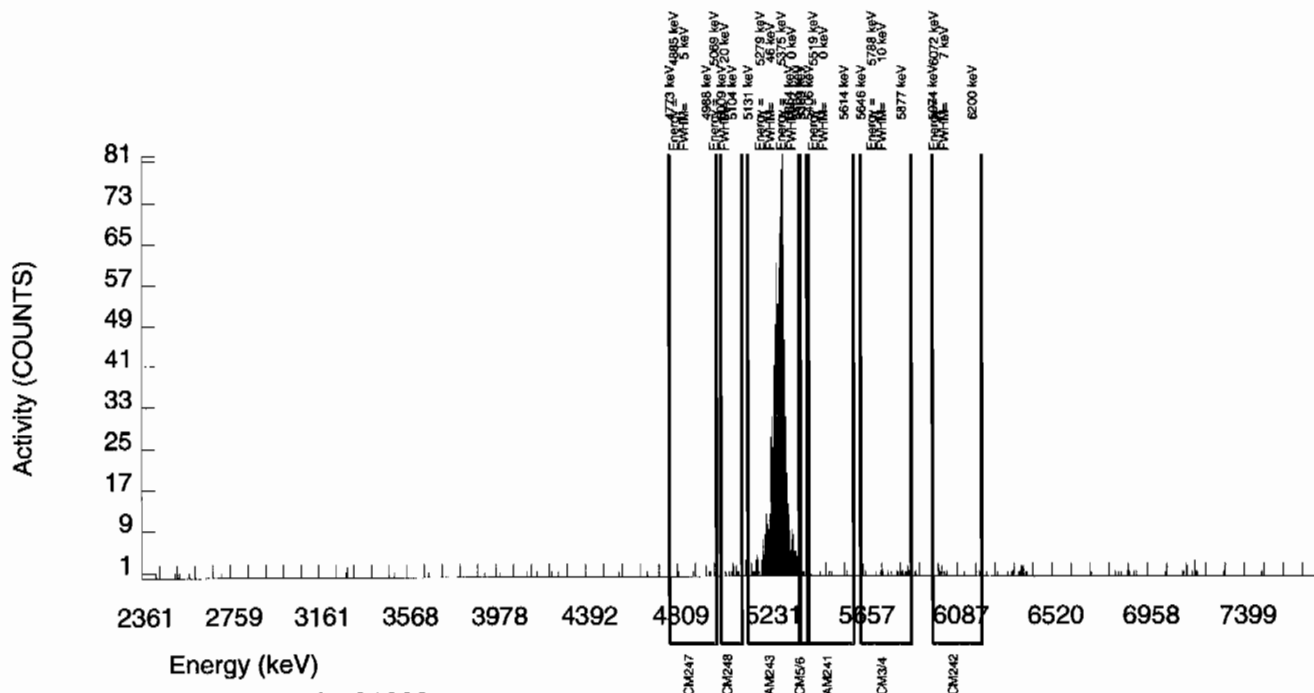
NUCLIDE ACTIVITY SUMMARY

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	17.000	0.000	17.000	5.2338	100.0000	0.00E+00	8.56E-03	1.79E-02	3.97E-02	8.56E-03
CM-5/6	5386.000	11.000	11.000	0.000	19.8463	86.09000	1.88E-02	5.76E-03	7.87E-02	1.62E-01	5.66E-03
AM-241	5479.150	6.000	2.446	2.000	3.0704	99.94000	3.59E-03	3.74E-03	1.05E-02	2.50E-02	3.73E-03
CM-242	6102.000	9.000	8.000	1.000	4.3186	100.0000	1.19E-02	4.77E-03	1.47E-02	3.35E-02	4.72E-03
AM243	5270.000	893.000	893.000	0.000	0.0000	99.78000	1.31E+00	8.98E-02	0.00E+00	3.99E-03	4.40E-02
CM-247	4946.000	8.000	7.000	1.000	15.3366	79.30000	1.30E-02	5.61E-03	6.60E-02	1.37E-01	5.55E-03
CM-248	5078.600	12.000	12.000	0.000	22.1555	91.00000	1.94E-02	5.71E-03	8.31E-02	1.71E-01	5.59E-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: 940237 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S1202012063_AM SAMPLE QTY: 1.257 G		
DETECTOR NUMBER :78783 AVERAGE %EFFICIENCY :33.6899 % YIELD : 80.679			COUNT DATE:16-JAN-2010 11:29:55 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.35307 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B045.CNF;1095 BKG DATE : 10-JAN-2010 EFF FILE : W045.CNF;296 CAL DATE : 4-JAN-2010		

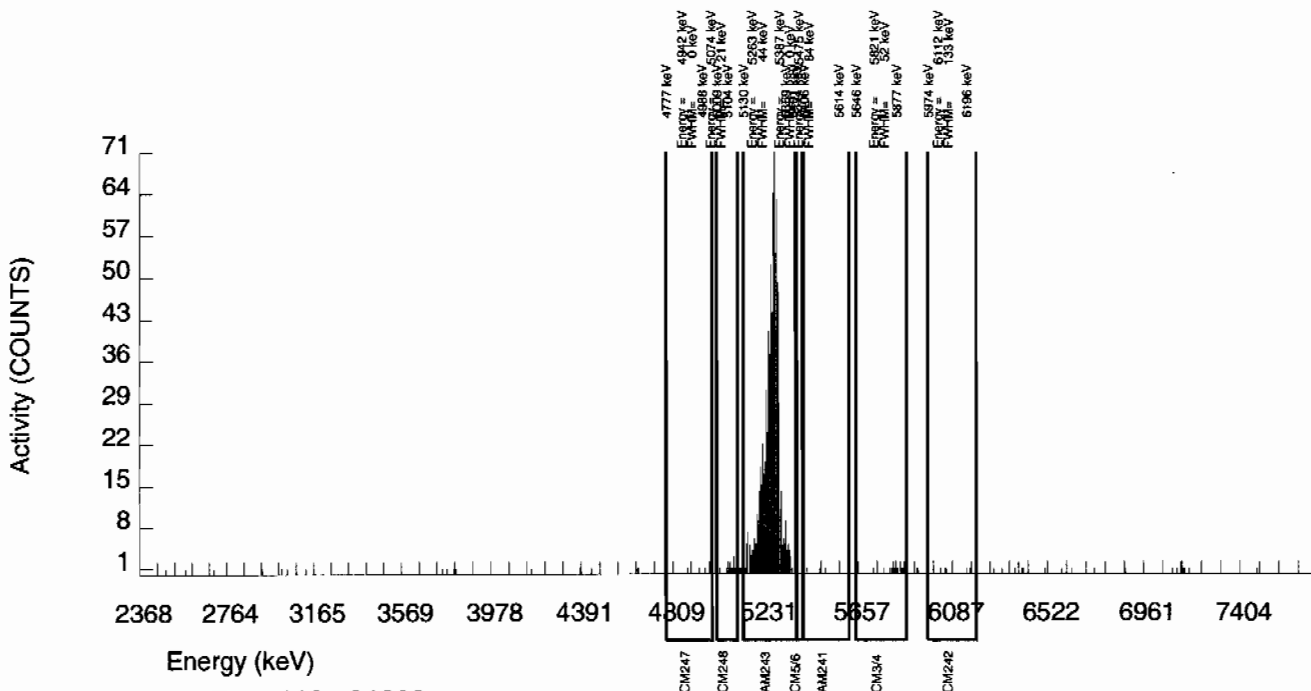
NUCLIDE ACTIVITY SUMMARY

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	-1.000	17.000	5.2338	100.0000	-1.32E-03	7.58E-03	1.61E-02	3.57E-02	7.58E-03
CM-5/6	5386.000	0.000	0.000	0.000	19.8463	86.09000	0.00E+00	1.53E-03	7.07E-02	1.46E-01	1.53E-03
AM-241	5479.150	3.000	1.623	0.000	3.0704	99.94000	2.14E-03	1.69E-03	9.42E-03	2.24E-02	1.68E-03
CM-242	6102.000	6.000	4.000	2.000	4.3186	100.0000	5.57E-03	3.95E-03	1.32E-02	3.01E-02	3.94E-03
AM243	5270.000	793.000	791.000	2.000	1.4142	99.78000	1.05E+00	7.37E-02	4.35E-03	1.23E-02	3.73E-02
CM-247	4946.000	4.000	3.000	1.000	15.3366	79.30000	4.99E-03	3.73E-03	5.93E-02	1.23E-01	3.72E-03
CM-248	5078.600	12.000	12.000	0.000	22.1555	91.00000	1.74E-02	5.13E-03	7.47E-02	1.53E-01	5.02E-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: 940237  
SAMPLE DATE : 13-JAN-2010 00:00:00

SAMPLE ID : S1202012064\_AM  
SAMPLE QTY: 0.102 G

DETECTOR NUMBER :76544  
AVERAGE %EFFICIENCY :33.8926  
% YIELD : 97.128

COUNT DATE:16-JAN-2010 11:29:55  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91658 dpm  
RESULTS : 2.83281 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B046.CNF;1106  
BKG DATE : 10-JAN-2010  
EFF FILE : W046.CNF;287  
CAL DATE : 4-JAN-2010

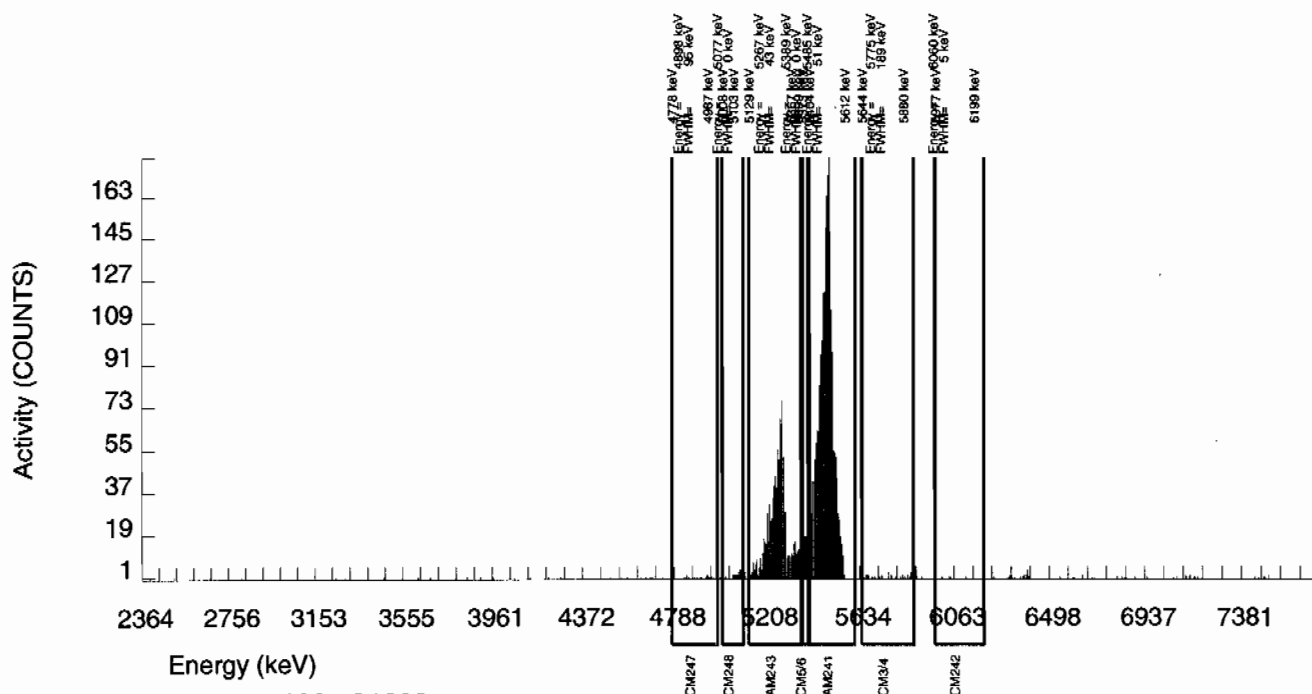
NUCLIDE ACTIVITY SUMMARY

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	28.000	3.000	25.000	5.2338	100.0000	4.03E-02	9.77E-02	1.63E-01	3.63E-01	9.77E-02
CM-5/6	5386.000	96.000	96.000	0.000	19.8463	86.09000	1.50E+00	1.83E-01	7.19E-01	1.48E+00	1.53E-01
AM-241	5479.150	2289.000	2284.333	3.000	3.0704	99.94000	3.07E+01	2.15E+00	9.59E-02	2.28E-01	6.42E-01
CM-242	6102.000	8.000	4.000	4.000	4.3186	100.0000	5.45E-02	4.74E-02	1.35E-01	3.06E-01	4.72E-02
AM243	5270.000	960.000	958.000	2.000	1.4142	99.78000	1.29E+01	9.57E-01	4.42E-02	1.25E-01	4.17E-01
CM-247	4946.000	17.000	16.000	1.000	15.3366	79.30000	2.71E-01	7.40E-02	6.04E-01	1.25E+00	7.18E-02
CM-248	5078.600	28.000	28.000	0.000	22.1555	91.00000	4.13E-01	8.27E-02	7.60E-01	1.56E+00	7.80E-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, Rev10

Batch# 940239 Product: Pu Date: 1/20/10

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 stated.	✓		
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: E. [Signature] 1/20/10

Secondary Review Performed By: JapLM 1/21/10

LANL

1/25 - 2/5

# Plutonium Que Sheet

11-JAN-10

Internal Due Date: 25-JAN-10

Analyst: MXE1 First Client Due Date: 05-FEB-10

Vol: 0.1

Expiration Date: 12/18/10

Vol: 1

Expiration Date: 1

Vol: 1

Expiration Date: 1

Witness: JBO 01/14/10

Balance ID: 50410272

Pipet ID: 2411058

Initials: MZ

Prep Date: 1/13/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l)	Pu Det #
244148001-1	RE12-10-7619	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	1	1	1.261	43
244148002-1	RE12-10-7618	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	2	2	1.258	44
244148003-1	RE12-10-7623	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	3	3	1.264	45
244148004-1	RE12-10-7622	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	4	4	1.251	46
244148005-1	RE12-10-7621	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	5	5	1.254	47
244148006-1	RE12-10-7617	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	6	6	1.256	48
244148007-1	RE12-10-7620	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	7	7	1.266	65
244148008-1	RE12-10-7624	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	8	8	1.278	66
244148009-1	RE12-10-7630	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	9	9	1.253	67
244148010-1	RE12-10-7628	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	10	10	1.255	68
244148011-1	RE12-10-7632	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	11	11	1.270	69
244148012-1	RE12-10-7629	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	12	12	1.262	70
244148013-1	RE12-10-7626	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	13	13	1.259	71
244148014-1	RE12-10-7631	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	14	14	1.273	72
244148015-1	RE12-10-7627	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	15	15	1.276	73
244148016-1	RE12-10-7625	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	16	16	1.255	74
244148017-1	RE12-10-7656	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	17	17	1.281	75
244148018-1	RE12-10-7655	SAMPLE	.05 pCi/g		SOIL	LANL010	04-JAN-10	18	18	1.274	76
1202012073-1	MB for batch 940239	MB	.05 pCi/g		SOIL	QC ACCOUNT		19	19	1	77
1202012074-1	RE12-10-7655(244148018DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	04-JAN-10	20	20	1.257	78
1202012075-1	LCS for batch 940239	LCS	.05 pCi/g		SOIL	QC ACCOUNT		21	21	0.102	79

\*SRM 0244-B

Exp: 4/30/20

Solid Sample Dissolution by: SEARCH or DIGESTION  
Circle One

Choose SOP Used: GL-RAD-A-011, GL-RAD-A-036, GL-RAD-A-045, GL-RAD-A-043

Data Reviewed By: E. Smith 1/22/10

1/22/10

# Blank Correction Report

Batch ID 940239

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202012074	DUP	Plutonium-238	1.26 g	-0.00134	0.00445	0.0222	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00	0.0018	0.0254	.001365079	pCi/g	YES
1202012075	LCS	Plutonium-238	0.102 g	7.95	0.573	0.225	-.05058824	pCi/g	NO
		Plutonium-239/240	0.102 g	37.6	2.33	0.257	.016862745	pCi/g	NO
1202012073	MB	Plutonium-238	1.00 g	-0.00516	0.0062	0.0284	-.00516	pCi/g	NO
		Plutonium-239/240	1.00 g	0.00172	0.00384	0.0325	.00172	pCi/g	YES
244148001	RE12-10-7619	Plutonium-238	1.26 g	-0.0012	0.00268	0.0198	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	-1.43E-10	0.0017	0.0227	.001365079	pCi/g	YES
244148002	RE12-10-7618	Plutonium-238	1.26 g	0.00238	0.00239	0.0197	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0286	0.00647	0.0225	.001365079	pCi/g	NO
244148003	RE12-10-7623	Plutonium-238	1.26 g	0.00	0.00126	0.0208	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00252	0.00253	0.0239	.001365079	pCi/g	YES
244148004	RE12-10-7622	Plutonium-238	1.25 g	0.00113	0.003	0.0187	-.004128	pCi/g	NO
		Plutonium-239/240	1.25 g	-1.35E-10	0.0016	0.0214	.001376	pCi/g	YES
244148005	RE12-10-7621	Plutonium-238	1.25 g	0.00696	0.00569	0.0192	-.004128	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0058	0.00349	0.0219	.001376	pCi/g	YES
244148006	RE12-10-7617	Plutonium-238	1.26 g	-0.00689	0.00632	0.0228	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.00276	0.00477	0.026	.001365079	pCi/g	YES
244148007	RE12-10-7620	Plutonium-238	1.27 g	0.00875	0.00547	0.0206	-.00406299	pCi/g	NO
		Plutonium-239/240	1.27 g	0.00	0.00353	0.0236	.001354331	pCi/g	YES
244148008	RE12-10-7624	Plutonium-238	1.28 g	0.00141	0.00732	0.0233	-.00403125	pCi/g	NO
		Plutonium-239/240	1.28 g	0.00423	0.00316	0.0266	.00134375	pCi/g	YES
244148009	RE12-10-7630	Plutonium-238	1.25 g	-0.00122	0.00442	0.0202	-.004128	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00122	0.00212	0.0231	.001376	pCi/g	YES
244148010	RE12-10-7628	Plutonium-238	1.26 g	0.00725	0.00326	0.0239	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.00145	0.00324	0.0274	.001365079	pCi/g	YES
244148011	RE12-10-7632	Plutonium-238	1.27 g	0.00	0.0032	0.0264	-.00406299	pCi/g	NO
		Plutonium-239/240	1.27 g	0.00	0.0032	0.0303	.001354331	pCi/g	YES
244148012	RE12-10-7629	Plutonium-238	1.26 g	-0.00106	0.00281	0.0175	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.00425	0.00451	0.0201	.001365079	pCi/g	YES
244148013	RE12-10-7626	Plutonium-238	1.26 g	-0.00967	0.00513	0.020	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00121	0.0027	0.0228	.001365079	pCi/g	YES
244148014	RE12-10-7631	Plutonium-238	1.27 g	0.00233	0.00618	0.0193	-.00406299	pCi/g	NO
		Plutonium-239/240	1.27 g	0.00117	0.00387	0.022	.001354331	pCi/g	YES
244148015	RE12-10-7627	Plutonium-238	1.28 g	0.00126	0.00126	0.0207	-.00403125	pCi/g	NO
		Plutonium-239/240	1.28 g	0.0126	0.00592	0.0237	.00134375	pCi/g	NO
244148016	RE12-10-7625	Plutonium-238	1.26 g	-0.00389	0.00259	0.0214	-.00409524	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00389	0.0039	0.0245	.001365079	pCi/g	YES
244148017	RE12-10-7656	Plutonium-238	1.28 g	0.00125	0.00125	0.0206	-.00403125	pCi/g	NO

1/21/10



## Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
244148017	RE12-10-7656	Plutonium-239/240	1.28 g	0.0112	0.00378	0.0235	.00134375	pCi/g	NO
244148018	RE12-10-7655	Plutonium-238	1.27 g	0.00129	0.0013	0.0214	-.00406299	pCi/g	NO
		Plutonium-239/240	1.27 g	0.00129	0.00224	0.0245	.001354331	pCi/g	YES

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148001\_PU  
SAMPLE QTY: 1.261 G

DETECTOR NUMBER :76543  
AVERAGE %EFFICIENCY :34.3031  
% YIELD : 86.971

COUNT DATE:14-JAN-2010 17:50:35  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

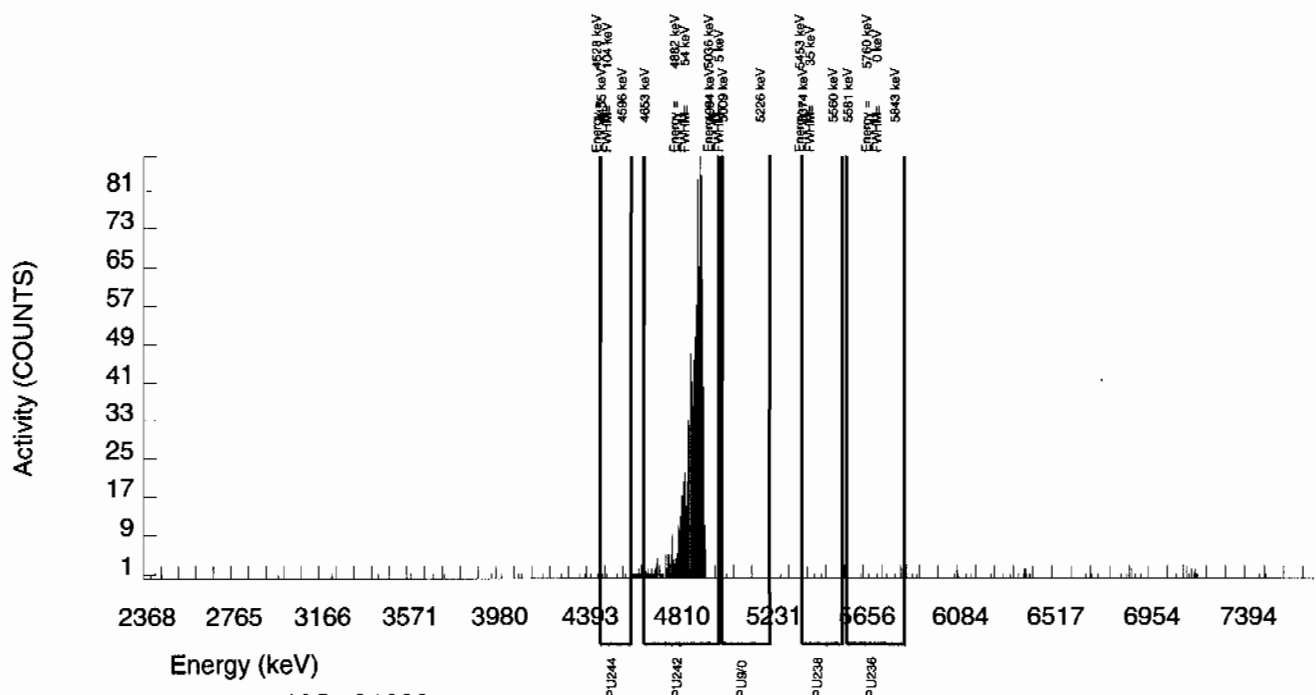
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.94434 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B043.CNF;1096  
BKG DATE : 10-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	1.000	0.000	1.000	3.4797	99.90000	-1.43E-10	1.70E-03	9.70E-03	2.27E-02	1.70E-03
PU-236	5749.000	7.000	-6.000	13.000	2.1286	100.0000	-7.24E-03	5.39E-03	5.93E-03	1.51E-02	5.39E-03
PU-238	5499.000	2.000	-1.000	3.000	2.9680	99.90000	-1.20E-03	2.68E-03	8.28E-03	1.98E-02	2.68E-03
PU242	4890.000	1012.000	1010.000	2.000	1.4142	100.0000	1.21E+00	7.22E-02	3.94E-03	1.11E-02	3.81E-02
PU-244	4589.000	5.000	5.000	0.000	5.2050	99.90000	5.99E-03	2.70E-03	1.45E-02	3.23E-02	2.68E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



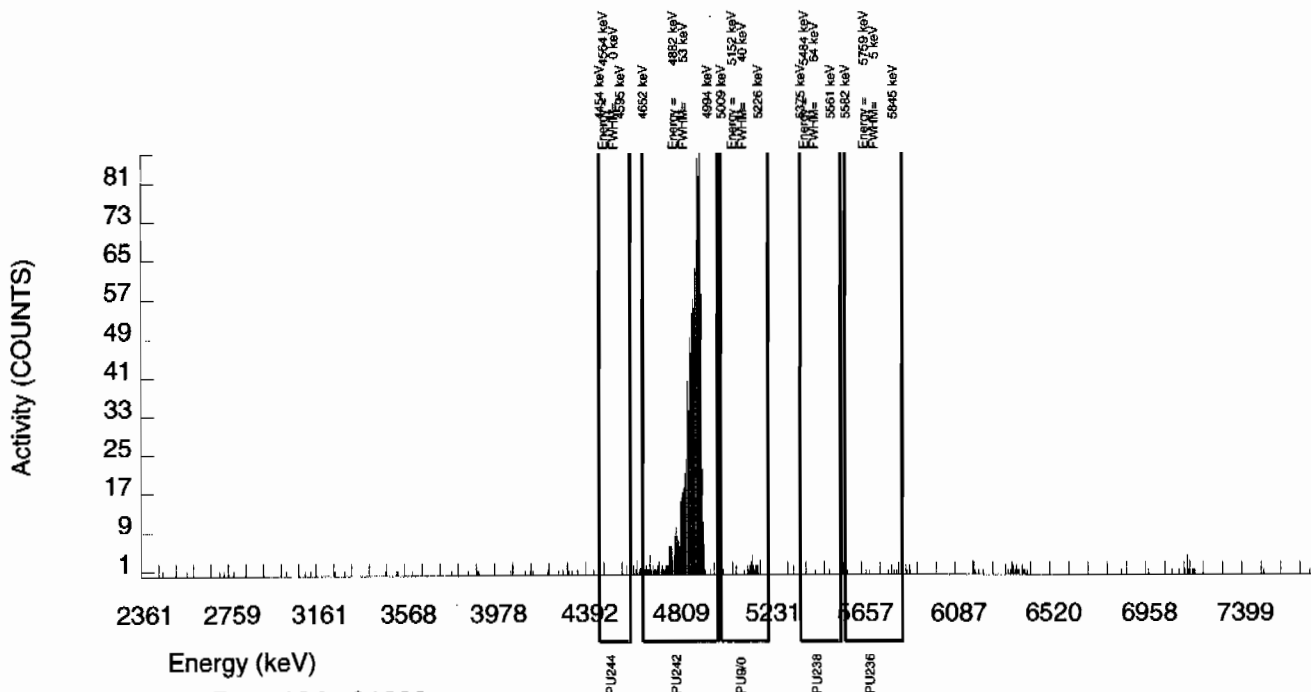
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148002_PU SAMPLE QTY: 1.258 G	
DETECTOR NUMBER :79459 AVERAGE %EFFICIENCY :34.8103 % YIELD : 86.467		COUNT DATE:14-JAN-2010 17:50:35 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.92729 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B044.CNF;1106 BKG DATE : 10-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
PU-9/0	5155.000	26.000	24.000	2.000	3.4797	99.90000	2.86E-02	6.47E-03	9.64E-03	2.25E-02	6.30E-03
PU-236	5749.000	11.000	1.000	10.000	2.1286	100.0000	1.20E-03	5.49E-03	5.89E-03	1.50E-02	5.49E-03
PU-238	5499.000	3.000	2.000	1.000	2.9680	99.90000	2.38E-03	2.39E-03	8.22E-03	1.97E-02	2.38E-03
PU242	4890.000	1020.000	1019.000	1.000	1.0000	100.0000	1.21E+00	7.22E-02	2.77E-03	8.76E-03	3.80E-02
PU-244	4589.000	6.000	6.000	0.000	5.2050	99.90000	7.14E-03	2.94E-03	1.44E-02	3.21E-02	2.92E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



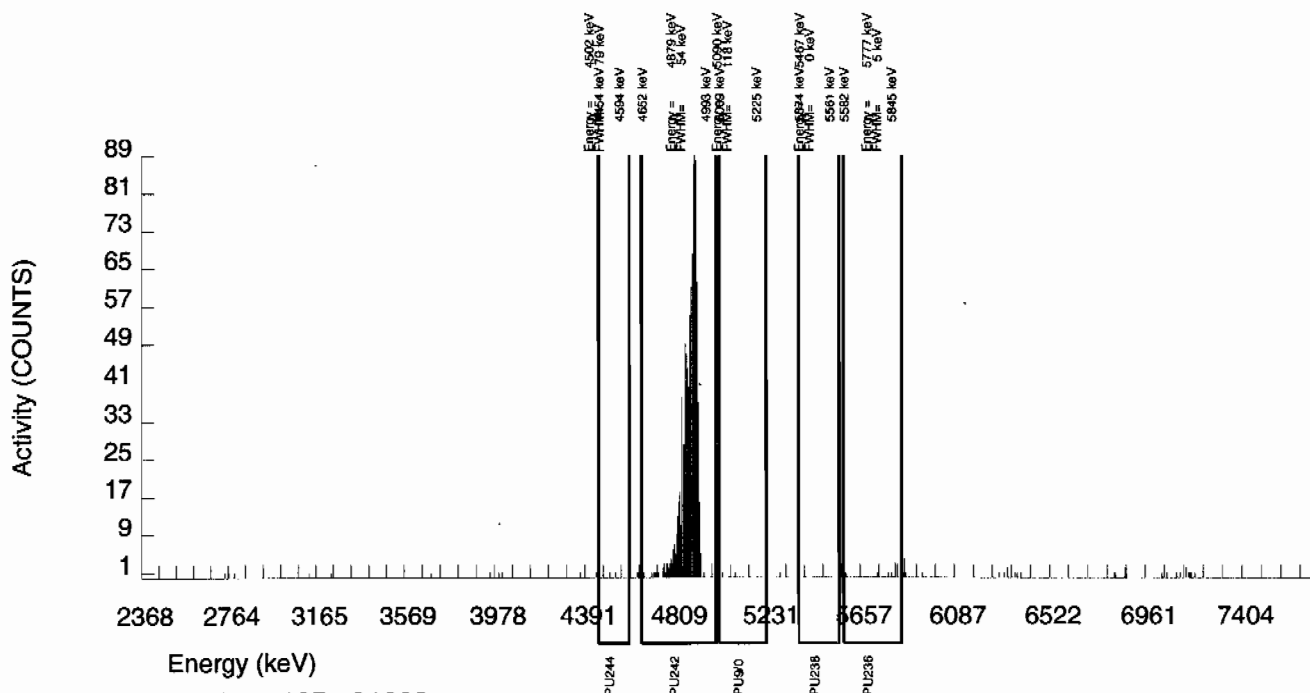
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148003_PU SAMPLE QTY: 1.264 G		
DETECTOR NUMBER :78783 AVERAGE %EFFICIENCY :33.6899 % YIELD : 83.907			COUNT DATE:14-JAN-2010 17:50:35 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.84062 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B045.CNF;1095 BKG DATE : 10-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
PU-9/0	5155.000	3.000	2.000	1.000	3.4797	99.90000	2.52E-03	2.53E-03	1.02E-02	2.39E-02	2.52E-03
PU-236	5749.000	9.000	0.000	9.000	2.1286	100.0000	-1.21E-09	5.39E-03	6.24E-03	1.59E-02	5.39E-03
PU-238	5499.000	0.000	0.000	0.000	2.9680	99.90000	0.00E+00	1.26E-03	8.71E-03	2.08E-02	1.26E-03
PU242	4890.000	959.000	957.000	2.000	1.4142	100.0000	1.21E+00	7.32E-02	4.15E-03	1.17E-02	3.91E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.52E-03	2.53E-03	1.53E-02	3.40E-02	2.52E-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

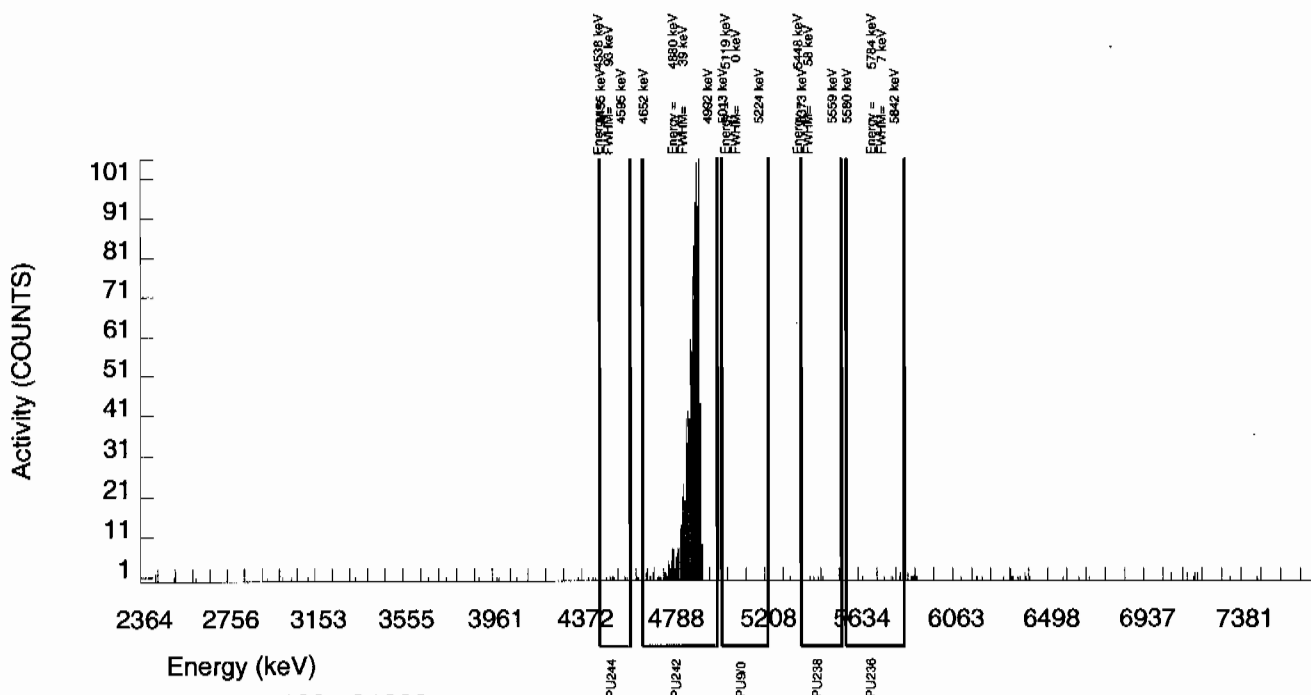
BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148004_PU SAMPLE QTY: 1.251 G	
DETECTOR NUMBER :76544 AVERAGE %EFFICIENCY :33.8926 % YIELD : 93.950		COUNT DATE:14-JAN-2010 17:50:35 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.18063 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B046.CNF;1106 BKG DATE : 10-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
PU-9/0	5155.000	1.000	0.000	1.000	3.4797	99.90000	-1.35E-10	1.60E-03	9.16E-03	2.14E-02	1.60E-03
PU-236	5749.000	7.000	-10.000	17.000	2.1286	100.0000	-1.14E-02	5.58E-03	5.60E-03	1.43E-02	5.58E-03
PU-238	5499.000	4.000	1.000	3.000	2.9680	99.90000	1.13E-03	3.00E-03	7.82E-03	1.87E-02	3.00E-03
PU242	4890.000	1081.000	1078.000	3.000	1.7321	100.0000	1.22E+00	7.16E-02	4.56E-03	1.22E-02	3.72E-02
PU-244	4589.000	8.000	7.000	1.000	5.2050	99.90000	7.92E-03	3.42E-03	1.37E-02	3.05E-02	3.40E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



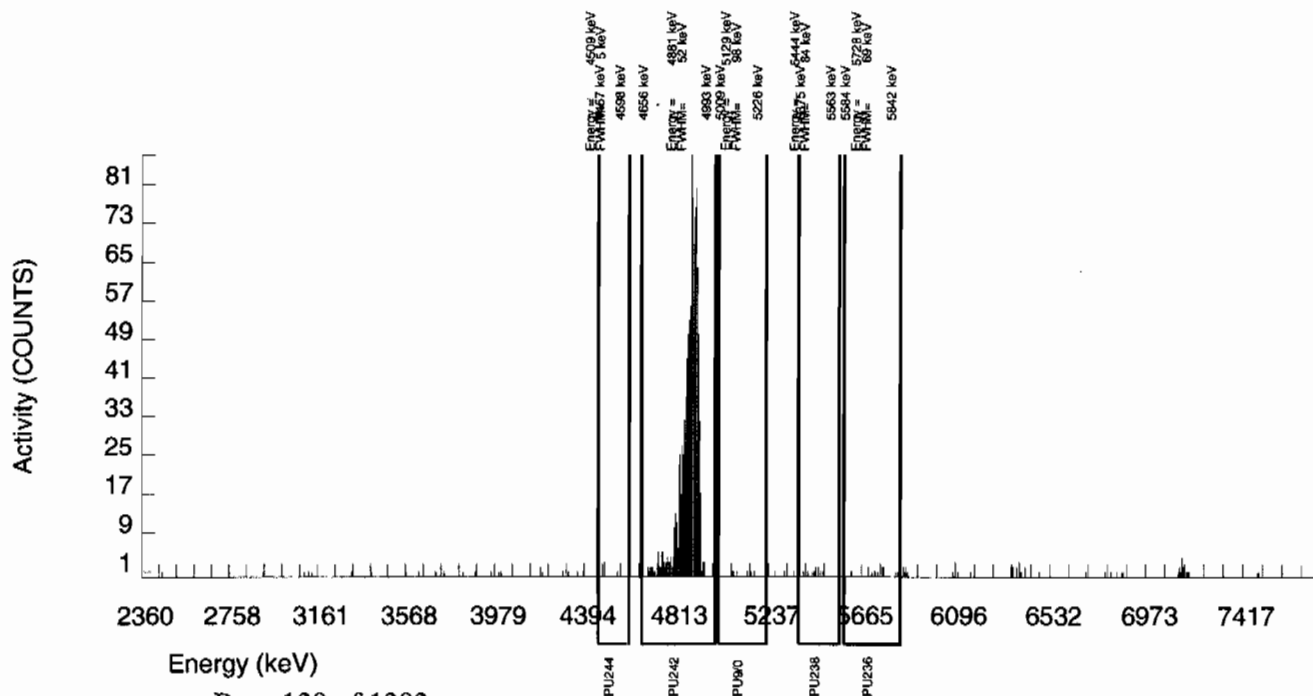
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148005_PU SAMPLE QTY: 1.254 G	
DETECTOR NUMBER :46-089B1 AVERAGE %EFFICIENCY :34.5024 % YIELD : 89.893		COUNT DATE:14-JAN-2010 17:50:35 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.04326 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B047.CNF;1101 BKG DATE : 10-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	7.000	5.000	2.000	3.4797	99.90000	5.80E-03	3.49E-03	9.38E-03	2.19E-02	3.48E-03
PU-236	5749.000	15.000	5.000	10.000	2.1286	100.0000	5.83E-03	5.84E-03	5.74E-03	1.46E-02	5.83E-03
PU-238	5499.000	15.000	6.000	9.000	2.9680	99.90000	6.96E-03	5.69E-03	8.00E-03	1.92E-02	5.68E-03
PU242	4890.000	1053.000	1050.000	3.000	1.7321	100.0000	1.22E+00	7.19E-02	4.67E-03	1.25E-02	3.76E-02
PU-244	4589.000	6.000	5.000	1.000	5.2050	99.90000	5.80E-03	3.08E-03	1.40E-02	3.12E-02	3.07E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
 NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



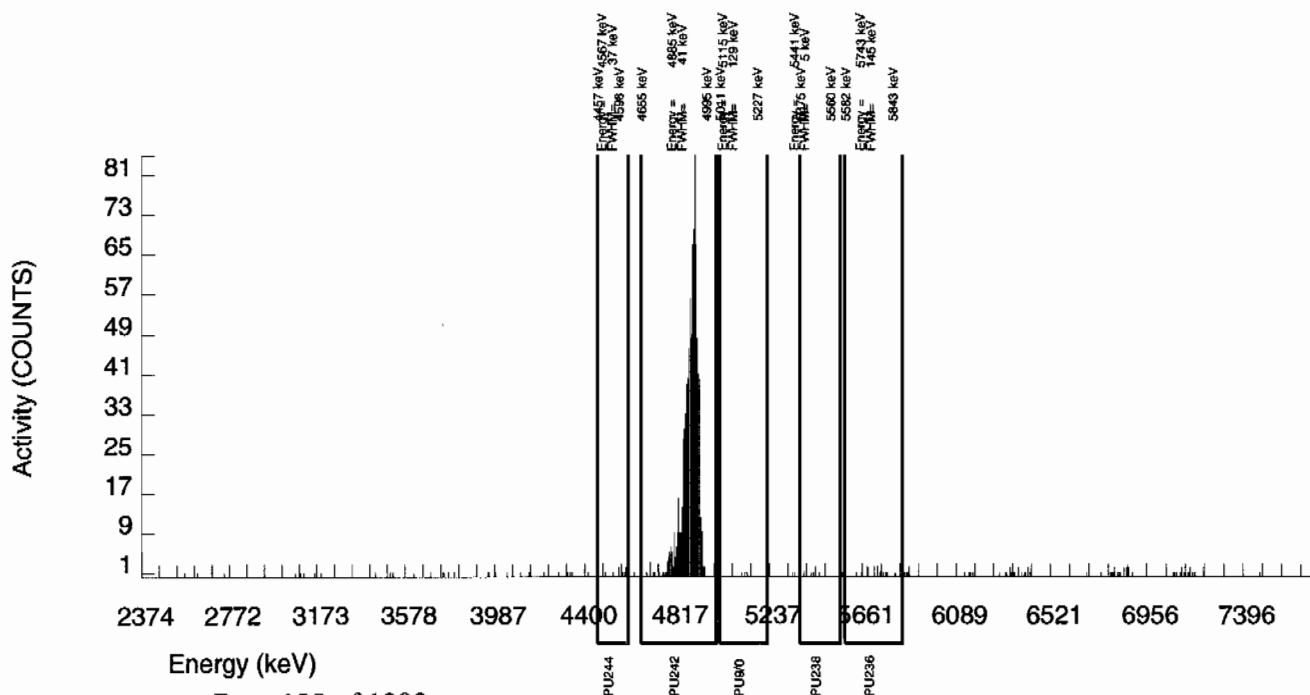
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148006_PU SAMPLE QTY: 1.256 G		
DETECTOR NUMBER :42483 AVERAGE %EFFICIENCY :31.2622 % YIELD : 83.336			COUNT DATE:14-JAN-2010 17:50:35 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.82130 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B048.CNF;1102 BKG DATE : 10-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	5.000	-2.000	7.000	3.4797	99.90000	-2.76E-03	4.77E-03	1.12E-02	2.60E-02	4.77E-03
PU-236	5749.000	19.000	4.000	15.000	2.1286	100.0000	5.55E-03	8.09E-03	6.82E-03	1.74E-02	8.09E-03
PU-238	5499.000	8.000	-5.000	13.000	2.9680	99.90000	-6.89E-03	6.32E-03	9.51E-03	2.28E-02	6.32E-03
PU242	4890.000	885.000	882.000	3.000	1.7321	100.0000	1.21E+00	7.55E-02	5.55E-03	1.48E-02	4.10E-02
PU-244	4589.000	9.000	8.000	1.000	5.2050	99.90000	1.10E-02	4.40E-03	1.67E-02	3.71E-02	4.36E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



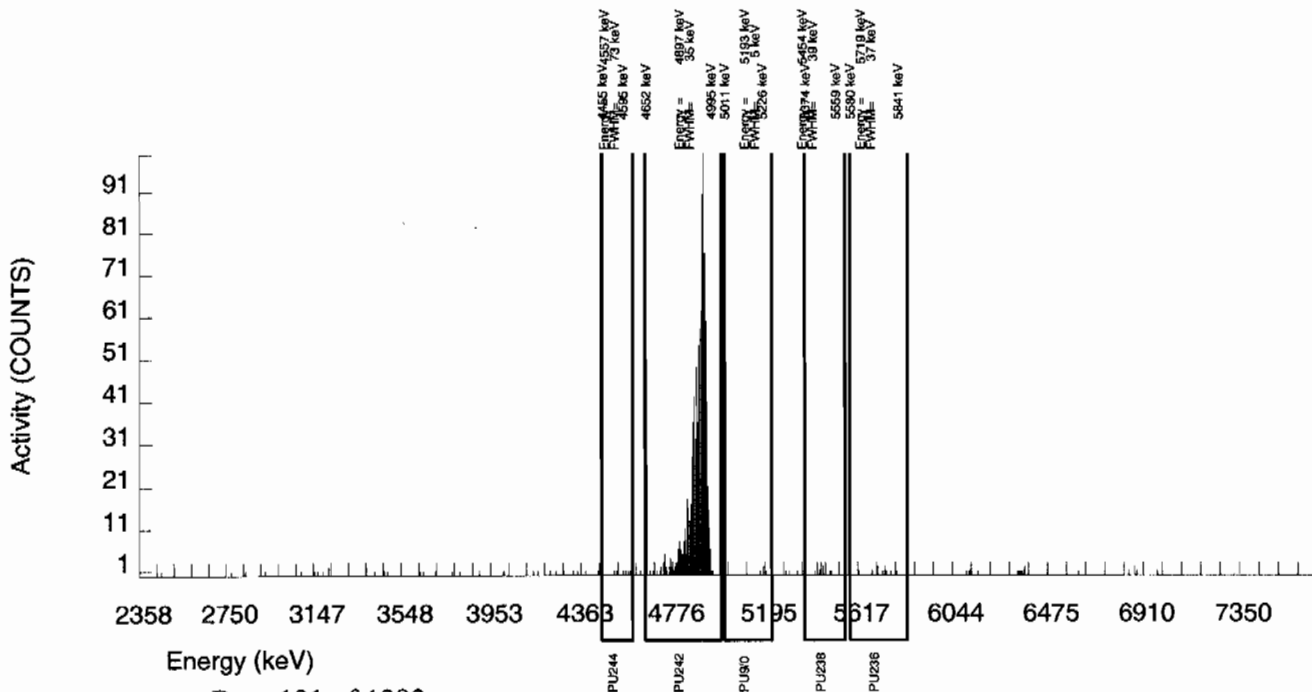
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148007_PU SAMPLE QTY: 1.266 G	
DETECTOR NUMBER :68551 AVERAGE %EFFICIENCY :31.0643 % YIELD : 91.760		COUNT DATE:14-JAN-2010 17:50:36 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.10646 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B065.CNF;1934 BKG DATE : 10-JAN-2010 EFF FILE : W065.CNF;305 CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	4.000	0.000	4.000	3.4797	99.90000	0.00E+00	3.53E-03	1.01E-02	2.36E-02	3.53E-03
PU-236	5749.000	11.000	-2.000	13.000	2.1286	100.0000	-2.51E-03	6.16E-03	6.18E-03	1.57E-02	6.16E-03
PU-238	5499.000	13.000	7.000	6.000	2.9680	99.90000	8.75E-03	5.47E-03	8.63E-03	2.06E-02	5.45E-03
PU242	4890.000	967.000	965.000	2.000	1.4142	100.0000	1.20E+00	7.29E-02	4.11E-03	1.16E-02	3.89E-02
PU-244	4589.000	6.000	4.000	2.000	5.2050	99.90000	5.00E-03	3.54E-03	1.51E-02	3.36E-02	3.53E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148008\_PU  
SAMPLE QTY: 1.278 G

DETECTOR NUMBER :46-089C1  
AVERAGE %EFFICIENCY :31.1641  
% YIELD : 80.376

COUNT DATE:14-JAN-2010 17:50:36  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

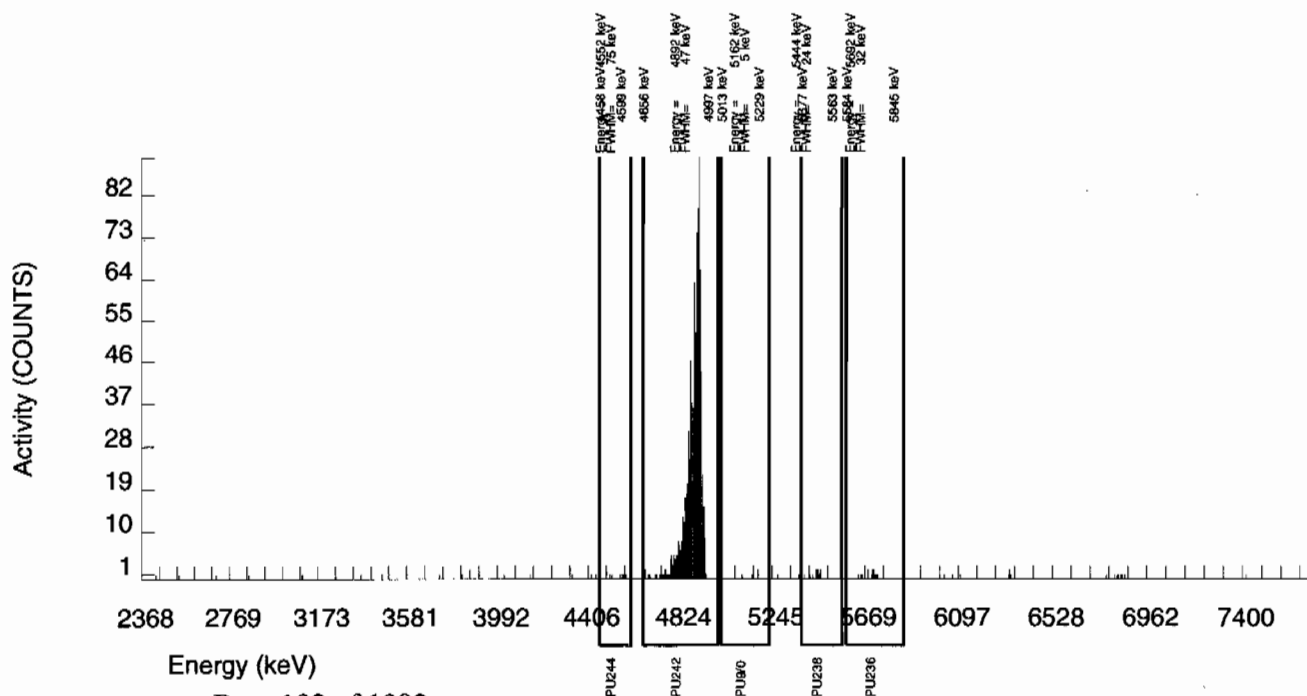
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.72108 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B066.CNF;1095  
BKG DATE : 10-JAN-2010  
EFF FILE : W066.CNF;306  
CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	4.000	3.000	1.000	3.4797	99.90000	4.23E-03	3.16E-03	1.14E-02	2.66E-02	3.15E-03
PU-236	5749.000	14.000	7.000	7.000	2.1286	100.0000	9.92E-03	6.52E-03	6.97E-03	1.77E-02	6.50E-03
PU-238	5499.000	14.000	1.000	13.000	2.9680	99.90000	1.41E-03	7.32E-03	9.73E-03	2.33E-02	7.32E-03
PU242	4890.000	854.000	848.000	6.000	2.4495	100.0000	1.19E+00	7.52E-02	8.02E-03	1.99E-02	4.13E-02
PU-244	4589.000	6.000	6.000	0.000	5.2050	99.90000	8.45E-03	3.48E-03	1.71E-02	3.79E-02	3.45E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



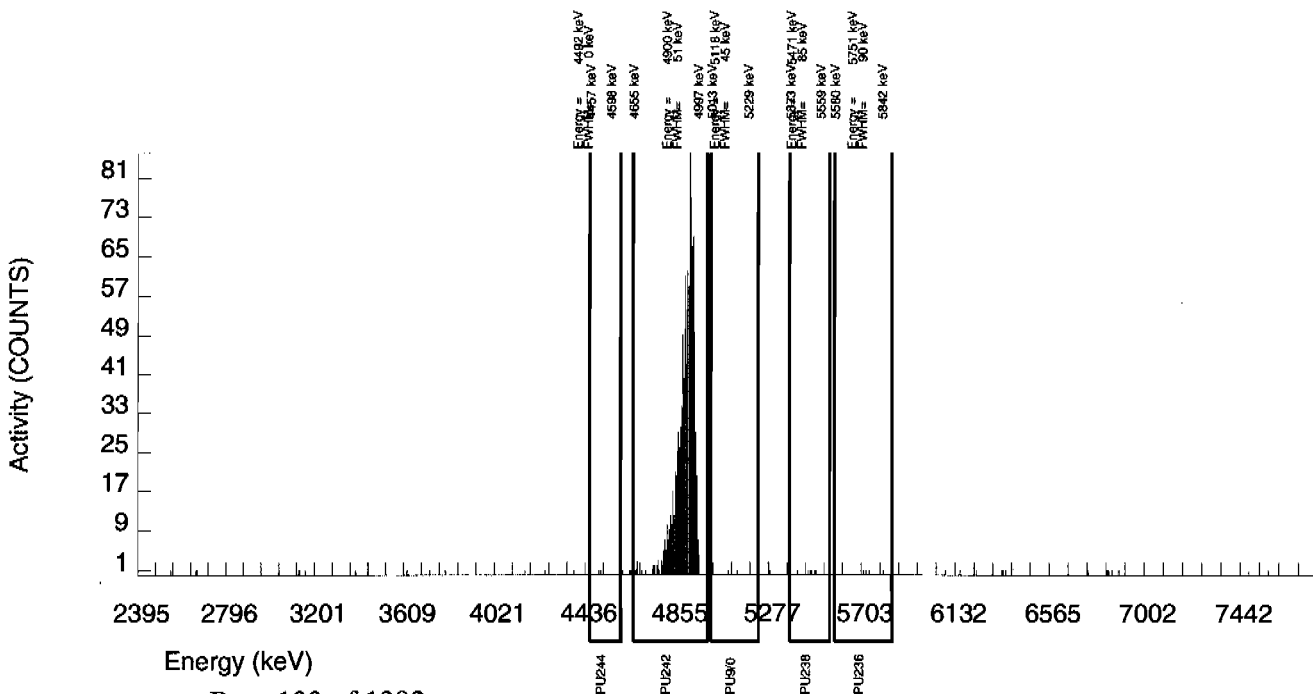
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148009_PU SAMPLE QTY: 1.253 G	
DETECTOR NUMBER :46-089B4 AVERAGE %EFFICIENCY :32.5269 % YIELD : 90.358		COUNT DATE:14-JAN-2010 17:50:36 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.05900 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B067.CNF;1093 BKG DATE : 10-JAN-2010 EFF FILE : W067.CNF;287 CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2.000	1.000	1.000	3.4797	99.90000	1.22E-03	2.12E-03	9.91E-03	2.31E-02	2.12E-03
PU-236	5749.000	4.000	1.000	3.000	2.1286	100.0000	1.23E-03	3.26E-03	6.06E-03	1.54E-02	3.26E-03
PU-238	5499.000	6.000	-1.000	7.000	2.9680	99.90000	-1.22E-03	4.42E-03	8.45E-03	2.02E-02	4.42E-03
PU242	4890.000	1002.000	995.000	7.000	2.6458	100.0000	1.22E+00	7.32E-02	7.53E-03	1.84E-02	3.89E-02
PU-244	4589.000	3.000	3.000	0.000	5.2050	99.90000	3.67E-03	2.13E-03	1.48E-02	3.30E-02	2.12E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



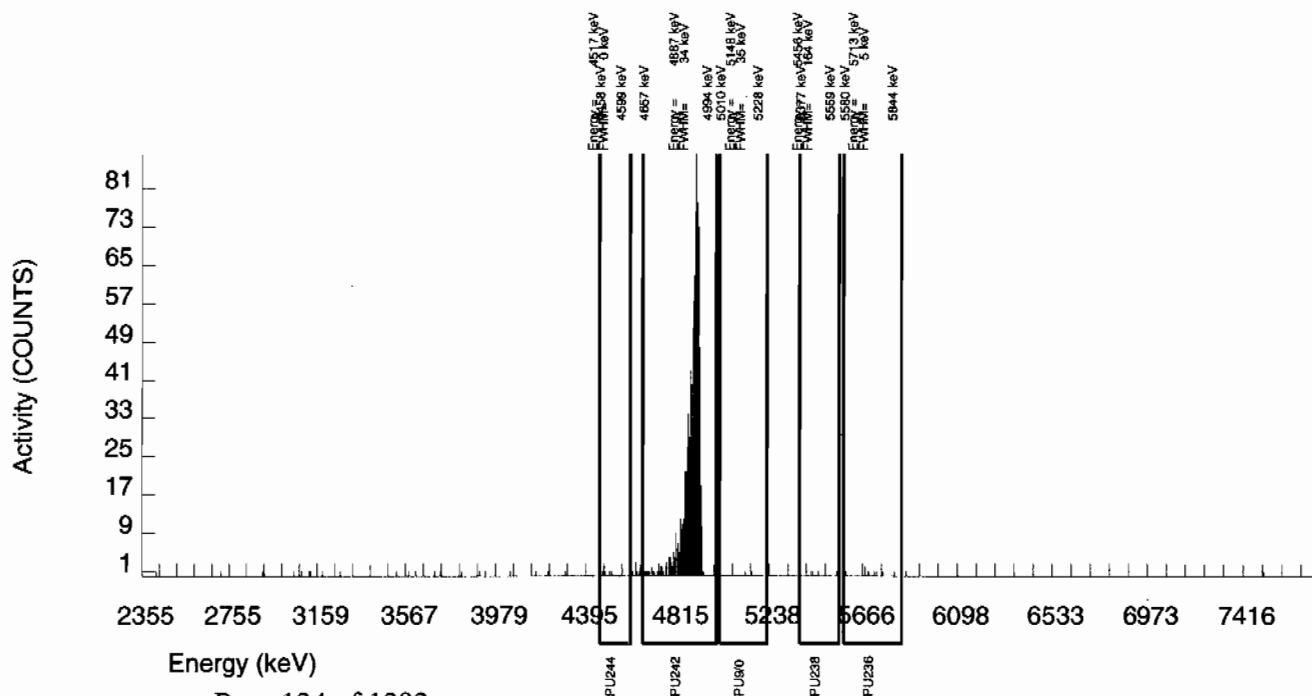
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148010_PU SAMPLE QTY: 1.255 G	
DETECTOR NUMBER :78794 AVERAGE %EFFICIENCY :29.6665 % YIELD : 83.538		COUNT DATE:14-JAN-2010 17:50:36 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.82811 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B068.CNF;1086 BKG DATE : 10-JAN-2010 EFF FILE : W068.CNF;278 CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2.000	-1.000	3.000	3.4797	99.90000	-1.45E-03	3.24E-03	1.17E-02	2.74E-02	3.24E-03
PU-236	5749.000	8.000	1.000	7.000	2.1286	100.0000	1.46E-03	5.65E-03	7.17E-03	1.83E-02	5.65E-03
PU-238	5499.000	5.000	5.000	0.000	2.9680	99.90000	7.25E-03	3.26E-03	1.00E-02	2.39E-02	3.24E-03
PU242	4890.000	841.000	839.000	2.000	1.4142	100.0000	1.22E+00	7.66E-02	4.76E-03	1.35E-02	4.21E-02
PU-244	4589.000	7.000	5.000	2.000	5.2050	99.90000	7.25E-03	4.37E-03	1.76E-02	3.90E-02	4.35E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



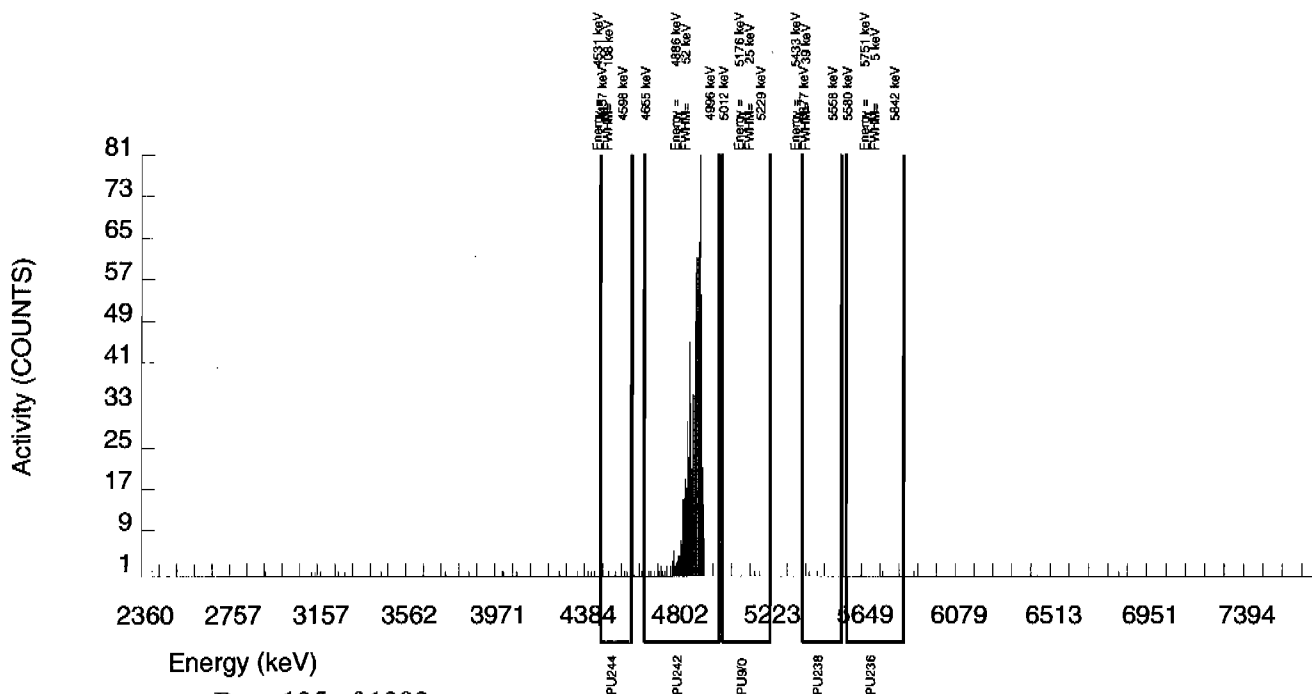
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148011_PU SAMPLE QTY: 1.270 G		
DETECTOR NUMBER :78795 AVERAGE %EFFICIENCY :31.8131 % YIELD : 69.730			COUNT DATE:14-JAN-2010 17:50:36 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.36066 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B069.CNF;1088 BKG DATE : 10-JAN-2010 EFF FILE : W069.CNF;285 CAL DATE : 11-JAN-2010		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2.000	0.000	2.000	3.4797	99.90000	0.00E+00	3.20E-03	1.30E-02	3.02E-02	3.20E-03
PU-236	5749.000	1.000	-1.000	2.000	2.1286	100.0000	-1.61E-03	2.79E-03	7.92E-03	2.02E-02	2.79E-03
PU-238	5499.000	2.000	0.000	2.000	2.9680	99.90000	0.00E+00	3.20E-03	1.11E-02	2.64E-02	3.20E-03
PU242	4890.000	754.000	751.000	3.000	1.7321	100.0000	1.20E+00	7.84E-02	6.44E-03	1.72E-02	4.40E-02
PU-244	4589.000	5.000	3.000	2.000	5.2050	99.90000	4.80E-03	4.24E-03	1.94E-02	4.31E-02	4.23E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



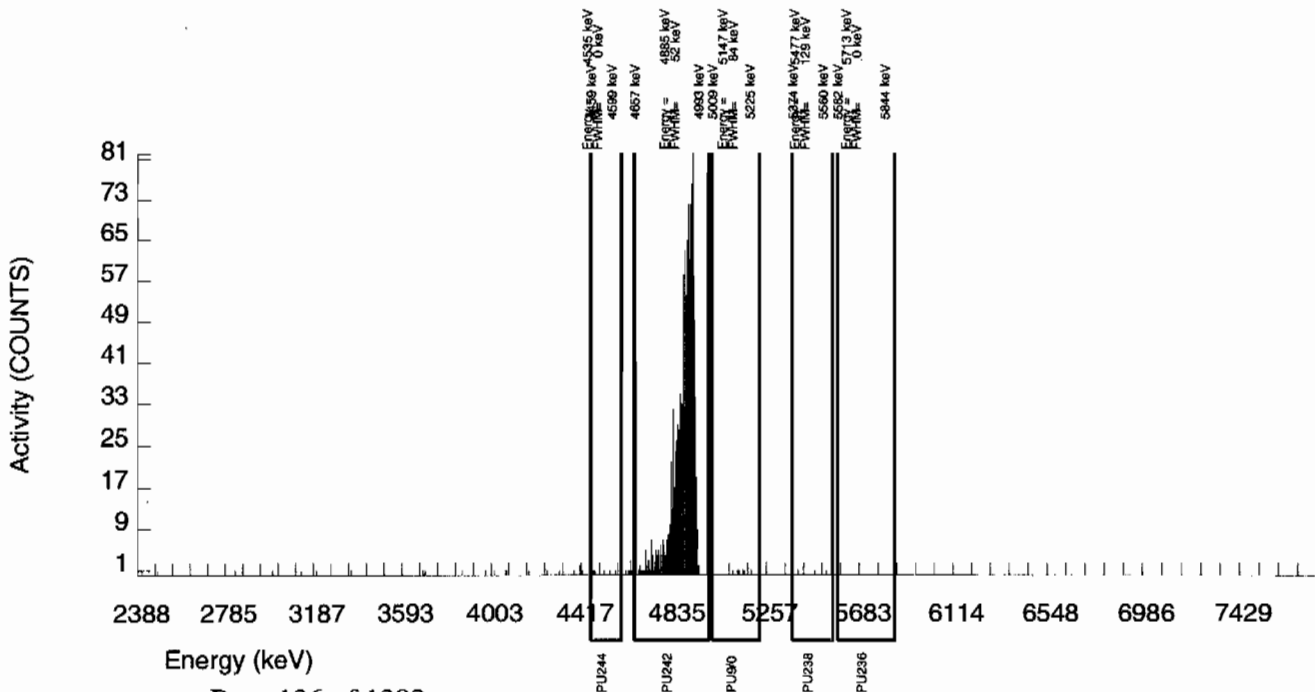
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148012_PU SAMPLE QTY: 1.262 G	
DETECTOR NUMBER :79190 AVERAGE %EFFICIENCY :38.4770 % YIELD : 87.440		COUNT DATE:16-JAN-2010 11:07:55 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.96021 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B211.CNF;68 BKG DATE : 10-JAN-2010 EFF FILE : W211.CNF;25 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	7.000	-4.000	11.000	3.4797	99.90000	-4.25E-03	4.51E-03	8.60E-03	2.01E-02	4.51E-03
PU-236	5749.000	0.000	0.000	0.000	2.1286	100.0000	0.00E+00	1.07E-03	5.25E-03	1.34E-02	1.07E-03
PU-238	5499.000	3.000	-1.000	4.000	2.9680	99.90000	-1.06E-03	2.81E-03	7.33E-03	1.75E-02	2.81E-03
PU242	4890.000	1142.000	1139.000	3.000	1.7321	100.0000	1.21E+00	6.97E-02	4.27E-03	1.14E-02	3.59E-02
PU-244	4589.000	8.000	8.000	0.000	5.2050	99.90000	8.50E-03	3.03E-03	1.29E-02	2.86E-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: 940239  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148013\_PU  
SAMPLE QTY: 1.259 G

DETECTOR NUMBER :64259  
AVERAGE %EFFICIENCY :32.3636  
% YIELD : 91.544

COUNT DATE:14-JAN-2010 17:50:37  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

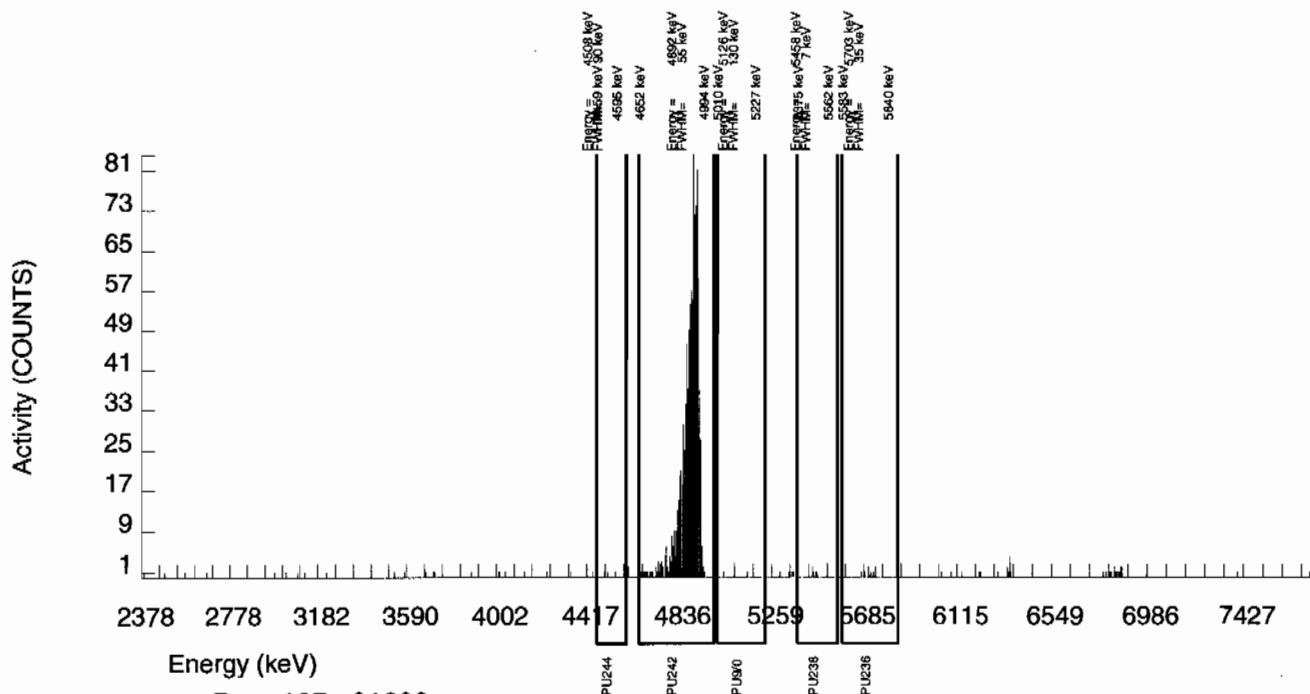
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.09916 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B071.CNF;1091  
BKG DATE : 10-JAN-2010  
EFF FILE : W071.CNF;284  
CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	3.000	1.000	2.000	3.4797	99.90000	1.21E-03	2.70E-03	9.79E-03	2.28E-02	2.70E-03
PU-236	5749.000	9.000	4.000	5.000	2.1286	100.0000	4.87E-03	4.56E-03	5.98E-03	1.52E-02	4.55E-03
PU-238	5499.000	5.000	-8.000	13.000	2.9680	99.90000	-9.67E-03	5.13E-03	8.35E-03	2.00E-02	5.13E-03
PU242	4890.000	1007.000	1003.000	4.000	2.0000	100.0000	1.21E+00	7.25E-02	5.62E-03	1.45E-02	3.84E-02
PU-244	4589.000	4.000	3.000	1.000	5.2050	99.90000	3.63E-03	2.71E-03	1.46E-02	3.26E-02	2.70E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



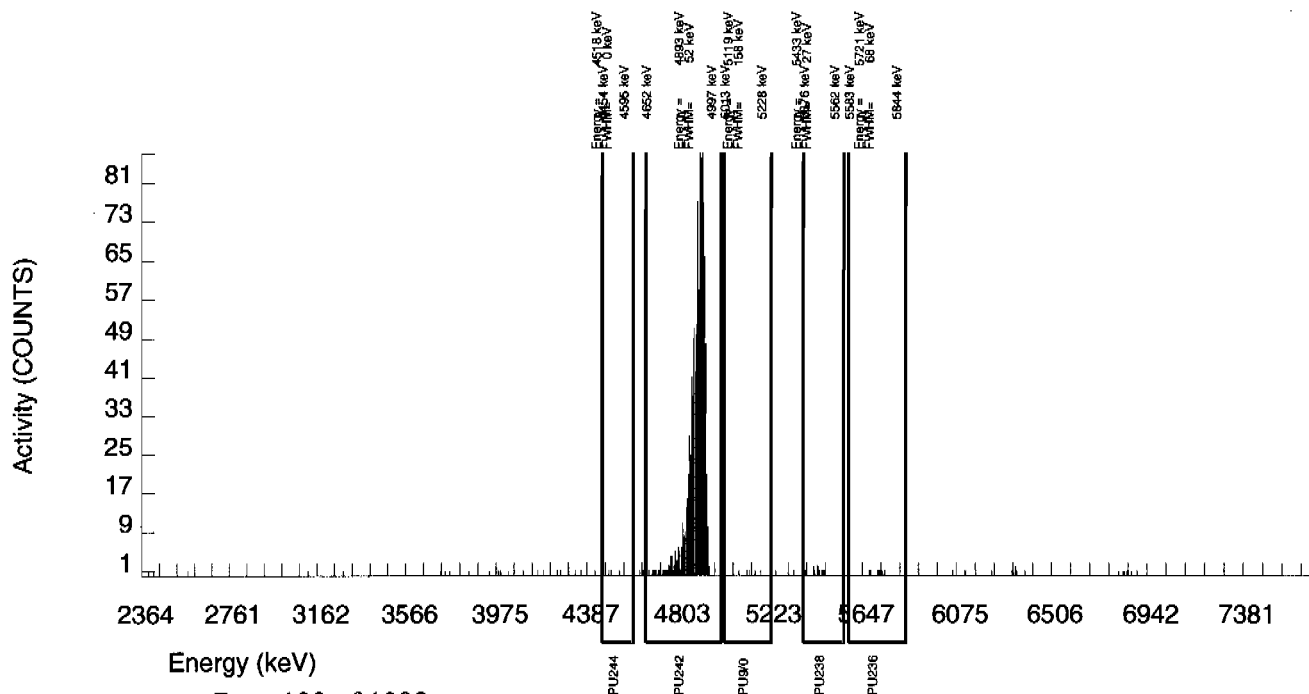
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S0244148014_PU SAMPLE QTY: 1.273 G		
DETECTOR NUMBER :45-149AA3 AVERAGE %EFFICIENCY :32.2361 % YIELD : 94.197			COUNT DATE:14-JAN-2010 17:50:37 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.18897 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B072.CNF;1089 BKG DATE : 10-JAN-2010 EFF FILE : W072.CNF;275 CAL DATE : 11-JAN-2010		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	6.000	1.000	5.000	3.4797	99.90000	1.17E-03	3.87E-03	9.44E-03	2.20E-02	3.87E-03
PU-236	5749.000	7.000	-4.000	11.000	2.1286	100.0000	-4.70E-03	4.98E-03	5.77E-03	1.47E-02	4.98E-03
PU-238	5499.000	15.000	2.000	13.000	2.9680	99.90000	2.33E-03	6.17E-03	8.05E-03	1.93E-02	6.17E-03
PU242	4890.000	1031.000	1028.000	3.000	1.7321	100.0000	1.20E+00	7.12E-02	4.70E-03	1.25E-02	3.75E-02
PU-244	4589.000	5.000	5.000	0.000	5.2050	99.90000	5.83E-03	2.62E-03	1.41E-02	3.14E-02	2.61E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



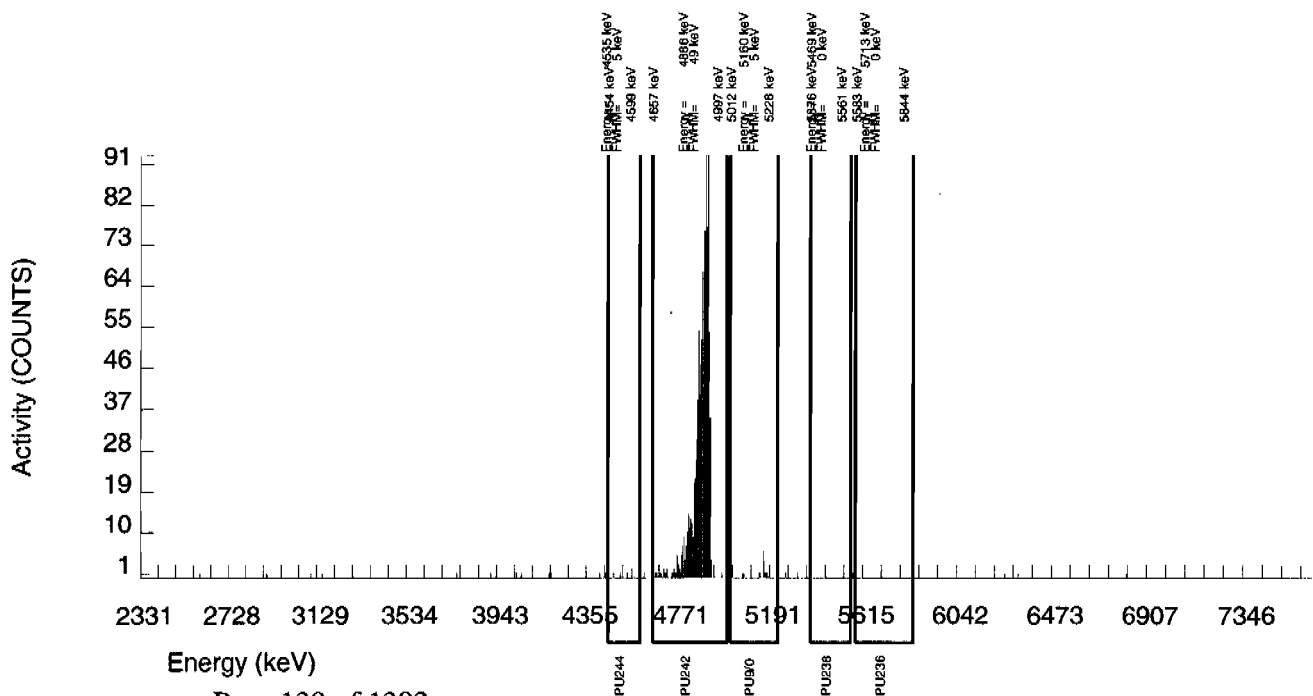
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148015_PU SAMPLE QTY: 1.276 G	
DETECTOR NUMBER :78775 AVERAGE %EFFICIENCY :33.5654 % YIELD : 83.866		COUNT DATE:14-JAN-2010 17:50:37 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.83923 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B073.CNF;1091 BKG DATE : 10-JAN-2010 EFF FILE : W073.CNF;283 CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	16.000	10.000	6.000	3.4797	99.90000	1.26E-02	5.92E-03	1.02E-02	2.37E-02	5.89E-03
PU-236	5749.000	0.000	-1.000	1.000	2.1286	100.0000	-1.26E-03	1.79E-03	6.21E-03	1.58E-02	1.79E-03
PU-238	5499.000	1.000	1.000	0.000	2.9680	99.90000	1.26E-03	1.26E-03	8.67E-03	2.07E-02	1.26E-03
PU242	4890.000	955.000	953.000	2.000	1.4142	100.0000	1.20E+00	7.25E-02	4.13E-03	1.17E-02	3.88E-02
PU-244	4589.000	6.000	3.000	3.000	5.2050	99.90000	3.77E-03	3.77E-03	1.52E-02	3.38E-02	3.77E-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: 940239  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148016\_PU  
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :78266  
AVERAGE %EFFICIENCY :31.6797  
% YIELD : 87.460

COUNT DATE:14-JAN-2010 17:50:37  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

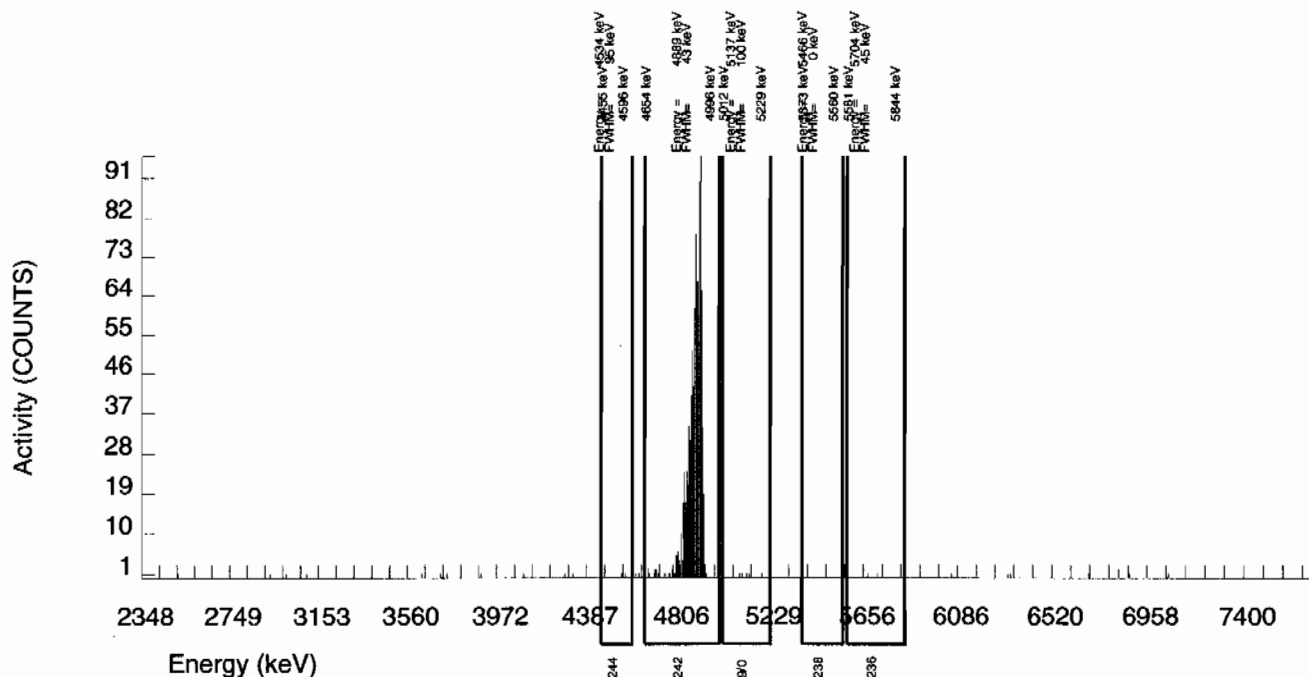
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.96089 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B074.CNF;1113  
BKG DATE : 10-JAN-2010  
EFF FILE : W074.CNF;330  
CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	6.000	3.000	3.000	3.4797	99.90000	3.89E-03	3.90E-03	1.05E-02	2.45E-02	3.89E-03
PU-236	5749.000	2.000	0.000	2.000	2.1286	100.0000	0.00E+00	2.61E-03	6.41E-03	1.63E-02	2.61E-03
PU-238	5499.000	0.000	-3.000	3.000	2.9680	99.90000	-3.89E-03	2.59E-03	8.95E-03	2.14E-02	2.59E-03
PU242	4890.000	940.000	938.000	2.000	1.4142	100.0000	1.22E+00	7.41E-02	4.26E-03	1.20E-02	3.98E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.59E-03	2.60E-03	1.57E-02	3.49E-02	2.59E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



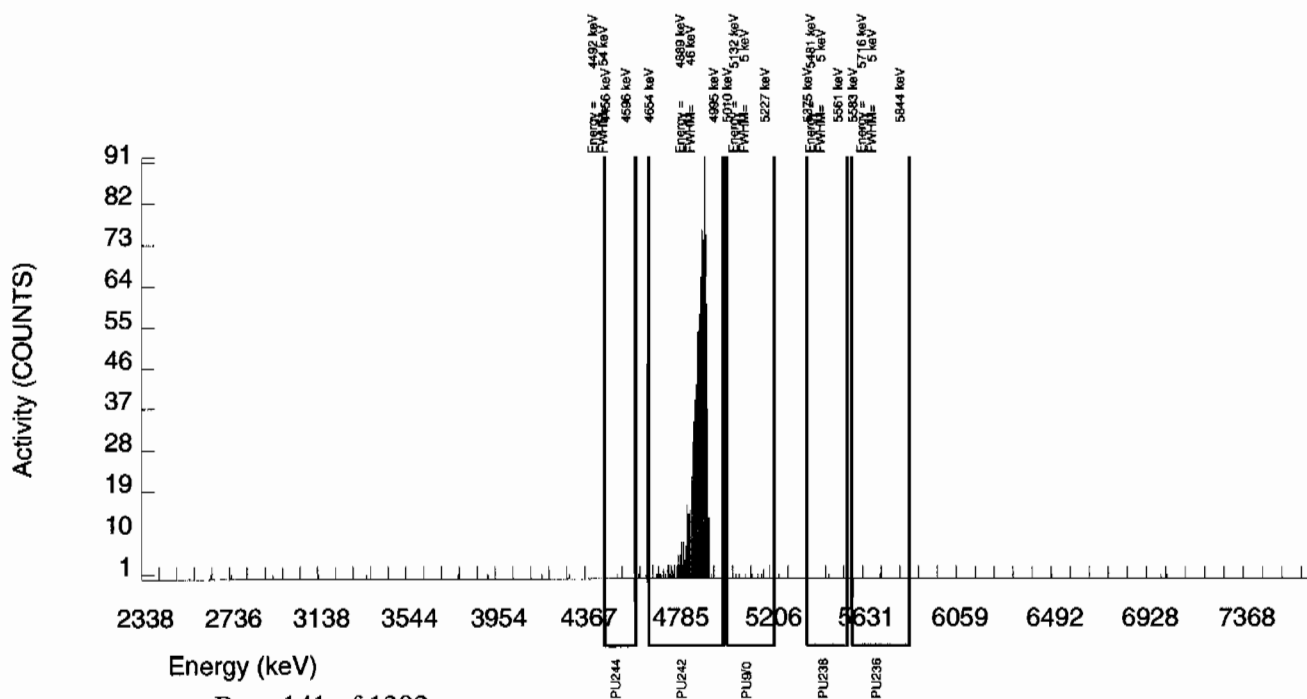
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148017_PU SAMPLE QTY: 1.281 G	
DETECTOR NUMBER :80010 AVERAGE %EFFICIENCY :30.2754 % YIELD : 93.370		COUNT DATE:14-JAN-2010 17:50:37 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.16098 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B075.CNF;1094 BKG DATE : 10-JAN-2010 EFF FILE : W075.CNF;288 CAL DATE : 12-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	9.000	0.000	3.4797	99.90000	1.12E-02	3.78E-03	1.01E-02	2.35E-02	3.74E-03
PU-236	5749.000	1.000	1.000	0.000	2.1286	100.0000	1.25E-03	1.25E-03	6.16E-03	1.57E-02	1.25E-03
PU-238	5499.000	1.000	1.000	0.000	2.9680	99.90000	1.25E-03	1.25E-03	8.60E-03	2.06E-02	1.25E-03
PU242	4890.000	957.000	957.000	0.000	0.0000	100.0000	1.19E+00	7.21E-02	0.00E+00	3.37E-03	3.85E-02
PU-244	4589.000	2.000	2.000	0.000	5.2050	99.90000	2.49E-03	1.77E-03	1.51E-02	3.35E-02	1.76E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



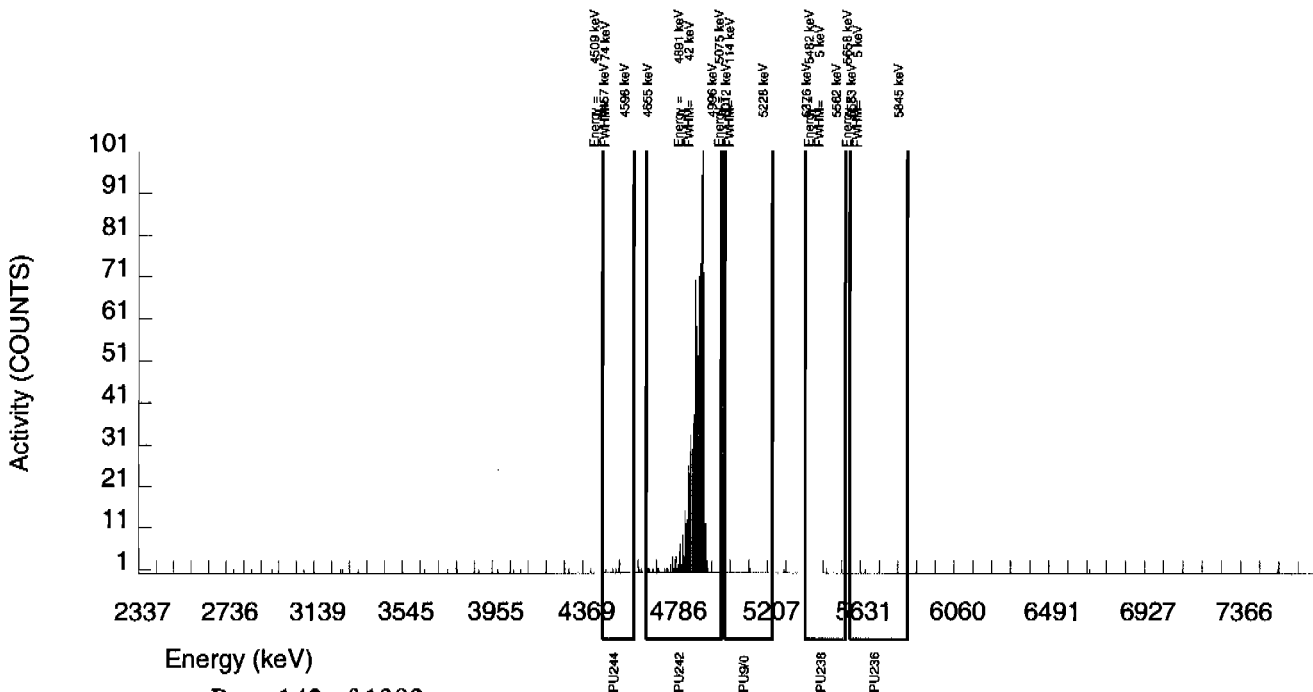
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148018_PU SAMPLE QTY: 1.274 G	
DETECTOR NUMBER :78779 AVERAGE %EFFICIENCY :30.8747 % YIELD : 88.592		COUNT DATE:14-JAN-2010 17:50:37 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.99922 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B076.CNF;1097 BKG DATE : 10-JAN-2010 EFF FILE : W076.CNF;293 CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2.000	1.000	1.000	3.4797	99.90000	1.29E-03	2.24E-03	1.05E-02	2.45E-02	2.24E-03
PU-236	5749.000	1.000	1.000	0.000	2.1286	100.0000	1.30E-03	1.30E-03	6.40E-03	1.63E-02	1.30E-03
PU-238	5499.000	1.000	1.000	0.000	2.9680	99.90000	1.29E-03	1.30E-03	8.93E-03	2.14E-02	1.29E-03
PU242	4890.000	934.000	926.000	8.000	2.8284	100.0000	1.20E+00	7.35E-02	8.51E-03	2.05E-02	3.97E-02
PU-244	4589.000	6.000	6.000	0.000	5.2050	99.90000	7.76E-03	3.19E-03	1.57E-02	3.48E-02	3.17E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



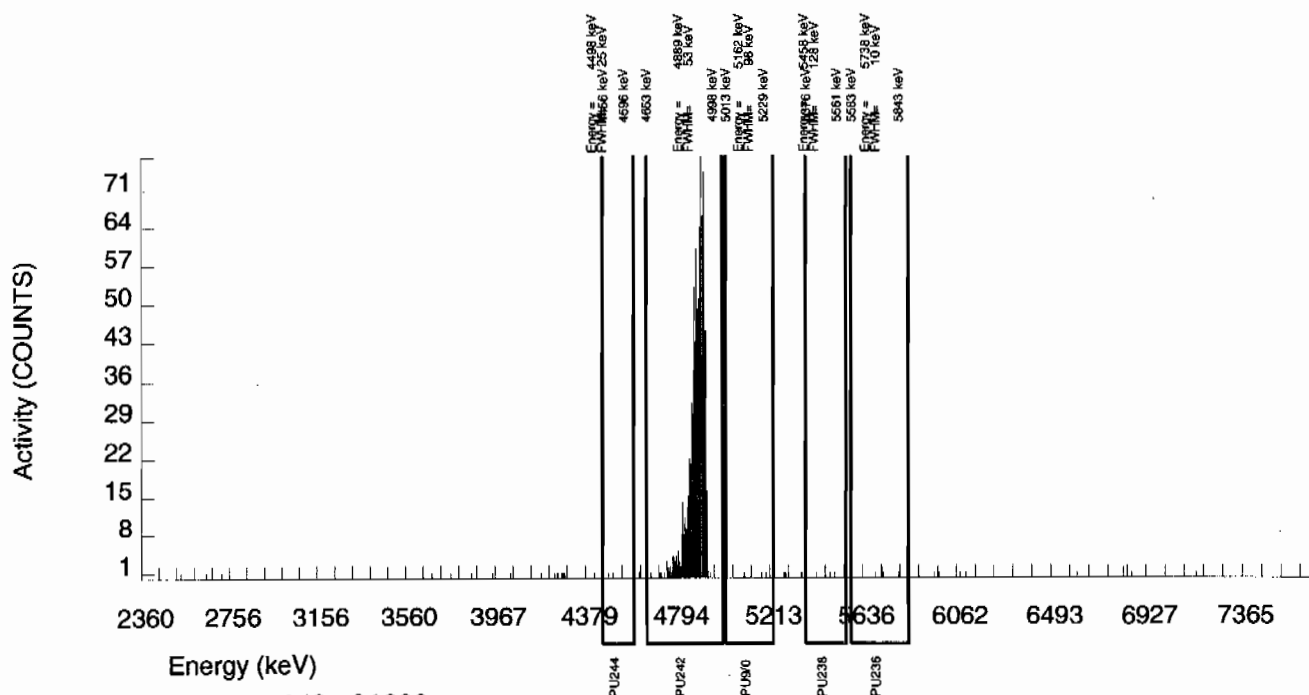
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 13-JAN-2010 00:00:00			SAMPLE ID : S1202012073_PU SAMPLE QTY: 1.000 G		
DETECTOR NUMBER :67576 AVERAGE %EFFICIENCY :31.9454 % YIELD : 82.109			COUNT DATE:14-JAN-2010 17:50:38 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.77974 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B077.CNF;1006 BKG DATE : 10-JAN-2010 EFF FILE : W077.CNF;261 CAL DATE : 11-JAN-2010		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	3.000	1.000	2.000	3.4797	99.90000	1.72E-03	3.84E-03	1.39E-02	3.25E-02	3.84E-03
PU-236	5749.000	6.000	0.000	6.000	2.1286	100.0000	0.00E+00	5.96E-03	8.50E-03	2.17E-02	5.96E-03
PU-238	5499.000	5.000	-3.000	8.000	2.9680	99.90000	-5.16E-03	6.20E-03	1.19E-02	2.84E-02	6.20E-03
PU242	4890.000	892.000	888.000	4.000	2.0000	100.0000	1.52E+00	9.47E-02	7.99E-03	2.06E-02	5.14E-02
PU-244	4589.000	2.000	1.000	1.000	5.2050	99.90000	1.72E-03	2.98E-03	2.08E-02	4.63E-02	2.98E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



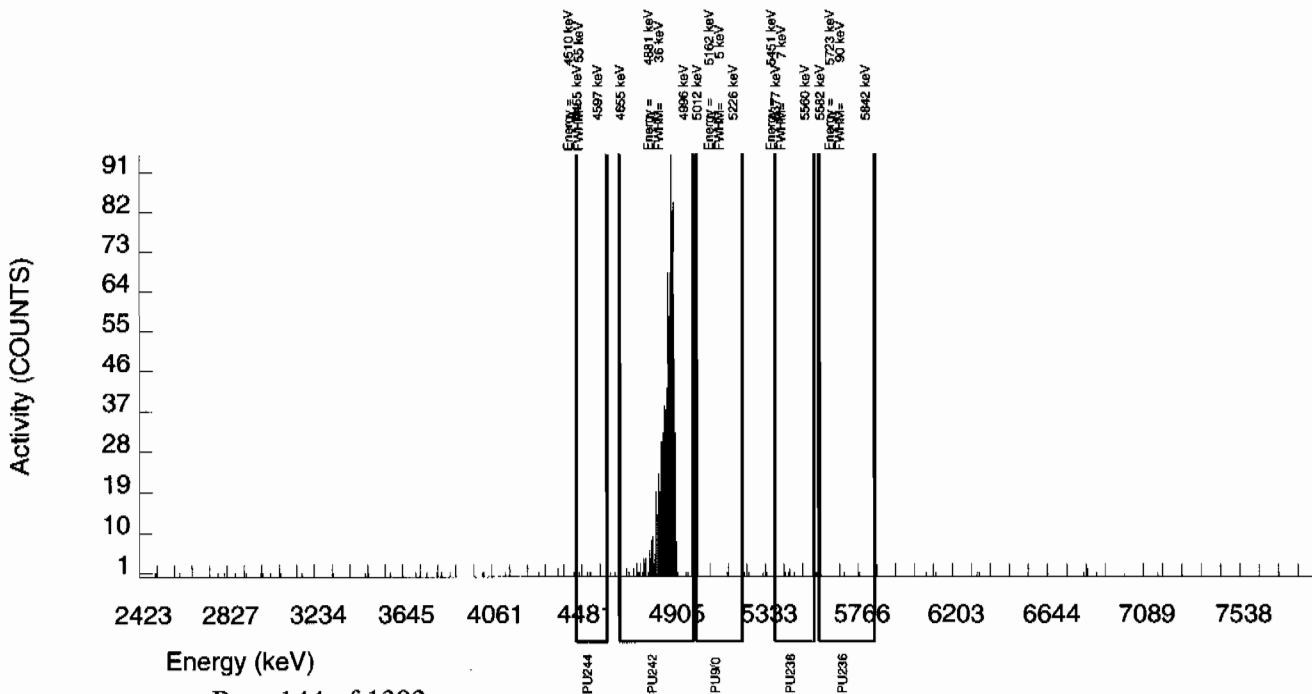
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S1202012074_PU SAMPLE QTY: 1.257 G	
DETECTOR NUMBER :67577 AVERAGE %EFFICIENCY :31.0633 % YIELD : 86.057		COUNT DATE:14-JAN-2010 17:50:38 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.91340 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B078.CNF;1006 BKG DATE : 10-JAN-2010 EFF FILE : W078.CNF;251 CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	1.000	0.000	1.000	3.4797	99.90000	0.00E+00	1.90E-03	1.09E-02	2.54E-02	1.90E-03
PU-236	5749.000	3.000	-1.000	4.000	2.1286	100.0000	-1.35E-03	3.57E-03	6.64E-03	1.69E-02	3.57E-03
PU-238	5499.000	5.000	-1.000	6.000	2.9680	99.90000	-1.34E-03	4.45E-03	9.27E-03	2.22E-02	4.45E-03
PU242	4890.000	908.000	905.000	3.000	1.7321	100.0000	1.21E+00	7.48E-02	5.40E-03	1.44E-02	4.05E-02
PU-244	4589.000	4.000	4.000	0.000	5.2050	99.90000	5.37E-03	2.70E-03	1.62E-02	3.61E-02	2.68E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



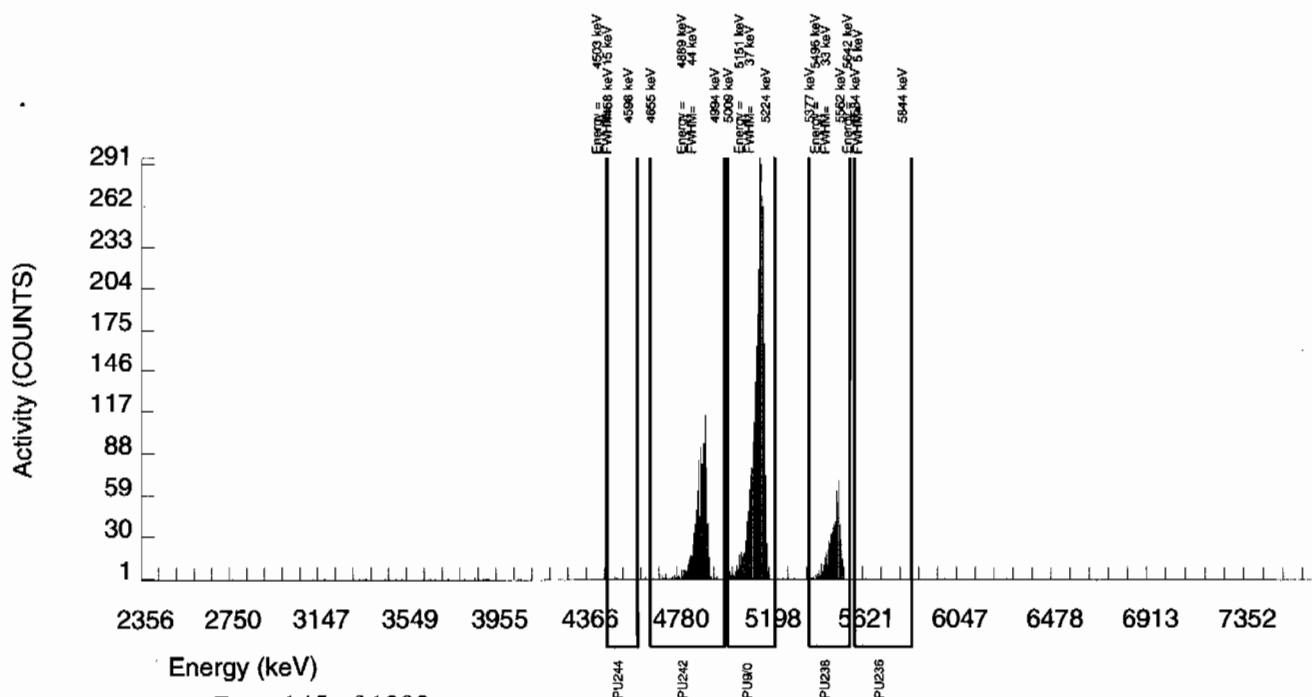
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940239 SAMPLE DATE : 13-JAN-2010 00:00:00		SAMPLE ID : S1202012075_PU SAMPLE QTY: 0.102 G	
DETECTOR NUMBER :79466 AVERAGE %EFFICIENCY :32.2835 % YIELD : 100.738		COUNT DATE:14-JAN-2010 17:50:38 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.41041 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B079.CNF;1008 BKG DATE : 10-JAN-2010 EFF FILE : W079.CNF;266 CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2763.000	2763.000	0.000	3.4797	99.90000	3.76E+01	2.33E+00	1.10E-01	2.57E-01	7.14E-01
PU-236	5749.000	1.000	0.000	1.000	2.1286	100.0000	0.00E+00	1.92E-02	6.72E-02	1.71E-01	1.92E-02
PU-238	5499.000	585.000	585.000	0.000	2.9680	99.90000	7.95E+00	5.73E-01	9.39E-02	2.25E-01	3.29E-01
PU242	4890.000	1101.000	1101.000	0.000	0.0000	100.0000	1.50E+01	9.91E-01	0.00E+00	3.68E-02	4.51E-01
PU-244	4589.000	9.000	9.000	0.000	5.2050	99.90000	1.22E-01	4.14E-02	1.65E-01	3.66E-01	4.08E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



# Radiochemistry Batch Checklist, Rev10

Batch# 940245 Product: U Date: 1/25/10

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%.	✓		Case Narrative
Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			N/A
Aux data is correct.	✓		
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: Denise Green 1/25/10

Secondary Review Performed By: J. L. M. S. - 1/25/10

PJ

# Uranium Que Sheet

11-JAN-10

Batch #: 940245 Analyst: MXE1 First Client Due Date: 05-FEB-10 Internal Due Date: 25-JAN-10  
Tracer Isotope: U-236 Tracer Code: 1283-41 Expiration Date: 12/1/10 Vol: 0.1  
LCS Isotope: U-238 LCS Code: 1 Expiration Date: 1/1/10 Vol: 1  
Spike Isotope: U-238 Spike Code: 1 Expiration Date: 1/1/10 Vol: 1  
Prep Date: 1/1/10 Initials: MG Pipet ID: 2411038 Balance ID: 5010272  
Witness: JGD 01/13/10

Sample ID	Client Description	Type	Hazard Code	Mia CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet Weight Aliquot (g/l)	U Det #
244148001-1	RE12-10-7619	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	1	1	0.509	131
244148002-1	RE12-10-7618	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	2	2	0.517	132
244148003-1	RE12-10-7623	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	3	3	0.512	133
244148004-1	RE12-10-7622	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	4	4	0.510	134
244148005-1	RE12-10-7621	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	5	5	0.508	139
244148006-1	RE12-10-7617	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	6	6	0.533	140
244148007-1	RE12-10-7620	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	7	7	0.523	141
244148008-1	RE12-10-7624	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	8	8	0.514	142
244148009-1	RE12-10-7630	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	9	9	0.515	147
244148010-1	RE12-10-7628	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	10	10	0.529	148
244148011-1	RE12-10-7632	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	11	11	0.534	149
244148012-1	RE12-10-7629	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	12	12	0.546	150
244148013-1	RE12-10-7626	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	13	13	0.508	153
244148014-1	RE12-10-7631	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	14	14	0.531	154
244148015-1	RE12-10-7627	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	15	15	0.515	155
244148016-1	RE12-10-7625	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	16	16	0.501	156
244148017-1	RE12-10-7656	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	17	17	0.514	157
244148018-1	RE12-10-7655	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	18	18	0.537	158
1202012084-1	MB for batch 940245	MB		.1 pCi/g	SOIL	QC ACCOUNT	04-JAN-10	19	19	1	159
1202012085-1	RE12-10-7655(244148018DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	04-JAN-10	20	20	0.515	160
1202012086-1	LCS for batch 940245	LCS		.1 pCi/g	SOIL	QC ACCOUNT	04-JAN-10	21	21	0.186	256

SRM 0244-A 10/31/20

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By:

1/25/10



# Blank Correction Report

**Batch ID 940245**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202012085	DUP	Uranium-233/234	0.515 g	1.03	0.0954	0.114	.022135922	pCi/g	NO
		Uranium-235/236	0.515 g	0.082	0.0202	0.0709	.012116505	pCi/g	NO
		Uranium-238	0.515 g	1.09	0.100	0.0662	.006524272	pCi/g	NO
1202012086	LCS	Uranium-233/234	0.125 g	5.70	0.474	0.292	.0912	pCi/g	NO
		Uranium-235/236	0.125 g	0.443	0.0805	0.182	.04992	pCi/g	NO
		Uranium-238	0.125 g	5.46	0.457	0.170	.02688	pCi/g	NO
1202012084	MB	Uranium-233/234	1.00 g	0.0114	0.00558	0.0521	.0114	pCi/g	YES
		Uranium-235/236	1.00 g	0.00624	0.00467	0.0324	.00624	pCi/g	YES
		Uranium-238	1.00 g	0.00336	0.00337	0.0302	.00336	pCi/g	YES
244148002	RE12-10-7618	Uranium-233/234	0.517 g	1.64	0.139	0.111	.022050290	pCi/g	NO
		Uranium-235/236	0.517 g	0.129	0.0256	0.0691	.012069632	pCi/g	NO
		Uranium-238	0.517 g	1.85	0.154	0.0646	.006499033	pCi/g	NO
244148003	RE12-10-7623	Uranium-233/234	0.512 g	1.50	0.131	0.118	.022265625	pCi/g	NO
		Uranium-235/236	0.512 g	0.0987	0.0226	0.0731	.0121875	pCi/g	NO
		Uranium-238	0.512 g	1.82	0.154	0.0683	.00656625	pCi/g	NO
244148004	RE12-10-7622	Uranium-233/234	0.510 g	1.08	0.100	0.117	.022352941	pCi/g	NO
		Uranium-235/236	0.510 g	0.103	0.0232	0.0729	.012235294	pCi/g	NO
		Uranium-238	0.510 g	1.14	0.104	0.0681	.006588235	pCi/g	NO
244148005	RE12-10-7621	Uranium-233/234	0.508 g	1.27	0.115	0.118	.022440945	pCi/g	NO
		Uranium-235/236	0.508 g	0.0987	0.0227	0.0732	.012283465	pCi/g	NO
		Uranium-238	0.508 g	1.43	0.127	0.0684	.006614173	pCi/g	NO
244148006	RE12-10-7617	Uranium-233/234	0.533 g	0.891	0.081	0.094	.021388368	pCi/g	NO
		Uranium-235/236	0.533 g	0.0487	0.0149	0.0583	.011707317	pCi/g	YES
		Uranium-238	0.533 g	0.828	0.0765	0.0545	.006303940	pCi/g	NO
244148007	RE12-10-7620	Uranium-233/234	0.523 g	1.24	0.112	0.113	.021797323	pCi/g	NO
		Uranium-235/236	0.523 g	0.0858	0.0216	0.0703	.011931166	pCi/g	NO
		Uranium-238	0.523 g	1.39	0.123	0.0656	.006424474	pCi/g	NO
244148008	RE12-10-7624	Uranium-233/234	0.514 g	1.20	0.108	0.114	.022178988	pCi/g	NO
		Uranium-235/236	0.514 g	0.0776	0.0196	0.071	.012140078	pCi/g	NO
		Uranium-238	0.514 g	1.34	0.119	0.0664	.006536965	pCi/g	NO
244148009	RE12-10-7630	Uranium-233/234	0.515 g	0.862	0.0819	0.104	.022135922	pCi/g	NO
		Uranium-235/236	0.515 g	0.0664	0.0182	0.0646	.012116505	pCi/g	NO
		Uranium-238	0.515 g	1.07	0.0973	0.0604	.006524272	pCi/g	NO
244148010	RE12-10-7628	Uranium-233/234	0.529 g	1.16	0.104	0.107	.021550095	pCi/g	NO
		Uranium-235/236	0.529 g	0.0897	0.0214	0.0665	.011795841	pCi/g	NO
		Uranium-238	0.529 g	1.01	0.0928	0.0621	.006351607	pCi/g	NO
244148011	RE12-10-7632	Uranium-233/234	0.534 g	0.825	0.0776	0.0988	.021348315	pCi/g	NO
		Uranium-235/236	0.534 g	0.071	0.0191	0.0614	.011685393	pCi/g	NO
		Uranium-238	0.534 g	0.890	0.0823	0.0573	.006292135	pCi/g	NO
244148012	RE12-10-7629	Uranium-233/234	0.546 g	1.94	0.160	0.110	.020879121	pCi/g	NO
		Uranium-235/236	0.546 g	0.127	0.0252	0.068	.011428571	pCi/g	NO

11/25/10

# Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
244148012	RE12-10-7629	Uranium-238	0.546 g	2.07	0.170	0.0635	.006153846	pCi/g	NO
244148013	RE12-10-7626	Uranium-233/234	0.508 g	1.08	0.0989	0.112	.022440945	pCi/g	NO
		Uranium-235/236	0.508 g	0.0314	0.0121	0.0698	.012283465	pCi/g	YES
		Uranium-238	0.508 g	1.15	0.104	0.0652	.006614173	pCi/g	NO
244148014	RE12-10-7631	Uranium-233/234	0.531 g	1.80	0.155	0.126	.021468927	pCi/g	NO
		Uranium-235/236	0.531 g	0.100	0.0235	0.0779	.011751412	pCi/g	NO
		Uranium-238	0.531 g	2.21	0.185	0.0728	.006327684	pCi/g	NO
244148015	RE12-10-7627	Uranium-233/234	0.515 g	1.30	0.112	0.101	.022135922	pCi/g	NO
		Uranium-235/236	0.515 g	0.0884	0.0198	0.0625	.012116505	pCi/g	NO
		Uranium-238	0.515 g	1.46	0.123	0.0584	.006524272	pCi/g	NO
244148016	RE12-10-7625	Uranium-233/234	0.501 g	1.66	0.145	0.132	.022754491	pCi/g	NO
		Uranium-235/236	0.501 g	0.0944	0.0233	0.0816	.012455090	pCi/g	NO
		Uranium-238	0.501 g	1.85	0.159	0.0763	.006706587	pCi/g	NO
244148017	RE12-10-7656	Uranium-233/234	0.514 g	2.48	0.199	0.117	.022178988	pCi/g	NO
		Uranium-235/236	0.514 g	0.191	0.0327	0.0724	.012140078	pCi/g	NO
		Uranium-238	0.514 g	2.26	0.185	0.0676	.008536965	pCi/g	NO
244148018	RE12-10-7655	Uranium-233/234	0.537 g	1.06	0.0982	0.114	.021229050	pCi/g	NO
		Uranium-235/236	0.537 g	0.0592	0.0181	0.0708	.011620112	pCi/g	NO
		Uranium-238	0.537 g	1.13	0.103	0.0662	.006256983	pCi/g	NO

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148002_UU SAMPLE QTY: 0.517 G	
DETECTOR NUMBER :67579 AVERAGE %EFFICIENCY :24.9091 % YIELD : 97.361		COUNT DATE:21-JAN-2010 20:07:07 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.39016 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B132.CNF;434 BKG DATE : 17-JAN-2010 EFF FILE : W132.CNF;130 CAL DATE : 18-JAN-2010

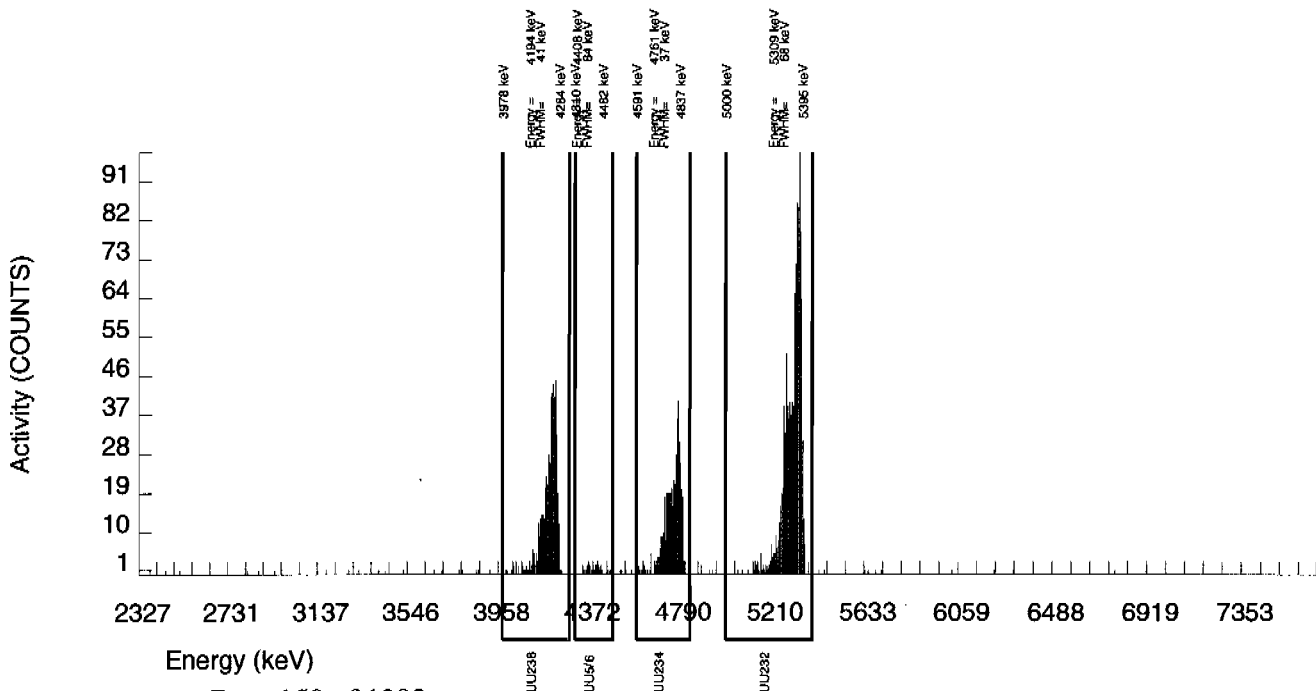
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	458.000	456.895	0.000	6.0782	100.0000	1.64E+00	1.39E-01	5.08E-02	1.11E-01	7.68E-02
U232	5302.100	1095.000	1093.000	2.000	1.4142	100.0000	3.93E+00	3.02E-01	1.18E-02	3.34E-02	1.19E-01
U-235	4391.000	29.000	29.000	0.000	2.7628	80.90000	1.29E-01	2.56E-02	2.85E-02	6.91E-02	2.39E-02
U-238	4184.730	514.000	514.000	0.000	3.2810	100.0000	1.85E+00	1.54E-01	2.74E-02	6.46E-02	8.15E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148003_UU SAMPLE QTY: 0.512 G	
DETECTOR NUMBER :76229 AVERAGE %EFFICIENCY :24.3524 % YIELD : 95.031		COUNT DATE:21-JAN-2010 20:07:09 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.28509 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B133.CNF;426 BKG DATE : 17-JAN-2010 EFF FILE : W133.CNF;121 CAL DATE : 18-JAN-2010

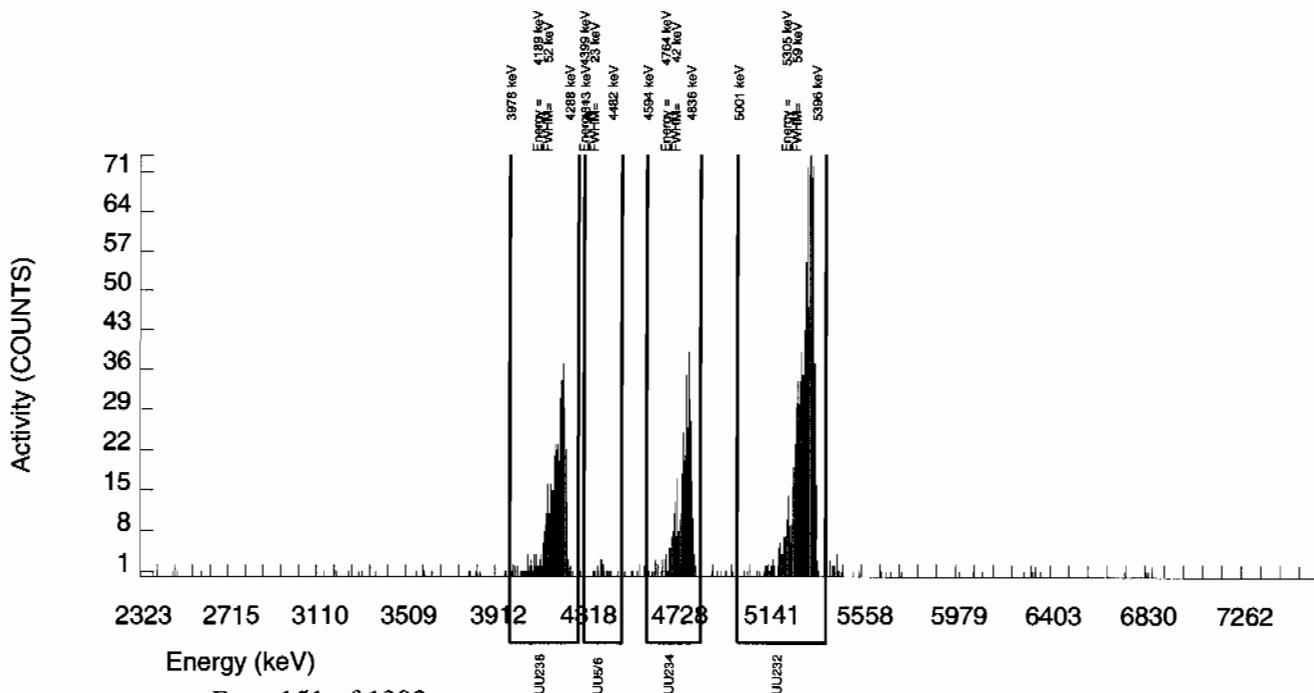
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	400.000	394.945	4.000	6.0782	100.0000	1.50E+00	1.31E-01	5.38E-02	1.18E-01	7.63E-02
U232	5302.100	1045.000	1043.000	2.000	1.4142	100.0000	3.97E+00	3.07E-01	1.25E-02	3.53E-02	1.23E-01
U-235	4391.000	21.000	21.000	0.000	2.7628	80.90000	9.87E-02	2.26E-02	3.02E-02	7.31E-02	2.15E-02
U-238	4184.730	481.000	480.000	1.000	3.2810	100.0000	1.82E+00	1.54E-01	2.90E-02	6.83E-02	8.35E-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: 940245  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148004\_UU  
SAMPLE QTY: 0.510 G

DETECTOR NUMBER :76230  
AVERAGE %EFFICIENCY :24.4853  
% YIELD : 95.149

COUNT DATE:21-JAN-2010 20:07:13  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50915 dpm  
RESULTS : 4.29043 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B134.CNF;425  
BKG DATE : 17-JAN-2010  
EFF FILE : W134.CNF;125  
CAL DATE : 18-JAN-2010

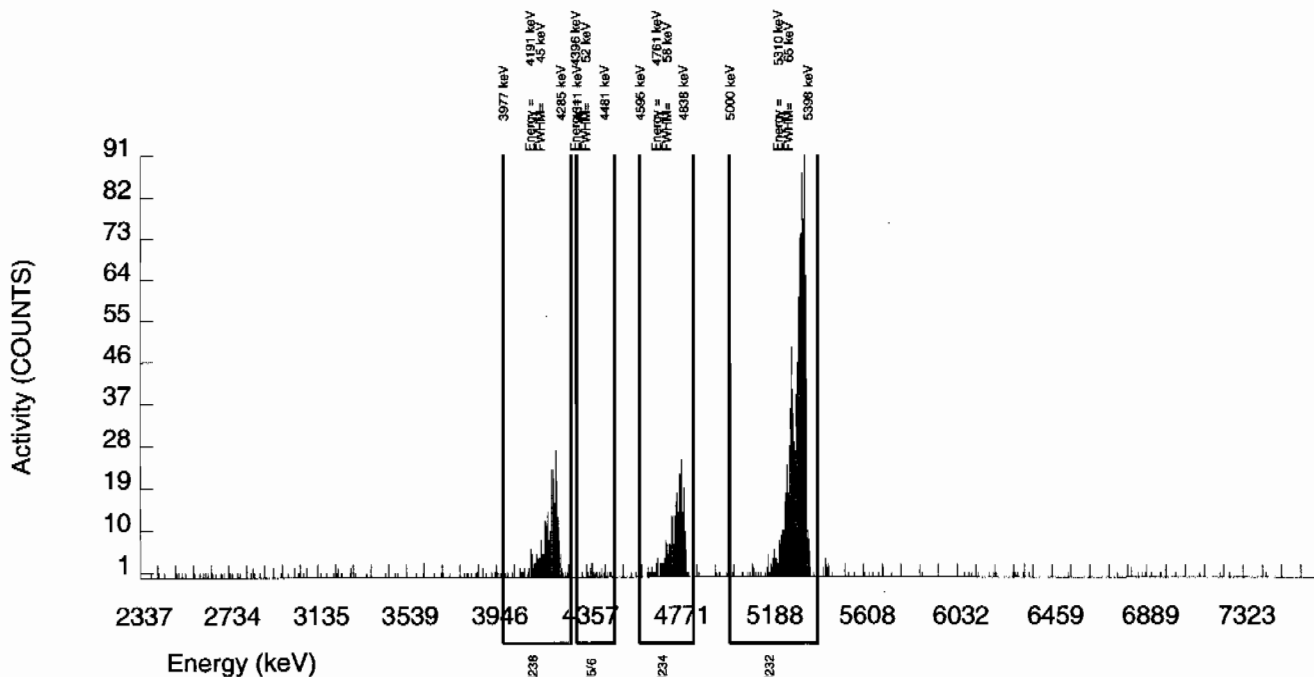
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	287.000	285.938	0.000	6.0782	100.0000	1.08E+00	1.00E-01	5.36E-02	1.17E-01	6.41E-02
U232	5302.100	1051.000	1050.000	1.000	1.0000	100.0000	3.98E+00	3.08E-01	8.82E-03	2.79E-02	1.23E-01
U-235	4391.000	22.000	22.000	0.000	2.7628	80.90000	1.03E-01	2.32E-02	3.01E-02	7.29E-02	2.20E-02
U-238	4184.730	301.000	300.000	1.000	3.2810	100.0000	1.14E+00	1.04E-01	2.89E-02	6.81E-02	6.59E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148005_UU SAMPLE QTY: 0.508 G	
DETECTOR NUMBER :76231 AVERAGE %EFFICIENCY :24.9676 % YIELD : 93.401		COUNT DATE:21-JAN-2010 20:07:15 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.21157 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B139.CNF;388 BKG DATE : 17-JAN-2010 EFF FILE : W139.CNF;102 CAL DATE : 18-JAN-2010

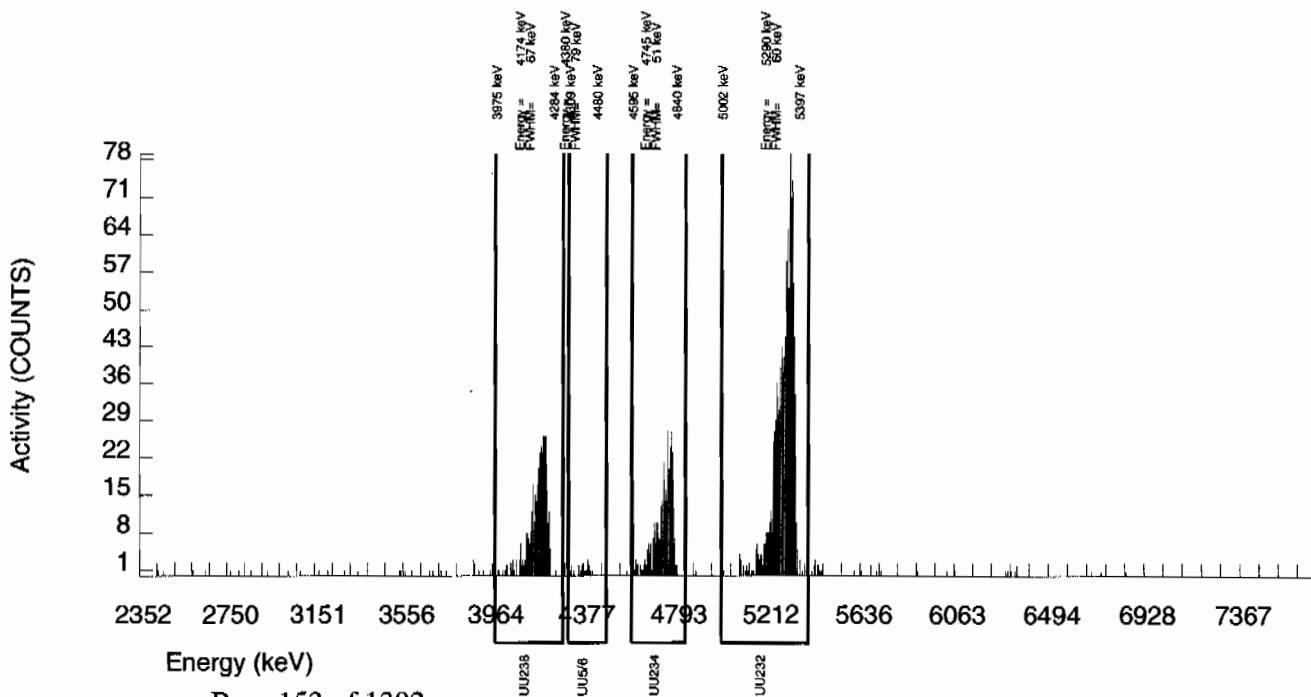
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	335.000	332.937	1.000	6.0782	100.0000	1.27E+00	1.15E-01	5.38E-02	1.18E-01	6.96E-02
U232	5302.100	1055.000	1051.000	4.000	2.0000	100.0000	4.00E+00	3.14E-01	1.77E-02	4.57E-02	1.24E-01
U-235	4391.000	21.000	21.000	0.000	2.7628	80.90000	9.87E-02	2.27E-02	3.02E-02	7.32E-02	2.15E-02
U-238	4184.730	377.000	375.000	2.000	3.2810	100.0000	1.43E+00	1.27E-01	2.90E-02	6.84E-02	7.40E-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: 940245  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148006\_UU  
SAMPLE QTY: 0.533 G

DETECTOR NUMBER :78771  
AVERAGE %EFFICIENCY :25.4652  
% YIELD : 109.437

COUNT DATE:21-JAN-2010 20:07:18  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50915 dpm  
RESULTS : 4.93468 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B140.CNF;388  
BKG DATE : 17-JAN-2010  
EFF FILE : W140.CNF;107  
CAL DATE : 18-JAN-2010

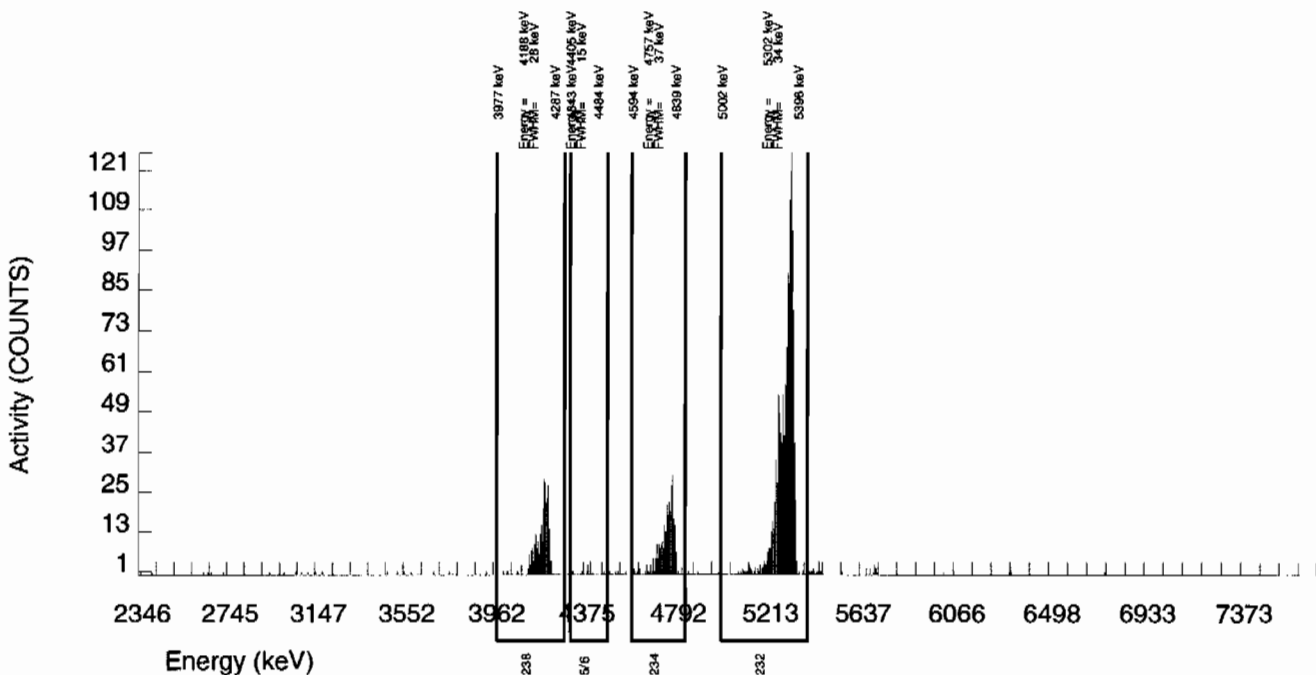
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	295.000	293.730	0.000	6.0782	100.0000	8.91E-01	8.10E-02	4.29E-02	9.40E-02	5.20E-02
U232	5302.100	1260.000	1256.000	4.000	2.0000	100.0000	3.81E+00	2.87E-01	1.41E-02	3.64E-02	1.08E-01
U-235	4391.000	14.000	13.000	1.000	2.7628	80.90000	4.87E-02	1.49E-02	2.41E-02	5.83E-02	1.45E-02
U-238	4184.730	273.000	273.000	0.000	3.2810	100.0000	8.28E-01	7.65E-02	2.31E-02	5.45E-02	5.01E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148007_UU SAMPLE QTY: 0.523 G	
DETECTOR NUMBER :76232 AVERAGE %EFFICIENCY :25.2508 % YIELD : 93.407		COUNT DATE:21-JAN-2010 20:07:20 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.21187 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B141.CNF;391 BKG DATE : 17-JAN-2010 EFF FILE : W141.CNF;105 CAL DATE : 18-JAN-2010

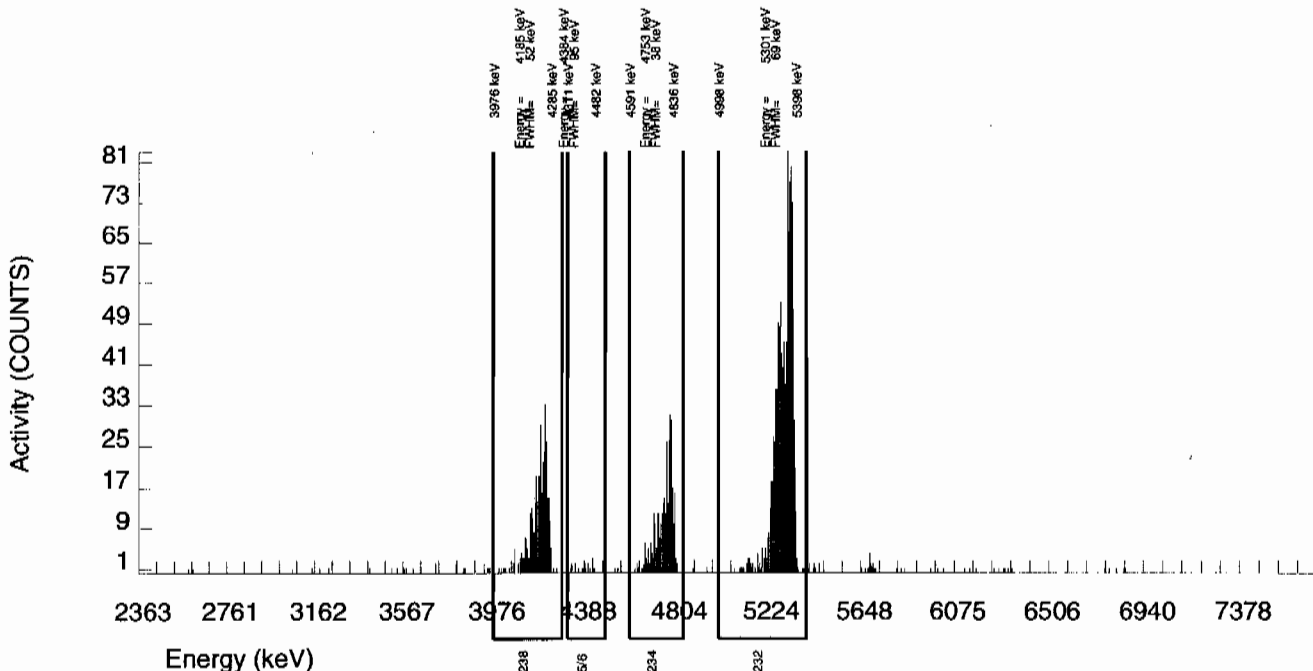
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	341.000	338.925	1.000	6.0782	100.0000	1.24E+00	1.12E-01	5.16E-02	1.13E-01	6.74E-02
U232	5302.100	1067.000	1063.000	4.000	2.0000	100.0000	3.88E+00	3.05E-01	1.70E-02	4.39E-02	1.20E-01
U-235	4391.000	20.000	19.000	1.000	2.7628	80.90000	8.58E-02	2.16E-02	2.90E-02	7.03E-02	2.07E-02
U-238	4184.730	382.000	381.000	1.000	3.2810	100.0000	1.39E+00	1.23E-01	2.79E-02	6.56E-02	7.15E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148008_UU SAMPLE QTY: 0.514 G	
DETECTOR NUMBER :64261 AVERAGE %EFFICIENCY :25.9552 % YIELD : 91.471		COUNT DATE:21-JAN-2010 20:07:22 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.12455 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B142.CNF;385 BKG DATE : 17-JAN-2010 EFF FILE : W142.CNF;109 CAL DATE : 18-JAN-2010

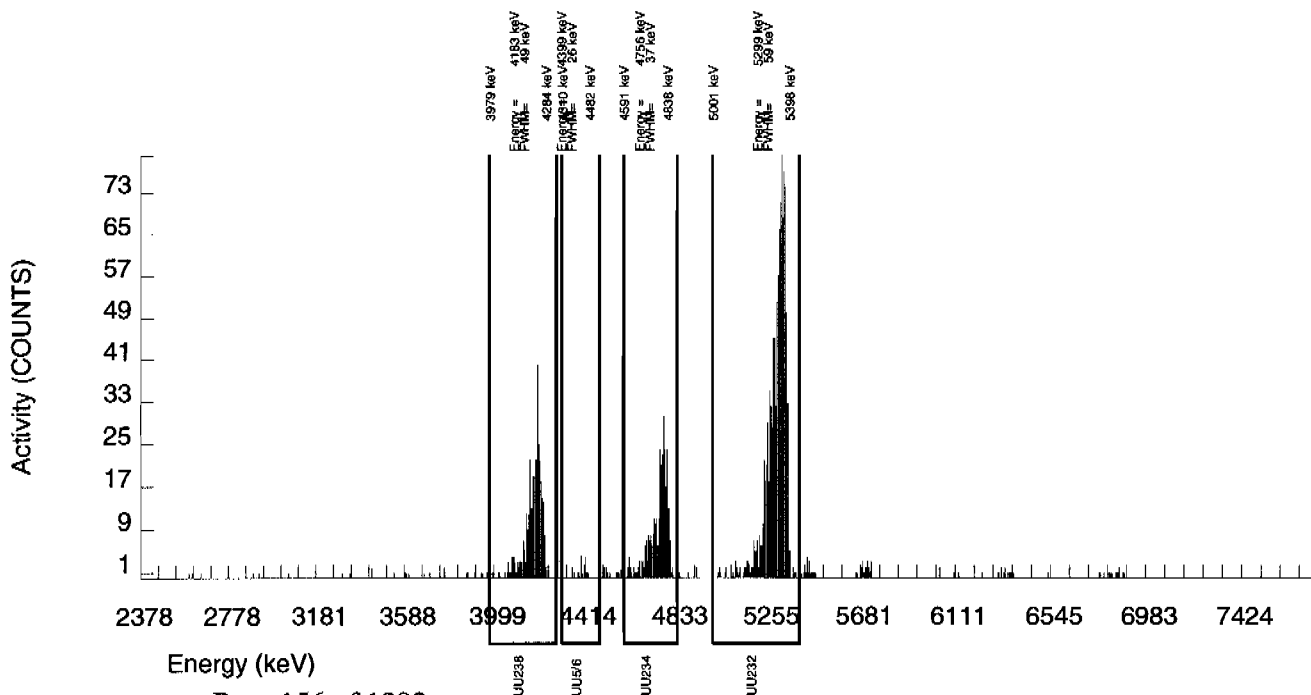
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	327.000	323.918	2.000	6.0782	100.0000	1.20E+00	1.08E-01	5.22E-02	1.14E-01	6.68E-02
U232	5302.100	1075.000	1070.000	5.000	2.2361	100.0000	3.95E+00	3.05E-01	1.92E-02	4.84E-02	1.21E-01
U-235	4391.000	17.000	17.000	0.000	2.7628	80.90000	7.76E-02	1.96E-02	2.93E-02	7.10E-02	1.88E-02
U-238	4184.730	366.000	364.000	2.000	3.2810	100.0000	1.34E+00	1.19E-01	2.82E-02	6.64E-02	7.08E-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: 940245  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148009\_UU  
SAMPLE QTY: 0.515 G

DETECTOR NUMBER :75550  
AVERAGE %EFFICIENCY :24.6786  
% YIELD : 105.553

COUNT DATE:21-JAN-2010 20:07:25  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50915 dpm  
RESULTS : 4.75955 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B147.CNF;390  
BKG DATE : 17-JAN-2010  
EFF FILE : W147.CNF;112  
CAL DATE : 18-JAN-2010

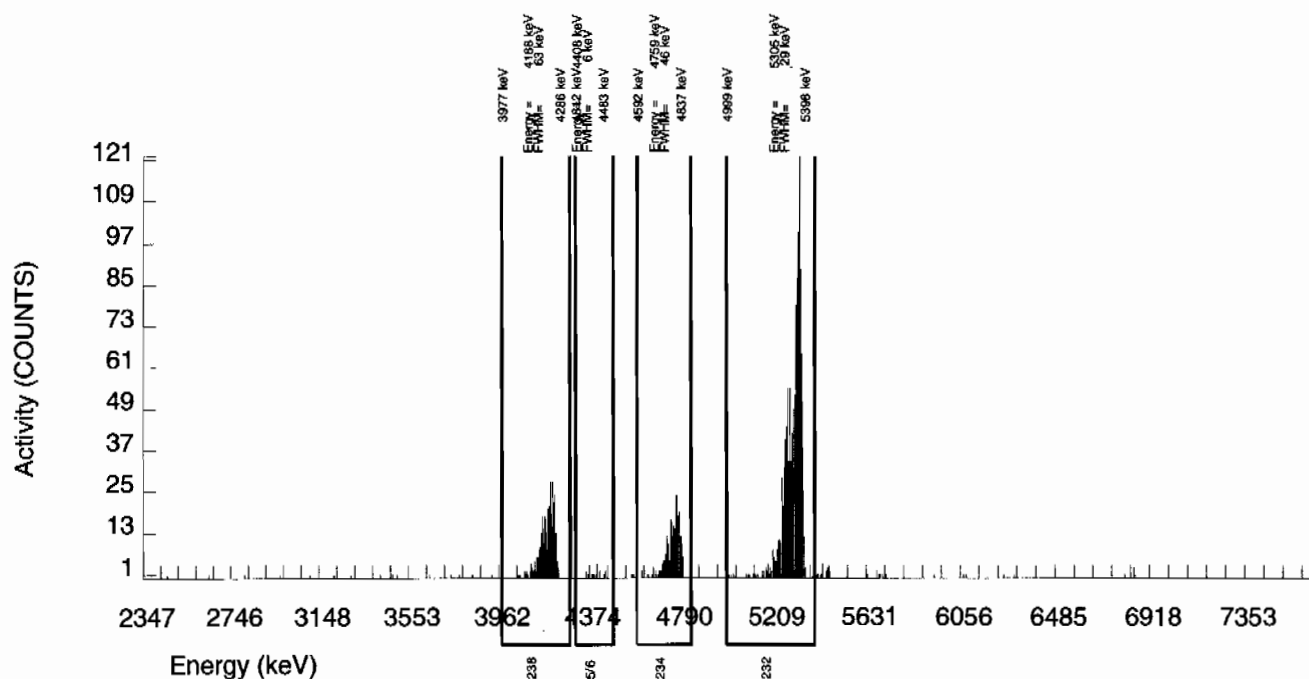
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	258.000	256.813	0.000	6.0782	100.0000	8.62E-01	8.19E-02	4.75E-02	1.04E-01	5.38E-02
U232	5302.100	1177.000	1174.000	3.000	1.7321	100.0000	3.94E+00	3.05E-01	1.35E-02	3.62E-02	1.15E-01
U-235	4391.000	17.000	16.000	1.000	2.7628	80.90000	6.64E-02	1.82E-02	2.67E-02	6.46E-02	1.76E-02
U-238	4184.730	319.000	319.000	0.000	3.2810	100.0000	1.07E+00	9.73E-02	2.56E-02	6.04E-02	6.00E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148010_UU SAMPLE QTY: 0.529 G	
DETECTOR NUMBER :74429 AVERAGE %EFFICIENCY :24.9625 % YIELD : 98.752		COUNT DATE:21-JAN-2010 20:07:27 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.45290 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B148.CNF;389 BKG DATE : 17-JAN-2010 EFF FILE : W148.CNF;127 CAL DATE : 18-JAN-2010

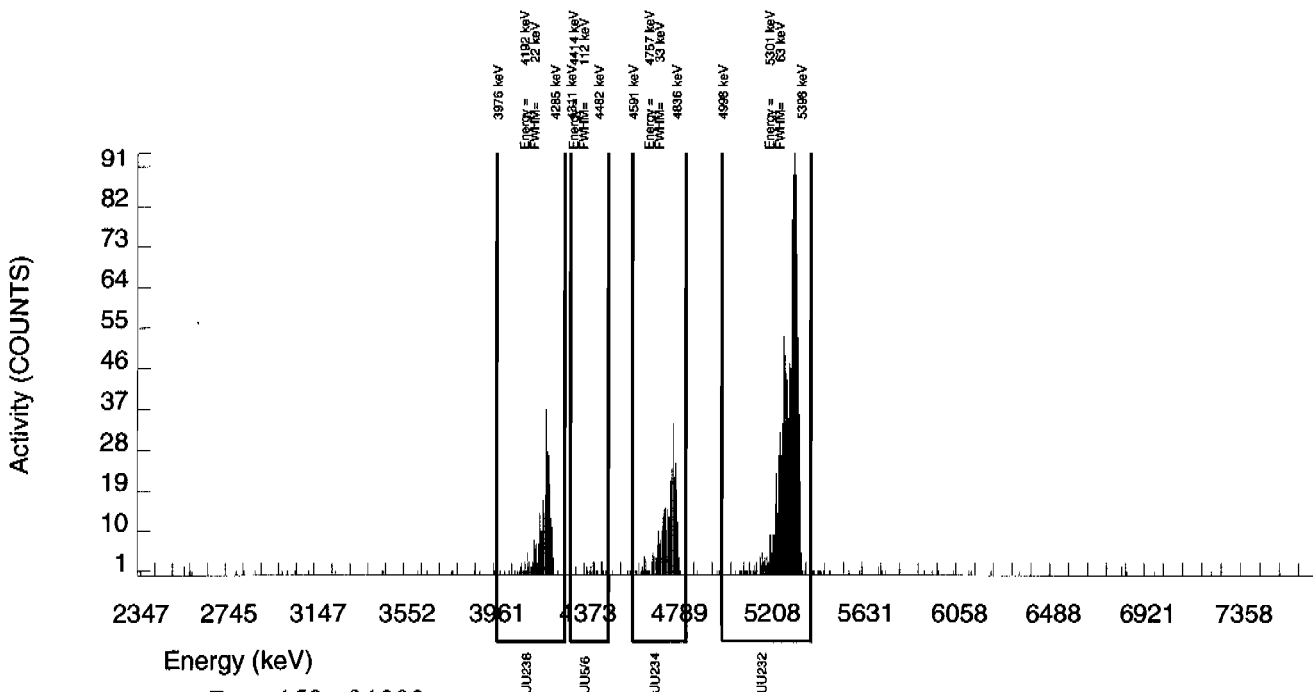
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	338.000	335.876	1.000	6.0782	100.0000	1.16E+00	1.04E-01	4.88E-02	1.07E-01	6.35E-02
U232	5302.100	1115.000	1111.000	4.000	2.0000	100.0000	3.84E+00	2.94E-01	1.61E-02	4.15E-02	1.16E-01
U-235	4391.000	22.000	21.000	1.000	2.7628	80.90000	8.97E-02	2.14E-02	2.74E-02	6.65E-02	2.05E-02
U-238	4184.730	294.000	293.000	1.000	3.2810	100.0000	1.01E+00	9.28E-02	2.64E-02	6.21E-02	5.93E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148011_UU SAMPLE QTY: 0.534 G	
DETECTOR NUMBER :33449 AVERAGE %EFFICIENCY :24.3144 % YIELD : 108.776		COUNT DATE:21-JAN-2010 20:07:30 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.90489 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B149.CNF;393 BKG DATE : 17-JAN-2010 EFF FILE : W149.CNF;112 CAL DATE : 18-JAN-2010

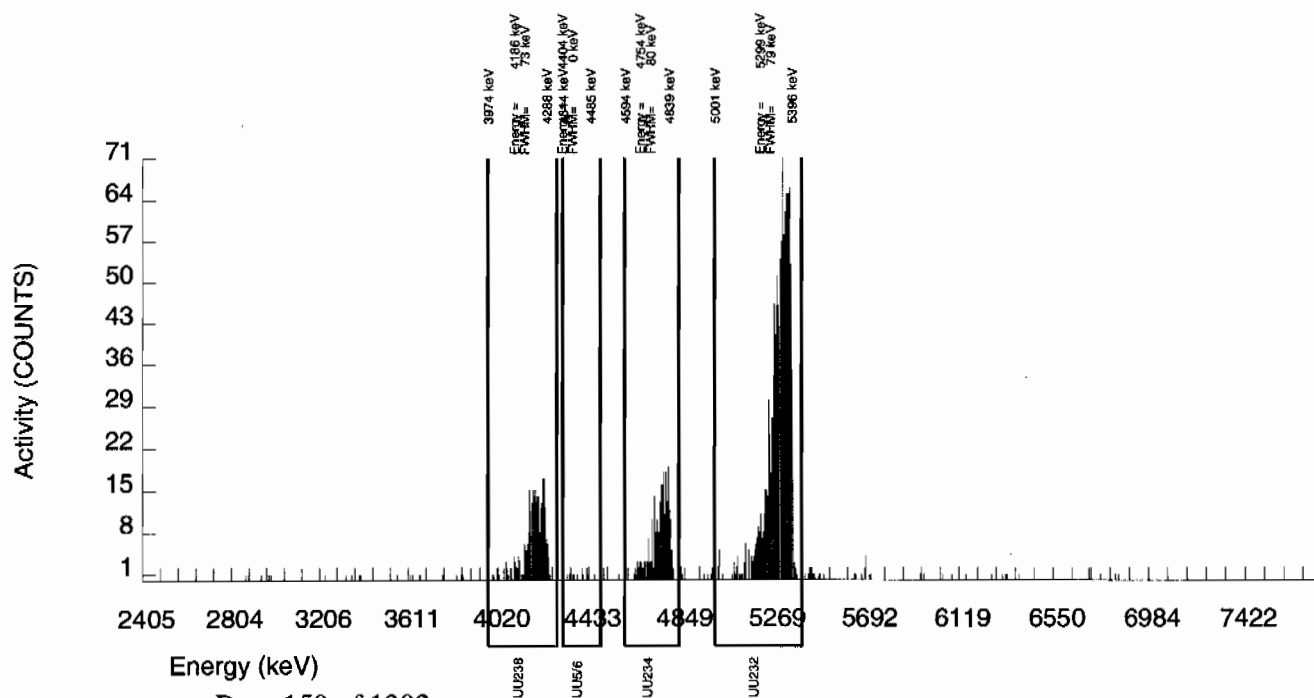
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	262.000	258.794	2.000	6.0782	100.0000	8.25E-01	7.76E-02	4.51E-02	9.88E-02	5.17E-02
U232	5302.100	1195.000	1192.000	3.000	1.7321	100.0000	3.80E+00	2.88E-01	1.29E-02	3.43E-02	1.10E-01
U-235	4391.000	20.000	18.000	2.000	2.7628	80.90000	7.10E-02	1.91E-02	2.53E-02	6.14E-02	1.85E-02
U-238	4184.730	281.000	279.000	2.000	3.2810	100.0000	8.90E-01	8.23E-02	2.43E-02	5.73E-02	5.37E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148012_UU SAMPLE QTY: 0.546 G	
DETECTOR NUMBER :75552 AVERAGE %EFFICIENCY :24.4633 % YIELD : 95.416		COUNT DATE:21-JAN-2010 20:07:32 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50916 dpm RESULTS : 4.30247 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B150.CNF;394 BKG DATE : 17-JAN-2010 EFF FILE : W150.CNF;120 CAL DATE : 18-JAN-2010

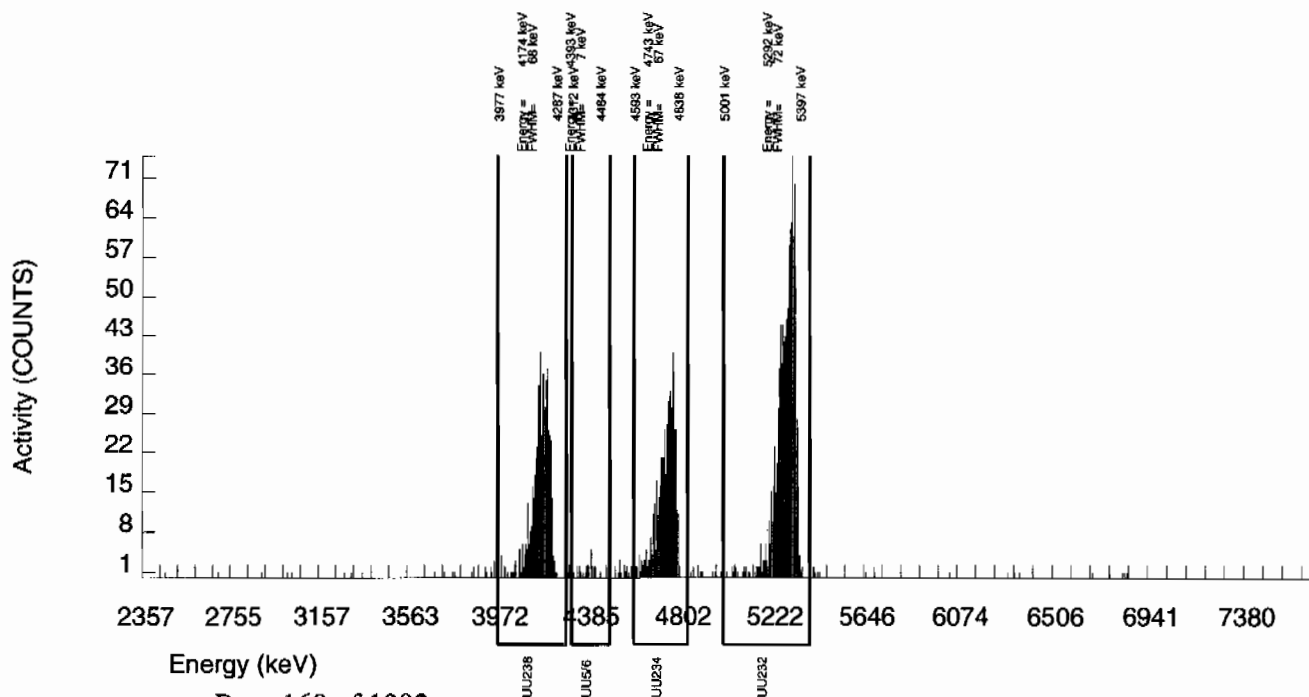
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	550.000	547.936	1.000	6.0782	100.0000	1.94E+00	1.60E-01	5.00E-02	1.10E-01	8.29E-02
U232	5302.100	1052.000	1052.000	0.000	0.0000	100.0000	3.72E+00	2.87E-01	0.00E+00	9.58E-03	1.15E-01
U-235	4391.000	29.000	29.000	0.000	2.7628	80.90000	1.27E-01	2.52E-02	2.81E-02	6.80E-02	2.35E-02
U-238	4184.730	586.000	586.000	0.000	3.2810	100.0000	2.07E+00	1.70E-01	2.70E-02	6.35E-02	8.56E-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: 940245  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148013\_UU  
SAMPLE QTY: 0.508 G

DETECTOR NUMBER :76223  
AVERAGE %EFFICIENCY :25.3391  
% YIELD : 96.409

COUNT DATE:21-JAN-2010 20:07:34  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50916 dpm  
RESULTS : 4.34724 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B153.CNF;381  
BKG DATE : 17-JAN-2010  
EFF FILE : W153.CNF;108  
CAL DATE : 18-JAN-2010

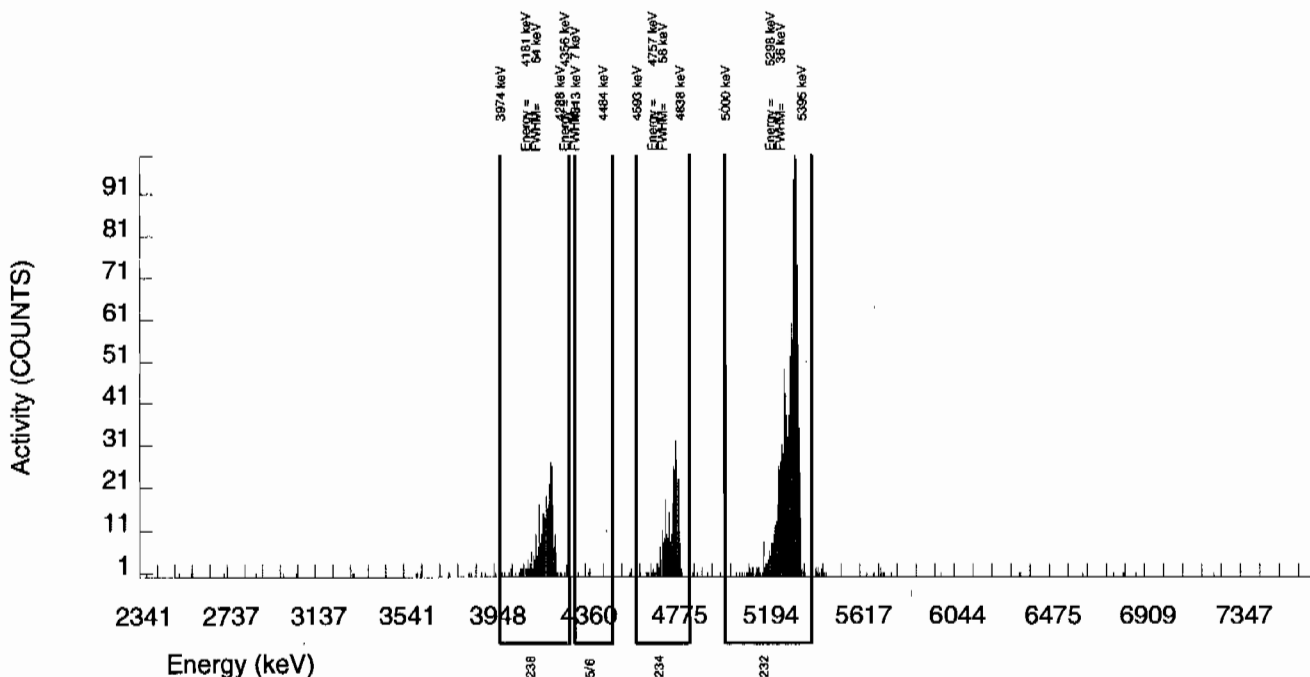
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	300.000	297.887	1.000	6.0782	100.0000	1.08E+00	9.89E-02	5.13E-02	1.12E-01	6.29E-02
U232	5302.100	1103.000	1101.000	2.000	1.4142	100.0000	4.00E+00	3.07E-01	1.19E-02	3.37E-02	1.21E-01
U-235	4391.000	7.000	7.000	0.000	2.7628	80.90000	3.14E-02	1.21E-02	2.88E-02	6.98E-02	1.19E-02
U-238	4184.730	318.000	318.000	0.000	3.2810	100.0000	1.15E+00	1.04E-01	2.77E-02	6.52E-02	6.47E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148014_UU SAMPLE QTY: 0.531 G	
DETECTOR NUMBER :76224 AVERAGE %EFFICIENCY :25.6513 % YIELD : 81.655		COUNT DATE:21-JAN-2010 20:07:37 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50916 dpm RESULTS : 3.68197 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B154.CNF;383 BKG DATE : 17-JAN-2010 EFF FILE : W154.CNF;106 CAL DATE : 18-JAN-2010

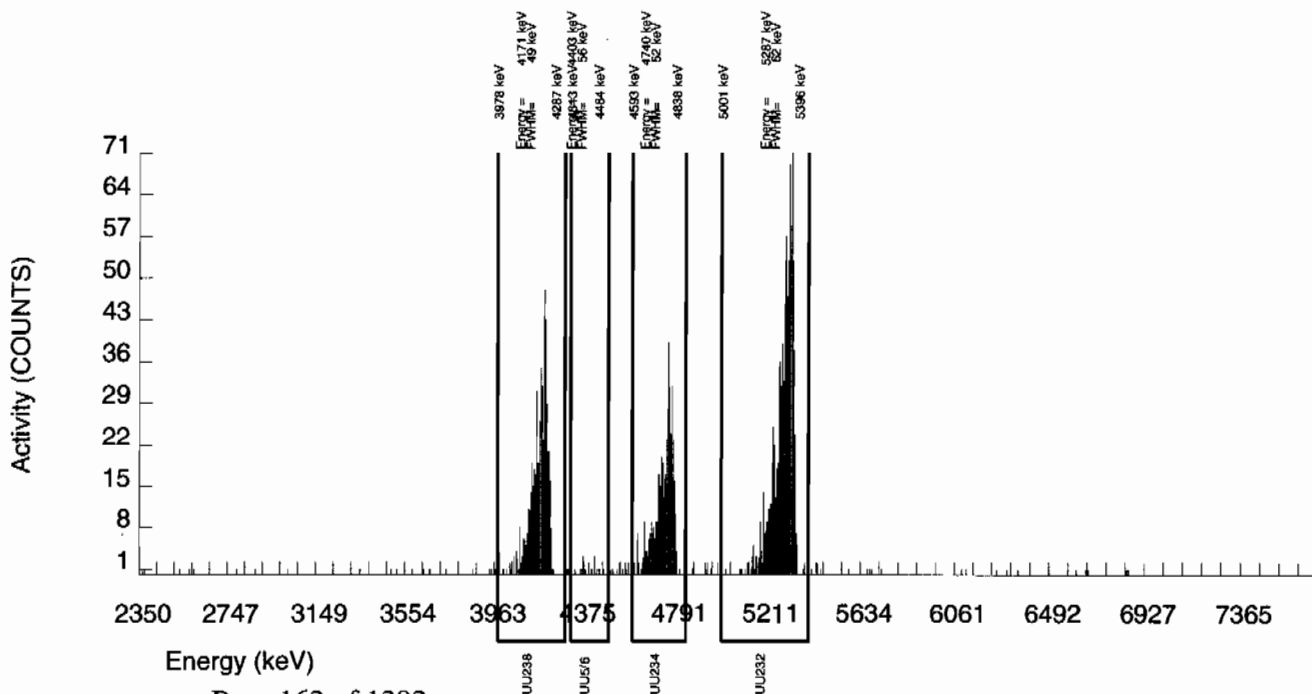
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	445.000	444.045	0.000	6.0782	100.0000	1.80E+00	1.55E-01	5.73E-02	1.26E-01	8.53E-02
U232	5302.100	946.000	944.000	2.000	1.4142	100.0000	3.83E+00	3.01E-01	1.33E-02	3.76E-02	1.25E-01
U-235	4391.000	20.000	20.000	0.000	2.7628	80.90000	1.00E-01	2.35E-02	3.22E-02	7.79E-02	2.24E-02
U-238	4184.730	547.000	546.000	1.000	3.2810	100.0000	2.21E+00	1.85E-01	3.09E-02	7.28E-02	9.48E-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: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148015_UU SAMPLE QTY: 0.515 G	
DETECTOR NUMBER :75553 AVERAGE %EFFICIENCY :25.9756 % YIELD : 103.614		COUNT DATE:21-JAN-2010 20:07:40 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50916 dpm RESULTS : 4.67212 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B155.CNF;390 BKG DATE : 17-JAN-2010 EFF FILE : W155.CNF;115 CAL DATE : 18-JAN-2010

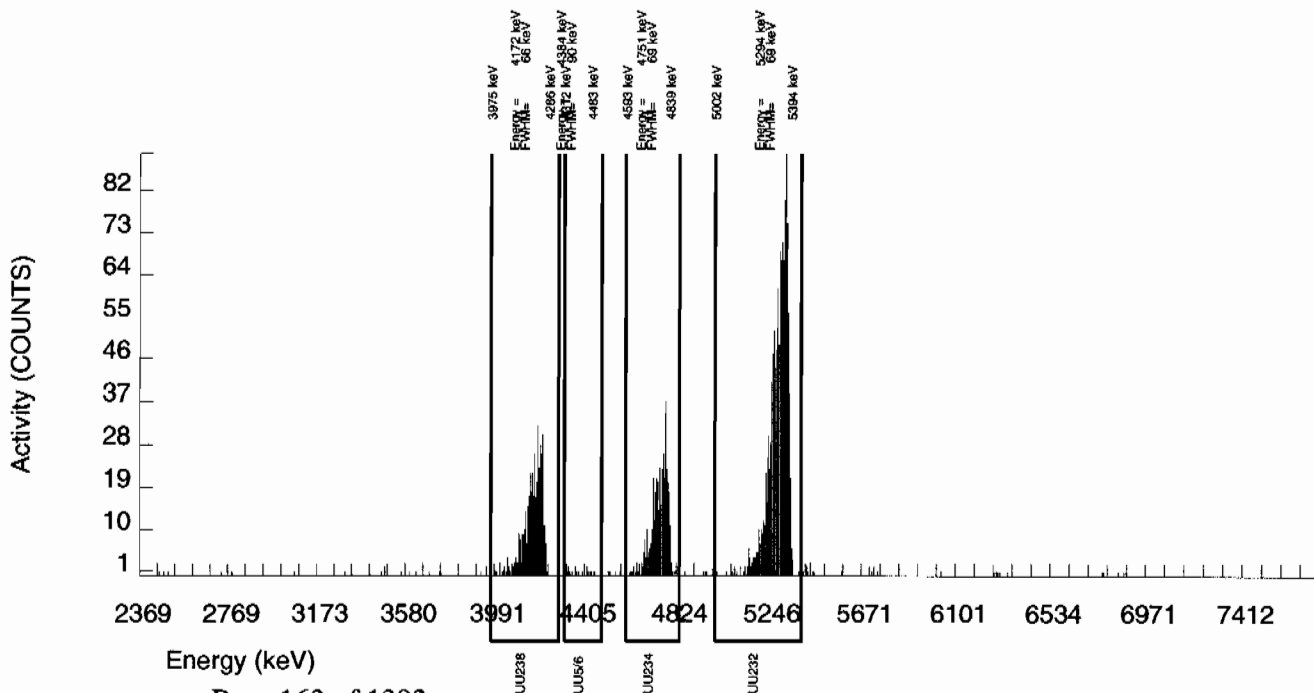
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	402.000	400.773	0.000	6.0782	100.0000	1.30E+00	1.12E-01	4.60E-02	1.01E-01	6.51E-02
U232	5302.100	1213.000	1213.000	0.000	0.0000	100.0000	3.94E+00	2.98E-01	0.00E+00	8.81E-03	1.13E-01
U-235	4391.000	22.000	22.000	0.000	2.7628	80.90000	8.84E-02	1.98E-02	2.58E-02	6.25E-02	1.88E-02
U-238	4184.730	449.000	449.000	0.000	3.2810	100.0000	1.46E+00	1.23E-01	2.48E-02	5.84E-02	6.89E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940245 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148016_UU SAMPLE QTY: 0.501 G	
DETECTOR NUMBER :75554 AVERAGE %EFFICIENCY :24.5738 % YIELD : 86.229		COUNT DATE:21-JAN-2010 20:07:42 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50916 dpm RESULTS : 3.88821 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B156.CNF;391 BKG DATE : 17-JAN-2010 EFF FILE : W156.CNF;119 CAL DATE : 18-JAN-2010

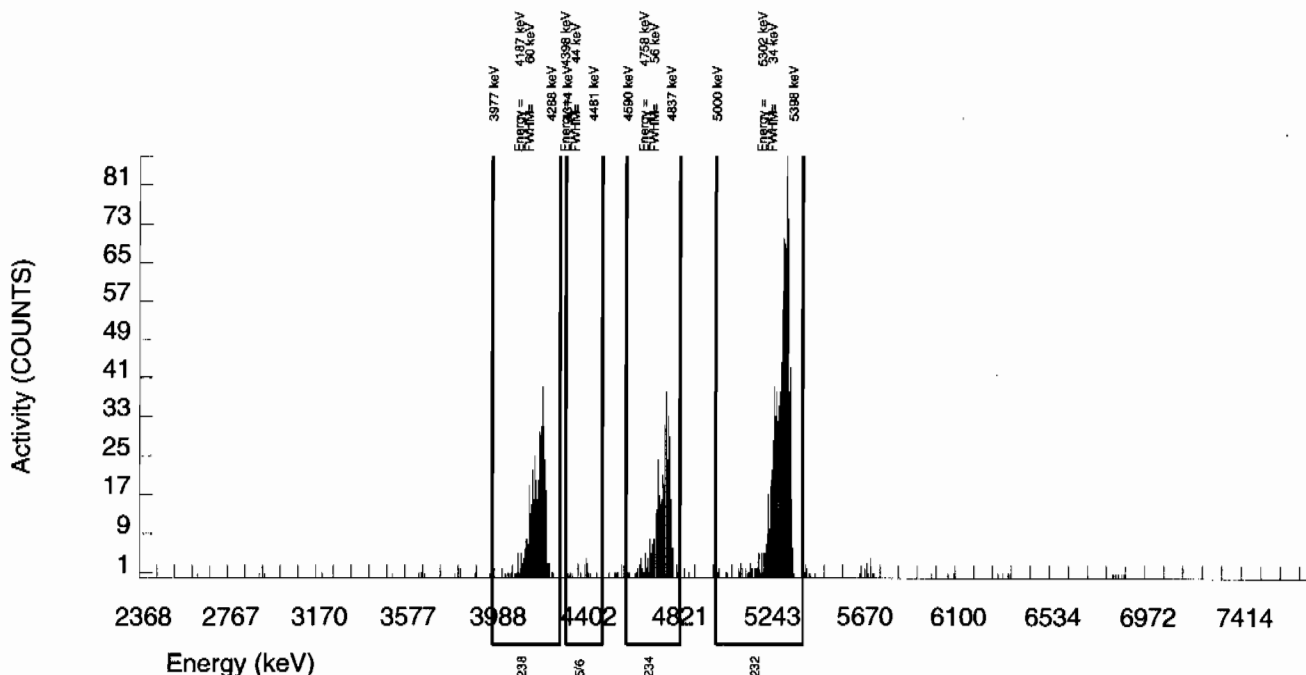
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	391.000	390.034	0.000	6.0782	100.0000	1.65E+00	1.45E-01	6.00E-02	1.31E-01	8.38E-02
U232	5302.100	959.000	955.000	4.000	2.0000	100.0000	4.05E+00	3.19E-01	1.97E-02	5.10E-02	1.32E-01
U-235	4391.000	18.000	18.000	0.000	2.7628	80.90000	9.44E-02	2.33E-02	3.37E-02	8.16E-02	2.23E-02
U-238	4184.730	437.000	436.000	1.000	3.2810	100.0000	1.85E+00	1.59E-01	3.24E-02	7.63E-02	8.88E-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: 940245  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148017\_UU  
SAMPLE QTY: 0.514 G

DETECTOR NUMBER :75555  
AVERAGE %EFFICIENCY :24.6661  
% YIELD : 94.452

COUNT DATE:21-JAN-2010 20:07:45  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50915 dpm  
RESULTS : 4.25898 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B157.CNF;391  
BKG DATE : 17-JAN-2010  
EFF FILE : W157.CNF;109  
CAL DATE : 18-JAN-2010

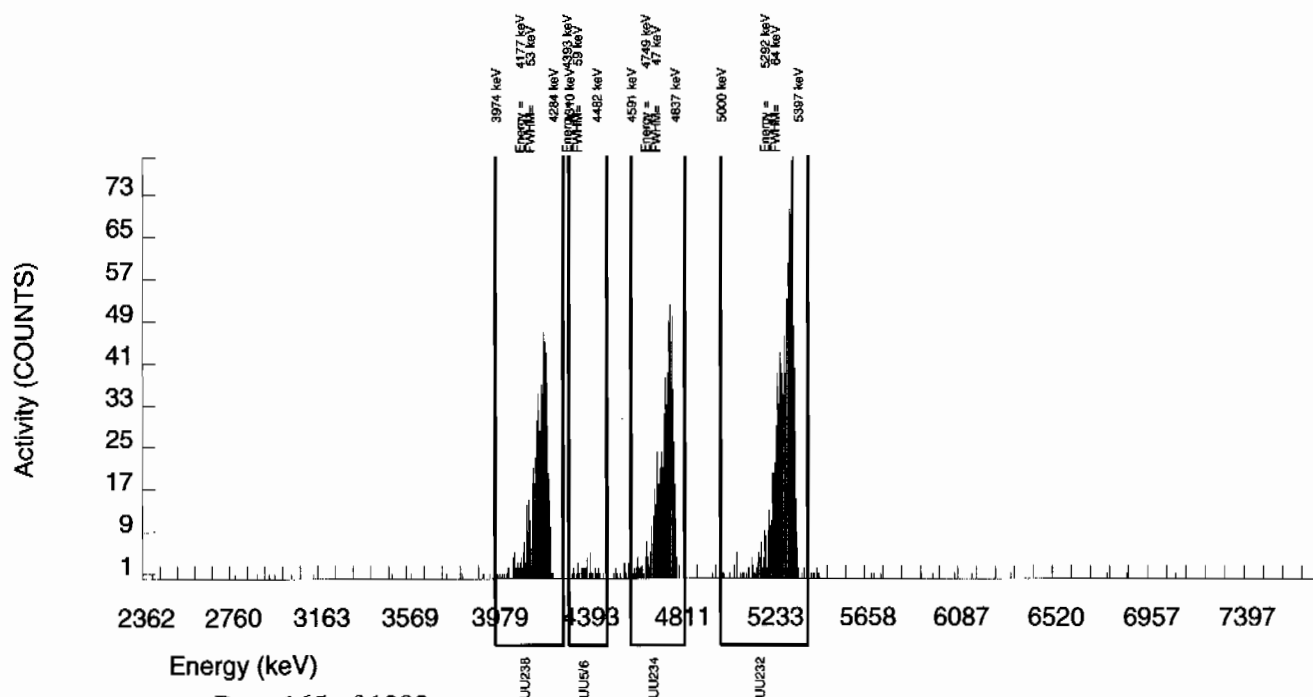
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	654.000	652.938	0.000	6.0782	100.0000	2.46E+00	1.99E-01	5.32E-02	1.17E-01	9.61E-02
U232	5302.100	1051.000	1050.000	1.000	1.0000	100.0000	3.95E+00	3.05E-01	8.75E-03	2.77E-02	1.22E-01
U-235	4391.000	41.000	41.000	0.000	2.7628	80.90000	1.91E-01	3.27E-02	2.99E-02	7.24E-02	2.98E-02
U-238	4184.730	603.000	602.000	1.000	3.2810	100.0000	2.26E+00	1.85E-01	2.87E-02	6.76E-02	9.24E-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: 940245  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S0244148018\_UU  
SAMPLE QTY: 0.537 G

DETECTOR NUMBER :33451  
AVERAGE %EFFICIENCY :24.3861  
% YIELD : 93.444

COUNT DATE:21-JAN-2010 20:07:47  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50915 dpm  
RESULTS : 4.21353 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B158.CNF;392  
BKG DATE : 17-JAN-2010  
EFF FILE : W158.CNF;112  
CAL DATE : 18-JAN-2010

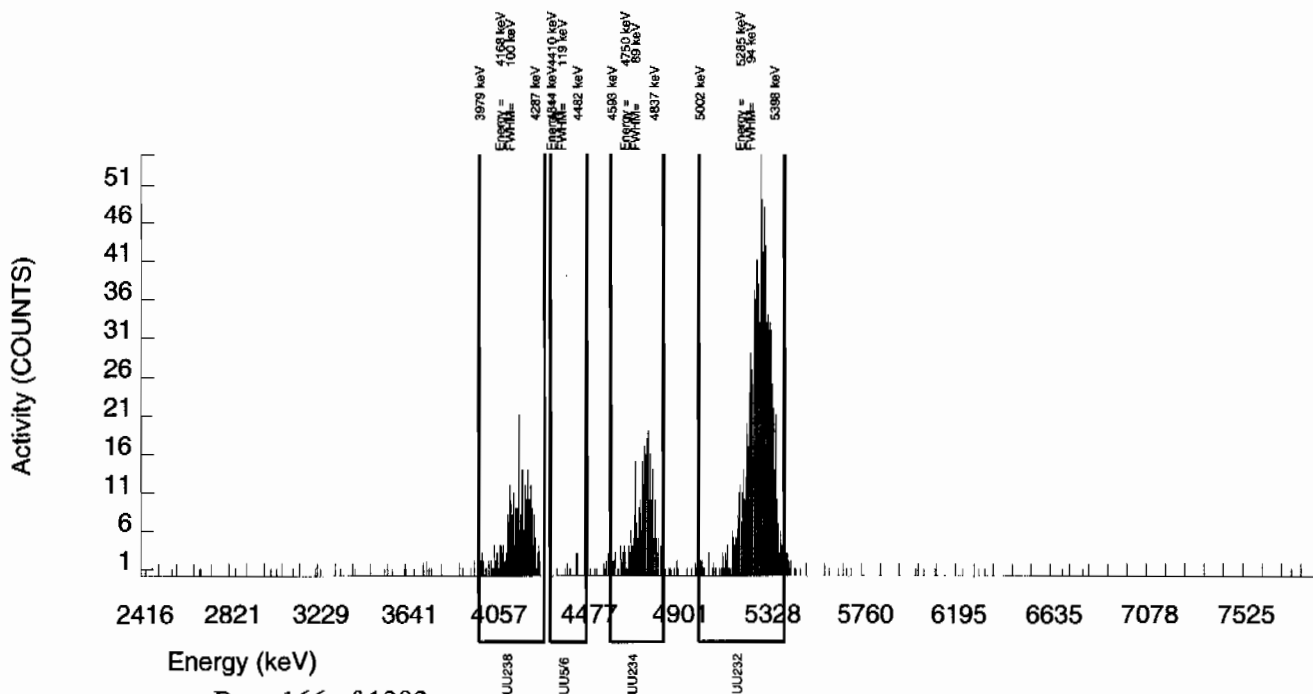
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	291.000	288.961	1.000	6.0782	100.0000	1.06E+00	9.82E-02	5.21E-02	1.14E-01	6.28E-02
U232	5302.100	1030.000	1027.000	3.000	1.7321	100.0000	3.78E+00	2.94E-01	1.48E-02	3.96E-02	1.18E-01
U-235	4391.000	14.000	13.000	1.000	2.7628	80.90000	5.92E-02	1.81E-02	2.92E-02	7.08E-02	1.76E-02
U-238	4184.730	310.000	306.000	4.000	3.2810	100.0000	1.13E+00	1.03E-01	2.81E-02	6.62E-02	6.52E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940245 SAMPLE DATE : 13-JAN-2010 00:00:00		SAMPLE ID : S1202012084_UU SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :76225 AVERAGE %EFFICIENCY :25.0212 % YIELD : 107.034		COUNT DATE:21-JAN-2010 20:07:51 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50804 dpm RESULTS : 4.82513 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B159.CNF;365 BKG DATE : 17-JAN-2010 EFF FILE : W159.CNF;104 CAL DATE : 18-JAN-2010

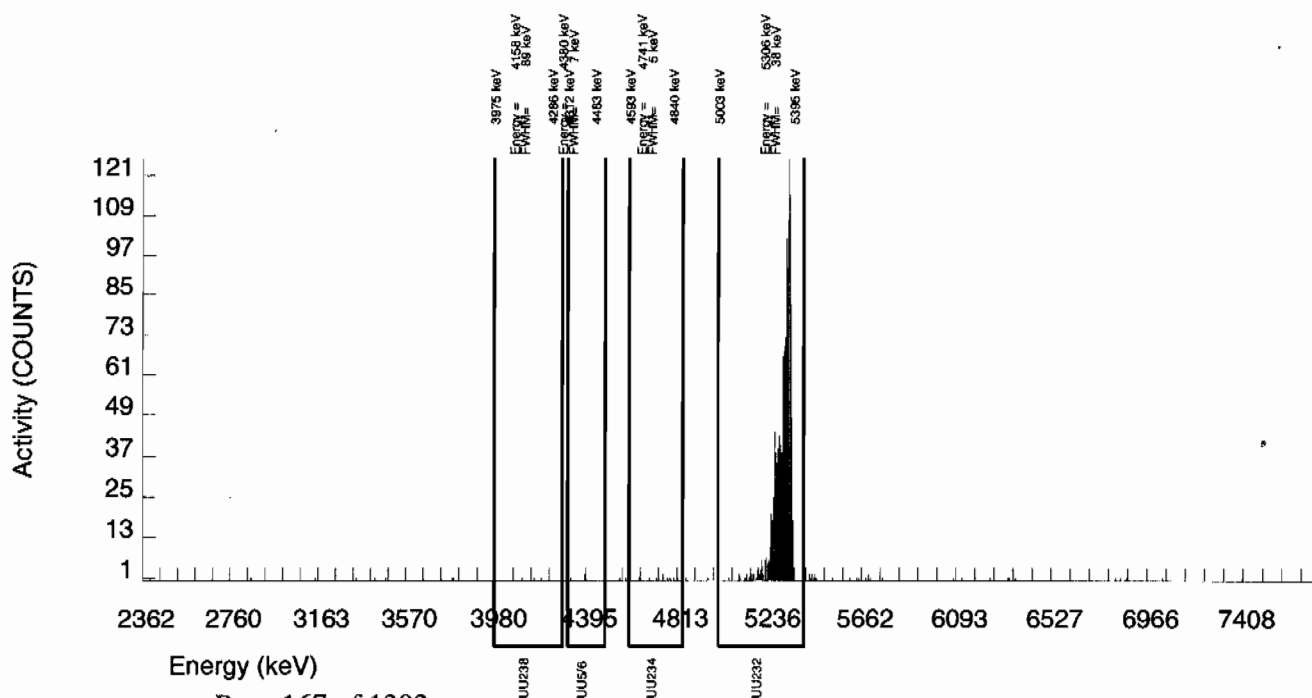
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	10.000	6.779	2.000	6.0782	100.0000	1.14E-02	5.58E-03	2.38E-02	5.21E-02	5.52E-03
U232	5302.100	1211.000	1207.000	4.000	2.0000	100.0000	2.03E+00	1.53E-01	7.83E-03	2.02E-02	5.86E-02
U-235	4391.000	4.000	3.000	1.000	2.7628	80.90000	6.24E-03	4.67E-03	1.34E-02	3.24E-02	4.65E-03
U-238	4184.730	3.000	2.000	1.000	3.2810	100.0000	3.36E-03	3.37E-03	1.28E-02	3.02E-02	3.36E-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: 940245  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S1202012085\_UU  
SAMPLE QTY: 0.515 G

DETECTOR NUMBER :79994  
AVERAGE %EFFICIENCY :24.5767  
% YIELD : 96.601

COUNT DATE:21-JAN-2010 20:07:52  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50916 dpm  
RESULTS : 4.35590 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B160.CNF;367  
BKG DATE : 17-JAN-2010  
EFF FILE : W160.CNF;116  
CAL DATE : 18-JAN-2010

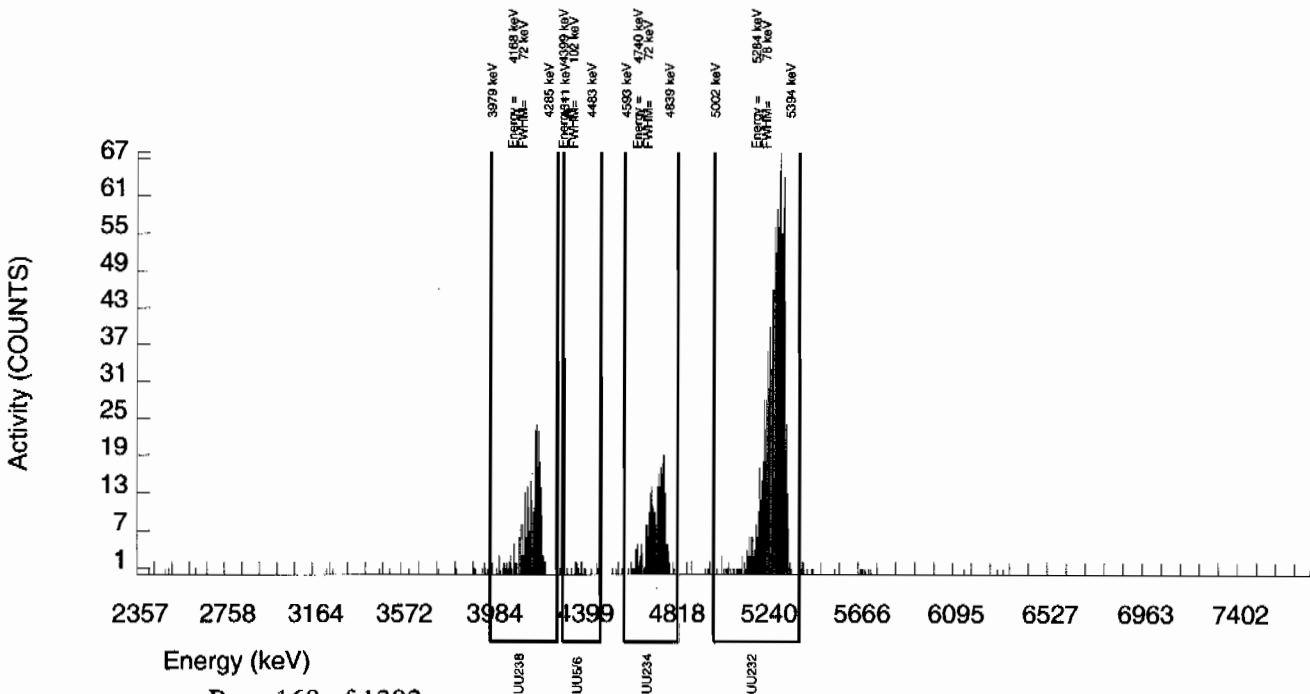
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	281.000	278.918	1.000	6.0782	100.0000	1.03E+00	9.54E-02	5.21E-02	1.14E-01	6.17E-02
U232	5302.100	1071.000	1070.000	1.000	1.0000	100.0000	3.94E+00	3.04E-01	8.57E-03	2.71E-02	1.21E-01
U-235	4391.000	18.000	18.000	0.000	2.7628	80.90000	8.20E-02	2.02E-02	2.93E-02	7.09E-02	1.93E-02
U-238	4184.730	297.000	297.000	0.000	3.2810	100.0000	1.09E+00	1.00E-01	2.81E-02	6.62E-02	6.35E-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: 940245 SAMPLE DATE : 13-JAN-2010 00:00:00		SAMPLE ID : S1202012086_UU SAMPLE QTY: 0.125 G	
DETECTOR NUMBER :79449 AVERAGE %EFFICIENCY :37.8660 % YIELD : 100.841		COUNT DATE:20-JAN-2010 08:24:10 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50804 dpm RESULTS : 4.54593 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B256.CNF;72 BKG DATE : 17-JAN-2010 EFF FILE : W256.CNF;24 CAL DATE : 28-DEC-2009

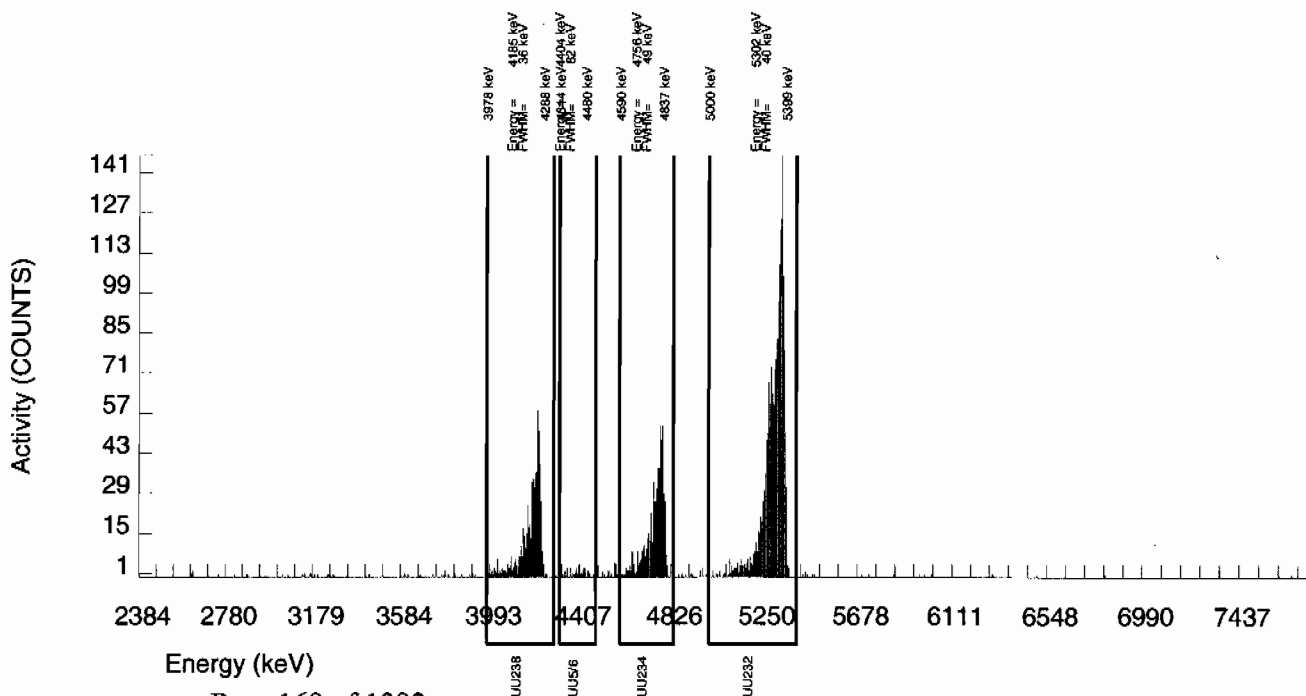
NUCLIDE ACTIVITY SUMMARY

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
U-3/4	4763.020	607.000	604.260	1.000	6.0782	100.0000	5.70E+00	4.74E-01	1.33E-01	2.92E-01	2.32E-01
U232	5302.100	1724.000	1721.000	3.000	1.7321	100.0000	1.62E+01	1.24E+00	3.80E-02	1.02E-01	3.92E-01
U-235	4391.000	39.000	38.000	1.000	2.7628	80.90000	4.43E-01	8.05E-02	7.50E-02	1.82E-01	7.38E-02
U-238	4184.730	580.000	579.000	1.000	3.2810	100.0000	5.46E+00	4.57E-01	7.20E-02	1.70E-01	2.27E-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# 943139 Product: Am Date: 1/23/10

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	✓		
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] 1/23/10

Secondary Review Performed By: [Signature] 1/25/10

LANL

1/24 - 1/30

## Am/Cm Que Sheet

19-JAN-10

Batch #: 943139 Analyst: MXA1 First Client Due Date: 30-JAN-10 Internal Due Date: 24-JAN-10 Comments:  
 Tracer(s) Am243 Cm244 Tracer Code: 445-96-2-55 Expiration Date: 5/10/10 Vol: 0.1mL  
 LCS Isotope(s) Am241 Cm244 LCS Code(s): 0244-B Expiration Date: 4/30/20 Vol(s): 0.111g - \* SRM  
 Spike Isotope(s): Am241/Cm244 Spike Code(s): --- Expiration Date: --- Vol(s): ---  
 Prep Date: 1/19/10 Initials: CMV Pipet ID: 247058 Balance ID: 5410272 Witness: AG 4/19/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot (g/L/f)	Am/Cm Det #
244148011-3	RE12-10-7632	SAMPLE		.05 pCi/g	SOIL	LANL010	04-JAN-10	1	1	1.253	81
244222005-2	RE16-10-2786	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	2	2	1.265	82
244413001-2	RE16-10-1278	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	3	3	1.254	83-10/10/10
244413002-2	RE16-10-1280	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	4	4	1.255	88
244413003-2	RE16-10-1282	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	5	5	1.267	89
244413004-2	RE16-10-1284	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	6	6	1.262	90
244413005-2	RE16-10-1300	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	7	7	1.251	91
244414001-2	RE16-10-1406	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	8	8	1.251	92
244414002-2	RE16-10-1408	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	9	9	1.266	93
244414003-2	RE16-10-1410	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	10	10	1.257	94
244414004-2	RE16-10-1412	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	11	11	1.266	95
244414005-2	RE16-10-1414	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	12	12	1.253	97
244414006-2	RE16-10-1428	SAMPLE		.05 pCi/g	SOIL	LANL010	06-JAN-10	13	13	1.256	26
1202019361-1	MB for batch 943139	MB		UCF pCi/g to pCi/soil	QC ACCOUNT	QC ACCOUNT		14	14	1.00	27
1202019362-3	RE12-10-7632/244148011(DUP)	DUP		.05 pCi/g	SOIL	QC ACCOUNT	04-JAN-10	15	15	1.258	28
1202019363-1	LCS for batch 943139	LCS		UCF pCi/g to pCi/soil	QC ACCOUNT	QC ACCOUNT		16	16	0.111	29

Choose SOP Used: GL-RAD-A-011  
GL-RAD-A-036

Solid Sample Dissolution by: LEACH or DIGESTION  
 Circle One

Data Reviewed By: [Signature] 1/23/10  
 Page 1 of 1

GEL Laboratories LLC, Radiochemistry Division



# Blank Correction Report

**Batch ID 943139**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202019362	DUP	Americium-241	1.26 g	0.00214	0.00251	0.0224	-.00441270	pCi/g	NO
1202019363	LCS	Americium-241	0.111 g	31.9	2.27	0.233	-.05009009	pCi/g	NO
1202019361	MB	Americium-241	1.00 g	-0.00556	0.00328	0.0278	-.00556	pCi/g	NO
244148011	RE12-10-7632	Americium-241	1.25 g	-0.00182	0.00298	0.0234	-.004448	pCi/g	NO
244222005	RE16-10-2786	Americium-241	1.27 g	0.000868	0.00218	0.0227	-.00437795	pCi/g	NO
244413001	RE16-10-1278	Americium-241	1.25 g	-0.00445	0.00339	0.0224	-.004448	pCi/g	NO
244413002	RE16-10-1280	Americium-241	1.26 g	-0.00182	0.0056	0.0233	-.00441270	pCi/g	NO
244413003	RE16-10-1282	Americium-241	1.27 g	-0.0018	0.00131	0.0222	-.00437795	pCi/g	NO
244413004	RE16-10-1284	Americium-241	1.26 g	-0.000503	0.00131	0.0222	-.00441270	pCi/g	NO
244413005	RE16-10-1300	Americium-241	1.25 g	0.000617	0.00122	0.0207	-.004448	pCi/g	NO
244414001	RE16-10-1406	Americium-241	1.25 g	0.0144	0.00526	0.023	-.004448	pCi/g	NO
244414002	RE16-10-1408	Americium-241	1.27 g	0.0121	0.00399	0.0215	-.00437795	pCi/g	NO
244414003	RE16-10-1410	Americium-241	1.26 g	0.0156	0.00505	0.0228	-.00441270	pCi/g	NO
244414004	RE16-10-1412	Americium-241	1.27 g	0.016	0.00826	0.0233	-.00437795	pCi/g	NO
244414005	RE16-10-1414	Americium-241	1.25 g	0.00582	0.00579	0.0216	-.004448	pCi/g	NO
244414006	RE16-10-1428	Americium-241	1.26 g	0.00649	0.00327	0.0202	-.00441270	pCi/g	NO

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 943139 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148011_AM SAMPLE QTY: 1.253 G	
DETECTOR NUMBER :79996 AVERAGE %EFFICIENCY :31.8577 % YIELD : 81.975		COUNT DATE:22-JAN-2010 12:03:50 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXA1	
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 : 2.39088 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B081.CNF;1018 BKG DATE : 17-JAN-2010 EFF FILE : W081.CNF;272 CAL DATE : 12-JAN-2010

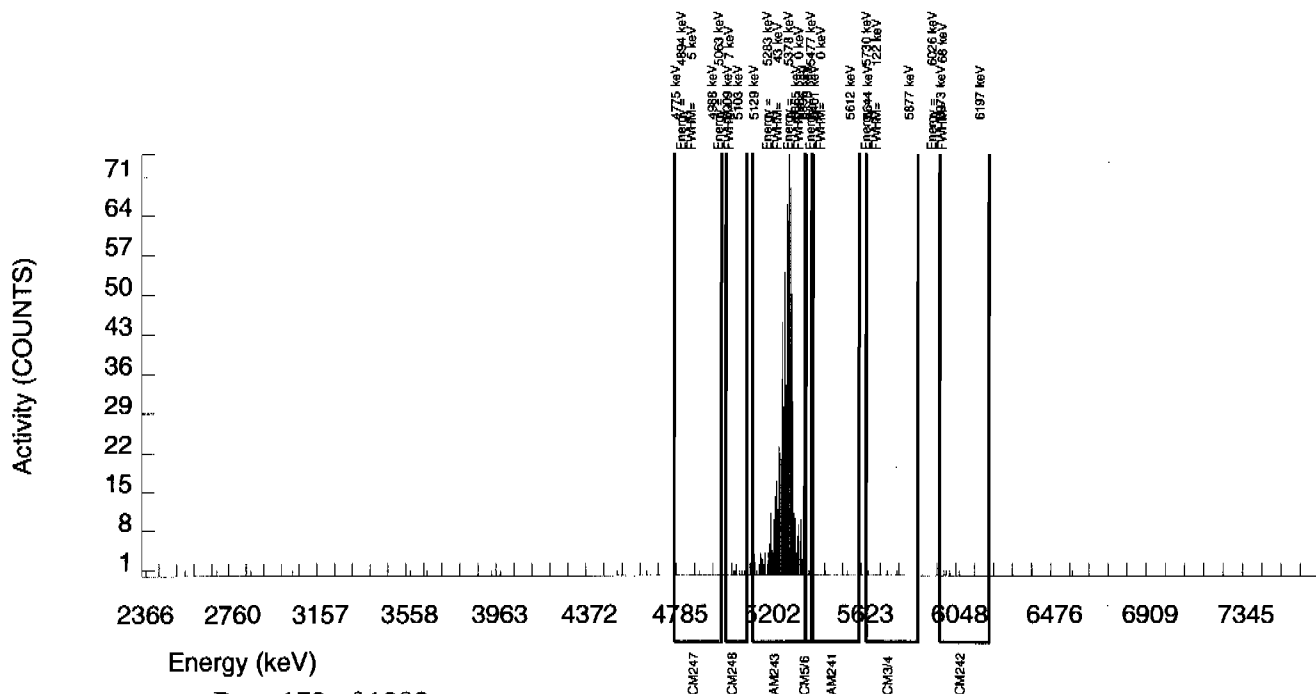
NUCLIDE ACTIVITY SUMMARY

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	3.000	3.000	0.000	5.2338	100.0000	4.14E-03	2.40E-03	1.68E-02	3.73E-02	2.39E-03
CM-5/6	5386.000	5.000	5.000	0.000	19.8463	86.09000	7.99E-03	3.61E-03	7.38E-02	1.52E-01	3.58E-03
AM-241	5479.150	3.000	-1.323	3.000	3.0704	99.94000	-1.82E-03	2.98E-03	9.84E-03	2.34E-02	2.98E-03
CM-242	6102.000	4.000	3.000	1.000	4.3186	100.0000	4.47E-03	3.35E-03	1.38E-02	3.14E-02	3.34E-03
AM243	5270.000	760.000	760.000	0.000	0.0000	99.78000	1.05E+00	7.46E-02	0.00E+00	3.74E-03	3.80E-02
CM-247	4946.000	1.000	-1.000	2.000	15.3366	79.30000	-1.74E-03	3.01E-03	6.19E-02	1.29E-01	3.01E-03
CM-248	5078.600	8.000	8.000	0.000	22.1555	91.00000	1.21E-02	4.34E-03	7.80E-02	1.60E-01	4.28E-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: 943139  
SAMPLE DATE : 19-JAN-2010 00:00:00

SAMPLE ID : S1202019361\_AM  
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :42484  
AVERAGE %EFFICIENCY :33.2327  
% YIELD : 82.823

COUNT DATE:22-JAN-2010 12:03:14  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXA1

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 : 2.91658 dpm  
RESULTS : 2.41559 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B027.CNF;1111  
BKG DATE : 17-JAN-2010  
EFF FILE : W027.CNF;327  
CAL DATE : 4-JAN-2010

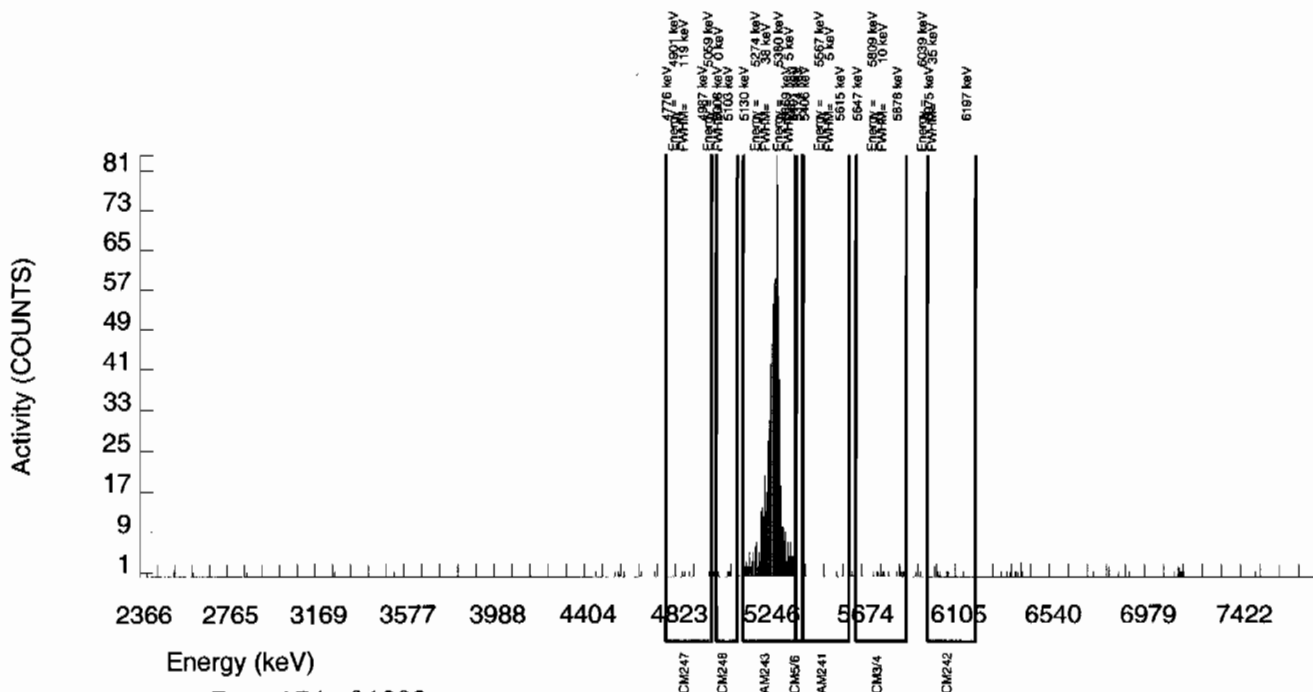
NUCLIDE ACTIVITY SUMMARY

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	15.000	0.000	15.000	5.2338	100.0000	0.00E+00	8.97E-03	1.99E-02	4.43E-02	8.97E-03
CM-5/6	5386.000	1.000	1.000	0.000	19.8463	86.09000	1.90E-03	1.90E-03	8.78E-02	1.81E-01	1.90E-03
AM-241	5479.150	1.000	-3.394	3.000	3.0704	99.94000	-5.56E-03	3.28E-03	1.17E-02	2.78E-02	3.28E-03
CM-242	6102.000	9.000	9.000	0.000	4.3186	100.0000	1.50E-02	5.08E-03	1.64E-02	3.73E-02	4.99E-03
AM243	5270.000	803.000	801.000	2.000	1.4142	99.78000	1.31E+00	9.42E-02	5.40E-03	1.52E-02	4.65E-02
CM-247	4946.000	4.000	3.000	1.000	15.3366	79.30000	6.19E-03	4.63E-03	7.36E-02	1.53E-01	4.61E-03
CM-248	5078.600	6.000	6.000	0.000	22.1555	91.00000	1.08E-02	4.46E-03	9.27E-02	1.90E-01	4.41E-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: 943139  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S1202019362\_AM  
SAMPLE QTY: 1.258 G

DETECTOR NUMBER :78792  
AVERAGE %EFFICIENCY :30.5070  
% YIELD : 89.097

COUNT DATE:22-JAN-2010 12:03:14  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXA1

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 : 2.59858 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B028.CNF;1115 BKG DATE : 17-JAN-2010 EFF FILE : W028.CNF;319 CAL DATE : 4-JAN-2010
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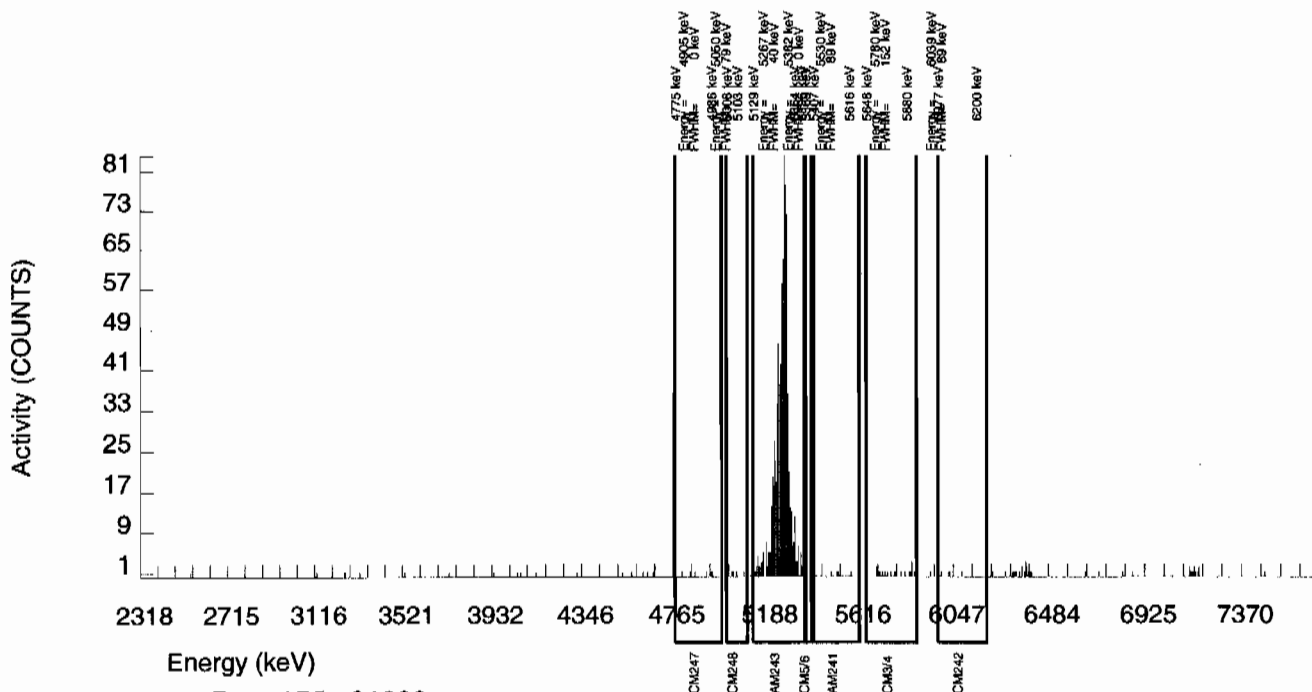
NUCLIDE ACTIVITY SUMMARY

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	3.000	20.000	5.2338	100.0000	3.96E-03	8.66E-03	1.60E-02	3.57E-02	8.66E-03
CM-5/6	5386.000	1.000	1.000	0.000	19.8463	86.09000	1.53E-03	1.53E-03	7.07E-02	1.45E-01	1.53E-03
AM-241	5479.150	4.000	1.623	1.000	3.0704	99.94000	2.14E-03	2.51E-03	9.42E-03	2.24E-02	2.51E-03
CM-242	6102.000	4.000	1.000	3.000	4.3186	100.0000	1.43E-03	3.78E-03	1.32E-02	3.00E-02	3.78E-03
AM243	5270.000	792.000	791.000	1.000	1.0000	99.78000	1.04E+00	7.51E-02	3.07E-03	9.72E-03	3.72E-02
CM-247	4946.000	7.000	7.000	0.000	15.3366	79.30000	1.16E-02	4.45E-03	5.93E-02	1.23E-01	4.40E-03
CM-248	5078.600	5.000	4.000	1.000	22.1555	91.00000	5.79E-03	3.56E-03	7.46E-02	1.53E-01	3.55E-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: 943139 SAMPLE DATE : 19-JAN-2010 00:00:00		SAMPLE ID : S1202019363_AM SAMPLE QTY: 0.111 G	
DETECTOR NUMBER :33454 AVERAGE %EFFICIENCY :31.1998 % YIELD : 95.048		COUNT DATE:22-JAN-2010 12:03:14 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXA1	
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 : 2.91658 dpm RESULTS : 2.77215 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B029.CNF;1106 BKG DATE : 17-JAN-2010 EFF FILE : W029.CNF;318 CAL DATE : 4-JAN-2010

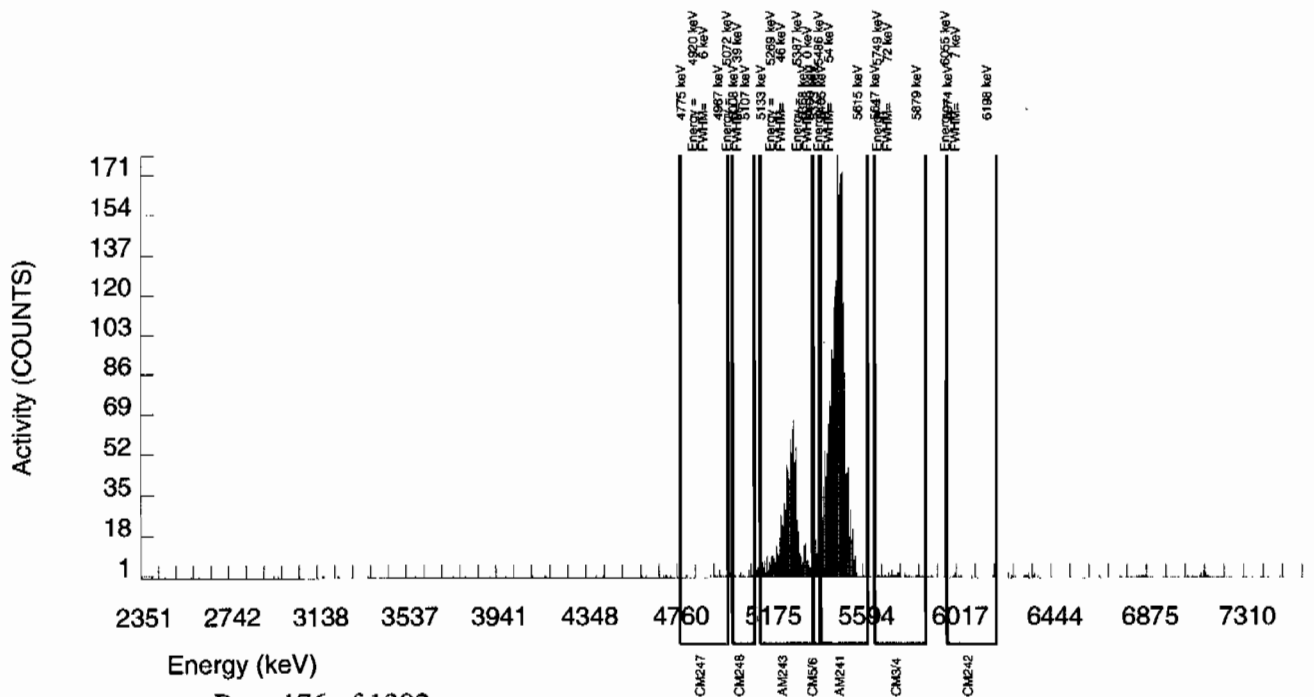
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	29.000	9.000	20.000	5.2338	100.0000	1.23E-01	9.62E-02	1.67E-01	3.70E-01	9.58E-02
CM-5/6	5386.000	81.000	80.000	1.000	19.8463	86.09000	1.27E+00	1.68E-01	7.34E-01	1.51E+00	1.44E-01
AM-241	5479.150	2340.000	2326.498	12.000	3.0704	99.94000	3.19E+01	2.27E+00	9.78E-02	2.33E-01	6.64E-01
CM-242	6102.000	10.000	2.000	8.000	4.3186	100.0000	2.78E-02	5.90E-02	1.37E-01	3.12E-01	5.90E-02
AM243	5270.000	869.000	863.000	6.000	2.4495	99.78000	1.18E+01	9.03E-01	7.82E-02	1.93E-01	4.06E-01
CM-247	4946.000	13.000	9.000	4.000	15.3366	79.30000	1.55E-01	7.19E-02	6.16E-01	1.28E+00	7.12E-02
CM-248	5078.600	11.000	10.000	1.000	22.1555	91.00000	1.50E-01	5.31E-02	7.75E-01	1.59E+00	5.21E-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, Rev10

Batch# 944933Product: UDate: 1/28/10

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%.	✓		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.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.			
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch 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: J. L. Miller 1/28/10Secondary Review Performed By: Ray Stedw 1/28/10

1/30 2/5

LANL

# Uranium Que Sheet

25-JAN-10

Batch #: 944933 Analyst: MXE1 First Client Due Date: 05-FEB-10 Internal Due Date: 30-JAN-10  
 Tracer Isotope: U-233/U-236 Tracer Code: Y8341 Expiration Date: 12/9/10 Vol: 0.1  
 LCS Isotope: U-238 LCS Code: / Expiration Date: / Vol: /  
 Spike Isotope: U-238 Spike Code: / Expiration Date: / Vol: /  
 Prep Date: 1/25/10 Initials: MG Pipet ID: 2971098 Balance ID: 5040272  
 Witness: 1/25/10 CM

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet Aliquot (g/1/1)	U Det #
244148001-3	RE12-10-7619	SAMPLE		.1 pCi/g	SOIL	LANL010	04-JAN-10	1	1	0.511	161
1202023628-1	MB for batch 944933	MB		UCF pCi/g to pCi	SOIL	QC ACCOUNT		2	2	1	172
1202023629-3	RE12-10-7619(244148001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	04-JAN-10	3	3	0.517	162
1202023630-1	LCS for batch 944933	LCS		UCF pCi/g to pCi	SOIL	QC ACCOUNT		4	4	0.103	163

SRM \* 0244-A exp 10/31/10

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION  
 Circle One

Data Reviewed By: Jag Lal - 1/28/10

# Blank Correction Report

**Batch ID 944933**

GEL Sample ID	Client sample ID	Parameter	Alliquot	Result	TPU	MDA	Alliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202023629	DUP	Uranium-233/234	0.517 g	1.40	0.112	0.0749	.045647989	pCi/g	NO
		Uranium-235/236	0.517 g	0.0747	0.0158	0.0465	.013326886	pCi/g	NO
		Uranium-238	0.517 g	1.28	0.104	0.0434	.012940039	pCi/g	NO
1202023630	LCS	Uranium-233/234	0.103 g	6.00	0.521	0.364	.229126214	pCi/g	NO
		Uranium-235/236	0.103 g	0.377	0.0818	0.226	.066893204	pCi/g	NO
		Uranium-238	0.103 g	5.79	0.506	0.211	.064951456	pCi/g	NO
1202023628	MB	Uranium-233/234	1.00 g	0.0236	0.0056	0.0346	.0236	pCi/g	YES
		Uranium-235/236	1.00 g	0.00689	0.00312	0.0215	.00689	pCi/g	YES
		Uranium-238	1.00 g	0.00669	0.00319	0.020	.00669	pCi/g	YES
244148001	RE12-10-7619	Uranium-233/234	0.511 g	1.26	0.101	0.0694	.046183953	pCi/g	NO
		Uranium-235/236	0.511 g	0.0886	0.0168	0.0431	.013483366	pCi/g	NO
		Uranium-238	0.511 g	1.36	0.108	0.0403	.013091977	pCi/g	NO



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 944933 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S0244148001_UU SAMPLE QTY: 0.511 G	
DETECTOR NUMBER :SAMPLE AVERAGE %EFFICIENCY :36.7974 % YIELD : 106.926		COUNT DATE:27-JAN-2010 12:23:42 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.82145 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B161.CNF;166 BKG DATE : 24-JAN-2010 EFF FILE : W161.CNF;60 CAL DATE : 21-JAN-2010

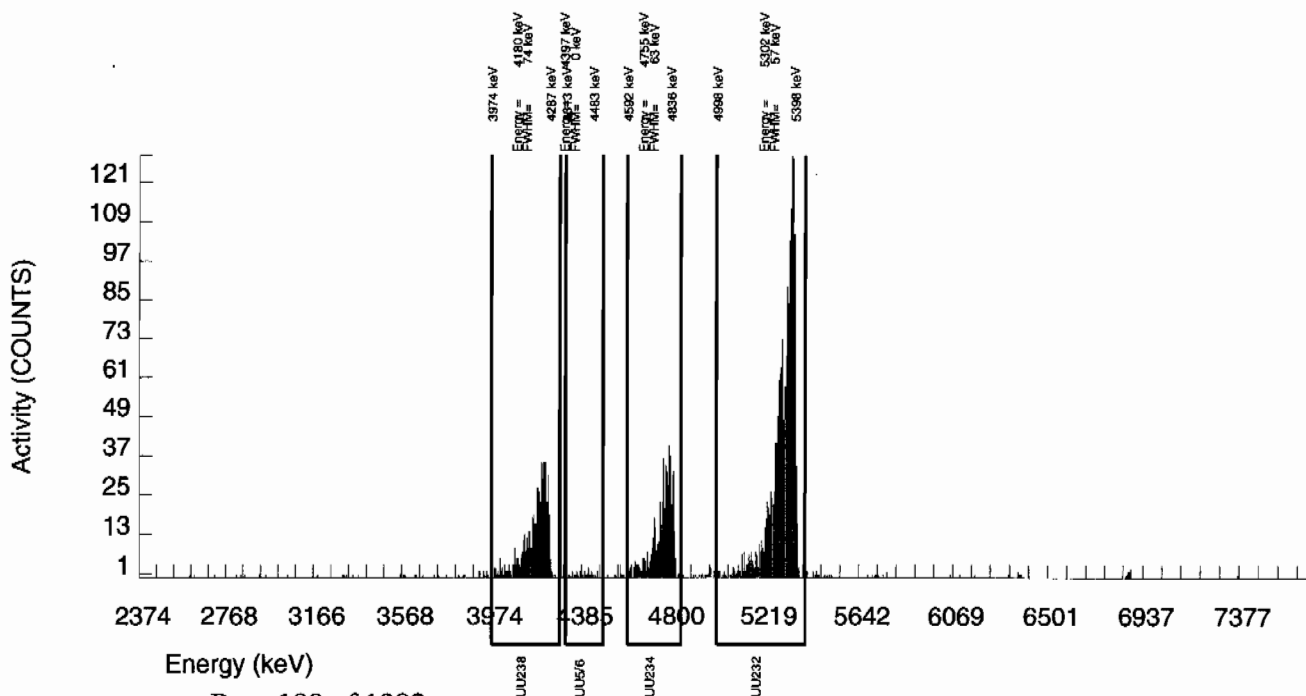
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	566.000	562.207	2.000	6.0782	100.0000	1.26E+00	1.01E-01	3.17E-02	6.94E-02	5.33E-02
U232	5302.100	1775.000	1773.000	2.000	1.4142	100.0000	3.97E+00	2.86E-01	7.37E-03	2.08E-02	9.45E-02
U-235	4391.000	32.000	32.000	0.000	2.7628	80.90000	8.86E-02	1.68E-02	1.78E-02	4.31E-02	1.57E-02
U-238	4184.730	607.000	607.000	0.000	3.2810	100.0000	1.36E+00	1.08E-01	1.71E-02	4.03E-02	5.52E-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: 944933 SAMPLE DATE : 25-JAN-2010 00:00:00		SAMPLE ID : S1202023628_UU SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :78772 AVERAGE %EFFICIENCY :38.2928 % YIELD : 105.474		COUNT DATE:27-JAN-2010 12:24:10 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50654 dpm RESULTS : 4.75323 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B172.CNF;169 BKG DATE : 24-JAN-2010 EFF FILE : W172.CNF;65 CAL DATE : 21-JAN-2010

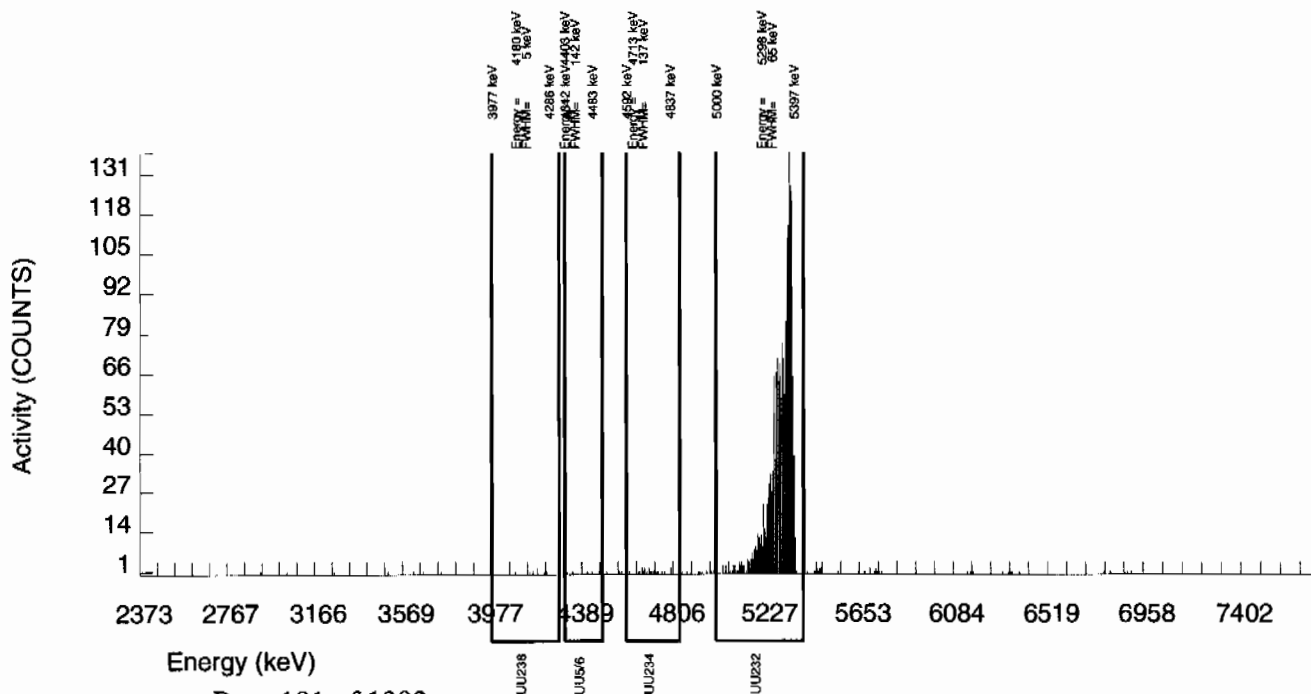
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	24.000	21.159	1.000	6.0782	100.0000	2.36E-02	5.60E-03	1.58E-02	3.46E-02	5.37E-03
U232	5302.100	1822.000	1820.000	2.000	1.4142	100.0000	2.03E+00	1.45E-01	3.67E-03	1.04E-02	4.76E-02
U-235	4391.000	5.000	5.000	0.000	2.7628	80.90000	6.89E-03	3.12E-03	8.86E-03	2.15E-02	3.08E-03
U-238	4184.730	7.000	6.000	1.000	3.2810	100.0000	6.69E-03	3.19E-03	8.51E-03	2.00E-02	3.15E-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: 944933 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S1202023629_UU SAMPLE QTY: 0.517 G	
DETECTOR NUMBER :70323 AVERAGE %EFFICIENCY :37.0846 % YIELD : 97.241		COUNT DATE:27-JAN-2010 12:23:43 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.38476 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B162.CNF;166 BKG DATE : 24-JAN-2010 EFF FILE : W162.CNF;66 CAL DATE : 21-JAN-2010

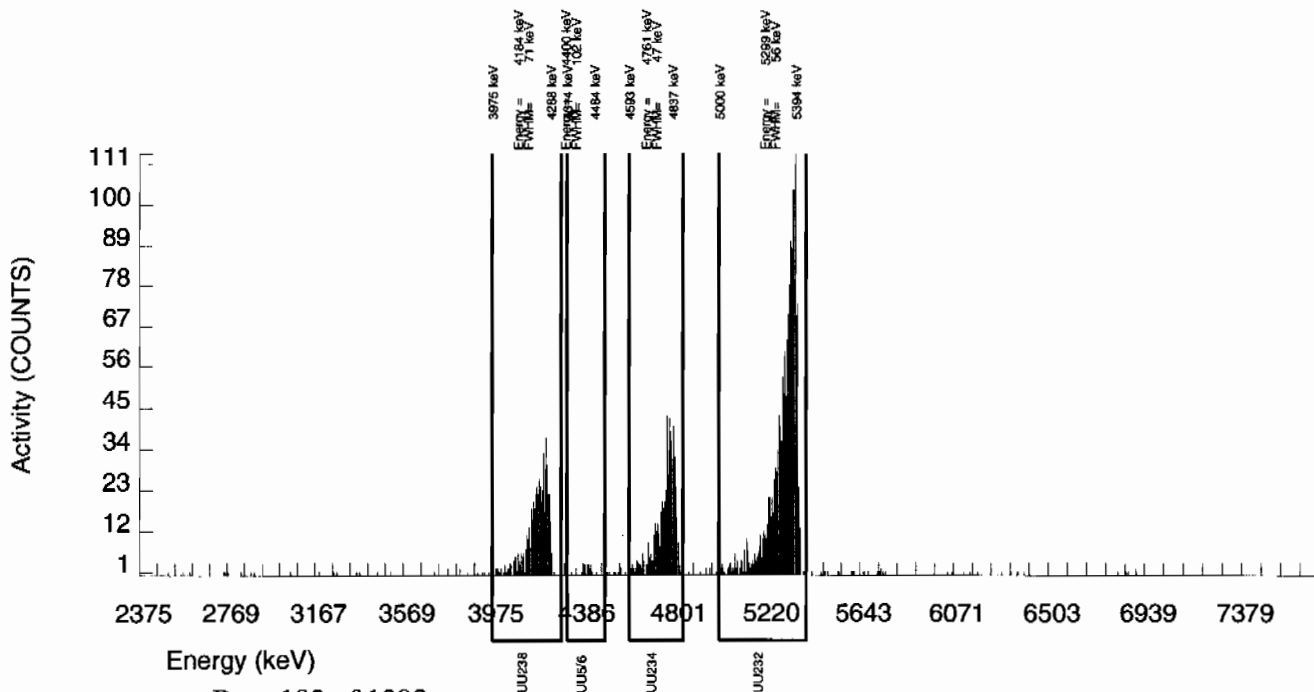
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	582.000	580.356	0.000	6.0782	100.0000	1.40E+00	1.12E-01	3.42E-02	7.49E-02	5.82E-02
U232	5302.100	1629.000	1625.000	4.000	2.0000	100.0000	3.93E+00	2.86E-01	1.12E-02	2.90E-02	9.77E-02
U-235	4391.000	25.000	25.000	0.000	2.7628	80.90000	7.47E-02	1.58E-02	1.92E-02	4.65E-02	1.49E-02
U-238	4184.730	531.000	531.000	0.000	3.2810	100.0000	1.28E+00	1.04E-01	1.84E-02	4.34E-02	5.57E-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: 944933 SAMPLE DATE : 25-JAN-2010 00:00:00		SAMPLE ID : S1202023630_UU SAMPLE QTY: 0.103 G	
DETECTOR NUMBER :70324 AVERAGE %EFFICIENCY :37.8552 % YIELD : 98.427		COUNT DATE:27-JAN-2010 12:23:47 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50654 dpm RESULTS : 4.43567 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B163.CNF;167 BKG DATE : 24-JAN-2010 EFF FILE : W163.CNF;55 CAL DATE : 21-JAN-2010

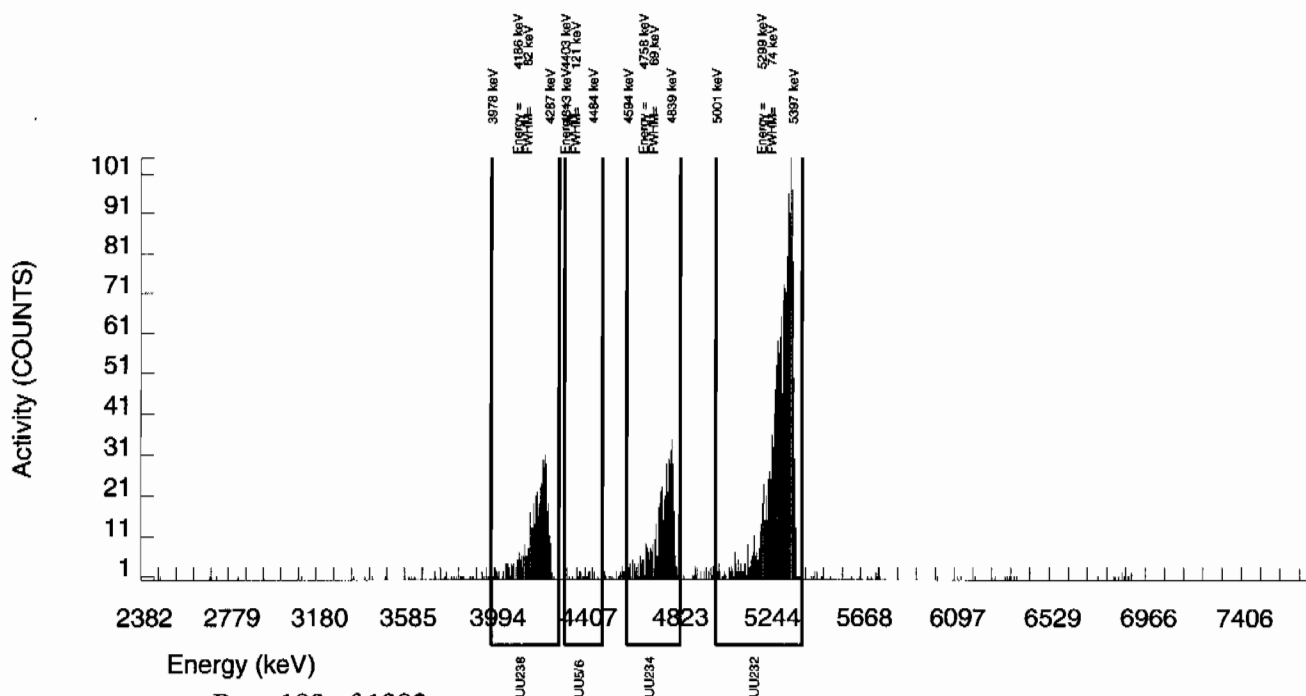
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	513.000	511.302	0.000	6.0782	100.0000	6.00E+00	5.21E-01	1.66E-01	3.64E-01	2.65E-01
U232	5302.100	1688.000	1679.000	9.000	3.0000	100.0000	1.97E+01	1.55E+00	8.19E-02	1.96E-01	4.84E-01
U-235	4391.000	27.000	26.000	1.000	2.7628	80.90000	3.77E-01	8.18E-02	9.33E-02	2.26E-01	7.68E-02
U-238	4184.730	496.000	493.000	3.000	3.2810	100.0000	5.79E+00	5.06E-01	8.96E-02	2.11E-01	2.62E-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# 940268 Product: 8-5 Date: 1/21/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.			
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.			NA
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)			
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			NA
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.			
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly stated.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hlt 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 REMF, 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: KD 1/21/10

Secondary Review Performed By: Heaven B. McCarty 1/21/10

LANL

2/5

# Gamma Spec Que Sheet

1.6 - 1/19/10

01/11/2010

Batch #: 940268

Analyst: MXR1 ✓

First Client Due Date: 02/05/2010

Internal Due Date: 01/25/2010

Gamma Spike Isotope: Mixed Gamma

Spike Code: n/a

Expiration Date: n/a

Vol: n/a

Nominal Concentration: n/a

Gamma LCS Isotope: Mixed Gamma

LCS Code: 1032-A

Expiration Date: 12/2/10

Vol: 1.0mL

Nominal Concentration: 15.91

Initials: MS

Prep Date: 1/12/10

Library: SOLID ✓

Witness: n/a

Wet/Dry

Sample ID	Client Description / Container ID	Hazard Code	Type	Client	Matrix	Collect Date	Geometry	Detector	Sealing Date/Time (if Applicable)
244148001-1	RE12-10-7619		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	CAF	130.86	2
244148002-1	RE12-10-7618		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	124.67	6
244148003-1	RE12-10-7623		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	125.01	7
244148004-1	RE12-10-7622		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	127.57	10
244148005-1	RE12-10-7621		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	134.62	12
244148006-1	RE12-10-7617		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	134.90	16
244148007-1	RE12-10-7620		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	127.71	22
244148008-1	RE12-10-7624		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	139.90	23
244148009-1	RE12-10-7630		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	126.62	1
244148010-1	RE12-10-7628		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	138.00	11
244148011-1	RE12-10-7632		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	138.81	13
244148012-1	RE12-10-7629		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	135.80	15
244148013-1	RE12-10-7626		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	127.27	17
244148014-1	RE12-10-7631		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	117.33	20
244148015-1	RE12-10-7627		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	120.54	25
244148016-1	RE12-10-7625		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	125.00	4
244148017-1	RE12-10-7656		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	131.11	18
244148018-1	RE12-10-7655		SAMPLE	LANL010	SOIL	04-JAN-10 12:00:00	RF	129.03	22
1202012156-1	MB		MB	QC ACCOUNT	SOIL	1/12/10	RF	139.90	23
1202012157-1	DUP RE12-10-7619(244148001)		DUP	QC ACCOUNT	SOIL	1/12/10	RF	130.86	16
1202012158-1	LCS		LCS	QC ACCOUNT	SOIL	1/12/10	RF	155.44	1

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: n/a

no history

1/21/10

Page 1

of 1

# Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
940268	244148001	SAMPLE	20-JAN-10		Americium-241	-0.06504	0.3097	0.200
					Cerium-139	0.01796	0.05475	0.050
					Thorium-234	1.51	2.361	2.00
940268	244148002	SAMPLE	20-JAN-10		Americium-241	-0.09058	0.3318	0.200
					Cerium-139	0.01803	0.05991	0.050
					Sodium-22	0.0193	0.09033	0.080
					Thorium-234	2.461	2.796	2.00
940268	244148003	SAMPLE	20-JAN-10					
940268	244148004	SAMPLE	20-JAN-10		Americium-241	-0.02751	0.3796	0.200
					Thorium-234	2.366	3.168	2.00
940268	244148005	SAMPLE	20-JAN-10		Americium-241	0.1379	0.2411	0.200
940268	244148006	SAMPLE	20-JAN-10		Americium-241	-0.03847	0.2064	0.200
940268	244148007	SAMPLE	20-JAN-10		Americium-241	0.1727	0.2281	0.200
940268	244148008	SAMPLE	20-JAN-10		Americium-241	0.00576	0.3367	0.200
					Cerium-139	-0.00308	0.0521	0.050
					Thorium-234	2.011	2.603	2.00
940268	244148009	SAMPLE	20-JAN-10		Americium-241	0.04024	0.2924	0.200
					Cerium-139	-0.01274	0.05304	0.050
					Thorium-234	-0.5853	2.565	2.00
940268	244148010	SAMPLE	20-JAN-10					
940268	244148011	SAMPLE	20-JAN-10		Cerium-139	0.03906	0.05623	0.050
					Cesium-134	0.08662	0.1122	0.100
					Sodium-22	-0.02003	0.09043	0.080
940268	244148012	SAMPLE	20-JAN-10		Americium-241	-0.2809	0.5037	0.200
					Cerium-139	-0.02554	0.05798	0.050
					Thorium-234	2.479	4.134	2.00
940268	244148013	SAMPLE	20-JAN-10		Cesium-134	0.05261	0.1138	0.100
					Sodium-22	0.01079	0.09423	0.080
940268	244148014	SAMPLE	20-JAN-10					
940268	244148015	SAMPLE	20-JAN-10					
940268	244148016	SAMPLE	20-JAN-10		Americium-241	-0.02168	0.3775	0.200
					Thorium-234	1.399	3.112	2.00
940268	244148017	SAMPLE	20-JAN-10		Americium-241	0.1248	0.2866	0.200
					Thorium-234	1.625	2.221	2.00
940268	244148018	SAMPLE	20-JAN-10		Americium-241	0.04266	0.2082	0.200
940268	1202012156	MB	20-JAN-10					
940268	1202012157	DUP	20-JAN-10		Americium-241	-0.08402	0.212	0.200
940268	1202012158	LCS	20-JAN-10		Cerium-139	0.0281	0.08498	0.050
					Cesium-134	0.01952	0.166	0.100
					Europium-152	0.08747	0.3541	0.200
					Mercury-203	0.00016	0.1157	0.100
					Ruthenium-106	0.01874	1.093	0.800

## Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
940268	1202012158	LCS	20-JAN-10		Sodium-22	0.00375	0.09774	0.080
					Thorium-234	-1.916	3.821	2.00
					Tin-113	0.02936	0.1521	0.100
					Uranium-235	-0.229	0.5722	0.500



## Gamma Review Report based on Result &gt; MDA for Batch:940268

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244148001	04-JAN-10 12:00	20-JAN-10 15:48	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 ✓	1.808	0.2007	pCi/g	0.2142	N	910.9 3	1.738	IDENTIFIED 9.181	☐	
Americium-243 INT ✓	0.3934	0.04566	pCi/g	0.09208	N	74.53 1	1.192	IDENTIFIED 10.75	☐	
Annihilation Rad. HE	0.1159	0.03492	pCi/g	0.04891	N	510.5 1	2.058	IDENTIFIED 29.7	☐	
Barium-137m NR	0.1488	0.04026	pCi/g	0.06113	N	663.1 2	4.17	IDENTIFIED 26.72	☐	
Bismuth-211 INT ✓	4.235	0.3457	pCi/g	0.3609	Y	351.6 4	1.238	IDENTIFIED 5.782	☑ ✓	
Bismuth-212 HE	0.9277	0.254	pCi/g	0.6992	N	0 6 0	FAIL_ABUND 0	☐		
Bismuth-214 ✓	1.312	0.1103	pCi/g	0.1196	0.200	608.9 4	1.52	IDENTIFIED 6.535	☐	
Cadmium-109 INT ✓	2.668	0.5711	pCi/g	1.495	Y	86.94 3	1.137	IDENTIFIED 20.82	☑ ✓	
Cerium-143 —	1702	258.5	pCi/g	0	N	0 6 0	SHORT_HLIF 0	☐		
Cesium-135 HE	0.5246	0.1552	pCi/g	0.2806	N	269.6 1	1.352	IDENTIFIED 28.84	☐	
Cesium-137 gpd	0.1572	0.04256	pCi/g	0.06462	0.100	663.1 2	4.17	IDENTIFIED 26.72	☑ UI	Data rejected due to high peak-width.
Gross Gamma —	8.408	1.431	pCi/g	3.039	N	0			☐	
Lead-212 ✓	1.601	0.1167	pCi/g	0.09724	0.100	238.4 4	1.089	IDENTIFIED 3.694	☐	
Lead-214 ✓	1.473	0.1262	pCi/g	0.1258	0.100	351.6 4	1.238	IDENTIFIED 5.782	☐	
Lutetium-177 HE	3.815	0.8214	pCi/g	2.407	N	0 6 0	FAIL_ABUND 0	☐		
Neptunium-237 HE	0.7689	0.1827	pCi/g	0.4371	N	86.94 3	1.137	IDENTIFIED 20.82	☐	
Niobium-97 HE	81320	1.55E+05	pCi/g	0	N	0 6 0	SHORT_HLIF 0	☐		
Polonium-212 NR	1.601	0.1167	pCi/g	0.09724	N	238.4 4	1.089	IDENTIFIED 3.694	☐	
Polonium-214 NR	1.473	0.1262	pCi/g	0.1258	N	351.6 4	1.238	IDENTIFIED 5.782	☐	
Polonium-216 NR	1.601	0.1167	pCi/g	0.09724	N	238.4 4	1.089	IDENTIFIED 3.694	☐	
Polonium-218 NR	1.473	0.1262	pCi/g	0.1258	N	351.6 4	1.238	IDENTIFIED 5.782	☐	
Potassium-40 ✓	19.87	1.209	pCi/g	0.3742	1.00	1460 1	2.238	IDENTIFIED 3.797	☐	
Radium-224 INT ✓	4.613	0.7272	pCi/g	1.107	Y	241.5 1	1.845	IDENTIFIED 14.62	☑ ✓	
Radium-226 ✓	1.312	0.1103	pCi/g	0.1196	Y	608.9 4	1.52	IDENTIFIED 6.535	☐	
Radium-228 ✓	1.808	0.2007	pCi/g	0.2142	0.500	910.9 3	1.738	IDENTIFIED 9.181	☐	
Thallium-208 ✓	0.5179	0.05498	pCi/g	0.06092	0.080	583 1	1.485	IDENTIFIED 9.358	☐	
Thorium-228 NR	1.626	0.1186	pCi/g	0.09882	N	238.4 4	1.089	IDENTIFIED 3.694	☐	
Thorium-230 NR	1.312	0.1103	pCi/g	0.1196	N	608.9 4	1.52	IDENTIFIED 6.535	☐	
Thorium-232 NR	1.808	0.2007	pCi/g	0.2142	N	910.9 3	1.738	IDENTIFIED 9.181	☐	
Tin-126 HE	0.2618	0.05604	pCi/g	0.1532	N	86.94 3	1.137	IDENTIFIED 20.82	☐	
Titanium-44 —	0.1303	0.01947	pCi/g	0.07264	N	0 6 0	NOT_IDENTI 0	☐		
Total Uranium —	4.5309	3.76E-06	ug/g	3.5153	N	0			☐	
Uranium-234 NR	1.312	0.1103	pCi/g	0.1196	N	608.9 4	1.52	IDENTIFIED 6.535	☐	
Zirconium-97 —	1.27E+07	3.10E+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
244148002	04-JAN-10 12:00	20-JAN-10 15:49	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 ✓	1.499	0.1605	pCi/g	0.2352	N	910.8 3	1.574	IDENTIFIED 9.41	☐	
Americium-243 INT ✓	0.4352	0.05148	pCi/g	0.1195	N	74.57 1	1.385	IDENTIFIED 10.93	☐	
Annihilation Rad. —	0.1524	0.03749	pCi/g	0.05328	N	510.5 1	2.061	IDENTIFIED 24.43	☐	
Barium-137m NR	0.3266	0.04131	pCi/g	0.07166	N	661.6 2	1.415	IDENTIFIED 12.41	☐	
Bismuth-211 INT ✓	4.177	0.2751	pCi/g	0.4202	Y	351.6 4	1.455	IDENTIFIED 5.743	☑ ✓	
Bismuth-212 HE	1.354	0.346	pCi/g	0.7664	N	0 13 0	FAIL_ABUND 0	☐		
Bismuth-214 ✓	1.324	0.09934	pCi/g	0.1399	0.200	609.1 4	1.603	IDENTIFIED 6.534	☐	
Cadmium-109 100% INT ✓	4.396	0.8832	pCi/g	1.697	Y	87.79 3	3.344	IDENTIFIED 19.47	☑ UI	Data rejected due to high peak-width.
Cerium-143 —	2007	287.5	pCi/g	0	N	0 13 0	SHORT_HLIF 0	☐		
Cesium-134 LA	0.1131	0.03309	pCi/g	0.1082	0.100	0 13 0	FAIL_ABUND 0	☑ UI		Data rejected due to low abundance.
Cesium-135 INT ✓	0.806	0.1745	pCi/g	0.288	N	269.7 1	1.52	IDENTIFIED 21.3	☐	
Cesium-137 ✓	0.3452	0.04368	pCi/g	0.07575	0.100	661.6 2	1.415	IDENTIFIED 12.41	☐	
Gross Gamma —	8.922	1.332	pCi/g	3.672	N	0			☐	

Iodine-123	HE	3.22E+05	1.21E+07	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-133	HE	8948	7909	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>
Krypton-85	HE	16.66	4.668	pCi/g	15.69	N	0	13	0	NOT_IDENTI	0	<input type="checkbox"/>
Lead-212	✓	1.647	0.08788	pCi/g	0.115	0.100	238.4	4	1.112	IDENTIFIED	3.857	<input type="checkbox"/>
Lead-214	✓	1.453	0.1029	pCi/g	0.1323	0.100	351.6	4	1.455	IDENTIFIED	5.743	<input type="checkbox"/>
Lutetium-177	HE	3.22	0.9823	pCi/g	2.626	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>
Neptunium-237	INT	1.267	0.2861	pCi/g	0.5042	N	87.79	3	3.344	IDENTIFIED	19.47	<input type="checkbox"/>
Niobium-95m	HE	0.4577	0.1012	pCi/g	0.3219	N	0	13	0	NOT_IDENTI	0	<input type="checkbox"/>
Niobium-97	HE	1.92E+05	1.99E+05	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>
Polonium-212	NR	1.647	0.08788	pCi/g	0.115	N	238.4	4	1.112	IDENTIFIED	3.857	<input type="checkbox"/>
Polonium-214	NR	1.453	0.1029	pCi/g	0.1323	N	351.6	4	1.455	IDENTIFIED	5.743	<input type="checkbox"/>
Polonium-216	NR	1.647	0.08788	pCi/g	0.115	N	238.4	4	1.112	IDENTIFIED	3.857	<input type="checkbox"/>
Polonium-218	NR	1.453	0.1029	pCi/g	0.1323	N	351.6	4	1.455	IDENTIFIED	5.743	<input type="checkbox"/>
Potassium-40	✓	20.09	1.086	pCi/g	0.6311	1.00	1460	1	2.082	IDENTIFIED	4.278	<input type="checkbox"/>
Radium-224	INT	3.952	0.6814	pCi/g	1.309	Y	241.4	1	1.691	IDENTIFIED	16.99	<input checked="" type="checkbox"/> uI
Radium-226	✓	1.324	0.09934	pCi/g	0.1399	Y	609.1	4	1.603	IDENTIFIED	6.534	<input type="checkbox"/>
Radium-228	✓	1.499	0.1605	pCi/g	0.2352	0.500	910.8	3	1.574	IDENTIFIED	9.41	<input type="checkbox"/>
Strontium-85	LA	0.08636	0.0242	pCi/g	0.08135	Y	0	13	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Date rejected due to low abundance.
Thallium-200	HE	119.9	493.2	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	✓	0.5481	0.04744	pCi/g	0.07596	0.080	582.7	1	1.566	IDENTIFIED	8.058	<input type="checkbox"/>
Thorium-228	NR	1.674	0.08931	pCi/g	0.1169	N	238.4	4	1.112	IDENTIFIED	3.857	<input type="checkbox"/>
Thorium-230	NR	1.324	0.09934	pCi/g	0.1399	N	609.1	4	1.603	IDENTIFIED	6.534	<input type="checkbox"/>
Thorium-232	NR	1.499	0.1605	pCi/g	0.2352	N	910.8	3	1.574	IDENTIFIED	9.41	<input type="checkbox"/>
Tin-126	NR	0.4314	0.08667	pCi/g	0.1674	N	87.79	3	3.344	IDENTIFIED	19.47	<input type="checkbox"/>
Titanium-44	✓	0.3838	0.03473	pCi/g	0.09579	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>
Total Uranium	—	7.2918	2.98E-06	ug/g	4.1633	N	0					<input type="checkbox"/>
Uranium-234	NR	1.324	0.09934	pCi/g	0.1399	N	609.1	4	1.603	IDENTIFIED	6.534	<input type="checkbox"/>
Zirconium-97	—	2.06E+07	3.33E+06	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244148003	04-JAN-10 12:00	20-JAN-10 15:49	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.621	0.1648	pCi/g	0.2153	N	911.3	3	1.342	IDENTIFIED 8.339 <input type="checkbox"/>
Americium-243	INT	0.3796	0.03635	pCi/g	0.07402	N	74.78	1	1.106	IDENTIFIED 8.689 <input type="checkbox"/>
Annihilation Rad.	—	0.1343	0.03539	pCi/g	0.05022	N	511.1	1	1.636	IDENTIFIED 25.98 <input type="checkbox"/>
Barium-137m	HE	0.1041	0.02586	pCi/g	0.06625	N	661.9	2	1.58	IDENTIFIED 24.46 <input type="checkbox"/>
Bismuth-211	INT	4.144	0.3073	pCi/g	0.3343	Y	352.1	4	1.183	IDENTIFIED 5.905 <input checked="" type="checkbox"/> uI
Bismuth-212	HE	1.057	0.2578	pCi/g	0.719	N	0	9	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.367	0.11	pCi/g	0.1129	0.200	609.3	4	1.411	IDENTIFIED 6.165 <input type="checkbox"/>
Cadmium-109	INT	3.123	0.4019	pCi/g	1.121	Y	87.2	3	0.8637	IDENTIFIED 11.99 <input checked="" type="checkbox"/> uI
Cerium-143	—	1225	198.3	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-137	✓	0.11	0.02734	pCi/g	0.07004	0.100	661.9	2	1.58	IDENTIFIED 24.46 <input type="checkbox"/>
Gross Gamma	—	9.15	1.374	pCi/g	4.018	N	0			<input type="checkbox"/>
Iodine-133	HE	5312	7025	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>
Krypton-85	HE	15.66	4.086	pCi/g	14.04	N	0	9	0	NOT_IDENTI 0 <input type="checkbox"/>
Lead-212	✓	1.687	0.1002	pCi/g	0.09087	0.100	238.7	4	1.092	IDENTIFIED 3.519 <input type="checkbox"/>
Lead-214	✓	1.442	0.1133	pCi/g	0.1165	0.100	352.1	4	1.183	IDENTIFIED 5.905 <input type="checkbox"/>
Lutetium-177	HE	3.533	0.8752	pCi/g	2.362	N	0	9	0	FAIL_ABUND 0 <input type="checkbox"/>
Neptunium-237	INT	0.9001	0.1485	pCi/g	0.327	N	87.2	3	0.8637	IDENTIFIED 11.99 <input type="checkbox"/>
Polonium-212	NR	1.687	0.1002	pCi/g	0.09087	N	238.7	4	1.092	IDENTIFIED 3.519 <input type="checkbox"/>
Polonium-214	NR	1.442	0.1133	pCi/g	0.1165	N	352.1	4	1.183	IDENTIFIED 5.905 <input type="checkbox"/>
Polonium-216	NR	1.687	0.1002	pCi/g	0.09087	N	238.7	4	1.092	IDENTIFIED 3.519 <input type="checkbox"/>
Polonium-218	NR	1.442	0.1133	pCi/g	0.1165	N	352.1	4	1.183	IDENTIFIED 5.905 <input type="checkbox"/>
Potassium-40	✓	21.32	1.243	pCi/g	0.4383	1.00	1461	1	2.238	IDENTIFIED 3.948 <input type="checkbox"/>
Radium-224	INT	4.787	0.6303	pCi/g	1.034	Y	241.6	1	1.577	IDENTIFIED 12.47 <input checked="" type="checkbox"/> uI
Radium-226	✓	1.367	0.11	pCi/g	0.1129	Y	609.3	4	1.411	IDENTIFIED 6.165 <input type="checkbox"/>
Radium-228	✓	1.621	0.1648	pCi/g	0.2153	0.500	911.3	3	1.342	IDENTIFIED 8.339 <input type="checkbox"/>
Sodium-24	HE	36870	1.14E+06	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>



Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244148005	04-JAN-10 12:00	20-JAN-10 15:50	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.395	0.1519	pCi/g 0.2189	N	910.7 3	1.206	IDENTIFIED 9.401	☐	
Americium-243	INT	0.4017	0.03959	pCi/g 0.0835	N	74.67 1	1.149	IDENTIFIED 9.25	☐	
Annihilation Rad. HE		0.1101	0.0351	pCi/g 0.04148	N	510.7 1	1.797	IDENTIFIED 31.75	☐	
Barium-137m	HE	0.1109	0.03044	pCi/g 0.06059	N	660.8 2	1.115	IDENTIFIED 27.26	☐	
Bismuth-211	INT	3.502	0.234	pCi/g 0.327	Y	351.6 4	1.173	IDENTIFIED 5.896	☐	us
Bismuth-212	HE	0.9614	0.2365	pCi/g 0.66	N	0 8 0		FAIL_ABUND 0	☐	
Bismuth-214	✓	1.348	0.08915	pCi/g 0.1134	0.200	608.9 4	1.373	IDENTIFIED 5.179	☐	
Cadmium-109	INT	2.131	0.5149	pCi/g 1.423	Y	86.96 3	1.037	IDENTIFIED 23.86	☐	us
Cerium-143	—	1445	206.6	pCi/g 0	N	0 8 0		SHORT_HLIF 0	☐	
Cesium-134	LA	0.2259	0.04576	pCi/g 0.09201	0.100	0 8 0		FAIL_ABUND 0	☐	UI Data rejected due to low abundance.
Cesium-137	✓	0.1172	0.03218	pCi/g 0.06405	0.100	660.8 2	1.115	IDENTIFIED 27.26	☐	
Gross Gamma	—	8.422	1.29	pCi/g 3.379	N	0			☐	
Iodine-135	—	1.26E+16 0		pCi/g 0	N	0 8 0		SHORT_HLIF 0	☐	
Lead-212	✓	1.428	0.07203	pCi/g 0.08129	0.100	238.4 4	1.093	IDENTIFIED 3.585	☐	
Lead-214	✓	1.218	0.08739	pCi/g 0.114	0.100	351.6 4	1.173	IDENTIFIED 5.896	☐	
Lutetium-177	HE	2.987	0.71	pCi/g 2.136	N	0 8 0		FAIL_ABUND 0	☐	
Neptunium-237	HE	0.6142	0.1613	pCi/g 0.4132	N	86.96 3	1.037	IDENTIFIED 23.86	☐	
Niobium-97	HE	1.36E+05	1.39E+05	pCi/g 0	N	0 8 0		SHORT_HLIF 0	☐	
Polonium-212	NR	1.428	0.07203	pCi/g 0.08129	N	238.4 4	1.093	IDENTIFIED 3.585	☐	
Polonium-214	NR	1.218	0.08739	pCi/g 0.114	N	351.6 4	1.173	IDENTIFIED 5.896	☐	
Polonium-216	NR	1.428	0.07203	pCi/g 0.08129	N	238.4 4	1.093	IDENTIFIED 3.585	☐	
Polonium-218	NR	1.218	0.08739	pCi/g 0.114	N	351.6 4	1.173	IDENTIFIED 5.896	☐	
Potassium-40	✓	20.95	1.037	pCi/g 0.3803	1.00	1460 1	2.052	IDENTIFIED 3.432	☐	
Radium-224	INT	4.784	0.6237	pCi/g 0.9251	Y	241.5 1	1.81	IDENTIFIED 12.74	☐	us
Radium-226	✓	1.348	0.08915	pCi/g 0.1134	Y	608.9 4	1.373	IDENTIFIED 5.179	☐	
Radium-228	✓	1.395	0.1519	pCi/g 0.2189	0.500	910.7 3	1.206	IDENTIFIED 9.401	☐	
Thallium-208	✓	0.5219	0.04188	pCi/g 0.05421	0.080	582.9 1	1.306	IDENTIFIED 7.182	☐	
Thorium-228	NR	1.451	0.0732	pCi/g 0.08261	N	238.4 4	1.093	IDENTIFIED 3.585	☐	
Thorium-230	NR	1.348	0.08915	pCi/g 0.1134	N	608.9 4	1.373	IDENTIFIED 5.179	☐	
Thorium-232	NR	1.395	0.1519	pCi/g 0.2189	N	910.7 3	1.206	IDENTIFIED 9.401	☐	
Thorium-234	✓	2.159	0.8819	pCi/g 1.984	2.00	63.1 2	0.6389	IDENTIFIED 39.95	☐	
Tin-126	HE	0.2092	0.05053	pCi/g 0.1424	N	86.96 3	1.037	IDENTIFIED 23.86	☐	
Titanium-44	—	0.3625	0.02644	pCi/g 0.07163	N	0 8 0		FAIL_ABUND 0	☐	
Total Uranium	—	6.451	2.62E-06	ug/g 2.9547	N	0			☐	
Uranium-234	NR	1.348	0.08915	pCi/g 0.1134	N	608.9 4	1.373	IDENTIFIED 5.179	☐	
Uranium-238	HE	2.159	0.8819	pCi/g 1.984	N	63.1 2	0.6389	IDENTIFIED 39.95	☐	
Zirconium-97	—	7.25E+06	2.61E+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
244148006	04-JAN-10 12:00	20-JAN-10 15:51	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.747	0.1609	pCi/g 0.1724	N	911.1 3	1.66	IDENTIFIED 7.039	☐	
Americium-243	INT	0.3632	0.03457	pCi/g 0.07527	N	74.85 1	1.035	IDENTIFIED 8.568	☐	
Annihilation Rad.	—	0.1359	0.03467	pCi/g 0.04113	N	510.7 1	1.967	IDENTIFIED 25.06	☐	
Bismuth-211	INT	4.02	0.297	pCi/g 0.2591	Y	351.8 4	1.152	IDENTIFIED 4.981	☐	us
Bismuth-212	HE	0.9443	0.2028	pCi/g 0.6182	N	0 6 0		FAIL_ABUND 0	☐	
Bismuth-214	✓	1.253	0.1024	pCi/g 0.09303	0.200	609.2 4	1.2	IDENTIFIED 6.231	☐	
Cadmium-109	INT	3.568	0.4408	pCi/g 1.049	Y	87.26 3	1.052	IDENTIFIED 11.39	☐	us
Cerium-143	—	887.5	166.2	pCi/g 0	N	0 6 0		SHORT_HLIF 0	☐	
Cesium-134	LA	0.08528	0.02119	pCi/g 0.08163	0.100	0 6 0		NOT_IDENTI 0	☐	UI Data rejected due to low abundance.
Gross Gamma	—	8.574	1.208	pCi/g 2.897	N	0			☐	
Lead-212	✓	1.6	0.1081	pCi/g 0.08331	0.100	238.5 4	0.9508	IDENTIFIED 3.259	☐	
Lead-214	✓	1.398	0.1096	pCi/g 0.09032	0.100	351.8 4	1.152	IDENTIFIED 4.981	☐	
Lutetium-177	HE	2.834	0.8216	pCi/g 2.084	N	0 6 0		FAIL_ABUND 0	☐	

Neptunium-237	INT	1.028	0.1655	pCi/g	0.3071	N	87.26	3	1.052	IDENTIFIED	11.39	<input type="checkbox"/>
Polonium-212	NR	1.6	0.1081	pCi/g	0.08331	N	238.5	4	0.9508	IDENTIFIED	3.259	<input type="checkbox"/>
Polonium-214	NR	1.398	0.1096	pCi/g	0.09032	N	351.8	4	1.152	IDENTIFIED	4.981	<input type="checkbox"/>
Polonium-216	NR	1.6	0.1081	pCi/g	0.08331	N	238.5	4	0.9508	IDENTIFIED	3.259	<input type="checkbox"/>
Polonium-218	NR	1.398	0.1096	pCi/g	0.09032	N	351.8	4	1.152	IDENTIFIED	4.981	<input type="checkbox"/>
Potassium-40	✓	21.49	1.2	pCi/g	0.4212	1.00	1460	1	1.95	IDENTIFIED	3.447	<input type="checkbox"/>
Radium-224	INT	4.002	0.6296	pCi/g	0.9481	Y	241.6	1	1.671	IDENTIFIED	14.73	<input checked="" type="checkbox"/> uI
Radium-226	✓	1.253	0.1024	pCi/g	0.09303	Y	609.2	4	1.2	IDENTIFIED	6.231	<input type="checkbox"/>
Radium-228	✓	1.747	0.1609	pCi/g	0.1724	0.500	911.1	3	1.66	IDENTIFIED	7.039	<input type="checkbox"/>
Thallium-208	✓	0.4894	0.04134	pCi/g	0.05106	0.080	583	1	1.37	IDENTIFIED	6.838	<input type="checkbox"/>
Thorium-228	NR	1.626	0.1098	pCi/g	0.08467	N	238.5	4	0.9508	IDENTIFIED	3.259	<input type="checkbox"/>
Thorium-230	NR	1.253	0.1024	pCi/g	0.09303	N	609.2	4	1.2	IDENTIFIED	6.231	<input type="checkbox"/>
Thorium-232	NR	1.747	0.1609	pCi/g	0.1724	N	911.1	3	1.66	IDENTIFIED	7.039	<input type="checkbox"/>
Tin-126	NR	0.3502	0.04326	pCi/g	0.1034	N	87.26	3	1.052	IDENTIFIED	11.39	<input type="checkbox"/>
Titanium-44	-	0.3469	0.0261	pCi/g	0.06446	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>
Total Uranium	-	3.4358	2.13E-06	ug/g	2.6841	N	0					<input type="checkbox"/>
Uranium-234	NR	1.253	0.1024	pCi/g	0.09303	N	609.2	4	1.2	IDENTIFIED	6.231	<input type="checkbox"/>
Zirconium-97	-	7.36E+06	2.39E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue		
244148007	04-JAN-10 12:00	20-JAN-10 15:51	16.2	SAMPLE	LOAD	1	LANL	LANL01004KEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228	✓	1.887	0.1737	pCi/g	0.1894	N	911.3	3	1.623	IDENTIFIED 6.39	☐	
Americium-243	INT	0.4222	0.03637	pCi/g	0.08354	N	74.85	1	1.047	IDENTIFIED 7.586	☐	
Annihilation Rad. HE		0.08825	0.03086	pCi/g	0.04414	N	510.7	1	2.084	IDENTIFIED 34.61	☐	
Bismuth-211	INT	4.313	0.3178	pCi/g	0.3025	Y	352	4	1.413	IDENTIFIED 4.529	☑ uI	
Bismuth-212	HE	1.017	0.2539	pCi/g	0.5741	N	0	12	0	FAIL_ABUND	0	☐
Bismuth-214	✓	1.303	0.109	pCi/g	0.1057	0.200	609.3	4	1.791	IDENTIFIED 6.014	☐	
Cadmium-109	INT	3.274	0.4821	pCi/g	1.199	Y	87.32	3	1.169	IDENTIFIED 13.95	☑ uI	
Cerium-143	—	1340	220.7	pCi/g	0	N	0	12	0	SHORT_HLIF	0	☐
Cesium-134	LA	0.1209	0.03366	pCi/g	0.08278	0.100	0	12	0	FAIL_ABUND	0	☑ uI Data rejected due to low abundance.
Gross Gamma	—	8.982	1.21	pCi/g	2.149	N	0				☐	
Iodine-123	HE	1.23E+07	1.04E+07	pCi/g	0	N	0	12	0	SHORT_HLIF	0	☐
Iodine-133	HE	2227	5834	pCi/g	0	N	0	12	0	SHORT_HLIF	0	☐
Iodine-135	—	7.15E+15	0	pCi/g	0	N	0	12	0	SHORT_HLIF	0	☐
Krypton-85	HE	19.87	4.333	pCi/g	13.63	N	0	12	0	NOT_IDENTI	0	☐
Lead-212	✓	1.891	0.1358	pCi/g	0.08859	0.100	238.7	4	1.274	IDENTIFIED 2.811	☐	
Lead-214	✓	1.5	0.1173	pCi/g	0.106	0.100	352	4	1.413	IDENTIFIED 4.529	☐	
Neptunium-237	INT	0.9436	0.1696	pCi/g	0.3896	N	87.32	3	1.169	IDENTIFIED 13.95	☐	
Niobium-95	HE	0.08053	0.02223	pCi/g	0.07048	N	0	12	0	NOT_IDENTI	0	☐
Polonium-212	NR	1.891	0.1358	pCi/g	0.08859	N	238.7	4	1.274	IDENTIFIED 2.811	☐	
Polonium-214	NR	1.5	0.1173	pCi/g	0.106	N	352	4	1.413	IDENTIFIED 4.529	☐	
Polonium-216	NR	1.891	0.1358	pCi/g	0.08859	N	238.7	4	1.274	IDENTIFIED 2.811	☐	
Polonium-218	NR	1.5	0.1173	pCi/g	0.106	N	352	4	1.413	IDENTIFIED 4.529	☐	
Potassium-40	✓	20.57	1.138	pCi/g	0.5272	1.00	1461	1	2.4	IDENTIFIED 3.1	☐	
Radium-224	INT	5.622	0.6858	pCi/g	1.007	Y	241.7	1	1.886	IDENTIFIED 10.46	☑ uI	
Radium-226	✓	1.303	0.109	pCi/g	0.1057	Y	609.3	4	1.791	IDENTIFIED 6.014	☐	
Radium-228	✓	1.887	0.1737	pCi/g	0.1894	0.500	911.3	3	1.623	IDENTIFIED 6.39	☐	
Strontium-85	LA	0.103	0.02246	pCi/g	0.07064	Y	0	12	0	NOT_IDENTI	0	☑ uI Data rejected due to low abundance.
Thallium-200	HE	287.4	398.9	pCi/g	0	N	0	12	0	SHORT_HLIF	0	☐
Thallium-208	✓	0.6498	0.05198	pCi/g	0.0514	0.080	583.1	1	1.656	IDENTIFIED 5.882	☐	
Thorium-228	NR	1.922	0.138	pCi/g	0.09003	N	238.7	4	1.274	IDENTIFIED 2.811	☐	
Thorium-230	NR	1.303	0.109	pCi/g	0.1057	N	609.3	4	1.791	IDENTIFIED 6.014	☐	
Thorium-232	NR	1.887	0.1737	pCi/g	0.1894	N	911.3	3	1.623	IDENTIFIED 6.39	☐	
Tin-126	NR	0.3213	0.04731	pCi/g	0.1182	N	87.32	3	1.169	IDENTIFIED 13.95	☐	
Titanium-44	—	0.4172	0.02869	pCi/g	0.07448	N	0	12	0	FAIL_ABUND	0	☐
Uranium-234	NR	1.303	0.109	pCi/g	0.1057	N	609.3	4	1.791	IDENTIFIED 6.014	☐	
Zirconium-97	—	1.06E+07	2.83E+06	pCi/g	0	N	0	12	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		
244148008	04-JAN-10 12:00	20-JAN-10 15:51	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228	1.53	0.1542	pCi/g	0.2197	N	910	3	1.835	IDENTIFIED	8.258	<input type="checkbox"/>	
Americium-243	0.3616	0.04277	pCi/g	0.1014	N	74.73	1	1.243	IDENTIFIED	10.96	<input type="checkbox"/>	
Annihilation Rad. HE	0.09104	0.0316	pCi/g	0.04683	N	510.2	1	1.81	IDENTIFIED	34.59	<input type="checkbox"/>	
Bismuth-211	4.018	0.2551	pCi/g	0.3385	Y	351.5	4	1.239	IDENTIFIED	5.449	<input type="checkbox"/>	
Bismuth-212	1.203	0.2205	pCi/g	0.7033	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	1.215	0.09785	pCi/g	0.1218	0.200	608.7	4	1.527	IDENTIFIED	7.123	<input type="checkbox"/>	
Cadmium-109	3.014	0.5343	pCi/g	1.42	Y	87.01	3	1.315	IDENTIFIED	17.05	<input type="checkbox"/>	
Cerium-143	—	2408	321.6	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-135	HE	0.4455	0.122	pCi/g	0.2381	N	269.7	1	1.519	IDENTIFIED	27.11	<input type="checkbox"/>
Gross Gamma	—	7.946	1.307	pCi/g	3.529	N	0				<input type="checkbox"/>	
Iodine-133	HE	9693	6559	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-135	—	5.47E+15	0	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	1.508	0.07657	pCi/g	0.09317	0.100	238.3	4	1.097	IDENTIFIED	3.587	<input type="checkbox"/>	
Lead-214	1.398	0.09593	pCi/g	0.1106	0.100	351.5	4	1.239	IDENTIFIED	5.449	<input type="checkbox"/>	
Neptunium-237	0.8686	0.1782	pCi/g	0.4536	N	87.01	3	1.315	IDENTIFIED	17.05	<input type="checkbox"/>	
Niobium-95m	—	0.6627	0.08927	pCi/g	0.2999	N	0	11	0	NOT_IDENTI	0	<input type="checkbox"/>
Niobium-97	HE	87530	1.47E+05	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Polonium-212	NR	1.508	0.07657	pCi/g	0.09317	N	238.3	4	1.097	IDENTIFIED	3.587	<input type="checkbox"/>
Polonium-214	NR	1.398	0.09593	pCi/g	0.1106	N	351.5	4	1.239	IDENTIFIED	5.449	<input type="checkbox"/>
Polonium-216	NR	1.508	0.07657	pCi/g	0.09317	N	238.3	4	1.097	IDENTIFIED	3.587	<input type="checkbox"/>
Polonium-218	NR	1.398	0.09593	pCi/g	0.1106	N	351.5	4	1.239	IDENTIFIED	5.449	<input type="checkbox"/>
Potassium-40	16.39	0.9005	pCi/g	3.037	1.00	0	11	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.	
Radium-224	4.8	0.5601	pCi/g	1.06	Y	241.3	1	1.922	IDENTIFIED	11.32	<input type="checkbox"/>	
Radium-226	1.215	0.09785	pCi/g	0.1218	Y	608.7	4	1.527	IDENTIFIED	7.123	<input type="checkbox"/>	
Radium-228	1.53	0.1542	pCi/g	0.2197	0.500	910	3	1.835	IDENTIFIED	8.258	<input type="checkbox"/>	
Technetium-99m	2.06E+17	0	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-200	HE	415.2	432.5	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	0.505	0.03816	pCi/g	0.05749	0.080	582.5	1	1.435	IDENTIFIED	6.823	<input type="checkbox"/>	
Thorium-228	1.532	0.07781	pCi/g	0.09469	N	238.3	4	1.097	IDENTIFIED	3.587	<input type="checkbox"/>	
Thorium-230	1.215	0.09785	pCi/g	0.1218	N	608.7	4	1.527	IDENTIFIED	7.123	<input type="checkbox"/>	
Thorium-232	1.53	0.1542	pCi/g	0.2197	N	910	3	1.835	IDENTIFIED	8.258	<input type="checkbox"/>	
Tin-126	0.2958	0.05243	pCi/g	0.155	N	87.01	3	1.315	IDENTIFIED	17.05	<input type="checkbox"/>	
Titanium-44	0.362	0.03001	pCi/g	0.09428	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	6.0121	2.94E-06	ug/g	3.8747	N	0					<input type="checkbox"/>	
Uranium-234	1.215	0.09785	pCi/g	0.1218	N	608.7	4	1.527	IDENTIFIED	7.123	<input type="checkbox"/>	
Zirconium-97	2.23E+07	3.11E+06	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
244148009	04-JAN-10 12:00	20-JAN-10 15:56	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓ 1.691	0.1762	pCi/g	0.2489	N	911.4	3	1.669	IDENTIFIED	8.664	<input type="checkbox"/>
Americium-243	INT 0.3598	0.04528	pCi/g	0.1097	N	74.82	1	1.213	IDENTIFIED	11.87	<input type="checkbox"/>
Annihilation Rad.	— 0.1578	0.04117	pCi/g	0.05064	N	510.9	1	1.456	IDENTIFIED	25.75	<input type="checkbox"/>
Bismuth-211	INT 3.388	0.3239	pCi/g	0.3617	Y	352.2	4	1.362	IDENTIFIED	8.412	<input checked="" type="checkbox"/> us
Bismuth-212	NR 1.64	0.3074	pCi/g	0.5018	N	727.9	1	1.613	IDENTIFIED	18.08	<input type="checkbox"/>
Bismuth-214	✓ 1.104	0.1076	pCi/g	0.1299	0.200	609.7	4	1.436	IDENTIFIED	8.413	<input type="checkbox"/>
Cadmium-109	INT 2.057	0.4922	pCi/g	1.606	Y	87.2	3	1.047	IDENTIFIED	23.46	<input checked="" type="checkbox"/> us
Cerium-143	— 358.5	158.5	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-134	LA 0.1341	0.03732	pCi/g	0.1088	0.100	0	9	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Gross Gamma	— 8.393	1.241	pCi/g	3.77	N	0					<input type="checkbox"/>
Iodine-123	HE 7.77E+06	1.14E+07	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>
Krypton-85	HE 20.08	4.802	pCi/g	16.16	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>
Lead-212	✓ 1.815	0.1122	pCi/g	0.1008	0.100	239.1	4	1.201	IDENTIFIED	3.55	<input type="checkbox"/>



Lead-214	✓	1.179	0.1168	pCi/g	0.1363	0.100	352.2	4	1.362	IDENTIFIED	8.412	☐
Lutetium-177	HE	3.181	0.9686	pCi/g	2.565	N	0	9	0	FAIL_ABUND	0	☐
Neptunium-237	HE	0.5929	0.1545	pCi/g	0.3316	N	87.2	3	1.047	IDENTIFIED	23.46	☐
Polonium-212	NR	1.815	0.1122	pCi/g	0.1008	N	239.1	4	1.201	IDENTIFIED	3.55	☐
Polonium-214	NR	1.179	0.1168	pCi/g	0.1363	N	352.2	4	1.362	IDENTIFIED	8.412	☐
Polonium-216	NR	1.815	0.1122	pCi/g	0.1008	N	239.1	4	1.201	IDENTIFIED	3.55	☐
Polonium-218	NR	1.179	0.1168	pCi/g	0.1363	N	352.2	4	1.362	IDENTIFIED	8.412	☐
Potassium-40	✓	19.45	1.189	pCi/g	0.5566	1.00	1461	1	1.964	IDENTIFIED	4.195	☐
Radium-224	INT	4.582	0.5575	pCi/g	1.147	Y	242	1	1.637	IDENTIFIED	11.28	☐ ✓
Radium-226	✓	1.104	0.1076	pCi/g	0.1299	Y	609.7	4	1.436	IDENTIFIED	8.413	☐
Radium-228	✓	1.691	0.1762	pCi/g	0.2489	0.500	911.4	3	1.669	IDENTIFIED	8.664	☐
Strontium-85	LA	0.1041	0.0249	pCi/g	0.08375	Y	0	9	0	NOT_IDENTI	0	☐ UI Data rejected due to low abundance.
Thallium-200	HE	969.3	504.2	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Thallium-208	✓	0.6405	0.05514	pCi/g	0.06175	0.080	583.7	1	1.569	IDENTIFIED	7.313	☐
Thorium-228	NR	1.844	0.114	pCi/g	0.1024	N	239.1	4	1.201	IDENTIFIED	3.55	☐
Thorium-230	NR	1.104	0.1076	pCi/g	0.1299	N	609.7	4	1.436	IDENTIFIED	8.413	☐
Thorium-232	NR	1.691	0.1762	pCi/g	0.2489	N	911.4	3	1.669	IDENTIFIED	8.664	☐
Tin-126	HE	0.2019	0.0483	pCi/g	0.165	N	87.2	3	1.047	IDENTIFIED	23.46	☐
Titanium-44	—	0.3695	0.03288	pCi/g	0.09074	N	0	9	0	FAIL_ABUND	0	☐
Uranium-234	NR	1.104	0.1076	pCi/g	0.1299	N	609.7	4	1.436	IDENTIFIED	8.413	☐
Zirconium-97	—	1.02E+07	3.09E+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	
244148010	04-JAN-10 12:00	20-JAN-10 15:56	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	✓	1.567	0.1542	pCi/g	0.1647	N	911.5	3	1.305	IDENTIFIED	7.734	☐
Americium-243	INT	0.3352	0.03128	pCi/g	0.06882	N	74.83	1	0.9588	IDENTIFIED	8.407	☐
Annihilation Rad.	HE	0.08953	0.03426	pCi/g	0.04123	N	511	1	1.866	IDENTIFIED	37.89	☐
Bismuth-211	INT	4.271	0.3498	pCi/g	0.2576	Y	352.1	4	1.122	IDENTIFIED	4.884	☐✓✓
Bismuth-212	HE	1.101	0.2461	pCi/g	0.6379	N	0	9	0	FAIL_ABUND	0	☐
Bismuth-214	✓	1.214	0.09681	pCi/g	0.09148	0.200	609.5	4	1.182	IDENTIFIED	5.625	☐
Cadmium-109	INT	2.834	0.4552	pCi/g	0.9474	Y	87.21	3	1.099	IDENTIFIED	15.36	☐✓✓
Cerium-143	—	573.5	139.7	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Gross Gamma	—	8.481	1.332	pCi/g	3.326	N	0	0	0	SHORT_HLIF	0	☐
Iodine-133	HE	5931	5377	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Iodine-135	—	2.03E+16	0	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Lead-212	✓	1.687	0.1287	pCi/g	0.07167	0.100	238.6	4	0.9798	IDENTIFIED	3.023	☐
Lead-214	✓	1.486	0.1277	pCi/g	0.0898	0.100	352.1	4	1.122	IDENTIFIED	4.884	☐
Lutetium-177	HE	2.679	0.793	pCi/g	1.986	N	0	9	0	FAIL_ABUND	0	☐
Neptunium-237	INT	0.8166	0.1559	pCi/g	0.3105	N	87.21	3	1.099	IDENTIFIED	15.36	☐
Niobium-97	HE	30770	1.08E+05	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Polonium-212	NR	1.687	0.1287	pCi/g	0.07167	N	238.6	4	0.9798	IDENTIFIED	3.023	☐
Polonium-214	NR	1.486	0.1277	pCi/g	0.0898	N	352.1	4	1.122	IDENTIFIED	4.884	☐
Polonium-216	NR	1.687	0.1287	pCi/g	0.07167	N	238.6	4	0.9798	IDENTIFIED	3.023	☐
Polonium-218	NR	1.486	0.1277	pCi/g	0.0898	N	352.1	4	1.122	IDENTIFIED	4.884	☐
Potassium-40	✓	20.3	1.119	pCi/g	0.4768	1.00	1461	1	1.836	IDENTIFIED	3.421	☐
Radium-224	INT	4.963	0.6791	pCi/g	0.8158	Y	241.6	1	1.661	IDENTIFIED	11.92	☐✓✓
Radium-226	✓	1.214	0.09681	pCi/g	0.09148	Y	609.5	4	1.182	IDENTIFIED	5.625	☐
Radium-228	✓	1.567	0.1542	pCi/g	0.1647	0.500	911.5	3	1.305	IDENTIFIED	7.734	☐
Thallium-200	HE	313	375.9	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Thallium-208	✓	0.46	0.04445	pCi/g	0.04615	0.080	583.4	1	1.204	IDENTIFIED	8.016	☐
Thorium-228	NR	1.714	0.1308	pCi/g	0.07283	N	238.6	4	0.9798	IDENTIFIED	3.023	☐
Thorium-230	NR	1.214	0.0968	pCi/g	0.09148	N	609.5	4	1.182	IDENTIFIED	5.625	☐
Thorium-232	NR	1.567	0.1542	pCi/g	0.1647	N	911.5	3	1.305	IDENTIFIED	7.734	☐
Thorium-234	✓	1.869	0.6977	pCi/g	1.397	2.00	62.92	2	0.9453	IDENTIFIED	36.3	☐
Tin-126	NR	0.2781	0.04467	pCi/g	0.09328	N	87.21	3	1.099	IDENTIFIED	15.36	☐
Titanium-44	—	0.3435	0.02325	pCi/g	0.05565	N	0	9	0	FAIL_ABUND	0	☐
Total Uranium	—	5.5634	2.08E-06	ug/g	2.0801	N	0	0	0			☐



Uranium-234	NR	1.214	0.0968	pCi/g	0.09148	N	609.5	4	1.182	IDENTIFIED	5.625	<input type="checkbox"/>
Uranium-238	HE	1.869	0.6977	pCi/g	1.397	N	62.92	2	0.9453	IDENTIFIED	36.3	<input type="checkbox"/>
Zirconium-97	HE	1.78E+06	2.35E+06	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a skyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244148011	04-JAN-10 12:00	20-JAN-10 15:57	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.752	0.2055	pCi/g	0.2763	N	910.9	3	1.585	IDENTIFIED 10.52 <input type="checkbox"/>
Americium-243	INT	0.368	0.0322	pCi/g	0.06236	N	74.77	1	1.146	IDENTIFIED 7.61 <input type="checkbox"/>
Annihilation Rad.	—	0.1851	0.03811	pCi/g	0.05667	N	510.6	1	2.132	IDENTIFIED 20.3 <input type="checkbox"/>
Bismuth-211	INT	3.895	0.28	pCi/g	0.3517	Y	351.7	4	1.419	IDENTIFIED 6.198 <input checked="" type="checkbox"/>
Bismuth-212	—	1.871	0.3265	pCi/g	0.8433	N	0	9	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.237	0.1121	pCi/g	0.1376	0.200	609	4	1.708	IDENTIFIED 7.761 <input type="checkbox"/>
Cadmium-109	INT	3.197	0.471	pCi/g	1.007	Y	87.15	3	1.39	IDENTIFIED 14.19 <input checked="" type="checkbox"/>
Cerium-143	—	1468	232.8	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>
Gross Gamma	—	8.05	1.412	pCi/g	2.792	N	0			<input type="checkbox"/>
Iodine-133	HE	2838	8642	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>
Iodine-135	—	3.02E+15	0	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>
Lead-212	✓	1.507	0.08943	pCi/g	0.09303	0.100	238.4	4	1.277	IDENTIFIED 3.819 <input type="checkbox"/>
Lead-214	✓	1.355	0.1036	pCi/g	0.1226	0.100	351.7	4	1.419	IDENTIFIED 6.198 <input type="checkbox"/>
Lawrencium-177	HE	3.538	0.9432	pCi/g	2.362	N	0	9	0	FAIL_ABUND 0 <input type="checkbox"/>
Neptunium-237	INT	0.9212	0.1657	pCi/g	0.289	N	87.15	3	1.39	IDENTIFIED 14.19 <input type="checkbox"/>
Niobium-97	HE	61030	1.66E+05	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>
Polonium-212	NR	1.507	0.08943	pCi/g	0.09303	N	238.4	4	1.277	IDENTIFIED 3.819 <input type="checkbox"/>
Polonium-214	NR	1.355	0.1036	pCi/g	0.1226	N	351.7	4	1.419	IDENTIFIED 6.198 <input type="checkbox"/>
Polonium-216	NR	1.507	0.08943	pCi/g	0.09303	N	238.4	4	1.277	IDENTIFIED 3.819 <input type="checkbox"/>
Polonium-218	NR	1.355	0.1036	pCi/g	0.1226	N	351.7	4	1.419	IDENTIFIED 6.198 <input type="checkbox"/>
Potassium-40	✓	18.64	1.043	pCi/g	0.7303	1.00	1460	1	2.117	IDENTIFIED 4.684 <input type="checkbox"/>
Radium-224	INT	4.802	0.7118	pCi/g	1.059	Y	241.5	1	1.83	IDENTIFIED 14.29 <input checked="" type="checkbox"/>
Radium-226	✓	1.237	0.1121	pCi/g	0.1376	Y	609	4	1.708	IDENTIFIED 7.761 <input type="checkbox"/>
Radium-228	✓	1.752	0.2055	pCi/g	0.2763	0.500	910.9	3	1.585	IDENTIFIED 10.52 <input type="checkbox"/>
Thallium-200	HE	29.65	486.2	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>
Thallium-208	✓	0.524	0.05288	pCi/g	0.07102	0.080	582.9	1	1.652	IDENTIFIED 9.204 <input type="checkbox"/>
Thorium-228	NR	1.531	0.09088	pCi/g	0.09454	N	238.4	4	1.277	IDENTIFIED 3.819 <input type="checkbox"/>
Thorium-230	NR	1.237	0.1121	pCi/g	0.1376	N	609	4	1.708	IDENTIFIED 7.761 <input type="checkbox"/>
Thorium-232	NR	1.752	0.2055	pCi/g	0.2763	N	910.9	3	1.585	IDENTIFIED 10.52 <input type="checkbox"/>
Tin-126	NR	0.3137	0.04623	pCi/g	0.09872	N	87.15	3	1.39	IDENTIFIED 14.19 <input type="checkbox"/>
Titanium-44	—	0.376	0.02472	pCi/g	0.05854	N	0	9	0	FAIL_ABUND 0 <input type="checkbox"/>
Total Uranium	—	1.6627	1.60E-06	ug/g	1.5418	N	0			<input type="checkbox"/>
Uranium-234	NR	1.237	0.1121	pCi/g	0.1376	N	609	4	1.708	IDENTIFIED 7.761 <input type="checkbox"/>
Zirconium-97	—	1.61E+07	3.57E+06	pCi/g	0	N	0	9	0	SHORT_HLIF 0 <input type="checkbox"/>

\*\*\* = Number of isotopes identified with a skyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244148012	04-JAN-10 12:00	20-JAN-10 15:57	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.482	0.2	pCi/g	0.229	N	910.9	3	1.844	IDENTIFIED 12.3 <input type="checkbox"/>
Americium-243	INT	0.4045	0.05988	pCi/g	0.1258	N	74.2	1	1.582	IDENTIFIED 13.72 <input type="checkbox"/>
Annihilation Rad. HE	—	0.07297	0.03348	pCi/g	0.05334	N	510.3	1	2.493	IDENTIFIED 45.79 <input type="checkbox"/>
Bismuth-211	INT	4.257	0.3032	pCi/g	0.3698	Y	351.3	4	1.552	IDENTIFIED 6.239 <input checked="" type="checkbox"/>
Bismuth-212	HE	1.003	0.3256	pCi/g	0.724	N	0	10	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.181	0.09497	pCi/g	0.1192	0.200	608.5	4	1.58	IDENTIFIED 7.132 <input type="checkbox"/>
Cadmium-109	INT	2.288	0.6048	pCi/g	1.948	Y	86.58	3	1.061	IDENTIFIED 25.8 <input checked="" type="checkbox"/>
Cerium-143	—	2409	342.2	pCi/g	0	N	0	10	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-135	HE	0.4172	0.1065	pCi/g	0.3558	N	0	10	0	NOT_IDENTI 0 <input type="checkbox"/>
Gross Gamma	—	7.861	1.409	pCi/g	3.431	N	0			<input type="checkbox"/>
Lead-212	✓	1.447	0.08592	pCi/g	0.1077	0.100	238	4	1.295	IDENTIFIED 4.259 <input type="checkbox"/>
Lead-214	✓	1.481	0.1123	pCi/g	0.1289	0.100	351.3	4	1.552	IDENTIFIED 6.239 <input type="checkbox"/>

Lutetium-177	HE	4.197	1.052	pCi/g	2.78	N	0	10	0	FAIL_ABUND	0	
Neptunium-237	HE	0.6594	0.1871	pCi/g	0.562	N	86.58	3	1.061	IDENTIFIED	25.8	
Niobium-95m	—	1.608	0.1238	pCi/g	0.4111	N	0	10	0	NOT_IDENTI	0	
Niobium-97	HE	2.50E+05	1.83E+05	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Polonium-212	NR	1.447	0.08592	pCi/g	0.1077	N	238	4	1.295	IDENTIFIED	4.259	
Polonium-214	NR	1.481	0.1123	pCi/g	0.1289	N	351.3	4	1.552	IDENTIFIED	6.239	
Polonium-216	NR	1.447	0.08592	pCi/g	0.1077	N	238	4	1.295	IDENTIFIED	4.259	
Polonium-218	NR	1.481	0.1123	pCi/g	0.1289	N	351.3	4	1.552	IDENTIFIED	6.239	
Potassium-40	✓	20.48	1.118	pCi/g	0.5381	1.00	1460	1	2.03	IDENTIFIED	3.896	
Radium-224	INT	5.245	0.8189	pCi/g	1.225	Y	241	1	1.991	IDENTIFIED	15.22	✓
Radium-226	✓	1.181	0.09497	pCi/g	0.1192	Y	608.5	4	1.58	IDENTIFIED	7.132	
Radium-228	✓	1.482	0.2	pCi/g	0.229	0.500	910.9	3	1.844	IDENTIFIED	12.3	
Sodium-24	HE	1.47E+06	1.21E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Thallium-200	HE	693.7	495.9	pCi/g	0	N	0	10	0	SHORT_HLIF	0	
Thallium-208	✓	0.42	0.04814	pCi/g	0.0661	0.080	582.7	1	1.574	IDENTIFIED	11.01	
Thorium-228	NR	1.47	0.08731	pCi/g	0.1095	N	238	4	1.295	IDENTIFIED	4.259	
Thorium-230	NR	1.181	0.09497	pCi/g	0.1192	N	608.5	4	1.58	IDENTIFIED	7.132	
Thorium-232	NR	1.482	0.2	pCi/g	0.229	N	910.9	3	1.844	IDENTIFIED	12.3	
Tin-126	HE	0.2245	0.05935	pCi/g	0.1783	N	86.58	3	1.061	IDENTIFIED	25.8	
Titanium-44	—	0.1876	0.02965	pCi/g	0.09611	N	0	10	0	NOT_IDENTI	0	
Total Uranium	—	7.4943	3.47E-06	ug/g	6.1535	N						
Uranium-234	NR	1.181	0.09497	pCi/g	0.1192	N	608.5	4	1.58	IDENTIFIED	7.132	
Zirconium-97	—	2.24E+07	3.67E+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 Qvals	Zero?	queue
244148013	04-JAN-10 12:00	20-JAN-10 15:58	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.473	0.2191	pCi/g	0.2835	N	910.4	3	1.638	IDENTIFIED 13.75
Americium-243	INT	0.401	0.03291	pCi/g	0.06104	N	74.84	1	0.9629	IDENTIFIED 6.598
Annihilation Rad.	—	0.1499	0.04302	pCi/g	0.06154	N	510.7	1	1.644	IDENTIFIED 28.35
Bismuth-210	HE	1.215	0.4469	pCi/g	0.8256	N	46.52	3	0.8946	IDENTIFIED 36.39
Bismuth-211	INT	4.335	0.3332	pCi/g	0.3761	Y	351.7	4	1.153	IDENTIFIED 6.11
Bismuth-212	HE	0.869	0.3434	pCi/g	0.8355	N	0	9	0	FAIL_ABUND 0
Bismuth-214	✓	1.394	0.128	pCi/g	0.1221	0.200	609	4	1.505	IDENTIFIED 7.646
Cadmium-109	INT	4.34	0.4932	pCi/g	0.9717	Y	87.22	3	1.111	IDENTIFIED 10.26
Cerium-143	—	1073	200.4	pCi/g	0	N	0	9	0	SHORT_HLIF 0
Gross Gamma	—	8.738	1.385	pCi/g	3.845	N				
Iodine-123	HE	1.06E+07	1.10E+07	pCi/g	0	N	0	9	0	SHORT_HLIF 0
Iodine-133	HE	6466	8507	pCi/g	0	N	0	9	0	SHORT_HLIF 0
Iodine-135	—	4.10E+16	0	pCi/g	0	N	0	9	0	SHORT_HLIF 0
Lead-210	HE	1.215	0.4469	pCi/g	0.8256	N	46.52	3	0.8946	IDENTIFIED 36.39
Lead-212	✓	1.775	0.1097	pCi/g	0.09661	0.100	238.5	4	0.9949	IDENTIFIED 3.579
Lead-214	✓	1.508	0.1224	pCi/g	0.1312	0.100	351.7	4	1.153	IDENTIFIED 6.11
Lutetium-177	HE	4.426	1.004	pCi/g	2.521	N	0	9	0	FAIL_ABUND 0
Neptunium-237	INT	1.251	0.192	pCi/g	0.3007	N	87.22	3	1.111	IDENTIFIED 10.26
Polonium-210	HE	1.215	0.4462	pCi/g	0.8256	N	46.52	3	0.8946	IDENTIFIED 36.39
Polonium-212	NR	1.775	0.1097	pCi/g	0.09661	N	238.5	4	0.9949	IDENTIFIED 3.579
Polonium-214	NR	1.508	0.1224	pCi/g	0.1312	N	351.7	4	1.153	IDENTIFIED 6.11
Polonium-216	NR	1.775	0.1097	pCi/g	0.09661	N	238.5	4	0.9949	IDENTIFIED 3.579
Polonium-218	NR	1.508	0.1224	pCi/g	0.1312	N	351.7	4	1.153	IDENTIFIED 6.11
Potassium-40	✓	19.07	1.268	pCi/g	0.6658	1.00	1459	1	2.099	IDENTIFIED 4.951
Radium-224	INT	5.091	0.6969	pCi/g	1.1	Y	241.6	1	1.657	IDENTIFIED 12.92
Radium-226	✓	1.394	0.128	pCi/g	0.1221	Y	609	4	1.505	IDENTIFIED 7.646
Radium-228	✓	1.473	0.2191	pCi/g	0.2835	0.500	910.4	3	1.638	IDENTIFIED 13.75
Thallium-200	HE	52.56	482.9	pCi/g	0	N	0	9	0	SHORT_HLIF 0
Thallium-208	✓	0.6032	0.05868	pCi/g	0.07123	0.080	582.8	1	1.385	IDENTIFIED 8.501
Thorium-228	NR	1.804	0.1115	pCi/g	0.09818	N	238.5	4	0.9949	IDENTIFIED 3.579
Thorium-230	NR	1.394	0.128	pCi/g	0.1221	N	609	4	1.505	IDENTIFIED 7.646



Bismuth-211	INT	4.219	0.3238	pCi/g	0.3111	Y	351.9	4	1.101	IDENTIFIED	5.589	<input checked="" type="checkbox"/>	UI
Bismuth-212	HE	0.9023	0.2353	pCi/g	0.6758	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.307	0.1165	pCi/g	0.106	0.200	609.2	4	1.29	IDENTIFIED	6.561	<input type="checkbox"/>	
Cadmium-109	INT	3.781	0.4094	pCi/g	0.7478	Y	87.24	3	1.11	IDENTIFIED	9.412	<input checked="" type="checkbox"/>	UI
Cerium-143	—	709.7	145.9	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.1101	0.03505	pCi/g	0.09812	0.100	0	12	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137	✓	0.2835	0.043	pCi/g	0.07352	0.100	661.5	2	1.527	IDENTIFIED	14.12	<input type="checkbox"/>	
Gross Gamma	—	8.862	1.105	pCi/g	3.206	N	0					<input type="checkbox"/>	
Iodine-123	HE	4.56E+05	9.13E+06	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-133	HE	982.8	7688	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-210	✓	2.725	0.3713	pCi/g	0.6014	N	46.57	3	0.952	IDENTIFIED	12.61	<input type="checkbox"/>	
Lead-212	✓	1.651	0.1083	pCi/g	0.07735	0.100	238.6	4	1.005	IDENTIFIED	3.261	<input type="checkbox"/>	
Lead-214	✓	1.468	0.119	pCi/g	0.1085	0.100	351.9	4	1.101	IDENTIFIED	5.589	<input type="checkbox"/>	
Lutetium-177	HE	3.189	0.8298	pCi/g	2.182	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237	INT	1.089	0.1629	pCi/g	0.2141	N	87.24	3	1.11	IDENTIFIED	9.412	<input type="checkbox"/>	
Niobium-97	HE	1.93E+05	1.46E+05	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	
Polonium-210	NR	2.725	0.3673	pCi/g	0.6014	N	46.57	3	0.952	IDENTIFIED	12.61	<input type="checkbox"/>	
Polonium-212	NR	1.651	0.1083	pCi/g	0.07735	N	238.6	4	1.005	IDENTIFIED	3.261	<input type="checkbox"/>	
Polonium-214	NR	1.468	0.119	pCi/g	0.1085	N	351.9	4	1.101	IDENTIFIED	5.589	<input type="checkbox"/>	
Polonium-216	NR	1.651	0.1083	pCi/g	0.07735	N	238.6	4	1.005	IDENTIFIED	3.261	<input type="checkbox"/>	
Polonium-218	NR	1.468	0.119	pCi/g	0.1085	N	351.9	4	1.101	IDENTIFIED	5.589	<input type="checkbox"/>	
Potassium-40	✓	19.62	1.162	pCi/g	0.5176	1.00	1461	1	1.892	IDENTIFIED	4.118	<input type="checkbox"/>	
Radium-224	INT	4.381	0.5797	pCi/g	0.8813	Y	241.6	1	1.459	IDENTIFIED	12.14	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.307	0.1165	pCi/g	0.106	Y	609.2	4	1.29	IDENTIFIED	6.561	<input type="checkbox"/>	
Radium-228	✓	1.553	0.1753	pCi/g	0.2245	0.500	911.1	3	1.494	IDENTIFIED	9.594	<input type="checkbox"/>	
Sodium-24	HE	1.34E+06	1.10E+06	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	
Technetium-99m	—	1.77E+17	0	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-200	HE	224.4	420.4	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.5254	0.0524	pCi/g	0.05632	0.080	583.2	1	1.515	IDENTIFIED	8.228	<input type="checkbox"/>	
Thorium-228	NR	1.678	0.1101	pCi/g	0.07861	N	238.6	4	1.005	IDENTIFIED	3.261	<input type="checkbox"/>	
Thorium-230	NR	1.307	0.1165	pCi/g	0.106	N	609.2	4	1.29	IDENTIFIED	6.561	<input type="checkbox"/>	
Thorium-232	NR	1.553	0.1753	pCi/g	0.2245	N	911.1	3	1.494	IDENTIFIED	9.594	<input type="checkbox"/>	
Thorium-234	✓	2.407	0.4484	pCi/g	0.7394	2.00	63.27	2	0.6957	IDENTIFIED	16.13	<input type="checkbox"/>	
Tin-126	NR	0.371	0.04017	pCi/g	0.07324	N	87.24	3	1.11	IDENTIFIED	9.412	<input type="checkbox"/>	
Titanium-44	—	0.4032	0.02567	pCi/g	0.0474	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	—	7.1328	1.33E-06	ug/g	1.1027	N	0					<input type="checkbox"/>	
Uranium-234	NR	1.307	0.1165	pCi/g	0.106	N	609.2	4	1.29	IDENTIFIED	6.561	<input type="checkbox"/>	
Uranium-238	NR	2.407	0.4484	pCi/g	0.7394	N	63.27	2	0.6957	IDENTIFIED	16.13	<input type="checkbox"/>	
Zirconium-97	HE	4.92E+06	2.66E+06	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	Queue
244148016	04-JAN-10 12:00	20-JAN-10 16:27	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	✓	1.447	0.1478	pCi/g	0.2059	N	911.1	3	1.712	IDENTIFIED	8.633
Americium-243	INT	0.3586	0.04993	pCi/g	0.1054	N	74.8	1	1.11	IDENTIFIED	12.69
Annihilation Rad.	—	0.1497	0.03241	pCi/g	0.04192	N	510.9	1	1.587	IDENTIFIED	21.47
Barium-137m	HE	0.09411	0.03309	pCi/g	0.05461	N	662.1	2	1.213	IDENTIFIED	35.08
Bismuth-211	INT	4.145	0.2686	pCi/g	0.3425	Y	351.9	4	1.186	IDENTIFIED	5.534
Bismuth-212	—	1.728	0.2319	pCi/g	0.7053	N	0	7	0	FAIL_ABUND	0
Bismuth-214	✓	1.244	0.09699	pCi/g	0.1051	0.200	609.3	4	1.589	IDENTIFIED	6.879
Cadmium-109	INT	2.764	0.539	pCi/g	1.303	Y	87.22	3	1.014	IDENTIFIED	18.56
Cerium-143	—	1116	185.7	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Cesium-137	✓	0.09948	0.03498	pCi/g	0.05773	0.100	662.1	2	1.213	IDENTIFIED	35.08
Gross Gamma	—	8.032	1.391	pCi/g	3.09	N	0				
Iodine-123	HE	1.03E+07	1.09E+07	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Iodine-133	HE	1190	6836	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Lead-212	✓	1.48	0.08607	pCi/g	0.1292	0.100	238.5	4	1.089	IDENTIFIED	4.208
Lead-214	✓	1.442	0.1007	pCi/g	0.1133	0.100	351.9	4	1.186	IDENTIFIED	5.534

Neptunium-237	INT	0.7965	0.1757	pCi/g	0.3856	N	87.22	3	1.014	IDENTIFIED	18.56	<input type="checkbox"/>
Niobium-97	HE	1.61E+05	1.43E+05	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>
Polonium-212	NR	1.48	0.08607	pCi/g	0.1292	N	238.5	4	1.089	IDENTIFIED	4.208	<input type="checkbox"/>
Polonium-214	NR	1.442	0.1007	pCi/g	0.1133	N	351.9	4	1.186	IDENTIFIED	5.534	<input type="checkbox"/>
Polonium-216	NR	1.48	0.08607	pCi/g	0.1292	N	238.5	4	1.089	IDENTIFIED	4.208	<input type="checkbox"/>
Polonium-218	NR	1.442	0.1007	pCi/g	0.1133	N	351.9	4	1.186	IDENTIFIED	5.534	<input type="checkbox"/>
Potassium-40	✓	20.02	1.035	pCi/g	0.5236	1.00	1461	1	2.119	IDENTIFIED	3.756	<input type="checkbox"/>
Radium-224	INT	2.654	0.4812	pCi/g	1.394	Y	241.9	1	0.9396	IDENTIFIED	17.82	<input checked="" type="checkbox"/> us
Radium-226	✓	1.244	0.09699	pCi/g	0.1051	Y	609.3	4	1.589	IDENTIFIED	6.879	<input type="checkbox"/>
Radium-228	✓	1.447	0.1478	pCi/g	0.2059	0.500	911.1	3	1.712	IDENTIFIED	8.633	<input type="checkbox"/>
Thallium-208	✓	0.4883	0.04499	pCi/g	0.05853	0.080	583.2	1	1.43	IDENTIFIED	8.66	<input type="checkbox"/>
Thorium-228	NR	1.504	0.08747	pCi/g	0.1313	N	238.5	4	1.089	IDENTIFIED	4.208	<input type="checkbox"/>
Thorium-230	NR	1.244	0.09699	pCi/g	0.1051	N	609.3	4	1.589	IDENTIFIED	6.879	<input type="checkbox"/>
Thorium-232	NR	1.447	0.1478	pCi/g	0.2059	N	911.1	3	1.712	IDENTIFIED	8.633	<input type="checkbox"/>
Tin-126	NR	0.2712	0.0529	pCi/g	0.1289	N	87.22	3	1.014	IDENTIFIED	18.56	<input type="checkbox"/>
Titanium-44	—	0.3684	0.03321	pCi/g	0.08696	N	0	7	0	FAIL_ABUND	0	<input type="checkbox"/>
Uranium-234	NR	1.244	0.09699	pCi/g	0.1051	N	609.3	4	1.589	IDENTIFIED	6.879	<input type="checkbox"/>
Zirconium-97	HE	3.80E+06	2.78E+06	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244148017	04-JAN-10 12:00	20-JAN-10 18:02	16.3	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.526	0.1538	pCi/g	0.1566	N	910.9	3	1.68	IDENTIFIED 7.592 <input type="checkbox"/>
Americium-243	—	0.3549	0.0337	pCi/g	0.1208	N	0	12	0	FAIL_ABUND 0 <input type="checkbox"/>
Annihilation Rad.	—	0.1283	0.02673	pCi/g	0.03509	N	511	1	2.107	IDENTIFIED 20.58 <input type="checkbox"/>
Barium-137m	NR	0.1188	0.02141	pCi/g	0.04755	N	661.8	2	1.633	IDENTIFIED 17.62 <input type="checkbox"/>
Bismuth-211	INT	3.643	0.2049	pCi/g	0.2441	Y	351.9	4	1.291	IDENTIFIED 4.618 <input checked="" type="checkbox"/> UI
Bismuth-212	—	0.9524	0.1831	pCi/g	0.516	N	0	12	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.17	0.08253	pCi/g	0.08402	0.200	609.2	4	1.612	IDENTIFIED 5.46 <input type="checkbox"/>
Cadmium-109	INT	2.956	0.4843	pCi/g	1.406	Y	87.36	3	1.094	IDENTIFIED 15.73 <input checked="" type="checkbox"/> UI
Cerium-143	—	1002	168.2	pCi/g	0	N	0	12	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-134	LA	0.105	0.03326	pCi/g	0.07054	0.100	0	12	0	FAIL_ABUND 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Cesium-137	✓	0.1256	0.02263	pCi/g	0.05026	0.100	661.8	2	1.633	IDENTIFIED 17.62 <input type="checkbox"/>
Gross Gamma	—	8.356	1.143	pCi/g	2.154	N	0			<input type="checkbox"/>
Iodine-135	—	1.46E+16	0	pCi/g	0	N	0	12	0	SHORT_HLIF 0 <input type="checkbox"/>
Krypton-85	HE	16.63	3.175	pCi/g	10.85	N	0	12	0	NOT_IDENTI 0 <input type="checkbox"/>
Lead-212	✓	1.518	0.07158	pCi/g	0.06905	0.100	238.8	4	1.265	IDENTIFIED 3.078 <input type="checkbox"/>
Lead-214	✓	1.267	0.07857	pCi/g	0.08507	0.100	351.9	4	1.291	IDENTIFIED 4.618 <input type="checkbox"/>
Lutetium-177	—	5.017	0.9784	pCi/g	1.895	N	0	12	0	FAIL_ABUND 0 <input type="checkbox"/>
Neptunium-237	INT	0.8517	0.1649	pCi/g	0.3695	N	87.36	3	1.094	IDENTIFIED 15.73 <input type="checkbox"/>
Niobium-95	HE	0.0861	0.01975	pCi/g	0.06624	N	0	12	0	NOT_IDENTI 0 <input type="checkbox"/>
Niobium-97	HE	1.55E+05	1.25E+05	pCi/g	0	N	0	12	0	SHORT_HLIF 0 <input type="checkbox"/>
Polonium-212	NR	1.518	0.07158	pCi/g	0.06905	N	238.8	4	1.265	IDENTIFIED 3.078 <input type="checkbox"/>
Polonium-214	NR	1.267	0.07857	pCi/g	0.08507	N	351.9	4	1.291	IDENTIFIED 4.618 <input type="checkbox"/>
Polonium-216	NR	1.518	0.07158	pCi/g	0.06905	N	238.8	4	1.265	IDENTIFIED 3.078 <input type="checkbox"/>
Polonium-218	NR	1.267	0.07857	pCi/g	0.08507	N	351.9	4	1.291	IDENTIFIED 4.618 <input type="checkbox"/>
Potassium-40	✓	20.95	0.9889	pCi/g	0.3704	1.00	1460	1	2.059	IDENTIFIED 2.805 <input type="checkbox"/>
Radium-224	INT	4.735	0.5481	pCi/g	0.7847	Y	241.7	1	1.767	IDENTIFIED 11.24 <input checked="" type="checkbox"/> UI
Radium-226	✓	1.17	0.08253	pCi/g	0.08402	Y	609.2	4	1.612	IDENTIFIED 5.46 <input type="checkbox"/>
Radium-228	✓	1.526	0.1538	pCi/g	0.1566	0.500	910.9	3	1.68	IDENTIFIED 7.592 <input type="checkbox"/>
Strontium-85	LA	0.08626	0.01647	pCi/g	0.05631	Y	0	12	0	NOT_IDENTI 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.4735	0.03816	pCi/g	0.04366	0.080	583.2	1	1.693	IDENTIFIED 7.041 <input type="checkbox"/>
Thorium-228	NR	1.543	0.07275	pCi/g	0.07018	N	238.8	4	1.265	IDENTIFIED 3.078 <input type="checkbox"/>
Thorium-230	NR	1.17	0.08253	pCi/g	0.08402	N	609.2	4	1.612	IDENTIFIED 5.46 <input type="checkbox"/>
Thorium-232	NR	1.526	0.1538	pCi/g	0.1566	N	910.9	3	1.68	IDENTIFIED 7.592 <input type="checkbox"/>
Tin-126	NR	0.29	0.04752	pCi/g	0.1338	N	87.36	3	1.094	IDENTIFIED 15.73 <input type="checkbox"/>
Titanium-44	—	0.266	0.02241	pCi/g	0.07819	N	0	12	0	NOT_IDENTI 0 <input type="checkbox"/>
Total Uranium	—	4.8258	2.81E-06	ug/g	3.3064	N	0			<input type="checkbox"/>

Uranium-234 *NR* 1.17 0.08253 pCi/g 0.08402 N 609.2 4 1.612 IDENTIFIED 5.46 ☐  
 Zirconium-97 *-* 8.51E+06 2.39E+06 pCi/g 0 N 0 12 0 SHORT\_HLIF 0 ☐

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
244148018	04-JAN-10 12:00	20-JAN-10 18:02	16.3	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.92	0.1768	pCi/g	0.1751	N	911.4 3	2.086	IDENTIFIED	6.399	
Americium-243	INT	0.4478	0.03864	pCi/g	0.07858	N	74.78 1	1.224	IDENTIFIED	7.604	
Annihilation Rad. HE		0.08613	0.0302	pCi/g	0.04039	N	511 1	2.015	IDENTIFIED	34.71	
Bismuth-211	INT	4.066	0.3076	pCi/g	0.3116	Y	352 4	1.38	IDENTIFIED	4.842	✓ UI
Bismuth-212	—	1.34	0.2265	pCi/g	0.5783	N	0 15 0		FAIL_ABUND 0		
Bismuth-214	✓	1.259	0.1037	pCi/g	0.1016	0.200	609.5 4	1.89	IDENTIFIED	5.84	
Cadmium-109	INT	3.801	0.474	pCi/g	1.081	Y	87.17 3	1.229	IDENTIFIED	11.55	✓ UI
Cerium-143	—	1640	249.3	pCi/g	0	N	0 15 0		SHORT_HLIF 0		
Cesium-134	LA	0.1046	0.02966	pCi/g	0.07769	0.100	0 15 0		FAIL_ABUND 0	✓ UI	Data rejected due to low abundance.
Cesium-135	HE	0.3174	0.0854	pCi/g	0.2634	N	0 15 0		NOT_IDENTI 0		
Gross Gamma	—	9.013	1.319	pCi/g	2.361	N	0				
Iodine-133	HE	3969	6166	pCi/g	0	N	0 15 0		SHORT_HLIF 0		
Iodine-135	—	2.85E+16	0	pCi/g	0	N	0 15 0		SHORT_HLIF 0		
Krypton-85	—	25.58	4.067	pCi/g	13.26	N	0 15 0		NOT_IDENTI 0		
Lead-212	✓	1.746	0.1261	pCi/g	0.08807	0.100	238.7 4	1.168	IDENTIFIED	2.924	
Lead-214	✓	1.414	0.1132	pCi/g	0.106	0.100	352 4	1.38	IDENTIFIED	4.842	
Lutetium-177	HE	3.241	0.7753	pCi/g	2.149	N	0 15 0		FAIL_ABUND 0		
Neptunium-237	INT	1.095	0.1773	pCi/g	0.3158	N	87.17 3	1.229	IDENTIFIED	11.55	
Niobium-95	HE	0.1108	0.02303	pCi/g	0.07468	N	0 15 0		NOT_IDENTI 0		
Niobium-95m	HE	0.238	0.06888	pCi/g	0.2132	N	0 15 0		NOT_IDENTI 0		
Polonium-212	NR	1.746	0.1261	pCi/g	0.08807	N	238.7 4	1.168	IDENTIFIED	2.924	
Polonium-214	NR	1.414	0.1132	pCi/g	0.106	N	352 4	1.38	IDENTIFIED	4.842	
Polonium-216	NR	1.746	0.1261	pCi/g	0.08807	N	238.7 4	1.168	IDENTIFIED	2.924	
Polonium-218	NR	1.414	0.1132	pCi/g	0.106	N	352 4	1.38	IDENTIFIED	4.842	
Potassium-40	✓	21.22	1.144	pCi/g	0.3987	1.00	1461 1	2.834	IDENTIFIED	2.844	
Radium-224	INT	5.357	0.6608	pCi/g	1.001	Y	241.7 1	1.671	IDENTIFIED	10.62	✓ UI
Radium-226	✓	1.259	0.1037	pCi/g	0.1016	Y	609.5 4	1.89	IDENTIFIED	5.84	
Radium-228	✓	1.92	0.1768	pCi/g	0.1751	0.500	911.4 3	2.086	IDENTIFIED	6.399	
Rhenium-188	HE	0.3103	0.08312	pCi/g	0.3008	N	0 15 0		NOT_IDENTI 0		
Strontium-85	LA	0.1327	0.0211	pCi/g	0.0688	Y	0 15 0		NOT_IDENTI 0	✓ UI	Data rejected due to low abundance.
Thallium-200	HE	260.8	420.3	pCi/g	0	N	0 15 0		SHORT_HLIF 0		
Thallium-208	✓	0.5529	0.04566	pCi/g	0.04961	0.080	583.2 1	1.804	IDENTIFIED	6.229	
Thorium-228	NR	1.774	0.1282	pCi/g	0.08951	N	238.7 4	1.168	IDENTIFIED	2.924	
Thorium-230	NR	1.259	0.1037	pCi/g	0.1016	N	609.5 4	1.89	IDENTIFIED	5.84	
Thorium-232	NR	1.92	0.1768	pCi/g	0.1751	N	911.4 3	2.086	IDENTIFIED	6.399	
Tin-126	NR	0.373	0.04651	pCi/g	0.1065	N	87.17 3	1.229	IDENTIFIED	11.55	
Titanium-44	—	0.3975	0.0276	pCi/g	0.07285	N	0 15 0		FAIL_ABUND 0		
Total Uranium	—	3.2255	2.29E-06	ug/g	2.6262	N	0				
Uranium-234	NR	1.259	0.1037	pCi/g	0.1016	N	609.5 4	1.89	IDENTIFIED	5.84	
Zirconium-97	—	1.54E+07	2.98E+06	pCi/g	0	N	0 15 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		
1202012156		20-JAN-10 18:03	0	MB	LOAD	1		GEL	N	RGSP		
Name Result Uncert. Units MDA RDL Energy *** FWHM Comb Act Rpt Err(%) Qual Qual Comment												
Iodine-123 HE	50.83	484.8	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135 HE	2.53E+07	1.03E+08	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>	
Niobium-97 HE	26.47	51.45	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>	
*** = Number of isotopes identified with a keyline at this energy.												
Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue		
1202012157	04-JAN-10 12:00	20-JAN-10 18:04	16.3	DUP	LOAD	1		LANL01004GEL	N	RGSP		



Polonium-214	0.6819	0.1278	pCi/g 0.3558	N	0	17	0	FAIL_ABUND 0	<input type="checkbox"/>
Polonium-216	0.8808	0.1258	pCi/g 0.1805	N	238.7	4	1.218	IDENTIFIED 13.35	<input type="checkbox"/>
Polonium-218	0.6819	0.1278	pCi/g 0.3558	N	0	17	0	FAIL_ABUND 0	<input type="checkbox"/>
Potassium-40	0.7286	0.3089	pCi/g 0.6276	1.00	1461	1	1.369	IDENTIFIED 42.17	<input type="checkbox"/>
Radium-224	6.464	0.872	pCi/g 3.021	Y	0	17	0	NOT_IDENTI 0	<input type="checkbox"/>
Radium-226	0.7644	0.1095	pCi/g 0.2134	Y	609.6	4	1.706	IDENTIFIED 13.45	<input type="checkbox"/>
Radium-228	1.103	0.247	pCi/g 0.7828	0.500	0	17	0	FAIL_ABUND 0	<input type="checkbox"/>
Sodium-24 HE	379.1	361.7	pCi/g 0	N	0	17	0	SHORT_HLIF 0	<input type="checkbox"/>
Technetium-99m HE	8.84E+08	6.64E+08	pCi/g 0	N	0	17	0	SHORT_HLIF 0	<input type="checkbox"/>
Thallium-208	0.2989	0.05866	pCi/g 0.1166	0.080	583.7	1	1.959	IDENTIFIED 19.09	<input type="checkbox"/>
Thorium-228	0.8885	0.1269	pCi/g 0.1821	N	238.7	4	1.218	IDENTIFIED 13.35	<input type="checkbox"/>
Thorium-230	0.7644	0.1095	pCi/g 0.2134	N	609.6	4	1.706	IDENTIFIED 13.45	<input type="checkbox"/>
Thorium-232 HE	1.103	0.247	pCi/g 0.7828	N	0	17	0	FAIL_ABUND 0	<input type="checkbox"/>
Tin-126	3.349	0.2215	pCi/g 0.2268	N	88.11	2	1.138	IDENTIFIED 4.625	<input type="checkbox"/>
Titanium-44 HE	0.1593	0.0454	pCi/g 0.1211	N	0	17	0	FAIL_ABUND 0	<input type="checkbox"/>
Uranium-234	0.7644	0.1095	pCi/g 0.2134	N	609.6	4	1.706	IDENTIFIED 13.45	<input type="checkbox"/>
Zirconium-97 HE	4931	3716	pCi/g 0	N	0	17	0	SHORT_HLIF 0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.



# GEL QUALS

Batch ID: 940268

Report run on: January 21, 2010 2:41 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
244148001-1 20-JAN-2010 15:48	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.235			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.668			
	Cesium-137	UI	UI	UI	Data rejected due to high peak-width.		.1572		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.813			
244148002-1 20-JAN-2010 15:48	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.177			
	Cadmium-109	UI	UI	UI	Data rejected due to high peak-width.		4.396			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1131		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.952			
244148003-1 20-JAN-2010 15:49	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08636			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.144			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.123			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.787			
244148004-1 20-JAN-2010 15:50	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08117			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.101			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.573			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.09573		.1	.1
244148005-1 20-JAN-2010 15:50	Radium-224	UI	UI	UI	Data rejected due to interference.		4.532			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08987			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.502			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.131			

# GEL QUALS

Batch ID: 940268

Report run on: January 21, 2010 2:41 PM

Samp id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
244148005-1 20-JAN-2010 15:50	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		2259		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.784			
244148006-1 20-JAN-2010 15:51	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.02			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.568			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08528		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.002			
244148007-1 20-JAN-2010 15:51	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.313			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.274			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1209		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.622			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.103			
244148008-1 20-JAN-2010 15:51	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.018			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.014			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.8			
244148009-1 20-JAN-2010 15:56	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.388			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.057			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1341		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.582			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1041			

# GEL QUALS

Batch ID: 940268

Report run on: January 21, 2010 2:41 PM

Samp Id	Parname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
244148010-1 20-JAN-2010 15:56	Bismuth-211	UI	UI	Data rejected due to interference.		4.271			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.834			
	Radium-224	UI	UI	Data rejected due to interference.		4.963			
244148011-1 20-JAN-2010 15:57	Bismuth-211	UI	UI	Data rejected due to interference.		3.895			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.197			
	Radium-224	UI	UI	Data rejected due to interference.		4.802			
244148012-1 20-JAN-2010 15:57	Bismuth-211	UI	UI	Data rejected due to interference.		4.257			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.288			
	Radium-224	UI	UI	Data rejected due to interference.		5.245			
244148013-1 20-JAN-2010 15:58	Bismuth-211	UI	UI	Data rejected due to interference.		4.335			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.34			
	Radium-224	UI	UI	Data rejected due to interference.		5.091			
244148014-1 20-JAN-2010 15:58	Bismuth-211	UI	UI	Data rejected due to interference.		4.832			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.458			
	Radium-224	UI	UI	Data rejected due to interference.		5.178			
244148015-1 20-JAN-2010 15:59	Bismuth-211	UI	UI	Data rejected due to interference.		4.219			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.781			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1101		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.381			

# GEL QUALS

Batch ID: 940268

Report run on: January 21, 2010 2:41 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
244148016-1 20-JAN-2010 16:27	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.145			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.764			
	Radium-224	UI	UI	UI	Data rejected due to interference.		2.654			
244148017-1 20-JAN-2010 18:02	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.643			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.956			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.105		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.735			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08626			
244148018-1 20-JAN-2010 18:02	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.066			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.801			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1046		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.357			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1327			
1202012157-1 DUP 20-JAN-2010 18:04	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.947			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.548			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.431			

# Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Paramname	Result	Uncertainty	Units	DL	RDL
940268	244148017	SAMPLE	20-JAN-10	Radium-224	4.735	0.5481	pCi/g	0.3926	Y
				Radium-226	1.17	0.08253	pCi/g	0.04203	Y
				Radium-228	1.526	0.1538	pCi/g	0.07837	0.500
				Strontium-85	0.06626	0.01647	pCi/g	0.02817	Y
				Thallium-208	0.4735	0.03816	pCi/g	0.02184	0.080
				Thorium-234	1.625	0.9446	pCi/g	1.111	2.00
				Zirconium-97	8.51E+06	2.39E+06	pCi/g	0	N
940268	244148018	SAMPLE	20-JAN-10	Bismuth-211	4.066	0.3076	pCi/g	0.1559	Y
				Bismuth-214	1.259	0.1037	pCi/g	0.05083	0.200
				Cadmium-109	3.801	0.474	pCi/g	0.5407	Y
				Cerium-143	1640	249.3	pCi/g	0	N
				Cesium-134	0.1046	0.02966	pCi/g	0.03887	0.100
				Gross Gamma	9.013	1.319	pCi/g	1.146	N
				Iodine-133	3969	6186	pCi/g	0	N
				Iodine-135	2.85E+16	0	pCi/g	0	N
				Krypton-85	25.58	4.067	pCi/g	6.633	N
				Lead-212	1.746	0.1291	pCi/g	0.04406	0.100
				Lead-214	1.414	0.1132	pCi/g	0.05302	0.100
				Potassium-40	21.22	1.144	pCi/g	0.1995	1.00
				Radium-224	5.357	0.6808	pCi/g	0.5008	Y
				Radium-226	1.259	0.1037	pCi/g	0.05083	Y
				Radium-228	1.92	0.1768	pCi/g	0.08759	0.500
				Strontium-85	0.1327	0.0211	pCi/g	0.03442	Y
				Thallium-200	260.8	420.3	pCi/g	0	N
				Thallium-208	0.5529	0.04566	pCi/g	0.02482	0.080
				Thorium-234	1.067	0.7893	pCi/g	0.8823	2.00
				Zirconium-97	1.54E+07	2.98E+06	pCi/g	0	N
940268	1202012156	MB	20-JAN-10	Iodine-123	50.83	484.8	pCi/g	0	N
				Iodine-135	2.53E+07	1.03E+08	pCi/g	0	N
				Niobium-97	26.47	51.45	pCi/g	0	N
				Radium-226	0.06278	0.03181	pCi/g	0.06266	0.500
940268	1202012157	DUP	20-JAN-10	Bismuth-211	3.947	0.321	pCi/g	0.143	Y
				Bismuth-214	1.262	0.1031	pCi/g	0.05157	0.200
				Cadmium-109	2.548	0.497	pCi/g	0.5579	Y
				Cerium-143	980.8	171.5	pCi/g	0	N
				Cesium-134	0.08202	0.02261	pCi/g	0.0429	0.100
				Cesium-137	0.1052	0.0234	pCi/g	0.03027	0.100

VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:49:13.92

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148001.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:48:46
Sample ID        : G244148001      Sample quantity   : 1.30860E+02 GRAM
Detector name    : GAM02           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:02.64 0.0%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000        Sensitivity     : 5.00000
Batch ID        : 940268           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	62.93*	51	484	1.09	125.05	121	9	7.02E-03	83.3	
2	3	74.53	366	418	1.19	148.27	143	17	5.09E-02	10.8	1.98E+00
3	3	76.83*	553	334	1.03	152.86	143	17	7.68E-02	7.0	
4	0	86.94	176	427	1.14	173.10	170	7	2.45E-02	20.8	
5	0	92.50*	198	494	1.17	184.23	181	9	2.76E-02	23.1	
6	0	128.74	83	381	1.17	256.75	253	9	1.16E-02	43.7	
7	0	185.67*	153	396	1.13	370.66	366	10	2.13E-02	27.4	
8	0	208.84	134	218	1.56	417.03	414	8	1.87E-02	20.8	
9	5	238.35*	1109	186	1.09	476.08	471	18	1.54E-01	3.7	7.78E-01
10	5	241.53*	280	234	1.85	482.44	471	18	3.90E-02	14.6	
11	0	269.62	119	250	1.35	538.66	534	13	1.66E-02	28.8	
12	0	276.19	98	185	0.92	551.80	546	11	1.35E-02	28.8	
13	0	294.78*	367	259	1.22	589.00	582	14	5.10E-02	10.8	
14	0	300.21	89	148	1.55	599.86	595	9	1.24E-02	26.9	
15	0	327.82	58	180	1.33	655.10	650	10	8.11E-03	44.9	
16	0	338.10	212	204	1.22	675.67	671	12	2.95E-02	15.0	
17	0	351.60*	640	174	1.24	702.70	696	12	8.89E-02	5.8	
18	0	462.32	65	109	1.63	924.26	918	11	8.99E-03	30.6	
19	0	510.46*	103	120	2.06	1020.61	1013	15	1.43E-02	29.7	
20	0	582.97*	348	136	1.49	1165.70	1158	16	4.84E-02	9.4	
21	0	608.94*	469	88	1.52	1217.67	1211	16	6.51E-02	6.5	
22	0	663.13	96	92	4.17	1326.13	1318	19	1.34E-02	26.7	
23	0	727.09	73	78	1.65	1454.13	1448	12	1.01E-02	26.9	
24	0	834.89	38	48	1.37	1669.87	1662	14	5.23E-03	43.6	
25	0	860.64	45	79	0.94	1721.39	1714	15	6.24E-03	45.6	
26	0	910.86*	274	59	1.74	1821.91	1815	17	3.81E-02	9.2	
27	1	964.28	57	48	1.99	1928.81	1923	30	7.95E-03	25.4	6.99E-01
28	1	968.55*	146	33	1.99	1937.36	1923	30	2.03E-02	12.5	
29	0	1119.52*	85	46	1.65	2239.53	2233	13	1.19E-02	20.2	
30	0	1460.29*	760	9	2.24	2921.59	2913	18	1.06E-01	3.8	
31	0	1629.98	21	3	2.16	3261.23	3255	11	2.93E-03	26.6	
32	0	1763.64*	87	6	2.74	3528.79	3522	13	1.21E-02	12.9	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:49:16

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:48:46
Sample ID         : G244148001           Sample quantity  : 130.86 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA2               Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:02.64   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	*	1.987E+01	2.418E+00	3.738E-01	3.554E-02	53.168
MN-54	+	834.83	*	6.598E-02	5.795E-02	6.828E-02	6.708E-03	0.966
CD-109	+	88.03	*	2.668E+00	1.142E+00	1.427E+00	1.433E-01	1.870
SN-126	+	64.28		5.979E-01	9.995E-01	8.414E-01	1.248E-01	0.711
	+	86.94		1.089E+00	6.411E-01	6.073E-01	2.529E-01	1.793
	+	87.57	*	2.618E-01	1.121E-01	1.462E-01	1.461E-02	1.791
CS-135	+	268.24	*	5.246E-01	3.105E-01	2.725E-01	3.605E-02	1.925
BA-137M	+	661.65	*	1.488E-01	8.051E-02	6.026E-02	5.192E-03	2.469
CS-137	+	661.65	*	1.572E-01	8.511E-02	6.370E-02	5.499E-03	2.469
TL-208	+	277.35		1.027E+00	6.121E-01	5.862E-01	8.911E-02	1.753
	+	510.84		5.368E-01	3.264E-01	2.222E-01	2.877E-02	2.416
	+	583.14	*	5.179E-01	1.100E-01	5.993E-02	6.003E-03	8.643
	+	860.37		6.267E-01	5.748E-01	4.996E-01	5.266E-02	1.254
BI-211		72.87		6.730E+00	3.588E+00	5.820E+00	5.009E-01	1.156
	+	351.07	*	4.235E+00	6.914E-01	3.521E-01	4.062E-02	12.029
PB-212	+	74.81		2.427E+00	6.072E-01	5.385E-01	6.897E-02	4.506
	+	77.11		2.048E+00	3.385E-01	3.021E-01	2.701E-02	6.780
	+	87.30		1.211E+00	5.324E-01	6.783E-01	9.576E-02	1.785
	+	238.63	*	1.601E+00	2.335E-01	9.427E-02	1.186E-02	16.978
	+	300.09		1.997E+00	1.106E+00	1.240E+00	1.675E-01	1.611
PO-212	+	74.81		2.427E+00	6.072E-01	5.385E-01	6.897E-02	4.506
	+	77.11		2.048E+00	3.385E-01	3.021E-01	2.701E-02	6.780
	+	87.30		1.211E+00	5.324E-01	6.783E-01	9.576E-02	1.785
	+	115.19		1.809E+00	3.705E+00	6.234E+00	5.242E-01	0.290
	+	238.63	*	1.601E+00	2.335E-01	9.427E-02	1.186E-02	16.978
	+	300.09		1.997E+00	1.106E+00	1.240E+00	1.675E-01	1.611
BI-214	+	609.31	*	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143
	+	1120.29		1.250E+00	5.218E-01	4.921E-01	5.358E-02	2.539
	+	1764.49		1.762E+00	4.777E-01	2.725E-01	2.310E-02	6.466
PB-214	+	74.81		4.181E+00	1.019E+00	9.279E-01	1.064E-01	4.506
	+	77.11		3.511E+00	6.390E-01	5.178E-01	6.084E-02	6.780
	+	87.30		2.075E+00	9.024E-01	1.162E+00	1.464E-01	1.785
	+	241.98		2.433E+00	7.791E-01	5.681E-01	7.432E-02	4.282
	+	295.21		1.436E+00	3.672E-01	2.004E-01	2.754E-02	7.168

## ----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.473E+00	2.525E-01	1.227E-01	1.552E-02	12.003
	+	74.81		4.181E+00	1.019E+00	9.279E-01	1.064E-01	4.506
	+	77.11		3.511E+00	6.390E-01	5.178E-01	6.084E-02	6.780
	+	87.30		2.075E+00	9.024E-01	1.162E+00	1.464E-01	1.785
	+	241.98		2.433E+00	7.791E-01	5.681E-01	7.432E-02	4.282
PO-216	+	295.21		1.436E+00	3.672E-01	2.004E-01	2.754E-02	7.168
	+	351.92	*	1.473E+00	2.525E-01	1.227E-01	1.552E-02	12.003
	+	74.81		2.427E+00	6.072E-01	5.385E-01	6.897E-02	4.506
	+	77.11		2.048E+00	3.385E-01	3.021E-01	2.701E-02	6.780
	+	87.30		1.211E+00	5.324E-01	6.783E-01	9.576E-02	1.785
PO-218	+	238.63	*	1.601E+00	2.335E-01	9.427E-02	1.186E-02	16.978
	+	300.09		1.997E+00	1.106E+00	1.240E+00	1.675E-01	1.611
	+	74.81		4.181E+00	1.019E+00	9.279E-01	1.064E-01	4.506
	+	77.11		3.511E+00	6.390E-01	5.178E-01	6.084E-02	6.780
	+	87.30		2.075E+00	9.024E-01	1.162E+00	1.464E-01	1.785
RA-224	+	241.98		2.433E+00	7.791E-01	5.681E-01	7.432E-02	4.282
	+	295.21		1.436E+00	3.672E-01	2.004E-01	2.754E-02	7.168
	+	351.92	*	1.473E+00	2.525E-01	1.227E-01	1.552E-02	12.003
	+	240.98	*	4.613E+00	1.454E+00	1.073E+00	1.267E-01	4.297
	+	609.31	*	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143
RA-226	+	1120.29		1.250E+00	5.218E-01	4.921E-01	5.358E-02	2.539
	+	1764.49		1.762E+00	4.777E-01	2.725E-01	2.310E-02	6.466
AC-228	+	338.32		1.548E+00	7.991E-01	3.676E-01	1.542E-01	4.211
	+	911.07	*	1.808E+00	4.014E-01	2.123E-01	2.648E-02	8.517
	+	969.11		1.703E+00	5.869E-01	3.435E-01	8.185E-02	4.956
RA-228	+	338.32		1.548E+00	7.991E-01	3.676E-01	1.542E-01	4.211
	+	911.07	*	1.808E+00	4.014E-01	2.123E-01	2.648E-02	8.517
	+	969.11		1.703E+00	5.869E-01	3.435E-01	8.185E-02	4.956
TH-228	+	74.81		2.466E+00	5.731E-01	5.473E-01	4.831E-02	4.506
	+	77.11		2.081E+00	3.440E-01	3.070E-01	2.745E-02	6.780
	+	87.30		1.231E+00	5.268E-01	6.894E-01	6.868E-02	1.785
	+	238.63	*	1.626E+00	2.373E-01	9.580E-02	1.206E-02	16.978
	+	300.09		2.029E+00	1.633E+00	1.260E+00	7.546E-01	1.611
TH-230	+	609.31	*	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143
	+	1120.29		1.250E+00	5.218E-01	4.921E-01	5.358E-02	2.539
	+	1764.49		1.762E+00	4.777E-01	2.725E-01	2.310E-02	6.466
TH-232	+	338.32		1.548E+00	4.986E-01	3.676E-01	4.226E-02	4.211
	+	911.07	*	1.808E+00	4.014E-01	2.123E-01	2.648E-02	8.517
	+	969.11		1.703E+00	5.869E-01	3.435E-01	8.185E-02	4.956
TH-234	+	63.29	*	1.510E+00	2.529E+00	2.241E+00	3.957E-01	0.674
	+	92.38		1.884E+00	9.370E-01	8.879E-01	1.645E-01	2.122
U-234	+	609.31	*	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143
	+	1120.29		1.250E+00	5.218E-01	4.921E-01	5.358E-02	2.539
	+	1764.49		1.762E+00	4.777E-01	2.725E-01	2.310E-02	6.466
NP-237	+	86.50	*	7.689E-01	3.654E-01	4.169E-01	9.537E-02	1.844
	+	95.87		-5.058E-01	1.066E+00	1.509E+00	3.750E-01	-0.335
U-238	+	63.29	*	1.510E+00	2.529E+00	2.241E+00	3.957E-01	0.674
	+	92.38		1.884E+00	8.879E-01	8.879E-01	8.453E-02	2.122
AM-243	+	74.67	*	3.934E-01	9.132E-02	8.764E-02	7.664E-03	4.489



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	86.72		2.883E+01	1.234E+01	1.613E+01	1.596E+00	1.787
		117.66		-1.265E+00	3.838E+00	6.240E+00	5.228E-01	-0.203
		142.18		-1.179E+01	1.885E+01	2.971E+01	2.688E+00	-0.397
ANH-511	+	511.00	*	1.159E-01	6.983E-02	4.801E-02	4.759E-03	2.415

## ---- 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	*	2.469E-01	3.315E-01	5.654E-01	5.996E-02	0.437
NA-22		1274.54	*	-2.869E-03	4.737E-02	7.740E-02	6.863E-03	-0.037
NA-24		1368.53	*	-8.204E-01	4.737E-02	Half-Life too short		
AL-26		1129.67		5.103E-01	1.857E+00	3.163E+00	2.702E-01	0.161
		1808.65	*	1.577E-02	3.053E-02	5.560E-02	4.603E-03	0.284
TI-44		67.85		-2.392E-02	4.858E-02	7.705E-02	6.356E-03	-0.311
		78.38	*	1.303E-01	3.893E-02	6.919E-02	6.264E-03	1.883
SC-46		889.25	*	-4.158E-02	4.177E-02	5.999E-02	6.099E-03	-0.693
	+	1120.51		2.158E-01	8.895E-02	1.357E-01	1.173E-02	1.590
V-48		944.10		-2.174E-01	1.030E+00	1.624E+00	1.624E-01	-0.134
		983.50	*	-3.189E-02	7.900E-02	1.212E-01	1.185E-02	-0.263
		1312.09		-4.181E-03	8.455E-02	1.378E-01	1.262E-02	-0.030
CR-51		320.08	*	-1.980E-01	3.964E-01	6.384E-01	7.788E-02	-0.310
MN-52		744.21		7.721E-02	2.852E-01	4.808E-01	4.429E-02	0.161
		848.13		-1.926E-01	7.570E+00	1.230E+01	1.219E+00	-0.016
		935.52		8.927E-02	3.319E-01	5.494E-01	5.523E-02	0.162
		1246.25		-1.130E+01	9.708E+00	1.418E+01	1.224E+00	-0.797
		1333.61		-4.926E-01	6.087E+00	9.868E+00	9.194E-01	-0.050
		1434.06	*	1.512E-01	2.573E-01	4.570E-01	4.252E-02	0.331
CO-56		846.75	*	-1.409E-02	3.880E-02	6.070E-02	6.010E-03	-0.232
		977.42		-5.982E-01	3.528E+00	4.750E+00	4.664E-01	-0.126
		1037.82		3.539E-02	3.270E-01	5.533E-01	5.432E-02	0.064
		1175.09		7.008E-01	2.309E+00	3.936E+00	3.176E-01	0.178
		1238.25		1.098E-01	1.026E-01	1.824E-01	1.609E-02	0.602
		1360.21		-5.835E-01	9.976E-01	1.484E+00	1.384E-01	-0.393
		1771.40		-7.149E-01	3.209E-01	3.043E-01	2.570E-02	-2.350
CO-57		122.06	*	-2.757E-02	2.528E-02	3.939E-02	3.293E-03	-0.700
		136.48		-6.646E-02	2.107E-01	3.396E-01	3.206E-02	-0.196
CO-58		810.76	*	-3.545E-02	4.380E-02	6.592E-02	6.384E-03	-0.538
FE-59		142.65		1.070E-01	2.945E+00	4.785E+00	4.339E-01	0.022
		192.34		1.232E+00	1.043E+00	1.738E+00	2.595E-01	0.709
		1099.22	*	1.210E-02	8.524E-02	1.442E-01	1.375E-02	0.084
		1291.56		-3.144E-02	1.289E-01	2.057E-01	2.080E-02	-0.153
CO-60		1173.22		1.668E-03	4.502E-02	7.487E-02	6.029E-03	0.022
		1332.49	*	1.189E-02	4.088E-02	6.940E-02	6.466E-03	0.171
ZN-65		1115.52	*	-3.110E-02	1.038E-01	1.422E-01	1.237E-02	-0.219
GE-68		1077.35	*	9.706E-01	1.301E+00	2.320E+00	2.101E-01	0.418
AS-73		53.44	*	3.409E-02	1.067E+00	1.830E+00	1.515E-01	0.019
AS-74		595.88	*	-5.295E-02	1.015E-01	1.634E-01	1.526E-02	-0.324
		634.78		-9.110E-02	4.105E-01	6.732E-01	6.018E-02	-0.135

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75		66.05	-3.670E+00	5.437E+00	8.004E+00	8.025E-01	-0.459
		96.73	-2.634E-01	8.526E-01	1.253E+00	1.749E-01	-0.210
		121.11	-2.687E-02	1.331E-01	2.171E-01	2.392E-02	-0.124
		136.00	3.451E-03	3.935E-02	6.464E-02	5.720E-03	0.053
		198.60	-1.047E+00	2.006E+00	3.082E+00	3.608E-01	-0.340
		264.65	* -1.599E-02	5.318E-02	7.730E-02	9.449E-03	-0.207
		279.53	-5.032E-02	1.230E-01	1.760E-01	2.221E-02	-0.286
		303.91	1.892E+00	2.304E+00	3.587E+00	5.128E-01	0.527
		400.65	2.560E-01	2.721E-01	4.700E-01	5.752E-02	0.545
BR-77	+	87.88	7.799E+02	3.339E+02	4.485E+02	4.499E+01	1.739
		200.40	-1.681E+02	2.394E+02	3.675E+02	4.039E+01	-0.457
	+	239.00	3.483E+02	4.835E+01	5.377E+01	6.326E+00	6.478
		249.79	-2.645E+01	8.817E+01	1.467E+02	1.754E+01	-0.180
		281.68	1.050E+01	1.302E+02	2.039E+02	2.525E+01	0.052
		297.23	1.212E+02	1.145E+02	1.376E+02	1.681E+01	0.881
		303.76	2.061E+02	2.631E+02	4.095E+02	4.965E+01	0.503
		439.47	-1.355E+02	2.122E+02	3.278E+02	3.303E+01	-0.413
		484.57	-5.619E+01	3.218E+02	5.112E+02	5.115E+01	-0.110
		520.65	* 5.501E-01	1.476E+01	2.373E+01	2.342E+00	0.023
		574.64	2.920E+01	3.019E+02	4.840E+02	4.607E+01	0.060
		578.91	3.384E+01	1.273E+02	1.917E+02	1.819E+01	0.176
		585.48	1.090E+03	3.125E+02	5.610E+02	5.290E+01	1.944
		755.35	2.734E+02	2.450E+02	4.376E+02	4.065E+01	0.625
		817.79	-2.829E+01	1.965E+02	3.167E+02	3.076E+01	-0.089
SR-82		698.33	-1.433E+01	3.845E+01	6.179E+01	5.490E+00	-0.232
		776.49	* -7.280E-02	4.091E-01	6.604E-01	6.232E-02	-0.110
		1395.20	-6.024E+00	1.300E+01	1.986E+01	1.851E+00	-0.303
RB-83		520.41	* -1.501E-02	7.278E-02	1.145E-01	1.130E-02	-0.131
		529.64	-8.442E-02	1.219E-01	1.836E-01	1.803E-02	-0.460
		552.65	1.346E-01	2.090E-01	3.678E-01	3.561E-02	0.366
RB-84		881.50	* 7.527E-03	7.181E-02	1.179E-01	1.193E-02	0.064
KR-85		513.99	* 8.199E+00	8.170E+00	1.261E+01	1.249E+00	0.650
SR-85		513.99	* 4.250E-02	4.235E-02	6.538E-02	6.473E-03	0.650
RB-86		1076.63	* 7.236E-01	8.135E-01	1.473E+00	1.335E-01	0.491
Y-88		898.02	-5.096E-02	4.470E-02	6.294E-02	6.455E-03	-0.810
		1836.01	* 4.518E-03	3.459E-02	5.866E-02	4.785E-03	0.077
ZR-88		392.90	* -9.573E-03	3.385E-02	5.441E-02	5.444E-03	-0.176
Y-91		1204.90	* 8.688E+00	2.169E+01	3.705E+01	3.077E+00	0.234
NB-94		702.63	* 1.243E-02	3.440E-02	5.857E-02	5.222E-03	0.212
		871.10	5.422E-03	3.724E-02	6.137E-02	6.170E-03	0.088
NB-95		765.79	* 6.272E-02	4.858E-02	8.612E-02	8.063E-03	0.728
NB-95M		235.69	* 1.203E-01	1.455E-01	2.275E-01	2.877E-02	0.529
ZR-95		724.18	8.345E-02	1.174E-01	1.807E-01	1.768E-02	0.462
		756.15	* 8.084E-02	7.601E-02	1.355E-01	1.370E-02	0.596
NB-97		657.90	* 8.132E-02	7.601E-02	Half-Life	too short	
		1024.50	-1.184E+01	7.601E-02	Half-Life	too short	
ZR-97		254.15	4.427E+00	7.601E-02	Half-Life	too short	
		355.39	2.701E+00	7.601E-02	Half-Life	too short	
		507.63	* 1.272E+01	7.601E-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			1.812E+01	7.601E-02	Half-Life	too short	
	1021.30			-1.286E+00	7.601E-02	Half-Life	too short	
	1147.95			-3.882E+00	7.601E-02	Half-Life	too short	
	1362.66			1.140E+01	7.601E-02	Half-Life	too short	
	1750.46			-4.366E+00	7.601E-02	Half-Life	too short	
MO-99	140.51			-1.919E+01	3.580E+01	5.560E+01	1.546E+01	-0.345
	181.06			9.214E+00	2.572E+01	3.758E+01	7.248E+00	0.245
	366.43			3.765E+00	1.134E+02	1.871E+02	2.019E+01	0.020
	739.58	*		8.580E+00	1.541E+01	2.655E+01	4.117E+00	0.323
	778.00			8.203E+00	4.724E+01	7.870E+01	7.435E+00	0.104
TC-99M	140.51		*	-3.818E+11	4.724E+01	Half-Life	too short	
RH-101	127.23			4.431E-03	3.789E-02	5.600E-02	4.753E-03	0.079
	198.01	*		6.912E-04	3.587E-02	5.674E-02	6.206E-03	0.012
	325.23			2.842E-02	2.644E-01	3.894E-01	4.582E-02	0.073
RH-102	418.52			-6.215E-02	3.254E-01	5.237E-01	5.269E-02	-0.119
	475.06	*		-4.991E-03	2.999E-02	4.775E-02	4.791E-03	-0.105
	631.29			3.040E-02	5.855E-02	1.015E-01	9.112E-03	0.300
	697.49			-2.746E-02	8.474E-02	1.368E-01	1.214E-02	-0.201
	766.84			2.268E-01	1.253E-01	2.276E-01	2.132E-02	0.997
	1046.59			-1.869E-02	1.113E-01	1.830E-01	1.707E-02	-0.102
	1112.84			5.138E-02	2.372E-01	3.516E-01	3.066E-02	0.146
RU-103	497.08	*		-4.669E-03	4.137E-02	6.589E-02	9.896E-03	-0.071
+	610.33			1.443E+01	3.094E+00	3.156E+00	5.363E-01	4.571
RH-106	511.85	*		5.803E-01	3.495E-01	4.448E-01	4.407E-02	1.305
	1050.47		*	-9.591E-02	3.322E-01	5.421E-01	7.405E-02	-0.177
	1050.47			-6.011E-01	2.217E+00	3.602E+00	3.347E-01	-0.167
RU-106	511.85	*		5.803E-01	3.495E-01	4.448E-01	4.407E-02	1.305
	621.84	*		-9.591E-02	3.320E-01	5.421E-01	4.923E-02	-0.177
	1050.47			-6.011E-01	2.217E+00	3.602E+00	3.347E-01	-0.167
AG-108M	433.93	*		-1.543E-02	3.404E-02	5.337E-02	5.533E-03	-0.289
	614.37			1.500E-02	4.225E-02	6.396E-02	6.062E-03	0.234
	722.95			2.448E-03	4.801E-02	6.916E-02	6.489E-03	0.035
AG-110M	657.75	*		1.140E-02	4.008E-02	5.987E-02	5.341E-03	0.190
	677.61			1.882E-02	3.013E-01	5.028E-01	4.512E-02	0.037
	706.67			-7.136E-02	2.208E-01	3.553E-01	3.260E-02	-0.201
	763.93			-9.620E-02	1.832E-01	2.878E-01	2.755E-02	-0.334
	884.67			-2.152E-03	5.037E-02	8.137E-02	8.442E-03	-0.026
	937.48			-5.260E-02	1.282E-01	1.984E-01	2.046E-02	-0.265
	1384.27			2.581E-03	1.732E-01	2.832E-01	2.704E-02	0.009
IN-111	171.28			3.461E-01	1.333E+00	2.176E+00	2.256E-01	0.159
	245.39	*		-3.561E-01	1.438E+00	2.110E+00	2.507E-01	-0.169
IN-113M	391.69	*		6.942E-03	4.967E-02	8.212E-02	8.403E-03	0.085
SN-113	391.69	*		6.942E-03	4.967E-02	8.212E-02	8.403E-03	0.085
IN-114M	190.27	*		-1.373E-01	2.291E-01	3.134E-01	3.376E-02	-0.438
CD-115	260.90			2.049E+01	1.883E+02	3.192E+02	3.874E+01	0.064
	492.35			-2.346E+01	5.242E+01	8.113E+01	8.100E+00	-0.289
	527.90	*		5.422E+00	1.673E+01	2.747E+01	2.700E+00	0.197
SN-117M	156.02			-1.509E+00	2.435E+00	3.830E+00	3.721E-01	-0.394
	158.56	*		-4.162E-02	6.021E-02	9.421E-02	9.281E-03	-0.442

---- 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	*		1.504E+00	2.849E+00	4.967E+00	4.769E-01	0.303
	692.80			1.004E+01	6.274E+01	1.052E+02	9.306E+00	0.095
I-123	159.00	*		-7.066E+00	6.274E+01	Half-Life too short		
	528.96			-1.224E+03	6.274E+01	Half-Life too short		
TE-123M	159.00	*		-9.380E-03	3.006E-02	4.799E-02	4.761E-03	-0.195
I-124	602.71	*		7.198E-01	8.779E-01	1.389E+00	1.289E-01	0.518
	722.78			4.949E-01	5.975E+00	8.640E+00	7.829E-01	0.057
	1325.50			-1.871E+00	4.400E+01	7.173E+01	6.644E+00	-0.026
	1376.25			5.676E+01	4.162E+01	7.773E+01	7.248E+00	0.730
	1509.49			1.056E+01	1.978E+01	3.454E+01	3.184E+00	0.306
	1691.02			1.199E+00	4.156E+00	7.317E+00	6.409E-01	0.164
SB-124	602.71			3.562E-02	4.344E-02	6.876E-02	6.378E-03	0.518
	645.85			-1.477E-02	5.038E-01	8.373E-01	7.802E-02	-0.018
	709.31			7.433E-01	2.795E+00	4.727E+00	4.237E-01	0.157
	713.82			-6.401E-02	1.685E+00	2.775E+00	3.417E-01	-0.023
	722.78			3.550E-02	4.286E-01	6.198E-01	5.726E-02	0.057
+	968.20			1.774E+01	4.753E+00	7.852E+00	7.753E-01	2.259
	1045.16			1.970E-01	2.488E+00	4.198E+00	3.919E-01	0.047
	1325.50			-1.434E-01	3.371E+00	5.496E+00	5.090E-01	-0.026
	1368.21			5.967E-02	1.762E+00	2.893E+00	4.032E-01	0.021
	1436.60			-1.655E+00	3.641E+00	5.450E+00	5.069E-01	-0.304
	1691.02	*		2.029E-02	7.032E-02	1.238E-01	1.126E-02	0.164
SB-125	427.89	*		1.019E-01	9.990E-02	1.732E-01	1.769E-02	0.588
+	463.38			6.625E-01	4.121E-01	5.863E-01	6.237E-02	1.130
	600.56			-3.336E-02	1.889E-01	3.041E-01	3.007E-02	-0.110
	635.90			-1.757E-01	3.046E-01	4.852E-01	4.658E-02	-0.362
TE-125M	109.28	*		3.803E+00	9.239E+00	1.555E+01	1.595E+00	0.245
I-126	388.63			2.125E-01	2.373E-01	4.095E-01	4.138E-02	0.519
	666.33	*		-5.034E-02	2.318E-01	3.262E-01	2.821E-02	-0.154
	753.82			1.184E+00	1.612E+00	2.816E+00	2.613E-01	0.420
SB-126	223.80			2.517E+00	4.891E+00	7.939E+00	9.110E-01	0.317
	278.60			3.124E+00	2.974E+00	4.694E+00	5.817E-01	0.665
	296.50			9.032E+00	2.793E+00	3.724E+00	4.551E-01	2.426
	414.70			7.673E-02	9.077E-02	1.556E-01	1.564E-02	0.493
	415.30			4.503E+00	7.627E+00	1.289E+01	1.296E+00	0.349
	555.20			-4.011E-01	4.349E+00	7.282E+00	7.037E-01	-0.055
	573.80			-4.328E-01	1.128E+00	1.841E+00	1.754E-01	-0.235
	593.00			3.673E-01	1.027E+00	1.767E+00	1.654E-01	0.208
	656.30			2.423E+00	3.722E+00	5.819E+00	5.053E-01	0.416
	666.33			-2.109E-02	9.711E-02	1.366E-01	1.182E-02	-0.154
	675.00			-5.409E-01	2.100E+00	3.408E+00	2.970E-01	-0.159
	695.00			9.353E-02	8.995E-02	1.600E-01	1.417E-02	0.585
	697.00			-3.362E-02	3.178E-01	5.220E-01	4.633E-02	-0.064
	720.50	*		2.174E-02	1.814E-01	2.635E-01	2.384E-02	0.082
	856.80			-1.902E-01	6.477E-01	8.747E-01	8.716E-02	-0.217
	989.30			2.923E-01	1.403E+00	2.306E+00	2.247E-01	0.127
	1034.80			-7.206E+00	9.819E+00	1.520E+01	1.432E+00	-0.474
	1213.00			4.912E-01	5.356E+00	8.921E+00	7.465E-01	0.055
SB-127	61.10			2.985E+01	8.156E+01	1.275E+02	1.375E+01	0.234

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	252.40			1.910E-01	5.168E+00	8.747E+00	3.756E+00	0.022
	290.80			-7.487E+00	2.912E+01	4.205E+01	6.070E+00	-0.178
	411.60			-2.621E+01	1.765E+01	2.510E+01	4.208E+00	-1.044
	444.90			1.281E+01	1.233E+01	2.134E+01	2.952E+00	0.600
	473.00			-4.294E-01	2.082E+00	3.305E+00	4.664E-01	-0.130
	543.00			2.145E+00	2.153E+01	3.468E+01	5.315E+00	0.062
	603.60			2.442E+00	1.586E+01	2.350E+01	3.109E+00	0.104
	685.20	*		-7.122E-01	1.577E+00	2.503E+00	2.958E-01	-0.285
	698.50			-1.055E+01	2.037E+01	3.225E+01	5.221E+00	-0.327
	722.20			4.821E+00	4.227E+01	6.135E+01	7.244E+00	0.079
	783.80			2.865E+00	4.776E+00	8.198E+00	1.091E+00	0.349
XE-127	57.60			4.559E+00	7.350E+00	1.284E+01	9.875E-01	0.355
	145.22			4.417E-01	7.251E-01	1.211E+00	1.112E-01	0.365
	172.10			-6.802E-03	1.297E-01	2.086E-01	2.166E-02	-0.033
	202.84	*		-3.589E-03	5.201E-02	8.269E-02	9.131E-03	-0.043
	374.96			2.434E-01	2.263E-01	3.939E-01	4.150E-02	0.618
I-131	80.18			1.111E+00	5.090E+00	7.780E+00	7.217E-01	0.143
	284.30			5.520E-01	1.677E+00	2.859E+00	3.624E-01	0.193
	364.48	*		1.262E-01	1.329E-01	2.310E-01	2.592E-02	0.546
	636.97			-1.199E+00	1.927E+00	3.058E+00	2.871E-01	-0.392
	722.89			5.717E-01	8.855E+00	1.278E+01	1.165E+00	0.045
TE-132	49.72			1.865E+00	3.563E+01	5.542E+01	6.241E+00	0.034
	111.76			-3.417E+01	3.923E+01	6.063E+01	6.682E+00	-0.564
	116.30			8.311E+00	3.508E+01	5.847E+01	6.409E+00	0.142
	228.16	*		-3.734E-01	1.008E+00	1.561E+00	2.760E-01	-0.239
BA-133	53.15			9.530E-01	4.602E+00	7.948E+00	6.614E-01	0.120
	79.62			5.816E-01	1.328E+00	2.049E+00	3.184E-01	0.284
	81.00			-1.479E-01	1.070E-01	1.464E-01	2.380E-02	-1.010
	276.40	+		1.015E+00	6.098E-01	7.039E-01	1.193E-01	1.443
	302.84			9.050E-02	1.566E-01	2.400E-01	3.792E-02	0.377
	356.01	*		1.051E-02	5.356E-02	7.886E-02	1.176E-02	0.133
	383.85			-2.536E-01	3.268E-01	5.055E-01	6.965E-02	-0.502
I-133	510.53	+		2.714E+00	3.268E-01	Half-Life	too short	
	529.87	*		-7.204E-03	3.268E-01	Half-Life	too short	
	706.58			-3.385E-01	3.268E-01	Half-Life	too short	
	856.28			3.994E-01	3.268E-01	Half-Life	too short	
	875.33			-1.582E-01	3.268E-01	Half-Life	too short	
	1236.41			7.192E-01	3.268E-01	Half-Life	too short	
	1298.22			5.823E-02	3.268E-01	Half-Life	too short	
CS-134	475.35			-1.549E-02	1.947E+00	3.141E+00	3.151E-01	-0.005
	563.23			1.571E-01	3.786E-01	6.556E-01	6.346E-02	0.240
	569.32			-1.121E-01	2.165E-01	3.351E-01	3.239E-02	-0.334
	604.70			1.605E-02	3.725E-02	5.678E-02	5.267E-03	0.283
	795.84	*		3.444E-02	4.905E-02	8.501E-02	8.181E-03	0.405
	801.93			-5.563E-03	4.420E-01	7.164E-01	6.914E-02	-0.008
	1038.57			-4.167E-02	4.069E+00	6.808E+00	6.391E-01	-0.006
	1167.94			6.332E-01	2.412E+00	4.105E+00	3.331E-01	0.154
	1365.15			3.652E-01	1.243E+00	2.115E+00	2.049E-01	0.173
I-135	288.45			-1.201E+11	1.243E+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		417.63		1.603E+11	1.243E+00	Half-Life too short		
		546.56		-2.927E+10	1.243E+00	Half-Life too short		
		836.80		1.003E+11	1.243E+00	Half-Life too short		
		1038.76		2.394E+09	1.243E+00	Half-Life too short		
		1124.00		-1.126E+11	1.243E+00	Half-Life too short		
		1131.51		1.379E+11	1.243E+00	Half-Life too short		
		1260.41	*	-3.968E+10	1.243E+00	Half-Life too short		
		1457.56		8.506E+12	1.243E+00	Half-Life too short		
		1678.03		-1.357E+10	1.243E+00	Half-Life too short		
		1706.46		-1.509E+11	1.243E+00	Half-Life too short		
		1791.20		5.411E+10	1.243E+00	Half-Life too short		
	+	66.91		-6.418E-02	8.961E-01	1.364E+00	2.072E-01	-0.047
		86.29		3.610E+00	1.583E+00	2.172E+00	2.977E-01	1.662
		153.22		5.910E-01	7.200E-01	1.208E+00	1.268E-01	0.489
		163.89		-8.970E-01	1.240E+00	1.934E+00	2.136E-01	-0.464
		176.55		2.648E-01	4.163E-01	6.886E-01	7.499E-02	0.385
		273.65		6.183E-01	6.277E-01	7.675E-01	9.770E-02	0.806
CE-139		340.57		1.548E-01	1.520E-01	2.376E-01	2.765E-02	0.651
		818.51		5.532E-03	8.780E-02	1.443E-01	1.403E-02	0.038
		1048.07	*	-4.918E-02	1.146E-01	1.832E-01	1.768E-02	-0.268
		1235.34		3.929E-01	7.135E-01	1.225E+00	1.445E-01	0.321
		165.85	*	1.796E-02	3.188E-02	5.277E-02	5.413E-03	0.340
BA-140		162.64		-3.248E-01	8.913E-01	1.379E+00	1.449E-01	-0.236
		304.84		7.282E-01	1.488E+00	2.252E+00	6.595E-01	0.323
LA-140		423.70		-1.581E+00	2.247E+00	3.377E+00	1.109E+00	-0.468
	+	537.32	*	-2.587E-02	2.949E-01	4.676E-01	1.565E-01	-0.055
		328.77		5.571E-01	5.050E-01	6.222E-01	7.502E-02	0.895
		432.53		-1.757E+00	2.266E+00	3.452E+00	3.602E-01	-0.509
		487.03		-1.100E-03	1.546E-01	2.490E-01	2.605E-02	-0.004
		751.79		-1.075E+00	1.915E+00	2.987E+00	3.025E-01	-0.360
		815.85		1.690E-01	3.812E-01	6.470E-01	6.853E-02	0.261
		867.82		4.431E-01	1.794E+00	2.721E+00	2.837E-01	0.163
		919.63		2.869E+00	3.207E+00	5.248E+00	6.246E-01	0.547
		925.24		-1.072E+00	1.194E+00	1.713E+00	1.811E-01	-0.625
CE-141		1596.49	*	-4.848E-02	9.338E-02	1.434E-01	1.297E-02	-0.338
		145.44	*	2.608E-02	6.531E-02	1.082E-01	1.011E-02	0.241
CE-143		57.37		1.949E-03	6.531E-02	Half-Life too short		
		231.56		3.789E-04	6.531E-02	Half-Life too short		
		293.26	*	1.702E-03	6.531E-02	Half-Life too short		
	+	350.59		5.677E-02	6.531E-02	Half-Life too short		
		490.36		1.102E-03	6.531E-02	Half-Life too short		
	+	664.57		9.056E-03	6.531E-02	Half-Life too short		
		721.93		3.709E-04	6.531E-02	Half-Life too short		
CE-144		80.11		4.802E-01	2.148E+00	3.285E+00	3.026E-01	0.146
		133.54	*	6.470E-02	2.251E-01	3.349E-01	5.228E-02	0.193
PM-144		476.78		-2.602E-02	7.020E-02	1.098E-01	1.178E-02	-0.237
		618.01		-1.878E-02	3.477E-02	5.260E-02	4.916E-03	-0.357
		696.49	*	3.121E-02	3.740E-02	6.569E-02	5.830E-03	0.475
		778.57		-6.234E-02	2.486E+00	4.070E+00	3.847E-01	-0.015

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144	696.49	*		2.116E+00	2.536E+00	4.454E+00	3.951E-01	0.475
	1489.15			-1.765E+00	1.454E+01	2.316E+01	2.142E+00	-0.076
PM-146	453.90	*		-2.052E-03	4.879E-02	7.883E-02	9.395E-03	-0.026
	633.02			3.553E-01	1.503E+00	2.544E+00	9.526E-01	0.140
	735.90			-6.820E-02	1.505E-01	2.354E-01	6.772E-02	-0.290
	747.13			3.541E-02	9.428E-02	1.602E-01	2.310E-02	0.221
ND-147	91.11	+		1.012E+00	4.784E-01	5.890E-01	6.065E-02	1.719
	319.41			-2.201E+00	3.619E+00	5.781E+00	6.866E-01	-0.381
	439.89			-5.202E+00	6.691E+00	1.020E+01	1.027E+00	-0.510
	531.02	*		2.979E-01	6.795E-01	1.090E+00	1.709E-01	0.273
PM-149	285.90	*		3.941E+01	1.296E+02	2.204E+02	3.941E+01	0.179
EU-152	121.78			-6.886E-02	7.365E-02	1.157E-01	1.122E-02	-0.595
	244.69			-1.070E-01	3.493E-01	5.105E-01	6.058E-02	-0.210
	344.27	*		-4.264E-02	1.221E-01	1.591E-01	1.870E-02	-0.268
	443.98			5.053E-01	1.025E+00	1.722E+00	1.735E-01	0.293
	778.89			3.842E-02	2.838E-01	4.712E-01	4.454E-02	0.082
	867.32			-7.994E-02	1.099E+00	1.528E+00	1.533E-01	-0.052
	964.01	+		7.676E-01	3.976E-01	6.110E-01	6.048E-02	1.256
	1085.78			1.772E-01	4.017E-01	6.989E-01	6.276E-02	0.254
	1112.02			1.311E-02	3.383E-01	5.077E-01	4.431E-02	0.026
	1407.95			8.608E-02	1.984E-01	3.417E-01	3.184E-02	0.252
GD-153	69.67			-5.931E-01	1.823E+00	2.732E+00	2.289E-01	-0.217
	83.37			1.705E+01	1.582E+01	2.482E+01	2.366E+00	0.687
	97.43	*		-1.144E-01	9.428E-02	1.303E-01	1.184E-02	-0.878
	103.18			-4.874E-02	1.023E-01	1.663E-01	1.456E-02	-0.293
EU-154	123.07			-1.694E-02	5.194E-02	8.418E-02	9.410E-03	-0.201
	247.94			1.815E-01	3.606E-01	6.057E-01	8.556E-02	0.300
	591.81			2.317E-01	6.304E-01	1.086E+00	1.329E-01	0.213
	723.30			-2.879E-02	2.028E-01	2.852E-01	2.833E-02	-0.101
	756.87			4.134E-01	8.128E-01	1.393E+00	1.738E-01	0.297
	873.19			1.134E-01	3.167E-01	5.324E-01	7.082E-02	0.213
	996.32			-4.830E-01	4.520E-01	6.331E-01	1.159E-01	-0.763
	1004.76			-2.049E-01	2.439E-01	3.770E-01	4.680E-02	-0.543
	1274.45	*		-1.181E-02	1.318E-01	2.147E-01	2.468E-02	-0.055
EU-155	48.70			-5.191E+00	3.856E+00	5.480E+00	4.852E-01	-0.947
	60.01			-1.975E+00	6.148E+00	9.285E+00	7.005E-01	-0.213
	86.54	+		3.155E-01	1.351E-01	1.889E-01	1.880E-02	1.670
	105.31	*		1.516E-02	1.067E-01	1.747E-01	1.532E-02	0.087
TB-160	86.79	+		8.508E-01	3.642E-01	5.098E-01	5.049E-02	1.669
	197.04			3.957E-01	6.189E-01	1.006E+00	1.099E-01	0.393
	215.65			3.746E-01	8.423E-01	1.366E+00	1.546E-01	0.274
	298.57			1.648E-01	1.815E-01	2.151E-01	2.624E-02	0.766
	879.36	*		2.285E-02	1.405E-01	2.320E-01	2.345E-02	0.098
	962.29			1.035E+00	6.355E-01	1.057E+00	1.047E-01	0.979
	966.15			1.371E+00	3.138E-01	5.927E-01	5.859E-02	2.313
	1177.93			1.204E-01	3.721E-01	6.354E-01	5.141E-02	0.190
	1271.85			3.768E-02	7.701E-01	1.274E+00	1.125E-01	0.030
HO-166M	80.57			-7.755E-02	2.802E-01	4.176E-01	3.864E-02	-0.186
	184.41	+		1.153E-01	6.437E-02	7.919E-02	8.430E-03	1.456

---- 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		-1.317E-02	9.533E-02	1.395E-01	1.728E-02	-0.094
		410.95		-1.026E-01	2.814E-01	4.486E-01	4.508E-02	-0.229
		711.68	*	-3.643E-02	6.210E-02	9.721E-02	8.731E-03	-0.375
		752.31		-9.857E-02	2.949E-01	4.709E-01	4.365E-02	-0.209
		810.29		-4.452E-02	6.592E-02	1.008E-01	9.742E-03	-0.442
		51.35		1.533E+01	4.074E+01	7.093E+01	6.088E+00	0.216
		52.39		2.518E+01	2.046E+01	3.660E+01	3.087E+00	0.688
		59.40		-5.993E+00	3.335E+01	5.078E+01	3.801E+00	-0.118
		66.72	*	6.300E-01	3.069E+01	4.693E+01	3.834E+00	0.013
		88.36		6.210E-01	2.659E-01	3.442E-01	3.441E-02	1.804
LU-176	+	201.83		-5.747E-04	3.059E-02	4.876E-02	5.374E-03	-0.012
		306.84	*	-6.651E-03	2.475E-02	4.060E-02	4.905E-03	-0.164
LU-177		401.10		6.383E+00	7.032E+00	1.215E+01	1.219E+00	0.525
		112.95		4.970E-02	1.917E+00	3.092E+00	2.612E-01	0.016
LU-177M	+	208.36	*	3.815E+00	1.643E+00	2.328E+00	2.598E-01	1.638
		52.97		5.091E-01	2.105E+00	3.641E+00	3.039E-01	0.140
		54.07		-6.678E-01	1.067E+00	1.778E+00	1.455E-01	-0.376
		61.30		1.008E+00	1.764E+00	2.783E+00	2.143E-01	0.362
		121.62		-1.331E-01	3.708E-01	6.004E-01	5.013E-02	-0.222
		147.16		-7.896E-01	6.683E-01	1.023E+00	9.484E-02	-0.772
		171.86		8.982E-02	5.085E-01	8.269E-01	8.582E-02	0.109
		218.09		3.260E-01	9.246E-01	1.494E+00	1.697E-01	0.218
	+	268.79		2.648E+00	1.562E+00	1.631E+00	1.999E-01	1.623
		319.02		-2.268E-01	2.715E-01	4.268E-01	5.071E-02	-0.531
		367.43		1.119E-02	9.252E-01	1.525E+00	1.640E-01	0.007
		413.65	*	3.510E-02	1.986E-01	3.279E-01	3.297E-02	0.107
HF-181		56.28		3.534E-01	1.167E+00	2.017E+00	1.587E-01	0.175
		57.53		3.870E-01	6.178E-01	1.079E+00	8.311E-02	0.359
		65.20		-4.438E-01	1.080E+00	1.616E+00	1.302E-01	-0.275
		133.02		-3.351E-02	7.407E-02	1.054E-01	9.148E-03	-0.318
		136.25		-1.054E-01	4.699E-01	7.609E-01	6.697E-02	-0.139
		345.85		8.843E-03	2.224E-01	3.243E-01	3.672E-02	0.027
W-181		482.03	*	-7.432E-03	4.415E-02	7.019E-02	7.029E-03	-0.106
		56.28		1.386E-01	4.518E-01	7.812E-01	6.145E-02	0.177
		57.53		1.500E-01	2.394E-01	4.181E-01	3.220E-02	0.359
TA-182		65.20	*	-1.706E-01	4.151E-01	6.213E-01	5.006E-02	-0.275
		67.75		-2.626E-02	1.151E-01	1.848E-01	1.523E-02	-0.142
		100.10		9.666E-02	1.783E-01	3.028E-01	2.700E-02	0.319
		152.43		9.434E-02	3.516E-01	5.780E-01	5.510E-02	0.163
		222.10		-1.095E-01	3.944E-01	6.158E-01	7.046E-02	-0.178
		1001.68		9.566E-01	2.548E+00	4.373E+00	4.225E-01	0.219
		1121.28		4.244E-01	2.140E-01	3.649E-01	3.149E-02	1.163
		1189.05		2.190E-01	3.199E-01	5.624E-01	4.599E-02	0.389
		1221.42	*	1.451E-02	1.993E-01	3.313E-01	2.795E-02	0.044
		1230.97		-1.326E-01	5.134E-01	8.272E-01	7.040E-02	-0.160
		57.98		9.280E-02	2.483E-01	4.121E-01	3.151E-02	0.225
		59.32		-3.784E-02	1.395E-01	2.114E-01	1.584E-02	-0.179
		67.20		-3.940E-02	2.209E-01	3.342E-01	2.742E-02	-0.118
RE-183		162.32	*	1.355E-03	1.244E-01	1.959E-01	1.971E-02	0.007



## ---- 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		3.112E+00	1.340E+00	1.924E+00	2.148E-01	1.618
		291.72		2.920E-01	1.084E+00	1.629E+00	2.000E-01	0.179
		57.98		3.399E-01	9.094E-01	1.509E+00	1.154E-01	0.225
		59.32		-1.385E-01	5.105E-01	7.735E-01	5.796E-02	-0.179
		67.20		-1.443E-01	8.088E-01	1.224E+00	1.004E-01	-0.118
		161.27		9.768E-02	3.978E-01	6.332E-01	6.332E-02	0.154
		216.55		-7.396E-03	2.959E-01	4.694E-01	5.318E-02	-0.016
		252.85	*	-1.708E-02	2.283E-01	3.842E-01	4.613E-02	-0.044
		318.01		9.309E-02	4.689E-01	7.890E-01	9.389E-02	0.118
		792.07		-3.087E-01	1.044E+00	1.664E+00	1.588E-01	-0.185
OS-185		903.28		1.085E+00	1.084E+00	1.793E+00	1.829E-01	0.605
		920.93		-6.053E-02	4.569E-01	7.278E-01	7.367E-02	-0.083
		59.72		-1.239E-01	3.707E-01	5.596E-01	4.200E-02	-0.221
		61.14		7.903E-02	1.939E-01	3.038E-01	2.334E-02	0.260
		69.30		2.429E-02	3.038E-01	4.937E-01	4.123E-02	0.049
		592.07		2.838E-01	2.614E+00	4.422E+00	4.144E-01	0.064
		646.12	*	-3.598E-03	4.311E-02	7.132E-02	6.282E-03	-0.050
		717.42		7.860E-02	9.415E-01	1.567E+00	1.413E-01	0.050
		874.81		-4.618E-01	6.184E-01	9.209E-01	9.281E-02	-0.501
		880.27		3.557E-01	7.879E-01	1.339E+00	1.354E-01	0.266
RE-188		155.03	*	1.576E-01	1.771E-01	2.979E-01	2.880E-02	0.529
		477.96		1.752E+00	3.178E+00	5.349E+00	5.362E-01	0.328
		633.10		6.257E-01	3.049E+00	5.167E+00	4.629E-01	0.121
W-188	+	63.58		6.134E+01	1.023E+02	1.122E+02	8.889E+00	0.547
		227.08		4.528E+00	1.506E+01	2.418E+01	2.791E+00	0.187
IR-192		290.67	*	-2.432E+00	8.432E+00	1.215E+01	1.493E+00	-0.200
	+	295.96		1.106E+00	2.744E-01	2.998E-01	3.680E-02	3.689
		308.46		-2.951E-03	9.614E-02	1.600E-01	1.934E-02	-0.018
		316.51	*	2.033E-02	3.695E-02	6.328E-02	7.555E-03	0.321
		468.07		-2.516E-02	7.382E-02	1.064E-01	1.126E-02	-0.237
		604.41		2.359E-01	5.099E-01	7.789E-01	1.048E-01	0.303
AU-195		612.46		1.530E-01	8.012E-01	1.190E+00	1.237E-01	0.129
		65.12		-6.941E-02	1.925E-01	2.889E-01	2.326E-02	-0.240
		66.83		5.707E-03	1.017E-01	1.559E-01	1.275E-02	0.037
	+	75.70		1.815E+00	3.000E-01	4.816E-01	4.250E-02	3.768
TL-200		98.88	*	1.457E-01	2.326E-01	3.884E-01	3.491E-02	0.375
	+	129.76		5.063E+00	4.447E+00	5.028E+00	4.307E-01	1.007
		367.94	*	-7.289E-04	4.447E+00	Half-Life	too short	
		579.30		-1.813E-03	4.447E+00	Half-Life	too short	
TL-201		828.27		-2.296E-05	4.447E+00	Half-Life	too short	
		1205.75		1.576E-03	4.447E+00	Half-Life	too short	
		68.90		7.520E-01	6.241E+00	1.016E+01	8.459E-01	0.074
		70.82		1.924E-02	3.787E+00	5.769E+00	4.880E-01	0.003
TL-202		80.30		-1.739E+00	6.579E+00	9.813E+00	9.056E-01	-0.177
		135.34		-2.272E+00	3.198E+01	5.217E+01	4.573E+00	-0.044
		167.43	*	2.161E+00	9.317E+00	1.521E+01	1.565E+00	0.142
		68.90		5.660E-02	4.697E-01	7.649E-01	6.366E-02	0.074
TL-202		70.82		1.444E-03	2.843E-01	4.330E-01	3.662E-02	0.003
		80.30		-1.306E-01	4.939E-01	7.367E-01	6.799E-02	-0.177

## ---- 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	*		-4.450E-02	7.964E-02	1.238E-01	1.247E-02	-0.359
	70.83			1.841E-02	1.180E+00	1.798E+00	2.428E-01	0.010
	72.87			1.359E+00	7.374E-01	1.176E+00	1.551E-01	1.156
	82.60			-2.223E-02	1.215E+00	1.822E+00	2.603E-01	-0.012
BI-207	279.20	*		5.987E-04	4.622E-02	6.846E-02	8.607E-03	0.009
	72.80			3.354E-01	2.070E-01	3.337E-01	2.871E-02	1.005
	74.97	+		7.062E-01	1.639E-01	2.448E-01	2.146E-02	2.885
	84.90			1.925E-01	2.063E-01	3.212E-01	3.114E-02	0.599
	569.67			-1.352E-02	3.319E-02	5.174E-02	4.945E-03	-0.261
TL-207	1063.62	*		-9.975E-04	5.129E-02	8.554E-02	7.853E-03	-0.012
	1770.23			-3.259E+00	8.911E-01	5.972E-01	5.047E-02	-5.456
	81.07			-3.254E-01	2.320E-01	3.230E-01	3.005E-02	-1.007
	83.78			1.117E-01	1.365E-01	2.119E-01	2.029E-02	0.527
	94.90			4.138E-02	2.472E-01	3.650E-01	3.389E-02	0.113
	122.32			-1.866E+00	1.750E+00	2.728E+00	2.456E-01	-0.684
	144.24			1.868E-01	7.289E-01	1.194E+00	1.207E-01	0.156
	154.21			2.552E-01	4.075E-01	6.788E-01	7.059E-02	0.376
	269.46	+		6.172E-01	3.641E-01	3.873E-01	4.799E-02	1.594
	323.87	*		1.344E-01	7.707E-01	1.141E+00	2.220E-01	0.118
PO-209	338.28	+		6.463E+00	2.158E+00	2.638E+00	3.818E-01	2.450
	445.03			2.519E+00	2.382E+00	4.132E+00	5.439E-01	0.610
	260.50			2.551E+00	9.873E+00	1.686E+01	2.045E+00	0.151
	262.80			8.815E+00	2.716E+01	4.649E+01	5.656E+00	0.190
	896.60	*		-1.009E+01	7.899E+00	1.087E+01	1.110E+00	-0.928
BI-210	46.50	*		1.442E+00	6.283E+00	9.736E+00	9.328E-01	0.148
PB-210	46.50	*		1.442E+00	6.283E+00	9.736E+00	9.328E-01	0.148
PO-210	46.50	*		1.442E+00	6.282E+00	9.736E+00	8.498E-01	0.148
PB-211	404.84	*		-8.147E-01	1.155E+00	1.605E+00	1.009E+00	-0.508
BI-212	427.08			1.737E+00	2.490E+00	3.845E+00	2.398E+00	0.452
	831.96			7.582E-01	1.473E+00	2.113E+00	1.328E+00	0.359
	727.18	+		9.277E-01	5.080E-01	6.903E-01	7.191E-02	1.344
	785.46			2.000E+00	1.881E+00	3.344E+00	3.176E-01	0.598
	1620.62			6.095E-01	1.261E+00	2.204E+00	1.979E-01	0.277
PO-215	81.07			-3.254E-01	2.320E-01	3.230E-01	3.005E-02	-1.007
	83.78			1.117E-01	1.365E-01	2.119E-01	2.029E-02	0.527
	94.90			4.138E-02	2.472E-01	3.650E-01	3.389E-02	0.113
	122.32			-1.866E+00	1.750E+00	2.728E+00	2.456E-01	-0.684
	144.24			1.868E-01	7.289E-01	1.194E+00	1.207E-01	0.156
	154.21			2.552E-01	4.075E-01	6.788E-01	7.059E-02	0.376
	269.46	+		6.172E-01	3.641E-01	3.873E-01	4.799E-02	1.594
	323.87	*		1.344E-01	7.707E-01	1.141E+00	2.220E-01	0.118
	338.28	+		6.463E+00	2.158E+00	2.638E+00	3.818E-01	2.450
	445.03			2.519E+00	2.382E+00	4.132E+00	5.439E-01	0.610
RN-219	271.23			4.289E-01	2.958E-01	4.709E-01	6.372E-02	0.911
	401.81	*		5.908E-01	4.249E-01	7.438E-01	1.181E-01	0.794
RN-220	549.76	*		5.145E-01	2.931E+01	4.683E+01	4.543E+00	0.011
RA-223	81.07			-3.254E-01	2.320E-01	3.230E-01	3.005E-02	-1.007
	83.78			1.117E-01	1.365E-01	2.119E-01	2.029E-02	0.527
	94.90			4.138E-02	2.472E-01	3.650E-01	3.389E-02	0.113

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		-1.866E+00	1.750E+00	2.728E+00	2.456E-01	-0.684
		144.24		1.868E-01	7.289E-01	1.194E+00	1.207E-01	0.156
		154.21		2.552E-01	4.075E-01	6.788E-01	7.059E-02	0.376
	+	269.46		6.172E-01	3.641E-01	3.873E-01	4.799E-02	1.594
		323.87	*	1.344E-01	7.707E-01	1.141E+00	2.220E-01	0.118
	+	338.28		6.463E+00	2.158E+00	2.638E+00	3.818E-01	2.450
		445.03		2.519E+00	2.382E+00	4.132E+00	5.439E-01	0.610
		79.80		5.900E-01	1.675E+00	2.571E+00	5.587E-01	0.230
		236.00		6.715E-01	3.108E-01	4.927E-01	7.186E-02	1.363
		256.20	*	-1.286E-01	3.826E-01	6.337E-01	1.110E-01	-0.203
		286.10		6.424E-01	1.578E+00	2.696E+00	4.282E-01	0.238
	+	299.80		3.700E+00	2.115E+00	2.800E+00	5.457E-01	1.322
TH-227		304.40		1.879E+00	2.086E+00	3.235E+00	6.569E-01	0.581
		334.20		-4.563E-01	2.661E+00	3.819E+00	7.981E-01	-0.119
		79.80		5.900E-01	1.675E+00	2.571E+00	5.657E-01	0.230
	+	94.00		7.281E+00	3.727E+00	3.634E+00	8.025E-01	2.004
		236.00		6.715E-01	3.088E-01	4.927E-01	6.711E-02	1.363
		256.20	*	-1.286E-01	3.828E-01	6.337E-01	1.263E-01	-0.203
		286.10		6.424E-01	1.702E+00	2.696E+00	2.717E+00	0.238
	+	299.80		3.700E+00	2.115E+00	2.800E+00	5.457E-01	1.322
		304.40		1.879E+00	2.086E+00	3.235E+00	6.569E-01	0.581
		334.20		-4.563E-01	2.661E+00	3.819E+00	7.981E-01	-0.119
		85.43		2.162E-01	2.103E-01	3.280E-01	3.199E-02	0.659
		88.47		1.945E-01	1.516E-01	1.961E-01	1.957E-02	0.992
PA-231		100.00		1.504E-01	1.839E-01	3.152E-01	2.812E-02	0.477
		193.63	*	-9.672E-02	5.547E-01	8.800E-01	9.542E-02	-0.110
		210.97		3.535E-01	9.200E-01	1.333E+00	1.495E-01	0.265
		283.67	*	2.323E-01	1.567E+00	2.648E+00	4.655E-01	0.088
	+	301.29		1.480E+00	8.254E-01	1.095E+00	1.637E-01	1.351
		81.07		-3.254E-01	2.320E-01	3.230E-01	3.005E-02	-1.007
		83.78		1.117E-01	1.365E-01	2.119E-01	2.029E-02	0.527
		94.90		4.138E-02	2.472E-01	3.650E-01	3.389E-02	0.113
		122.32		-1.866E+00	1.750E+00	2.728E+00	2.456E-01	-0.684
		144.24		1.868E-01	7.289E-01	1.194E+00	1.207E-01	0.156
		154.21		2.552E-01	4.075E-01	6.788E-01	7.059E-02	0.376
	+	269.46		6.172E-01	3.641E-01	3.873E-01	4.799E-02	1.594
U-231		323.87	*	1.344E-01	7.707E-01	1.141E+00	2.220E-01	0.118
	+	338.28		6.463E+00	2.158E+00	2.638E+00	3.818E-01	2.450
		445.03		2.519E+00	2.382E+00	4.132E+00	5.439E-01	0.610
		84.21		5.083E+00	6.976E+00	1.079E+01	1.038E+00	0.471
	+	92.29		8.539E+00	4.024E+00	5.487E+00	5.229E-01	1.556
		95.87	*	-6.807E-01	1.427E+00	2.031E+00	1.870E-01	-0.335
		108.00		-6.950E-01	2.364E+00	3.869E+00	3.315E-01	-0.180
	+	75.28		2.061E+01	5.452E+00	7.286E+00	1.125E+00	2.828
	+	86.59		5.126E+00	2.551E+00	3.070E+00	8.367E-01	1.669
	+	300.12		1.032E+00	5.818E-01	7.762E-01	1.333E-01	1.329
		311.98	*	1.917E-02	6.557E-02	1.110E-01	1.352E-02	0.173
		340.50		7.481E-01	7.273E-01	1.108E+00	2.770E-01	0.675
PA-233		398.62		-5.928E-01	2.146E+00	3.434E+00	9.312E-01	-0.173

---- 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	1.561E+00	1.914E+00	3.234E+00	7.168E-01	0.483
		63.00	1.761E+00	2.944E+00	3.332E+00	5.030E-01	0.528
		94.67	8.795E-02	1.814E-01	2.720E-01	3.505E-02	0.323
		98.44	-1.652E-02	9.666E-02	1.561E-01	8.718E-02	-0.106
		99.86	1.708E-01	4.888E-01	8.082E-01	7.217E-02	0.211
		111.00	-4.621E-02	1.842E-01	3.014E-01	3.616E-02	-0.153
		131.20	2.121E-03	1.124E-01	1.650E-01	1.421E-02	0.013
		152.70	2.892E-01	3.376E-01	5.631E-01	9.872E-02	0.514
	+	186.00	4.151E+00	2.631E+00	2.998E+00	9.548E-01	1.384
		226.40	3.744E-01	4.716E-01	7.708E-01	1.176E-01	0.486
		227.20	1.409E-01	5.029E-01	8.069E-01	9.314E-02	0.175
		248.90	2.907E-01	7.944E-01	1.363E+00	3.257E-01	0.213
	+	293.70	6.895E+00	1.997E+00	1.895E+00	3.670E-01	3.639
		369.80	-1.387E-01	8.662E-01	1.409E+00	3.196E-01	-0.098
		568.70	-5.029E-01	1.095E+00	1.703E+00	1.629E-01	-0.295
		569.50	-1.670E-01	2.985E-01	4.601E-01	4.398E-02	-0.363
		574.00	-6.114E-01	1.526E+00	2.488E+00	2.369E-01	-0.246
		699.00	-4.457E-01	7.947E-01	1.251E+00	2.402E-01	-0.356
		706.10	-2.659E-01	1.091E+00	1.757E+00	7.845E-01	-0.151
		733.00	-7.414E-02	4.240E-01	5.913E-01	1.325E-01	-0.125
		742.81	-6.803E-01	1.530E+00	2.306E+00	1.552E+00	-0.295
		796.30	2.250E-01	9.512E-01	1.587E+00	4.343E-01	0.142
		805.60	6.002E-01	1.139E+00	1.923E+00	5.950E-01	0.312
		819.60	3.264E-01	1.364E+00	2.269E+00	8.688E-01	0.144
		826.30	-3.013E-01	9.544E-01	1.400E+00	6.299E-01	-0.215
		831.60	5.733E-01	7.337E-01	1.117E+00	3.373E-01	0.513
		876.40	-3.778E-02	8.536E-01	1.378E+00	1.419E+00	-0.027
		880.51	1.339E-01	2.802E-01	4.774E-01	4.828E-02	0.281
		883.24	-3.270E-03	2.917E-01	4.729E-01	3.189E-01	-0.007
		899.00	-3.179E-01	8.689E-01	1.334E+00	5.877E-01	-0.238
		925.00	-1.141E+00	1.163E+00	1.647E+00	1.664E-01	-0.693
		926.50	5.131E-02	1.703E-01	2.838E-01	7.326E-02	0.181
		946.00	* 0.000E+00	3.336E-01	5.381E-01	1.046E-01	0.000
		949.00	3.327E-01	4.754E-01	8.196E-01	8.182E-02	0.406
		980.50	1.357E-01	7.953E-01	1.230E+00	1.205E-01	0.110
		1394.10	4.604E-01	1.373E+00	2.284E+00	1.489E+00	0.202
PA-234M		766.42	1.963E+01	1.647E+01	2.363E+01	1.202E+01	0.831
		1001.03	* 1.969E+00	5.819E+00	9.947E+00	1.082E+00	0.198
U-235		89.95	1.117E+00	1.506E+00	1.845E+00	5.759E-01	0.605
	+	93.35	2.265E+00	1.226E+00	1.369E+00	3.873E-01	1.654
		105.00	3.994E-01	1.048E+00	1.721E+00	5.139E-01	0.232
		143.76	* 8.081E-02	2.262E-01	3.715E-01	6.597E-02	0.218
		163.35	-4.494E-01	5.443E-01	8.136E-01	1.611E-01	-0.552
	+	185.71	1.537E-01	8.583E-02	1.117E-01	1.192E-02	1.377
		205.31	1.303E-01	6.241E-01	8.929E-01	1.814E-01	0.146
NP-236		94.67	6.829E-02	1.375E-01	2.065E-01	1.921E-02	0.331
		98.44	-1.250E-02	7.275E-02	1.180E-01	1.064E-02	-0.106
		111.00	-3.496E-02	1.393E-01	2.280E-01	1.935E-02	-0.153
		160.31	* 5.589E-02	8.464E-02	1.409E-01	1.401E-02	0.397

---- 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		1.394E-01	1.627E-01	2.736E-01	2.449E-02	0.509
		117.00	*	-7.919E-02	1.929E-01	3.126E-01	2.621E-02	-0.253
	+	209.75		2.430E+00	1.046E+00	1.509E+00	1.688E-01	1.610
		228.18		-9.949E-02	2.638E-01	4.088E-01	4.727E-02	-0.243
	+	277.60		4.955E-01	2.919E-01	3.338E-01	4.132E-02	1.484
AM-241		334.30		-3.319E-01	1.503E+00	2.149E+00	2.490E-01	-0.154
		59.54	*	-6.504E-02	1.946E-01	2.938E-01	2.407E-02	-0.221
CM-243		99.55		1.434E-01	1.674E-01	2.816E-01	2.520E-02	0.509
		103.76	*	6.980E-02	9.387E-02	1.573E-01	1.373E-02	0.444
		117.00		-8.147E-02	1.985E-01	3.216E-01	2.697E-02	-0.253
	+	209.75		2.395E+00	1.031E+00	1.488E+00	1.665E-01	1.610
		228.18		-1.005E-01	2.666E-01	4.131E-01	4.777E-02	-0.243
AM-246	+	277.60		4.996E-01	2.943E-01	3.366E-01	4.166E-02	1.484
		798.80		-2.294E-01	1.540E-01	2.143E-01	2.054E-02	-1.070
		1036.00		-1.809E-01	3.118E-01	4.914E-01	4.623E-02	-0.368
		1062.04		4.827E-03	2.226E-01	3.729E-01	3.428E-02	0.013
		1078.86	*	2.684E-02	1.480E-01	2.514E-01	2.274E-02	0.107
CM-247		278.00		1.334E+00	8.666E-01	1.396E+00	1.729E-01	0.956
		287.40		8.413E-01	1.290E+00	2.165E+00	2.668E-01	0.389
		402.60	*	7.298E-03	4.025E-02	6.660E-02	6.682E-03	0.110
CF-249		252.85		-6.380E-02	8.529E-01	1.435E+00	1.723E-01	-0.044
		333.44		2.811E-02	2.315E-01	2.886E-01	3.349E-02	0.097
		387.95	*	1.557E-02	4.416E-02	7.399E-02	7.494E-03	0.210
CF-251		176.60	*	8.467E-02	1.358E-01	2.245E-01	2.352E-02	0.377
		227.00		1.409E-01	4.475E-01	7.191E-01	8.298E-02	0.196
		285.00		3.598E-03	1.821E+00	3.053E+00	3.770E-01	0.001

# 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]G244148001      *
* Acquisition date   : 20-JAN-2010 15:48:46 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 02:00:02.64              Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G244148001              Analyst initials: MXR1         *
* Batch Number       : 940268                  Sample Quantity : 1.3086E+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	1.987E+01	2.370E+00	3.742E-01	0.000E+00
MN-54	6.598E-02	5.679E-02	6.900E-02	0.000E+00
CD-109	2.668E+00	1.119E+00	1.495E+00	0.000E+00
SN-126	2.618E-01	1.098E-01	1.532E-01	0.000E+00
CS-135	5.246E-01	3.043E-01	2.806E-01	0.000E+00
BA-137M	1.488E-01	7.890E-02	6.113E-02	0.000E+00
CS-137	1.572E-01	8.341E-02	6.462E-02	0.000E+00
TL-208	5.179E-01	1.078E-01	6.092E-02	0.000E+00
BI-211	4.235E+00	6.776E-01	3.609E-01	0.000E+00
PB-212	1.601E+00	2.288E-01	9.724E-02	0.000E+00
PO-212	1.601E+00	2.288E-01	9.724E-02	0.000E+00
BI-214	1.312E+00	2.161E-01	1.196E-01	0.000E+00
PB-214	1.473E+00	2.474E-01	1.258E-01	0.000E+00
PO-214	1.473E+00	2.474E-01	1.258E-01	0.000E+00
PO-216	1.601E+00	2.288E-01	9.724E-02	0.000E+00
PO-218	1.473E+00	2.474E-01	1.258E-01	0.000E+00
RA-224	4.613E+00	1.425E+00	1.107E+00	0.000E+00
RA-226	1.312E+00	2.161E-01	1.196E-01	0.000E+00
AC-228	1.808E+00	3.933E-01	2.142E-01	0.000E+00
RA-228	1.808E+00	3.933E-01	2.142E-01	0.000E+00
TH-228	1.626E+00	2.325E-01	9.882E-02	0.000E+00
TH-230	1.312E+00	2.161E-01	1.196E-01	0.000E+00
TH-232	1.808E+00	3.933E-01	2.142E-01	0.000E+00
TH-234	1.510E+00	2.479E+00	2.361E+00	0.000E+00
U-234	1.312E+00	2.161E-01	1.196E-01	0.000E+00
NP-237	7.689E-01	3.581E-01	4.371E-01	0.000E+00
U-238	1.510E+00	2.479E+00	2.361E+00	0.000E+00
AM-243	3.934E-01	8.949E-02	9.208E-02	0.000E+00
ANH-511	1.159E-01	6.844E-02	4.891E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Key-Line	Activity	K.L. Act error	MDA
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Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)	
BE-7	2.469E-01	3.249E-01	5.766E-01	0.000E+00	NOT IDENT.
NA-22	-2.869E-03	4.642E-02	7.766E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.355E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.577E-02	2.992E-02	5.545E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	3.815E-02	7.264E-02	0.000E+00	NOT IDENT.
SC-46	-4.158E-02	4.093E-02	6.056E-02	0.000E+00	FAIL ABUN
V-48	-3.189E-02	7.742E-02	1.221E-01	0.000E+00	NOT IDENT.
CR-51	-1.980E-01	3.885E-01	6.554E-01	0.000E+00	NOT IDENT.
MN-52	1.512E-01	2.521E-01	4.576E-01	0.000E+00	NOT IDENT.
CO-56	-1.409E-02	3.803E-02	6.132E-02	0.000E+00	NOT IDENT.
CO-57	-2.757E-02	2.478E-02	4.107E-02	0.000E+00	NOT IDENT.
CO-58	-3.545E-02	4.292E-02	6.664E-02	0.000E+00	NOT IDENT.
FE-59	1.210E-02	8.354E-02	1.451E-01	0.000E+00	NOT IDENT.
CO-60	1.189E-02	4.006E-02	6.958E-02	0.000E+00	NOT IDENT.
ZN-65	-3.110E-02	1.017E-01	1.430E-01	0.000E+00	NOT IDENT.
GE-68	9.706E-01	1.275E+00	2.334E+00	0.000E+00	NOT IDENT.
AS-73	3.409E-02	1.046E+00	1.933E+00	0.000E+00	NOT IDENT.
AS-74	-5.295E-02	9.946E-02	1.660E-01	0.000E+00	NOT IDENT.
SE-75	-1.599E-02	5.211E-02	7.961E-02	0.000E+00	NOT IDENT.
BR-77	5.501E-01	1.446E+01	2.417E+01	0.000E+00	FAIL ABUN
SR-82	-7.280E-02	4.009E-01	6.682E-01	0.000E+00	NOT IDENT.
RB-83	-1.501E-02	7.133E-02	1.166E-01	0.000E+00	NOT IDENT.
RB-84	7.527E-03	7.037E-02	1.190E-01	0.000E+00	NOT IDENT.
KR-85	8.199E+00	8.007E+00	1.285E+01	0.000E+00	NOT IDENT.
SR-85	4.250E-02	4.151E-02	6.661E-02	0.000E+00	NOT IDENT.
RB-86	7.236E-01	7.973E-01	1.482E+00	0.000E+00	NOT IDENT.
Y-88	4.518E-03	3.390E-02	5.849E-02	0.000E+00	NOT IDENT.
ZR-88	-9.573E-03	3.317E-02	5.567E-02	0.000E+00	NOT IDENT.
Y-91	8.688E+00	2.126E+01	3.721E+01	0.000E+00	NOT IDENT.
NB-94	1.243E-02	3.371E-02	5.935E-02	0.000E+00	NOT IDENT.
NB-95	6.272E-02	4.761E-02	8.715E-02	0.000E+00	NOT IDENT.
NB-95M	1.203E-01	1.426E-01	2.347E-01	0.000E+00	NOT IDENT.
ZR-95	8.084E-02	7.449E-02	1.372E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.040E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.077E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	8.580E+00	1.510E+01	2.688E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.000E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	6.912E-04	3.516E-02	5.870E-02	0.000E+00	NOT IDENT.
RH-102	-4.991E-03	2.939E-02	4.871E-02	0.000E+00	NOT IDENT.
RU-103	-4.669E-03	4.054E-02	6.715E-02	0.000E+00	FAIL ABUN
RH-106	-9.591E-02	3.255E-01	5.505E-01	0.000E+00	FAIL ABUN
RU-106	-9.591E-02	3.254E-01	5.505E-01	0.000E+00	FAIL ABUN
AG-108M	-1.543E-02	3.336E-02	5.452E-02	0.000E+00	NOT IDENT.
AG-110M	1.140E-02	3.928E-02	6.074E-02	0.000E+00	NOT IDENT.
IN-111	-3.561E-01	1.409E+00	2.175E+00	0.000E+00	NOT IDENT.
IN-113M	6.942E-03	4.867E-02	8.403E-02	0.000E+00	NOT IDENT.
SN-113	6.942E-03	4.867E-02	8.403E-02	0.000E+00	NOT IDENT.
IN-114M	-1.373E-01	2.245E-01	3.245E-01	0.000E+00	NOT IDENT.
CD-115	5.422E+00	1.639E+01	2.797E+01	0.000E+00	NOT IDENT.
SN-117M	-4.162E-02	5.900E-02	9.781E-02	0.000E+00	NOT IDENT.
SB-122	1.504E+00	2.792E+00	5.052E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.219E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-9.380E-03	2.946E-02	4.983E-02	0.000E+00	NOT IDENT.
I-124	7.198E-01	8.603E-01	1.412E+00	0.000E+00	NOT IDENT.
SB-124	2.029E-02	6.891E-02	1.236E-01	0.000E+00	FAIL ABUN
SB-125	1.019E-01	9.790E-02	1.770E-01	0.000E+00	FAIL ABUN
TE-125M	3.803E+00	9.054E+00	1.624E+01	0.000E+00	NOT IDENT.
I-126	-5.034E-02	2.272E-01	3.309E-01	0.000E+00	NOT IDENT.
SB-126	2.174E-02	1.778E-01	2.670E-01	0.000E+00	NOT IDENT.
SB-127	-7.122E-01	1.546E+00	2.538E+00	0.000E+00	NOT IDENT.
XE-127	-3.589E-03	5.097E-02	8.552E-02	0.000E+00	NOT IDENT.
I-131	1.262E-01	1.302E-01	2.366E-01	0.000E+00	NOT IDENT.
TE-132	-3.734E-01	9.879E-01	1.611E+00	0.000E+00	NOT IDENT.
BA-133	1.051E-02	5.249E-02	8.082E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.560E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.444E-02	4.807E-02	8.597E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.009E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.918E-02	1.123E-01	1.844E-01	0.000E+00	FAIL ABUN
CE-139	1.796E-02	3.124E-02	5.475E-02	0.000E+00	NOT IDENT.
BA-140	-2.587E-02	2.890E-01	4.760E-01	0.000E+00	NOT IDENT.
LA-140	-4.848E-02	9.151E-02	1.433E-01	0.000E+00	FAIL ABUN
CE-141	2.608E-02	6.401E-02	1.125E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.066E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	6.470E-02	2.206E-01	3.487E-01	0.000E+00	NOT IDENT.
PM-144	3.121E-02	3.666E-02	6.658E-02	0.000E+00	NOT IDENT.
PR-144	2.116E+00	2.485E+00	4.514E+00	0.000E+00	NOT IDENT.

PM-146	-2.052E-03	4.782E-02	8.047E-02	0.000E+00	NOT IDENT.
ND-147	2.979E-01	6.659E-01	1.110E+00	0.000E+00	FAIL ABUN
PM-149	3.941E+01	1.270E+02	2.267E+02	0.000E+00	NOT IDENT.
EU-152	-4.264E-02	1.196E-01	1.632E-01	0.000E+00	FAIL ABUN
GD-153	-1.144E-01	9.239E-02	1.363E-01	0.000E+00	NOT IDENT.
EU-154	-1.181E-02	1.292E-01	2.154E-01	0.000E+00	NOT IDENT.
EU-155	1.516E-02	1.046E-01	1.826E-01	0.000E+00	FAIL ABUN
TB-160	2.285E-02	1.377E-01	2.343E-01	0.000E+00	FAIL ABUN
HO-166M	-3.643E-02	6.085E-02	9.849E-02	0.000E+00	FAIL ABUN
TM-171	6.300E-01	3.007E+01	4.939E+01	0.000E+00	NOT IDENT.
LU-176	-6.651E-03	2.426E-02	4.171E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.610E+00	2.407E+00	0.000E+00	FAIL ABUN
LU-177M	3.510E-02	1.947E-01	3.352E-01	0.000E+00	FAIL ABUN
HF-181	-7.432E-03	4.326E-02	7.157E-02	0.000E+00	NOT IDENT.
W-181	-1.706E-01	4.068E-01	6.542E-01	0.000E+00	NOT IDENT.
TA-182	1.451E-02	1.953E-01	3.326E-01	0.000E+00	NOT IDENT.
RE-183	1.355E-03	1.219E-01	2.034E-01	0.000E+00	FAIL ABUN
RE-184	-1.708E-02	2.237E-01	3.959E-01	0.000E+00	NOT IDENT.
OS-185	-3.598E-03	4.224E-02	7.237E-02	0.000E+00	NOT IDENT.
RE-188	1.576E-01	1.736E-01	3.095E-01	0.000E+00	NOT IDENT.
W-188	-2.432E+00	8.263E+00	1.249E+01	0.000E+00	FAIL ABUN
IR-192	2.033E-02	3.621E-02	6.497E-02	0.000E+00	FAIL ABUN
AU-195	1.457E-01	2.279E-01	4.063E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.985E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	2.161E+00	9.131E+00	1.578E+01	0.000E+00	NOT IDENT.
TL-202	-4.450E-02	7.804E-02	1.264E-01	0.000E+00	NOT IDENT.
HG-203	5.987E-04	4.530E-02	7.044E-02	0.000E+00	NOT IDENT.
BI-207	-9.975E-04	5.026E-02	8.608E-02	0.000E+00	FAIL ABUN
TL-207	1.344E-01	7.553E-01	1.172E+00	0.000E+00	FAIL ABUN
PO-209	-1.009E+01	7.741E+00	1.097E+01	0.000E+00	NOT IDENT.
BI-210	1.442E+00	6.157E+00	1.030E+01	0.000E+00	NOT IDENT.
PB-210	1.442E+00	6.157E+00	1.030E+01	0.000E+00	NOT IDENT.
PO-210	1.442E+00	6.157E+00	1.030E+01	0.000E+00	NOT IDENT.
PB-211	-8.147E-01	1.132E+00	1.641E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.978E-01	6.992E-01	0.000E+00	FAIL ABUN
PO-215	1.344E-01	7.553E-01	1.172E+00	0.000E+00	FAIL ABUN
RN-219	5.908E-01	4.164E-01	7.608E-01	0.000E+00	NOT IDENT.
RN-220	5.145E-01	2.873E+01	4.765E+01	0.000E+00	NOT IDENT.
RA-223	1.344E-01	7.553E-01	1.172E+00	0.000E+00	FAIL ABUN
AC-227	-1.286E-01	3.749E-01	6.529E-01	0.000E+00	FAIL ABUN
TH-227	-1.286E-01	3.751E-01	6.529E-01	0.000E+00	FAIL ABUN
TH-229	-9.672E-02	5.436E-01	9.108E-01	0.000E+00	NOT IDENT.
PA-231	2.323E-01	1.536E+00	2.724E+00	0.000E+00	FAIL ABUN
TH-231	1.344E-01	7.553E-01	1.172E+00	0.000E+00	FAIL ABUN
U-231	-6.807E-01	1.398E+00	2.126E+00	0.000E+00	FAIL ABUN
PA-233	1.917E-02	6.426E-02	1.140E-01	0.000E+00	FAIL ABUN
PA-234	0.000E+00	3.269E-01	5.426E-01	0.000E+00	FAIL ABUN
PA-234M	1.969E+00	5.702E+00	1.002E+01	0.000E+00	NOT IDENT.
U-235	8.081E-02	2.217E-01	3.864E-01	0.000E+00	FAIL ABUN
NP-236	5.589E-02	8.295E-02	1.462E-01	0.000E+00	NOT IDENT.
NP-239	-7.919E-02	1.891E-01	3.261E-01	0.000E+00	FAIL ABUN
AM-241	-6.504E-02	1.907E-01	3.097E-01	0.000E+00	NOT IDENT.
CM-243	6.980E-02	9.199E-02	1.644E-01	0.000E+00	FAIL ABUN
AM-246	2.684E-02	1.451E-01	2.529E-01	0.000E+00	NOT IDENT.
CM-247	7.298E-03	3.944E-02	6.812E-02	0.000E+00	NOT IDENT.
CF-249	1.557E-02	4.328E-02	7.573E-02	0.000E+00	NOT IDENT.
CF-251	8.467E-02	1.331E-01	2.327E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148001.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:48:46
Sample ID          : G244148001      Sample quantity      : 1.30860E+02 GRAM
Detector name      : GAM02            Detector geometry   : CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time  : 0 02:00:02.64  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials   : MXR1
Abundance limit    : 75.00000          Sensitivity        : 5.00000
Batch ID           : 940268            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	760	10.67*	1.028E+00	1.987E+01	1.987E+01	12.17
MN-54	834.83	38	99.97*	1.697E+00	6.365E-02	6.598E-02	87.83
CD-109	88.03	176	3.72*	5.225E+00	2.604E+00	2.668E+00	42.81
SN-126	64.28	51	9.60	2.528E+00	5.979E-01	5.979E-01	167.17
	86.94	176	8.90	5.225E+00	1.089E+00	1.089E+00	58.90
	87.57	176	37.00*	5.225E+00	2.618E-01	2.618E-01	42.81
CS-135	268.24	119	16.00*	4.075E+00	5.246E-01	5.246E-01	59.18
BA-137M	661.65	96	89.98*	2.066E+00	1.486E-01	1.488E-01	54.12
CS-137	661.65	96	85.12*	2.066E+00	1.571E-01	1.572E-01	54.13
TL-208	277.35	98	6.80	4.003E+00	1.027E+00	1.027E+00	59.58
	510.84	103	21.60	2.540E+00	5.368E-01	5.368E-01	60.80
	583.14	348	84.20*	2.292E+00	5.179E-01	5.179E-01	21.23
	860.37	45	12.46	1.651E+00	6.267E-01	6.267E-01	91.72
BI-211	72.87	-----	1.27	3.848E+00	-----	Line Not Found	-----
	351.07	640	12.94*	3.352E+00	4.235E+00	4.235E+00	16.33
PB-212	74.81	366	10.70	4.045E+00	2.427E+00	2.427E+00	25.02
	77.11	553	18.00	4.304E+00	2.048E+00	2.048E+00	16.53
	87.30	176	8.00	5.225E+00	1.211E+00	1.211E+00	43.96
	238.63	1109	44.60*	4.458E+00	1.601E+00	1.601E+00	14.59
	300.09	89	3.41	3.765E+00	1.997E+00	1.997E+00	55.39
PO-212	74.81	366	10.70	4.045E+00	2.427E+00	2.427E+00	25.02
	77.11	553	18.00	4.304E+00	2.048E+00	2.048E+00	16.53
	87.30	176	8.00	5.225E+00	1.211E+00	1.211E+00	43.96
	115.19	-----	0.60	6.220E+00	-----	Line Not Found	-----
	238.63	1109	44.60*	4.458E+00	1.601E+00	1.601E+00	14.59
	300.09	89	3.41	3.765E+00	1.997E+00	1.997E+00	55.39
BI-214	609.31	469	46.30*	2.214E+00	1.312E+00	1.312E+00	16.81
	1120.29	85	15.10	1.299E+00	1.250E+00	1.250E+00	41.75
	1764.49	87	15.80	9.006E-01	1.762E+00	1.762E+00	27.11
PB-214	74.81	366	6.21	4.045E+00	4.181E+00	4.181E+00	24.37
	77.11	553	10.50	4.304E+00	3.511E+00	3.511E+00	18.20
	87.30	176	4.67	5.225E+00	2.074E+00	2.075E+00	43.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	280	7.49	4.415E+00	2.433E+00	2.433E+00	32.03
	295.21	367	19.20	3.816E+00	1.436E+00	1.436E+00	25.56
	351.92	640	37.20*	3.352E+00	1.473E+00	1.473E+00	17.14
	74.81	366	6.21	4.045E+00	4.181E+00	4.181E+00	24.37
	77.11	553	10.50	4.304E+00	3.511E+00	3.511E+00	18.20
	87.30	176	4.67	5.225E+00	2.074E+00	2.075E+00	43.50
	241.98	280	7.49	4.415E+00	2.433E+00	2.433E+00	32.03
PO-216	295.21	367	19.20	3.816E+00	1.436E+00	1.436E+00	25.56
	351.92	640	37.20*	3.352E+00	1.473E+00	1.473E+00	17.14
	74.81	366	10.70	4.045E+00	2.427E+00	2.427E+00	25.02
	77.11	553	18.00	4.304E+00	2.048E+00	2.048E+00	16.53
	87.30	176	8.00	5.225E+00	1.211E+00	1.211E+00	43.96
	238.63	1109	44.60*	4.458E+00	1.601E+00	1.601E+00	14.59
	300.09	89	3.41	3.765E+00	1.997E+00	1.997E+00	55.39
PO-218	74.81	366	6.21	4.045E+00	4.181E+00	4.181E+00	24.37
	77.11	553	10.50	4.304E+00	3.511E+00	3.511E+00	18.20
	87.30	176	4.67	5.225E+00	2.074E+00	2.075E+00	43.50
	241.98	280	7.49	4.415E+00	2.433E+00	2.433E+00	32.03
	295.21	367	19.20	3.816E+00	1.436E+00	1.436E+00	25.56
	351.92	640	37.20*	3.352E+00	1.473E+00	1.473E+00	17.14
	240.98	280	3.95*	4.415E+00	4.613E+00	4.613E+00	31.53
RA-224	609.31	469	46.30*	2.214E+00	1.312E+00	1.312E+00	16.81
AC-228	1120.29	85	15.10	1.299E+00	1.250E+00	1.250E+00	41.75
	1764.49	87	15.80	9.006E-01	1.762E+00	1.762E+00	27.11
	338.32	212	11.40	3.450E+00	1.548E+00	1.548E+00	51.63
	911.07	274	27.70*	1.569E+00	1.808E+00	1.808E+00	22.20
	969.11	146	16.60	1.484E+00	1.703E+00	1.703E+00	34.47
	338.32	212	11.40	3.450E+00	1.548E+00	1.548E+00	51.63
	911.07	274	27.70*	1.569E+00	1.808E+00	1.808E+00	22.20
TH-228	969.11	146	16.60	1.484E+00	1.703E+00	1.703E+00	34.47
	74.81	366	10.70	4.045E+00	2.427E+00	2.466E+00	23.24
	77.11	553	18.00	4.304E+00	2.048E+00	2.081E+00	16.53
	87.30	176	8.00	5.225E+00	1.211E+00	1.231E+00	42.81
	238.63	1109	44.60*	4.458E+00	1.601E+00	1.626E+00	14.59
	300.09	89	3.41	3.765E+00	1.997E+00	2.029E+00	80.46
	609.31	469	46.30*	2.214E+00	1.312E+00	1.312E+00	16.81
TH-230	1120.29	85	15.10	1.299E+00	1.250E+00	1.250E+00	41.75
	1764.49	87	15.80	9.006E-01	1.762E+00	1.762E+00	27.11
	338.32	212	11.40	3.450E+00	1.548E+00	1.548E+00	32.21
	911.07	274	27.70*	1.569E+00	1.808E+00	1.808E+00	22.20
	969.11	146	16.60	1.484E+00	1.703E+00	1.703E+00	34.47
	63.29	51	3.80*	2.528E+00	1.510E+00	1.510E+00	167.45
	92.38	198	5.41	5.584E+00	1.884E+00	1.884E+00	49.73
U-234	609.31	469	46.30*	2.214E+00	1.312E+00	1.312E+00	16.81
	1120.29	85	15.10	1.299E+00	1.250E+00	1.250E+00	41.75
	1764.49	87	15.80	9.006E-01	1.762E+00	1.762E+00	27.11
	86.50	176	12.60*	5.225E+00	7.689E-01	7.689E-01	47.52
	95.87	----	2.60	5.755E+00	-----	Line Not Found	-----
	63.29	51	3.80*	2.528E+00	1.510E+00	1.510E+00	167.45

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	92.38	198	5.41	5.584E+00	1.884E+00	1.884E+00	47.12
AM-243	74.67	366	66.00*	4.045E+00	3.934E-01	3.934E-01	23.21
	86.72	176	0.34	5.225E+00	2.883E+01	2.883E+01	42.81
	117.66	-----	0.55	6.232E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.053E+00	-----	Line Not Found	-----
ANH-511	511.00	103	100.00*	2.540E+00	1.159E-01	1.159E-01	60.23

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	1.987E+01	1.987E+01	0.242E+01	12.17	
MN-54	312.70D	1.04	6.365E-02	6.598E-02	5.795E-02	87.83	
CD-109	464.00D	1.02	2.604E+00	2.668E+00	1.142E+00	42.81	
SN-126	1.00E+05Y	1.00	2.618E-01	2.618E-01	1.121E-01	42.81	
CS-135	2.30E+06Y	1.00	5.246E-01	5.246E-01	3.105E-01	59.18	
BA-137M	30.17Y	1.00	1.486E-01	1.488E-01	0.805E-01	54.12	
CS-137	30.17Y	1.00	1.571E-01	1.572E-01	0.851E-01	54.13	
TL-208	1.41E+10Y	1.00	5.179E-01	5.179E-01	1.100E-01	21.23	
BI-211	7.04E+08Y	1.00	4.235E+00	4.235E+00	0.691E+00	16.33	
PB-212	1.41E+10Y	1.00	1.601E+00	1.601E+00	0.233E+00	14.59	
PO-212	1.41E+10Y	1.00	1.601E+00	1.601E+00	0.233E+00	14.59	
BI-214	1600.00Y	1.00	1.312E+00	1.312E+00	0.221E+00	16.81	
PB-214	1600.00Y	1.00	1.473E+00	1.473E+00	0.252E+00	17.14	
PO-214	1600.00Y	1.00	1.473E+00	1.473E+00	0.252E+00	17.14	
PO-216	1.41E+10Y	1.00	1.601E+00	1.601E+00	0.233E+00	14.59	
PO-218	1600.00Y	1.00	1.473E+00	1.473E+00	0.252E+00	17.14	
RA-224	1.41E+10Y	1.00	4.613E+00	4.613E+00	1.454E+00	31.53	
RA-226	1600.00Y	1.00	1.312E+00	1.312E+00	0.221E+00	16.81	
AC-228	1.41E+10Y	1.00	1.808E+00	1.808E+00	0.401E+00	22.20	
RA-228	1.41E+10Y	1.00	1.808E+00	1.808E+00	0.401E+00	22.20	
TH-228	1.91Y	1.02	1.601E+00	1.626E+00	0.237E+00	14.59	
TH-230	4.47E+09Y	1.00	1.312E+00	1.312E+00	0.221E+00	16.81	
TH-232	1.41E+10Y	1.00	1.808E+00	1.808E+00	0.401E+00	22.20	
TH-234	4.47E+09Y	1.00	1.510E+00	1.510E+00	2.529E+00	167.45	
U-234	4.47E+09Y	1.00	1.312E+00	1.312E+00	0.221E+00	16.81	
NP-237	2.14E+06Y	1.00	7.689E-01	7.689E-01	3.654E-01	47.52	
U-238	4.47E+09Y	1.00	1.510E+00	1.510E+00	2.529E+00	167.45	
AM-243	7380.00Y	1.00	3.934E-01	3.934E-01	0.913E-01	23.21	
ANH-511	1.00E+09Y	1.00	1.159E-01	1.159E-01	0.698E-01	60.23	

Total Activity : 5.879E+01 5.889E+01

Grand Total Activity : 5.879E+01 5.889E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244148001

Page : 5  
Acquisition date : 20-JAN-2010 15:48:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.74	83	381	1.17	256.75	253	9	1.16E-02	87.4	6.21E+00	T
0	185.67	153	396	1.13	370.66	366	10	2.13E-02	54.8	5.29E+00	T
0	208.84	134	218	1.56	417.03	414	8	1.87E-02	41.6	4.89E+00	T
0	327.82	58	180	1.33	655.10	650	10	8.11E-03	89.8	3.53E+00	T
0	462.32	65	109	1.63	924.26	918	11	8.99E-03	61.3	2.74E+00	T
0	727.09	73	78	1.65	1454.13	1448	12	1.01E-02	53.8	1.91E+00	T
1	964.28	57	48	1.99	1928.81	1923	30	7.95E-03	50.8	1.49E+00	T
0	1629.98	21	3	2.16	3261.23	3255	11	2.93E-03	53.2	9.47E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148001.CNF;1  *
* Acquisition date   : 20-JAN-2010 15:48:46  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 02:00:02.64             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID          *
* Sample ID          : G244148001             Analyst initials: MXR1          *
* Batch Number       : 940268                 Sample Quantity : 1.30860E+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	1.987E+01	2.418E+00	3.738E-01	3.554E-02	53.168
MN-54	6.598E-02	5.795E-02	6.828E-02	6.708E-03	0.966
CD-109	2.668E+00	1.142E+00	1.427E+00	1.433E-01	1.870
SN-126	2.618E-01	1.121E-01	1.462E-01	1.461E-02	1.791
CS-135	5.246E-01	3.105E-01	2.725E-01	3.605E-02	1.925
BA-137M	1.488E-01	8.051E-02	6.026E-02	5.192E-03	2.469
CS-137	1.572E-01	8.511E-02	6.370E-02	5.499E-03	2.469
TL-208	5.179E-01	1.100E-01	5.993E-02	6.003E-03	8.643
BI-211	4.235E+00	6.914E-01	3.521E-01	4.062E-02	12.029
PB-212	1.601E+00	2.335E-01	9.427E-02	1.186E-02	16.978
PO-212	1.601E+00	2.335E-01	9.427E-02	1.186E-02	16.978
BI-214	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143
PB-214	1.473E+00	2.525E-01	1.227E-01	1.552E-02	12.003
PO-214	1.473E+00	2.525E-01	1.227E-01	1.552E-02	12.003
PO-216	1.601E+00	2.335E-01	9.427E-02	1.186E-02	16.978
PO-218	1.473E+00	2.525E-01	1.227E-01	1.552E-02	12.003
RA-224	4.613E+00	1.454E+00	1.073E+00	1.267E-01	4.297
RA-226	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.808E+00	4.014E-01	2.123E-01	2.648E-02	8.517
RA-228	1.808E+00	4.014E-01	2.123E-01	2.648E-02	8.517
TH-228	1.626E+00	2.373E-01	9.580E-02	1.206E-02	16.978
TH-230	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143
TH-232	1.808E+00	4.014E-01	2.123E-01	2.648E-02	8.517
TH-234	1.510E+00	2.529E+00	2.241E+00	3.957E-01	0.674
U-234	1.312E+00	2.205E-01	1.177E-01	1.244E-02	11.143
NP-237	7.689E-01	3.654E-01	4.169E-01	9.537E-02	1.844
U-238	1.510E+00	2.529E+00	2.241E+00	3.957E-01	0.674
AM-243	3.934E-01	9.132E-02	8.764E-02	7.664E-03	4.489
ANH-511	1.159E-01	6.983E-02	4.801E-02	4.759E-03	2.415

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.469E-01		3.315E-01	5.654E-01	5.996E-02	0.437
NA-22	-2.869E-03		4.737E-02	7.740E-02	6.863E-03	-0.037
NA-24	-8.204E-01		1.202E+00	Half-Life too short		
AL-26	1.577E-02		3.053E-02	5.560E-02	4.603E-03	0.284
TI-44	1.303E-01		3.893E-02	6.919E-02	6.264E-03	1.883
SC-46	-4.158E-02		4.177E-02	5.999E-02	6.099E-03	-0.693
V-48	-3.189E-02		7.900E-02	1.212E-01	1.185E-02	-0.263
CR-51	-1.980E-01		3.964E-01	6.384E-01	7.788E-02	-0.310
MN-52	1.512E-01		2.573E-01	4.570E-01	4.252E-02	0.331
CO-56	-1.409E-02		3.880E-02	6.070E-02	6.010E-03	-0.232
CO-57	-2.757E-02		2.528E-02	3.939E-02	3.293E-03	-0.700
CO-58	-3.545E-02		4.380E-02	6.592E-02	6.384E-03	-0.538
FE-59	1.210E-02		8.524E-02	1.442E-01	1.375E-02	0.084
CO-60	1.189E-02		4.088E-02	6.940E-02	6.466E-03	0.171
ZN-65	-3.110E-02		1.038E-01	1.422E-01	1.237E-02	-0.219
GE-68	9.706E-01		1.301E+00	2.320E+00	2.101E-01	0.418
AS-73	3.409E-02		1.067E+00	1.830E+00	1.515E-01	0.019
AS-74	-5.295E-02		1.015E-01	1.634E-01	1.526E-02	-0.324
SE-75	-1.599E-02		5.318E-02	7.730E-02	9.449E-03	-0.207
BR-77	5.501E-01		1.476E+01	2.373E+01	2.342E+00	0.023
SR-82	-7.280E-02		4.091E-01	6.604E-01	6.232E-02	-0.110
RB-83	-1.501E-02		7.278E-02	1.145E-01	1.130E-02	-0.131
RB-84	7.527E-03		7.181E-02	1.179E-01	1.193E-02	0.064
KR-85	8.199E+00		8.170E+00	1.261E+01	1.249E+00	0.650
SR-85	4.250E-02		4.235E-02	6.538E-02	6.473E-03	0.650
RB-86	7.236E-01		8.135E-01	1.473E+00	1.335E-01	0.491
Y-88	4.518E-03		3.459E-02	5.866E-02	4.785E-03	0.077
ZR-88	-9.573E-03		3.385E-02	5.441E-02	5.444E-03	-0.176
Y-91	8.688E+00		2.169E+01	3.705E+01	3.077E+00	0.234
NB-94	1.243E-02		3.440E-02	5.857E-02	5.222E-03	0.212
NB-95	6.272E-02		4.858E-02	8.612E-02	8.063E-03	0.728
NB-95M	1.203E-01		1.455E-01	2.275E-01	2.877E-02	0.529

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	8.084E-02		7.601E-02	1.355E-01	1.370E-02	0.596
NB-97	8.132E-02		1.551E-01	Half-Life too short		
ZR-97	1.272E+01		3.100E+00	Half-Life too short		
MO-99	8.580E+00		1.541E+01	2.655E+01	4.117E+00	0.323
TC-99M	-3.818E+11		3.571E+11	Half-Life too short		
RH-101	6.912E-04		3.587E-02	5.674E-02	6.206E-03	0.012
RH-102	-4.991E-03		2.999E-02	4.775E-02	4.791E-03	-0.105
RU-103	-4.669E-03		4.137E-02	6.589E-02	9.896E-03	-0.071
RH-106	-9.591E-02		3.322E-01	5.421E-01	7.405E-02	-0.177
RU-106	-9.591E-02		3.320E-01	5.421E-01	4.923E-02	-0.177
AG-108M	-1.543E-02		3.404E-02	5.337E-02	5.533E-03	-0.289
AG-110M	1.140E-02		4.008E-02	5.987E-02	5.341E-03	0.190
IN-111	-3.561E-01		1.438E+00	2.110E+00	2.507E-01	-0.169
IN-113M	6.942E-03		4.967E-02	8.212E-02	8.403E-03	0.085
SN-113	6.942E-03		4.967E-02	8.212E-02	8.403E-03	0.085
IN-114M	-1.373E-01		2.291E-01	3.134E-01	3.376E-02	-0.438
CD-115	5.422E+00		1.673E+01	2.747E+01	2.700E+00	0.197
SN-117M	-4.162E-02		6.021E-02	9.421E-02	9.281E-03	-0.442
SB-122	1.504E+00		2.849E+00	4.967E+00	4.769E-01	0.303
I-123	-7.066E+00		1.132E+01	Half-Life too short		
TE-123M	-9.380E-03		3.006E-02	4.799E-02	4.761E-03	-0.195
I-124	7.198E-01		8.779E-01	1.389E+00	1.289E-01	0.518
SB-124	2.029E-02		7.032E-02	1.238E-01	1.126E-02	0.164
SB-125	1.019E-01		9.990E-02	1.732E-01	1.769E-02	0.588
TE-125M	3.803E+00		9.239E+00	1.555E+01	1.595E+00	0.245
I-126	-5.034E-02		2.318E-01	3.262E-01	2.821E-02	-0.154
SB-126	2.174E-02		1.814E-01	2.635E-01	2.384E-02	0.082
SB-127	-7.122E-01		1.577E+00	2.503E+00	2.958E-01	-0.285
XE-127	-3.589E-03		5.201E-02	8.269E-02	9.131E-03	-0.043
I-131	1.262E-01		1.329E-01	2.310E-01	2.592E-02	0.546
TE-132	-3.734E-01		1.008E+00	1.561E+00	2.760E-01	-0.239
BA-133	1.051E-02		5.356E-02	7.886E-02	1.176E-02	0.133
I-133	-7.204E-03		7.960E-03	Half-Life too short		
CS-134	3.444E-02		4.905E-02	8.501E-02	8.181E-03	0.405
I-135	-3.968E+10		4.596E+10	Half-Life too short		
CS-136	-4.918E-02		1.146E-01	1.832E-01	1.768E-02	-0.268
CE-139	1.796E-02		3.188E-02	5.277E-02	5.413E-03	0.340
BA-140	-2.587E-02		2.949E-01	4.676E-01	1.565E-01	-0.055
LA-140	-4.848E-02		9.338E-02	1.434E-01	1.297E-02	-0.338
CE-141	2.608E-02		6.531E-02	1.082E-01	1.011E-02	0.241
CE-143	1.702E-03		2.585E-04	Half-Life too short		
CE-144	6.470E-02		2.251E-01	3.349E-01	5.228E-02	0.193
PM-144	3.121E-02		3.740E-02	6.569E-02	5.830E-03	0.475
PR-144	2.116E+00		2.536E+00	4.454E+00	3.951E-01	0.475
PM-146	-2.052E-03		4.879E-02	7.883E-02	9.395E-03	-0.026
ND-147	2.979E-01		6.795E-01	1.090E+00	1.709E-01	0.273
PM-149	3.941E+01		1.296E+02	2.204E+02	3.941E+01	0.179
EU-152	-4.264E-02		1.221E-01	1.591E-01	1.870E-02	-0.268



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-1.144E-01		9.428E-02	1.303E-01	1.184E-02	-0.878
EU-154	-1.181E-02		1.318E-01	2.147E-01	2.468E-02	-0.055
EU-155	1.516E-02		1.067E-01	1.747E-01	1.532E-02	0.087
TB-160	2.285E-02		1.405E-01	2.320E-01	2.345E-02	0.098
HO-166M	-3.643E-02		6.210E-02	9.721E-02	8.731E-03	-0.375
TM-171	6.300E-01		3.069E+01	4.693E+01	3.834E+00	0.013
LU-176	-6.651E-03		2.475E-02	4.060E-02	4.905E-03	-0.164
LU-177	3.815E+00	+	1.643E+00	2.328E+00	2.598E-01	1.638
LU-177M	3.510E-02		1.986E-01	3.279E-01	3.297E-02	0.107
HF-181	-7.432E-03		4.415E-02	7.019E-02	7.029E-03	-0.106
W-181	-1.706E-01		4.151E-01	6.213E-01	5.006E-02	-0.275
TA-182	1.451E-02		1.993E-01	3.313E-01	2.795E-02	0.044
RE-183	1.355E-03		1.244E-01	1.959E-01	1.971E-02	0.007
RE-184	-1.708E-02		2.283E-01	3.842E-01	4.613E-02	-0.044
OS-185	-3.598E-03		4.311E-02	7.132E-02	6.282E-03	-0.050
RE-188	1.576E-01		1.771E-01	2.979E-01	2.880E-02	0.529
W-188	-2.432E+00		8.432E+00	1.215E+01	1.493E+00	-0.200
IR-192	2.033E-02		3.695E-02	6.328E-02	7.555E-03	0.321
AU-195	1.457E-01		2.326E-01	3.884E-01	3.491E-02	0.375
TL-200	-7.289E-04		4.584E-04	Half-Life too short		
TL-201	2.161E+00		9.317E+00	1.521E+01	1.565E+00	0.142
TL-202	-4.450E-02		7.964E-02	1.238E-01	1.247E-02	-0.359
HG-203	5.987E-04		4.622E-02	6.846E-02	8.607E-03	0.009
BI-207	-9.975E-04		5.129E-02	8.554E-02	7.853E-03	-0.012
TL-207	1.344E-01		7.707E-01	1.141E+00	2.220E-01	0.118
PO-209	-1.009E+01		7.899E+00	1.087E+01	1.110E+00	-0.928
BI-210	1.442E+00		6.283E+00	9.736E+00	9.328E-01	0.148
PB-210	1.442E+00		6.283E+00	9.736E+00	9.328E-01	0.148
PO-210	1.442E+00		6.282E+00	9.736E+00	8.498E-01	0.148
PB-211	-8.147E-01		1.155E+00	1.605E+00	1.009E+00	-0.508
BI-212	9.277E-01	+	5.080E-01	6.903E-01	7.191E-02	1.344
PO-215	1.344E-01		7.707E-01	1.141E+00	2.220E-01	0.118
RN-219	5.908E-01		4.249E-01	7.438E-01	1.181E-01	0.794
RN-220	5.145E-01		2.931E+01	4.683E+01	4.543E+00	0.011
RA-223	1.344E-01		7.707E-01	1.141E+00	2.220E-01	0.118
AC-227	-1.286E-01		3.826E-01	6.337E-01	1.110E-01	-0.203
TH-227	-1.286E-01		3.828E-01	6.337E-01	1.263E-01	-0.203
TH-229	-9.672E-02		5.547E-01	8.800E-01	9.542E-02	-0.110
PA-231	2.323E-01		1.567E+00	2.648E+00	4.655E-01	0.088
TH-231	1.344E-01		7.707E-01	1.141E+00	2.220E-01	0.118
U-231	-6.807E-01		1.427E+00	2.031E+00	1.870E-01	-0.335
PA-233	1.917E-02		6.557E-02	1.110E-01	1.352E-02	0.173
PA-234	0.000E+00		3.336E-01	5.381E-01	1.046E-01	0.000
PA-234M	1.969E+00		5.819E+00	9.947E+00	1.082E+00	0.198
U-235	8.081E-02		2.262E-01	3.715E-01	6.597E-02	0.218
NP-236	5.589E-02		8.464E-02	1.409E-01	1.401E-02	0.397
NP-239	-7.919E-02		1.929E-01	3.126E-01	2.621E-02	-0.253
AM-241	-6.504E-02		1.946E-01	2.938E-01	2.407E-02	-0.221

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	6.980E-02		9.387E-02	1.573E-01	1.373E-02	0.444
AM-246	2.684E-02		1.480E-01	2.514E-01	2.274E-02	0.107
CM-247	7.298E-03		4.025E-02	6.660E-02	6.682E-03	0.110
CF-249	1.557E-02		4.416E-02	7.399E-02	7.494E-03	0.210
CF-251	8.467E-02		1.358E-01	2.245E-01	2.352E-02	0.377

# 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]G244148001          *
* Acquisition date   : 20-JAN-2010 15:48:46 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 02:00:02.64 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148001 Analyst initials: MXR1                  *
* Batch Number       : 940268 Sample Quantity : 1.3086E+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	1.987E+01	2.370E+00	1.872E-01	1.209E+00
MN-54	6.598E-02	5.679E-02	3.452E-02	2.898E-02
CD-109	2.668E+00	1.119E+00	7.481E-01	5.711E-01
SN-126	2.618E-01	1.098E-01	7.665E-02	5.604E-02
CS-135	5.246E-01	3.043E-01	1.404E-01	1.552E-01
BA-137M	1.488E-01	7.890E-02	3.058E-02	4.026E-02
CS-137	1.572E-01	8.341E-02	3.233E-02	4.256E-02
TL-208	5.179E-01	1.078E-01	3.048E-02	5.498E-02
BI-211	4.235E+00	6.776E-01	1.806E-01	3.457E-01
PB-212	1.601E+00	2.288E-01	4.865E-02	1.167E-01
PO-212	1.601E+00	2.288E-01	4.865E-02	1.167E-01
BI-214	1.312E+00	2.161E-01	5.983E-02	1.103E-01
PB-214	1.473E+00	2.474E-01	6.294E-02	1.262E-01
PO-214	1.473E+00	2.474E-01	6.294E-02	1.262E-01
PO-216	1.601E+00	2.288E-01	4.865E-02	1.167E-01
PO-218	1.473E+00	2.474E-01	6.294E-02	1.262E-01
RA-224	4.613E+00	1.425E+00	5.539E-01	7.272E-01
RA-226	1.312E+00	2.161E-01	5.983E-02	1.103E-01
AC-228	1.808E+00	3.933E-01	1.072E-01	2.007E-01
RA-228	1.808E+00	3.933E-01	1.072E-01	2.007E-01
TH-228	1.626E+00	2.325E-01	4.944E-02	1.186E-01
TH-230	1.312E+00	2.161E-01	5.983E-02	1.103E-01
TH-232	1.808E+00	3.933E-01	1.072E-01	2.007E-01
TH-234	1.510E+00	2.479E+00	1.181E+00	1.265E+00
U-234	1.312E+00	2.161E-01	5.983E-02	1.103E-01
NP-237	7.689E-01	3.581E-01	2.187E-01	1.827E-01
U-238	1.510E+00	2.479E+00	1.181E+00	1.265E+00
AM-243	3.934E-01	8.949E-02	4.607E-02	4.566E-02
ANH-511	1.159E-01	6.844E-02	2.447E-02	3.492E-02

### ---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )	
BE-7	2.469E-01	3.249E-01	2.885E-01	1.657E-01 NOT IDENT.
NA-22	-2.869E-03	4.642E-02	3.885E-02	2.368E-02 NOT IDENT.
NA-24	-8.204E+05	2.355E+06	0.000E+00	1.202E+06 SHORT HLIF
AL-26	1.577E-02	2.992E-02	2.774E-02	1.526E-02 NOT IDENT.
TI-44	1.303E-01	3.815E-02	3.634E-02	1.947E-02 NOT IDENT.
SC-46	-4.158E-02	4.093E-02	3.030E-02	2.088E-02 FAIL ABUN
V-48	-3.189E-02	7.742E-02	6.108E-02	3.950E-02 NOT IDENT.
CR-51	-1.980E-01	3.885E-01	3.279E-01	1.982E-01 NOT IDENT.
MN-52	1.512E-01	2.521E-01	2.289E-01	1.286E-01 NOT IDENT.
CO-56	-1.409E-02	3.803E-02	3.068E-02	1.940E-02 NOT IDENT.
CO-57	-2.757E-02	2.478E-02	2.055E-02	1.264E-02 NOT IDENT.
CO-58	-3.545E-02	4.292E-02	3.334E-02	2.190E-02 NOT IDENT.
FE-59	1.210E-02	8.354E-02	7.258E-02	4.262E-02 NOT IDENT.
CO-60	1.189E-02	4.006E-02	3.481E-02	2.044E-02 NOT IDENT.
ZN-65	-3.110E-02	1.017E-01	7.155E-02	5.190E-02 NOT IDENT.
GE-68	9.706E-01	1.275E+00	1.168E+00	6.506E-01 NOT IDENT.
AS-73	3.409E-02	1.046E+00	9.669E-01	5.335E-01 NOT IDENT.
AS-74	-5.295E-02	9.946E-02	8.306E-02	5.074E-02 NOT IDENT.
SE-75	-1.599E-02	5.211E-02	3.983E-02	2.659E-02 NOT IDENT.
BR-77	5.501E-01	1.446E+01	1.209E+01	7.380E+00 FAIL ABUN
SR-82	-7.280E-02	4.009E-01	3.343E-01	2.046E-01 NOT IDENT.
RB-83	-1.501E-02	7.133E-02	5.836E-02	3.639E-02 NOT IDENT.
RB-84	7.527E-03	7.037E-02	5.954E-02	3.590E-02 NOT IDENT.
KR-85	8.199E+00	8.007E+00	6.428E+00	4.085E+00 NOT IDENT.
SR-85	4.250E-02	4.151E-02	3.332E-02	2.118E-02 NOT IDENT.
RB-86	7.236E-01	7.973E-01	7.412E-01	4.068E-01 NOT IDENT.
Y-88	4.518E-03	3.390E-02	2.926E-02	1.729E-02 NOT IDENT.
ZR-88	-9.573E-03	3.317E-02	2.785E-02	1.692E-02 NOT IDENT.
Y-91	8.688E+00	2.126E+01	1.862E+01	1.085E+01 NOT IDENT.
NB-94	1.243E-02	3.371E-02	2.969E-02	1.720E-02 NOT IDENT.
NB-95	6.272E-02	4.761E-02	4.360E-02	2.429E-02 NOT IDENT.
NB-95M	1.203E-01	1.426E-01	1.174E-01	7.276E-02 NOT IDENT.
ZR-95	8.084E-02	7.449E-02	6.863E-02	3.801E-02 NOT IDENT.
NB-97	8.132E+04	3.040E+05	0.000E+00	1.551E+05 SHORT HLIF
ZR-97	1.272E+07	6.077E+06	0.000E+00	3.100E+06 SHORT HLIF
MO-99	8.580E+00	1.510E+01	1.345E+01	7.703E+00 NOT IDENT.
TC-99M	-3.818E+17	7.000E+17	0.000E+00	0.000E+00 SHORT HLIF
RH-101	6.912E-04	3.516E-02	2.937E-02	1.794E-02 NOT IDENT.
RH-102	-4.991E-03	2.939E-02	2.437E-02	1.499E-02 NOT IDENT.
RU-103	-4.669E-03	4.054E-02	3.360E-02	2.068E-02 FAIL ABUN
RH-106	-9.591E-02	3.255E-01	2.754E-01	1.661E-01 FAIL ABUN
RU-106	-9.591E-02	3.254E-01	2.754E-01	1.660E-01 FAIL ABUN
AG-108M	-1.543E-02	3.336E-02	2.728E-02	1.702E-02 NOT IDENT.
AG-110M	1.140E-02	3.928E-02	3.039E-02	2.004E-02 NOT IDENT.
IN-111	-3.561E-01	1.409E+00	1.088E+00	7.191E-01 NOT IDENT.
IN-113M	6.942E-03	4.867E-02	4.204E-02	2.483E-02 NOT IDENT.
SN-113	6.942E-03	4.867E-02	4.204E-02	2.483E-02 NOT IDENT.
IN-114M	-1.373E-01	2.245E-01	1.623E-01	1.146E-01 NOT IDENT.
CD-115	5.422E+00	1.639E+01	1.399E+01	8.364E+00 NOT IDENT.
SN-117M	-4.162E-02	5.900E-02	4.894E-02	3.010E-02 NOT IDENT.
SB-122	1.504E+00	2.792E+00	2.528E+00	1.425E+00 NOT IDENT.
I-123	-7.066E+06	2.219E+07	0.000E+00	1.132E+07 SHORT HLIF
TE-123M	-9.380E-03	2.946E-02	2.493E-02	1.503E-02 NOT IDENT.
I-124	7.198E-01	8.603E-01	7.063E-01	4.389E-01 NOT IDENT.
SB-124	2.029E-02	6.891E-02	6.185E-02	3.516E-02 FAIL ABUN
SB-125	1.019E-01	9.790E-02	8.853E-02	4.995E-02 FAIL ABUN
TE-125M	3.803E+00	9.054E+00	8.126E+00	4.619E+00 NOT IDENT.
I-126	-5.034E-02	2.272E-01	1.655E-01	1.159E-01 NOT IDENT.
SB-126	2.174E-02	1.778E-01	1.336E-01	9.070E-02 NOT IDENT.
SB-127	-7.122E-01	1.546E+00	1.270E+00	7.887E-01 NOT IDENT.
XE-127	-3.589E-03	5.097E-02	4.279E-02	2.601E-02 NOT IDENT.
I-131	1.262E-01	1.302E-01	1.184E-01	6.644E-02 NOT IDENT.
TE-132	-3.734E-01	9.879E-01	8.062E-01	5.041E-01 NOT IDENT.
BA-133	1.051E-02	5.249E-02	4.043E-02	2.678E-02 FAIL ABUN
I-133	-7.204E+03	1.560E+04	0.000E+00	7.960E+03 SHORT HLIF
CS-134	3.444E-02	4.807E-02	4.301E-02	2.453E-02 NOT IDENT.
I-135	-3.968E+16	9.009E+16	0.000E+00	0.000E+00 SHORT HLIF
CS-136	-4.918E-02	1.123E-01	9.226E-02	5.729E-02 FAIL ABUN
CE-139	1.796E-02	3.124E-02	2.739E-02	1.594E-02 NOT IDENT.
BA-140	-2.587E-02	2.890E-01	2.381E-01	1.474E-01 NOT IDENT.
LA-140	-4.848E-02	9.151E-02	7.171E-02	4.669E-02 FAIL ABUN
CE-141	2.608E-02	6.401E-02	5.630E-02	3.266E-02 NOT IDENT.
CE-143	1.702E+03	5.066E+02	0.000E+00	2.585E+02 SHORT HLIF
CE-144	6.470E-02	2.206E-01	1.745E-01	1.126E-01 NOT IDENT.
PM-144	3.121E-02	3.666E-02	3.331E-02	1.870E-02 NOT IDENT.
PR-144	2.116E+00	2.485E+00	2.258E+00	1.268E+00 NOT IDENT.

PM-146	-2.052E-03	4.782E-02	4.026E-02	2.440E-02	NOT IDENT.
ND-147	2.979E-01	6.659E-01	5.555E-01	3.397E-01	FAIL ABUN
PM-149	3.941E+01	1.270E+02	1.134E+02	6.480E+01	NOT IDENT.
EU-152	-4.264E-02	1.196E-01	8.163E-02	6.103E-02	FAIL ABUN
GD-153	-1.144E-01	9.239E-02	6.819E-02	4.714E-02	NOT IDENT.
EU-154	-1.181E-02	1.292E-01	1.078E-01	6.592E-02	NOT IDENT.
EU-155	1.516E-02	1.046E-01	9.134E-02	5.337E-02	FAIL ABUN
TB-160	2.285E-02	1.377E-01	1.172E-01	7.023E-02	FAIL ABUN
HO-166M	-3.643E-02	6.085E-02	4.928E-02	3.105E-02	FAIL ABUN
TM-171	6.300E-01	3.007E+01	2.471E+01	1.534E+01	NOT IDENT.
LU-176	-6.651E-03	2.426E-02	2.087E-02	1.238E-02	FAIL ABUN
LU-177	3.815E+00	1.610E+00	1.204E+00	8.214E-01	FAIL ABUN
LU-177M	3.510E-02	1.947E-01	1.677E-01	9.932E-02	FAIL ABUN
HF-181	-7.432E-03	4.326E-02	3.581E-02	2.207E-02	NOT IDENT.
W-181	-1.706E-01	4.068E-01	3.273E-01	2.076E-01	NOT IDENT.
TA-182	1.451E-02	1.953E-01	1.664E-01	9.964E-02	NOT IDENT.
RE-183	1.355E-03	1.219E-01	1.017E-01	6.218E-02	FAIL ABUN
RE-184	-1.708E-02	2.237E-01	1.981E-01	1.141E-01	NOT IDENT.
OS-185	-3.598E-03	4.224E-02	3.621E-02	2.155E-02	NOT IDENT.
RE-188	1.576E-01	1.736E-01	1.548E-01	8.855E-02	NOT IDENT.
W-188	-2.432E+00	8.263E+00	6.248E+00	4.216E+00	FAIL ABUN
IR-192	2.033E-02	3.621E-02	3.251E-02	1.847E-02	FAIL ABUN
AU-195	1.457E-01	2.279E-01	2.033E-01	1.163E-01	FAIL ABUN
TL-200	-7.289E+02	8.985E+02	0.000E+00	4.584E+02	SHORT HLIF
TL-201	2.161E+00	9.131E+00	7.895E+00	4.659E+00	NOT IDENT.
TL-202	-4.450E-02	7.804E-02	6.326E-02	3.982E-02	NOT IDENT.
HG-203	5.987E-04	4.530E-02	3.524E-02	2.311E-02	NOT IDENT.
BI-207	-9.975E-04	5.026E-02	4.307E-02	2.564E-02	FAIL ABUN
TL-207	1.344E-01	7.553E-01	5.862E-01	3.853E-01	FAIL ABUN
PO-209	-1.009E+01	7.741E+00	5.489E+00	3.950E+00	NOT IDENT.
BI-210	1.442E+00	6.157E+00	5.155E+00	3.141E+00	NOT IDENT.
PB-210	1.442E+00	6.157E+00	5.155E+00	3.141E+00	NOT IDENT.
PO-210	1.442E+00	6.157E+00	5.155E+00	3.141E+00	NOT IDENT.
PB-211	-8.147E-01	1.132E+00	8.210E-01	5.776E-01	NOT IDENT.
BI-212	9.277E-01	4.978E-01	3.498E-01	2.540E-01	FAIL ABUN
PO-215	1.344E-01	7.553E-01	5.862E-01	3.853E-01	FAIL ABUN
RN-219	5.908E-01	4.164E-01	3.806E-01	2.124E-01	NOT IDENT.
RN-220	5.145E-01	2.873E+01	2.384E+01	1.466E+01	NOT IDENT.
RA-223	1.344E-01	7.553E-01	5.862E-01	3.853E-01	FAIL ABUN
AC-227	-1.286E-01	3.749E-01	3.266E-01	1.913E-01	FAIL ABUN
TH-227	-1.286E-01	3.751E-01	3.266E-01	1.914E-01	FAIL ABUN
TH-229	-9.672E-02	5.436E-01	4.556E-01	2.774E-01	NOT IDENT.
PA-231	2.323E-01	1.536E+00	1.363E+00	7.836E-01	FAIL ABUN
TH-231	1.344E-01	7.553E-01	5.862E-01	3.853E-01	FAIL ABUN
U-231	-6.807E-01	1.398E+00	1.064E+00	7.133E-01	FAIL ABUN
PA-233	1.917E-02	6.426E-02	5.705E-02	3.278E-02	FAIL ABUN
PA-234	0.000E+00	3.269E-01	2.715E-01	0.000E+00	FAIL ABUN
PA-234M	1.969E+00	5.702E+00	5.013E+00	2.909E+00	NOT IDENT.
U-235	8.081E-02	2.217E-01	1.933E-01	1.131E-01	FAIL ABUN
NP-236	5.589E-02	8.295E-02	7.316E-02	4.232E-02	NOT IDENT.
NP-239	-7.919E-02	1.891E-01	1.632E-01	9.646E-02	FAIL ABUN
AM-241	-6.504E-02	1.907E-01	1.550E-01	9.730E-02	NOT IDENT.
CM-243	6.980E-02	9.199E-02	8.225E-02	4.694E-02	FAIL ABUN
AM-246	2.684E-02	1.451E-01	1.265E-01	7.402E-02	NOT IDENT.
CM-247	7.298E-03	3.944E-02	3.408E-02	2.012E-02	NOT IDENT.
CF-249	1.557E-02	4.328E-02	3.789E-02	2.208E-02	NOT IDENT.
CF-251	8.467E-02	1.331E-01	1.164E-01	6.789E-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	229.4696
46.50	229.4696
46.50	229.4696
48.70	253.6592
49.72	209.6405
51.35	220.8533
52.39	201.4801
52.97	232.1506
53.15	232.2889
53.44	236.7243
54.07	248.1889
56.28	246.5637
56.28	246.5659
57.37	0.0000
57.53	247.5424
57.53	247.5439
57.60	247.5970
57.98	257.4650
57.98	257.4650
59.32	278.1071
59.32	278.1071
59.40	273.0241
59.54	280.8718
59.72	281.0264
60.01	281.2751
61.10	260.1996
61.14	260.2310
61.30	260.3560
63.00	270.7902
63.29	271.0215
63.29	271.0215
63.58	271.2524
64.28	270.5011
65.12	298.6690
65.20	298.7382
65.20	298.7382
66.05	307.3482
66.72	277.6651
66.83	277.7537
66.91	284.3998
67.20	292.5403
67.20	292.5403
67.75	298.7996
67.85	313.6700
68.90	298.7007
68.90	298.7007
69.30	294.7896
69.67	317.1192
70.82	326.1028
70.82	326.1028
70.83	326.1122
72.80	339.8921
72.87	339.9541
72.87	339.9541
74.67	310.1994
74.81	310.3121
74.81	310.3121
74.81	310.3121
74.81	310.3121
74.81	310.3121
74.81	310.3121
74.97	310.4423
75.28	310.6940
75.70	311.0336
77.11	312.1687
77.11	312.1687

77.11	312.1687
77.11	312.1687
77.11	312.1687
77.11	312.1687
77.11	312.1687
78.38	313.1806
79.62	298.2729
79.80	297.0440
79.80	297.0440
80.11	297.2751
80.18	297.3267
80.30	323.3381
80.30	323.3381
80.57	323.5551
81.00	371.7339
81.07	371.7982
81.07	371.7982
81.07	371.7982
81.07	371.7982
82.60	326.5509
83.37	291.4207
83.78	313.7296
83.78	313.7296
83.78	313.7296
83.78	313.7296
84.21	320.9421
84.90	320.0956
85.43	346.7508
86.29	418.0587
86.50	418.2683
86.54	447.8568
86.59	447.9086
86.72	448.0468
86.79	448.1183
86.94	448.2787
87.30	456.5241
87.30	456.5241
87.30	456.5241
87.30	456.5241
87.30	456.5241
87.30	456.5241
87.57	456.8128
87.88	424.2594
88.03	424.4085
88.36	353.3273
88.47	353.4184
89.95	354.6315
91.11	423.7038
92.29	403.3194
92.38	403.4005
92.38	403.4005
93.35	404.2817
94.00	291.6765
94.67	296.3411
94.67	296.3443
94.90	288.0252
94.90	288.0252
94.90	288.0252
94.90	288.0252
95.87	304.2072
95.87	304.2072
96.73	301.9477
97.43	329.3820
98.44	283.6233
98.44	283.6233
98.88	248.7619
99.55	246.2679
99.55	246.2679
99.86	262.6063
100.00	262.6849
100.10	270.3596
103.18	274.9935
103.76	227.3613
105.00	246.2188
105.31	255.0380
108.00	271.9243
109.28	260.9837

111.00	283.2961
111.00	283.2961
111.76	310.0471
112.95	288.2960
115.19	282.6826
116.30	273.4498
117.00	281.6956
117.00	281.6956
117.66	276.1320
121.11	247.1585
121.62	254.3477
121.78	277.2815
122.06	277.4248
122.32	278.5531
122.32	278.5531
122.32	278.5531
122.32	278.5531
123.07	266.9845
127.23	302.6363
129.76	238.9673
131.20	242.6074
133.02	266.1957
133.54	243.5986
135.34	256.5732
136.00	252.7882
136.25	266.1521
136.48	266.2570
140.51	279.3711
140.51	0.0000
142.18	277.0587
142.65	261.8109
143.76	255.0630
144.24	254.2280
144.24	254.2280
144.24	254.2280
144.24	254.2280
145.22	259.8114
145.44	259.9059
147.16	291.7822
152.43	262.8269
152.70	245.1306
153.22	247.4274
154.21	247.8091
154.21	247.8091
154.21	247.8091
154.21	247.8091
155.03	236.5608
156.02	267.4617
158.56	270.6198
159.00	0.0000
159.00	267.6286
160.31	250.1426
161.27	253.6895
162.32	262.5958
162.64	271.2306
163.35	291.7494
163.89	297.3145
165.85	247.9491
167.43	246.3824
171.28	227.2977
171.86	238.2701
172.10	249.1362
176.55	235.5248
176.60	235.5403
181.06	232.6416
184.41	291.3224
185.71	275.8972
186.00	276.0070
190.27	272.0654
192.34	211.8187
193.63	251.0590
197.04	214.2422
198.01	226.8014
198.60	247.0985
200.40	253.2752
201.83	233.5282
202.84	242.8220
205.31	218.2091



208.36	241.1157
208.81	233.3237
209.75	244.9336
209.75	244.9336
210.97	231.6748
215.65	222.7254
216.55	228.6845
218.09	206.1987
222.10	234.8125
223.80	220.2900
226.40	220.9623
227.00	231.5368
227.08	231.5592
227.20	231.5898
228.16	244.5998
228.18	244.6062
228.18	244.6062
231.56	0.0000
235.69	218.8913
236.00	242.8314
236.00	242.8314
238.63	197.0938
238.63	197.0938
238.63	197.0938
238.63	197.0938
239.00	197.1741
240.98	197.6116
241.98	197.8303
241.98	197.8303
241.98	197.8303
244.69	168.6598
245.39	160.2801
247.94	149.3481
248.90	151.2843
249.79	167.4633
252.40	160.7890
252.85	159.9736
252.85	159.9736
254.15	0.0000
256.20	172.2070
256.20	172.2070
260.50	164.8804
260.90	173.0625
262.80	158.0517
264.65	182.4262
268.24	178.7434
268.79	171.5725
269.46	165.8705
269.46	165.8705
269.46	165.8705
269.46	165.8705
271.23	166.1684
273.65	109.5905
276.40	149.4539
277.35	142.2627
277.60	142.2982
277.60	142.2982
278.00	137.9523
278.60	142.4403
279.20	152.8109
279.53	160.2108
280.46	153.0014
281.68	147.2949
283.67	150.3502
284.30	146.7528
285.00	157.0119
285.90	145.1320
286.10	145.1608
286.10	145.1608
287.40	136.4844
288.45	0.0000
290.67	153.0491
290.80	153.0692
291.72	150.2276
293.26	0.0000
293.70	120.7090
295.21	120.8830
295.21	120.8830

295.21	120.8830
295.96	120.9700
296.50	149.4214
297.23	149.5239
298.57	149.7144
299.80	134.8989
299.80	134.8989
300.09	142.4327
300.09	142.4327
300.09	142.4327
300.09	142.4327
300.12	142.4351
301.29	142.5928
302.84	121.7551
303.76	115.8421
303.91	115.8572
304.40	115.9098
304.40	115.9098
304.84	120.4746
306.84	135.7866
308.46	128.4338
311.98	128.8468
316.51	131.2807
318.01	132.4101
319.02	149.6909
319.41	140.2058
320.08	143.1519
323.87	133.2952
323.87	133.2952
323.87	133.2952
323.87	133.2952
325.23	142.6583
328.77	143.1033
333.44	131.3246
334.20	137.5936
334.20	137.5936
334.30	137.6067
338.28	117.3277
338.28	117.3277
338.28	117.3277
338.28	117.3277
338.32	117.3314
338.32	117.3314
338.32	117.3314
340.50	124.3496
340.57	121.2485
344.27	128.6464
345.85	117.1069
350.59	0.0000
351.07	131.3399
351.92	131.4319
351.92	131.4319
351.92	131.4319
355.39	0.0000
356.01	130.6946
364.48	100.0861
366.43	110.1684
367.43	107.2766
367.94	0.0000
369.80	109.4696
374.96	110.9170
383.85	130.8073
387.95	119.1091
388.63	108.0621
391.69	121.4740
391.69	121.4740
392.90	123.6121
398.62	107.8649
400.65	95.8001
401.10	95.8316
401.81	80.5827
402.60	115.3312
404.84	135.9690
410.95	138.6368
411.60	159.2525
413.65	119.3595
414.70	109.1540
415.30	115.3821

415.76	109.2381
417.63	0.0000
418.52	121.8477
423.70	118.1557
427.08	95.5839
427.89	89.4014
432.53	104.2953
433.93	100.2217
439.47	112.1381
439.56	109.0012
439.89	110.0741
443.98	90.4118
444.90	76.7928
445.03	76.7995
445.03	76.7995
445.03	76.7995
445.03	76.7995
453.90	105.8426
463.38	81.8051
468.07	89.7524
473.00	86.8282
475.06	85.8716
475.35	82.6667
476.78	90.2664
477.59	72.0360
477.96	75.2797
482.03	83.0250
484.57	85.3214
487.03	86.5369
490.36	0.0000
492.35	87.9152
497.08	76.2036
507.63	0.0000
510.53	0.0000
510.84	83.4456
511.00	83.4532
511.85	82.6183
511.85	82.6183
513.99	75.6852
513.99	75.6852
520.41	80.6190
520.65	77.3187
527.90	83.2031
528.96	0.0000
529.64	101.0587
529.87	0.0000
531.02	75.5786
537.32	81.4388
543.00	78.3527
546.56	0.0000
549.76	85.4026
552.65	73.8400
555.20	81.1626
563.23	80.6280
563.90	79.7543
568.70	83.6041
569.32	84.5424
569.50	84.5514
569.67	80.0143
573.80	84.7558
574.00	84.7649
574.64	76.3605
578.91	68.5455
579.30	0.0000
583.14	75.1193
585.48	58.0932
591.81	69.9530
592.07	74.5671
593.00	73.6836
595.88	90.4036
600.56	85.2875
602.52	0.0000
602.71	64.8115
602.71	64.8115
603.60	77.1932
604.41	71.0496
604.70	71.0608
609.31	81.7652

609.31	81.7652
609.31	81.7652
609.31	81.7652
610.33	81.8104
612.46	76.0082
614.37	65.2148
618.01	74.6748
621.84	77.6301
621.84	77.6301
631.29	69.5539
633.02	74.3190
633.10	74.3229
634.78	83.8025
635.90	90.4453
636.97	93.3249
645.85	64.3925
646.12	66.2949
656.30	49.1830
657.75	63.5075
657.90	0.0000
661.65	70.6306
661.65	70.6306
664.57	0.0000
666.33	78.1296
666.33	78.1296
675.00	66.2929
677.61	59.6432
685.20	62.7609
692.80	78.4945
695.00	65.9663
696.49	67.9543
696.49	67.9543
697.00	85.4498
697.49	86.4404
698.33	86.4751
698.50	90.3685
699.00	90.3912
702.63	66.2054
706.10	74.1148
706.58	0.0000
706.67	77.0616
709.31	60.5544
711.68	72.3541
713.82	64.5965
717.42	65.6849
720.50	65.4525
721.93	0.0000
722.20	67.1405
722.78	65.5208
722.78	65.5208
722.89	65.5241
722.95	65.5257
723.30	68.8140
724.18	70.4804
727.18	69.9218
733.00	59.2456
735.90	63.2797
739.58	53.4806
742.81	71.4129
744.21	60.5398
747.13	56.6451
751.79	70.7053
752.31	70.7209
753.82	53.8247
755.35	54.8577
756.15	51.8845
756.87	57.8896
763.93	84.1025
765.79	56.1135
766.42	59.1368
766.84	53.1320
776.49	63.4245
778.00	61.4512
778.57	65.4967
778.89	62.4829
783.80	62.6161
785.46	53.5642
792.07	67.9062

795.84	56.8490
796.30	61.9367
798.80	84.3637
801.93	61.0664
805.60	61.1616
810.29	71.4954
810.76	71.5090
815.85	57.3303
817.79	60.4505
818.51	61.4927
819.60	57.4191
826.30	61.6919
828.27	0.0000
831.60	44.6526
831.96	48.0942
834.83	70.1632
836.80	0.0000
846.75	50.8040
848.13	47.7205
856.28	0.0000
856.80	67.6660
860.37	59.4228
867.32	62.7231
867.82	55.2664
871.10	53.3944
873.19	48.1989
874.81	57.6667
875.33	0.0000
876.40	48.2596
879.36	44.1144
880.27	42.0293
880.51	40.9824
881.50	45.2025
883.24	47.3379
884.67	47.3643
889.25	60.1005
896.60	63.4438
898.02	63.4790
899.00	51.8603
903.28	36.3465
911.07	47.8477
911.07	47.8477
911.07	47.8477
919.63	35.0495
920.93	45.8912
925.00	51.3059
925.24	51.3106
926.50	38.5014
935.52	57.9472
937.48	64.4326
944.10	54.9010
946.00	53.8623
949.00	43.1377
962.29	41.5415
964.01	40.1210
966.15	40.1526
968.20	40.1824
969.11	40.1950
969.11	40.1950
969.11	40.1950
977.42	45.4000
980.50	42.2683
983.50	51.3225
989.30	43.7686
996.32	74.5925
1001.03	54.9377
1001.68	52.7520
1004.76	70.5959
1021.30	0.0000
1024.50	0.0000
1034.80	55.5835
1036.00	53.7520
1037.82	47.2937
1038.57	49.1613
1038.76	0.0000
1045.16	43.6934
1046.59	43.7144
1048.07	49.3209

1050.47	43.7718
1050.47	43.7718
1062.04	42.0721
1063.62	43.0295
1076.63	34.7598
1077.35	40.4070
1078.86	46.0671
1085.78	40.5190
1099.22	36.9100
1112.02	42.7661
1112.84	37.4809
1115.52	52.1920
1120.29	52.2701
1120.29	52.2701
1120.29	52.2701
1120.29	52.2701
1120.51	52.2746
1121.28	57.1899
1124.00	0.0000
1129.67	52.5629
1131.51	0.0000
1147.95	0.0000
1167.94	41.5880
1173.22	47.4688
1175.09	46.5254
1177.93	46.5664
1189.05	44.7777
1204.90	60.6402
1205.75	0.0000
1213.00	58.8257
1221.42	52.0942
1230.97	65.0547
1235.34	70.0726
1236.41	0.0000
1238.25	62.2284
1246.25	76.2355
1260.41	0.0000
1271.85	42.8880
1274.45	44.9158
1274.54	44.9176
1291.56	39.1174
1298.22	0.0000
1312.09	32.2813
1325.50	33.4136
1325.50	33.4136
1332.49	28.4056
1333.61	32.4740
1360.21	28.6209
1362.66	0.0000
1365.15	22.5174
1368.21	23.5606
1368.53	0.0000
1376.25	24.6377
1384.27	27.7767
1394.10	26.8178
1395.20	34.0474
1407.95	24.8447
1434.06	15.6335
1436.60	21.9015
1457.56	0.0000
1460.81	9.4446
1489.15	27.4790
1509.49	19.1199
1596.49	23.2422
1620.62	13.0894
1678.03	0.0000
1691.02	9.5002
1691.02	9.5002
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	77.3270
1771.40	37.7064
1791.20	0.0000
1808.65	8.7705

1836.01

10.7809

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148001

Total Uranium Activity	4.5309E+00	ug/g
Total Uranium Counting Unc.	7.3745E+00	ug/g
Total Uranium Tpu	3.7625E-06	ug/g
Total Uranium Mda	3.5153E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148001
*  ANALYST       : MXR1                             DETECTOR    : GAM02
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 15:48:46.56          SAMPLE ALQT  : 130.860 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.408E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.431E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.039E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.466E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:50:13.83

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148002.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:49:14
Sample ID          : G244148002          Sample quantity  : 1.24670E+02 GRAM
Detector name      : GAM06              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.18  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	62.89*	84	348	0.93	125.77	122	7	1.16E-02	39.7	
2	1	74.57*	391	476	1.38	149.14	144	21	5.42E-02	10.9	1.80E+00
3	1	76.91*	538	375	1.14	153.83	144	21	7.48E-02	7.8	
4	0	87.79	275	649	3.34	175.58	170	12	3.83E-02	19.5	
5	0	92.76*	300	444	1.43	185.52	182	10	4.17E-02	14.9	
6	0	185.73*	251	296	1.23	371.46	367	10	3.48E-02	14.8	
7	0	209.03	106	264	1.16	418.06	413	10	1.47E-02	30.4	
8	4	238.41*	1066	218	1.11	476.83	472	17	1.48E-01	3.9	1.07E+00
9	4	241.36	224	252	1.69	482.73	472	17	3.12E-02	17.0	
10	0	269.65	171	255	1.52	539.30	532	14	2.37E-02	21.3	
11	0	294.97	378	176	1.35	589.93	585	10	5.26E-02	8.3	
12	0	300.24*	43	150	1.29	600.48	596	9	6.02E-03	55.1	
13	0	328.11	26	136	1.09	656.23	651	7	3.57E-03	78.0	
14	0	338.20*	248	141	1.46	676.39	670	13	3.44E-02	12.2	
15	0	351.62*	582	133	1.46	703.25	698	11	8.09E-02	5.7	
16	0	462.68	44	102	1.40	925.35	921	10	6.08E-03	45.8	
17	0	510.55*	122	110	2.06	1021.09	1014	16	1.69E-02	24.4	
18	0	582.72*	331	83	1.57	1165.43	1158	13	4.60E-02	8.1	
19	0	609.13*	423	81	1.60	1218.25	1212	12	5.88E-02	6.5	
20	0	661.58	189	91	1.42	1323.15	1316	12	2.63E-02	12.4	
21	0	727.40	95	79	1.94	1454.79	1445	20	1.32E-02	25.3	
22	0	794.45	47	40	1.30	1588.89	1584	10	6.53E-03	29.1	
23	0	860.14	62	29	1.85	1720.28	1714	12	8.57E-03	21.8	
24	0	910.79*	202	32	1.57	1821.58	1815	13	2.80E-02	9.4	
25	0	934.09	31	30	1.32	1868.18	1862	11	4.35E-03	38.3	
26	1	964.11	47	56	2.12	1928.23	1918	26	6.57E-03	33.3	3.05E+00
27	1	968.64	97	35	1.88	1937.28	1918	26	1.34E-02	16.2	
28	0	1120.32	107	38	1.97	2240.63	2234	15	1.48E-02	15.8	
29	0	1460.35*	685	30	2.08	2920.69	2913	17	9.52E-02	4.3	
30	0	1764.48	95	4	1.73	3528.96	3521	15	1.33E-02	11.1	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:50:16

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:49:14
Sample ID        : G244148002             Sample quantity  : 124.67 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA6                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.18    0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance : 1.50 keV               Half life ratio   : 8.00
Errors propagated: Yes                     Systematic Error  : 0.00 %
Efficiency type  : Empirical               Efficiencies at   : Peak Energy
Abundance limit  : 75.00                  WTM error limit   : 3.00

```

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.009E+01	2.172E+00	6.318E-01	4.179E-02	31.796
CD-109	+	88.03	*	4.396E+00	1.766E+00	1.634E+00	1.613E-01	2.690
SN-126	+	64.28		9.741E-01	7.871E-01	1.072E+00	1.649E-01	0.909
	+	86.94		1.794E+00	1.023E+00	6.752E-01	2.810E-01	2.656
	+	87.57	*	4.314E-01	1.733E-01	1.612E-01	1.586E-02	2.676
CS-135	+	268.24	*	8.060E-01	3.490E-01	2.815E-01	2.188E-02	2.863
BA-137M	+	661.65	*	3.266E-01	8.262E-02	7.093E-02	3.503E-03	4.604
CS-137	+	661.65	*	3.452E-01	8.736E-02	7.498E-02	3.725E-03	4.604
TL-208		277.35		5.518E-01	4.739E-01	7.838E-01	8.348E-02	0.704
	+	510.84		7.057E-01	3.521E-01	2.432E-01	2.441E-02	2.901
	+	583.14	*	5.481E-01	9.487E-02	7.506E-02	4.744E-03	7.301
	+	860.37		9.690E-01	4.288E-01	4.541E-01	3.472E-02	2.134
BI-211		72.87		1.565E+01	4.812E+00	7.596E+00	6.820E-01	2.060
	+	351.07	*	4.177E+00	5.503E-01	4.123E-01	2.661E-02	10.131
PB-212	+	74.81		2.684E+00	6.828E-01	7.060E-01	9.178E-02	3.802
	+	77.11		2.080E+00	3.764E-01	3.982E-01	3.635E-02	5.223
	+	87.30		1.995E+00	8.262E-01	7.479E-01	1.048E-01	2.668
	+	238.63	*	1.647E+00	1.758E-01	1.123E-01	8.277E-03	14.672
	+	300.09		1.044E+00	1.154E+00	1.294E+00	1.083E-01	0.807
PO-212	+	74.81		2.684E+00	6.828E-01	7.060E-01	9.178E-02	3.802
	+	77.11		2.080E+00	3.764E-01	3.982E-01	3.635E-02	5.223
	+	87.30		1.995E+00	8.262E-01	7.479E-01	1.048E-01	2.668
	+	115.19		2.327E-01	4.094E+00	6.760E+00	4.461E-01	0.034
	+	238.63	*	1.647E+00	1.758E-01	1.123E-01	8.277E-03	14.672
	+	300.09		1.044E+00	1.154E+00	1.294E+00	1.083E-01	0.807
BI-214	+	609.31	*	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
	+	1120.29		1.757E+00	5.793E-01	4.787E-01	4.372E-02	3.670
	+	1764.49		2.165E+00	4.986E-01	2.746E-01	1.608E-02	7.886
PB-214	+	74.81		4.625E+00	1.147E+00	1.217E+00	1.421E-01	3.802
	+	77.11		3.565E+00	7.001E-01	6.826E-01	8.117E-02	5.223
	+	87.30		3.418E+00	1.398E+00	1.281E+00	1.599E-01	2.668
	+	241.98		2.084E+00	7.282E-01	6.763E-01	5.487E-02	3.082
	+	295.21		1.596E+00	2.993E-01	2.807E-01	2.427E-02	5.687
	+	351.92	*	1.453E+00	2.059E-01	1.299E-01	1.077E-02	11.189

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		4.625E+00	1.147E+00	1.217E+00	1.421E-01	3.802
	+	77.11		3.565E+00	7.001E-01	6.826E-01	8.117E-02	5.223
	+	87.30		3.418E+00	1.398E+00	1.281E+00	1.599E-01	2.668
	+	241.98		2.084E+00	7.282E-01	6.763E-01	5.487E-02	3.082
	+	295.21		1.596E+00	2.993E-01	2.807E-01	2.427E-02	5.687
	+	351.92	*	1.453E+00	2.059E-01	1.299E-01	1.077E-02	11.189
PO-216	+	74.81		2.684E+00	6.828E-01	7.060E-01	9.178E-02	3.802
	+	77.11		2.080E+00	3.764E-01	3.982E-01	3.635E-02	5.223
	+	87.30		1.995E+00	8.262E-01	7.479E-01	1.048E-01	2.668
	+	238.63	*	1.647E+00	1.758E-01	1.123E-01	8.277E-03	14.672
	+	300.09		1.044E+00	1.154E+00	1.294E+00	1.083E-01	0.807
	+	74.81		4.625E+00	1.147E+00	1.217E+00	1.421E-01	3.802
PO-218	+	77.11		3.565E+00	7.001E-01	6.826E-01	8.117E-02	5.223
	+	87.30		3.418E+00	1.398E+00	1.281E+00	1.599E-01	2.668
	+	241.98		2.084E+00	7.282E-01	6.763E-01	5.487E-02	3.082
	+	295.21		1.596E+00	2.993E-01	2.807E-01	2.427E-02	5.687
	+	351.92	*	1.453E+00	2.059E-01	1.299E-01	1.077E-02	11.189
	+	240.98	*	3.952E+00	1.363E+00	1.278E+00	7.490E-02	3.093
RA-224	+	609.31	*	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
RA-226	+	1120.29		1.757E+00	5.793E-01	4.787E-01	4.372E-02	3.670
	+	1764.49		2.165E+00	4.986E-01	2.746E-01	1.608E-02	7.886
	+	338.32		1.956E+00	9.290E-01	4.457E-01	1.817E-01	4.388
	+	911.07	*	1.499E+00	3.209E-01	2.339E-01	2.390E-02	6.407
	+	969.11		1.269E+00	5.035E-01	3.686E-01	8.407E-02	3.442
	+	338.32		1.956E+00	9.290E-01	4.457E-01	1.817E-01	4.388
RA-228	+	911.07	*	1.499E+00	3.209E-01	2.339E-01	2.390E-02	6.407
	+	969.11		1.269E+00	5.035E-01	3.686E-01	8.407E-02	3.442
	+	74.81		2.728E+00	6.461E-01	7.175E-01	6.533E-02	3.802
	+	77.11		2.113E+00	3.825E-01	4.046E-01	3.694E-02	5.223
	+	87.30		2.028E+00	8.147E-01	7.601E-01	7.462E-02	2.668
	+	238.63	*	1.674E+00	1.786E-01	1.141E-01	8.411E-03	14.671
TH-228	+	300.09		1.061E+00	1.326E+00	1.315E+00	7.752E-01	0.807
	+	609.31	*	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
	+	1120.29		1.757E+00	5.793E-01	4.787E-01	4.372E-02	3.670
	+	1764.49		2.165E+00	4.986E-01	2.746E-01	1.608E-02	7.886
	+	338.32		1.956E+00	4.903E-01	4.457E-01	2.622E-02	4.388
	+	911.07	*	1.499E+00	3.209E-01	2.339E-01	2.390E-02	6.407
TH-232	+	969.11		1.269E+00	5.035E-01	3.686E-01	8.407E-02	3.442
	+	63.29	*	2.461E+00	2.003E+00	2.682E+00	4.875E-01	0.918
	+	92.38		3.052E+00	1.066E+00	9.516E-01	1.743E-01	3.207
	+	609.31	*	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
	+	1120.29		1.757E+00	5.793E-01	4.787E-01	4.372E-02	3.670
	+	1764.49		2.165E+00	4.986E-01	2.746E-01	1.608E-02	7.886
TH-234	+	86.50	*	1.267E+00	5.722E-01	4.855E-01	1.108E-01	2.609
	+	95.87		-2.400E-01	1.223E+00	1.760E+00	4.331E-01	-0.136
	+	63.29	*	2.461E+00	2.003E+00	2.682E+00	4.875E-01	0.918
	+	92.38		3.052E+00	9.493E-01	9.516E-01	8.651E-02	3.207
	+	74.67	*	4.352E-01	1.030E-01	1.149E-01	1.037E-02	3.789
	+	86.72		4.751E+01	1.909E+01	1.793E+01	1.752E+00	2.649

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-2.489E+00	4.456E+00	7.165E+00	4.593E-01	-0.347
		142.18		8.219E+00	2.062E+01	3.373E+01	1.926E+00	0.244
ANH-511	+	511.00	*	1.524E-01	7.497E-02	5.256E-02	2.938E-03	2.900

---- 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	*	-2.193E-01	4.011E-01	6.345E-01	4.191E-02	-0.346
NA-22		1274.54	*	1.930E-02	5.331E-02	9.025E-02	5.573E-03	0.214
NA-24		1368.53	*	-1.304E-01	5.331E-02	Half-Life	too short	
AL-26		1129.67		-9.319E-01	1.892E+00	2.768E+00	1.724E-01	-0.337
		1808.65	*	-1.022E-02	2.589E-02	3.790E-02	2.177E-03	-0.270
TI-44		67.85		-1.217E-02	5.960E-02	9.563E-02	8.534E-03	-0.127
	+	78.38	*	3.838E-01	6.946E-02	9.212E-02	8.468E-03	4.166
SC-46		889.25	*	-7.398E-03	4.655E-02	7.638E-02	5.475E-03	-0.097
	+	1120.51		3.034E-01	9.798E-02	1.549E-01	9.740E-03	1.959
V-48		944.10		-4.710E-01	1.049E+00	1.659E+00	1.184E-01	-0.284
		983.50	*	3.217E-02	7.280E-02	1.267E-01	8.872E-03	0.254
		1312.09		2.951E-02	9.215E-02	1.562E-01	9.747E-03	0.189
CR-51		320.08	*	-7.069E-01	4.698E-01	7.105E-01	4.681E-02	-0.995
MN-52		744.21		2.991E-02	2.883E-01	4.687E-01	2.673E-02	0.064
		848.13		-3.938E+00	8.899E+00	1.425E+01	9.597E-01	-0.276
	+	935.52		5.211E-01	4.009E-01	6.489E-01	4.649E-02	0.803
		1246.25		-3.260E+00	9.049E+00	1.417E+01	8.638E-01	-0.230
		1333.61		-7.005E-01	6.579E+00	1.044E+01	6.560E-01	-0.067
		1434.06	*	1.820E-02	3.004E-01	4.905E-01	3.087E-02	0.037
MN-54		834.83	*	6.659E-03	4.139E-02	7.019E-02	4.633E-03	0.095
CO-56		846.75	*	-2.827E-04	4.561E-02	7.616E-02	5.120E-03	-0.004
		977.42		1.131E+00	2.973E+00	5.045E+00	3.544E-01	0.224
		1037.82		6.541E-02	3.048E-01	5.163E-01	3.790E-02	0.127
		1175.09		-4.409E+00	3.423E+00	4.191E+00	2.482E-01	-1.052
		1238.25		1.628E-01	1.109E-01	2.021E-01	1.299E-02	0.806
		1360.21		-1.020E+00	1.122E+00	1.550E+00	9.755E-02	-0.658
		1771.40		-1.322E+00	4.252E-01	3.226E-01	1.884E-02	-4.096
CO-57		122.06	*	-1.841E-03	3.136E-02	5.146E-02	3.143E-03	-0.036
		136.48		-8.240E-02	2.512E-01	4.061E-01	2.729E-02	-0.203
CO-58		810.76	*	-7.660E-03	4.455E-02	7.342E-02	4.688E-03	-0.104
FE-59		142.65		-5.065E-01	3.250E+00	5.198E+00	2.965E-01	-0.097
		192.34		-5.268E-01	1.213E+00	1.852E+00	2.168E-01	-0.284
		1099.22	*	-6.200E-02	9.615E-02	1.457E-01	1.069E-02	-0.425
		1291.56		-5.767E-03	1.376E-01	2.229E-01	1.725E-02	-0.026
CO-60		1173.22		3.208E-02	5.325E-02	9.227E-02	5.459E-03	0.348
		1332.49	*	5.143E-03	4.703E-02	7.691E-02	4.832E-03	0.067
ZN-65		1115.52	*	-4.367E-02	1.129E-01	1.493E-01	9.459E-03	-0.292
GE-68		1077.35	*	-7.695E-01	1.414E+00	2.188E+00	1.434E-01	-0.352
AS-73		53.44	*	-3.301E-01	1.195E+00	1.988E+00	1.818E-01	-0.166
AS-74		595.88	*	6.718E-03	1.138E-01	1.862E-01	9.902E-03	0.036
		634.78		-1.004E-02	4.094E-01	6.626E-01	3.387E-02	-0.015

----- 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		-2.859E+00	6.930E+00	9.979E+00	1.068E+00	-0.286
		96.73		-5.901E-01	1.015E+00	1.425E+00	1.928E-01	-0.414
		121.11		4.683E-02	1.655E-01	2.751E-01	2.604E-02	0.170
		136.00		-6.584E-03	4.715E-02	7.684E-02	4.529E-03	-0.086
		198.60		-1.512E+00	2.283E+00	3.435E+00	2.398E-01	-0.440
		264.65	*	2.605E-02	5.885E-02	8.491E-02	5.094E-03	0.307
		279.53		-6.365E-02	1.342E-01	2.163E-01	1.389E-02	-0.294
		303.91		-2.499E+00	2.718E+00	3.569E+00	3.442E-01	-0.700
		400.65		1.362E-01	3.048E-01	5.197E-01	4.655E-02	0.262
BR-77	+	87.88		1.285E+03	5.164E+02	5.623E+02	5.549E+01	2.286
		200.40		-6.446E+01	2.695E+02	4.308E+02	2.427E+01	-0.150
	+	239.00		3.585E+02	3.471E+01	5.927E+01	3.468E+00	6.049
		249.79		-2.758E+01	1.067E+02	1.684E+02	9.927E+00	-0.164
		281.68		-1.862E+02	1.457E+02	2.294E+02	1.369E+01	-0.812
		297.23		3.758E+02	1.627E+02	2.000E+02	1.194E+01	1.879
		303.76		-2.892E+02	3.111E+02	4.091E+02	2.442E+01	-0.707
		439.47		2.645E+01	2.234E+02	3.724E+02	2.095E+01	0.071
		484.57		-2.944E+02	3.477E+02	5.326E+02	2.995E+01	-0.553
		520.65	*	1.933E+01	1.571E+01	2.819E+01	1.571E+00	0.686
		574.64		-2.417E+02	3.722E+02	5.370E+02	2.904E+01	-0.450
		578.91		7.152E+01	1.498E+02	2.230E+02	1.202E+01	0.321
		585.48		1.574E+03	3.852E+02	7.048E+02	3.781E+01	2.233
		755.35		-1.837E+02	2.696E+02	4.035E+02	2.344E+01	-0.455
		817.79		-5.345E+00	2.006E+02	3.350E+02	2.153E+01	-0.016
SR-82		698.33		4.215E+00	4.431E+01	7.207E+01	3.799E+00	0.058
		776.49	*	-4.036E-01	4.046E-01	6.109E-01	3.675E-02	-0.661
		1395.20		-6.561E+00	1.052E+01	1.491E+01	9.392E-01	-0.440
RB-83		520.41	*	9.508E-02	7.727E-02	1.387E-01	7.726E-03	0.686
		529.64		1.065E-01	1.183E-01	2.076E-01	1.152E-02	0.513
		552.65		-1.689E-01	2.450E-01	3.781E-01	2.075E-02	-0.447
RB-84		881.50	*	-2.334E-02	8.125E-02	1.316E-01	9.324E-03	-0.177
KR-85		513.99	*	1.666E+01	9.335E+00	1.548E+01	8.646E-01	1.076
SR-85		513.99	*	8.636E-02	4.839E-02	8.024E-02	4.482E-03	1.076
RB-86		1076.63	*	-1.755E-01	9.002E-01	1.451E+00	9.514E-02	-0.121
Y-88		898.02		-1.301E-02	4.518E-02	7.299E-02	5.336E-03	-0.178
		1836.01	*	-1.255E-02	3.505E-02	5.295E-02	3.009E-03	-0.237
ZR-88		392.90	*	-1.991E-03	3.845E-02	6.372E-02	3.536E-03	-0.031
Y-91		1204.90	*	2.122E+01	2.215E+01	3.946E+01	2.367E+00	0.538
NB-94		702.63	*	-2.342E-02	4.171E-02	6.398E-02	3.398E-03	-0.366
		871.10		-1.125E-02	3.783E-02	6.122E-02	4.270E-03	-0.184
NB-95		765.79	*	6.729E-02	5.358E-02	9.465E-02	5.595E-03	0.711
NB-95M		235.69	*	4.577E-01	2.025E-01	3.141E-01	2.374E-02	1.457
ZR-95		724.18		8.428E-02	1.348E-01	2.008E-01	1.329E-02	0.420
		756.15	*	-6.370E-03	8.463E-02	1.349E-01	9.511E-03	-0.047
NB-97		657.90	*	1.918E-01	8.463E-02	Half-Life	too short	
		1024.50		1.677E+00	8.463E-02	Half-Life	too short	
ZR-97		254.15		-1.956E+01	8.463E-02	Half-Life	too short	
		355.39		5.927E+00	8.463E-02	Half-Life	too short	
		507.63	*	2.058E+01	8.463E-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			9.772E+00	8.463E-02	Half-Life	too short	
	1021.30			9.835E-01	8.463E-02	Half-Life	too short	
	1147.95			7.632E+00	8.463E-02	Half-Life	too short	
	1362.66			3.258E+00	8.463E-02	Half-Life	too short	
	1750.46			-1.216E+01	8.463E-02	Half-Life	too short	
MO-99	140.51			-2.182E+01	4.074E+01	6.456E+01	1.739E+01	-0.338
	181.06			1.807E+01	2.881E+01	4.227E+01	7.203E+00	0.428
	366.43			1.192E+01	1.270E+02	2.130E+02	1.222E+01	0.056
	739.58	*		-1.229E+01	1.598E+01	2.331E+01	3.198E+00	-0.527
	778.00			-6.601E+01	4.701E+01	6.762E+01	4.079E+00	-0.976
TC-99M	140.51	*		-4.346E+11	4.701E+01	Half-Life	too short	
RH-101	127.23			2.392E-03	3.964E-02	6.526E-02	3.897E-03	0.037
	198.01	*		-6.932E-03	4.125E-02	6.361E-02	3.573E-03	-0.109
	325.23			3.922E-01	2.987E-01	4.765E-01	2.824E-02	0.823
RH-102	418.52			1.206E-01	3.326E-01	5.643E-01	3.161E-02	0.214
	475.06	*		2.078E-02	3.624E-02	6.198E-02	3.490E-03	0.335
	631.29			-1.408E-02	5.847E-02	9.265E-02	4.755E-03	-0.152
	697.49			4.016E-02	9.715E-02	1.620E-01	8.528E-03	0.248
	766.84			1.107E-01	1.346E-01	2.305E-01	1.365E-02	0.480
	1046.59			-2.883E-02	1.227E-01	1.971E-01	1.325E-02	-0.146
	1112.84			7.667E-02	2.677E-01	3.954E-01	2.507E-02	0.194
RU-103	497.08	*		1.160E-02	4.809E-02	8.044E-02	1.010E-02	0.144
+	610.33			1.456E+01	2.921E+00	3.610E+00	5.494E-01	4.033
RH-106	511.85	+		7.629E-01	3.752E-01	5.211E-01	2.912E-02	1.464
	621.84	*		-2.180E-01	3.740E-01	5.745E-01	6.575E-02	-0.379
	1050.47			6.799E-02	2.482E+00	4.107E+00	2.752E-01	0.017
RU-106	511.85	+		7.629E-01	3.752E-01	5.211E-01	2.912E-02	1.464
	621.84	*		-2.180E-01	3.733E-01	5.745E-01	2.979E-02	-0.379
	1050.47			6.799E-02	2.482E+00	4.107E+00	2.752E-01	0.017
AG-108M	433.93	*		1.504E-02	3.967E-02	6.723E-02	4.123E-03	0.224
	614.37			4.572E-02	5.072E-02	7.857E-02	4.531E-03	0.582
	722.95			-1.663E-02	5.398E-02	7.167E-02	4.312E-03	-0.232
AG-110M	657.75	*		1.188E-02	5.052E-02	7.254E-02	3.916E-03	0.164
	677.61			-9.398E-03	3.771E-01	6.082E-01	3.335E-02	-0.015
	706.67			5.805E-02	2.460E-01	4.051E-01	2.319E-02	0.143
	763.93			-2.982E-01	2.198E-01	3.094E-01	1.932E-02	-0.964
	884.67			2.096E-02	5.710E-02	9.841E-02	7.334E-03	0.213
	937.48			8.738E-02	1.326E-01	2.084E-01	1.570E-02	0.419
	1384.27			-8.689E-02	1.977E-01	3.002E-01	1.989E-02	-0.289
IN-111	171.28			-2.469E-01	1.517E+00	2.448E+00	1.331E-01	-0.101
	245.39	*		1.892E+00	1.786E+00	2.692E+00	1.583E-01	0.703
IN-113M	391.69	*		4.957E-03	5.549E-02	9.273E-02	5.519E-03	0.053
SN-113	391.69	*		4.957E-03	5.549E-02	9.273E-02	5.519E-03	0.053
IN-114M	190.27	*		2.581E-01	2.430E-01	3.664E-01	2.039E-02	0.704
CD-115	260.90			-1.591E+02	2.142E+02	3.273E+02	1.941E+01	-0.486
	492.35			2.427E+01	5.977E+01	1.012E+02	5.682E+00	0.240
	527.90	*		7.623E+00	1.651E+01	2.807E+01	1.559E+00	0.272
SN-117M	156.02			-2.650E+00	2.805E+00	4.384E+00	2.422E-01	-0.605
	158.56	*		-7.929E-03	6.534E-02	1.060E-01	5.821E-03	-0.075

## ---- 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	*	-3.940E-01	3.065E+00	4.952E+00	2.698E-01	-0.080	
	692.80		3.701E+01	6.930E+01	1.169E+02	6.103E+00	0.317	
I-123	159.00	*	3.222E-01	6.930E+01	Half-Life	too short		
	528.96		2.124E+03	6.930E+01	Half-Life	too short		
TE-123M	159.00	*	4.275E-04	3.208E-02	5.234E-02	2.915E-03	0.008	
I-124	602.71	*	5.768E-01	1.116E+00	1.656E+00	8.752E-02	0.348	
	722.78		-1.979E+00	6.708E+00	8.925E+00	4.908E-01	-0.222	
	1325.50		2.767E+01	5.033E+01	8.723E+01	5.468E+00	0.317	
	1376.25		4.243E+01	4.384E+01	7.941E+01	4.999E+00	0.534	
	1509.49		2.334E+01	2.407E+01	4.385E+01	2.744E+00	0.532	
	1691.02		2.897E+00	5.561E+00	1.004E+01	6.039E-01	0.288	
SB-124	602.71		2.854E-02	5.524E-02	8.195E-02	4.333E-03	0.348	
	645.85		1.402E-01	5.297E-01	8.811E-01	5.184E-02	0.159	
	709.31		1.403E+00	3.038E+00	5.117E+00	2.750E-01	0.274	
	713.82		-2.135E+00	1.806E+00	2.518E+00	2.517E-01	-0.848	
	722.78		-1.420E-01	4.812E-01	6.402E-01	3.705E-02	-0.222	
	+ 968.20		1.322E+01	4.393E+00	7.500E+00	5.294E-01	1.763	
	1045.16		1.184E+00	2.468E+00	4.300E+00	2.893E-01	0.275	
	1325.50		2.120E+00	3.856E+00	6.684E+00	4.189E-01	0.317	
	1368.21		5.669E-01	2.004E+00	3.384E+00	4.101E-01	0.168	
	1436.60		4.380E+00	4.134E+00	7.773E+00	4.892E-01	0.563	
	1691.02	*	4.902E-02	9.410E-02	1.699E-01	1.103E-02	0.288	
SB-125	427.89	*	5.739E-02	1.116E-01	1.907E-01	1.119E-02	0.301	
	+ 463.38		4.940E-01	4.537E-01	6.235E-01	4.128E-02	0.792	
	600.56		2.035E-01	2.249E-01	3.895E-01	2.445E-02	0.522	
	635.90		-9.800E-02	3.022E-01	4.750E-01	2.949E-02	-0.206	
TE-125M	109.28	*	1.384E+00	1.098E+01	1.820E+01	1.655E+00	0.076	
I-126	388.63		1.999E-01	2.625E-01	4.555E-01	2.538E-02	0.439	
	666.33	*	1.135E-01	2.484E-01	3.670E-01	1.828E-02	0.309	
	753.82		4.475E-01	1.781E+00	2.933E+00	1.700E-01	0.153	
SB-126	223.80		-8.345E-01	5.222E+00	8.339E+00	4.817E-01	-0.100	
	278.60		2.952E+00	3.145E+00	5.406E+00	3.225E-01	0.546	
	296.50		1.426E+01	3.543E+00	4.776E+00	2.853E-01	2.985	
	414.70		-1.258E-01	9.149E-02	1.366E-01	7.646E-03	-0.921	
	415.30		-1.335E+00	7.657E+00	1.255E+01	7.021E-01	-0.106	
	555.20		-4.003E-01	4.891E+00	7.938E+00	4.349E-01	-0.050	
	573.80		-3.857E-01	1.389E+00	2.153E+00	1.165E-01	-0.179	
	593.00		-3.194E-01	1.126E+00	1.789E+00	9.536E-02	-0.179	
	656.30		-2.344E+00	4.769E+00	6.224E+00	3.097E-01	-0.377	
	666.33		4.755E-02	1.040E-01	1.537E-01	7.655E-03	0.309	
	675.00		-9.009E-02	2.523E+00	4.066E+00	2.057E-01	-0.022	
	695.00		-4.786E-02	1.052E-01	1.633E-01	8.560E-03	-0.293	
	697.00		2.186E-01	3.588E-01	6.073E-01	3.194E-02	0.360	
	720.50	*	8.838E-02	1.872E-01	2.774E-01	1.520E-02	0.319	
	856.80		-2.545E-01	7.348E-01	1.012E+00	6.910E-02	-0.251	
	989.30		-8.075E-01	1.339E+00	2.052E+00	1.432E-01	-0.394	
	1034.80		5.696E-01	9.651E+00	1.605E+01	1.088E+00	0.035	
	1213.00		-4.321E+00	5.761E+00	8.688E+00	5.229E-01	-0.497	
SB-127	61.10		1.154E+02	9.673E+01	1.495E+02	1.770E+01	0.772	



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	252.40			1.016E-02	6.085E+00	9.746E+00	4.059E+00	0.001
	290.80			-1.435E+01	3.256E+01	4.610E+01	4.448E+00	-0.311
	411.60			3.249E+00	1.682E+01	2.823E+01	4.104E+00	0.115
	444.90			-9.648E+00	1.351E+01	2.108E+01	2.324E+00	-0.458
	473.00			-1.077E+00	2.573E+00	4.113E+00	4.691E-01	-0.262
	543.00			-2.986E+01	2.340E+01	3.354E+01	4.380E+00	-0.890
	603.60			-9.878E+00	2.107E+01	2.811E+01	3.043E+00	-0.351
	685.20	*		9.461E-01	1.932E+00	3.256E+00	3.070E-01	0.291
	698.50			1.935E+00	2.326E+01	3.779E+01	5.488E+00	0.051
	722.20			-3.582E+00	4.618E+01	6.339E+01	5.933E+00	-0.057
	783.80			4.558E+00	4.779E+00	8.618E+00	9.599E-01	0.529
XE-127	57.60			1.669E+00	8.580E+00	1.348E+01	1.241E+00	0.124
	145.22			4.816E-01	8.110E-01	1.358E+00	7.695E-02	0.355
	172.10			3.066E-02	1.451E-01	2.380E-01	1.295E-02	0.129
	202.84	*		4.979E-02	6.213E-02	9.674E-02	5.465E-03	0.515
	374.96			9.029E-02	2.213E-01	3.782E-01	2.147E-02	0.239
I-131	80.18			-1.255E+01	5.954E+00	9.007E+00	8.422E-01	-1.393
	284.30			2.603E-01	1.935E+00	3.283E+00	2.171E-01	0.079
	364.48	*		4.935E-03	1.477E-01	2.468E-01	1.589E-02	0.020
	636.97			3.525E-01	1.892E+00	3.121E+00	1.838E-01	0.113
	722.89			-3.020E+00	9.948E+00	1.322E+01	7.400E-01	-0.228
TE-132	49.72			-6.713E+00	3.719E+01	6.218E+01	6.951E+00	-0.108
	111.76			-4.172E+01	4.360E+01	6.887E+01	6.783E+00	-0.606
	116.30			2.404E+00	4.032E+01	6.657E+01	6.390E+00	0.036
	228.16	*		-1.445E+00	1.097E+00	1.616E+00	2.356E-01	-0.894
BA-133	53.15			-4.131E-02	5.150E+00	8.652E+00	7.898E-01	-0.005
	79.62			-2.209E+00	1.576E+00	2.440E+00	3.805E-01	-0.905
	81.00			-2.618E-01	1.493E-01	1.756E-01	2.859E-02	-1.491
	276.40			5.057E-01	4.872E-01	7.599E-01	9.907E-02	0.666
	302.84			-1.432E-01	1.795E-01	2.445E-01	2.871E-02	-0.586
	356.01	*		9.409E-03	5.496E-02	8.097E-02	9.360E-03	0.116
	383.85			-7.248E-03	3.521E-01	5.851E-01	6.303E-02	-0.012
I-133	510.53	+		3.569E+00	3.521E-01	Half-Life	too short	
	529.87	*		8.948E-03	3.521E-01	Half-Life	too short	
	706.58			3.306E-01	3.521E-01	Half-Life	too short	
	856.28			-5.920E-01	3.521E-01	Half-Life	too short	
	875.33			-4.039E-02	3.521E-01	Half-Life	too short	
	1236.41			1.573E+00	3.521E-01	Half-Life	too short	
	1298.22			-2.559E-02	3.521E-01	Half-Life	too short	
CS-134	475.35			1.030E+00	2.380E+00	4.034E+00	2.271E-01	0.255
	563.23			-3.289E-02	4.106E-01	6.660E-01	3.717E-02	-0.049
	569.32			1.954E-01	2.426E-01	4.125E-01	2.316E-02	0.474
	604.70			-1.646E-02	4.872E-02	6.593E-02	3.502E-03	-0.250
	795.84	+	*	1.131E-01	6.619E-02	1.074E-01	6.760E-03	1.053
	801.93			-3.833E-01	4.732E-01	6.896E-01	4.368E-02	-0.556
	1038.57			1.387E+00	3.951E+00	6.784E+00	4.586E-01	0.205
	1167.94			-4.979E-02	2.963E+00	4.848E+00	2.888E-01	-0.010
	1365.15			4.619E-01	1.306E+00	2.234E+00	1.524E-01	0.207
I-135	288.45			-2.158E+10	1.306E+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
	417.63			4.347E+11	1.306E+00	Half-Life too short		
	546.56			2.020E+11	1.306E+00	Half-Life too short		
	836.80			1.178E+11	1.306E+00	Half-Life too short		
	1038.76			1.308E+11	1.306E+00	Half-Life too short		
	1124.00			9.396E+11	1.306E+00	Half-Life too short		
	1131.51			4.630E+10	1.306E+00	Half-Life too short		
	1260.41	*		-1.384E+10	1.306E+00	Half-Life too short		
	1457.56			8.490E+12	1.306E+00	Half-Life too short		
	1678.03			-9.904E+10	1.306E+00	Half-Life too short		
	1706.46			2.259E+11	1.306E+00	Half-Life too short		
	1791.20			8.756E+10	1.306E+00	Half-Life too short		
CS-136	66.91			-1.029E+00	1.202E+00	1.681E+00	2.624E-01	-0.612
	86.29			2.916E+00	1.692E+00	2.571E+00	3.502E-01	1.134
	153.22			1.188E+00	8.228E-01	1.415E+00	9.949E-02	0.840
	163.89			6.270E-01	1.315E+00	2.185E+00	1.520E-01	0.287
	176.55			-2.593E-01	4.583E-01	7.249E-01	4.515E-02	-0.358
	273.65			-1.042E+00	7.300E-01	8.808E-01	5.950E-02	-1.183
	340.57			4.666E-01	1.716E-01	2.957E-01	1.844E-02	1.578
	818.51			-4.360E-02	8.947E-02	1.429E-01	9.208E-03	-0.305
	1048.07	*		-6.027E-02	1.200E-01	1.862E-01	1.336E-02	-0.324
	1235.34			8.356E-01	7.596E-01	1.347E+00	1.367E-01	0.620
CE-139	165.85	*		1.803E-02	3.498E-02	5.819E-02	3.147E-03	0.310
BA-140	162.64			-3.668E-01	9.372E-01	1.500E+00	9.315E-02	-0.244
	304.84			-2.711E-01	1.736E+00	2.448E+00	6.688E-01	-0.111
	423.70			-8.392E-01	2.400E+00	3.857E+00	1.225E+00	-0.218
	537.32	*		3.551E-01	3.297E-01	5.516E-01	1.791E-01	0.644
LA-140	328.77		+	2.650E-01	4.137E-01	6.821E-01	4.502E-02	0.389
	432.53			6.993E-01	2.676E+00	4.502E+00	2.811E-01	0.155
	487.03			-2.984E-02	1.643E-01	2.665E-01	1.708E-02	-0.112
	751.79			-1.803E-01	2.034E+00	3.238E+00	2.292E-01	-0.056
	815.85			1.730E-01	3.795E-01	6.615E-01	5.088E-02	0.261
	867.82			2.303E+00	1.650E+00	3.009E+00	2.257E-01	0.765
	919.63			-4.293E-01	3.310E+00	5.431E+00	5.182E-01	-0.079
	925.24			6.080E-01	1.375E+00	2.338E+00	1.832E-01	0.260
	1596.49	*		-3.635E-02	1.111E-01	1.763E-01	1.088E-02	-0.206
CE-141	145.44	*		2.270E-02	7.416E-02	1.228E-01	7.244E-03	0.185
CE-143	57.37			-2.098E-04	7.416E-02	Half-Life too short		
	231.56			-2.630E-04	7.416E-02	Half-Life too short		
	293.26	*		2.007E-03	7.416E-02	Half-Life too short		
	350.59		+	5.600E-02	7.416E-02	Half-Life too short		
	490.36			-3.239E-03	7.416E-02	Half-Life too short		
	664.57			5.813E-03	7.416E-02	Half-Life too short		
	721.93			-2.118E-04	7.416E-02	Half-Life too short		
CE-144	80.11			-5.132E+00	2.514E+00	3.820E+00	3.548E-01	-1.343
	133.54	*		-2.117E-01	2.494E-01	3.921E-01	5.576E-02	-0.540
PM-144	476.78			-4.128E-02	8.334E-02	1.324E-01	9.004E-03	-0.312
	618.01			-6.656E-03	3.809E-02	6.097E-02	3.410E-03	-0.109
	696.49	*		1.945E-02	4.389E-02	7.336E-02	3.859E-03	0.265
	778.57			-1.981E+00	2.339E+00	3.587E+00	2.167E-01	-0.552

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144	696.49	*		1.319E+00	2.976E+00	4.974E+00	2.613E-01	0.265
	1489.15			6.877E+00	1.352E+01	2.367E+01	1.484E+00	0.291
PM-146	453.90	*		3.538E-02	5.325E-02	9.163E-02	7.798E-03	0.386
	633.02			6.944E-01	1.468E+00	2.455E+00	9.015E-01	0.283
	735.90			6.758E-02	1.793E-01	2.615E-01	7.283E-02	0.258
	747.13			-4.240E-02	1.040E-01	1.600E-01	1.996E-02	-0.265
ND-147	91.11			1.369E+00	5.499E-01	6.868E-01	6.845E-02	1.993
	319.41			-3.283E+00	4.295E+00	6.818E+00	4.054E-01	-0.482
	439.89			2.052E-01	7.266E+00	1.204E+01	6.776E-01	0.017
	531.02	*		1.599E-01	6.965E-01	1.161E+00	1.558E-01	0.138
PM-149	285.90	*		3.319E+01	1.514E+02	2.576E+02	3.671E+01	0.129
EU-152	121.78			-5.343E-03	9.078E-02	1.490E-01	1.170E-02	-0.036
	244.69			4.618E-01	4.344E-01	6.540E-01	3.843E-02	0.706
	344.27	*		-3.485E-02	1.320E-01	1.764E-01	1.162E-02	-0.198
	443.98			-8.246E-01	1.101E+00	1.719E+00	9.674E-02	-0.480
	778.89			-1.832E-01	2.740E-01	4.296E-01	2.594E-02	-0.426
	867.32			1.008E+00	9.547E-01	1.658E+00	1.150E-01	0.608
	+ 964.01			7.145E-01	4.786E-01	6.281E-01	4.443E-02	1.137
	1085.78			3.787E-01	4.628E-01	8.232E-01	5.355E-02	0.460
	1112.02			8.069E-02	3.621E-01	5.676E-01	3.601E-02	0.142
	1407.95			1.690E-01	2.190E-01	3.912E-01	2.464E-02	0.432
GD-153	69.67			-1.843E-01	2.350E+00	3.426E+00	3.058E-01	-0.054
	83.37			-8.420E+00	2.765E+01	2.853E+01	2.711E+00	-0.295
	97.43	*		1.627E-02	1.027E-01	1.507E-01	1.260E-02	0.108
	103.18			-3.547E-02	1.275E-01	2.084E-01	1.601E-02	-0.170
EU-154	123.07			-3.862E-03	6.429E-02	1.055E-01	1.010E-02	-0.037
	247.94			9.883E-02	4.687E-01	7.028E-01	6.743E-02	0.141
	591.81			-5.287E-01	7.387E-01	1.127E+00	1.071E-01	-0.469
	723.30			-5.476E-02	2.333E-01	3.135E-01	2.144E-02	-0.175
	756.87			2.082E-01	9.111E-01	1.495E+00	1.518E-01	0.139
	873.19			-4.003E-01	3.222E-01	4.588E-01	5.120E-02	-0.873
	996.32			-2.817E-01	4.221E-01	6.452E-01	1.098E-01	-0.437
	1004.76			1.194E-01	2.245E-01	3.920E-01	4.092E-02	0.305
	1274.45	*		5.247E-02	1.487E-01	2.515E-01	2.407E-02	0.209
EU-155	48.70			1.049E+00	3.757E+00	6.384E+00	5.346E-01	0.164
	60.01			-2.284E+00	7.076E+00	1.028E+01	9.414E-01	-0.222
	+ 86.54			5.198E-01	2.090E-01	2.233E-01	2.195E-02	2.328
	105.31	*		8.557E-02	1.308E-01	2.210E-01	1.677E-02	0.387
TB-160	+ 86.79			1.402E+00	5.633E-01	5.999E-01	5.863E-02	2.337
	197.04			1.923E-01	7.005E-01	1.102E+00	6.184E-02	0.174
	215.65			1.529E-01	8.786E-01	1.428E+00	8.184E-02	0.107
	298.57			1.303E-02	2.432E-01	2.413E-01	1.441E-02	0.054
	879.36	*		-1.333E-02	1.506E-01	2.487E-01	1.757E-02	-0.054
	962.29			1.141E+00	6.021E-01	1.149E+00	8.132E-02	0.993
	966.15			1.181E+00	2.972E-01	5.960E-01	4.212E-02	1.982
	1177.93			-2.061E-01	4.404E-01	6.875E-01	4.076E-02	-0.300
	1271.85			-1.153E+00	8.791E-01	1.204E+00	7.414E-02	-0.957
HO-166M	80.57			-6.671E-01	3.673E-01	4.835E-01	4.504E-02	-1.380
	+ 184.41			2.026E-01	6.102E-02	8.621E-02	4.762E-03	2.350

---- 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		-6.704E-02	1.013E-01	1.652E-01	9.860E-03	-0.406
		410.95		6.558E-02	2.861E-01	4.812E-01	2.689E-02	0.136
		711.68	*	-4.335E-02	6.594E-02	9.897E-02	5.340E-03	-0.438
		752.31		-6.477E-02	3.163E-01	4.977E-01	2.877E-02	-0.130
		810.29		-3.007E-02	6.627E-02	1.063E-01	6.749E-03	-0.283
		51.35		4.175E+00	4.513E+01	7.614E+01	6.828E+00	0.055
		52.39		-8.638E+00	2.313E+01	3.835E+01	3.481E+00	-0.225
		59.40		-1.723E+01	3.793E+01	5.469E+01	5.026E+00	-0.315
		66.72	*	-1.752E+01	4.037E+01	5.807E+01	5.187E+00	-0.302
		88.36		1.023E+00	4.111E-01	4.442E-01	4.357E-02	2.304
LU-176	+	201.83		9.605E-03	3.429E-02	5.612E-02	3.167E-03	0.171
		306.84	*	1.614E-02	2.825E-02	4.779E-02	2.850E-03	0.338
LU-177		401.10		-5.443E-01	7.930E+00	1.311E+01	7.301E-01	-0.042
		112.95		-2.681E-01	2.056E+00	3.372E+00	2.285E-01	-0.080
LU-177M	+	208.36	*	3.220E+00	1.965E+00	2.559E+00	1.455E-01	1.258
		52.97		-9.209E-01	2.385E+00	3.952E+00	3.603E-01	-0.233
		54.07		-1.870E-02	1.198E+00	2.011E+00	1.844E-01	-0.009
		61.30		3.382E+00	2.095E+00	3.294E+00	2.995E-01	1.027
		121.62		3.571E-02	4.644E-01	7.662E-01	4.692E-02	0.047
		147.16		3.778E-01	7.607E-01	1.268E+00	7.153E-02	0.298
		171.86		9.243E-02	5.744E-01	9.404E-01	5.116E-02	0.098
		218.09		-8.734E-02	9.900E-01	1.588E+00	9.122E-02	-0.055
	+	268.79		4.069E+00	1.750E+00	1.930E+00	1.148E-01	2.108
		319.02		-9.515E-02	3.175E-01	5.182E-01	3.080E-02	-0.184
		367.43		1.871E-01	1.038E+00	1.749E+00	1.002E-01	0.107
		413.65	*	-2.919E-01	2.036E-01	3.031E-01	1.695E-02	-0.963
HF-181		56.28		-2.436E-01	1.284E+00	2.139E+00	1.970E-01	-0.114
		57.53		-7.242E-02	7.296E-01	1.131E+00	1.041E-01	-0.064
		65.20		-5.454E-01	1.376E+00	1.984E+00	1.777E-01	-0.275
		133.02		-4.406E-02	8.051E-02	1.291E-01	7.562E-03	-0.341
		136.25		-1.716E-01	5.596E-01	9.056E-01	5.254E-02	-0.190
W-181		345.85		1.589E-01	2.581E-01	3.753E-01	2.195E-02	0.423
		482.03	*	-2.410E-03	4.891E-02	8.021E-02	4.513E-03	-0.030
		56.28		-9.453E-02	4.969E-01	8.282E-01	7.624E-02	-0.114
		57.53		-2.814E-02	2.827E-01	4.384E-01	4.035E-02	-0.064
		65.20	*	-2.096E-01	5.288E-01	7.626E-01	6.831E-02	-0.275
TA-182		67.75		-3.307E-02	1.431E-01	2.294E-01	2.047E-02	-0.144
		100.10		1.578E-01	2.071E-01	3.518E-01	2.824E-02	0.449
		152.43		4.466E-01	3.992E-01	6.803E-01	3.789E-02	0.657
		222.10		1.609E-01	4.151E-01	6.809E-01	3.927E-02	0.236
		1001.68		1.454E+00	2.413E+00	4.163E+00	2.884E-01	0.349
RE-183	+	1121.28		8.359E-01	2.700E-01	4.208E-01	2.645E-02	1.986
		1189.05		4.511E-02	3.305E-01	5.490E-01	3.271E-02	0.082
		1221.42	*	1.809E-02	2.394E-01	3.939E-01	2.379E-02	0.046
		1230.97		-1.309E-01	6.060E-01	9.707E-01	5.884E-02	-0.135
		57.98		1.734E-02	2.890E-01	4.284E-01	3.942E-02	0.040
		59.32		-7.201E-02	1.576E-01	2.272E-01	2.088E-02	-0.317
		67.20		-2.185E-01	2.752E-01	4.106E-01	3.665E-02	-0.532
		162.32	*	-7.355E-02	1.280E-01	2.030E-01	1.106E-02	-0.362

## ---- 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		2.626E+00	1.602E+00	2.081E+00	1.184E-01	1.262
		291.72		-5.718E-01	1.259E+00	1.786E+00	1.067E-01	-0.320
		57.98		6.350E-02	1.058E+00	1.569E+00	1.444E-01	0.040
		59.32		-2.635E-01	5.767E-01	8.315E-01	7.642E-02	-0.317
		67.20		-7.999E-01	1.008E+00	1.503E+00	1.342E-01	-0.532
		161.27		-1.915E-01	4.054E-01	6.463E-01	3.529E-02	-0.296
		216.55		-1.920E-01	3.176E-01	4.962E-01	2.846E-02	-0.387
		252.85	*	-1.748E-01	2.785E-01	4.297E-01	2.538E-02	-0.407
		318.01		2.756E-01	5.351E-01	9.116E-01	5.420E-02	0.302
		792.07		2.229E+00	1.317E+00	2.261E+00	1.395E-01	0.986
OS-185		903.28		2.932E-01	1.136E+00	1.757E+00	1.273E-01	0.167
		920.93		-4.938E-02	5.230E-01	8.615E-01	6.207E-02	-0.057
		59.72		-2.022E-01	4.240E-01	6.107E-01	5.604E-02	-0.331
		61.14		3.077E-01	2.289E-01	3.569E-01	3.248E-02	0.862
		69.30		1.521E-01	4.169E-01	6.198E-01	5.531E-02	0.245
		592.07		-2.087E+00	3.020E+00	4.624E+00	2.467E-01	-0.451
		646.12	*	1.775E-03	4.568E-02	7.433E-02	3.747E-03	0.024
		717.42		2.966E-01	1.010E+00	1.632E+00	8.892E-02	0.182
		874.81		-3.720E-01	6.021E-01	9.342E-01	6.553E-02	-0.398
		880.27		-2.295E-01	8.570E-01	1.390E+00	9.828E-02	-0.165
RE-188		155.03	*	1.144E-01	2.034E-01	3.395E-01	1.880E-02	0.337
		477.96		-1.464E-01	3.761E+00	6.176E+00	3.477E-01	-0.024
		633.10		1.418E+00	2.951E+00	5.012E+00	2.567E-01	0.283
W-188	+	63.58		9.994E+01	7.978E+01	1.180E+02	1.062E+01	0.847
		227.08		-3.780E+00	1.567E+01	2.491E+01	1.443E+00	-0.152
IR-192		290.67	*	-3.360E+00	9.477E+00	1.352E+01	8.079E-01	-0.248
	+	295.96		1.229E+00	2.177E-01	3.535E-01	2.143E-02	3.477
		308.46		1.150E-01	1.090E-01	1.931E-01	1.164E-02	0.596
AU-195		316.51	*	3.493E-02	4.051E-02	7.101E-02	4.244E-03	0.492
		468.07		7.794E-02	9.321E-02	1.436E-01	9.398E-03	0.543
		604.41		-2.005E-01	6.663E-01	9.052E-01	1.004E-01	-0.222
		612.46		1.187E+00	1.057E+00	1.645E+00	1.176E-01	0.722
		65.12		-7.634E-02	2.452E-01	3.552E-01	3.182E-02	-0.215
		66.83		-5.940E-02	1.337E-01	1.922E-01	1.717E-02	-0.309
TL-200	+	75.70		1.414E+00	3.345E-01	5.827E-01	5.285E-02	2.427
		98.88	*	2.299E-01	2.793E-01	4.439E-01	3.628E-02	0.518
		129.76		1.507E+00	3.466E+00	5.782E+00	3.422E-01	0.261
TL-201		367.94	*	1.199E-04	3.466E+00	Half-Life	too short	
		579.30		8.871E-03	3.466E+00	Half-Life	too short	
		828.27		-2.222E-03	3.466E+00	Half-Life	too short	
TL-202		1205.75		6.508E-03	3.466E+00	Half-Life	too short	
		68.90		2.717E+00	8.379E+00	1.250E+01	1.115E+00	0.217
		70.82		8.958E-01	4.853E+00	7.156E+00	6.396E-01	0.125
		80.30		-1.629E+01	7.506E+00	1.131E+01	1.052E+00	-1.440
TL-202		135.34		-9.150E+00	3.784E+01	6.141E+01	3.572E+00	-0.149
		167.43	*	-1.416E+00	1.045E+01	1.690E+01	9.146E-01	-0.084
		68.90		2.044E-01	6.305E-01	9.406E-01	8.393E-02	0.217
		70.82		6.723E-02	3.642E-01	5.370E-01	4.800E-02	0.125
		80.30		-1.223E+00	5.635E-01	8.492E-01	7.898E-02	-1.440

----- 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	*		1.057E-02	8.468E-02	1.412E-01	7.946E-03	0.075
	70.83			2.868E-01	1.512E+00	2.229E+00	3.078E-01	0.129
	72.87			3.160E+00	1.022E+00	1.534E+00	2.062E-01	2.060
	82.60			4.982E-01	1.996E+00	2.157E+00	3.080E-01	0.231
BI-207	279.20	*		1.621E-02	4.990E-02	8.353E-02	5.275E-03	0.194
	72.80			8.779E-01	2.764E-01	4.379E-01	3.930E-02	2.005
	74.97		+	7.812E-01	1.848E-01	2.996E-01	2.709E-02	2.607
	84.90			2.668E-01	3.577E-01	3.992E-01	3.840E-02	0.668
TL-207	569.67			2.507E-02	3.716E-02	6.264E-02	3.400E-03	0.400
	1063.62	*		2.546E-02	5.839E-02	1.006E-01	6.672E-03	0.253
	1770.23			-8.020E-02	5.350E-01	7.186E-01	4.197E-02	-0.112
	81.07			-5.751E-01	3.201E-01	3.877E-01	3.624E-02	-1.484
PO-209	83.78			-3.377E-02	2.344E-01	2.452E-01	2.338E-02	-0.138
	94.90			4.375E-01	3.035E-01	4.689E-01	4.082E-02	0.933
	122.32			-5.379E-01	2.179E+00	3.549E+00	2.467E-01	-0.152
	144.24			-8.601E-02	8.073E-01	1.294E+00	9.233E-02	-0.066
BI-210	154.21			4.273E-01	4.625E-01	7.821E-01	5.323E-02	0.546
	269.46		+	9.483E-01	4.082E-01	4.567E-01	2.835E-02	2.076
	323.87	*		4.435E-01	8.952E-01	1.351E+00	2.237E-01	0.328
	338.28		+	8.166E+00	2.169E+00	2.844E+00	3.009E-01	2.871
PB-210	445.03			-1.838E+00	2.609E+00	4.077E+00	4.148E-01	-0.451
	260.50			-6.753E+00	1.159E+01	1.791E+01	1.062E+00	-0.377
	262.80			-1.058E+01	3.625E+01	4.929E+01	2.926E+00	-0.215
	896.60	*		-2.664E+00	7.948E+00	1.277E+01	9.249E-01	-0.209
PB-211	46.50	*		-1.534E+00	5.598E+00	9.186E+00	7.564E-01	-0.167
	46.50	*		-1.534E+00	5.598E+00	9.186E+00	7.564E-01	-0.167
	46.50	*		-1.534E+00	5.598E+00	9.186E+00	6.636E-01	-0.167
	404.84	*		-1.185E+00	1.362E+00	1.777E+00	1.108E+00	-0.667
BI-212	427.08			4.788E-01	2.480E+00	4.129E+00	2.552E+00	0.116
	831.96			-9.119E-02	1.377E+00	2.287E+00	1.427E+00	-0.040
	727.18	*	+	1.354E+00	6.920E-01	7.596E-01	5.712E-02	1.783
	785.46			6.579E-02	1.938E+00	3.262E+00	1.991E-01	0.020
PO-215	1620.62			1.193E+00	1.506E+00	2.798E+00	1.716E-01	0.426
	81.07			-5.751E-01	3.201E-01	3.877E-01	3.624E-02	-1.484
	83.78			-3.377E-02	2.344E-01	2.452E-01	2.338E-02	-0.138
	94.90			4.375E-01	3.035E-01	4.689E-01	4.082E-02	0.933
RN-219	122.32			-5.379E-01	2.179E+00	3.549E+00	2.467E-01	-0.152
	144.24			-8.601E-02	8.073E-01	1.294E+00	9.233E-02	-0.066
	154.21			4.273E-01	4.625E-01	7.821E-01	5.323E-02	0.546
	269.46		+	9.483E-01	4.082E-01	4.567E-01	2.835E-02	2.076
RN-220	323.87	*		4.435E-01	8.952E-01	1.351E+00	2.237E-01	0.328
	338.28		+	8.166E+00	2.169E+00	2.844E+00	3.009E-01	2.871
	445.03			-1.838E+00	2.609E+00	4.077E+00	4.148E-01	-0.451
	271.23			8.731E-01	3.682E-01	5.736E-01	4.712E-02	1.522
RA-223	401.81	*		2.978E-01	4.926E-01	8.453E-01	1.142E-01	0.352
	549.76	*		2.269E+01	3.207E+01	5.517E+01	3.032E+00	0.411
	81.07			-5.751E-01	3.201E-01	3.877E-01	3.624E-02	-1.484
	83.78			-3.377E-02	2.344E-01	2.452E-01	2.338E-02	-0.138
	94.90			4.375E-01	3.035E-01	4.689E-01	4.082E-02	0.933

---- 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		-5.379E-01	2.179E+00	3.549E+00	2.467E-01	-0.152
		144.24		-8.601E-02	8.073E-01	1.294E+00	9.233E-02	-0.066
		154.21		4.273E-01	4.625E-01	7.821E-01	5.323E-02	0.546
	+	269.46		9.483E-01	4.082E-01	4.567E-01	2.835E-02	2.076
		323.87	*	4.435E-01	8.952E-01	1.351E+00	2.237E-01	0.328
	+	338.28		8.166E+00	2.169E+00	2.844E+00	3.009E-01	2.871
		445.03		-1.838E+00	2.609E+00	4.077E+00	4.148E-01	-0.451
		79.80		-3.283E+00	2.060E+00	3.035E+00	6.609E-01	-1.082
		236.00		2.036E+00	4.524E-01	6.924E-01	7.252E-02	2.940
		256.20	*	4.040E-01	4.505E-01	7.515E-01	1.053E-01	0.538
		286.10		1.478E+00	1.803E+00	3.146E+00	3.664E-01	0.470
	+	299.80		1.935E+00	2.156E+00	2.953E+00	4.827E-01	0.655
TH-227		304.40		-4.198E-01	2.362E+00	3.322E+00	5.765E-01	-0.126
		334.20		8.812E-01	3.191E+00	4.737E+00	8.699E-01	0.186
		79.80		-3.283E+00	2.064E+00	3.035E+00	6.691E-01	-1.082
	+	94.00		1.179E+01	4.361E+00	4.559E+00	9.968E-01	2.587
		236.00		2.036E+00	4.398E-01	6.924E-01	6.288E-02	2.940
		256.20	*	4.040E-01	4.521E-01	7.515E-01	1.273E-01	0.538
		286.10		1.478E+00	2.327E+00	3.146E+00	3.151E+00	0.470
	+	299.80		1.935E+00	2.156E+00	2.953E+00	4.827E-01	0.655
		304.40		-4.198E-01	2.362E+00	3.322E+00	5.765E-01	-0.126
		334.20		8.812E-01	3.191E+00	4.737E+00	8.699E-01	0.186
		85.43		5.302E-01	3.092E-01	4.138E-01	3.998E-02	1.281
	+	88.47		5.890E-01	2.367E-01	2.523E-01	2.469E-02	2.335
TH-229		100.00		1.619E-01	2.136E-01	3.628E-01	2.917E-02	0.446
		193.63	*	-3.874E-01	6.148E-01	9.660E-01	5.397E-02	-0.401
		210.97		1.376E+00	1.014E+00	1.547E+00	8.817E-02	0.890
		283.67	*	4.450E-01	1.823E+00	3.108E+00	4.305E-01	0.143
	+	301.29		7.738E-01	8.570E-01	1.129E+00	1.191E-01	0.685
		81.07		-5.751E-01	3.201E-01	3.877E-01	3.624E-02	-1.484
		83.78		-3.377E-02	2.344E-01	2.452E-01	2.338E-02	-0.138
		94.90		4.375E-01	3.035E-01	4.689E-01	4.082E-02	0.933
		122.32		-5.379E-01	2.179E+00	3.549E+00	2.467E-01	-0.152
		144.24		-8.601E-02	8.073E-01	1.294E+00	9.233E-02	-0.066
		154.21		4.273E-01	4.625E-01	7.821E-01	5.323E-02	0.546
	+	269.46		9.483E-01	4.082E-01	4.567E-01	2.835E-02	2.076
U-231		323.87	*	4.435E-01	8.952E-01	1.351E+00	2.237E-01	0.328
	+	338.28		8.166E+00	2.169E+00	2.844E+00	3.009E-01	2.871
		445.03		-1.838E+00	2.609E+00	4.077E+00	4.148E-01	-0.451
		84.21		1.065E+01	1.106E+01	1.260E+01	1.206E+00	0.845
	+	92.29		1.383E+01	4.303E+00	5.737E+00	5.224E-01	2.411
		95.87	*	-3.230E-01	1.645E+00	2.368E+00	2.029E-01	-0.136
		108.00		-1.256E-01	2.888E+00	4.760E+00	3.430E-01	-0.026
	+	75.28		2.280E+01	6.120E+00	9.175E+00	1.431E+00	2.485
	+	86.59		8.446E+00	4.015E+00	3.623E+00	9.858E-01	2.331
	+	300.12		5.393E-01	5.990E-01	8.107E-01	1.095E-01	0.665
		311.98	*	-5.826E-02	7.314E-02	1.171E-01	7.388E-03	-0.497
		340.50		2.362E+00	9.566E-01	1.392E+00	3.200E-01	1.696
PA-233		398.62		7.094E-01	2.498E+00	4.210E+00	1.086E+00	0.168

---- 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		4.027E-01	1.879E+00	3.157E+00	6.482E-01	0.128
		63.00		2.868E+00	2.319E+00	3.493E+00	5.494E-01	0.821
		94.67		4.713E-01	2.262E-01	3.500E-01	4.370E-02	1.347
		98.44		6.005E-02	1.242E-01	1.786E-01	9.951E-02	0.336
		99.86		4.068E-01	5.406E-01	9.184E-01	7.398E-02	0.443
		111.00		-7.375E-02	2.165E-01	3.522E-01	3.858E-02	-0.209
		131.20		9.631E-02	1.249E-01	2.109E-01	1.243E-02	0.457
		152.70		4.718E-01	3.877E-01	6.526E-01	1.026E-01	0.723
		186.00		7.293E+00	3.100E+00	3.173E+00	9.679E-01	2.299
		226.40		4.016E-01	4.719E-01	7.880E-01	9.106E-02	0.510
		227.20		-1.488E-01	5.230E-01	8.291E-01	4.805E-02	-0.180
		248.90		-3.932E-01	9.886E-01	1.543E+00	3.320E-01	-0.255
		293.70		7.661E+00	1.776E+00	2.135E+00	3.447E-01	3.589
		369.80		-5.400E-01	9.831E-01	1.571E+00	3.267E-01	-0.344
		568.70		9.293E-01	1.195E+00	2.029E+00	1.102E-01	0.458
		569.50		2.521E-01	3.320E-01	5.630E-01	3.056E-02	0.448
		574.00		-6.449E-01	1.873E+00	2.885E+00	1.561E-01	-0.224
		699.00		1.449E-01	9.141E-01	1.494E+00	2.662E-01	0.097
		706.10		4.105E-01	1.219E+00	2.005E+00	8.836E-01	0.205
		733.00		9.751E-02	4.611E-01	6.589E-01	1.397E-01	0.148
		742.81		1.405E-01	1.417E+00	2.299E+00	1.538E+00	0.061
		796.30		1.869E+00	1.305E+00	2.053E+00	5.418E-01	0.910
		805.60		-8.311E-02	1.086E+00	1.806E+00	5.432E-01	-0.046
		819.60		3.649E-01	1.333E+00	2.278E+00	8.565E-01	0.160
		826.30		-1.319E-01	9.039E-01	1.488E+00	6.604E-01	-0.089
		831.60		-1.049E-01	6.953E-01	1.146E+00	3.359E-01	-0.092
		876.40		1.044E-01	8.503E-01	1.425E+00	1.464E+00	0.073
		880.51		-4.341E-02	3.084E-01	5.068E-01	3.586E-02	-0.086
		883.24		-2.880E-03	3.263E-01	5.434E-01	3.643E-01	-0.005
		899.00		-4.677E-01	9.154E-01	1.404E+00	6.101E-01	-0.333
		925.00		8.541E-01	1.361E+00	2.356E+00	1.695E-01	0.363
		926.50		-7.432E-02	2.263E-01	3.212E-01	7.973E-02	-0.231
		946.00	*	8.277E-02	3.470E-01	5.888E-01	1.067E-01	0.141
		949.00		6.755E-01	5.045E-01	9.394E-01	6.692E-02	0.719
		980.50		-2.970E-01	7.652E-01	1.211E+00	8.494E-02	-0.245
		1394.10		-1.560E+00	1.548E+00	1.384E+00	8.969E-01	-1.128
PA-234M	+	766.42		1.627E+01	1.613E+01	2.447E+01	1.232E+01	0.665
		1001.03	*	5.733E+00	5.446E+00	9.734E+00	8.319E-01	0.589
U-235	+	89.95		2.096E+00	2.004E+00	2.180E+00	6.783E-01	0.962
		93.35		3.669E+00	1.503E+00	1.501E+00	4.220E-01	2.445
		105.00		1.119E+00	1.304E+00	2.152E+00	6.356E-01	0.520
		143.76	*	-6.282E-02	2.538E-01	4.044E-01	6.577E-02	-0.155
		163.35		2.406E-01	5.427E-01	8.984E-01	1.605E-01	0.268
		185.71		2.701E-01	8.136E-02	1.173E-01	6.490E-03	2.303
NP-236	+	205.31		-8.281E-02	7.157E-01	1.002E+00	1.798E-01	-0.083
		94.67		3.610E-01	1.688E-01	2.658E-01	2.323E-02	1.358
		98.44		4.536E-02	9.049E-02	1.350E-01	1.111E-02	0.336
		111.00		-5.578E-02	1.637E-01	2.664E-01	1.849E-02	-0.209
		160.31	*	-2.287E-02	9.243E-02	1.490E-01	8.153E-03	-0.153



----- 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		1.001E-01	1.877E-01	3.066E-01	2.481E-02	0.326
		117.00	*	2.005E-02	2.208E-01	3.650E-01	2.358E-02	0.055
	+	209.75		2.050E+00	1.251E+00	1.620E+00	9.225E-02	1.266
		228.18		-3.815E-01	2.830E-01	4.230E-01	2.454E-02	-0.902
		277.60		2.625E-01	2.273E-01	3.777E-01	2.253E-02	0.695
		334.30		4.905E-01	1.806E+00	2.683E+00	1.582E-01	0.183
AM-241		59.54	*	-9.058E-02	2.200E-01	3.179E-01	3.108E-02	-0.285
CM-243		99.55		1.030E-01	1.932E-01	3.155E-01	2.554E-02	0.326
		103.76	*	8.339E-02	1.151E-01	1.951E-01	1.487E-02	0.427
		117.00		2.063E-02	2.272E-01	3.756E-01	2.426E-02	0.055
	+	209.75		2.021E+00	1.233E+00	1.597E+00	9.094E-02	1.266
		228.18		-3.855E-01	2.859E-01	4.275E-01	2.479E-02	-0.902
		277.60		2.646E-01	2.292E-01	3.808E-01	2.271E-02	0.695
AM-246		798.80		4.326E-02	1.648E-01	2.470E-01	1.541E-02	0.175
		1036.00		-2.298E-01	3.245E-01	4.914E-01	3.328E-02	-0.468
		1062.04		3.415E-02	2.465E-01	4.126E-01	2.739E-02	0.083
		1078.86	*	-6.750E-02	1.651E-01	2.599E-01	1.701E-02	-0.260
CM-247		278.00		7.768E-01	9.120E-01	1.562E+00	9.320E-02	0.497
		287.40		2.103E-01	1.444E+00	2.451E+00	1.464E-01	0.086
		402.60	*	2.951E-02	4.390E-02	7.582E-02	4.225E-03	0.389
CF-249		252.85		-6.531E-01	1.041E+00	1.606E+00	9.484E-02	-0.407
		333.44		1.153E-01	2.482E-01	3.546E-01	2.092E-02	0.325
		387.95	*	3.075E-02	4.808E-02	8.294E-02	4.626E-03	0.371
CF-251		176.60	*	-8.562E-02	1.496E-01	2.365E-01	1.294E-02	-0.362
		227.00		6.570E-02	4.581E-01	7.422E-01	4.300E-02	0.089
		285.00		4.929E-01	2.048E+00	3.492E+00	2.085E-01	0.141

# 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]G244148002  *
* Acquisition date   : 20-JAN-2010 15:49:14 Detector SN#             *
* Detector ID        : GAM06                                           *
* Geometry           : CAN                                             *
* Elapsed live time   : 0 02:00:00.00 Abundance limit : 75.000         *
* Elapsed real time   : 0 02:00:01.18 Half life ratio : 8.000         *
*****
*                               SAMPLE DATA                              *
*                               *                                         *
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID          : G244148002 Analyst initials: MXR1              *
* Batch Number       : 940268 Sample Quantity : 1.2467E+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	2.009E+01	2.129E+00	6.311E-01	0.000E+00
CD-109	4.396E+00	1.731E+00	1.697E+00	0.000E+00
SN-126	4.314E-01	1.699E-01	1.674E-01	0.000E+00
CS-135	8.060E-01	3.420E-01	2.880E-01	0.000E+00
BA-137M	3.266E-01	8.097E-02	7.166E-02	0.000E+00
CS-137	3.452E-01	8.561E-02	7.575E-02	0.000E+00
TL-208	5.481E-01	9.298E-02	7.596E-02	0.000E+00
BI-211	4.177E+00	5.393E-01	4.202E-01	0.000E+00
PB-212	1.647E+00	1.722E-01	1.150E-01	0.000E+00
PO-212	1.647E+00	1.722E-01	1.150E-01	0.000E+00
BI-214	1.324E+00	1.947E-01	1.399E-01	0.000E+00
PB-214	1.453E+00	2.018E-01	1.323E-01	0.000E+00
PO-214	1.453E+00	2.018E-01	1.323E-01	0.000E+00
PO-216	1.647E+00	1.722E-01	1.150E-01	0.000E+00
PO-218	1.453E+00	2.018E-01	1.323E-01	0.000E+00
RA-224	3.952E+00	1.336E+00	1.309E+00	0.000E+00
RA-226	1.324E+00	1.947E-01	1.399E-01	0.000E+00
AC-228	1.499E+00	3.145E-01	2.352E-01	0.000E+00
RA-228	1.499E+00	3.145E-01	2.352E-01	0.000E+00
TH-228	1.674E+00	1.750E-01	1.169E-01	0.000E+00
TH-230	1.324E+00	1.947E-01	1.399E-01	0.000E+00
TH-232	1.499E+00	3.145E-01	2.352E-01	0.000E+00
TH-234	2.461E+00	1.962E+00	2.796E+00	0.000E+00
U-234	1.324E+00	1.947E-01	1.399E-01	0.000E+00
NP-237	1.267E+00	5.608E-01	5.042E-01	0.000E+00
U-238	2.461E+00	1.962E+00	2.796E+00	0.000E+00
AM-243	4.352E-01	1.009E-01	1.195E-01	0.000E+00
ANH-511	1.524E-01	7.348E-02	5.328E-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	-2.193E-01	3.931E-01	6.439E-01	0.000E+00	NOT IDENT.
NA-22	1.930E-02	5.225E-02	9.033E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.645E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.022E-02	2.537E-02	3.774E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.807E-02	9.579E-02	0.000E+00	FAIL ABUN
SC-46	-7.398E-03	4.562E-02	7.684E-02	0.000E+00	FAIL ABUN
V-48	3.217E-02	7.134E-02	1.273E-01	0.000E+00	NOT IDENT.
CR-51	-7.069E-01	4.604E-01	7.250E-01	0.000E+00	NOT IDENT.
MN-52	1.820E-02	2.944E-01	4.901E-01	0.000E+00	FAIL ABUN
MN-54	6.659E-03	4.056E-02	7.068E-02	0.000E+00	NOT IDENT.
CO-56	-2.827E-04	4.470E-02	7.668E-02	0.000E+00	NOT IDENT.
CO-57	-1.841E-03	3.074E-02	5.320E-02	0.000E+00	NOT IDENT.
CO-58	-7.660E-03	4.365E-02	7.397E-02	0.000E+00	NOT IDENT.
FE-59	-6.200E-02	9.423E-02	1.462E-01	0.000E+00	NOT IDENT.
CO-60	5.143E-03	4.609E-02	7.694E-02	0.000E+00	NOT IDENT.
ZN-65	-4.367E-02	1.106E-01	1.498E-01	0.000E+00	NOT IDENT.
GE-68	-7.695E-01	1.385E+00	2.195E+00	0.000E+00	NOT IDENT.
AS-73	-3.301E-01	1.171E+00	2.078E+00	0.000E+00	NOT IDENT.
AS-74	6.718E-03	1.116E-01	1.884E-01	0.000E+00	NOT IDENT.
SE-75	2.605E-02	5.767E-02	8.687E-02	0.000E+00	NOT IDENT.
BR-77	1.933E+01	1.539E+01	2.857E+01	0.000E+00	FAIL ABUN
SR-82	-4.036E-01	3.965E-01	6.158E-01	0.000E+00	NOT IDENT.
RB-83	9.508E-02	7.572E-02	1.405E-01	0.000E+00	NOT IDENT.
RB-84	-2.334E-02	7.962E-02	1.324E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	9.148E+00	1.569E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.742E-02	8.135E-02	0.000E+00	NOT IDENT.
RB-86	-1.755E-01	8.822E-01	1.456E+00	0.000E+00	NOT IDENT.
Y-88	-1.255E-02	3.435E-02	5.272E-02	0.000E+00	NOT IDENT.
ZR-88	-1.991E-03	3.769E-02	6.484E-02	0.000E+00	NOT IDENT.
Y-91	2.122E+01	2.171E+01	3.953E+01	0.000E+00	NOT IDENT.
NB-94	-2.342E-02	4.087E-02	6.458E-02	0.000E+00	NOT IDENT.
NB-95	6.729E-02	5.251E-02	9.543E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.984E-01	3.219E-01	0.000E+00	NOT IDENT.
ZR-95	-6.370E-03	8.294E-02	1.361E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.907E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.525E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.229E+01	1.566E+01	2.351E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.974E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.932E-03	4.042E-02	6.534E-02	0.000E+00	NOT IDENT.
RH-102	2.078E-02	3.552E-02	6.290E-02	0.000E+00	NOT IDENT.
RU-103	1.160E-02	4.713E-02	8.158E-02	0.000E+00	FAIL ABUN
RH-106	-2.180E-01	3.665E-01	5.808E-01	0.000E+00	FAIL ABUN
RU-106	-2.180E-01	3.659E-01	5.808E-01	0.000E+00	FAIL ABUN
AG-108M	1.504E-02	3.887E-02	6.832E-02	0.000E+00	NOT IDENT.
AG-110M	1.188E-02	4.951E-02	7.329E-02	0.000E+00	NOT IDENT.
IN-111	1.892E+00	1.750E+00	2.757E+00	0.000E+00	NOT IDENT.
IN-113M	4.957E-03	5.438E-02	9.436E-02	0.000E+00	NOT IDENT.
SN-113	4.957E-03	5.438E-02	9.436E-02	0.000E+00	NOT IDENT.
IN-114M	2.581E-01	2.381E-01	3.766E-01	0.000E+00	NOT IDENT.
CD-115	7.623E+00	1.618E+01	2.844E+01	0.000E+00	NOT IDENT.
SN-117M	-7.929E-03	6.404E-02	1.092E-01	0.000E+00	NOT IDENT.
SB-122	-3.940E-01	3.004E+00	5.014E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.369E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	4.275E-04	3.144E-02	5.392E-02	0.000E+00	NOT IDENT.
I-124	5.768E-01	1.094E+00	1.675E+00	0.000E+00	NOT IDENT.
SB-124	4.902E-02	9.222E-02	1.694E-01	0.000E+00	FAIL ABUN
SB-125	5.739E-02	1.094E-01	1.939E-01	0.000E+00	FAIL ABUN
TE-125M	1.384E+00	1.076E+01	1.885E+01	0.000E+00	NOT IDENT.
I-126	1.135E-01	2.434E-01	3.707E-01	0.000E+00	NOT IDENT.
SB-126	8.838E-02	1.835E-01	2.799E-01	0.000E+00	NOT IDENT.
SB-127	9.461E-01	1.893E+00	3.287E+00	0.000E+00	NOT IDENT.
XE-127	4.979E-02	6.089E-02	9.932E-02	0.000E+00	NOT IDENT.
I-131	4.935E-03	1.447E-01	2.514E-01	0.000E+00	NOT IDENT.
TE-132	-1.445E+00	1.075E+00	1.657E+00	0.000E+00	NOT IDENT.
BA-133	9.409E-03	5.387E-02	8.250E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.550E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.486E-02	1.082E-01	0.000E+00	FAIL ABUN
I-135	0.000E+00	8.454E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.027E-02	1.176E-01	1.869E-01	0.000E+00	NOT IDENT.
CE-139	1.803E-02	3.428E-02	5.991E-02	0.000E+00	NOT IDENT.
BA-140	3.551E-01	3.231E-01	5.589E-01	0.000E+00	NOT IDENT.
LA-140	-3.635E-02	1.088E-01	1.759E-01	0.000E+00	FAIL ABUN
CE-141	2.270E-02	7.267E-02	1.266E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.636E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.117E-01	2.445E-01	4.049E-01	0.000E+00	NOT IDENT.
PM-144	1.945E-02	4.301E-02	7.405E-02	0.000E+00	NOT IDENT.
PR-144	1.319E+00	2.916E+00	5.021E+00	0.000E+00	NOT IDENT.

PM-146	3.538E-02	5.219E-02	9.305E-02	0.000E+00	NOT IDENT.
ND-147	1.599E-01	6.826E-01	1.177E+00	0.000E+00	NOT IDENT.
PM-149	3.319E+01	1.483E+02	2.633E+02	0.000E+00	NOT IDENT.
EU-152	-3.485E-02	1.293E-01	1.798E-01	0.000E+00	FAIL ABUN
GD-153	1.627E-02	1.007E-01	1.562E-01	0.000E+00	NOT IDENT.
EU-154	5.247E-02	1.458E-01	2.517E-01	0.000E+00	NOT IDENT.
EU-155	8.557E-02	1.282E-01	2.289E-01	0.000E+00	FAIL ABUN
TB-160	-1.333E-02	1.475E-01	2.503E-01	0.000E+00	FAIL ABUN
HO-166M	-4.335E-02	6.462E-02	9.988E-02	0.000E+00	FAIL ABUN
TM-171	-1.752E+01	3.956E+01	6.051E+01	0.000E+00	NOT IDENT.
LU-176	1.614E-02	2.769E-02	4.879E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.925E+00	2.626E+00	0.000E+00	FAIL ABUN
LU-177M	-2.919E-01	1.996E-01	3.082E-01	0.000E+00	FAIL ABUN
HF-181	-2.410E-03	4.794E-02	8.139E-02	0.000E+00	NOT IDENT.
W-181	-2.096E-01	5.182E-01	7.949E-01	0.000E+00	NOT IDENT.
TA-182	1.809E-02	2.346E-01	3.946E-01	0.000E+00	FAIL ABUN
RE-183	-7.355E-02	1.254E-01	2.091E-01	0.000E+00	FAIL ABUN
RE-184	-1.748E-01	2.730E-01	4.399E-01	0.000E+00	NOT IDENT.
OS-185	1.775E-03	4.477E-02	7.511E-02	0.000E+00	NOT IDENT.
RE-188	1.144E-01	1.994E-01	3.499E-01	0.000E+00	NOT IDENT.
W-188	-3.360E+00	9.287E+00	1.382E+01	0.000E+00	FAIL ABUN
IR-192	3.493E-02	3.970E-02	7.247E-02	0.000E+00	FAIL ABUN
AU-195	2.299E-01	2.737E-01	4.601E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.667E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.416E+00	1.024E+01	1.740E+01	0.000E+00	NOT IDENT.
TL-202	1.057E-02	8.299E-02	1.435E-01	0.000E+00	NOT IDENT.
HG-203	1.621E-02	4.891E-02	8.539E-02	0.000E+00	NOT IDENT.
BI-207	2.546E-02	5.723E-02	1.010E-01	0.000E+00	FAIL ABUN
TL-207	4.435E-01	8.773E-01	1.378E+00	0.000E+00	FAIL ABUN
PO-209	-2.664E+00	7.789E+00	1.284E+01	0.000E+00	NOT IDENT.
BI-210	-1.534E+00	5.486E+00	9.618E+00	0.000E+00	NOT IDENT.
PB-210	-1.534E+00	5.486E+00	9.618E+00	0.000E+00	NOT IDENT.
PO-210	-1.534E+00	5.486E+00	9.618E+00	0.000E+00	NOT IDENT.
PB-211	-1.185E+00	1.335E+00	1.808E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.782E-01	7.664E-01	0.000E+00	FAIL ABUN
PO-215	4.435E-01	8.773E-01	1.378E+00	0.000E+00	FAIL ABUN
RN-219	2.978E-01	4.827E-01	8.598E-01	0.000E+00	NOT IDENT.
RN-220	2.269E+01	3.142E+01	5.588E+01	0.000E+00	NOT IDENT.
RA-223	4.435E-01	8.773E-01	1.378E+00	0.000E+00	FAIL ABUN
AC-227	4.040E-01	4.415E-01	7.691E-01	0.000E+00	FAIL ABUN
TH-227	4.040E-01	4.431E-01	7.691E-01	0.000E+00	FAIL ABUN
TH-229	-3.874E-01	6.025E-01	9.925E-01	0.000E+00	FAIL ABUN
PA-231	4.450E-01	1.787E+00	3.176E+00	0.000E+00	FAIL ABUN
TH-231	4.435E-01	8.773E-01	1.378E+00	0.000E+00	FAIL ABUN
U-231	-3.230E-01	1.612E+00	2.456E+00	0.000E+00	FAIL ABUN
PA-233	-5.826E-02	7.168E-02	1.196E-01	0.000E+00	FAIL ABUN
PA-234	8.277E-02	3.400E-01	5.919E-01	0.000E+00	FAIL ABUN
PA-234M	5.733E+00	5.337E+00	9.777E+00	0.000E+00	NOT IDENT.
U-235	-6.282E-02	2.487E-01	4.171E-01	0.000E+00	FAIL ABUN
NP-236	-2.287E-02	9.058E-02	1.535E-01	0.000E+00	NOT IDENT.
NP-239	2.005E-02	2.164E-01	3.775E-01	0.000E+00	FAIL ABUN
AM-241	-9.058E-02	2.156E-01	3.318E-01	0.000E+00	NOT IDENT.
CM-243	8.339E-02	1.128E-01	2.022E-01	0.000E+00	FAIL ABUN
AM-246	-6.750E-02	1.617E-01	2.608E-01	0.000E+00	NOT IDENT.
CM-247	2.951E-02	4.302E-02	7.713E-02	0.000E+00	NOT IDENT.
CF-249	3.075E-02	4.712E-02	8.441E-02	0.000E+00	NOT IDENT.
CF-251	-8.562E-02	1.466E-01	2.433E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148002.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:49:14
Sample ID          : G244148002          Sample quantity   : 1.24670E+02 GRAM
Detector name      : GAM06              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.18  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940268             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	685	10.67*	9.626E-01	2.009E+01	2.009E+01	10.81
CD-109	88.03	275	3.72*	5.195E+00	4.291E+00	4.396E+00	40.18
SN-126	64.28	84	9.60	2.700E+00	9.741E-01	9.741E-01	80.80
	86.94	275	8.90	5.195E+00	1.794E+00	1.794E+00	57.01
	87.57	275	37.00*	5.195E+00	4.314E-01	4.314E-01	40.18
CS-135	268.24	171	16.00*	3.983E+00	8.060E-01	8.060E-01	43.30
BA-137M	661.65	189	89.98*	1.939E+00	3.262E-01	3.266E-01	25.30
CS-137	661.65	189	85.12*	1.939E+00	3.449E-01	3.452E-01	25.30
TL-208	277.35	-----	6.80	3.899E+00	-----	Line Not Found	-----
	510.84	122	21.60	2.408E+00	7.057E-01	7.057E-01	49.89
	583.14	331	84.20*	2.159E+00	5.481E-01	5.481E-01	17.31
	860.37	62	12.46	1.539E+00	9.690E-01	9.690E-01	44.26
BI-211	72.87	-----	1.27	3.913E+00	-----	Line Not Found	-----
	351.07	582	12.94*	3.243E+00	4.177E+00	4.177E+00	13.17
PB-212	74.81	391	10.70	4.095E+00	2.684E+00	2.684E+00	25.44
	77.11	538	18.00	4.330E+00	2.080E+00	2.080E+00	18.10
	87.30	275	8.00	5.195E+00	1.995E+00	1.995E+00	41.40
	238.63	1066	44.60*	4.367E+00	1.647E+00	1.647E+00	10.67
	300.09	43	3.41	3.668E+00	1.044E+00	1.044E+00	110.56
PO-212	74.81	391	10.70	4.095E+00	2.684E+00	2.684E+00	25.44
	77.11	538	18.00	4.330E+00	2.080E+00	2.080E+00	18.10
	87.30	275	8.00	5.195E+00	1.995E+00	1.995E+00	41.40
	115.19	-----	0.60	6.030E+00	-----	Line Not Found	-----
	238.63	1066	44.60*	4.367E+00	1.647E+00	1.647E+00	10.67
	300.09	43	3.41	3.668E+00	1.044E+00	1.044E+00	110.56
BI-214	609.31	423	46.30*	2.080E+00	1.324E+00	1.324E+00	15.01
	1120.29	107	15.10	1.211E+00	1.757E+00	1.757E+00	32.97
	1764.49	95	15.80	8.404E-01	2.165E+00	2.165E+00	23.03
PB-214	74.81	391	6.21	4.095E+00	4.625E+00	4.625E+00	24.79
	77.11	538	10.50	4.330E+00	3.565E+00	3.565E+00	19.64
	87.30	275	4.67	5.195E+00	3.418E+00	3.418E+00	40.91
	241.98	224	7.49	4.328E+00	2.084E+00	2.084E+00	34.94

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	378	19.20	3.719E+00	1.596E+00	1.596E+00	18.75
	351.92	582	37.20*	3.243E+00	1.453E+00	1.453E+00	14.17
	74.81	391	6.21	4.095E+00	4.625E+00	4.625E+00	24.79
	77.11	538	10.50	4.330E+00	3.565E+00	3.565E+00	19.64
	87.30	275	4.67	5.195E+00	3.418E+00	3.418E+00	40.91
	241.98	224	7.49	4.328E+00	2.084E+00	2.084E+00	34.94
PO-216	295.21	378	19.20	3.719E+00	1.596E+00	1.596E+00	18.75
	351.92	582	37.20*	3.243E+00	1.453E+00	1.453E+00	14.17
	74.81	391	10.70	4.095E+00	2.684E+00	2.684E+00	25.44
	77.11	538	18.00	4.330E+00	2.080E+00	2.080E+00	18.10
	87.30	275	8.00	5.195E+00	1.995E+00	1.995E+00	41.40
	238.63	1066	44.60*	4.367E+00	1.647E+00	1.647E+00	10.67
PO-218	300.09	43	3.41	3.668E+00	1.044E+00	1.044E+00	110.56
	74.81	391	6.21	4.095E+00	4.625E+00	4.625E+00	24.79
	77.11	538	10.50	4.330E+00	3.565E+00	3.565E+00	19.64
	87.30	275	4.67	5.195E+00	3.418E+00	3.418E+00	40.91
	241.98	224	7.49	4.328E+00	2.084E+00	2.084E+00	34.94
	295.21	378	19.20	3.719E+00	1.596E+00	1.596E+00	18.75
RA-224	351.92	582	37.20*	3.243E+00	1.453E+00	1.453E+00	14.17
	240.98	224	3.95*	4.328E+00	3.952E+00	3.952E+00	34.48
RA-226	609.31	423	46.30*	2.080E+00	1.324E+00	1.324E+00	15.01
	1120.29	107	15.10	1.211E+00	1.757E+00	1.757E+00	32.97
AC-228	1764.49	95	15.80	8.404E-01	2.165E+00	2.165E+00	23.03
	338.32	248	11.40	3.343E+00	1.956E+00	1.956E+00	47.50
	911.07	202	27.70*	1.462E+00	1.499E+00	1.499E+00	21.42
RA-228	969.11	97	16.60	1.382E+00	1.269E+00	1.269E+00	39.68
	338.32	248	11.40	3.343E+00	1.956E+00	1.956E+00	47.50
	911.07	202	27.70*	1.462E+00	1.499E+00	1.499E+00	21.42
TH-228	969.11	97	16.60	1.382E+00	1.269E+00	1.269E+00	39.68
	74.81	391	10.70	4.095E+00	2.684E+00	2.728E+00	23.68
	77.11	538	18.00	4.330E+00	2.080E+00	2.113E+00	18.10
TH-230	87.30	275	8.00	5.195E+00	1.995E+00	2.028E+00	40.18
	238.63	1066	44.60*	4.367E+00	1.647E+00	1.674E+00	10.67
	300.09	43	3.41	3.668E+00	1.044E+00	1.061E+00	125.01
	609.31	423	46.30*	2.080E+00	1.324E+00	1.324E+00	15.01
TH-232	1120.29	107	15.10	1.211E+00	1.757E+00	1.757E+00	32.97
	1764.49	95	15.80	8.404E-01	2.165E+00	2.165E+00	23.03
	338.32	248	11.40	3.343E+00	1.956E+00	1.956E+00	25.07
TH-234	911.07	202	27.70*	1.462E+00	1.499E+00	1.499E+00	21.42
	969.11	97	16.60	1.382E+00	1.269E+00	1.269E+00	39.68
	63.29	84	3.80*	2.700E+00	2.461E+00	2.461E+00	81.38
U-234	92.38	300	5.41	5.471E+00	3.052E+00	3.052E+00	34.94
	609.31	423	46.30*	2.080E+00	1.324E+00	1.324E+00	15.01
	1120.29	107	15.10	1.211E+00	1.757E+00	1.757E+00	32.97
NP-237	1764.49	95	15.80	8.404E-01	2.165E+00	2.165E+00	23.03
	86.50	275	12.60*	5.195E+00	1.267E+00	1.267E+00	45.17
U-238	95.87	-----	2.60	5.611E+00	-----	Line Not Found	-----
	63.29	84	3.80*	2.700E+00	2.461E+00	2.461E+00	81.38
	92.38	300	5.41	5.471E+00	3.052E+00	3.052E+00	31.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	391	66.00*	4.095E+00	4.352E-01	4.352E-01	23.66
	86.72	275	0.34	5.195E+00	4.751E+01	4.751E+01	40.18
	117.66	-----	0.55	6.042E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.887E+00	-----	Line Not Found	-----
ANH-511	511.00	122	100.00*	2.408E+00	1.524E-01	1.524E-01	49.19

Flag: "\*" = Keyline

Total number of lines in spectrum 30  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 30 100.00%

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	2.009E+01	2.009E+01	0.217E+01	10.81	
CD-109	464.00D	1.02	4.291E+00	4.396E+00	1.766E+00	40.18	
SN-126	1.00E+05Y	1.00	4.314E-01	4.314E-01	1.733E-01	40.18	
CS-135	2.30E+06Y	1.00	8.060E-01	8.060E-01	3.490E-01	43.30	
BA-137M	30.17Y	1.00	3.262E-01	3.266E-01	0.826E-01	25.30	
CS-137	30.17Y	1.00	3.449E-01	3.452E-01	0.874E-01	25.30	
TL-208	1.41E+10Y	1.00	5.481E-01	5.481E-01	0.949E-01	17.31	
BI-211	7.04E+08Y	1.00	4.177E+00	4.177E+00	0.550E+00	13.17	
PB-212	1.41E+10Y	1.00	1.647E+00	1.647E+00	0.176E+00	10.67	
PO-212	1.41E+10Y	1.00	1.647E+00	1.647E+00	0.176E+00	10.67	
BI-214	1600.00Y	1.00	1.324E+00	1.324E+00	0.199E+00	15.01	
PB-214	1600.00Y	1.00	1.453E+00	1.453E+00	0.206E+00	14.17	
PO-214	1600.00Y	1.00	1.453E+00	1.453E+00	0.206E+00	14.17	
PO-216	1.41E+10Y	1.00	1.647E+00	1.647E+00	0.176E+00	10.67	
PO-218	1600.00Y	1.00	1.453E+00	1.453E+00	0.206E+00	14.17	
RA-224	1.41E+10Y	1.00	3.952E+00	3.952E+00	1.363E+00	34.48	
RA-226	1600.00Y	1.00	1.324E+00	1.324E+00	0.199E+00	15.01	
AC-228	1.41E+10Y	1.00	1.499E+00	1.499E+00	0.321E+00	21.42	
RA-228	1.41E+10Y	1.00	1.499E+00	1.499E+00	0.321E+00	21.42	
TH-228	1.91Y	1.02	1.647E+00	1.674E+00	0.179E+00	10.67	
TH-230	4.47E+09Y	1.00	1.324E+00	1.324E+00	0.199E+00	15.01	
TH-232	1.41E+10Y	1.00	1.499E+00	1.499E+00	0.321E+00	21.42	
TH-234	4.47E+09Y	1.00	2.461E+00	2.461E+00	2.003E+00	81.38	
U-234	4.47E+09Y	1.00	1.324E+00	1.324E+00	0.199E+00	15.01	
NP-237	2.14E+06Y	1.00	1.267E+00	1.267E+00	0.572E+00	45.17	
U-238	4.47E+09Y	1.00	2.461E+00	2.461E+00	2.003E+00	81.38	
AM-243	7380.00Y	1.00	4.352E-01	4.352E-01	1.030E-01	23.66	
ANH-511	1.00E+09Y	1.00	1.524E-01	1.524E-01	0.750E-01	49.19	
Total Activity :			6.248E+01	6.261E+01			

Grand Total Activity : 6.248E+01 6.261E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Unidentified Energy Lines  
Sample ID : G244148002

Page : 5  
Acquisition date : 20-JAN-2010 15:49:14

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.73	251	296	1.23	371.46	367	10	3.48E-02	29.6	5.18E+00	T
0	209.03	106	264	1.16	418.06	413	10	1.47E-02	60.8	4.79E+00	T
0	328.11	26	136	1.09	656.23	651	7	3.57E-03	****	3.42E+00	T
0	462.68	44	102	1.40	925.35	921	10	6.08E-03	91.6	2.61E+00	T
0	727.40	95	79	1.94	1454.79	1445	20	1.32E-02	50.5	1.79E+00	T
0	794.45	47	40	1.30	1588.89	1584	10	6.53E-03	58.2	1.65E+00	T
0	934.09	31	30	1.32	1868.18	1862	11	4.35E-03	76.6	1.43E+00	T
1	964.11	47	56	2.12	1928.23	1918	26	6.57E-03	66.6	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]G244148002.CNF;1
* Acquisition date   : 20-JAN-2010 15:49:14   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 02:00:01.18          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G244148002             Analyst initials: MXR1
* Batch Number       : 940268                 Sample Quantity : 1.24670E+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	2.009E+01	2.172E+00	6.318E-01	4.179E-02	31.796
CD-109	4.396E+00	1.766E+00	1.634E+00	1.613E-01	2.690
SN-126	4.314E-01	1.733E-01	1.612E-01	1.586E-02	2.676
CS-135	8.060E-01	3.490E-01	2.815E-01	2.188E-02	2.863
BA-137M	3.266E-01	8.262E-02	7.093E-02	3.503E-03	4.604
CS-137	3.452E-01	8.736E-02	7.498E-02	3.725E-03	4.604
TL-208	5.481E-01	9.487E-02	7.506E-02	4.744E-03	7.301
BI-211	4.177E+00	5.503E-01	4.123E-01	2.661E-02	10.131
PB-212	1.647E+00	1.758E-01	1.123E-01	8.277E-03	14.672
PO-212	1.647E+00	1.758E-01	1.123E-01	8.277E-03	14.672
BI-214	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
PB-214	1.453E+00	2.059E-01	1.299E-01	1.077E-02	11.189
PO-214	1.453E+00	2.059E-01	1.299E-01	1.077E-02	11.189
PO-216	1.647E+00	1.758E-01	1.123E-01	8.277E-03	14.672
PO-218	1.453E+00	2.059E-01	1.299E-01	1.077E-02	11.189
RA-224	3.952E+00	1.363E+00	1.278E+00	7.490E-02	3.093
RA-226	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
AC-228	1.499E+00	3.209E-01	2.339E-01	2.390E-02	6.407

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.499E+00	3.209E-01	2.339E-01	2.390E-02	6.407
TH-228	1.674E+00	1.786E-01	1.141E-01	8.411E-03	14.671
TH-230	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
TH-232	1.499E+00	3.209E-01	2.339E-01	2.390E-02	6.407
TH-234	2.461E+00	2.003E+00	2.682E+00	4.875E-01	0.918
U-234	1.324E+00	1.987E-01	1.384E-01	1.021E-02	9.568
NP-237	1.267E+00	5.722E-01	4.855E-01	1.108E-01	2.609
U-238	2.461E+00	2.003E+00	2.682E+00	4.875E-01	0.918
AM-243	4.352E-01	1.030E-01	1.149E-01	1.037E-02	3.789
ANH-511	1.524E-01	7.497E-02	5.256E-02	2.938E-03	2.900

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.193E-01		4.011E-01	6.345E-01	4.191E-02	-0.346
NA-22	1.930E-02		5.331E-02	9.025E-02	5.573E-03	0.214
NA-24	-1.304E-01		1.350E+00	Half-Life too short		
AL-26	-1.022E-02		2.589E-02	3.790E-02	2.177E-03	-0.270
TI-44	3.838E-01	+	6.946E-02	9.212E-02	8.468E-03	4.166
SC-46	-7.398E-03		4.655E-02	7.638E-02	5.475E-03	-0.097
V-48	3.217E-02		7.280E-02	1.267E-01	8.872E-03	0.254
CR-51	-7.069E-01		4.698E-01	7.105E-01	4.681E-02	-0.995
MN-52	1.820E-02		3.004E-01	4.905E-01	3.087E-02	0.037
MN-54	6.659E-03		4.139E-02	7.019E-02	4.633E-03	0.095
CO-56	-2.827E-04		4.561E-02	7.616E-02	5.120E-03	-0.004
CO-57	-1.841E-03		3.136E-02	5.146E-02	3.143E-03	-0.036
CO-58	-7.660E-03		4.455E-02	7.342E-02	4.688E-03	-0.104
FE-59	-6.200E-02		9.615E-02	1.457E-01	1.069E-02	-0.425
CO-60	5.143E-03		4.703E-02	7.691E-02	4.832E-03	0.067
ZN-65	-4.367E-02		1.129E-01	1.493E-01	9.459E-03	-0.292
GE-68	-7.695E-01		1.414E+00	2.188E+00	1.434E-01	-0.352
AS-73	-3.301E-01		1.195E+00	1.988E+00	1.818E-01	-0.166
AS-74	6.718E-03		1.138E-01	1.862E-01	9.902E-03	0.036
SE-75	2.605E-02		5.885E-02	8.491E-02	5.094E-03	0.307
BR-77	1.933E+01		1.571E+01	2.819E+01	1.571E+00	0.686
SR-82	-4.036E-01		4.046E-01	6.109E-01	3.675E-02	-0.661
RB-83	9.508E-02		7.727E-02	1.387E-01	7.726E-03	0.686
RB-84	-2.334E-02		8.125E-02	1.316E-01	9.324E-03	-0.177
KR-85	1.666E+01		9.335E+00	1.548E+01	8.646E-01	1.076
SR-85	8.636E-02		4.839E-02	8.024E-02	4.482E-03	1.076
RB-86	-1.755E-01		9.002E-01	1.451E+00	9.514E-02	-0.121
Y-88	-1.255E-02		3.505E-02	5.295E-02	3.009E-03	-0.237
ZR-88	-1.991E-03		3.845E-02	6.372E-02	3.536E-03	-0.031
Y-91	2.122E+01		2.215E+01	3.946E+01	2.367E+00	0.538
NB-94	-2.342E-02		4.171E-02	6.398E-02	3.398E-03	-0.366
NB-95	6.729E-02		5.358E-02	9.465E-02	5.595E-03	0.711
NB-95M	4.577E-01		2.025E-01	3.141E-01	2.374E-02	1.457

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	-6.370E-03		8.463E-02	1.349E-01	9.511E-03	-0.047
NB-97	1.918E-01		1.993E-01	Half-Life too short		
ZR-97	2.058E+01		3.329E+00	Half-Life too short		
MO-99	-1.229E+01		1.598E+01	2.331E+01	3.198E+00	-0.527
TC-99M	-4.346E+11		4.068E+11	Half-Life too short		
RH-101	-6.932E-03		4.125E-02	6.361E-02	3.573E-03	-0.109
RH-102	2.078E-02		3.624E-02	6.198E-02	3.490E-03	0.335
RU-103	1.160E-02		4.809E-02	8.044E-02	1.010E-02	0.144
RH-106	-2.180E-01		3.740E-01	5.745E-01	6.575E-02	-0.379
RU-106	-2.180E-01		3.733E-01	5.745E-01	2.979E-02	-0.379
AG-108M	1.504E-02		3.967E-02	6.723E-02	4.123E-03	0.224
AG-110M	1.188E-02		5.052E-02	7.254E-02	3.916E-03	0.164
IN-111	1.892E+00		1.786E+00	2.692E+00	1.583E-01	0.703
IN-113M	4.957E-03		5.549E-02	9.273E-02	5.519E-03	0.053
SN-113	4.957E-03		5.549E-02	9.273E-02	5.519E-03	0.053
IN-114M	2.581E-01		2.430E-01	3.664E-01	2.039E-02	0.704
CD-115	7.623E+00		1.651E+01	2.807E+01	1.559E+00	0.272
SN-117M	-7.929E-03		6.534E-02	1.060E-01	5.821E-03	-0.075
SB-122	-3.940E-01		3.065E+00	4.952E+00	2.698E-01	-0.080
I-123	3.222E-01		1.209E+01	Half-Life too short		
TE-123M	4.275E-04		3.208E-02	5.234E-02	2.915E-03	0.008
I-124	5.768E-01		1.116E+00	1.656E+00	8.752E-02	0.348
SB-124	4.902E-02		9.410E-02	1.699E-01	1.103E-02	0.288
SB-125	5.739E-02		1.116E-01	1.907E-01	1.119E-02	0.301
TE-125M	1.384E+00		1.098E+01	1.820E+01	1.655E+00	0.076
I-126	1.135E-01		2.484E-01	3.670E-01	1.828E-02	0.309
SB-126	8.838E-02		1.872E-01	2.774E-01	1.520E-02	0.319
SB-127	9.461E-01		1.932E+00	3.256E+00	3.070E-01	0.291
XE-127	4.979E-02		6.213E-02	9.674E-02	5.465E-03	0.515
I-131	4.935E-03		1.477E-01	2.468E-01	1.589E-02	0.020
TE-132	-1.445E+00		1.097E+00	1.616E+00	2.356E-01	-0.894
BA-133	9.409E-03		5.496E-02	8.097E-02	9.360E-03	0.116
I-133	8.948E-03		7.909E-03	Half-Life too short		
CS-134	1.131E-01	+	6.619E-02	1.074E-01	6.760E-03	1.053
I-135	-1.384E+10		4.313E+10	Half-Life too short		
CS-136	-6.027E-02		1.200E-01	1.862E-01	1.336E-02	-0.324
CE-139	1.803E-02		3.498E-02	5.819E-02	3.147E-03	0.310
BA-140	3.551E-01		3.297E-01	5.516E-01	1.791E-01	0.644
LA-140	-3.635E-02		1.111E-01	1.763E-01	1.088E-02	-0.206
CE-141	2.270E-02		7.416E-02	1.228E-01	7.244E-03	0.185
CE-143	2.007E-03		2.875E-04	Half-Life too short		
CE-144	-2.117E-01		2.494E-01	3.921E-01	5.576E-02	-0.540
PM-144	1.945E-02		4.389E-02	7.336E-02	3.859E-03	0.265
PR-144	1.319E+00		2.976E+00	4.974E+00	2.613E-01	0.265
PM-146	3.538E-02		5.325E-02	9.163E-02	7.798E-03	0.386
ND-147	1.599E-01		6.965E-01	1.161E+00	1.558E-01	0.138
PM-149	3.319E+01		1.514E+02	2.576E+02	3.671E+01	0.129
EU-152	-3.485E-02		1.320E-01	1.764E-01	1.162E-02	-0.198

---- 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		1.027E-01	1.507E-01	1.260E-02	0.108
EU-154	5.247E-02		1.487E-01	2.515E-01	2.407E-02	0.209
EU-155	8.557E-02		1.308E-01	2.210E-01	1.677E-02	0.387
TB-160	-1.333E-02		1.506E-01	2.487E-01	1.757E-02	-0.054
HO-166M	-4.335E-02		6.594E-02	9.897E-02	5.340E-03	-0.438
TM-171	-1.752E+01		4.037E+01	5.807E+01	5.187E+00	-0.302
LU-176	1.614E-02		2.825E-02	4.779E-02	2.850E-03	0.338
LU-177	3.220E+00	+	1.965E+00	2.559E+00	1.455E-01	1.258
LU-177M	-2.919E-01		2.036E-01	3.031E-01	1.695E-02	-0.963
HF-181	-2.410E-03		4.891E-02	8.021E-02	4.513E-03	-0.030
W-181	-2.096E-01		5.288E-01	7.626E-01	6.831E-02	-0.275
TA-182	1.809E-02		2.394E-01	3.939E-01	2.379E-02	0.046
RE-183	-7.355E-02		1.280E-01	2.030E-01	1.106E-02	-0.362
RE-184	-1.748E-01		2.785E-01	4.297E-01	2.538E-02	-0.407
OS-185	1.775E-03		4.568E-02	7.433E-02	3.747E-03	0.024
RE-188	1.144E-01		2.034E-01	3.395E-01	1.880E-02	0.337
W-188	-3.360E+00		9.477E+00	1.352E+01	8.079E-01	-0.248
IR-192	3.493E-02		4.051E-02	7.101E-02	4.244E-03	0.492
AU-195	2.299E-01		2.793E-01	4.439E-01	3.628E-02	0.518
TL-200	1.199E-04		4.932E-04	Half-Life	too short	
TL-201	-1.416E+00		1.045E+01	1.690E+01	9.146E-01	-0.084
TL-202	1.057E-02		8.468E-02	1.412E-01	7.946E-03	0.075
HG-203	1.621E-02		4.990E-02	8.353E-02	5.275E-03	0.194
BI-207	2.546E-02		5.839E-02	1.006E-01	6.672E-03	0.253
TL-207	4.435E-01		8.952E-01	1.351E+00	2.237E-01	0.328
PO-209	-2.664E+00		7.948E+00	1.277E+01	9.249E-01	-0.209
BI-210	-1.534E+00		5.598E+00	9.186E+00	7.564E-01	-0.167
PB-210	-1.534E+00		5.598E+00	9.186E+00	7.564E-01	-0.167
PO-210	-1.534E+00		5.598E+00	9.186E+00	6.636E-01	-0.167
PB-211	-1.185E+00		1.362E+00	1.777E+00	1.108E+00	-0.667
BI-212	1.354E+00	+	6.920E-01	7.596E-01	5.712E-02	1.783
PO-215	4.435E-01		8.952E-01	1.351E+00	2.237E-01	0.328
RN-219	2.978E-01		4.926E-01	8.453E-01	1.142E-01	0.352
RN-220	2.269E+01		3.207E+01	5.517E+01	3.032E+00	0.411
RA-223	4.435E-01		8.952E-01	1.351E+00	2.237E-01	0.328
AC-227	4.040E-01		4.505E-01	7.515E-01	1.053E-01	0.538
TH-227	4.040E-01		4.521E-01	7.515E-01	1.273E-01	0.538
TH-229	-3.874E-01		6.148E-01	9.660E-01	5.397E-02	-0.401
PA-231	4.450E-01		1.823E+00	3.108E+00	4.305E-01	0.143
TH-231	4.435E-01		8.952E-01	1.351E+00	2.237E-01	0.328
U-231	-3.230E-01		1.645E+00	2.368E+00	2.029E-01	-0.136
PA-233	-5.826E-02		7.314E-02	1.171E-01	7.388E-03	-0.497
PA-234	8.277E-02		3.470E-01	5.888E-01	1.067E-01	0.141
PA-234M	5.733E+00		5.446E+00	9.734E+00	8.319E-01	0.589
U-235	-6.282E-02		2.538E-01	4.044E-01	6.577E-02	-0.155
NP-236	-2.287E-02		9.243E-02	1.490E-01	8.153E-03	-0.153
NP-239	2.005E-02		2.208E-01	3.650E-01	2.358E-02	0.055
AM-241	-9.058E-02		2.200E-01	3.179E-01	3.108E-02	-0.285

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	8.339E-02		1.151E-01	1.951E-01	1.487E-02	0.427
AM-246	-6.750E-02		1.651E-01	2.599E-01	1.701E-02	-0.260
CM-247	2.951E-02		4.390E-02	7.582E-02	4.225E-03	0.389
CF-249	3.075E-02		4.808E-02	8.294E-02	4.626E-03	0.371
CF-251	-8.562E-02		1.496E-01	2.365E-01	1.294E-02	-0.362

## 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]G244148002
* Acquisition date   : 20-JAN-2010 15:49:14 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 02:00:01.18             Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G244148002                 Analyst initials: MXR1
* Batch Number       : 940268                     Sample Quantity : 1.2467E+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	2.009E+01	2.129E+00	3.158E-01	1.086E+00
CD-109	4.396E+00	1.731E+00	8.488E-01	8.832E-01
SN-126	4.314E-01	1.699E-01	8.374E-02	8.667E-02
CS-135	8.060E-01	3.420E-01	1.441E-01	1.745E-01
BA-137M	3.266E-01	8.097E-02	3.585E-02	4.131E-02
CS-137	3.452E-01	8.561E-02	3.790E-02	4.368E-02
TL-208	5.481E-01	9.298E-02	3.800E-02	4.744E-02
BI-211	4.177E+00	5.393E-01	2.102E-01	2.751E-01
PB-212	1.647E+00	1.722E-01	5.755E-02	8.788E-02
PO-212	1.647E+00	1.722E-01	5.755E-02	8.788E-02
BI-214	1.324E+00	1.947E-01	7.001E-02	9.934E-02
PB-214	1.453E+00	2.018E-01	6.621E-02	1.029E-01
PO-214	1.453E+00	2.018E-01	6.621E-02	1.029E-01
PO-216	1.647E+00	1.722E-01	5.755E-02	8.788E-02
PO-218	1.453E+00	2.018E-01	6.621E-02	1.029E-01
RA-224	3.952E+00	1.336E+00	6.550E-01	6.814E-01
RA-226	1.324E+00	1.947E-01	7.001E-02	9.934E-02
AC-228	1.499E+00	3.145E-01	1.177E-01	1.605E-01
RA-228	1.499E+00	3.145E-01	1.177E-01	1.605E-01
TH-228	1.674E+00	1.750E-01	5.849E-02	8.931E-02
TH-230	1.324E+00	1.947E-01	7.001E-02	9.934E-02
TH-232	1.499E+00	3.145E-01	1.177E-01	1.605E-01
TH-234	2.461E+00	1.962E+00	1.399E+00	1.001E+00
U-234	1.324E+00	1.947E-01	7.001E-02	9.934E-02
NP-237	1.267E+00	5.608E-01	2.523E-01	2.861E-01
U-238	2.461E+00	1.962E+00	1.399E+00	1.001E+00
AM-243	4.352E-01	1.009E-01	5.979E-02	5.148E-02
ANH-511	1.524E-01	7.348E-02	2.666E-02	3.749E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-2.193E-01	3.931E-01	3.221E-01	2.006E-01	NOT IDENT.
NA-22	1.930E-02	5.225E-02	4.519E-02	2.666E-02	NOT IDENT.
NA-24	-1.304E+05	2.645E+06	0.000E+00	1.350E+06	SHORT HLIF
AL-26	-1.022E-02	2.537E-02	1.888E-02	1.295E-02	NOT IDENT.
TI-44	3.838E-01	6.807E-02	4.793E-02	3.473E-02	FAIL ABUN
SC-46	-7.398E-03	4.562E-02	3.845E-02	2.327E-02	FAIL ABUN
V-48	3.217E-02	7.134E-02	6.368E-02	3.640E-02	NOT IDENT.
CR-51	-7.069E-01	4.604E-01	3.627E-01	2.349E-01	NOT IDENT.
MN-52	1.820E-02	2.944E-01	2.452E-01	1.502E-01	FAIL ABUN
MN-54	6.659E-03	4.056E-02	3.536E-02	2.070E-02	NOT IDENT.
CO-56	-2.827E-04	4.470E-02	3.836E-02	2.281E-02	NOT IDENT.
CO-57	-1.841E-03	3.074E-02	2.662E-02	1.568E-02	NOT IDENT.
CO-58	-7.660E-03	4.365E-02	3.700E-02	2.227E-02	NOT IDENT.
FE-59	-6.200E-02	9.423E-02	7.314E-02	4.807E-02	NOT IDENT.
CO-60	5.143E-03	4.609E-02	3.849E-02	2.352E-02	NOT IDENT.
ZN-65	-4.367E-02	1.106E-01	7.493E-02	5.645E-02	NOT IDENT.
GE-68	-7.695E-01	1.385E+00	1.098E+00	7.068E-01	NOT IDENT.
AS-73	-3.301E-01	1.171E+00	1.040E+00	5.976E-01	NOT IDENT.
AS-74	6.718E-03	1.116E-01	9.425E-02	5.691E-02	NOT IDENT.
SE-75	2.605E-02	5.767E-02	4.346E-02	2.942E-02	NOT IDENT.
BR-77	1.933E+01	1.539E+01	1.429E+01	7.854E+00	FAIL ABUN
SR-82	-4.036E-01	3.965E-01	3.081E-01	2.023E-01	NOT IDENT.
RB-83	9.508E-02	7.572E-02	7.031E-02	3.863E-02	NOT IDENT.
RB-84	-2.334E-02	7.962E-02	6.624E-02	4.062E-02	NOT IDENT.
KR-85	1.666E+01	9.148E+00	7.851E+00	4.668E+00	NOT IDENT.
SR-85	8.636E-02	4.742E-02	4.070E-02	2.420E-02	NOT IDENT.
RB-86	-1.755E-01	8.822E-01	7.282E-01	4.501E-01	NOT IDENT.
Y-88	-1.255E-02	3.435E-02	2.638E-02	1.753E-02	NOT IDENT.
ZR-88	-1.991E-03	3.769E-02	3.244E-02	1.923E-02	NOT IDENT.
Y-91	2.122E+01	2.171E+01	1.978E+01	1.108E+01	NOT IDENT.
NB-94	-2.342E-02	4.087E-02	3.231E-02	2.085E-02	NOT IDENT.
NB-95	6.729E-02	5.251E-02	4.774E-02	2.679E-02	NOT IDENT.
NB-95M	4.577E-01	1.984E-01	1.610E-01	1.012E-01	NOT IDENT.
ZR-95	-6.370E-03	8.294E-02	6.808E-02	4.232E-02	NOT IDENT.
NB-97	1.918E+05	3.907E+05	0.000E+00	1.993E+05	SHORT HLIF
ZR-97	2.058E+07	6.525E+06	0.000E+00	3.329E+06	SHORT HLIF
MO-99	-1.229E+01	1.566E+01	1.176E+01	7.989E+00	NOT IDENT.
TC-99M	-4.346E+17	7.974E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.932E-03	4.042E-02	3.269E-02	2.062E-02	NOT IDENT.
RH-102	2.078E-02	3.552E-02	3.147E-02	1.812E-02	NOT IDENT.
RU-103	1.160E-02	4.713E-02	4.082E-02	2.404E-02	FAIL ABUN
RH-106	-2.180E-01	3.665E-01	2.906E-01	1.870E-01	FAIL ABUN
RU-106	-2.180E-01	3.659E-01	2.906E-01	1.867E-01	FAIL ABUN
AG-108M	1.504E-02	3.887E-02	3.418E-02	1.983E-02	NOT IDENT.
AG-110M	1.188E-02	4.951E-02	3.667E-02	2.526E-02	NOT IDENT.
IN-111	1.892E+00	1.750E+00	1.379E+00	8.930E-01	NOT IDENT.
IN-113M	4.957E-03	5.438E-02	4.721E-02	2.775E-02	NOT IDENT.
SN-113	4.957E-03	5.438E-02	4.721E-02	2.775E-02	NOT IDENT.
IN-114M	2.581E-01	2.381E-01	1.884E-01	1.215E-01	NOT IDENT.
CD-115	7.623E+00	1.618E+01	1.423E+01	8.253E+00	NOT IDENT.
SN-117M	-7.929E-03	6.404E-02	5.461E-02	3.267E-02	NOT IDENT.
SB-122	-3.940E-01	3.004E+00	2.508E+00	1.533E+00	NOT IDENT.
I-123	3.222E+05	2.369E+07	0.000E+00	1.209E+07	SHORT HLIF
TE-123M	4.275E-04	3.144E-02	2.697E-02	1.604E-02	NOT IDENT.
I-124	5.768E-01	1.094E+00	8.380E-01	5.581E-01	NOT IDENT.
SB-124	4.902E-02	9.222E-02	8.475E-02	4.705E-02	FAIL ABUN
SB-125	5.739E-02	1.094E-01	9.699E-02	5.579E-02	FAIL ABUN
TE-125M	1.384E+00	1.076E+01	9.429E+00	5.490E+00	NOT IDENT.
I-126	1.135E-01	2.434E-01	1.855E-01	1.242E-01	NOT IDENT.
SB-126	8.838E-02	1.835E-01	1.400E-01	9.360E-02	NOT IDENT.
SB-127	9.461E-01	1.893E+00	1.645E+00	9.660E-01	NOT IDENT.
XE-127	4.979E-02	6.089E-02	4.969E-02	3.106E-02	NOT IDENT.
I-131	4.935E-03	1.447E-01	1.258E-01	7.385E-02	NOT IDENT.
TE-132	-1.445E+00	1.075E+00	8.288E-01	5.487E-01	NOT IDENT.
BA-133	9.409E-03	5.387E-02	4.128E-02	2.748E-02	NOT IDENT.
I-133	8.948E+03	1.550E+04	0.000E+00	7.909E+03	SHORT HLIF
CS-134	1.131E-01	6.486E-02	5.415E-02	3.309E-02	FAIL ABUN
I-135	-1.384E+16	8.454E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.027E-02	1.176E-01	9.349E-02	5.998E-02	NOT IDENT.
CE-139	1.803E-02	3.428E-02	2.997E-02	1.749E-02	NOT IDENT.
BA-140	3.551E-01	3.231E-01	2.796E-01	1.649E-01	NOT IDENT.
LA-140	-3.635E-02	1.088E-01	8.803E-02	5.553E-02	FAIL ABUN
CE-141	2.270E-02	7.267E-02	6.335E-02	3.708E-02	NOT IDENT.
CE-143	2.007E+03	5.636E+02	0.000E+00	2.875E+02	SHORT HLIF
CE-144	-2.117E-01	2.445E-01	2.026E-01	1.247E-01	NOT IDENT.
PM-144	1.945E-02	4.301E-02	3.705E-02	2.194E-02	NOT IDENT.
PR-144	1.319E+00	2.916E+00	2.512E+00	1.488E+00	NOT IDENT.



PM-146	3.538E-02	5.219E-02	4.655E-02	2.663E-02	NOT IDENT.
ND-147	1.599E-01	6.826E-01	5.886E-01	3.483E-01	NOT IDENT.
PM-149	3.319E+01	1.483E+02	1.317E+02	7.568E+01	NOT IDENT.
EU-152	-3.485E-02	1.293E-01	8.998E-02	6.599E-02	FAIL ABUN
GD-153	1.627E-02	1.007E-01	7.817E-02	5.137E-02	NOT IDENT.
EU-154	5.247E-02	1.458E-01	1.259E-01	7.437E-02	NOT IDENT.
EU-155	8.557E-02	1.282E-01	1.145E-01	6.540E-02	FAIL ABUN
TB-160	-1.333E-02	1.475E-01	1.252E-01	7.528E-02	FAIL ABUN
HO-166M	-4.335E-02	6.462E-02	4.997E-02	3.297E-02	FAIL ABUN
TM-171	-1.752E+01	3.956E+01	3.027E+01	2.018E+01	NOT IDENT.
LU-176	1.614E-02	2.769E-02	2.441E-02	1.413E-02	FAIL ABUN
LU-177	3.220E+00	1.925E+00	1.314E+00	9.823E-01	FAIL ABUN
LU-177M	-2.919E-01	1.996E-01	1.542E-01	1.018E-01	FAIL ABUN
HF-181	-2.410E-03	4.794E-02	4.072E-02	2.446E-02	NOT IDENT.
W-181	-2.096E-01	5.182E-01	3.977E-01	2.644E-01	NOT IDENT.
TA-182	1.809E-02	2.346E-01	1.974E-01	1.197E-01	FAIL ABUN
RE-183	-7.355E-02	1.254E-01	1.046E-01	6.398E-02	FAIL ABUN
RE-184	-1.748E-01	2.730E-01	2.201E-01	1.393E-01	NOT IDENT.
OS-185	1.775E-03	4.477E-02	3.758E-02	2.284E-02	NOT IDENT.
RE-188	1.144E-01	1.994E-01	1.750E-01	1.017E-01	NOT IDENT.
W-188	-3.360E+00	9.287E+00	6.913E+00	4.738E+00	FAIL ABUN
IR-192	3.493E-02	3.970E-02	3.626E-02	2.025E-02	FAIL ABUN
AU-195	2.299E-01	2.737E-01	2.302E-01	1.396E-01	FAIL ABUN
TL-200	1.199E+02	9.667E+02	0.000E+00	4.932E+02	SHORT HLIF
TL-201	-1.416E+00	1.024E+01	8.703E+00	5.223E+00	NOT IDENT.
TL-202	1.057E-02	8.299E-02	7.179E-02	4.234E-02	NOT IDENT.
HG-203	1.621E-02	4.891E-02	4.272E-02	2.495E-02	NOT IDENT.
BI-207	2.546E-02	5.723E-02	5.052E-02	2.920E-02	FAIL ABUN
TL-207	4.435E-01	8.773E-01	6.895E-01	4.476E-01	FAIL ABUN
PO-209	-2.664E+00	7.789E+00	6.424E+00	3.974E+00	NOT IDENT.
BI-210	-1.534E+00	5.486E+00	4.812E+00	2.799E+00	NOT IDENT.
PB-210	-1.534E+00	5.486E+00	4.812E+00	2.799E+00	NOT IDENT.
PO-210	-1.534E+00	5.486E+00	4.812E+00	2.799E+00	NOT IDENT.
PB-211	-1.185E+00	1.335E+00	9.045E-01	6.811E-01	NOT IDENT.
BI-212	1.354E+00	6.782E-01	3.834E-01	3.460E-01	FAIL ABUN
PO-215	4.435E-01	8.773E-01	6.895E-01	4.476E-01	FAIL ABUN
RN-219	2.978E-01	4.827E-01	4.302E-01	2.463E-01	NOT IDENT.
RN-220	2.269E+01	3.142E+01	2.796E+01	1.603E+01	NOT IDENT.
RA-223	4.435E-01	8.773E-01	6.895E-01	4.476E-01	FAIL ABUN
AC-227	4.040E-01	4.415E-01	3.848E-01	2.252E-01	FAIL ABUN
TH-227	4.040E-01	4.431E-01	3.848E-01	2.261E-01	FAIL ABUN
TH-229	-3.874E-01	6.025E-01	4.965E-01	3.074E-01	FAIL ABUN
PA-231	4.450E-01	1.787E+00	1.589E+00	9.117E-01	FAIL ABUN
TH-231	4.435E-01	8.773E-01	6.895E-01	4.476E-01	FAIL ABUN
U-231	-3.230E-01	1.612E+00	1.229E+00	8.223E-01	FAIL ABUN
PA-233	-5.826E-02	7.168E-02	5.982E-02	3.657E-02	FAIL ABUN
PA-234	8.277E-02	3.400E-01	2.961E-01	1.735E-01	FAIL ABUN
PA-234M	5.733E+00	5.337E+00	4.891E+00	2.723E+00	NOT IDENT.
U-235	-6.282E-02	2.487E-01	2.087E-01	1.269E-01	FAIL ABUN
NP-236	-2.287E-02	9.058E-02	7.679E-02	4.622E-02	NOT IDENT.
NP-239	2.005E-02	2.164E-01	1.889E-01	1.104E-01	FAIL ABUN
AM-241	-9.058E-02	2.156E-01	1.660E-01	1.100E-01	NOT IDENT.
CM-243	8.339E-02	1.128E-01	1.011E-01	5.756E-02	FAIL ABUN
AM-246	-6.750E-02	1.617E-01	1.305E-01	8.253E-02	NOT IDENT.
CM-247	2.951E-02	4.302E-02	3.859E-02	2.195E-02	NOT IDENT.
CF-249	3.075E-02	4.712E-02	4.223E-02	2.404E-02	NOT IDENT.
CF-251	-8.562E-02	1.466E-01	1.217E-01	7.478E-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	359.5648
46.50	359.5648
46.50	359.5648
48.70	363.7137
49.72	382.5430
51.35	356.2917
52.39	376.0971
52.97	381.9498
53.15	360.1294
53.44	365.7921
54.07	350.6163
56.28	350.9781
56.28	350.9796
57.37	0.0000
57.53	349.8508
57.53	349.8515
57.60	333.9301
57.98	331.6772
57.98	331.6772
59.32	363.4085
59.32	363.4085
59.40	363.4543
59.54	363.5347
59.72	372.5075
60.01	372.6775
61.10	336.2777
61.14	331.8540
61.30	331.9367
63.00	365.8640
63.29	401.3271
63.29	401.3271
63.58	441.6552
64.28	448.0774
65.12	435.2286
65.20	435.2803
65.20	435.2803
66.05	437.3254
66.72	439.2504
66.83	439.3240
66.91	467.7711
67.20	459.7467
67.20	459.7467
67.75	448.8940
67.85	448.9600
68.90	425.6654
68.90	425.6654
69.30	421.4125
69.67	450.1483
70.82	456.8980
70.82	456.8980
70.83	456.9055
72.80	459.6855
72.87	459.7302
72.87	459.7302
74.67	493.9356
74.81	494.0313
74.81	494.0313
74.81	494.0313
74.81	494.0313
74.81	494.0313
74.81	494.0313
74.81	494.0313
74.97	494.1391
75.28	494.3506
75.70	494.6339
77.11	495.5835
77.11	495.5835

77.11	495.5835
77.11	495.5835
77.11	495.5835
77.11	495.5835
77.11	495.5835
78.38	496.4314
79.62	497.2514
79.80	497.3691
79.80	497.3691
80.11	497.5746
80.18	497.6205
80.30	497.6983
80.30	497.6983
80.57	495.0200
81.00	510.5397
81.07	510.5867
81.07	510.5867
81.07	510.5867
81.07	510.5867
82.60	408.5220
83.37	466.2531
83.78	466.5007
83.78	466.5007
83.78	466.5007
83.78	466.5007
84.21	378.7638
84.90	467.1709
85.43	457.2672
86.29	498.6838
86.50	498.8167
86.54	498.8405
86.59	498.8722
86.72	486.6736
86.79	486.7142
86.94	486.8071
87.30	487.0276
87.30	487.0276
87.30	487.0276
87.30	487.0276
87.30	487.0276
87.30	487.0276
87.57	487.1921
87.88	487.3817
88.03	487.4727
88.36	487.6719
88.47	487.7397
89.95	400.7720
91.11	401.3433
92.29	401.9193
92.38	401.9637
92.38	401.9637
93.35	331.2350
94.00	323.7484
94.67	339.5081
94.67	339.5101
94.90	345.8065
94.90	345.8065
94.90	345.8065
94.90	345.8065
95.87	347.7578
95.87	347.7578
96.73	352.7741
97.43	323.5121
98.44	312.9927
98.44	312.9940
98.88	301.2090
99.55	314.0658
99.55	314.0658
99.86	304.1507
100.00	304.1995
100.10	304.2364
103.18	355.2136
103.76	315.2994
105.00	315.7392
105.31	332.5237
108.00	336.4684
109.28	321.1774

111.00	333.6239
111.00	333.6239
111.76	351.6787
112.95	308.6068
115.19	304.3861
116.30	311.6906
117.00	300.9923
117.00	300.9923
117.66	321.0815
121.11	312.2526
121.62	327.3882
121.78	335.4271
122.06	335.5232
122.32	345.6001
122.32	345.6001
122.32	345.6001
122.32	345.6001
123.07	340.8660
127.23	355.3416
129.76	335.0985
131.20	301.3086
133.02	340.2010
133.54	346.4333
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136.25	326.0682
136.48	325.1266
140.51	332.4637
140.51	0.0000
142.18	289.1937
142.65	308.6752
143.76	324.2886
144.24	308.1081
144.24	308.1081
144.24	308.1081
144.24	308.1081
145.22	282.8561
145.44	293.1266
147.16	288.4717
152.43	273.3932
152.70	269.3460
153.22	266.3844
154.21	271.7626
154.21	271.7626
154.21	271.7626
154.21	271.7626
155.03	283.2916
156.02	316.5305
158.56	266.5979
159.00	0.0000
159.00	259.4623
160.31	283.5576
161.27	276.5415
162.32	287.1546
162.64	295.5284
163.35	260.4294
163.89	266.7773
165.85	264.1002
167.43	281.1072
171.28	269.4717
171.86	268.5567
172.10	268.6096
176.55	281.1227
176.60	281.1330
181.06	242.5553
184.41	271.9076
185.71	293.7397
186.00	293.8076
190.27	230.7352
192.34	284.0204
193.63	284.9074
197.04	244.0760
198.01	261.3200
198.60	277.4402
200.40	276.7466
201.83	255.6461
202.84	245.4898
205.31	272.8174

208.36	278.5839
208.81	244.0555
209.75	232.3856
209.75	232.3856
210.97	223.9755
215.65	223.6457
216.55	248.6531
218.09	221.8665
222.10	220.3199
223.80	241.2255
226.40	198.1155
227.00	222.1554
227.08	237.4146
227.20	237.4346
228.16	273.5546
228.18	273.5584
228.18	273.5584
231.56	0.0000
235.69	289.1911
236.00	283.9924
236.00	283.9924
238.63	243.6611
238.63	243.6611
238.63	243.6611
238.63	243.6611
239.00	243.7203
240.98	244.0405
241.98	244.2014
241.98	244.2014
241.98	244.2014
244.69	174.5503
245.39	165.8104
247.94	186.9925
248.90	198.8951
249.79	190.1642
252.40	174.9787
252.85	196.0771
252.85	196.0771
254.15	0.0000
256.20	160.9700
256.20	160.9700
260.50	193.6870
260.90	190.3972
262.80	178.3594
264.65	158.9224
268.24	165.5380
268.79	165.5944
269.46	165.6622
269.46	165.6622
269.46	165.6622
269.46	165.6622
271.23	170.3251
273.65	247.7834
276.40	167.8610
277.35	164.2077
277.60	164.2322
277.60	164.2322
278.00	176.4239
278.60	167.4817
279.20	177.4515
279.53	200.0087
280.46	204.6270
281.68	212.8955
283.67	176.1165
284.30	175.2797
285.00	169.0236
285.90	175.4454
286.10	157.3753
286.10	157.3753
287.40	171.0736
288.45	0.0000
290.67	166.2622
290.80	166.2734
291.72	186.0240
293.26	0.0000
293.70	146.8716
295.21	204.5847
295.21	204.5847

295.21	204.5847
295.96	209.2236
296.50	209.2882
297.23	209.3752
298.57	209.5353
299.80	124.5949
299.80	124.5949
300.09	133.7331
300.09	133.7331
300.09	133.7331
300.09	133.7331
300.12	133.7349
301.29	124.7000
302.84	158.2957
303.76	156.8554
303.91	156.8680
304.40	138.6310
304.40	138.6310
304.84	143.2356
306.84	132.2111
308.46	124.5947
311.98	158.8022
316.51	132.5127
318.01	134.4654
319.02	158.4974
319.41	164.0612
320.08	181.6406
323.87	147.8301
323.87	147.8301
323.87	147.8301
323.87	147.8301
325.23	135.6094
328.77	186.8198
333.44	156.0193
334.20	161.0379
334.20	161.0379
334.30	161.0464
338.28	147.1086
338.28	147.1086
338.28	147.1086
338.28	147.1086
338.32	147.1105
338.32	147.1105
338.32	147.1105
340.50	104.0905
340.57	104.0932
344.27	130.7578
345.85	112.1689
350.59	0.0000
351.07	153.0871
351.92	125.0228
351.92	125.0228
351.92	125.0228
355.39	0.0000
356.01	117.4530
364.48	123.6169
366.43	119.0156
367.43	114.3488
367.94	0.0000
369.80	126.7831
374.96	101.4946
383.85	120.9880
387.95	117.4085
388.63	117.4461
391.69	131.9608
391.69	131.9608
392.90	133.9502
398.62	117.0437
400.65	113.3143
401.10	121.9833
401.81	112.4154
402.60	110.5345
404.84	147.2121
410.95	114.8222
411.60	109.0660
413.65	131.3881
414.70	127.5850
415.30	111.1844

415.76	101.5380
417.63	0.0000
418.52	101.6649
423.70	115.4904
427.08	107.8903
427.89	105.0126
432.53	109.1275
433.93	104.3198
439.47	96.7570
439.56	96.7607
439.89	100.6853
443.98	106.7407
444.90	104.8240
445.03	104.8305
445.03	104.8305
445.03	104.8305
445.03	104.8305
453.90	97.3649
463.38	102.0391
468.07	92.3467
473.00	116.0031
475.06	96.2552
475.35	99.2444
476.78	110.2263
477.59	110.2643
477.96	99.3518
482.03	85.5864
484.57	93.6454
487.03	85.7627
490.36	0.0000
492.35	85.9486
497.08	83.1094
507.63	0.0000
510.53	0.0000
510.84	81.5532
511.00	81.5582
511.85	81.5863
511.85	81.5863
513.99	73.9259
513.99	73.9259
520.41	59.6266
520.65	59.6324
527.90	66.8959
528.96	0.0000
529.64	62.8840
529.87	0.0000
531.02	77.1244
537.32	61.0342
543.00	93.7879
546.56	0.0000
549.76	77.6755
552.65	95.1524
555.20	77.8332
563.23	78.0651
563.90	78.0855
568.70	68.9596
569.32	73.0939
569.50	72.0696
569.67	72.0730
573.80	90.5144
574.00	90.5208
574.64	96.7026
578.91	68.8721
579.30	0.0000
583.14	94.8446
585.48	70.7624
591.81	86.1449
592.07	85.1150
593.00	74.7598
595.88	78.9929
600.56	81.2068
602.52	0.0000
602.71	83.3516
602.71	83.3516
603.60	109.4348
604.41	100.7778
604.70	100.7873
609.31	90.5070

609.31	90.5070
609.31	90.5070
609.31	90.5070
610.33	80.0920
612.46	87.1216
614.37	64.5136
618.01	77.5139
621.84	77.6151
621.84	77.6151
631.29	59.9794
633.02	49.4854
633.10	49.4865
634.78	61.1039
635.90	65.3422
636.97	60.0949
645.85	50.7574
646.12	54.9923
656.30	72.5107
657.75	76.0846
657.90	0.0000
661.65	77.9543
661.65	77.9543
664.57	0.0000
666.33	60.3301
666.33	60.3301
675.00	69.3973
677.61	71.5932
685.20	59.9854
692.80	67.6481
695.00	88.1120
696.49	76.3285
696.49	76.3285
697.00	73.1149
697.49	76.3527
698.33	80.6744
698.50	81.7557
699.00	81.7687
702.63	85.0928
706.10	62.5412
706.58	0.0000
706.67	65.7880
709.31	51.8109
711.68	62.6516
713.82	67.0163
717.42	51.7017
720.50	48.7419
721.93	0.0000
722.20	61.4113
722.78	65.0347
722.78	65.0347
722.89	65.0376
722.95	65.0391
723.30	68.6601
724.18	70.4860
727.18	56.4408
733.00	48.9298
735.90	43.5322
739.58	55.5646
742.81	45.8042
744.21	48.0058
747.13	60.0609
751.79	55.7700
752.31	60.1536
753.82	54.7107
755.35	70.0609
756.15	61.3184
756.87	58.0464
763.93	100.9709
765.79	61.4947
766.42	61.5057
766.84	68.1046
776.49	59.6693
778.00	66.1245
778.57	56.0308
778.89	56.0358
783.80	46.9171
785.46	57.9846
792.07	45.8445



795.84	50.6417
796.30	49.0657
798.80	45.9335
801.93	59.9260
805.60	52.7672
810.29	58.3998
810.76	55.6262
815.85	46.4223
817.79	51.0925
818.51	58.5357
819.60	44.6123
826.30	51.2145
828.27	0.0000
831.60	55.9534
831.96	57.8248
834.83	55.0712
836.80	0.0000
846.75	54.3160
848.13	59.0215
856.28	0.0000
856.80	72.4423
860.37	38.6735
867.32	35.1587
867.82	31.6470
871.10	49.9635
873.19	55.6510
874.81	45.2959
875.33	0.0000
876.40	37.7620
879.36	44.4058
880.27	48.1974
880.51	47.2555
881.50	51.9944
883.24	49.1806
884.67	46.3612
889.25	53.9965
896.60	46.5087
898.02	47.4752
899.00	48.4371
903.28	38.5085
911.07	45.7324
911.07	45.7324
911.07	45.7324
919.63	47.7437
920.93	49.6704
925.00	40.6818
925.24	41.7276
926.50	51.6555
935.52	41.0915
937.48	34.5337
944.10	49.9666
946.00	46.1455
949.00	33.6734
962.29	36.6818
964.01	36.6973
966.15	36.7174
968.20	36.7360
969.11	36.4682
969.11	36.4682
969.11	36.4682
977.42	30.6542
980.50	41.6965
983.50	30.0830
989.30	39.8439
996.32	53.5409
1001.03	36.0598
1001.68	40.9387
1004.76	35.1167
1021.30	0.0000
1024.50	0.0000
1034.80	35.3716
1036.00	46.1910
1037.82	30.4803
1038.57	32.4521
1038.76	0.0000
1045.16	29.5483
1046.59	41.3813
1048.07	42.3806

1050.47	39.4466
1050.47	39.4466
1062.04	38.5652
1063.62	38.5795
1076.63	42.6641
1077.35	48.6252
1078.86	49.6338
1085.78	37.7820
1099.22	42.8845
1112.02	38.6745
1112.84	36.0146
1115.52	48.0469
1120.29	39.0809
1120.29	39.0809
1120.29	39.0809
1120.29	39.0809
1120.51	39.0825
1121.28	41.2366
1124.00	0.0000
1129.67	44.5843
1131.51	0.0000
1147.95	0.0000
1167.94	51.6433
1173.22	45.6207
1175.09	68.9657
1177.93	58.8591
1189.05	41.7074
1204.90	42.8682
1205.75	0.0000
1213.00	61.3452
1221.42	58.3823
1230.97	69.7874
1235.34	54.4427
1236.41	0.0000
1238.25	51.3916
1246.25	46.3293
1260.41	0.0000
1271.85	55.8875
1274.45	40.3838
1274.54	40.3854
1291.56	33.2500
1298.22	0.0000
1312.09	27.1267
1325.50	29.2909
1325.50	29.2909
1332.49	28.2843
1333.61	27.2420
1360.21	30.5435
1362.66	0.0000
1365.15	18.9756
1368.21	22.1519
1368.53	0.0000
1376.25	24.2990
1384.27	31.7432
1394.10	25.4414
1395.20	19.0854
1407.95	21.2565
1434.06	20.2926
1436.60	12.8223
1457.56	0.0000
1460.81	21.4665
1489.15	15.1040
1509.49	19.4897
1596.49	24.4992
1620.62	14.1922
1678.03	0.0000
1691.02	12.4446
1691.02	12.4446
1706.46	0.0000
1750.46	0.0000
1764.49	6.7805
1764.49	6.7805
1764.49	6.7805
1764.49	6.7805
1770.23	10.1799
1771.40	56.2421
1791.20	0.0000
1808.65	7.8030

1836.01

10.7744

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148002

Total Uranium Activity	7.2918E+00	ug/g
Total Uranium Counting Unc.	5.8394E+00	ug/g
Total Uranium Tpu	2.9793E-06	ug/g
Total Uranium Mda	4.1633E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 940268                SAMPLE ID   : G244148002                *
*  ANALYST       : MXR1                  DETECTOR    : GAM06                  *
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 20-JAN-2010 15:49:14.78  SAMPLE ALQT: 124.670 GRAM          *
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.922E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.332E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.672E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.781E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:51:12.77

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148003.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:49:41
Sample ID        : G244148003      Sample quantity   : 1.25010E+02 GRAM
Detector name    : GAM07           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:01.28 0.0%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000        Sensitivity     : 5.00000
Batch ID        : 940268           Detector SN#    :
Matrix Spike ID  :                  LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.37*	42	393	1.44	92.40	89	8	5.90E-03	85.9	
2	0	63.38*	134	568	1.03	126.41	122	9	1.85E-02	34.2	
3	1	74.78*	506	470	1.11	149.20	143	22	7.03E-02	8.7	5.07E+00
4	1	77.13*	854	415	1.11	153.91	143	22	1.19E-01	5.4	
5	6	84.21*	173	331	1.61	168.07	165	13	2.40E-02	18.7	1.10E+00
6	6	87.20*	258	305	0.86	174.04	165	13	3.59E-02	12.0	
7	0	89.92	127	379	0.98	179.49	177	6	1.76E-02	25.9	
8	0	93.03*	400	601	1.52	185.71	182	11	5.56E-02	13.4	
9	0	185.92*	259	438	1.31	371.45	365	13	3.59E-02	18.1	
10	0	209.31	131	274	1.05	418.23	414	9	1.81E-02	24.4	
11	3	238.70*	1230	201	1.09	476.99	471	18	1.71E-01	3.5	6.90E-01
12	3	241.62	306	228	1.58	482.83	471	18	4.26E-02	12.5	
13	0	270.16	110	219	1.39	539.91	535	12	1.53E-02	28.4	
14	0	295.21*	414	168	1.34	589.98	585	10	5.75E-02	7.7	
15	0	300.35	48	179	1.15	600.27	596	9	6.67E-03	52.4	
16	0	338.39*	263	151	1.15	676.34	671	12	3.65E-02	11.4	
17	0	352.07*	657	191	1.18	703.68	697	13	9.13E-02	5.9	
18	0	409.55	48	99	0.97	818.64	814	8	6.69E-03	38.7	
19	0	463.02	70	105	1.39	925.56	922	10	9.72E-03	29.9	
20	0	511.08*	123	128	1.64	1021.67	1014	17	1.71E-02	26.0	
21	0	583.44*	427	87	1.42	1166.36	1158	16	5.93E-02	7.0	
22	0	609.29*	503	96	1.41	1218.06	1212	14	6.99E-02	6.2	
23	0	661.94	70	68	1.58	1323.35	1319	9	9.65E-03	24.5	
24	0	727.60*	86	81	1.12	1454.64	1450	12	1.19E-02	23.8	
25	0	768.33	46	78	1.32	1536.09	1528	13	6.39E-03	42.2	
26	0	861.34	61	49	1.88	1722.09	1716	15	8.47E-03	28.7	
27	0	911.26	254	46	1.34	1821.92	1815	13	3.52E-02	8.3	
28	1	964.77	71	28	1.98	1928.92	1923	22	9.81E-03	19.7	1.24E+00
29	1	969.19	163	22	1.98	1937.77	1923	22	2.27E-02	10.0	
30	0	1121.07*	108	58	2.48	2241.50	2234	20	1.50E-02	20.3	
31	0	1461.02*	855	40	2.24	2921.33	2910	23	1.19E-01	3.9	
32	0	1580.20	23	7	1.13	3159.69	3152	13	3.12E-03	31.5	
33	0	1622.41	9	9	0.89	3244.10	3239	8	1.25E-03	68.5	
34	0	1730.20	19	8	1.52	3459.67	3455	8	2.65E-03	34.3	
35	0	1764.64*	99	11	2.56	3528.54	3521	14	1.38E-02	12.7	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:51:15

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:49:41
Sample ID        : G244148003             Sample quantity  : 125.01 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA7                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.28   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
    
```

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	*	2.132E+01	2.487E+00	4.387E-01	3.767E-02	48.597
CD-109	+	88.03	*	3.123E+00	8.038E-01	1.079E+00	1.017E-01	2.894
SN-126	+	64.28		8.687E-01	6.071E-01	5.800E-01	8.412E-02	1.498
	+	86.94		1.274E+00	6.109E-01	4.445E-01	1.845E-01	2.867
	+	87.57	*	3.065E-01	7.888E-02	1.061E-01	9.945E-03	2.888
BA-137M	+	661.65	*	1.041E-01	5.173E-02	6.557E-02	5.803E-03	1.587
CS-137	+	661.65	*	1.100E-01	5.468E-02	6.931E-02	6.145E-03	1.587
TL-208		277.35		4.810E-01	4.015E-01	6.782E-01	8.304E-02	0.709
	+	510.84		6.218E-01	3.318E-01	2.292E-01	2.792E-02	2.713
	+	583.14	*	6.151E-01	1.045E-01	5.815E-02	5.562E-03	10.579
	+	860.37		8.251E-01	4.808E-01	4.221E-01	4.127E-02	1.955
BI-210	+	46.50	*	1.541E+00	2.651E+00	2.869E+00	2.691E-01	0.537
PB-210	+	46.50	*	1.541E+00	2.651E+00	2.869E+00	2.691E-01	0.537
PO-210	+	46.50	*	1.541E+00	2.650E+00	2.869E+00	2.441E-01	0.537
BI-211		72.87		5.514E+00	2.885E+00	4.521E+00	3.568E-01	1.220
	+	351.07	*	4.144E+00	6.145E-01	3.279E-01	2.942E-02	12.639
PB-212	+	74.81		2.342E+00	4.990E-01	4.377E-01	5.400E-02	5.350
	+	77.11		2.276E+00	3.090E-01	2.531E-01	2.089E-02	8.993
	+	87.30		1.418E+00	3.914E-01	4.936E-01	6.753E-02	2.872
	+	238.63	*	1.687E+00	2.003E-01	8.866E-02	8.480E-03	19.028
	+	300.09		1.019E+00	1.072E+00	1.174E+00	1.218E-01	0.868
PO-212	+	74.81		2.342E+00	4.990E-01	4.377E-01	5.400E-02	5.350
	+	77.11		2.276E+00	3.090E-01	2.531E-01	2.089E-02	8.993
	+	87.30		1.418E+00	3.914E-01	4.936E-01	6.753E-02	2.872
		115.19		-1.206E+00	3.476E+00	5.517E+00	4.752E-01	-0.219
	+	238.63	*	1.687E+00	2.003E-01	8.866E-02	8.480E-03	19.028
	+	300.09		1.019E+00	1.072E+00	1.174E+00	1.218E-01	0.868
BI-214	+	609.31	*	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
	+	1120.29		1.521E+00	6.381E-01	4.254E-01	4.568E-02	3.574
	+	1764.49		1.915E+00	5.118E-01	2.570E-01	2.114E-02	7.452
PB-214	+	74.81		4.035E+00	8.285E-01	7.543E-01	8.251E-02	5.350
	+	77.11		3.902E+00	6.075E-01	4.339E-01	4.874E-02	8.993
	+	87.30		2.429E+00	6.524E-01	8.456E-01	1.024E-01	2.872
	+	241.98		2.525E+00	6.797E-01	5.340E-01	5.420E-02	4.727

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		1.542E+00	2.887E-01	2.112E-01	2.236E-02	7.299
	+	351.92	*	1.442E+00	2.266E-01	1.143E-01	1.186E-02	12.612
	+	74.81		4.035E+00	8.285E-01	7.543E-01	8.251E-02	5.350
	+	77.11		3.902E+00	6.075E-01	4.339E-01	4.874E-02	8.993
	+	87.30		2.429E+00	6.524E-01	8.456E-01	1.024E-01	2.872
PO-216	+	241.98		2.525E+00	6.797E-01	5.340E-01	5.420E-02	4.727
	+	295.21		1.542E+00	2.887E-01	2.112E-01	2.236E-02	7.299
	+	351.92	*	1.442E+00	2.266E-01	1.143E-01	1.186E-02	12.612
	+	74.81		2.342E+00	4.990E-01	4.377E-01	5.400E-02	5.350
	+	77.11		2.276E+00	3.090E-01	2.531E-01	2.089E-02	8.993
PO-218	+	87.30		1.418E+00	3.914E-01	4.936E-01	6.753E-02	2.872
	+	238.63	*	1.687E+00	2.003E-01	8.866E-02	8.480E-03	19.028
	+	300.09		1.019E+00	1.072E+00	1.174E+00	1.218E-01	0.868
	+	74.81		4.035E+00	8.285E-01	7.543E-01	8.251E-02	5.350
	+	77.11		3.902E+00	6.075E-01	4.339E-01	4.874E-02	8.993
RA-224	+	87.30		2.429E+00	6.524E-01	8.456E-01	1.024E-01	2.872
	+	241.98		2.525E+00	6.797E-01	5.340E-01	5.420E-02	4.727
	+	295.21		1.542E+00	2.887E-01	2.112E-01	2.236E-02	7.299
	+	351.92	*	1.442E+00	2.266E-01	1.143E-01	1.186E-02	12.612
	+	240.98	*	4.787E+00	1.261E+00	1.009E+00	8.534E-02	4.743
RA-226	+	609.31	*	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
	+	1120.29		1.521E+00	6.381E-01	4.254E-01	4.568E-02	3.574
	+	1764.49		1.915E+00	5.118E-01	2.570E-01	2.114E-02	7.452
	+	338.32		1.824E+00	8.594E-01	3.661E-01	1.510E-01	4.982
	+	911.07	*	1.621E+00	3.297E-01	2.141E-01	2.494E-02	7.570
AC-228	+	969.11		1.840E+00	5.686E-01	3.218E-01	7.559E-02	5.719
	+	338.32		1.824E+00	8.594E-01	3.661E-01	1.510E-01	4.982
	+	911.07	*	1.621E+00	3.297E-01	2.141E-01	2.494E-02	7.570
	+	969.11		1.840E+00	5.686E-01	3.218E-01	7.559E-02	5.719
	+	74.81		2.380E+00	4.565E-01	4.448E-01	3.616E-02	5.350
TH-228	+	77.11		2.313E+00	3.140E-01	2.572E-01	2.123E-02	8.993
	+	87.30		1.441E+00	3.707E-01	5.016E-01	4.684E-02	2.872
	+	238.63	*	1.714E+00	2.036E-01	9.010E-02	8.618E-03	19.028
	+	300.09		1.036E+00	1.246E+00	1.193E+00	7.071E-01	0.868
	+	609.31	*	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
TH-230	+	1120.29		1.521E+00	6.381E-01	4.254E-01	4.567E-02	3.574
	+	1764.49		1.915E+00	5.118E-01	2.570E-01	2.114E-02	7.452
	+	338.32		1.824E+00	4.438E-01	3.661E-01	3.134E-02	4.982
	+	911.07	*	1.621E+00	3.297E-01	2.141E-01	2.494E-02	7.570
	+	969.11		1.840E+00	5.686E-01	3.218E-01	7.559E-02	5.719
TH-232	+	63.29	*	2.195E+00	1.548E+00	1.521E+00	2.647E-01	1.442
	+	92.38		3.162E+00	1.025E+00	7.185E-01	1.318E-01	4.401
	+	609.31	*	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
	+	1120.29		1.521E+00	6.381E-01	4.254E-01	4.567E-02	3.574
	+	1764.49		1.915E+00	5.118E-01	2.570E-01	2.114E-02	7.452
NP-237	+	86.50	*	9.001E-01	2.969E-01	3.147E-01	7.115E-02	2.860
	+	95.87		2.993E-01	9.458E-01	1.391E+00	3.445E-01	0.215
	+	63.29	*	2.195E+00	1.548E+00	1.521E+00	2.647E-01	1.442
	+	92.38		3.162E+00	8.930E-01	7.185E-01	6.582E-02	4.401
	+	92.38		3.162E+00	8.930E-01	7.185E-01	6.582E-02	4.401



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	+	74.67	*	3.796E-01	7.270E-02	7.110E-02	5.715E-03	5.340
	+	86.72		3.375E+01	8.686E+00	1.179E+01	1.092E+00	2.864
		117.66		-1.785E+00	3.714E+00	5.848E+00	5.030E-01	-0.305
		142.18		3.730E+00	1.775E+01	2.861E+01	2.361E+00	0.130
ANH-511	+	511.00	*	1.343E-01	7.079E-02	4.952E-02	4.400E-03	2.712

## ---- 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	*	7.929E-02	3.224E-01	5.273E-01	4.976E-02	0.150
NA-22		1274.54	*	6.231E-03	4.092E-02	6.879E-02	5.647E-03	0.091
NA-24		1368.53	*	3.687E-02	4.092E-02	Half-Life too short		
AL-26		1129.67		-2.309E-01	1.874E+00	2.644E+00	2.221E-01	-0.087
		1808.65	*	2.205E-03	2.840E-02	4.813E-02	3.925E-03	0.046
TI-44		67.85		1.141E-02	4.013E-02	5.952E-02	4.490E-03	0.192
	+	78.38	*	4.201E-01	5.703E-02	7.137E-02	5.975E-03	5.886
SC-46		889.25	*	-2.031E-02	4.005E-02	6.142E-02	5.628E-03	-0.331
	+	1120.51		2.625E-01	1.088E-01	1.360E-01	1.149E-02	1.931
V-48		944.10		-3.900E-01	9.215E-01	1.416E+00	1.288E-01	-0.275
		983.50	*	-4.080E-02	7.396E-02	1.114E-01	1.002E-02	-0.366
		1312.09		-7.062E-02	8.724E-02	1.295E-01	1.062E-02	-0.545
CR-51		320.08	*	3.597E-01	3.825E-01	6.617E-01	5.979E-02	0.544
MN-52		744.21		1.044E-01	2.584E-01	4.408E-01	4.001E-02	0.237
		848.13		6.309E+00	7.918E+00	1.384E+01	1.270E+00	0.456
		935.52		2.562E-01	3.045E-01	5.309E-01	4.834E-02	0.483
		1246.25		1.043E+01	8.374E+00	1.536E+01	1.258E+00	0.679
		1333.61		1.076E+00	5.822E+00	9.802E+00	8.031E-01	0.110
		1434.06	*	1.740E-01	2.589E-01	4.648E-01	3.865E-02	0.374
MN-54		834.83	*	5.080E-03	3.953E-02	6.521E-02	5.985E-03	0.078
CO-56		846.75	*	-2.475E-03	4.179E-02	6.771E-02	6.216E-03	-0.037
		977.42		-5.577E-01	2.970E+00	4.544E+00	4.098E-01	-0.123
		1037.82		7.196E-02	2.858E-01	4.921E-01	4.566E-02	0.146
		1175.09		1.004E-02	2.331E+00	3.878E+00	3.156E-01	0.003
		1238.25		1.387E-01	9.572E-02	1.751E-01	1.479E-02	0.792
		1360.21		1.512E-01	1.064E+00	1.781E+00	1.466E-01	0.085
		1771.40		-1.142E+00	3.608E-01	2.591E-01	2.128E-02	-4.409
CO-57		122.06	*	2.302E-03	2.420E-02	3.909E-02	3.363E-03	0.059
		136.48		1.010E-01	2.059E-01	3.364E-01	3.029E-02	0.300
CO-58		810.76	*	-7.607E-03	3.988E-02	6.397E-02	5.877E-03	-0.119
FE-59		142.65		2.980E-01	2.891E+00	4.555E+00	3.757E-01	0.065
		192.34		-7.896E-01	9.868E-01	1.546E+00	2.029E-01	-0.511
		1099.22	*	-6.786E-03	9.150E-02	1.518E-01	1.407E-02	-0.045
		1291.56		-9.201E-02	1.304E-01	1.976E-01	1.861E-02	-0.466
CO-60		1173.22		4.111E-03	4.625E-02	7.754E-02	6.310E-03	0.053
		1332.49	*	-3.318E-02	4.095E-02	6.033E-02	4.942E-03	-0.550
ZN-65		1115.52	*	-5.777E-02	1.072E-01	1.429E-01	1.212E-02	-0.404
GE-68		1077.35	*	-4.062E-01	1.351E+00	2.199E+00	1.905E-01	-0.185
AS-73		53.44	*	4.808E-02	5.221E-01	8.605E-01	6.461E-02	0.056

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-74	595.88	*		-1.631E-01	9.946E-02	1.428E-01	1.280E-02	-1.142
	634.78			-2.990E-02	3.924E-01	6.490E-01	5.786E-02	-0.046
SE-75	66.05			-1.990E+00	4.036E+00	5.772E+00	5.476E-01	-0.345
	96.73			-4.424E-01	7.843E-01	1.098E+00	1.521E-01	-0.403
	121.11			-3.684E-02	1.298E-01	2.059E-01	2.307E-02	-0.179
	136.00			3.131E-02	3.804E-02	6.306E-02	5.301E-03	0.496
	198.60			-4.074E-01	1.816E+00	3.036E+00	2.790E-01	-0.134
	264.65	*		8.794E-03	4.663E-02	6.917E-02	5.907E-03	0.127
	279.53			-6.098E-02	1.131E-01	1.820E-01	1.604E-02	-0.335
	303.91			-1.428E+00	2.373E+00	3.255E+00	3.722E-01	-0.439
	400.65			2.948E-02	2.736E-01	4.468E-01	4.885E-02	0.066
BR-77	87.88	+		9.132E+02	2.350E+02	4.166E+02	3.919E+01	2.192
	200.40			-6.471E+01	2.193E+02	3.652E+02	3.003E+01	-0.177
	239.00	+		3.672E+02	4.038E+01	5.436E+01	4.593E+00	6.755
	249.79			1.185E+01	8.410E+01	1.413E+02	1.198E+01	0.084
	281.68			-6.558E+01	1.210E+02	1.943E+02	1.651E+01	-0.338
	297.23			3.202E+02	1.261E+02	1.653E+02	1.413E+01	1.937
	303.76			-1.409E+02	2.731E+02	3.782E+02	3.238E+01	-0.372
	439.47			6.683E+01	1.948E+02	3.221E+02	2.775E+01	0.207
	484.57			-1.105E+02	3.221E+02	5.010E+02	4.413E+01	-0.221
	520.65	*		-1.145E+01	1.374E+01	2.162E+01	1.926E+00	-0.530
	574.64			-4.077E+01	2.997E+02	4.837E+02	4.338E+01	-0.084
	578.91			1.007E+01	1.335E+02	1.959E+02	1.757E+01	0.051
	585.48			2.116E+03	3.918E+02	7.013E+02	6.290E+01	3.017
	755.35			1.932E+02	2.169E+02	3.840E+02	3.494E+01	0.503
	817.79			4.384E+01	1.715E+02	2.875E+02	2.637E+01	0.152
SR-82	698.33			1.156E-01	3.595E+01	5.942E+01	5.328E+00	0.002
	776.49	*		-1.636E-01	4.095E-01	6.471E-01	5.909E-02	-0.253
	1395.20			1.942E-01	1.188E+01	1.954E+01	1.617E+00	0.010
RB-83	520.41	*		-5.238E-02	6.785E-02	1.074E-01	9.570E-03	-0.488
	529.64			3.809E-02	1.072E-01	1.848E-01	1.650E-02	0.206
	552.65			4.991E-02	1.872E-01	3.207E-01	2.872E-02	0.156
RB-84	881.50	*		5.983E-02	7.413E-02	1.296E-01	1.188E-02	0.462
KR-85	513.99	*		1.566E+01	8.171E+00	1.384E+01	1.231E+00	1.131
SR-85	513.99	*		8.117E-02	4.236E-02	7.175E-02	6.381E-03	1.131
RB-86	1076.63	*		1.661E-01	8.554E-01	1.457E+00	1.263E-01	0.114
Y-88	898.02			-3.234E-02	4.374E-02	6.530E-02	6.005E-03	-0.495
	1836.01	*		1.529E-02	2.914E-02	5.399E-02	4.382E-03	0.283
ZR-88	392.90	*		1.262E-02	3.293E-02	5.479E-02	4.564E-03	0.230
Y-91	1204.90	*		3.061E+00	1.807E+01	3.048E+01	2.489E+00	0.100
NB-94	702.63	*		2.240E-03	3.413E-02	5.668E-02	5.089E-03	0.040
	871.10			-2.181E-02	3.762E-02	5.763E-02	5.287E-03	-0.379
NB-95	765.79	*		6.567E-02	4.599E-02	7.626E-02	6.952E-03	0.861
NB-95M	235.69	*		4.293E-03	1.397E-01	2.062E-01	2.002E-02	0.021
ZR-95	724.18			5.580E-02	1.051E-01	1.596E-01	1.555E-02	0.350
	756.15	*		7.966E-02	6.941E-02	1.250E-01	1.242E-02	0.637
NB-97	657.90	*		-2.272E-01	6.941E-02	Half-Life	too short	
	1024.50			7.641E+00	6.941E-02	Half-Life	too short	
ZR-97	254.15			2.649E+00	6.941E-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
	355.39			5.244E+00	6.941E-02	Half-Life	too short	
	507.63	*		6.514E+00	6.941E-02	Half-Life	too short	
	602.52			2.978E+00	6.941E-02	Half-Life	too short	
	1021.30			5.914E+00	6.941E-02	Half-Life	too short	
	1147.95			-6.678E+00	6.941E-02	Half-Life	too short	
	1362.66			1.123E+01	6.941E-02	Half-Life	too short	
	1750.46			1.229E+01	6.941E-02	Half-Life	too short	
MO-99	140.51			-2.028E+01	3.499E+01	5.369E+01	1.481E+01	-0.378
	181.06			-5.203E+00	2.495E+01	3.691E+01	6.654E+00	-0.141
	366.43			-5.660E+01	1.149E+02	1.811E+02	1.534E+01	-0.313
	739.58	*		2.254E+00	1.466E+01	2.446E+01	3.777E+00	0.092
	778.00			-3.463E+01	4.561E+01	6.928E+01	6.329E+00	-0.500
TC-99M	140.51	*		-4.042E+11	4.561E+01	Half-Life	too short	
RH-101	127.23			-5.978E-03	3.143E-02	5.000E-02	4.246E-03	-0.120
	198.01	*		2.364E-02	3.286E-02	5.697E-02	4.673E-03	0.415
	325.23			-3.122E-01	2.284E-01	3.416E-01	2.929E-02	-0.914
RH-102	418.52			3.542E-01	2.931E-01	5.118E-01	4.348E-02	0.692
	475.06	*		8.594E-03	2.835E-02	4.661E-02	4.089E-03	0.184
	631.29			6.271E-03	5.493E-02	9.225E-02	8.231E-03	0.068
	697.49			-1.566E-02	7.867E-02	1.279E-01	1.147E-02	-0.122
+	766.84			2.088E-01	1.774E-01	2.146E-01	1.957E-02	0.973
	1046.59			3.032E-03	1.040E-01	1.751E-01	1.540E-02	0.017
	1112.84			-8.859E-02	2.670E-01	3.839E-01	3.260E-02	-0.231
RU-103	497.08	*		-1.567E-02	4.297E-02	6.649E-02	9.509E-03	-0.236
	610.33	+		1.503E+01	3.139E+00	3.295E+00	5.556E-01	4.561
RH-106	511.85	+		6.721E-01	3.543E-01	4.560E-01	4.053E-02	1.474
	621.84	*		2.976E-01	3.040E-01	5.422E-01	7.355E-02	0.549
	1050.47			8.208E-02	2.121E+00	3.571E+00	3.135E-01	0.023
RU-106	511.85	+		6.721E-01	3.543E-01	4.560E-01	4.053E-02	1.474
	621.84	*		2.976E-01	3.024E-01	5.422E-01	4.846E-02	0.549
	1050.47			8.208E-02	2.121E+00	3.571E+00	3.135E-01	0.023
AG-108M	433.93	*		2.980E-02	3.388E-02	5.799E-02	5.177E-03	0.514
	614.37			4.504E-02	4.011E-02	6.528E-02	6.054E-03	0.690
	722.95			-1.082E-02	4.763E-02	6.611E-02	6.184E-03	-0.164
AG-110M	657.75	*		-2.706E-02	4.324E-02	5.773E-02	5.259E-03	-0.469
	677.61			2.019E-02	3.259E-01	5.424E-01	4.957E-02	0.037
	706.67			9.617E-02	2.137E-01	3.653E-01	3.367E-02	0.263
	763.93			1.343E-01	1.664E-01	2.620E-01	2.448E-02	0.513
	884.67			1.680E-04	5.106E-02	8.295E-02	7.821E-03	0.002
	937.48			-1.344E-02	1.130E-01	1.804E-01	1.696E-02	-0.074
	1384.27			2.141E-02	1.790E-01	2.982E-01	2.539E-02	0.072
IN-111	171.28			6.773E-01	1.319E+00	2.138E+00	1.702E-01	0.317
	245.39	*		-5.109E-01	1.512E+00	2.168E+00	1.836E-01	-0.236
IN-113M	391.69	*		3.138E-02	4.710E-02	7.972E-02	6.853E-03	0.394
SN-113	391.69	*		3.138E-02	4.710E-02	7.972E-02	6.853E-03	0.394
IN-114M	190.27	*		9.257E-02	1.948E-01	2.990E-01	2.432E-02	0.310
CD-115	260.90			-4.109E+01	1.704E+02	2.796E+02	2.376E+01	-0.147
	492.35			-1.466E+01	5.340E+01	8.350E+01	7.375E+00	-0.176
	527.90	*		-4.757E+00	1.567E+01	2.582E+01	2.303E+00	-0.184

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M	156.02			-1.090E+00	2.479E+00	3.855E+00	3.105E-01	-0.283
	158.56		*	-1.891E-02	5.886E-02	9.195E-02	7.372E-03	-0.206
SB-122	563.90		*	4.277E+00	2.783E+00	5.109E+00	4.580E-01	0.837
	692.80			-4.005E+01	5.891E+01	9.175E+01	8.212E+00	-0.436
I-123	159.00		*	-1.518E+01	5.891E+01	Half-Life	too short	
	528.96			-1.370E+02	5.891E+01	Half-Life	too short	
TE-123M	159.00		*	-2.014E-02	2.999E-02	4.600E-02	3.711E-03	-0.438
I-124	602.71		*	3.431E-03	9.384E-01	1.363E+00	1.221E-01	0.003
	722.78			-1.120E+00	5.930E+00	8.273E+00	7.471E-01	-0.135
	1325.50			2.821E+01	3.593E+01	6.535E+01	5.355E+00	0.432
	1376.25			6.942E+01	4.004E+01	7.722E+01	6.373E+00	0.899
	1509.49			1.608E+01	1.859E+01	3.401E+01	2.844E+00	0.473
	1691.02			-4.223E+00	4.010E+00	4.600E+00	3.822E-01	-0.918
SB-124	602.71			1.698E-04	4.644E-02	6.742E-02	6.042E-03	0.003
	645.85			-2.799E-01	4.697E-01	7.365E-01	6.918E-02	-0.380
	709.31			-7.319E-02	2.844E+00	4.684E+00	4.214E-01	-0.016
	713.82			-7.519E-01	1.649E+00	2.607E+00	3.212E-01	-0.288
	722.78			-8.033E-02	4.254E-01	5.934E-01	5.465E-02	-0.135
	968.20		+	1.917E+01	4.221E+00	7.617E+00	6.886E-01	2.517
	1045.16			-2.136E-01	2.258E+00	3.751E+00	3.301E-01	-0.057
	1325.50			2.162E+00	2.753E+00	5.007E+00	4.103E-01	0.432
	1368.21			1.829E-01	1.740E+00	2.901E+00	3.840E-01	0.063
	1436.60			2.215E-01	3.845E+00	6.346E+00	5.278E-01	0.035
	1691.02		*	-7.145E-02	6.786E-02	7.783E-02	6.741E-03	-0.918
SB-125	427.89		*	1.411E-02	9.983E-02	1.628E-01	1.420E-02	0.087
	463.38		+	6.895E-01	4.171E-01	5.851E-01	5.496E-02	1.178
	600.56			2.798E-01	1.824E-01	3.337E-01	3.195E-02	0.838
	635.90			-2.556E-01	2.854E-01	4.385E-01	4.204E-02	-0.583
TE-125M	109.28		*	-1.400E+00	9.052E+00	1.438E+01	1.492E+00	-0.097
I-126	388.63			2.334E-02	2.307E-01	3.773E-01	3.148E-02	0.062
	666.33		*	1.857E-01	2.298E-01	3.587E-01	3.180E-02	0.518
	753.82			6.053E-01	1.479E+00	2.522E+00	2.294E-01	0.240
SB-126	223.80			1.803E+00	4.170E+00	7.128E+00	5.974E-01	0.253
	278.60			2.641E+00	2.745E+00	4.749E+00	4.031E-01	0.556
	296.50		+	1.627E+01	2.872E+00	4.169E+00	3.563E-01	3.902
	414.70			-3.152E-02	8.690E-02	1.318E-01	1.117E-02	-0.239
	415.30			-3.412E+00	7.039E+00	1.099E+01	9.317E-01	-0.310
	555.20			2.108E-01	3.940E+00	6.641E+00	5.949E-01	0.032
	573.80			2.737E-01	1.136E+00	1.935E+00	1.735E-01	0.141
	593.00			1.105E+00	9.689E-01	1.750E+00	1.569E-01	0.632
	656.30			-1.872E+00	4.367E+00	5.980E+00	5.302E-01	-0.313
	666.33			7.780E-02	9.626E-02	1.502E-01	1.332E-02	0.518
	675.00			-6.069E-01	2.169E+00	3.509E+00	3.121E-01	-0.173
	695.00			6.466E-02	8.217E-02	1.441E-01	1.291E-02	0.449
	697.00			-5.909E-02	2.899E-01	4.711E-01	4.222E-02	-0.125
	720.50		*	1.508E-01	1.554E-01	2.703E-01	2.439E-02	0.558
	856.80			-2.155E-02	5.411E-01	7.565E-01	6.944E-02	-0.028
	989.30			1.289E+00	1.359E+00	2.399E+00	2.156E-01	0.537
	1034.80			-6.445E+00	9.343E+00	1.458E+01	1.289E+00	-0.442

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1213.00			-2.089E+00	4.692E+00	7.436E+00	6.077E-01	-0.281
	61.10			2.669E+01	5.401E+01	8.172E+01	8.559E+00	0.327
	252.40			-3.831E+00	5.164E+00	7.823E+00	3.293E+00	-0.490
	290.80			-1.185E+01	2.741E+01	3.832E+01	4.372E+00	-0.309
	411.60			1.923E+01	1.745E+01	2.684E+01	4.258E+00	0.716
	444.90			2.088E+00	1.190E+01	1.942E+01	2.491E+00	0.108
	473.00			-1.830E+00	2.096E+00	3.095E+00	4.096E-01	-0.591
	543.00			6.510E+00	1.974E+01	3.321E+01	4.926E+00	0.196
	603.60			-1.037E+01	1.708E+01	2.315E+01	3.015E+00	-0.448
	685.20	*		-1.571E+00	1.646E+00	2.475E+00	2.950E-01	-0.635
	698.50			2.184E+00	1.870E+01	3.118E+01	5.061E+00	0.070
	722.20			7.212E-01	4.098E+01	5.868E+01	6.916E+00	0.012
	783.80			4.872E+00	4.617E+00	8.155E+00	1.065E+00	0.597
	57.60			2.070E-01	4.202E+00	6.917E+00	5.014E-01	0.030
XE-127	145.22			1.198E-01	7.406E-01	1.169E+00	9.593E-02	0.103
	172.10			2.463E-02	1.259E-01	2.010E-01	1.601E-02	0.123
	202.84	*		1.165E-02	4.644E-02	7.910E-02	6.519E-03	0.147
	374.96			6.666E-03	1.952E-01	3.188E-01	2.686E-02	0.021
I-131	80.18			2.337E-02	4.771E+00	6.968E+00	6.001E-01	0.003
	284.30			-3.871E-01	1.577E+00	2.574E+00	2.309E-01	-0.150
	364.48	*		1.395E-01	1.283E-01	2.231E-01	1.999E-02	0.625
	636.97			-7.330E-01	1.747E+00	2.806E+00	2.633E-01	-0.261
TE-132	722.89			-1.877E+00	8.784E+00	1.221E+01	1.110E+00	-0.154
	49.72			-6.107E+00	1.509E+01	2.204E+01	2.339E+00	-0.277
	111.76			1.158E+01	3.532E+01	5.780E+01	6.445E+00	0.200
	116.30			2.038E+01	3.339E+01	5.512E+01	6.134E+00	0.370
BA-133	228.16	*		-1.501E-01	8.704E-01	1.447E+00	2.285E-01	-0.104
	53.15			7.002E-02	2.225E+00	3.659E+00	2.757E-01	0.019
	79.62			-2.725E-02	1.221E+00	1.782E+00	2.700E-01	-0.015
	81.00			1.153E-01	1.071E-01	1.331E-01	2.114E-02	0.866
I-133	276.40			4.133E-01	4.174E-01	6.732E-01	9.675E-02	0.614
	302.84			7.837E-02	1.544E-01	2.325E-01	3.080E-02	0.337
	356.01	*		2.068E-02	4.811E-02	7.147E-02	9.386E-03	0.289
	383.85			3.783E-02	3.145E-01	5.155E-01	6.411E-02	0.073
	510.53			3.145E+00	3.145E-01	Half-Life	too short	
	529.87	*		5.312E-03	3.145E-01	Half-Life	too short	
	706.58			4.727E-01	3.145E-01	Half-Life	too short	
	856.28			-6.576E-02	3.145E-01	Half-Life	too short	
	875.33			-2.283E-02	3.145E-01	Half-Life	too short	
	1236.41			2.624E+00	3.145E-01	Half-Life	too short	
CS-134	1298.22			4.718E-01	3.145E-01	Half-Life	too short	
	475.35			2.906E-01	1.871E+00	3.039E+00	2.666E-01	0.096
	563.23			6.593E-01	3.793E-01	7.015E-01	6.344E-02	0.940
	569.32			-1.251E-01	2.001E-01	3.171E-01	2.879E-02	-0.395
	604.70			-1.909E-02	3.846E-02	5.273E-02	4.735E-03	-0.362
	795.84	*		7.493E-02	5.389E-02	9.671E-02	8.911E-03	0.775
	801.93			-7.997E-02	4.415E-01	7.024E-01	6.467E-02	-0.114
	1038.57			1.364E+00	3.506E+00	6.119E+00	5.400E-01	0.223
	1167.94			-7.916E-01	2.526E+00	4.077E+00	3.331E-01	-0.194

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135	1365.15			2.515E-01	1.292E+00	2.176E+00	1.882E-01	0.116
	268.24	*		2.134E-01	1.606E-01	2.563E-01	2.527E-02	0.833
	288.45			-1.508E+10	1.606E-01	Half-Life	too short	
	417.63			2.692E+11	1.606E-01	Half-Life	too short	
	546.56			-1.311E+10	1.606E-01	Half-Life	too short	
	836.80			-1.337E+11	1.606E-01	Half-Life	too short	
	1038.76			9.155E+10	1.606E-01	Half-Life	too short	
	1124.00			6.974E+11	1.606E-01	Half-Life	too short	
	1131.51			6.233E+10	1.606E-01	Half-Life	too short	
	1260.41	*		-9.355E+09	1.606E-01	Half-Life	too short	
	1457.56			4.808E+12	1.606E-01	Half-Life	too short	
	1678.03			-2.115E+10	1.606E-01	Half-Life	too short	
	1706.46			4.127E+09	1.606E-01	Half-Life	too short	
	1791.20			1.272E+11	1.606E-01	Half-Life	too short	
	66.91			-2.760E-01	7.043E-01	1.012E+00	1.501E-01	-0.273
CS-136 + CE-139 BA-140	86.29			4.226E+00	1.160E+00	1.943E+00	2.576E-01	2.175
	153.22			5.348E-01	7.236E-01	1.186E+00	1.088E-01	0.451
	163.89			4.164E-01	1.140E+00	1.838E+00	1.664E-01	0.227
	176.55			1.376E-01	3.949E-01	6.788E-01	5.800E-02	0.203
	273.65			-5.628E-01	5.729E-01	7.748E-01	7.028E-02	-0.726
	340.57			3.636E-01	1.558E-01	2.582E-01	2.275E-02	1.408
	818.51			-2.585E-03	7.477E-02	1.217E-01	1.117E-02	-0.021
	1048.07	*		8.328E-03	1.016E-01	1.719E-01	1.573E-02	0.048
	1235.34			1.614E-01	6.286E-01	1.063E+00	1.227E-01	0.152
	165.85	*		2.393E-03	2.988E-02	4.752E-02	3.759E-03	0.050
	162.64			8.931E-03	8.232E-01	1.306E+00	1.110E-01	0.007
	304.84			-2.175E-01	1.463E+00	2.090E+00	5.853E-01	-0.104
	423.70			-7.871E-01	2.089E+00	3.256E+00	1.055E+00	-0.242
	537.32	*		-1.201E-02	2.693E-01	4.515E-01	1.500E-01	-0.027
	328.77			4.307E-01	3.324E-01	5.798E-01	5.253E-02	0.743
LA-140 CE-141 CE-143	432.53			7.601E-01	2.319E+00	3.829E+00	3.446E-01	0.198
	487.03			1.100E-01	1.507E-01	2.547E-01	2.378E-02	0.432
	751.79			-1.397E+00	1.764E+00	2.667E+00	2.659E-01	-0.524
	815.85			-5.015E-02	3.304E-01	5.314E-01	5.373E-02	-0.094
	867.82			4.110E-01	1.711E+00	2.486E+00	2.388E-01	0.165
	919.63			-1.640E+00	2.965E+00	4.499E+00	4.978E-01	-0.365
	925.24			1.117E+00	1.220E+00	2.151E+00	2.073E-01	0.519
	1596.49	*		3.783E-02	9.783E-02	1.678E-01	1.404E-02	0.225
	145.44	*		4.483E-02	6.431E-02	1.056E-01	8.842E-03	0.424
	57.37			1.512E-04	6.431E-02	Half-Life	too short	
	231.56			3.824E-04	6.431E-02	Half-Life	too short	
	293.26	*		1.225E-03	6.431E-02	Half-Life	too short	
	350.59			5.556E-02	6.431E-02	Half-Life	too short	
	490.36			1.183E-03	6.431E-02	Half-Life	too short	
	664.57			3.000E-03	6.431E-02	Half-Life	too short	
	721.93			6.480E-05	6.431E-02	Half-Life	too short	
CE-144 PM-144	80.11			9.773E-03	2.012E+00	2.939E+00	2.510E-01	0.003
	133.54	*		-1.676E-01	2.041E-01	3.117E-01	4.812E-02	-0.538
	476.78			1.014E-02	6.760E-02	1.097E-01	1.050E-02	0.092

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		-2.925E-02	3.139E-02	4.804E-02	4.407E-03	-0.609
		696.49	*	-1.276E-02	3.546E-02	5.686E-02	5.097E-03	-0.224
		778.57		-1.187E+00	2.302E+00	3.586E+00	3.276E-01	-0.331
PR-144		696.49	*	-8.654E-01	2.404E+00	3.855E+00	3.455E-01	-0.224
		1489.15		-2.099E+00	1.081E+01	1.701E+01	1.421E+00	-0.123
PM-146		453.90	*	-1.375E-02	4.461E-02	6.998E-02	7.540E-03	-0.196
		633.02		5.824E-01	1.392E+00	2.366E+00	8.857E-01	0.246
		735.90		8.682E-02	1.508E-01	2.519E-01	7.238E-02	0.345
		747.13		-2.324E-02	8.564E-02	1.370E-01	1.963E-02	-0.170
ND-147	+	91.11		5.442E-01	2.869E-01	5.157E-01	5.103E-02	1.055
		319.41		3.008E-01	3.612E+00	5.971E+00	5.122E-01	0.050
		439.89		2.086E+00	6.175E+00	1.021E+01	8.799E-01	0.204
		531.02	*	9.339E-02	6.259E-01	1.064E+00	1.610E-01	0.088
PM-149		285.90	*	-3.465E+01	1.201E+02	1.953E+02	3.024E+01	-0.177
EU-152		121.78		5.403E-03	6.996E-02	1.129E-01	1.119E-02	0.048
		244.69		-6.100E-03	3.625E-01	5.321E-01	4.506E-02	-0.011
		344.27	*	6.511E-02	1.066E-01	1.611E-01	1.460E-02	0.404
		443.98		-3.017E-01	1.004E+00	1.579E+00	1.364E-01	-0.191
		778.89		-1.368E-01	2.653E-01	4.131E-01	3.774E-02	-0.331
		867.32		9.838E-02	9.687E-01	1.381E+00	1.267E-01	0.071
	+	964.01		9.156E-01	3.695E-01	6.363E-01	5.759E-02	1.439
		1085.78		3.064E-01	3.866E-01	6.946E-01	5.992E-02	0.441
		1112.02		-1.164E-01	3.512E-01	5.406E-01	4.593E-02	-0.215
		1407.95		-2.042E-02	2.115E-01	3.427E-01	2.841E-02	-0.060
GD-153		69.67		-2.598E-03	1.457E+00	2.145E+00	1.643E-01	-0.001
	+	83.37		3.691E+01	1.422E+01	2.223E+01	1.975E+00	1.660
		97.43	*	-2.607E-02	7.829E-02	1.113E-01	9.948E-03	-0.234
		103.18		-1.093E-01	9.854E-02	1.512E-01	1.326E-02	-0.723
EU-154		123.07		2.184E-02	4.870E-02	7.982E-02	9.044E-03	0.274
		247.94		1.956E-01	3.578E-01	5.941E-01	6.754E-02	0.329
		591.81		6.411E-01	6.161E-01	1.082E+00	1.291E-01	0.592
		723.30		-8.902E-02	2.056E-01	2.779E-01	2.752E-02	-0.320
		756.87		8.393E-01	7.543E-01	1.351E+00	1.665E-01	0.621
		873.19		1.283E-01	3.114E-01	5.260E-01	6.649E-02	0.244
		996.32		-7.718E-01	4.279E-01	5.119E-01	9.182E-02	-1.508
		1004.76		-2.315E-01	2.248E-01	3.169E-01	3.765E-02	-0.730
		1274.45	*	-6.982E-03	1.159E-01	1.903E-01	2.092E-02	-0.037
EU-155		48.70		-4.533E-01	1.451E+00	2.132E+00	1.726E-01	-0.213
		60.01		-5.764E-01	3.845E+00	5.656E+00	4.073E-01	-0.102
	+	86.54		3.693E-01	9.515E-02	1.694E-01	1.580E-02	2.180
		105.31	*	6.233E-02	1.005E-01	1.667E-01	1.473E-02	0.374
TB-160	+	86.79		9.960E-01	2.563E-01	4.564E-01	4.233E-02	2.183
		197.04		8.205E-01	5.625E-01	9.980E-01	8.178E-02	0.822
		215.65		-1.257E-01	7.334E-01	1.223E+00	1.019E-01	-0.103
		298.57		8.932E-02	1.805E-01	2.011E-01	1.719E-02	0.444
		879.36	*	-8.633E-02	1.575E-01	2.421E-01	2.220E-02	-0.357
		962.29		2.862E-01	6.800E-01	1.021E+00	9.243E-02	0.280
	+	966.15		6.349E-01	2.562E-01	5.240E-01	4.739E-02	1.212
		1177.93		-1.101E-01	3.706E-01	5.988E-01	4.876E-02	-0.184

---- 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			-2.803E-01	7.168E-01	1.133E+00	9.288E-02	-0.247
	80.57			-2.217E-02	2.569E-01	3.734E-01	3.207E-02	-0.059
	184.41			9.626E-02	3.854E-02	6.931E-02	5.603E-03	1.389
	280.46			-7.453E-02	8.830E-02	1.394E-01	1.184E-02	-0.534
	410.95		+	3.939E-01	3.066E-01	4.713E-01	3.982E-02	0.836
TM-171	711.68		*	-1.421E-02	6.109E-02	9.878E-02	8.893E-03	-0.144
	752.31			-2.410E-01	2.686E-01	4.018E-01	3.653E-02	-0.600
	810.29			-1.333E-02	5.923E-02	9.467E-02	8.678E-03	-0.141
	51.35			2.811E+00	1.866E+01	2.982E+01	2.302E+00	0.094
	52.39			1.624E+00	9.449E+00	1.581E+01	1.203E+00	0.103
LU-176	59.40			8.251E+00	2.015E+01	3.045E+01	2.190E+00	0.271
	66.72		*	-7.379E+00	2.396E+01	3.459E+01	2.587E+00	-0.213
	88.36		+	7.270E-01	1.871E-01	3.359E-01	3.156E-02	2.164
	201.83			-1.920E-02	2.816E-02	4.604E-02	3.790E-03	-0.417
	306.84		*	-7.353E-03	2.423E-02	3.920E-02	3.358E-03	-0.188
LU-177	401.10			2.952E-01	7.138E+00	1.161E+01	9.734E-01	0.025
	112.95			3.999E-01	1.705E+00	2.780E+00	2.398E-01	0.144
	208.36		+	3.533E+00	1.750E+00	2.300E+00	1.905E-01	1.536
	52.97			1.699E-01	1.002E+00	1.656E+00	1.251E-01	0.103
	54.07			-2.499E-01	5.453E-01	8.789E-01	6.554E-02	-0.284
LU-177M	61.30			7.703E-01	1.170E+00	1.784E+00	1.291E-01	0.432
	121.62			5.636E-03	3.593E-01	5.783E-01	4.969E-02	0.010
	147.16			-4.742E-01	6.719E-01	1.034E+00	8.460E-02	-0.459
	171.86			1.287E-01	5.011E-01	8.020E-01	6.388E-02	0.161
	218.09			3.183E-01	8.356E-01	1.427E+00	1.191E-01	0.223
HF-181	268.79		+	2.323E+00	1.334E+00	1.391E+00	1.182E-01	1.670
	319.02			6.510E-02	2.675E-01	4.461E-01	3.826E-02	0.146
	367.43			-1.000E+00	9.729E-01	1.472E+00	1.246E-01	-0.679
	413.65		*	-5.882E-02	2.118E-01	2.914E-01	2.467E-02	-0.202
	56.28			-2.149E-01	6.346E-01	1.029E+00	7.525E-02	-0.209
W-181	57.53			1.733E-02	3.523E-01	5.799E-01	4.205E-02	0.030
	65.20			-5.549E-02	7.919E-01	1.158E+00	8.566E-02	-0.048
	133.02			-5.561E-02	6.530E-02	1.001E-01	8.401E-03	-0.556
	136.25			3.669E-01	4.535E-01	7.510E-01	6.265E-02	0.489
	345.85			-1.701E-02	2.219E-01	3.161E-01	2.700E-02	-0.054
TA-182	482.03		*	-7.317E-03	4.333E-02	6.843E-02	6.020E-03	-0.107
	56.28			-8.301E-02	2.457E-01	3.985E-01	2.914E-02	-0.208
	57.53			6.712E-03	1.365E-01	2.247E-01	1.629E-02	0.030
	65.20		*	-2.133E-02	3.044E-01	4.450E-01	3.292E-02	-0.048
	67.75			1.973E-02	9.605E-02	1.420E-01	1.070E-02	0.139
RE-183	100.10			1.328E-01	1.615E-01	2.704E-01	2.395E-02	0.491
	152.43			9.504E-02	3.507E-01	5.646E-01	4.577E-02	0.168
	222.10			-6.700E-02	3.426E-01	5.697E-01	4.769E-02	-0.118
	1001.68			2.695E+00	2.173E+00	3.893E+00	3.484E-01	0.692
	1121.28		+	7.235E-01	2.998E-01	3.759E-01	3.175E-02	1.924
RE-183	1189.05			-9.689E-02	3.008E-01	4.838E-01	3.944E-02	-0.200
	1221.42		*	-4.522E-03	1.812E-01	2.996E-01	2.451E-02	-0.015
	1230.97			8.416E-02	4.403E-01	7.429E-01	6.080E-02	0.113
RE-183	57.98			-3.499E-02	1.452E-01	2.257E-01	1.632E-02	-0.155



## ---- 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		3.014E-02	8.359E-02	1.261E-01	9.067E-03	0.239
		67.20		-6.317E-02	1.735E-01	2.498E-01	1.875E-02	-0.253
		162.32	*	-1.403E-02	1.142E-01	1.800E-01	1.433E-02	-0.078
	+	208.81		2.882E+00	1.428E+00	1.907E+00	1.580E-01	1.511
		291.72		2.822E-01	9.725E-01	1.446E+00	1.234E-01	0.195
		57.98		-1.282E-01	5.318E-01	8.266E-01	5.979E-02	-0.155
		59.32		1.103E-01	3.059E-01	4.614E-01	3.318E-02	0.239
		67.20		-2.313E-01	6.352E-01	9.147E-01	6.866E-02	-0.253
		161.27		9.202E-03	3.652E-01	5.800E-01	4.627E-02	0.016
		216.55		1.770E-02	2.654E-01	4.472E-01	3.729E-02	0.040
		252.85	*	-1.950E-01	2.192E-01	3.463E-01	2.939E-02	-0.563
		318.01		-2.308E-01	4.743E-01	7.574E-01	6.496E-02	-0.305
		792.07		-2.262E-01	1.076E+00	1.730E+00	1.583E-01	-0.131
		903.28		5.073E-01	1.081E+00	1.739E+00	1.591E-01	0.292
OS-185		920.93		7.745E-02	4.495E-01	7.412E-01	6.767E-02	0.104
		59.72		9.397E-03	2.278E-01	3.383E-01	2.433E-02	0.028
		61.14		6.774E-02	1.284E-01	1.947E-01	1.409E-02	0.348
		69.30		7.515E-02	2.582E-01	3.853E-01	2.942E-02	0.195
		592.07		3.143E+00	2.484E+00	4.523E+00	4.056E-01	0.695
		646.12	*	-2.680E-02	3.984E-02	6.198E-02	5.510E-03	-0.432
		717.42		5.535E-02	9.173E-01	1.521E+00	1.371E-01	0.036
		874.81		-9.398E-02	6.422E-01	1.029E+00	9.439E-02	-0.091
		880.27		2.838E-01	8.302E-01	1.393E+00	1.277E-01	0.204
		155.03	*	2.450E-01	1.785E-01	2.996E-01	2.417E-02	0.818
RE-188		477.96		5.478E-01	3.085E+00	5.017E+00	4.407E-01	0.109
		633.10		1.112E+00	2.802E+00	4.809E+00	4.288E-01	0.231
W-188	+	63.58		8.913E+01	6.129E+01	7.130E+01	5.223E+00	1.250
		227.08		-1.156E+01	1.297E+01	2.079E+01	1.746E+00	-0.556
IR-192		290.67	*	-3.599E+00	7.936E+00	1.108E+01	9.452E-01	-0.325
	+	295.96		1.187E+00	2.099E-01	3.129E-01	2.694E-02	3.793
		308.46		4.217E-02	9.500E-02	1.606E-01	1.383E-02	0.263
		316.51	*	7.317E-03	3.585E-02	5.969E-02	5.131E-03	0.123
		468.07		5.814E-02	7.588E-02	1.149E-01	1.075E-02	0.506
		604.41		-2.562E-01	5.255E-01	7.204E-01	9.542E-02	-0.356
AU-195		612.46		8.981E-01	8.906E-01	1.405E+00	1.432E-01	0.639
		65.12		3.334E-03	1.410E-01	2.071E-01	1.531E-02	0.016
		66.83		-2.120E-02	7.960E-02	1.152E-01	8.621E-03	-0.184
	+	75.70		1.233E+00	2.362E-01	4.218E-01	3.428E-02	2.924
		98.88	*	1.531E-01	2.214E-01	3.328E-01	2.959E-02	0.460
TL-200		129.76		3.194E+00	2.865E+00	4.793E+00	4.049E-01	0.666
		367.94	*	-8.485E-04	2.865E+00	Half-Life	too short	
		579.30		1.211E-03	2.865E+00	Half-Life	too short	
		828.27		4.316E-04	2.865E+00	Half-Life	too short	
TL-201		1205.75		2.718E-03	2.865E+00	Half-Life	too short	
		68.90		1.595E+00	4.916E+00	7.813E+00	5.946E-01	0.204
		70.82		3.300E-01	3.040E+00	4.495E+00	3.479E-01	0.073
		80.30		2.993E-02	6.029E+00	8.804E+00	7.537E-01	0.003
		135.34		9.883E+00	3.121E+01	5.066E+01	4.233E+00	0.195
		167.43	*	-6.754E+00	8.983E+00	1.365E+01	1.081E+00	-0.495

---- 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		1.200E-01	3.699E-01	5.879E-01	4.474E-02	0.204
		70.82		2.477E-02	2.281E-01	3.373E-01	2.611E-02	0.073
		80.30		2.247E-03	4.526E-01	6.609E-01	5.658E-02	0.003
		439.56	*	2.484E-02	7.377E-02	1.219E-01	1.050E-02	0.204
HG-203		70.83		1.056E-01	9.468E-01	1.400E+00	1.829E-01	0.075
		72.87		1.114E+00	5.934E-01	9.133E-01	1.163E-01	1.220
		82.60		2.190E+00	1.267E+00	1.611E+00	2.232E-01	1.360
		279.20	*	1.687E-02	4.214E-02	7.123E-02	6.223E-03	0.237
BI-207		72.80		3.012E-01	1.676E-01	2.619E-01	2.066E-02	1.150
	+	74.97		6.815E-01	1.305E-01	2.034E-01	1.640E-02	3.350
	+	84.90		4.759E-01	1.833E-01	2.885E-01	2.612E-02	1.650
		569.67		-1.352E-02	3.161E-02	5.097E-02	4.571E-03	-0.265
		1063.62	*	1.194E-03	5.281E-02	8.868E-02	7.737E-03	0.013
		1770.23		3.937E-02	3.817E-01	5.676E-01	4.663E-02	0.069
TL-207		81.07		2.436E-01	2.336E-01	2.925E-01	2.528E-02	0.833
	+	83.78		3.138E-01	1.209E-01	1.899E-01	1.696E-02	1.652
		94.90		6.325E-01	2.315E-01	3.710E-01	3.355E-02	1.705
		122.32		6.778E-01	1.644E+00	2.693E+00	2.484E-01	0.252
		144.24		3.180E-01	7.163E-01	1.144E+00	1.063E-01	0.278
		154.21		1.858E-01	4.124E-01	6.686E-01	6.011E-02	0.278
	+	269.46		5.414E-01	3.111E-01	3.447E-01	2.992E-02	1.570
		323.87	*	-4.507E-01	6.558E-01	1.024E+00	1.810E-01	-0.440
	+	338.28		7.616E+00	1.970E+00	2.565E+00	3.148E-01	2.969
		445.03		5.117E-01	2.305E+00	3.776E+00	4.570E-01	0.136
PO-209		260.50		1.542E-01	9.058E+00	1.509E+01	1.282E+00	0.010
		262.80		-3.977E-02	2.502E+01	4.161E+01	3.536E+00	-0.001
		896.60	*	-3.905E+00	7.672E+00	1.177E+01	1.078E+00	-0.332
PB-211		404.84	*	-1.773E-01	1.161E+00	1.615E+00	1.011E+00	-0.110
		427.08		1.078E+00	2.257E+00	3.606E+00	2.240E+00	0.299
		831.96		-1.189E+00	1.512E+00	1.966E+00	1.234E+00	-0.605
BI-212	+	727.18	*	1.057E+00	5.156E-01	7.125E-01	7.391E-02	1.483
		785.46		2.590E+00	1.849E+00	3.355E+00	3.068E-01	0.772
		1620.62		2.765E-01	1.356E+00	2.268E+00	1.895E-01	0.122
PO-215		81.07		2.436E-01	2.336E-01	2.925E-01	2.528E-02	0.833
	+	83.78		3.138E-01	1.209E-01	1.899E-01	1.696E-02	1.652
		94.90		6.325E-01	2.315E-01	3.710E-01	3.355E-02	1.705
		122.32		6.778E-01	1.644E+00	2.693E+00	2.484E-01	0.252
		144.24		3.180E-01	7.163E-01	1.144E+00	1.063E-01	0.278
		154.21		1.858E-01	4.124E-01	6.686E-01	6.011E-02	0.278
	+	269.46		5.414E-01	3.111E-01	3.447E-01	2.992E-02	1.570
		323.87	*	-4.507E-01	6.558E-01	1.024E+00	1.810E-01	-0.440
	+	338.28		7.616E+00	1.970E+00	2.565E+00	3.148E-01	2.969
		445.03		5.117E-01	2.305E+00	3.776E+00	4.570E-01	0.136
RN-219	+	271.23		6.946E-01	4.010E-01	4.625E-01	4.722E-02	1.502
		401.81	*	2.479E-01	4.408E-01	7.387E-01	1.100E-01	0.336
RN-220		549.76	*	-1.218E+01	2.452E+01	3.951E+01	3.537E+00	-0.308
RA-223		81.07		2.436E-01	2.336E-01	2.925E-01	2.528E-02	0.833
	+	83.78		3.138E-01	1.209E-01	1.899E-01	1.696E-02	1.652
		94.90		6.325E-01	2.315E-01	3.710E-01	3.355E-02	1.705

## ---- 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		6.778E-01	1.644E+00	2.693E+00	2.484E-01	0.252
		144.24		3.180E-01	7.163E-01	1.144E+00	1.063E-01	0.278
		154.21		1.858E-01	4.124E-01	6.686E-01	6.011E-02	0.278
	+	269.46		5.414E-01	3.111E-01	3.447E-01	2.992E-02	1.570
		323.87	*	-4.507E-01	6.558E-01	1.024E+00	1.810E-01	-0.440
	+	338.28		7.616E+00	1.970E+00	2.565E+00	3.148E-01	2.969
		445.03		5.117E-01	2.305E+00	3.776E+00	4.570E-01	0.136
		79.80		-5.353E-04	1.551E+00	2.265E+00	4.861E-01	0.000
		236.00		2.940E-01	2.621E-01	4.079E-01	4.942E-02	0.721
		256.20	*	1.851E-01	3.621E-01	6.176E-01	9.435E-02	0.300
		286.10		6.900E-02	1.430E+00	2.373E+00	3.117E-01	0.029
	+	299.80		1.889E+00	2.005E+00	2.628E+00	4.588E-01	0.719
TH-227		304.40		-6.340E-01	2.067E+00	2.910E+00	5.358E-01	-0.218
		334.20		-1.744E-01	2.665E+00	3.810E+00	7.387E-01	-0.046
		79.80		-5.353E-04	1.551E+00	2.265E+00	4.924E-01	0.000
	+	94.00		1.222E+01	4.228E+00	3.744E+00	8.225E-01	3.263
		236.00		2.940E-01	2.616E-01	4.079E-01	4.460E-02	0.721
		256.20	*	1.851E-01	3.626E-01	6.176E-01	1.112E-01	0.300
		286.10		6.900E-02	1.431E+00	2.373E+00	2.382E+00	0.029
	+	299.80		1.889E+00	2.005E+00	2.628E+00	4.588E-01	0.719
		304.40		-6.340E-01	2.067E+00	2.910E+00	5.358E-01	-0.218
		334.20		-1.744E-01	2.665E+00	3.810E+00	7.387E-01	-0.046
	+	85.43		4.697E-01	1.809E-01	2.876E-01	2.622E-02	1.633
	+	88.47		4.185E-01	1.077E-01	1.940E-01	1.821E-02	2.158
TH-229		100.00		1.218E-01	1.670E-01	2.787E-01	2.469E-02	0.437
		193.63	*	-3.730E-01	5.044E-01	8.244E-01	6.732E-02	-0.453
		210.97		1.253E+00	8.840E-01	1.404E+00	1.166E-01	0.892
	PA-231	283.67	*	3.864E-01	1.454E+00	2.443E+00	3.693E-01	0.158
	+	301.29		7.556E-01	7.965E-01	1.052E+00	1.283E-01	0.718
	TH-231	81.07		2.436E-01	2.336E-01	2.925E-01	2.528E-02	0.833
	+	83.78		3.138E-01	1.209E-01	1.899E-01	1.696E-02	1.652
		94.90		6.325E-01	2.315E-01	3.710E-01	3.355E-02	1.705
		122.32		6.778E-01	1.644E+00	2.693E+00	2.484E-01	0.252
		144.24		3.180E-01	7.163E-01	1.144E+00	1.063E-01	0.278
		154.21		1.858E-01	4.124E-01	6.686E-01	6.011E-02	0.278
	+	269.46		5.414E-01	3.111E-01	3.447E-01	2.992E-02	1.570
U-231		323.87	*	-4.507E-01	6.558E-01	1.024E+00	1.810E-01	-0.440
	+	338.28		7.616E+00	1.970E+00	2.565E+00	3.148E-01	2.969
		445.03		5.117E-01	2.305E+00	3.776E+00	4.570E-01	0.136
	+	84.21		1.605E+01	6.181E+00	9.777E+00	8.778E-01	1.641
	+	92.29		1.433E+01	4.047E+00	4.719E+00	4.325E-01	3.037
		95.87	*	4.028E-01	1.269E+00	1.872E+00	1.685E-01	0.215
		108.00		-1.802E-01	2.330E+00	3.717E+00	3.229E-01	-0.048
	PA-233	75.28		1.989E+01	4.569E+00	6.242E+00	9.398E-01	3.186
	+	86.59		6.001E+00	2.170E+00	2.752E+00	7.438E-01	2.181
	+	300.12		5.266E-01	5.569E-01	7.307E-01	1.084E-01	0.721
		311.98	*	-2.954E-02	6.432E-02	1.029E-01	9.076E-03	-0.287
		340.50		1.844E+00	8.339E-01	1.213E+00	2.889E-01	1.520
		398.62		2.665E-01	2.128E+00	3.482E+00	9.244E-01	0.077

## ---- 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		-6.126E-01	1.761E+00	2.772E+00	5.959E-01	-0.221
		63.00		2.558E+00	1.790E+00	2.095E+00	3.103E-01	1.221
		94.67		5.057E-01	1.831E-01	2.829E-01	3.594E-02	1.788
		98.44		2.929E-02	9.293E-02	1.349E-01	7.533E-02	0.217
		99.86		3.011E-01	4.223E-01	7.045E-01	6.244E-02	0.427
		111.00		-1.449E-02	1.715E-01	2.760E-01	3.341E-02	-0.053
		131.20		-1.735E-02	1.047E-01	1.666E-01	1.403E-02	-0.104
		152.70		2.243E-01	3.377E-01	5.500E-01	9.235E-02	0.408
		186.00		6.677E+00	3.189E+00	2.769E+00	8.603E-01	2.412
		226.40		-1.474E-01	3.970E-01	6.534E-01	8.531E-02	-0.226
		227.20		-2.553E-01	4.294E-01	6.990E-01	5.871E-02	-0.365
		248.90		4.655E-01	7.911E-01	1.348E+00	3.014E-01	0.345
		293.70		5.484E+00	1.323E+00	1.757E+00	3.032E-01	3.122
		369.80		7.534E-01	8.538E-01	1.449E+00	3.147E-01	0.520
		568.70		-1.435E+00	1.044E+00	1.547E+00	1.387E-01	-0.928
		569.50		-1.457E-01	2.786E-01	4.456E-01	3.995E-02	0.327
		574.00		-1.851E-01	1.553E+00	2.579E+00	2.313E-01	-0.072
		699.00		4.167E-01	7.187E-01	1.236E+00	2.377E-01	0.337
		706.10		3.646E-01	1.094E+00	1.835E+00	8.195E-01	0.199
		733.00		6.069E-03	4.369E-01	6.245E-01	1.397E-01	0.010
		742.81		5.996E-01	1.387E+00	2.273E+00	1.529E+00	0.264
		796.30		1.390E+00	1.100E+00	1.863E+00	5.073E-01	0.746
		805.60		5.822E-01	1.056E+00	1.788E+00	5.508E-01	0.326
		819.60		-2.113E-01	1.213E+00	1.942E+00	7.410E-01	-0.109
		826.30		7.078E-01	9.109E-01	1.500E+00	6.728E-01	0.472
		831.60		-7.213E-01	7.204E-01	1.013E+00	3.039E-01	-0.712
		876.40		3.653E-01	9.739E-01	1.517E+00	1.560E+00	0.241
		880.51		2.378E-01	2.885E-01	5.053E-01	4.633E-02	0.471
		883.24		-6.388E-02	3.035E-01	4.775E-01	3.213E-01	-0.134
		899.00		-8.095E-01	9.811E-01	1.331E+00	5.832E-01	-0.608
		925.00		1.288E+00	1.192E+00	2.132E+00	1.945E-01	0.604
		926.50		8.534E-02	1.828E-01	3.077E-01	7.833E-02	0.277
		946.00	*	1.237E-01	2.834E-01	4.788E-01	9.089E-02	0.258
		949.00		1.055E-01	4.453E-01	7.373E-01	6.696E-02	0.143
		980.50		3.361E-01	6.808E-01	1.159E+00	1.044E-01	0.290
		1394.10		4.153E-01	1.194E+00	2.003E+00	1.303E+00	0.207
PA-234M		766.42		2.415E+01	1.774E+01	2.207E+01	1.122E+01	1.094
		1001.03	*	7.041E+00	4.767E+00	8.696E+00	8.917E-01	0.810
U-235	+	89.95		2.030E+00	1.225E+00	1.701E+00	5.281E-01	1.193
	+	93.35		3.801E+00	1.477E+00	1.252E+00	3.528E-01	3.036
		105.00		6.136E-01	9.945E-01	1.625E+00	4.855E-01	0.378
		143.76	*	4.192E-02	2.199E-01	3.476E-01	6.019E-02	0.121
		163.35		1.190E-01	4.818E-01	7.720E-01	1.450E-01	0.154
	+	185.71		2.473E-01	9.192E-02	1.025E-01	8.298E-03	2.413
		205.31		-5.022E-02	5.697E-01	8.391E-01	1.588E-01	-0.060
NP-236		94.67		3.864E-01	1.348E-01	2.148E-01	1.945E-02	1.798
		98.44		2.215E-02	6.918E-02	1.020E-01	9.085E-03	0.217
		111.00		-1.096E-02	1.297E-01	2.087E-01	1.805E-02	-0.053
		160.31	*	2.990E-02	8.045E-02	1.299E-01	1.038E-02	0.230

---- 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		1.144E-01	1.407E-01	2.355E-01	2.090E-02	0.486
		117.00	*	9.785E-02	1.800E-01	2.969E-01	2.554E-02	0.330
	+	209.75		2.250E+00	1.115E+00	1.525E+00	1.265E-01	1.475
		228.18		-3.711E-02	2.281E-01	3.794E-01	3.188E-02	-0.098
		277.60		2.526E-01	1.864E-01	3.275E-01	2.780E-02	0.771
AM-241		334.30		-1.838E-01	1.506E+00	2.143E+00	1.836E-01	-0.086
		59.54	*	8.460E-03	1.190E-01	1.771E-01	1.404E-02	0.048
CM-243		99.55		1.178E-01	1.448E-01	2.424E-01	2.151E-02	0.486
		103.76	*	-7.497E-02	9.049E-02	1.409E-01	1.235E-02	-0.532
		117.00		1.007E-01	1.852E-01	3.054E-01	2.628E-02	0.330
	+	209.75		2.218E+00	1.099E+00	1.504E+00	1.247E-01	1.475
		228.18		-3.750E-02	2.305E-01	3.834E-01	3.222E-02	-0.098
AM-246		277.60		2.546E-01	1.879E-01	3.302E-01	2.803E-02	0.771
		798.80		-1.801E-01	1.663E-01	2.467E-01	2.259E-02	-0.730
		1036.00		-8.083E-02	2.812E-01	4.579E-01	4.045E-02	-0.177
		1062.04		5.798E-02	2.319E-01	3.975E-01	3.471E-02	0.146
		1078.86	*	3.151E-03	1.484E-01	2.489E-01	2.155E-02	0.013
CM-247		278.00		9.622E-01	7.766E-01	1.358E+00	1.153E-01	0.708
		287.40		-1.872E-01	1.174E+00	1.925E+00	1.640E-01	-0.097
		402.60	*	2.206E-02	3.961E-02	6.649E-02	5.582E-03	0.332
CF-249		252.85		-7.285E-01	8.191E-01	1.294E+00	1.098E-01	-0.563
		333.44		6.148E-02	2.011E-01	2.962E-01	2.538E-02	0.208
		387.95	*	1.489E-02	4.203E-02	6.987E-02	5.832E-03	0.213
CF-251		176.60	*	4.518E-02	1.289E-01	2.216E-01	1.775E-02	0.204
		227.00		-3.416E-01	3.853E-01	6.177E-01	5.188E-02	-0.553
		285.00		-8.205E-01	1.690E+00	2.717E+00	2.312E-01	-0.302

# 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]G244148003      *
* Acquisition date   : 20-JAN-2010 15:49:41 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 02:00:01.28 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244148003 Analyst initials: MXR1                  *
* Batch Number      : 940268 Sample Quantity : 1.2501E+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	2.132E+01	2.437E+00	4.383E-01	0.000E+00
CD-109	3.123E+00	7.877E-01	1.121E+00	0.000E+00
SN-126	3.065E-01	7.730E-02	1.103E-01	0.000E+00
BA-137M	1.041E-01	5.069E-02	6.625E-02	0.000E+00
CS-137	1.100E-01	5.359E-02	7.004E-02	0.000E+00
TL-208	6.151E-01	1.024E-01	5.886E-02	0.000E+00
BI-210	1.541E+00	2.598E+00	3.005E+00	0.000E+00
PB-210	1.541E+00	2.598E+00	3.005E+00	0.000E+00
PO-210	1.541E+00	2.597E+00	3.005E+00	0.000E+00
BI-211	4.144E+00	6.022E-01	3.343E-01	0.000E+00
PB-212	1.687E+00	1.963E-01	9.087E-02	0.000E+00
PO-212	1.687E+00	1.963E-01	9.087E-02	0.000E+00
BI-214	1.367E+00	2.156E-01	1.129E-01	0.000E+00
PB-214	1.442E+00	2.221E-01	1.165E-01	0.000E+00
PO-214	1.442E+00	2.221E-01	1.165E-01	0.000E+00
PO-216	1.687E+00	1.963E-01	9.087E-02	0.000E+00
PO-218	1.442E+00	2.221E-01	1.165E-01	0.000E+00
RA-224	4.787E+00	1.235E+00	1.034E+00	0.000E+00
RA-226	1.367E+00	2.156E-01	1.129E-01	0.000E+00
AC-228	1.621E+00	3.231E-01	2.153E-01	0.000E+00
RA-228	1.621E+00	3.231E-01	2.153E-01	0.000E+00
TH-228	1.714E+00	1.995E-01	9.234E-02	0.000E+00
TH-230	1.367E+00	2.156E-01	1.129E-01	0.000E+00
TH-232	1.621E+00	3.231E-01	2.153E-01	0.000E+00
TH-234	2.195E+00	1.517E+00	1.587E+00	0.000E+00
U-234	1.367E+00	2.156E-01	1.129E-01	0.000E+00
NP-237	9.001E-01	2.910E-01	3.270E-01	0.000E+00
U-238	2.195E+00	1.517E+00	1.587E+00	0.000E+00
AM-243	3.796E-01	7.125E-02	7.402E-02	0.000E+00
ANH-511	1.343E-01	6.937E-02	5.022E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	7.929E-02	3.160E-01	5.352E-01	0.000E+00	NOT IDENT.
NA-22	6.231E-03	4.010E-02	6.886E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.230E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.205E-03	2.784E-02	4.794E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.589E-02	7.426E-02	0.000E+00	FAIL ABUN
SC-46	-2.031E-02	3.925E-02	6.180E-02	0.000E+00	FAIL ABUN
V-48	-4.080E-02	7.248E-02	1.119E-01	0.000E+00	NOT IDENT.
CR-51	3.597E-01	3.748E-01	6.754E-01	0.000E+00	NOT IDENT.
MN-52	1.740E-01	2.537E-01	4.645E-01	0.000E+00	NOT IDENT.
MN-54	5.080E-03	3.874E-02	6.567E-02	0.000E+00	NOT IDENT.
CO-56	-2.475E-03	4.095E-02	6.818E-02	0.000E+00	NOT IDENT.
CO-57	2.302E-03	2.372E-02	4.043E-02	0.000E+00	NOT IDENT.
CO-58	-7.607E-03	3.908E-02	6.446E-02	0.000E+00	NOT IDENT.
FE-59	-6.786E-03	8.967E-02	1.523E-01	0.000E+00	NOT IDENT.
CO-60	-3.318E-02	4.013E-02	6.036E-02	0.000E+00	NOT IDENT.
ZN-65	-5.777E-02	1.051E-01	1.433E-01	0.000E+00	NOT IDENT.
GE-68	-4.062E-01	1.324E+00	2.207E+00	0.000E+00	NOT IDENT.
AS-73	4.808E-02	5.117E-01	8.998E-01	0.000E+00	NOT IDENT.
AS-74	-1.631E-01	9.748E-02	1.446E-01	0.000E+00	NOT IDENT.
SE-75	8.794E-03	4.570E-02	7.079E-02	0.000E+00	NOT IDENT.
BR-77	-1.145E+01	1.346E+01	2.192E+01	0.000E+00	FAIL ABUN
SR-82	-1.636E-01	4.014E-01	6.524E-01	0.000E+00	NOT IDENT.
RB-83	-5.238E-02	6.649E-02	1.089E-01	0.000E+00	NOT IDENT.
RB-84	5.983E-02	7.264E-02	1.304E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	8.008E+00	1.404E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.151E-02	7.276E-02	0.000E+00	NOT IDENT.
RB-86	1.661E-01	8.383E-01	1.463E+00	0.000E+00	NOT IDENT.
Y-88	1.529E-02	2.855E-02	5.377E-02	0.000E+00	NOT IDENT.
ZR-88	1.262E-02	3.227E-02	5.577E-02	0.000E+00	NOT IDENT.
Y-91	3.061E+00	1.771E+01	3.054E+01	0.000E+00	NOT IDENT.
NB-94	2.240E-03	3.345E-02	5.722E-02	0.000E+00	NOT IDENT.
NB-95	6.567E-02	4.507E-02	7.690E-02	0.000E+00	NOT IDENT.
NB-95M	4.293E-03	1.369E-01	2.114E-01	0.000E+00	NOT IDENT.
ZR-95	7.966E-02	6.802E-02	1.261E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.277E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.463E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	2.254E+00	1.436E+01	2.468E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.856E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.364E-02	3.221E-02	5.854E-02	0.000E+00	NOT IDENT.
RH-102	8.594E-03	2.779E-02	4.732E-02	0.000E+00	FAIL ABUN
RU-103	-1.567E-02	4.211E-02	6.745E-02	0.000E+00	FAIL ABUN
RH-106	2.976E-01	2.979E-01	5.483E-01	0.000E+00	FAIL ABUN
RU-106	2.976E-01	2.964E-01	5.483E-01	0.000E+00	FAIL ABUN
AG-108M	2.980E-02	3.320E-02	5.894E-02	0.000E+00	NOT IDENT.
AG-110M	-2.706E-02	4.237E-02	5.833E-02	0.000E+00	NOT IDENT.
IN-111	-5.109E-01	1.482E+00	2.221E+00	0.000E+00	NOT IDENT.
IN-113M	3.138E-02	4.615E-02	8.115E-02	0.000E+00	NOT IDENT.
SN-113	3.138E-02	4.615E-02	8.115E-02	0.000E+00	NOT IDENT.
IN-114M	9.257E-02	1.909E-01	3.073E-01	0.000E+00	NOT IDENT.
CD-115	-4.757E+00	1.536E+01	2.617E+01	0.000E+00	NOT IDENT.
SN-117M	-1.891E-02	5.768E-02	9.476E-02	0.000E+00	NOT IDENT.
SB-122	4.277E+00	2.727E+00	5.174E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.215E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.014E-02	2.939E-02	4.740E-02	0.000E+00	NOT IDENT.
I-124	3.431E-03	9.197E-01	1.379E+00	0.000E+00	NOT IDENT.
SB-124	-7.145E-02	6.651E-02	7.759E-02	0.000E+00	FAIL ABUN
SB-125	1.411E-02	9.784E-02	1.655E-01	0.000E+00	FAIL ABUN
TE-125M	-1.400E+00	8.871E+00	1.490E+01	0.000E+00	NOT IDENT.
I-126	1.857E-01	2.252E-01	3.624E-01	0.000E+00	NOT IDENT.
SB-126	1.508E-01	1.523E-01	2.728E-01	0.000E+00	FAIL ABUN
SB-127	-1.571E+00	1.614E+00	2.499E+00	0.000E+00	NOT IDENT.
XE-127	1.165E-02	4.551E-02	8.125E-02	0.000E+00	NOT IDENT.
I-131	1.395E-01	1.257E-01	2.273E-01	0.000E+00	NOT IDENT.
TE-132	-1.501E-01	8.530E-01	1.484E+00	0.000E+00	NOT IDENT.
BA-133	2.068E-02	4.715E-02	7.285E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.377E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.493E-02	5.281E-02	9.747E-02	0.000E+00	NOT IDENT.
CS-135	2.134E-01	1.574E-01	2.623E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.723E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.328E-03	9.955E-02	1.726E-01	0.000E+00	FAIL ABUN
CE-139	2.393E-03	2.929E-02	4.894E-02	0.000E+00	NOT IDENT.
BA-140	-1.201E-02	2.640E-01	4.575E-01	0.000E+00	NOT IDENT.
LA-140	3.783E-02	9.587E-02	1.675E-01	0.000E+00	NOT IDENT.
CE-141	4.483E-02	6.303E-02	1.090E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.887E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	-1.676E-01	2.001E-01	3.220E-01	0.000E+00	NOT IDENT.
PM-144	-1.276E-02	3.475E-02	5.741E-02	0.000E+00	NOT IDENT.
PR-144	-8.654E-01	2.356E+00	3.893E+00	0.000E+00	NOT IDENT.
PM-146	-1.375E-02	4.371E-02	7.108E-02	0.000E+00	NOT IDENT.
ND-147	9.339E-02	6.133E-01	1.079E+00	0.000E+00	FAIL ABUN
PM-149	-3.465E+01	1.177E+02	1.996E+02	0.000E+00	NOT IDENT.
EU-152	6.511E-02	1.044E-01	1.643E-01	0.000E+00	FAIL ABUN
GD-153	-2.607E-02	7.673E-02	1.154E-01	0.000E+00	FAIL ABUN
EU-154	-6.982E-03	1.136E-01	1.905E-01	0.000E+00	NOT IDENT.
EU-155	6.233E-02	9.848E-02	1.728E-01	0.000E+00	FAIL ABUN
TB-160	-8.633E-02	1.544E-01	2.436E-01	0.000E+00	FAIL ABUN
HO-166M	-1.421E-02	5.987E-02	9.971E-02	0.000E+00	FAIL ABUN
TM-171	-7.379E+00	2.348E+01	3.607E+01	0.000E+00	NOT IDENT.
LU-176	-7.353E-03	2.375E-02	4.004E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.715E+00	2.362E+00	0.000E+00	FAIL ABUN
LU-177M	-5.882E-02	2.076E-01	2.964E-01	0.000E+00	FAIL ABUN
HF-181	-7.317E-03	4.247E-02	6.945E-02	0.000E+00	NOT IDENT.
W-181	-2.133E-02	2.983E-01	4.641E-01	0.000E+00	NOT IDENT.
TA-182	-4.522E-03	1.775E-01	3.001E-01	0.000E+00	FAIL ABUN
RE-183	-1.403E-02	1.119E-01	1.855E-01	0.000E+00	FAIL ABUN
RE-184	-1.950E-01	2.148E-01	3.546E-01	0.000E+00	NOT IDENT.
OS-185	-2.680E-02	3.905E-02	6.265E-02	0.000E+00	NOT IDENT.
RE-188	2.450E-01	1.749E-01	3.089E-01	0.000E+00	NOT IDENT.
W-188	-3.599E+00	7.778E+00	1.133E+01	0.000E+00	FAIL ABUN
IR-192	7.317E-03	3.513E-02	6.094E-02	0.000E+00	FAIL ABUN
AU-195	1.531E-01	2.170E-01	3.452E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.254E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-6.754E+00	8.803E+00	1.406E+01	0.000E+00	NOT IDENT.
TL-202	2.484E-02	7.229E-02	1.239E-01	0.000E+00	NOT IDENT.
HG-203	1.687E-02	4.129E-02	7.285E-02	0.000E+00	NOT IDENT.
BI-207	1.194E-03	5.175E-02	8.901E-02	0.000E+00	FAIL ABUN
TL-207	-4.507E-01	6.427E-01	1.045E+00	0.000E+00	FAIL ABUN
PO-209	-3.905E+00	7.518E+00	1.184E+01	0.000E+00	NOT IDENT.
PB-211	-1.773E-01	1.138E+00	1.643E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.053E-01	7.190E-01	0.000E+00	FAIL ABUN
PO-215	-4.507E-01	6.427E-01	1.045E+00	0.000E+00	FAIL ABUN
RN-219	2.479E-01	4.320E-01	7.517E-01	0.000E+00	FAIL ABUN
RN-220	-1.218E+01	2.403E+01	4.002E+01	0.000E+00	NOT IDENT.
RA-223	-4.507E-01	6.427E-01	1.045E+00	0.000E+00	FAIL ABUN
AC-227	1.851E-01	3.549E-01	6.324E-01	0.000E+00	FAIL ABUN
TH-227	1.851E-01	3.553E-01	6.324E-01	0.000E+00	FAIL ABUN
TH-229	-3.730E-01	4.943E-01	8.473E-01	0.000E+00	FAIL ABUN
PA-231	3.864E-01	1.425E+00	2.497E+00	0.000E+00	FAIL ABUN
TH-231	-4.507E-01	6.427E-01	1.045E+00	0.000E+00	FAIL ABUN
U-231	4.028E-01	1.244E+00	1.942E+00	0.000E+00	FAIL ABUN
PA-233	-2.954E-02	6.304E-02	1.051E-01	0.000E+00	FAIL ABUN
PA-234	1.237E-01	2.777E-01	4.814E-01	0.000E+00	FAIL ABUN
PA-234M	7.041E+00	4.672E+00	8.736E+00	0.000E+00	NOT IDENT.
U-235	4.192E-02	2.155E-01	3.587E-01	0.000E+00	FAIL ABUN
NP-236	2.990E-02	7.885E-02	1.339E-01	0.000E+00	NOT IDENT.
NP-239	9.785E-02	1.764E-01	3.072E-01	0.000E+00	FAIL ABUN
AM-241	8.460E-03	1.166E-01	1.849E-01	0.000E+00	NOT IDENT.
CM-243	-7.497E-02	8.868E-02	1.460E-01	0.000E+00	FAIL ABUN
AM-246	3.151E-03	1.454E-01	2.498E-01	0.000E+00	NOT IDENT.
CM-247	2.206E-02	3.881E-02	6.765E-02	0.000E+00	NOT IDENT.
CF-249	1.489E-02	4.119E-02	7.113E-02	0.000E+00	NOT IDENT.
CF-251	4.518E-02	1.263E-01	2.281E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148003.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:49:41
Sample ID          : G244148003          Sample quantity  : 1.25010E+02 GRAM
Detector name      : GAM07              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.28  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID          : 940268              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	855	10.67*	1.129E+00	2.132E+01	2.132E+01	11.67
CD-109	88.03	258	3.72*	6.835E+00	3.049E+00	3.123E+00	25.73
SN-126	64.28	134	9.60	4.809E+00	8.687E-01	8.687E-01	69.89
	86.94	258	8.90	6.835E+00	1.274E+00	1.274E+00	47.94
	87.57	258	37.00*	6.835E+00	3.065E-01	3.065E-01	25.73
BA-137M	661.65	70	89.98*	2.231E+00	1.040E-01	1.041E-01	49.70
CS-137	661.65	70	85.12*	2.231E+00	1.099E-01	1.100E-01	49.71
TL-208	277.35	-----	6.80	4.401E+00	-----	Line Not Found	-----
	510.84	123	21.60	2.755E+00	6.218E-01	6.218E-01	53.36
	583.14	427	84.20*	2.476E+00	6.151E-01	6.151E-01	16.99
	860.37	61	12.46	1.781E+00	8.251E-01	8.251E-01	58.27
BI-210	46.50	42	4.05*	2.047E+00	1.538E+00	1.541E+00	172.08
PB-210	46.50	42	4.05*	2.047E+00	1.538E+00	1.541E+00	172.08
PO-210	46.50	42	4.05*	2.047E+00	1.538E+00	1.541E+00	172.04
BI-211	72.87	-----	1.27	5.899E+00	-----	Line Not Found	-----
	351.07	657	12.94*	3.680E+00	4.144E+00	4.144E+00	14.83
PB-212	74.81	506	10.70	6.070E+00	2.342E+00	2.342E+00	21.31
	77.11	854	18.00	6.259E+00	2.276E+00	2.276E+00	13.58
	87.30	258	8.00	6.835E+00	1.418E+00	1.418E+00	27.61
	238.63	1230	44.60*	4.909E+00	1.687E+00	1.687E+00	11.88
	300.09	48	3.41	4.148E+00	1.019E+00	1.019E+00	105.22
PO-212	74.81	506	10.70	6.070E+00	2.342E+00	2.342E+00	21.31
	77.11	854	18.00	6.259E+00	2.276E+00	2.276E+00	13.58
	87.30	258	8.00	6.835E+00	1.418E+00	1.418E+00	27.61
	115.19	-----	0.60	7.150E+00	-----	Line Not Found	-----
	238.63	1230	44.60*	4.909E+00	1.687E+00	1.687E+00	11.88
	300.09	48	3.41	4.148E+00	1.019E+00	1.019E+00	105.22
BI-214	609.31	503	46.30*	2.389E+00	1.367E+00	1.367E+00	16.10
	1120.29	108	15.10	1.413E+00	1.521E+00	1.521E+00	41.96
	1764.49	99	15.80	9.833E-01	1.915E+00	1.915E+00	26.72
PB-214	74.81	506	6.21	6.070E+00	4.035E+00	4.035E+00	20.53
	77.11	854	10.50	6.259E+00	3.902E+00	3.902E+00	15.57

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	87.30	258	4.67	6.835E+00	2.429E+00	2.429E+00	26.86
	241.98	306	7.49	4.867E+00	2.525E+00	2.525E+00	26.92
	295.21	414	19.20	4.202E+00	1.542E+00	1.542E+00	18.73
	351.92	657	37.20*	3.680E+00	1.442E+00	1.442E+00	15.72
	74.81	506	6.21	6.070E+00	4.035E+00	4.035E+00	20.53
	77.11	854	10.50	6.259E+00	3.902E+00	3.902E+00	15.57
	87.30	258	4.67	6.835E+00	2.429E+00	2.429E+00	26.86
PO-216	241.98	306	7.49	4.867E+00	2.525E+00	2.525E+00	26.92
	295.21	414	19.20	4.202E+00	1.542E+00	1.542E+00	18.73
	351.92	657	37.20*	3.680E+00	1.442E+00	1.442E+00	15.72
	74.81	506	10.70	6.070E+00	2.342E+00	2.342E+00	21.31
	77.11	854	18.00	6.259E+00	2.276E+00	2.276E+00	13.58
	87.30	258	8.00	6.835E+00	1.418E+00	1.418E+00	27.61
	238.63	1230	44.60*	4.909E+00	1.687E+00	1.687E+00	11.88
PO-218	300.09	48	3.41	4.148E+00	1.019E+00	1.019E+00	105.22
	74.81	506	6.21	6.070E+00	4.035E+00	4.035E+00	20.53
	77.11	854	10.50	6.259E+00	3.902E+00	3.902E+00	15.57
	87.30	258	4.67	6.835E+00	2.429E+00	2.429E+00	26.86
	241.98	306	7.49	4.867E+00	2.525E+00	2.525E+00	26.92
	295.21	414	19.20	4.202E+00	1.542E+00	1.542E+00	18.73
	351.92	657	37.20*	3.680E+00	1.442E+00	1.442E+00	15.72
RA-224	240.98	306	3.95*	4.867E+00	4.787E+00	4.787E+00	26.33
RA-226	609.31	503	46.30*	2.389E+00	1.367E+00	1.367E+00	16.10
	1120.29	108	15.10	1.413E+00	1.521E+00	1.521E+00	41.96
	1764.49	99	15.80	9.833E-01	1.915E+00	1.915E+00	26.72
AC-228	338.32	263	11.40	3.792E+00	1.824E+00	1.824E+00	47.12
	911.07	254	27.70*	1.696E+00	1.621E+00	1.621E+00	20.34
	969.11	163	16.60	1.606E+00	1.840E+00	1.840E+00	30.90
RA-228	338.32	263	11.40	3.792E+00	1.824E+00	1.824E+00	47.12
	911.07	254	27.70*	1.696E+00	1.621E+00	1.621E+00	20.34
	969.11	163	16.60	1.606E+00	1.840E+00	1.840E+00	30.90
TH-228	74.81	506	10.70	6.070E+00	2.342E+00	2.380E+00	19.18
	77.11	854	18.00	6.259E+00	2.276E+00	2.313E+00	13.58
	87.30	258	8.00	6.835E+00	1.418E+00	1.441E+00	25.73
	238.63	1230	44.60*	4.909E+00	1.687E+00	1.714E+00	11.88
TH-230	300.09	48	3.41	4.148E+00	1.019E+00	1.036E+00	120.32
	609.31	503	46.30*	2.389E+00	1.367E+00	1.367E+00	16.10
	1120.29	108	15.10	1.413E+00	1.521E+00	1.521E+00	41.96
	1764.49	99	15.80	9.833E-01	1.915E+00	1.915E+00	26.72
TH-232	338.32	263	11.40	3.792E+00	1.824E+00	1.824E+00	24.33
	911.07	254	27.70*	1.696E+00	1.621E+00	1.621E+00	20.34
	969.11	163	16.60	1.606E+00	1.840E+00	1.840E+00	30.90
TH-234	63.29	134	3.80*	4.809E+00	2.195E+00	2.195E+00	70.55
	92.38	400	5.41	7.025E+00	3.162E+00	3.162E+00	32.41
U-234	609.31	503	46.30*	2.389E+00	1.367E+00	1.367E+00	16.10
	1120.29	108	15.10	1.413E+00	1.521E+00	1.521E+00	41.96
	1764.49	99	15.80	9.833E-01	1.915E+00	1.915E+00	26.72
NP-237	86.50	258	12.60*	6.835E+00	9.001E-01	9.001E-01	32.99
	95.87	-----	2.60	7.087E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-238	63.29	134	3.80*	4.809E+00	2.195E+00	2.195E+00	70.55
	92.38	400	5.41	7.025E+00	3.162E+00	3.162E+00	28.24
AM-243	74.67	506	66.00*	6.070E+00	3.796E-01	3.796E-01	19.15
	86.72	258	0.34	6.835E+00	3.375E+01	3.375E+01	25.73
	117.66	-----	0.55	7.126E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.723E+00	-----	Line Not Found	-----
ANH-511	511.00	123	100.00*	2.755E+00	1.343E-01	1.343E-01	52.71

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	2.132E+01	2.132E+01	0.249E+01	11.67	
CD-109	464.00D	1.02	3.049E+00	3.123E+00	0.804E+00	25.73	
SN-126	1.00E+05Y	1.00	3.065E-01	3.065E-01	0.789E-01	25.73	
BA-137M	30.17Y	1.00	1.040E-01	1.041E-01	0.517E-01	49.70	
CS-137	30.17Y	1.00	1.099E-01	1.100E-01	0.547E-01	49.71	
TL-208	1.41E+10Y	1.00	6.151E-01	6.151E-01	1.045E-01	16.99	
BI-210	22.26Y	1.00	1.538E+00	1.541E+00	2.651E+00	172.08	
PB-210	22.26Y	1.00	1.538E+00	1.541E+00	2.651E+00	172.08	
PO-210	22.26Y	1.00	1.538E+00	1.541E+00	2.650E+00	172.04	
BI-211	7.04E+08Y	1.00	4.144E+00	4.144E+00	0.615E+00	14.83	
PB-212	1.41E+10Y	1.00	1.687E+00	1.687E+00	0.200E+00	11.88	
PO-212	1.41E+10Y	1.00	1.687E+00	1.687E+00	0.200E+00	11.88	
BI-214	1600.00Y	1.00	1.367E+00	1.367E+00	0.220E+00	16.10	
PB-214	1600.00Y	1.00	1.442E+00	1.442E+00	0.227E+00	15.72	
PO-214	1600.00Y	1.00	1.442E+00	1.442E+00	0.227E+00	15.72	
PO-216	1.41E+10Y	1.00	1.687E+00	1.687E+00	0.200E+00	11.88	
PO-218	1600.00Y	1.00	1.442E+00	1.442E+00	0.227E+00	15.72	
RA-224	1.41E+10Y	1.00	4.787E+00	4.787E+00	1.261E+00	26.33	
RA-226	1600.00Y	1.00	1.367E+00	1.367E+00	0.220E+00	16.10	
AC-228	1.41E+10Y	1.00	1.621E+00	1.621E+00	0.330E+00	20.34	
RA-228	1.41E+10Y	1.00	1.621E+00	1.621E+00	0.330E+00	20.34	
TH-228	1.91Y	1.02	1.687E+00	1.714E+00	0.204E+00	11.88	
TH-230	4.47E+09Y	1.00	1.367E+00	1.367E+00	0.220E+00	16.10	
TH-232	1.41E+10Y	1.00	1.621E+00	1.621E+00	0.330E+00	20.34	
TH-234	4.47E+09Y	1.00	2.195E+00	2.195E+00	1.548E+00	70.55	
U-234	4.47E+09Y	1.00	1.367E+00	1.367E+00	0.220E+00	16.10	
NP-237	2.14E+06Y	1.00	9.001E-01	9.001E-01	2.969E-01	32.99	
U-238	4.47E+09Y	1.00	2.195E+00	2.195E+00	1.548E+00	70.55	
AM-243	7380.00Y	1.00	3.796E-01	3.796E-01	0.727E-01	19.15	
ANH-511	1.00E+09Y	1.00	1.343E-01	1.343E-01	0.708E-01	52.71	

Total Activity : 6.625E+01 6.636E+01

Grand Total Activity : 6.625E+01 6.636E+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	84.21	173	331	1.61	168.07	165	13	2.40E-02	37.5	6.70E+00	T
0	89.92	127	379	0.98	179.49	177	6	1.76E-02	51.8	6.93E+00	T
0	185.92	259	438	1.31	371.45	365	13	3.59E-02	36.3	5.82E+00	T
0	209.31	131	274	1.05	418.23	414	9	1.81E-02	48.8	5.38E+00	T
0	270.16	110	219	1.39	539.91	535	12	1.53E-02	56.8	4.49E+00	T
0	409.55	48	99	0.97	818.64	814	8	6.69E-03	77.4	3.28E+00	T
0	463.02	70	105	1.39	925.56	922	10	9.72E-03	59.8	2.98E+00	T
0	727.60	86	81	1.12	1454.64	1450	12	1.19E-02	47.7	2.06E+00	T
0	768.33	46	78	1.32	1536.09	1528	13	6.39E-03	84.5	1.97E+00	T
1	964.77	71	28	1.98	1928.92	1923	22	9.81E-03	39.3	1.61E+00	T
0	1580.20	23	7	1.13	3159.69	3152	13	3.12E-03	62.9	1.06E+00	
0	1622.41	9	9	0.89	3244.10	3239	8	1.25E-03	****	1.04E+00	
0	1730.20	19	8	1.52	3459.67	3455	8	2.65E-03	68.6	9.96E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148003.CNF;1  *
* Acquisition date   : 20-JAN-2010 15:49:41  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 02:00:01.28             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID          *
* Sample ID          : G244148003             Analyst initials: MXR1          *
* Batch Number       : 940268                 Sample Quantity : 1.25010E+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	2.132E+01	2.487E+00	4.387E-01	3.767E-02	48.597
CD-109	3.123E+00	8.038E-01	1.079E+00	1.017E-01	2.894
SN-126	3.065E-01	7.888E-02	1.061E-01	9.945E-03	2.888
BA-137M	1.041E-01	5.173E-02	6.557E-02	5.803E-03	1.587
CS-137	1.100E-01	5.468E-02	6.931E-02	6.145E-03	1.587
TL-208	6.151E-01	1.045E-01	5.815E-02	5.562E-03	10.579
BI-210	1.541E+00	2.651E+00	2.869E+00	2.691E-01	0.537
PB-210	1.541E+00	2.651E+00	2.869E+00	2.691E-01	0.537
PO-210	1.541E+00	2.650E+00	2.869E+00	2.441E-01	0.537
BI-211	4.144E+00	6.145E-01	3.279E-01	2.942E-02	12.639
PB-212	1.687E+00	2.003E-01	8.866E-02	8.480E-03	19.028
PO-212	1.687E+00	2.003E-01	8.866E-02	8.480E-03	19.028
BI-214	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
PB-214	1.442E+00	2.266E-01	1.143E-01	1.186E-02	12.612
PO-214	1.442E+00	2.266E-01	1.143E-01	1.186E-02	12.612
PO-216	1.687E+00	2.003E-01	8.866E-02	8.480E-03	19.028
PO-218	1.442E+00	2.266E-01	1.143E-01	1.186E-02	12.612
RA-224	4.787E+00	1.261E+00	1.009E+00	8.534E-02	4.743

----- Identified Nuclides -----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
AC-228	1.621E+00	3.297E-01	2.141E-01	2.494E-02	7.570
RA-228	1.621E+00	3.297E-01	2.141E-01	2.494E-02	7.570
TH-228	1.714E+00	2.036E-01	9.010E-02	8.618E-03	19.028
TH-230	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
TH-232	1.621E+00	3.297E-01	2.141E-01	2.494E-02	7.570
TH-234	2.195E+00	1.548E+00	1.521E+00	2.647E-01	1.442
U-234	1.367E+00	2.200E-01	1.116E-01	1.155E-02	12.241
NP-237	9.001E-01	2.969E-01	3.147E-01	7.115E-02	2.860
U-238	2.195E+00	1.548E+00	1.521E+00	2.647E-01	1.442
AM-243	3.796E-01	7.270E-02	7.110E-02	5.715E-03	5.340
ANH-511	1.343E-01	7.079E-02	4.952E-02	4.400E-03	2.712

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.929E-02		3.224E-01	5.273E-01	4.976E-02	0.150
NA-22	6.231E-03		4.092E-02	6.879E-02	5.647E-03	0.091
NA-24	3.687E-02		1.138E+00	Half-Life	too short	
AL-26	2.205E-03		2.840E-02	4.813E-02	3.925E-03	0.046
TI-44	4.201E-01	+	5.703E-02	7.137E-02	5.975E-03	5.886
SC-46	-2.031E-02		4.005E-02	6.142E-02	5.628E-03	-0.331
V-48	-4.080E-02		7.396E-02	1.114E-01	1.002E-02	-0.366
CR-51	3.597E-01		3.825E-01	6.617E-01	5.979E-02	0.544
MN-52	1.740E-01		2.589E-01	4.648E-01	3.865E-02	0.374
MN-54	5.080E-03		3.953E-02	6.521E-02	5.985E-03	0.078
CO-56	-2.475E-03		4.179E-02	6.771E-02	6.216E-03	-0.037
CO-57	2.302E-03		2.420E-02	3.909E-02	3.363E-03	0.059
CO-58	-7.607E-03		3.988E-02	6.397E-02	5.877E-03	-0.119
FE-59	-6.786E-03		9.150E-02	1.518E-01	1.407E-02	-0.045
CO-60	-3.318E-02		4.095E-02	6.033E-02	4.942E-03	-0.550
ZN-65	-5.777E-02		1.072E-01	1.429E-01	1.212E-02	-0.404
GE-68	-4.062E-01		1.351E+00	2.199E+00	1.905E-01	-0.185
AS-73	4.808E-02		5.221E-01	8.605E-01	6.461E-02	0.056
AS-74	-1.631E-01		9.946E-02	1.428E-01	1.280E-02	-1.142
SE-75	8.794E-03		4.663E-02	6.917E-02	5.907E-03	0.127
BR-77	-1.145E+01		1.374E+01	2.162E+01	1.926E+00	-0.530
SR-82	-1.636E-01		4.095E-01	6.471E-01	5.909E-02	-0.253
RB-83	-5.238E-02		6.785E-02	1.074E-01	9.570E-03	-0.488
RB-84	5.983E-02		7.413E-02	1.296E-01	1.188E-02	0.462
KR-85	1.566E+01		8.171E+00	1.384E+01	1.231E+00	1.131
SR-85	8.117E-02		4.236E-02	7.175E-02	6.381E-03	1.131
RB-86	1.661E-01		8.554E-01	1.457E+00	1.263E-01	0.114
Y-88	1.529E-02		2.914E-02	5.399E-02	4.382E-03	0.283
ZR-88	1.262E-02		3.293E-02	5.479E-02	4.564E-03	0.230
Y-91	3.061E+00		1.807E+01	3.048E+01	2.489E+00	0.100
NB-94	2.240E-03		3.413E-02	5.668E-02	5.089E-03	0.040

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	6.567E-02		4.599E-02	7.626E-02	6.952E-03	0.861
NB-95M	4.293E-03		1.397E-01	2.062E-01	2.002E-02	0.021
ZR-95	7.966E-02		6.941E-02	1.250E-01	1.242E-02	0.637
NB-97	-2.272E-01		1.672E-01	Half-Life	too short	
ZR-97	6.514E+00		2.787E+00	Half-Life	too short	
MO-99	2.254E+00		1.466E+01	2.446E+01	3.777E+00	0.092
TC-99M	-4.042E+11		3.498E+11	Half-Life	too short	
RH-101	2.364E-02		3.286E-02	5.697E-02	4.673E-03	0.415
RH-102	8.594E-03		2.835E-02	4.661E-02	4.089E-03	0.184
RU-103	-1.567E-02		4.297E-02	6.649E-02	9.509E-03	-0.236
RH-106	2.976E-01		3.040E-01	5.422E-01	7.355E-02	0.549
RU-106	2.976E-01		3.024E-01	5.422E-01	4.846E-02	0.549
AG-108M	2.980E-02		3.388E-02	5.799E-02	5.177E-03	0.514
AG-110M	-2.706E-02		4.324E-02	5.773E-02	5.259E-03	-0.469
IN-111	-5.109E-01		1.512E+00	2.168E+00	1.836E-01	-0.236
IN-113M	3.138E-02		4.710E-02	7.972E-02	6.853E-03	0.394
SN-113	3.138E-02		4.710E-02	7.972E-02	6.853E-03	0.394
IN-114M	9.257E-02		1.948E-01	2.990E-01	2.432E-02	0.310
CD-115	-4.757E+00		1.567E+01	2.582E+01	2.303E+00	-0.184
SN-117M	-1.891E-02		5.886E-02	9.195E-02	7.372E-03	-0.206
SB-122	4.277E+00		2.783E+00	5.109E+00	4.580E-01	0.837
I-123	-1.518E+01		1.130E+01	Half-Life	too short	
TE-123M	-2.014E-02		2.999E-02	4.600E-02	3.711E-03	-0.438
I-124	3.431E-03		9.384E-01	1.363E+00	1.221E-01	0.003
SB-124	-7.145E-02		6.786E-02	7.783E-02	6.741E-03	-0.918
SB-125	1.411E-02		9.983E-02	1.628E-01	1.420E-02	0.087
TE-125M	-1.400E+00		9.052E+00	1.438E+01	1.492E+00	-0.097
I-126	1.857E-01		2.298E-01	3.587E-01	3.180E-02	0.518
SB-126	1.508E-01		1.554E-01	2.703E-01	2.439E-02	0.558
SB-127	-1.571E+00		1.646E+00	2.475E+00	2.950E-01	-0.635
XE-127	1.165E-02		4.644E-02	7.910E-02	6.519E-03	0.147
I-131	1.395E-01		1.283E-01	2.231E-01	1.999E-02	0.625
TE-132	-1.501E-01		8.704E-01	1.447E+00	2.285E-01	-0.104
BA-133	2.068E-02		4.811E-02	7.147E-02	9.386E-03	0.289
I-133	5.312E-03		7.025E-03	Half-Life	too short	
CS-134	7.493E-02		5.389E-02	9.671E-02	8.911E-03	0.775
CS-135	2.134E-01		1.606E-01	2.563E-01	2.527E-02	0.833
I-135	-9.355E+09		3.940E+10	Half-Life	too short	
CS-136	8.328E-03		1.016E-01	1.719E-01	1.573E-02	0.048
CE-139	2.393E-03		2.988E-02	4.752E-02	3.759E-03	0.050
BA-140	-1.201E-02		2.693E-01	4.515E-01	1.500E-01	-0.027
LA-140	3.783E-02		9.783E-02	1.678E-01	1.404E-02	0.225
CE-141	4.483E-02		6.431E-02	1.056E-01	8.842E-03	0.424
CE-143	1.225E-03		1.983E-04	Half-Life	too short	
CE-144	-1.676E-01		2.041E-01	3.117E-01	4.812E-02	-0.538
PM-144	-1.276E-02		3.546E-02	5.686E-02	5.097E-03	-0.224
PR-144	-8.654E-01		2.404E+00	3.855E+00	3.455E-01	-0.224
PM-146	-1.375E-02		4.461E-02	6.998E-02	7.540E-03	-0.196



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	9.339E-02		6.259E-01	1.064E+00	1.610E-01	0.088
PM-149	-3.465E+01		1.201E+02	1.953E+02	3.024E+01	-0.177
EU-152	6.511E-02		1.066E-01	1.611E-01	1.460E-02	0.404
GD-153	-2.607E-02		7.829E-02	1.113E-01	9.948E-03	-0.234
EU-154	-6.982E-03		1.159E-01	1.903E-01	2.092E-02	-0.037
EU-155	6.233E-02		1.005E-01	1.667E-01	1.473E-02	0.374
TB-160	-8.633E-02		1.575E-01	2.421E-01	2.220E-02	-0.357
HO-166M	-1.421E-02		6.109E-02	9.878E-02	8.893E-03	-0.144
TM-171	-7.379E+00		2.396E+01	3.459E+01	2.587E+00	-0.213
LU-176	-7.353E-03		2.423E-02	3.920E-02	3.358E-03	-0.188
LU-177	3.533E+00	+	1.750E+00	2.300E+00	1.905E-01	1.536
LU-177M	-5.882E-02		2.118E-01	2.914E-01	2.467E-02	-0.202
HF-181	-7.317E-03		4.333E-02	6.843E-02	6.020E-03	-0.107
W-181	-2.133E-02		3.044E-01	4.450E-01	3.292E-02	-0.048
TA-182	-4.522E-03		1.812E-01	2.996E-01	2.451E-02	-0.015
RE-183	-1.403E-02		1.142E-01	1.800E-01	1.433E-02	-0.078
RE-184	-1.950E-01		2.192E-01	3.463E-01	2.939E-02	-0.563
OS-185	-2.680E-02		3.984E-02	6.198E-02	5.510E-03	-0.432
RE-188	2.450E-01		1.785E-01	2.996E-01	2.417E-02	0.818
W-188	-3.599E+00		7.936E+00	1.108E+01	9.452E-01	-0.325
IR-192	7.317E-03		3.585E-02	5.969E-02	5.131E-03	0.123
AU-195	1.531E-01		2.214E-01	3.328E-01	2.959E-02	0.460
TL-200	-8.485E-04		4.722E-04	Half-Life too short		
TL-201	-6.754E+00		8.983E+00	1.365E+01	1.081E+00	-0.495
TL-202	2.484E-02		7.377E-02	1.219E-01	1.050E-02	0.204
HG-203	1.687E-02		4.214E-02	7.123E-02	6.223E-03	0.237
BI-207	1.194E-03		5.281E-02	8.868E-02	7.737E-03	0.013
TL-207	-4.507E-01		6.558E-01	1.024E+00	1.810E-01	-0.440
PO-209	-3.905E+00		7.672E+00	1.177E+01	1.078E+00	-0.332
PB-211	-1.773E-01		1.161E+00	1.615E+00	1.011E+00	-0.110
BI-212	1.057E+00	+	5.156E-01	7.125E-01	7.391E-02	1.483
PO-215	-4.507E-01		6.558E-01	1.024E+00	1.810E-01	-0.440
RN-219	2.479E-01		4.408E-01	7.387E-01	1.100E-01	0.336
RN-220	-1.218E+01		2.452E+01	3.951E+01	3.537E+00	-0.308
RA-223	-4.507E-01		6.558E-01	1.024E+00	1.810E-01	-0.440
AC-227	1.851E-01		3.621E-01	6.176E-01	9.435E-02	0.300
TH-227	1.851E-01		3.626E-01	6.176E-01	1.112E-01	0.300
TH-229	-3.730E-01		5.044E-01	8.244E-01	6.732E-02	-0.453
PA-231	3.864E-01		1.454E+00	2.443E+00	3.693E-01	0.158
TH-231	-4.507E-01		6.558E-01	1.024E+00	1.810E-01	-0.440
U-231	4.028E-01		1.269E+00	1.872E+00	1.685E-01	0.215
PA-233	-2.954E-02		6.432E-02	1.029E-01	9.076E-03	-0.287
PA-234	1.237E-01		2.834E-01	4.788E-01	9.089E-02	0.258
PA-234M	7.041E+00		4.767E+00	8.696E+00	8.917E-01	0.810
U-235	4.192E-02		2.199E-01	3.476E-01	6.019E-02	0.121
NP-236	2.990E-02		8.045E-02	1.299E-01	1.038E-02	0.230
NP-239	9.785E-02		1.800E-01	2.969E-01	2.554E-02	0.330
AM-241	8.460E-03		1.190E-01	1.771E-01	1.404E-02	0.048

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-7.497E-02		9.049E-02	1.409E-01	1.235E-02	-0.532
AM-246	3.151E-03		1.484E-01	2.489E-01	2.155E-02	0.013
CM-247	2.206E-02		3.961E-02	6.649E-02	5.582E-03	0.332
CF-249	1.489E-02		4.203E-02	6.987E-02	5.832E-03	0.213
CF-251	4.518E-02		1.289E-01	2.216E-01	1.775E-02	0.204

# 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]G244148003          *
* Acquisition date   : 20-JAN-2010 15:49:41 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 02:00:01.28 Half life ratio : 8.000                *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148003 Analyst initials: MXR1                  *
* Batch Number       : 940268 Sample Quantity : 1.2501E+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	2.132E+01	2.437E+00	2.193E-01	1.243E+00
CD-109	3.123E+00	7.877E-01	5.609E-01	4.019E-01
SN-126	3.065E-01	7.730E-02	5.516E-02	3.944E-02
BA-137M	1.041E-01	5.069E-02	3.315E-02	2.586E-02
CS-137	1.100E-01	5.359E-02	3.504E-02	2.734E-02
TL-208	6.151E-01	1.024E-01	2.945E-02	5.226E-02
BI-210	1.541E+00	2.598E+00	1.503E+00	1.326E+00
PB-210	1.541E+00	2.598E+00	1.503E+00	1.326E+00
PO-210	1.541E+00	2.597E+00	1.503E+00	1.325E+00
BI-211	4.144E+00	6.022E-01	1.672E-01	3.073E-01
PB-212	1.687E+00	1.963E-01	4.546E-02	1.002E-01
PO-212	1.687E+00	1.963E-01	4.546E-02	1.002E-01
BI-214	1.367E+00	2.156E-01	5.650E-02	1.100E-01
PB-214	1.442E+00	2.221E-01	5.830E-02	1.133E-01
PO-214	1.442E+00	2.221E-01	5.830E-02	1.133E-01
PO-216	1.687E+00	1.963E-01	4.546E-02	1.002E-01
PO-218	1.442E+00	2.221E-01	5.830E-02	1.133E-01
RA-224	4.787E+00	1.235E+00	5.174E-01	6.303E-01
RA-226	1.367E+00	2.156E-01	5.650E-02	1.100E-01
AC-228	1.621E+00	3.231E-01	1.077E-01	1.648E-01
RA-228	1.621E+00	3.231E-01	1.077E-01	1.648E-01
TH-228	1.714E+00	1.995E-01	4.620E-02	1.018E-01
TH-230	1.367E+00	2.156E-01	5.650E-02	1.100E-01
TH-232	1.621E+00	3.231E-01	1.077E-01	1.648E-01
TH-234	2.195E+00	1.517E+00	7.942E-01	7.742E-01
U-234	1.367E+00	2.156E-01	5.650E-02	1.100E-01
NP-237	9.001E-01	2.910E-01	1.636E-01	1.485E-01
U-238	2.195E+00	1.517E+00	7.942E-01	7.742E-01
AM-243	3.796E-01	7.125E-02	3.703E-02	3.635E-02
ANH-511	1.343E-01	6.937E-02	2.513E-02	3.539E-02

### ---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	7.929E-02	3.160E-01	2.678E-01	1.612E-01 NOT IDENT.
NA-22	6.231E-03	4.010E-02	3.445E-02	2.046E-02 NOT IDENT.
NA-24	3.687E+04	2.230E+06	0.000E+00	1.138E+06 SHORT HLIF
AL-26	2.205E-03	2.784E-02	2.399E-02	1.420E-02 NOT IDENT.
TI-44	4.201E-01	5.589E-02	3.715E-02	2.852E-02 FAIL ABUN
SC-46	-2.031E-02	3.925E-02	3.092E-02	2.003E-02 FAIL ABUN
V-48	-4.080E-02	7.248E-02	5.598E-02	3.698E-02 NOT IDENT.
CR-51	3.597E-01	3.748E-01	3.379E-01	1.912E-01 NOT IDENT.
MN-52	1.740E-01	2.537E-01	2.324E-01	1.294E-01 NOT IDENT.
MN-54	5.080E-03	3.874E-02	3.286E-02	1.976E-02 NOT IDENT.
CO-56	-2.475E-03	4.095E-02	3.411E-02	2.089E-02 NOT IDENT.
CO-57	2.302E-03	2.372E-02	2.023E-02	1.210E-02 NOT IDENT.
CO-58	-7.607E-03	3.908E-02	3.225E-02	1.994E-02 NOT IDENT.
FE-59	-6.786E-03	8.967E-02	7.621E-02	4.575E-02 NOT IDENT.
CO-60	-3.318E-02	4.013E-02	3.020E-02	2.047E-02 NOT IDENT.
ZN-65	-5.777E-02	1.051E-01	7.169E-02	5.362E-02 NOT IDENT.
GE-68	-4.062E-01	1.324E+00	1.104E+00	6.754E-01 NOT IDENT.
AS-73	4.808E-02	5.117E-01	4.502E-01	2.611E-01 NOT IDENT.
AS-74	-1.631E-01	9.748E-02	7.232E-02	4.973E-02 NOT IDENT.
SE-75	8.794E-03	4.570E-02	3.542E-02	2.331E-02 NOT IDENT.
BR-77	-1.145E+01	1.346E+01	1.097E+01	6.868E+00 FAIL ABUN
SR-82	-1.636E-01	4.014E-01	3.264E-01	2.048E-01 NOT IDENT.
RB-83	-5.238E-02	6.649E-02	5.450E-02	3.393E-02 NOT IDENT.
RB-84	5.983E-02	7.264E-02	6.523E-02	3.706E-02 NOT IDENT.
KR-85	1.566E+01	8.008E+00	7.022E+00	4.086E+00 NOT IDENT.
SR-85	8.117E-02	4.151E-02	3.640E-02	2.118E-02 NOT IDENT.
RB-86	1.661E-01	8.383E-01	7.317E-01	4.277E-01 NOT IDENT.
Y-88	1.529E-02	2.855E-02	2.690E-02	1.457E-02 NOT IDENT.
ZR-88	1.262E-02	3.227E-02	2.790E-02	1.646E-02 NOT IDENT.
Y-91	3.061E+00	1.771E+01	1.528E+01	9.035E+00 NOT IDENT.
NB-94	2.240E-03	3.345E-02	2.863E-02	1.707E-02 NOT IDENT.
NB-95	6.567E-02	4.507E-02	3.847E-02	2.299E-02 NOT IDENT.
NB-95M	4.293E-03	1.369E-01	1.057E-01	6.985E-02 NOT IDENT.
ZR-95	7.966E-02	6.802E-02	6.309E-02	3.470E-02 NOT IDENT.
NB-97	-2.272E+05	3.277E+05	0.000E+00	1.672E+05 SHORT HLIF
ZR-97	6.514E+06	5.463E+06	0.000E+00	2.787E+06 SHORT HLIF
MO-99	2.254E+00	1.436E+01	1.235E+01	7.329E+00 NOT IDENT.
TC-99M	-4.042E+17	6.856E+17	0.000E+00	0.000E+00 SHORT HLIF
RH-101	2.364E-02	3.221E-02	2.929E-02	1.643E-02 NOT IDENT.
RH-102	8.594E-03	2.779E-02	2.367E-02	1.418E-02 FAIL ABUN
RU-103	-1.567E-02	4.211E-02	3.375E-02	2.148E-02 FAIL ABUN
RH-106	2.976E-01	2.979E-01	2.743E-01	1.520E-01 FAIL ABUN
RU-106	2.976E-01	2.964E-01	2.743E-01	1.512E-01 FAIL ABUN
AG-108M	2.980E-02	3.320E-02	2.949E-02	1.694E-02 NOT IDENT.
AG-110M	-2.706E-02	4.237E-02	2.918E-02	1.162E-02 NOT IDENT.
IN-111	-5.109E-01	1.482E+00	1.111E+00	7.561E-01 NOT IDENT.
IN-113M	3.138E-02	4.615E-02	4.060E-02	2.355E-02 NOT IDENT.
SN-113	3.138E-02	4.615E-02	4.060E-02	2.355E-02 NOT IDENT.
IN-114M	9.257E-02	1.909E-01	1.538E-01	9.742E-02 NOT IDENT.
CD-115	-4.757E+00	1.536E+01	1.309E+01	7.835E+00 NOT IDENT.
SN-117M	-1.891E-02	5.768E-02	4.741E-02	2.943E-02 NOT IDENT.
SB-122	4.277E+00	2.727E+00	2.589E+00	1.391E+00 NOT IDENT.
I-123	-1.518E+07	2.215E+07	0.000E+00	1.130E+07 SHORT HLIF
TE-123M	-2.014E-02	2.939E-02	2.372E-02	1.499E-02 NOT IDENT.
I-124	3.431E-03	9.197E-01	6.897E-01	4.692E-01 NOT IDENT.
SB-124	-7.145E-02	6.651E-02	3.882E-02	3.393E-02 FAIL ABUN
SB-125	1.411E-02	9.784E-02	8.281E-02	4.992E-02 FAIL ABUN
TE-125M	-1.400E+00	8.871E+00	7.454E+00	4.526E+00 NOT IDENT.
I-126	1.857E-01	2.252E-01	1.813E-01	1.149E-01 NOT IDENT.
SB-126	1.508E-01	1.523E-01	1.365E-01	7.768E-02 FAIL ABUN
SB-127	-1.571E+00	1.614E+00	1.250E+00	8.232E-01 NOT IDENT.
XE-127	1.165E-02	4.551E-02	4.065E-02	2.322E-02 NOT IDENT.
I-131	1.395E-01	1.257E-01	1.137E-01	6.414E-02 NOT IDENT.
TE-132	-1.501E-01	8.530E-01	7.422E-01	4.352E-01 NOT IDENT.
BA-133	2.068E-02	4.715E-02	3.645E-02	2.406E-02 NOT IDENT.
I-133	5.312E+03	1.377E+04	0.000E+00	7.025E+03 SHORT HLIF
CS-134	7.493E-02	5.281E-02	4.876E-02	2.695E-02 NOT IDENT.
CS-135	2.134E-01	1.574E-01	1.312E-01	8.030E-02 NOT IDENT.
I-135	-9.355E+15	7.723E+16	0.000E+00	0.000E+00 SHORT HLIF
CS-136	8.328E-03	9.955E-02	8.633E-02	5.079E-02 FAIL ABUN
CE-139	2.393E-03	2.929E-02	2.449E-02	1.494E-02 NOT IDENT.
BA-140	-1.201E-02	2.640E-01	2.289E-01	1.347E-01 NOT IDENT.
LA-140	3.783E-02	9.587E-02	8.378E-02	4.891E-02 NOT IDENT.
CE-141	4.483E-02	6.303E-02	5.452E-02	3.216E-02 NOT IDENT.
CE-143	1.225E+03	3.887E+02	0.000E+00	1.983E+02 SHORT HLIF

CE-144	-1.676E-01	2.001E-01	1.611E-01	1.021E-01	NOT IDENT.
PM-144	-1.276E-02	3.475E-02	2.872E-02	1.773E-02	NOT IDENT.
PR-144	-8.654E-01	2.356E+00	1.947E+00	1.202E+00	NOT IDENT.
PM-146	-1.375E-02	4.371E-02	3.556E-02	2.230E-02	NOT IDENT.
ND-147	9.339E-02	6.133E-01	5.396E-01	3.129E-01	FAIL ABUN
PM-149	-3.465E+01	1.177E+02	9.987E+01	6.006E+01	NOT IDENT.
EU-152	6.511E-02	1.044E-01	8.219E-02	5.329E-02	FAIL ABUN
GD-153	-2.607E-02	7.673E-02	5.774E-02	3.915E-02	FAIL ABUN
EU-154	-6.982E-03	1.136E-01	9.530E-02	5.797E-02	NOT IDENT.
EU-155	6.233E-02	9.848E-02	8.643E-02	5.024E-02	FAIL ABUN
TB-160	-8.633E-02	1.544E-01	1.219E-01	7.875E-02	FAIL ABUN
HO-166M	-1.421E-02	5.987E-02	4.989E-02	3.055E-02	FAIL ABUN
TM-171	-7.379E+00	2.348E+01	1.804E+01	1.198E+01	NOT IDENT.
LU-176	-7.353E-03	2.375E-02	2.003E-02	1.212E-02	FAIL ABUN
LU-177	3.533E+00	1.715E+00	1.182E+00	8.752E-01	FAIL ABUN
LU-177M	-5.882E-02	2.076E-01	1.483E-01	1.059E-01	FAIL ABUN
HF-181	-7.317E-03	4.247E-02	3.475E-02	2.167E-02	NOT IDENT.
W-181	-2.133E-02	2.983E-01	2.322E-01	1.522E-01	NOT IDENT.
TA-182	-4.522E-03	1.775E-01	1.502E-01	9.058E-02	FAIL ABUN
RE-183	-1.403E-02	1.119E-01	9.279E-02	5.711E-02	FAIL ABUN
RE-184	-1.950E-01	2.148E-01	1.774E-01	1.096E-01	NOT IDENT.
OS-185	-2.680E-02	3.905E-02	3.134E-02	1.992E-02	NOT IDENT.
RE-188	2.450E-01	1.749E-01	1.545E-01	8.923E-02	NOT IDENT.
W-188	-3.599E+00	7.778E+00	5.667E+00	3.968E+00	FAIL ABUN
IR-192	7.317E-03	3.513E-02	3.049E-02	1.793E-02	FAIL ABUN
AU-195	1.531E-01	2.170E-01	1.727E-01	1.107E-01	FAIL ABUN
TL-200	-8.485E+02	9.254E+02	0.000E+00	4.722E+02	SHORT HLIF
TL-201	-6.754E+00	8.803E+00	7.033E+00	4.491E+00	NOT IDENT.
TL-202	2.484E-02	7.229E-02	6.200E-02	3.688E-02	NOT IDENT.
HG-203	1.687E-02	4.129E-02	3.645E-02	2.107E-02	NOT IDENT.
BI-207	1.194E-03	5.175E-02	4.453E-02	2.640E-02	FAIL ABUN
TL-207	-4.507E-01	6.427E-01	5.228E-01	3.279E-01	FAIL ABUN
PO-209	-3.905E+00	7.518E+00	5.924E+00	3.836E+00	NOT IDENT.
PB-211	-1.773E-01	1.138E+00	8.219E-01	5.806E-01	NOT IDENT.
BI-212	1.057E+00	5.053E-01	3.597E-01	2.578E-01	FAIL ABUN
PO-215	-4.507E-01	6.427E-01	5.228E-01	3.279E-01	FAIL ABUN
RN-219	2.479E-01	4.320E-01	3.761E-01	2.204E-01	FAIL ABUN
RN-220	-1.218E+01	2.403E+01	2.002E+01	1.226E+01	NOT IDENT.
RA-223	-4.507E-01	6.427E-01	5.228E-01	3.279E-01	FAIL ABUN
AC-227	1.851E-01	3.549E-01	3.164E-01	1.811E-01	FAIL ABUN
TH-227	1.851E-01	3.553E-01	3.164E-01	1.813E-01	FAIL ABUN
TH-229	-3.730E-01	4.943E-01	4.239E-01	2.522E-01	FAIL ABUN
PA-231	3.864E-01	1.425E+00	1.249E+00	7.269E-01	FAIL ABUN
TH-231	-4.507E-01	6.427E-01	5.228E-01	3.279E-01	FAIL ABUN
U-231	4.028E-01	1.244E+00	9.718E-01	6.347E-01	FAIL ABUN
PA-233	-2.954E-02	6.304E-02	5.258E-02	3.216E-02	FAIL ABUN
PA-234	1.237E-01	2.777E-01	2.408E-01	1.417E-01	FAIL ABUN
PA-234M	7.041E+00	4.672E+00	4.370E+00	2.384E+00	NOT IDENT.
U-235	4.192E-02	2.155E-01	1.794E-01	1.100E-01	FAIL ABUN
NP-236	2.990E-02	7.885E-02	6.697E-02	4.023E-02	NOT IDENT.
NP-239	9.785E-02	1.764E-01	1.537E-01	9.002E-02	FAIL ABUN
AM-241	8.460E-03	1.166E-01	9.249E-02	5.951E-02	NOT IDENT.
CM-243	-7.497E-02	8.868E-02	7.307E-02	4.524E-02	FAIL ABUN
AM-246	3.151E-03	1.454E-01	1.250E-01	7.421E-02	NOT IDENT.
CM-247	2.206E-02	3.881E-02	3.384E-02	1.980E-02	NOT IDENT.
CF-249	1.489E-02	4.119E-02	3.559E-02	2.102E-02	NOT IDENT.
CF-251	4.518E-02	1.263E-01	1.141E-01	6.446E-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	295.6215
46.50	295.6215
46.50	295.6215
48.70	308.2770
49.72	320.5064
51.35	305.5621
52.39	310.7756
52.97	303.5724
53.15	311.3748
53.44	309.6846
54.07	330.3394
56.28	340.8304
56.28	340.8322
57.37	0.0000
57.53	344.7682
57.53	344.7700
57.60	344.8261
57.98	362.9780
57.98	362.9780
59.32	351.5867
59.32	351.5867
59.40	350.1929
59.54	370.7429
59.72	370.8998
60.01	382.8406
61.10	376.4864
61.14	376.5207
61.30	376.6599
63.00	394.3084
63.29	394.5671
63.29	394.5671
63.58	394.8252
64.28	386.5915
65.12	405.0542
65.20	405.1258
65.20	405.1258
66.05	414.7726
66.72	418.3463
66.83	418.4496
66.91	428.9116
67.20	432.1507
67.20	432.1507
67.75	414.8239
67.85	414.9133
68.90	423.3024
68.90	423.3024
69.30	422.1725
69.67	441.9156
70.82	447.4757
70.82	447.4757
70.83	447.4849
72.80	450.8240
72.87	450.8904
72.87	450.8904
74.67	414.8394
74.81	414.9568
74.81	414.9568
74.81	414.9568
74.81	414.9568
74.81	414.9568
74.81	414.9568
74.81	414.9568
74.97	415.0911
75.28	415.3513
75.70	415.7017
77.11	416.8745
77.11	416.8745

77.11	416.8745
77.11	416.8745
77.11	416.8745
77.11	416.8745
77.11	416.8745
78.38	417.9214
79.62	418.9348
79.80	419.0817
79.80	419.0817
80.11	419.3335
80.18	419.3901
80.30	419.4866
80.30	419.4866
80.57	419.7048
81.00	317.7129
81.07	317.7557
81.07	317.7557
81.07	317.7557
81.07	317.7557
82.60	318.6857
83.37	319.1475
83.78	319.3966
83.78	319.3966
83.78	319.3966
83.78	319.3966
84.21	371.9066
84.90	372.3848
85.43	372.7522
86.29	373.3467
86.50	373.4908
86.54	373.5185
86.59	373.5535
86.72	373.6422
86.79	373.6883
86.94	373.7935
87.30	374.0391
87.30	374.0391
87.30	374.0391
87.30	374.0391
87.30	374.0391
87.30	374.0391
87.57	371.1310
87.88	371.3416
88.03	371.4423
88.36	371.6656
88.47	371.7407
89.95	621.2219
91.11	379.7328
92.29	380.5258
92.38	380.5873
92.38	380.5873
93.35	317.1751
94.00	317.5360
94.67	317.9030
94.67	317.9061
94.90	275.7332
94.90	275.7332
94.90	275.7332
94.90	275.7332
95.87	318.5659
95.87	318.5659
96.73	333.1812
97.43	305.2549
98.44	288.4409
98.44	288.4409
98.88	266.5716
99.55	273.7149
99.55	273.7149
99.86	277.0176
100.00	277.0818
100.10	272.9151
103.18	326.2035
103.76	318.0328
105.00	277.2461
105.31	280.5739
108.00	295.6608
109.28	298.3987

111.00	284.1908
111.00	284.1908
111.76	289.8949
112.95	281.8238
115.19	306.5385
116.30	273.5377
117.00	257.5924
117.00	257.5924
117.66	296.8501
121.11	265.7047
121.62	259.3659
121.78	259.4264
122.06	259.5329
122.32	244.3586
122.32	244.3586
122.32	244.3586
122.32	244.3586
123.07	244.6263
127.23	294.4329
129.76	274.5379
131.20	292.7686
133.02	291.2921
133.54	294.8259
135.34	256.6651
136.00	239.1018
136.25	244.7451
136.48	257.0622
140.51	306.5665
140.51	0.0000
142.18	285.9386
142.65	289.4836
143.76	283.1616
144.24	278.8436
144.24	278.8436
144.24	278.8436
144.24	278.8436
145.22	280.3251
145.44	263.5118
147.16	305.8564
152.43	279.5077
152.70	270.5100
153.22	270.6868
154.21	276.7146
154.21	276.7146
154.21	276.7146
154.21	276.7146
155.03	245.0791
156.02	291.0332
158.56	267.9012
159.00	0.0000
159.00	290.9538
160.31	247.8208
161.27	261.8925
162.32	267.9746
162.64	268.0766
163.35	254.4859
163.89	245.4341
165.85	242.5412
167.43	263.8221
171.28	231.3023
171.86	244.2523
172.10	244.3207
176.55	268.3687
176.60	268.3850
181.06	277.8417
184.41	258.3493
185.71	258.7169
186.00	258.7993
190.27	219.3974
192.34	268.2262
193.63	268.0847
197.04	217.9328
198.01	239.6995
198.60	265.8969
200.40	254.6961
201.83	258.6793
202.84	231.8808
205.31	233.0098



208.36	232.2813
208.81	233.2945
209.75	231.1517
209.75	231.1517
210.97	235.8018
215.65	222.0931
216.55	225.9487
218.09	207.9667
222.10	218.8942
223.80	199.9062
226.40	219.7966
227.00	237.4787
227.08	237.4983
227.20	227.3574
228.16	223.8637
228.18	223.8692
228.18	223.8692
231.56	0.0000
235.69	234.0166
236.00	220.6649
236.00	220.6649
238.63	193.3613
238.63	193.3613
238.63	193.3613
238.63	193.3613
239.00	193.4276
240.98	193.7767
241.98	193.9527
241.98	193.9527
241.98	193.9527
244.69	189.3553
245.39	190.9790
247.94	158.2562
248.90	156.5052
249.79	156.6293
252.40	171.1761
252.85	173.1360
252.85	173.1360
254.15	0.0000
256.20	150.8712
256.20	150.8712
260.50	154.2901
260.90	159.1082
262.80	150.7770
264.65	143.7516
268.24	124.2468
268.79	138.1157
269.46	152.5901
269.46	152.5901
269.46	152.5901
269.46	152.5901
271.23	152.8158
273.65	221.8851
276.40	172.4563
277.35	163.3900
277.60	159.4208
277.60	159.4208
278.00	163.3397
278.60	172.1224
279.20	169.3043
279.53	191.6071
280.46	195.6259
281.68	170.6155
283.67	137.8788
284.30	150.5772
285.00	154.5504
285.90	144.9349
286.10	135.2289
286.10	135.2289
287.40	145.1099
288.45	0.0000
290.67	148.4166
290.80	148.4329
291.72	129.7787
293.26	0.0000
293.70	142.5096
295.21	148.9501
295.21	148.9501

295.21	148.9501
295.96	164.7264
296.50	164.7957
297.23	164.8905
298.57	165.0623
299.80	137.6843
299.80	137.6843
300.09	141.6489
300.09	141.6489
300.09	141.6489
300.09	141.6489
300.12	141.6533
301.29	143.3561
302.84	129.3322
303.76	156.2561
303.91	156.2730
304.40	145.2796
304.40	145.2796
304.84	137.4307
306.84	141.3984
308.46	127.7127
311.98	146.9138
316.51	140.4406
318.01	158.5463
319.02	139.7052
319.41	139.7458
320.08	119.8407
323.87	147.2153
323.87	147.2153
323.87	147.2153
323.87	147.2153
325.23	172.4225
328.77	140.7071
333.44	146.8286
334.20	146.9086
334.20	146.9086
334.30	146.9197
338.28	128.5154
338.28	128.5154
338.28	128.5154
338.28	128.5154
338.32	128.5193
338.32	128.5193
338.32	128.5193
340.50	113.5142
340.57	113.5193
344.27	108.9388
345.85	126.9633
350.59	0.0000
351.07	125.5863
351.92	125.6613
351.92	125.6613
351.92	125.6613
355.39	0.0000
356.01	109.8270
364.48	98.9180
366.43	130.0009
367.43	143.5092
367.94	0.0000
369.80	95.1347
374.96	103.7598
383.85	117.9296
387.95	116.1489
388.63	123.5276
391.69	109.0845
391.69	109.0845
392.90	115.4668
398.62	108.5102
400.65	119.1969
401.10	121.3400
401.81	112.9495
402.60	114.0612
404.84	128.6044
410.95	105.3107
411.60	96.8569
413.65	117.3943
414.70	117.9566
415.30	121.3442

415.76	119.2495
417.63	0.0000
418.52	85.3210
423.70	109.1236
427.08	98.6246
427.89	110.4701
432.53	101.0956
433.93	87.1860
439.47	88.5501
439.56	88.5539
439.89	86.4111
443.98	103.9395
444.90	89.9124
445.03	89.9200
445.03	89.9200
445.03	89.9200
445.03	89.9200
453.90	98.0008
463.38	101.8110
468.07	77.2718
473.00	101.2567
475.06	76.0289
475.35	79.3477
476.78	82.7179
477.59	79.4443
477.96	80.5644
482.03	85.1681
484.57	93.0388
487.03	77.6360
490.36	0.0000
492.35	94.5420
497.08	90.3204
507.63	0.0000
510.53	0.0000
510.84	95.4694
511.00	95.4771
511.85	95.5193
511.85	95.5193
513.99	76.5000
513.99	76.5000
520.41	90.2979
520.65	90.3101
527.90	95.1768
528.96	0.0000
529.64	79.8381
529.87	0.0000
531.02	88.0649
537.32	80.1475
543.00	69.4131
546.56	0.0000
549.76	76.9781
552.65	66.9921
555.20	68.9136
563.23	65.4930
563.90	65.5138
568.70	98.0345
569.32	83.2632
569.50	83.2698
569.67	83.2764
573.80	82.5140
574.00	89.0109
574.64	87.5963
578.91	82.0944
579.30	0.0000
583.14	75.4293
585.48	55.9351
591.81	58.1784
592.07	56.1064
593.00	58.9379
595.88	104.9180
600.56	63.8380
602.52	0.0000
602.71	89.2736
602.71	89.2736
603.60	103.4124
604.41	90.9106
604.70	90.9224
609.31	78.2320

609.31	78.2320
609.31	78.2320
609.31	78.2320
610.33	78.2684
612.46	88.0970
614.37	53.5345
618.01	82.3250
621.84	53.0824
621.84	53.0824
631.29	69.4872
633.02	63.8250
633.10	63.8267
634.78	79.1276
635.90	87.7504
636.97	79.2046
645.85	65.1429
646.12	66.1076
656.30	85.0036
657.75	88.2650
657.90	0.0000
661.65	88.7342
661.65	88.7342
664.57	0.0000
666.33	69.2609
666.33	69.2609
675.00	74.6877
677.61	73.7976
685.20	76.9536
692.80	83.0576
695.00	60.6392
696.49	79.2697
696.49	79.2697
697.00	76.3490
697.49	77.3432
698.33	75.4115
698.50	73.4583
699.00	64.6562
702.63	72.6017
706.10	70.7379
706.58	0.0000
706.67	66.8230
709.31	69.8456
711.68	69.9132
713.82	69.9738
717.42	66.1265
720.50	53.8011
721.93	0.0000
722.20	67.5709
722.78	70.8828
722.78	70.8828
722.89	70.8863
722.95	70.8881
723.30	77.4938
724.18	61.0268
727.18	62.7504
733.00	64.5493
735.90	51.9201
739.58	55.7553
742.81	52.8357
744.21	50.8693
747.13	55.9193
751.79	66.0242
752.31	68.0382
753.82	51.0585
755.35	47.0815
756.15	44.0902
756.87	45.1044
763.93	43.5513
765.79	45.2582
766.42	48.6224
766.84	65.3983
776.49	69.6772
778.00	70.7263
778.57	64.6781
778.89	64.6859
783.80	55.6915
785.46	50.6604
792.07	75.1617

795.84	64.0782
796.30	64.0890
798.80	97.7484
801.93	66.2600
805.60	55.1206
810.29	57.2592
810.76	57.2687
815.85	51.2280
817.79	45.1118
818.51	48.2002
819.60	52.3236
826.30	48.3356
828.27	0.0000
831.60	80.3670
831.96	77.2870
834.83	64.9872
836.80	0.0000
846.75	59.0457
848.13	46.6370
856.28	0.0000
856.80	48.5112
860.37	45.1022
867.32	50.4267
867.82	48.6958
871.10	65.8139
873.19	49.1343
874.81	59.6218
875.33	0.0000
876.40	52.3279
879.36	67.0469
880.27	51.3495
880.51	42.9689
881.50	44.0323
883.24	55.5970
884.67	51.4261
889.25	54.6584
896.60	56.9017
898.02	61.1450
899.00	63.2754
903.28	47.5236
911.07	51.8819
911.07	51.8819
911.07	51.8819
919.63	53.0908
920.93	44.6147
925.00	37.2285
925.24	39.3595
926.50	45.7610
935.52	45.8954
937.48	51.2637
944.10	49.2332
946.00	37.4832
949.00	45.0229
962.29	61.0024
964.01	46.6743
966.15	37.7241
968.20	37.7480
969.11	37.7592
969.11	37.7592
969.11	37.7592
977.42	44.4674
980.50	34.6461
983.50	49.8498
989.30	36.9119
996.32	76.1609
1001.03	35.9560
1001.68	41.4122
1004.76	61.0859
1021.30	0.0000
1024.50	0.0000
1034.80	54.1217
1036.00	44.9645
1037.82	37.6434
1038.57	35.8151
1038.76	0.0000
1045.16	40.4855
1046.59	39.5829
1048.07	37.7585

1050.47	40.5500
1050.47	40.5500
1062.04	47.1609
1063.62	49.0319
1076.63	50.1460
1077.35	59.4453
1078.86	52.0374
1085.78	37.2445
1099.22	48.6040
1112.02	60.7869
1112.84	61.9260
1115.52	62.7792
1120.29	42.3120
1120.29	42.3120
1120.29	42.3120
1120.29	42.3120
1120.51	42.3138
1121.28	42.3230
1124.00	0.0000
1129.67	46.8661
1131.51	0.0000
1147.95	0.0000
1167.94	56.2080
1173.22	54.3792
1175.09	55.3615
1177.93	57.3145
1189.05	53.6530
1204.90	48.1059
1205.75	0.0000
1213.00	54.9567
1221.42	48.3154
1230.97	48.4355
1235.34	63.0375
1236.41	0.0000
1238.25	54.3480
1246.25	38.9014
1260.41	0.0000
1271.85	45.0286
1274.45	38.2018
1274.54	35.2632
1291.56	48.2025
1298.22	0.0000
1312.09	44.4928
1325.50	18.8477
1325.50	18.8477
1332.49	40.7414
1333.61	30.8121
1360.21	30.0098
1362.66	0.0000
1365.15	28.0422
1368.21	25.0559
1368.53	0.0000
1376.25	22.0913
1384.27	32.1940
1394.10	22.1844
1395.20	28.2415
1407.95	36.4189
1434.06	17.3016
1436.60	23.4211
1457.56	0.0000
1460.81	14.3350
1489.15	17.5174
1509.49	16.5612
1596.49	20.0352
1620.62	19.0767
1678.03	0.0000
1691.02	15.0505
1691.02	15.0505
1706.46	0.0000
1750.46	0.0000
1764.49	8.1796
1764.49	8.1796
1764.49	8.1796
1764.49	8.1796
1770.23	6.5508
1771.40	56.1642
1791.20	0.0000
1808.65	10.3697

1836.01

6.6328

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148003

Total Uranium Activity	6.5480E+00	ug/g
Total Uranium Counting Unc.	4.5152E+00	ug/g
Total Uranium Tpu	2.3037E-06	ug/g
Total Uranium Mda	2.3642E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148003
*  ANALYST       : MXR1                             DETECTOR    : GAM07
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 15:49:41.04          SAMPLE ALQT  : 125.010 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.150E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.374E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.018E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.950E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:52:45.12

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148004.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:50:06
Sample ID        : G244148004      Sample quantity   : 1.27570E+02 GRAM
Detector name    : GAM10           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:01.01 0.0%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000        Sensitivity     : 5.00000
Batch ID        : 940268           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	62.93*	68	344	1.22	126.02	123	7	9.45E-03	48.2	
2	4	72.49	106	343	1.42	145.13	142	22	1.47E-02	31.8	1.54E+00
3	4	74.63*	421	343	1.10	149.40	142	22	5.85E-02	9.2	
4	4	76.83*	565	343	1.22	153.80	142	22	7.85E-02	7.4	
5	4	83.92*	107	459	1.46	167.96	164	14	1.49E-02	38.5	3.43E-01
6	4	87.01	232	378	1.11	174.13	164	14	3.22E-02	15.3	
7	0	93.02*	108	514	1.64	186.15	181	9	1.50E-02	41.0	
8	0	129.28	110	342	0.80	258.61	255	9	1.53E-02	31.8	
9	0	185.90*	233	397	1.38	371.76	366	13	3.23E-02	19.3	
10	0	209.39	102	252	0.99	418.70	415	8	1.42E-02	28.7	
11	7	238.57*	1415	153	1.21	477.01	471	22	1.97E-01	3.1	2.45E+00
12	7	241.57	309	253	1.71	483.00	471	22	4.29E-02	12.9	
13	0	270.32	150	223	0.97	540.46	535	11	2.08E-02	21.0	
14	0	295.17*	426	192	1.13	590.13	584	12	5.92E-02	8.2	
15	0	299.97	100	134	1.31	599.73	596	9	1.38E-02	23.3	
16	0	327.92	87	131	1.47	655.58	652	10	1.20E-02	26.7	
17	0	338.42*	268	194	1.21	676.57	672	12	3.72E-02	12.2	
18	0	351.92*	701	153	1.26	703.55	697	13	9.74E-02	5.3	
19	0	463.42	75	97	1.19	926.40	921	10	1.04E-02	27.5	
20	0	511.08*	134	136	1.70	1021.67	1013	17	1.86E-02	23.5	
21	0	583.49*	370	85	1.44	1166.43	1161	12	5.15E-02	7.5	
22	0	609.61*	493	70	1.31	1218.65	1214	10	6.84E-02	5.6	
23	0	727.84*	64	96	0.95	1455.01	1450	12	8.83E-03	33.7	
24	0	768.70	51	69	2.00	1536.71	1531	11	7.06E-03	34.6	
25	0	795.46	49	42	1.47	1590.21	1584	10	6.80E-03	26.3	
26	0	911.67*	274	63	1.75	1822.58	1813	18	3.81E-02	9.2	
27	0	934.74	51	22	1.75	1868.70	1864	10	7.13E-03	22.1	
28	4	965.07*	55	46	2.56	1929.37	1922	29	7.70E-03	32.3	7.46E-01
29	4	969.56	171	36	1.90	1938.35	1922	29	2.37E-02	10.4	
30	0	1120.79*	101	47	1.85	2240.78	2235	14	1.40E-02	17.8	
31	0	1379.42	18	48	1.12	2758.11	2747	16	2.50E-03	89.2	
32	0	1461.49*	863	19	2.24	2922.29	2915	19	1.20E-01	3.7	
33	0	1631.53	20	3	2.90	3262.49	3257	11	2.81E-03	27.3	
34	0	1765.41*	98	0	2.24	3530.39	3524	13	1.35E-02	11.0	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:52:48

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148004.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 4-JAN-2010 12:00:00 Acquisition date : 20-JAN-2010 15:50:06  
 Sample ID : G244148004 Sample quantity : 127.57 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA10 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.01 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.150E+01	2.427E+00	5.298E-01	4.563E-02	40.578
CD-109	+	88.03	*	3.573E+00	1.162E+00	1.446E+00	1.639E-01	2.471
SN-126	+	64.28		9.365E-01	9.179E-01	9.996E-01	1.709E-01	0.937
	+	86.94		1.458E+00	7.565E-01	5.981E-01	2.512E-01	2.437
	+	87.57	*	3.506E-01	1.140E-01	1.509E-01	1.707E-02	2.324
TL-208		277.35		6.826E-01	3.710E-01	6.599E-01	7.197E-02	1.034
	+	510.84		6.232E-01	2.999E-01	2.034E-01	2.138E-02	3.064
	+	583.14	*	4.930E-01	8.085E-02	5.614E-02	3.773E-03	8.781
		860.37		6.656E-01	3.011E-01	5.702E-01	5.568E-02	1.167
BI-211	+	72.87		6.851E+00	4.426E+00	5.300E+00	5.829E-01	1.292
	+	351.07	*	4.101E+00	5.286E-01	2.863E-01	2.087E-02	14.326
PB-212	+	74.81		2.993E+00	7.000E-01	5.886E-01	8.473E-02	5.085
	+	77.11		2.226E+00	4.079E-01	3.261E-01	3.566E-02	6.824
	+	87.30		1.622E+00	5.518E-01	7.008E-01	1.057E-01	2.314
	+	238.63	*	1.826E+00	1.787E-01	7.940E-02	6.023E-03	22.996
	+	300.09		1.972E+00	9.340E-01	1.068E+00	9.383E-02	1.847
PO-212	+	74.81		2.993E+00	7.000E-01	5.886E-01	8.473E-02	5.085
	+	77.11		2.226E+00	4.079E-01	3.261E-01	3.566E-02	6.824
	+	87.30		1.622E+00	5.518E-01	7.008E-01	1.057E-01	2.314
		115.19		-8.371E-01	3.520E+00	5.658E+00	4.048E-01	-0.148
	+	238.63	*	1.826E+00	1.787E-01	7.940E-02	6.023E-03	22.996
	+	300.09		1.972E+00	9.340E-01	1.068E+00	9.383E-02	1.847
BI-214	+	609.31	*	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755
	+	1120.29		1.386E+00	5.126E-01	4.062E-01	3.970E-02	3.411
	+	1764.49		1.860E+00	4.265E-01	2.675E-01	1.786E-02	6.954
PB-214	+	74.81		5.158E+00	1.170E+00	1.014E+00	1.341E-01	5.085
	+	77.11		3.815E+00	7.573E-01	5.591E-01	7.451E-02	6.824
	+	87.30		2.778E+00	9.285E-01	1.200E+00	1.642E-01	2.314
	+	241.98		2.390E+00	6.469E-01	4.780E-01	3.977E-02	5.001
	+	295.21		1.481E+00	2.774E-01	1.903E-01	1.718E-02	7.783
	+	351.92	*	1.427E+00	1.984E-01	9.979E-02	8.949E-03	14.296
PO-214	+	74.81		5.158E+00	1.170E+00	1.014E+00	1.341E-01	5.085
	+	77.11		3.815E+00	7.573E-01	5.591E-01	7.451E-02	6.824
	+	87.30		2.778E+00	9.285E-01	1.200E+00	1.642E-01	2.314

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.390E+00	6.469E-01	4.780E-01	3.977E-02	5.001
	+	295.21		1.481E+00	2.774E-01	1.903E-01	1.718E-02	7.783
	+	351.92	*	1.427E+00	1.984E-01	9.979E-02	8.949E-03	14.296
	+	74.81		2.993E+00	7.000E-01	5.886E-01	8.473E-02	5.085
	+	77.11		2.226E+00	4.079E-01	3.261E-01	3.566E-02	6.824
PO-218	+	87.30		1.622E+00	5.518E-01	7.008E-01	1.057E-01	2.314
	+	238.63	*	1.826E+00	1.787E-01	7.940E-02	6.023E-03	22.996
	+	300.09		1.972E+00	9.340E-01	1.068E+00	9.383E-02	1.847
	+	74.81		5.158E+00	1.170E+00	1.014E+00	1.341E-01	5.085
	+	77.11		3.815E+00	7.573E-01	5.591E-01	7.451E-02	6.824
RA-224	+	87.30		2.778E+00	9.285E-01	1.200E+00	1.642E-01	2.314
	+	241.98		2.390E+00	6.469E-01	4.780E-01	3.977E-02	5.001
	+	295.21		1.481E+00	2.774E-01	1.903E-01	1.718E-02	7.783
	+	351.92	*	1.427E+00	1.984E-01	9.979E-02	8.949E-03	14.296
	+	240.98	*	4.532E+00	1.200E+00	9.034E-01	5.545E-02	5.017
RA-226	+	609.31	*	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755
	+	1120.29		1.386E+00	5.126E-01	4.062E-01	3.970E-02	3.411
	+	1764.49		1.860E+00	4.265E-01	2.675E-01	1.786E-02	6.954
	+	338.32		1.727E+00	8.222E-01	3.559E-01	1.456E-01	4.853
	+	911.07	*	1.676E+00	3.717E-01	2.156E-01	2.661E-02	7.775
AC-228	+	969.11		1.848E+00	5.816E-01	3.305E-01	7.814E-02	5.593
	+	338.32		1.727E+00	8.222E-01	3.559E-01	1.456E-01	4.853
	+	911.07	*	1.676E+00	3.717E-01	2.156E-01	2.661E-02	7.775
	+	969.11		1.848E+00	5.816E-01	3.305E-01	7.814E-02	5.593
	+	74.81		3.042E+00	6.530E-01	5.981E-01	6.584E-02	5.085
TH-228	+	77.11		2.262E+00	4.146E-01	3.314E-01	3.624E-02	6.824
	+	87.30		1.648E+00	5.359E-01	7.121E-01	8.047E-02	2.314
	+	238.63	*	1.855E+00	1.816E-01	8.069E-02	6.121E-03	22.996
	+	300.09		2.004E+00	1.506E+00	1.085E+00	6.404E-01	1.847
	+	609.31	*	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755
TH-230	+	1120.29		1.386E+00	5.126E-01	4.062E-01	3.970E-02	3.411
	+	1764.49		1.860E+00	4.265E-01	2.675E-01	1.786E-02	6.954
	+	338.32		1.727E+00	4.364E-01	3.559E-01	2.386E-02	4.853
	+	911.07	*	1.676E+00	3.717E-01	2.156E-01	2.661E-02	7.775
	+	969.11		1.848E+00	5.816E-01	3.305E-01	7.814E-02	5.593
TH-232	+	63.29	*	2.366E+00	2.330E+00	3.024E+00	5.960E-01	0.782
	+	92.38		1.022E+00	8.597E-01	8.441E-01	1.598E-01	1.211
	+	609.31	*	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755
	+	1120.29		1.386E+00	5.126E-01	4.062E-01	3.970E-02	3.411
	+	1764.49		1.860E+00	4.265E-01	2.675E-01	1.786E-02	6.954
NP-237	+	86.50	*	1.030E+00	3.966E-01	4.256E-01	1.000E-01	2.419
	+	95.87		-6.300E-01	9.834E-01	1.364E+00	3.409E-01	-0.462
	+	63.29	*	2.366E+00	2.330E+00	3.024E+00	5.960E-01	0.782
	+	92.38		1.022E+00	8.442E-01	8.441E-01	8.673E-02	1.211
	+	74.67	*	4.853E-01	1.040E-01	9.586E-02	1.050E-02	5.062
AM-243	+	86.72		3.861E+01	1.256E+01	1.590E+01	1.791E+00	2.428
	+	117.66		-3.274E+00	3.685E+00	5.723E+00	3.971E-01	-0.572
	+	142.18		2.096E+00	1.706E+01	2.707E+01	1.616E+00	0.077
	+	511.00	*	1.346E-01	6.381E-02	4.394E-02	2.815E-03	3.063
	+	511.00	*	1.346E-01	6.381E-02	4.394E-02	2.815E-03	3.063

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	5.895E-02	2.939E-01	4.823E-01	3.587E-02	0.122
NA-22		1274.54	*	-1.897E-02	4.500E-02	7.156E-02	5.543E-03	-0.265
NA-24		1368.53	*	4.023E-01	4.500E-02	Half-Life too short		
AL-26		1129.67		2.779E-01	1.581E+00	2.588E+00	1.815E-01	0.107
		1808.65	*	2.878E-02	2.918E-02	5.654E-02	3.585E-03	0.509
TI-44		67.85		-6.143E-02	5.803E-02	8.689E-02	9.809E-03	-0.707
		78.38	*	1.779E-01	4.975E-02	7.834E-02	8.573E-03	2.271
SC-46		889.25	*	2.346E-02	3.809E-02	6.593E-02	6.525E-03	0.356
	+	1120.51		2.393E-01	8.708E-02	1.320E-01	9.484E-03	1.812
V-48		944.10		8.854E-03	8.629E-01	1.406E+00	1.362E-01	0.006
		983.50	*	5.671E-03	6.208E-02	1.018E-01	9.417E-03	0.056
		1312.09		3.978E-02	7.949E-02	1.396E-01	1.166E-02	0.285
CR-51		320.08	*	1.455E-01	3.519E-01	5.968E-01	4.311E-02	0.244
MN-52		744.21		-1.463E-01	2.393E-01	3.727E-01	2.431E-02	-0.393
		848.13		-2.491E+00	7.230E+00	1.145E+01	1.015E+00	-0.218
	+	935.52		7.025E-01	3.186E-01	5.445E-01	5.323E-02	1.290
		1246.25		3.076E+00	8.080E+00	1.394E+01	1.015E+00	0.221
		1333.61		-9.889E-01	5.686E+00	9.221E+00	8.012E-01	-0.107
		1434.06	*	9.830E-02	3.029E-01	5.193E-01	4.388E-02	0.189
MN-54		834.83	*	-5.372E-03	3.773E-02	6.121E-02	5.229E-03	-0.088
CO-56		846.75	*	6.748E-03	3.825E-02	6.380E-02	5.634E-03	0.106
		977.42		3.331E-01	3.000E+00	4.283E+00	3.992E-01	0.078
		1037.82		4.050E-02	3.241E-01	5.303E-01	4.768E-02	0.076
		1175.09		2.034E-01	2.087E+00	3.528E+00	2.185E-01	0.058
		1238.25		1.108E-01	9.737E-02	1.754E-01	1.308E-02	0.632
		1360.21		4.052E-01	9.892E-01	1.723E+00	1.488E-01	0.235
		1771.40		1.261E-01	1.792E-01	3.177E-01	2.105E-02	0.397
CO-57		122.06	*	-2.583E-03	2.424E-02	3.908E-02	2.578E-03	-0.066
		136.48		-1.500E-02	2.021E-01	3.247E-01	2.271E-02	-0.046
CO-58		810.76	*	-2.148E-02	3.883E-02	6.054E-02	4.844E-03	-0.355
FE-59		142.65		4.745E-01	2.703E+00	4.300E+00	2.562E-01	0.110
		192.34		-2.581E-01	9.475E-01	1.401E+00	1.648E-01	-0.184
		1099.22	*	-6.061E-02	9.662E-02	1.445E-01	1.206E-02	-0.419
		1291.56		4.185E-02	1.137E-01	1.970E-01	1.823E-02	0.212
CO-60		1173.22		-4.858E-03	4.451E-02	7.378E-02	4.550E-03	-0.066
		1332.49	*	1.533E-03	3.932E-02	6.549E-02	5.691E-03	0.023
ZN-65		1115.52	*	-9.759E-02	1.076E-01	1.273E-01	9.275E-03	-0.766
GE-68		1077.35	*	-1.249E-01	1.219E+00	1.940E+00	1.537E-01	-0.064
AS-73		53.44	*	9.894E-01	1.511E+00	2.526E+00	3.342E-01	0.392
AS-74		595.88	*	4.461E-03	8.545E-02	1.443E-01	8.243E-03	0.031
		634.78		-2.490E-01	3.187E-01	4.964E-01	2.620E-02	-0.502
SE-75		66.05		6.558E+00	6.558E+00	1.018E+01	1.312E+00	0.644
		96.73		-1.259E+00	8.537E-01	1.098E+00	1.554E-01	-1.146
		121.11		5.928E-02	1.292E-01	2.136E-01	2.093E-02	0.277
		136.00		3.320E-03	3.774E-02	6.108E-02	3.793E-03	0.054
		198.60		7.515E-01	1.825E+00	2.901E+00	2.055E-01	0.259
		264.65	*	4.142E-03	4.404E-02	6.541E-02	4.172E-03	0.063
		279.53		-3.436E-03	1.059E-01	1.765E-01	1.209E-02	-0.019
		303.91		-4.464E-01	2.132E+00	3.059E+00	3.066E-01	-0.146

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	400.65		2.439E-01	2.455E-01	4.252E-01	4.152E-02	0.574
		87.88		1.045E+03	3.398E+02	4.836E+02	5.483E+01	2.160
	+	200.40		-1.763E+02	2.190E+02	3.310E+02	1.909E+01	-0.533
		239.00		3.974E+02	3.458E+01	5.297E+01	3.242E+00	7.503
		249.79		3.848E+00	8.342E+01	1.359E+02	8.439E+00	0.028
		281.68		-1.161E+02	1.162E+02	1.832E+02	1.179E+01	-0.634
		297.23		3.121E+02	1.010E+02	1.439E+02	9.394E+00	2.169
		303.76		-4.783E+01	2.448E+02	3.518E+02	2.309E+01	-0.136
		439.47		1.399E+02	1.749E+02	3.007E+02	2.022E+01	0.465
		484.57		-1.832E+02	3.005E+02	4.608E+02	3.019E+01	-0.398
		520.65	*	2.211E+00	1.225E+01	1.999E+01	1.269E+00	0.111
		574.64		-6.333E+01	2.582E+02	4.274E+02	2.530E+01	-0.148
		578.91		4.777E+01	1.276E+02	1.943E+02	1.142E+01	0.246
		585.48		2.001E+03	3.372E+02	6.524E+02	3.795E+01	3.067
		755.35		-1.538E+01	2.148E+02	3.533E+02	2.387E+01	-0.044
		817.79		-1.566E+02	1.722E+02	2.567E+02	2.090E+01	-0.610
SR-82		698.33		-5.545E+00	3.255E+01	5.341E+01	2.996E+00	-0.104
		776.49	*	8.004E-02	3.823E-01	6.426E-01	4.633E-02	0.125
RB-83		1395.20		2.773E+00	1.156E+01	1.969E+01	1.686E+00	0.141
		520.41	*	9.662E-03	6.016E-02	9.800E-02	6.219E-03	0.099
		529.64		5.332E-03	1.043E-01	1.679E-01	1.055E-02	0.032
		552.65		1.687E-01	1.896E-01	3.253E-01	1.988E-02	0.518
RB-84		881.50	*	4.101E-02	7.109E-02	1.225E-01	1.188E-02	0.335
KR-85		513.99	*	1.927E+01	7.700E+00	1.324E+01	8.460E-01	1.455
SR-85		513.99	*	9.987E-02	3.992E-02	6.866E-02	4.385E-03	1.455
RB-86		1076.63	*	-2.512E-01	8.319E-01	1.295E+00	1.027E-01	-0.194
Y-88		898.02		7.409E-03	3.697E-02	6.170E-02	6.268E-03	0.120
		1836.01	*	-2.150E-02	3.109E-02	4.107E-02	2.520E-03	-0.523
ZR-88		392.90	*	1.224E-03	2.848E-02	4.672E-02	3.175E-03	0.026
Y-91		1204.90	*	-1.468E+01	1.754E+01	2.680E+01	1.780E+00	-0.548
NB-94		702.63	*	2.457E-03	3.282E-02	5.490E-02	3.125E-03	0.045
		871.10		2.591E-03	3.333E-02	5.499E-02	5.187E-03	0.047
NB-95		765.79	*	3.506E-02	4.682E-02	7.277E-02	5.078E-03	0.482
NB-95M		235.69	*	1.927E-02	1.300E-01	1.949E-01	1.511E-02	0.099
ZR-95		724.18		-2.306E-02	9.974E-02	1.397E-01	9.956E-03	-0.165
		756.15	*	8.795E-03	6.885E-02	1.152E-01	9.045E-03	0.076
NB-97		657.90	*	1.800E-01	6.885E-02	Half-Life	too short	
		1024.50		-8.176E+00	6.885E-02	Half-Life	too short	
ZR-97		254.15		4.678E+00	6.885E-02	Half-Life	too short	
		355.39		5.502E+00	6.885E-02	Half-Life	too short	
		507.63	*	2.963E+00	6.885E-02	Half-Life	too short	
		602.52		7.188E+00	6.885E-02	Half-Life	too short	
		1021.30		-1.330E+00	6.885E-02	Half-Life	too short	
		1147.95		1.547E+00	6.885E-02	Half-Life	too short	
		1362.66		-2.331E+00	6.885E-02	Half-Life	too short	
		1750.46		2.384E+00	6.885E-02	Half-Life	too short	
MO-99		140.51		1.191E+00	3.232E+01	5.211E+01	1.407E+01	0.023
		181.06		2.155E+01	2.266E+01	3.366E+01	5.745E+00	0.640
		366.43		-4.094E+01	1.017E+02	1.625E+02	1.100E+01	-0.252

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	739.58	*		1.378E+01	1.376E+01	2.456E+01	3.452E+00	0.561
	778.00			-3.362E+01	4.340E+01	6.656E+01	4.822E+00	-0.505
TC-99M	140.51	*		2.375E+10	4.340E+01	Half-Life	too short	
RH-101	127.23			3.161E-02	3.442E-02	5.221E-02	3.337E-03	0.605
	198.01	*		2.355E-02	3.284E-02	5.296E-02	3.042E-03	0.445
	325.23			3.584E-02	2.178E-01	3.211E-01	2.138E-02	0.112
RH-102	418.52			-2.224E-02	2.736E-01	4.405E-01	2.982E-02	-0.050
	475.06	*		6.832E-03	2.570E-02	4.242E-02	2.798E-03	0.161
	631.29			3.175E-02	4.487E-02	7.973E-02	4.242E-03	0.398
	697.49			3.511E-02	7.123E-02	1.231E-01	6.887E-03	0.285
	766.84			1.767E-01	1.248E-01	2.044E-01	1.431E-02	0.865
	1046.59			-8.978E-02	1.258E-01	1.878E-01	1.578E-02	-0.478
	1112.84			2.835E-01	2.163E-01	3.872E-01	2.835E-02	0.732
RU-103	497.08	*		-1.462E-02	3.742E-02	5.814E-02	7.543E-03	-0.252
	610.33	+		1.361E+01	2.591E+00	3.085E+00	4.730E-01	4.413
RH-106	511.85	+		6.737E-01	3.194E-01	4.161E-01	2.663E-02	1.619
	621.84	*		-9.245E-02	2.868E-01	4.681E-01	5.411E-02	-0.198
	1050.47			2.103E+00	2.465E+00	4.299E+00	3.586E-01	0.489
RU-106	511.85	+		6.737E-01	3.194E-01	4.161E-01	2.663E-02	1.619
	621.84	*		-9.245E-02	2.866E-01	4.681E-01	2.542E-02	-0.198
	1050.47			2.103E+00	2.465E+00	4.299E+00	3.586E-01	0.489
AG-108M	433.93	*		-4.526E-03	2.997E-02	4.814E-02	3.452E-03	-0.094
	614.37			4.333E-03	4.125E-02	6.094E-02	3.675E-03	0.071
	722.95			5.747E-03	4.147E-02	6.081E-02	3.990E-03	0.095
AG-110M	657.75	*		2.154E-02	3.206E-02	5.636E-02	3.053E-03	0.382
	677.61			8.183E-02	2.846E-01	4.857E-01	2.727E-02	0.168
	706.67			-1.570E-01	2.122E-01	3.322E-01	2.033E-02	-0.472
	763.93			-6.069E-02	1.772E-01	2.430E-01	1.759E-02	-0.250
	884.67			-4.850E-03	4.856E-02	7.862E-02	7.881E-03	-0.062
	937.48			5.795E-02	1.166E-01	1.762E-01	1.768E-02	0.329
	1384.27			1.089E-01	1.872E-01	2.945E-01	2.600E-02	0.370
IN-111	171.28			-5.468E-01	1.272E+00	1.983E+00	1.090E-01	-0.276
	245.39	*		7.678E-03	1.388E+00	2.058E+00	1.271E-01	0.004
IN-113M	391.69	*		1.526E-03	4.121E-02	6.760E-02	4.820E-03	0.023
SN-113	391.69	*		1.526E-03	4.121E-02	6.760E-02	4.820E-03	0.023
IN-114M	190.27	*		7.371E-02	1.818E-01	2.635E-01	1.494E-02	0.280
CD-115	260.90			2.453E+01	1.659E+02	2.801E+02	1.764E+01	0.088
	492.35			1.060E+01	4.725E+01	7.751E+01	5.048E+00	0.137
	527.90	*		6.032E+00	1.462E+01	2.423E+01	1.526E+00	0.249
SN-117M	156.02			-4.528E-01	2.343E+00	3.717E+00	2.104E-01	-0.122
	158.56	*		-2.799E-02	5.581E-02	8.707E-02	4.883E-03	-0.322
SB-122	563.90	*		3.811E+00	2.581E+00	4.598E+00	2.765E-01	0.829
	692.80			-2.756E+00	5.072E+01	8.406E+01	4.628E+00	-0.033
I-123	159.00	*		3.663E+00	5.072E+01	Half-Life	too short	
	528.96			1.744E+02	5.072E+01	Half-Life	too short	
TE-123M	159.00	*		4.857E-03	2.727E-02	4.399E-02	2.498E-03	0.110
I-124	602.71	*		2.949E-01	7.563E-01	1.275E+00	7.193E-02	0.231
	722.78			9.219E-01	5.167E+00	7.612E+00	4.634E-01	0.121
	1325.50			1.345E+01	3.980E+01	6.870E+01	5.889E+00	0.196

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25		6.242E+01	4.378E+01	7.583E+01	6.526E+00	0.823
		1509.49		2.742E+01	2.220E+01	4.152E+01	3.394E+00	0.661
		1691.02		5.705E-01	4.085E+00	6.840E+00	4.919E-01	0.083
		602.71		1.459E-02	3.742E-02	6.309E-02	3.561E-03	0.231
		645.85		-8.164E-02	4.772E-01	7.874E-01	4.699E-02	-0.104
		709.31		6.771E-01	2.802E+00	4.743E+00	2.761E-01	0.143
		713.82		-3.247E-01	1.634E+00	2.672E+00	2.745E-01	-0.122
		722.78		6.613E-02	3.706E-01	5.460E-01	3.466E-02	0.121
	+	968.20		1.926E+01	4.390E+00	7.823E+00	7.375E-01	2.462
		1045.16		3.681E-01	2.526E+00	4.141E+00	3.487E-01	0.089
		1325.50		1.030E+00	3.049E+00	5.263E+00	4.512E-01	0.196
		1368.21		1.492E-01	1.698E+00	2.719E+00	3.665E-01	0.055
SB-125		1436.60		1.035E+00	4.112E+00	6.999E+00	5.909E-01	0.148
		1691.02	*	9.652E-03	6.911E-02	1.157E-01	8.792E-03	0.083
		427.89	*	4.324E-02	8.393E-02	1.416E-01	9.863E-03	0.305
	+	463.38		6.788E-01	3.769E-01	5.241E-01	3.931E-02	1.295
		600.56		-6.561E-02	1.665E-01	2.718E-01	1.792E-02	-0.241
TE-125M		635.90		-8.946E-02	2.418E-01	3.923E-01	2.487E-02	-0.228
		109.28	*	-6.180E+00	9.056E+00	1.426E+01	1.369E+00	-0.433
I-126		388.63		8.619E-02	2.106E-01	3.535E-01	2.402E-02	0.244
		666.33	*	2.350E-01	1.819E-01	3.319E-01	1.665E-02	0.708
SB-126		753.82		-3.298E-01	1.487E+00	2.412E+00	1.622E-01	-0.137
		223.80		3.576E+00	3.993E+00	6.996E+00	4.189E-01	0.511
		278.60		2.733E+00	2.531E+00	4.433E+00	2.845E-01	0.617
	+	296.50		1.563E+01	2.760E+00	3.740E+00	2.440E-01	4.179
		414.70		-1.476E-02	7.801E-02	1.255E-01	8.505E-03	-0.118
		415.30		-6.792E-01	6.367E+00	1.030E+01	6.979E-01	-0.066
		555.20		-3.371E+00	4.137E+00	6.127E+00	3.730E-01	-0.550
		573.80		-3.507E-01	1.002E+00	1.645E+00	9.750E-02	-0.213
		593.00		3.414E-01	8.682E-01	1.505E+00	8.640E-02	0.227
		656.30		1.464E+00	3.240E+00	5.608E+00	2.807E-01	0.261
SB-127		666.33		9.843E-02	7.619E-02	1.390E-01	6.974E-03	0.708
		675.00		8.441E-01	1.987E+00	3.425E+00	1.772E-01	0.246
		695.00		-1.075E-02	7.614E-02	1.253E-01	6.948E-03	-0.086
		697.00		2.021E-01	2.635E-01	4.645E-01	2.594E-02	0.435
		720.50	*	-5.001E-02	1.445E-01	2.260E-01	1.366E-02	-0.221
		856.80		-9.366E-01	5.191E-01	6.907E-01	6.269E-02	-1.356
		989.30		-6.030E-01	1.228E+00	1.873E+00	1.719E-01	-0.322
		1034.80		-4.817E+00	9.334E+00	1.419E+01	1.216E+00	-0.339
		1213.00		-5.240E+00	5.056E+00	7.628E+00	5.161E-01	-0.687
		61.10		6.559E+01	1.020E+02	1.570E+02	2.245E+01	0.418
		252.40		-1.500E+00	4.831E+00	7.911E+00	3.299E+00	-0.190
		290.80		-1.908E+01	2.800E+01	3.884E+01	3.875E+00	-0.491
		411.60		2.257E+00	1.578E+01	2.595E+01	3.901E+00	0.087
		444.90		-1.135E+01	1.123E+01	1.665E+01	1.934E+00	-0.682
		473.00		-6.534E-01	1.836E+00	2.877E+00	3.428E-01	-0.227
		543.00		-7.420E+00	1.958E+01	3.028E+01	4.043E+00	-0.245
		603.60		1.023E+01	1.405E+01	2.287E+01	2.516E+00	0.447
		685.20	*	6.619E-01	1.468E+00	2.536E+00	2.422E-01	0.261



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		698.50		-5.366E+00	1.725E+01	2.795E+01	4.094E+00	-0.192
		722.20		-9.288E+00	3.804E+01	5.316E+01	5.163E+00	-0.175
		783.80		5.324E+00	4.277E+00	7.695E+00	9.149E-01	0.692
		57.60		3.968E+00	9.389E+00	1.592E+01	2.024E+00	0.249
		145.22		2.041E-01	6.602E-01	1.076E+00	6.346E-02	0.190
		172.10		9.293E-02	1.175E-01	1.943E-01	1.070E-02	0.478
I-131		202.84	*	-8.762E-03	4.435E-02	7.467E-02	4.324E-03	-0.117
		374.96		1.811E-01	1.826E-01	3.186E-01	2.161E-02	0.568
		80.18		-1.107E-01	5.654E+00	8.338E+00	9.192E-01	-0.013
		284.30		-1.180E+00	1.518E+00	2.419E+00	1.706E-01	-0.488
		364.48	*	-6.865E-02	1.176E-01	1.855E-01	1.366E-02	-0.370
		636.97		-3.701E-01	1.494E+00	2.449E+00	1.475E-01	-0.151
TE-132		722.89		1.168E+00	7.651E+00	1.124E+01	6.943E-01	0.104
		49.72		-2.444E+01	4.987E+01	8.172E+01	1.184E+01	-0.299
		111.76		8.925E+00	3.659E+01	6.013E+01	6.180E+00	0.148
		116.30		1.775E+01	3.311E+01	5.497E+01	5.484E+00	0.323
		228.16	*	2.373E-01	7.934E-01	1.355E+00	1.988E-01	0.175
		53.15		5.346E+00	6.596E+00	1.107E+01	1.467E+00	0.483
BA-133		79.62		4.657E-01	1.480E+00	2.218E+00	3.696E-01	0.210
		81.00		4.711E-02	1.324E-01	1.590E-01	2.747E-02	0.296
		276.40		4.681E-01	3.679E-01	6.257E-01	8.288E-02	0.748
		302.84		-3.110E-02	1.423E-01	2.040E-01	2.459E-02	-0.152
		356.01	*	1.736E-02	4.375E-02	6.484E-02	7.823E-03	0.268
		383.85		7.488E-02	2.889E-01	4.810E-01	5.499E-02	0.156
I-133	+	510.53		3.153E+00	2.889E-01	Half-Life	too short	
		529.87	*	1.354E-03	2.889E-01	Half-Life	too short	
		706.58		-6.850E-01	2.889E-01	Half-Life	too short	
		856.28		-2.097E+00	2.889E-01	Half-Life	too short	
		875.33		9.109E-02	2.889E-01	Half-Life	too short	
		1236.41		7.589E-01	2.889E-01	Half-Life	too short	
CS-134		1298.22		1.847E-01	2.889E-01	Half-Life	too short	
		475.35		-7.533E-02	1.752E+00	2.821E+00	1.860E-01	-0.027
		563.23		1.805E-01	3.608E-01	5.989E-01	3.676E-02	0.301
		569.32		5.153E-02	1.854E-01	3.028E-01	1.858E-02	0.170
		604.70		3.829E-02	3.349E-02	5.470E-02	3.093E-03	0.700
	+	795.84	*	9.573E-02	5.095E-02	8.772E-02	6.763E-03	1.091
CS-135		801.93		-1.007E-02	3.842E-01	6.167E-01	4.829E-02	-0.016
		1038.57		5.600E-01	4.012E+00	6.573E+00	5.598E-01	0.085
		1167.94		-8.194E-01	2.514E+00	4.084E+00	2.562E-01	-0.201
		1365.15		3.039E-01	1.205E+00	2.061E+00	1.859E-01	0.147
		268.24	*	1.852E-01	1.644E-01	2.598E-01	2.100E-02	0.713
		288.45		4.431E+11	1.644E-01	Half-Life	too short	
I-135		417.63		-3.179E+10	1.644E-01	Half-Life	too short	
		546.56		8.466E+10	1.644E-01	Half-Life	too short	
		836.80		1.519E+11	1.644E-01	Half-Life	too short	
		1038.76		6.871E+10	1.644E-01	Half-Life	too short	
		1124.00		9.050E+11	1.644E-01	Half-Life	too short	
		1131.51		8.760E+09	1.644E-01	Half-Life	too short	
		1260.41	*	5.044E+10	1.644E-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		2.012E+12	1.644E-01	Half-Life	too short	
		1678.03		6.853E+08	1.644E-01	Half-Life	too short	
		1706.46		-1.156E+11	1.644E-01	Half-Life	too short	
		1791.20		2.110E+10	1.644E-01	Half-Life	too short	
		66.91		2.658E-01	1.114E+00	1.677E+00	2.872E-01	0.159
	+	86.29		4.834E+00	1.638E+00	2.323E+00	3.422E-01	2.081
		153.22		3.718E-01	6.881E-01	1.129E+00	8.083E-02	0.329
		163.89		5.223E-01	1.139E+00	1.831E+00	1.284E-01	0.285
		176.55		2.554E-01	3.848E-01	6.313E-01	3.973E-02	0.405
		273.65		-8.639E-01	5.444E-01	7.085E-01	5.056E-02	-1.219
		340.57		3.440E-01	1.502E-01	2.498E-01	1.756E-02	1.377
		818.51		-8.036E-02	7.586E-02	1.111E-01	9.075E-03	-0.723
		1048.07	*	-9.439E-02	1.246E-01	1.849E-01	1.619E-02	-0.510
		1235.34		2.333E-02	6.198E-01	1.037E+00	1.120E-01	0.022
BA-137M		661.65	*	-4.893E-02	3.517E-02	5.218E-02	2.574E-03	-0.938
CS-137		661.65	*	-5.173E-02	3.718E-02	5.516E-02	2.737E-03	-0.938
CE-139		165.85	*	-1.344E-02	2.956E-02	4.614E-02	2.520E-03	-0.291
BA-140		162.64		-6.116E-02	8.062E-01	1.265E+00	7.942E-02	-0.048
		304.84		-4.509E-01	1.408E+00	1.994E+00	5.477E-01	-0.226
		423.70		-1.356E+00	1.916E+00	2.873E+00	9.186E-01	-0.472
LA-140		537.32	*	1.634E-01	2.573E-01	4.257E-01	1.388E-01	0.384
	+	328.77		7.318E-01	3.948E-01	5.466E-01	3.982E-02	1.339
		432.53		1.315E-01	2.035E+00	3.324E+00	2.417E-01	0.040
		487.03		3.784E-02	1.439E-01	2.367E-01	1.711E-02	0.160
		751.79		-3.082E-01	1.688E+00	2.748E+00	2.153E-01	-0.112
		815.85		7.584E-02	3.169E-01	5.228E-01	4.782E-02	0.145
		867.82		6.909E-01	1.380E+00	2.369E+00	2.315E-01	0.292
		919.63		1.893E-02	3.180E+00	4.703E+00	5.519E-01	0.004
		925.24		-1.781E-01	1.142E+00	1.830E+00	1.894E-01	-0.097
		1596.49	*	3.251E-02	1.016E-01	1.734E-01	1.345E-02	0.188
CE-141		145.44	*	-3.204E-03	6.039E-02	9.679E-02	5.924E-03	-0.033
CE-143		57.37		7.811E-04	6.039E-02	Half-Life	too short	
		231.56		1.982E-03	6.039E-02	Half-Life	too short	
		293.26	*	1.042E-03	6.039E-02	Half-Life	too short	
	+	350.59		5.500E-02	6.039E-02	Half-Life	too short	
		490.36		-1.063E-03	6.039E-02	Half-Life	too short	
		664.57		2.101E-03	6.039E-02	Half-Life	too short	
		721.93		-7.391E-06	6.039E-02	Half-Life	too short	
CE-144		80.11		5.696E-02	2.390E+00	3.533E+00	3.877E-01	0.016
		133.54	*	9.661E-03	2.181E-01	3.145E-01	4.519E-02	0.031
PM-144		476.78		-1.304E-02	6.325E-02	1.005E-01	7.649E-03	-0.130
		618.01		-1.276E-03	3.060E-02	5.118E-02	2.991E-03	-0.025
		696.49	*	1.885E-02	3.193E-02	5.559E-02	3.102E-03	0.339
		778.57		-1.636E+00	2.157E+00	3.303E+00	2.397E-01	-0.495
PR-144		696.49	*	1.278E+00	2.165E+00	3.769E+00	2.102E-01	0.339
		1489.15		-9.252E+00	1.130E+01	1.580E+01	1.305E+00	-0.586
PM-146		453.90	*	1.971E-02	4.097E-02	6.871E-02	6.346E-03	0.287
		633.02		6.898E-01	1.245E+00	2.137E+00	7.853E-01	0.323
		735.90		-1.199E-01	1.463E-01	2.107E-01	5.900E-02	-0.569

---- 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		-9.943E-03	8.030E-02	1.314E-01	1.694E-02	-0.076
		91.11		-1.043E-01	4.448E-01	5.349E-01	5.964E-02	-0.195
		319.41		-6.270E-02	3.318E+00	5.491E+00	3.645E-01	-0.011
		439.89		4.495E+00	5.776E+00	9.902E+00	6.659E-01	0.454
		531.02	*	1.740E-02	5.857E-01	9.412E-01	1.293E-01	0.018
PM-149		285.90	*	-1.060E+02	1.230E+02	1.940E+02	2.806E+01	-0.546
EU-152		121.78		-3.626E-03	7.005E-02	1.132E-01	9.333E-03	-0.032
		244.69		1.098E-01	3.292E-01	4.990E-01	3.079E-02	0.220
		344.27	*	5.544E-02	9.786E-02	1.487E-01	1.095E-02	0.373
		443.98		-9.560E-01	8.887E-01	1.315E+00	8.824E-02	-0.727
		778.89		-1.716E-01	2.500E-01	3.860E-01	2.803E-02	-0.445
		867.32		1.013E-01	7.793E-01	1.293E+00	1.207E-01	0.078
	+	964.01		6.913E-01	4.518E-01	5.784E-01	5.480E-02	1.195
		1085.78		3.623E-01	3.949E-01	6.960E-01	5.418E-02	0.521
		1112.02		2.578E-01	3.068E-01	5.359E-01	3.931E-02	0.481
		1407.95		7.876E-02	2.072E-01	3.568E-01	3.043E-02	0.221
GD-153		69.67		8.130E-01	2.015E+00	3.056E+00	3.408E-01	0.266
	+	83.37		3.034E+01	2.357E+01	2.763E+01	3.062E+00	1.098
		97.43	*	-5.220E-02	7.831E-02	1.161E-01	1.081E-02	-0.450
		103.18		-3.452E-02	9.753E-02	1.565E-01	1.323E-02	-0.221
EU-154		123.07		-4.215E-02	5.042E-02	7.821E-02	7.729E-03	-0.539
		247.94		3.435E-01	3.636E-01	5.719E-01	5.597E-02	0.601
		591.81		2.832E-01	5.522E-01	9.644E-01	9.400E-02	0.294
		723.30		-3.359E-02	1.802E-01	2.536E-01	1.858E-02	-0.132
		756.87		1.054E-01	7.533E-01	1.261E+00	1.353E-01	0.084
		873.19		-1.701E-01	2.878E-01	4.411E-01	5.676E-02	-0.386
		996.32		1.311E-01	3.386E-01	5.709E-01	1.028E-01	0.230
		1004.76		3.542E-02	1.792E-01	2.971E-01	3.538E-02	0.119
		1274.45	*	-5.120E-02	1.259E-01	2.004E-01	2.135E-02	-0.255
		48.70		-6.927E-01	5.223E+00	8.717E+00	1.047E+00	-0.079
EU-155		60.01		-3.124E+00	7.806E+00	1.140E+01	1.405E+00	-0.274
	+	86.54		4.224E-01	1.375E-01	2.018E-01	2.283E-02	2.094
		105.31	*	5.920E-02	1.032E-01	1.725E-01	1.431E-02	0.343
TB-160	+	86.79		1.139E+00	3.705E-01	5.407E-01	6.092E-02	2.107
		197.04		3.715E-01	5.605E-01	9.149E-01	5.247E-02	0.406
		215.65		3.123E-02	7.104E-01	1.204E+00	7.120E-02	0.026
	+	298.57		2.898E-01	1.362E-01	1.926E-01	1.259E-02	1.505
		879.36	*	-1.160E-02	1.426E-01	2.315E-01	2.232E-02	-0.050
		962.29		4.938E-01	5.466E-01	8.705E-01	8.264E-02	0.567
	+	966.15		4.794E-01	3.133E-01	4.526E-01	4.277E-02	1.059
		1177.93		-5.622E-02	3.364E-01	5.538E-01	3.453E-02	-0.102
		1271.85		4.164E-01	7.243E-01	1.274E+00	9.796E-02	0.327
		80.57		1.487E-01	3.677E-01	4.437E-01	4.874E-02	0.335
HO-166M	+	184.41		1.591E-01	6.193E-02	6.337E-02	3.559E-03	2.511
		280.46		-6.943E-02	8.170E-02	1.301E-01	8.369E-03	-0.533
		410.95		3.599E-01	2.578E-01	4.529E-01	3.071E-02	0.795
		711.68	*	2.579E-02	5.991E-02	1.028E-01	6.035E-03	0.251
		752.31		-3.995E-02	2.579E-01	4.210E-01	2.818E-02	-0.095
		810.29		-2.130E-02	5.783E-02	9.190E-02	7.322E-03	-0.232

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		-9.101E-01	5.869E+01	9.828E+01	1.292E+01	-0.009
		52.39		1.535E+01	2.983E+01	4.967E+01	6.579E+00	0.309
		59.40		-2.727E+00	4.223E+01	6.294E+01	7.819E+00	-0.043
		66.72	*	2.347E+01	3.841E+01	5.880E+01	6.698E+00	0.399
LU-176	+	88.36		8.316E-01	2.705E-01	3.722E-01	4.186E-02	2.234
		201.83		-3.096E-02	2.663E-02	4.290E-02	2.480E-03	-0.722
		306.84	*	-1.449E-03	2.358E-02	3.902E-02	2.567E-03	-0.037
		401.10		7.990E+00	6.394E+00	1.125E+01	7.640E-01	0.710
LU-177	+	112.95		6.761E-01	1.785E+00	2.949E+00	2.171E-01	0.229
		208.36	*	2.620E+00	1.511E+00	2.150E+00	1.256E-01	1.219
LU-177M		52.97		2.042E+00	3.038E+00	5.082E+00	6.732E-01	0.402
		54.07		-6.385E-01	1.522E+00	2.436E+00	3.213E-01	-0.262
		61.30		1.763E+00	2.197E+00	3.405E+00	4.120E-01	0.518
		121.62		2.786E-02	3.584E-01	5.829E-01	3.857E-02	0.048
		147.16		-8.545E-01	6.343E-01	9.504E-01	5.562E-02	-0.899
		171.86		1.484E-01	4.738E-01	7.663E-01	4.218E-02	0.194
		218.09		6.400E-01	8.189E-01	1.428E+00	8.477E-02	0.448
		268.79		1.924E+00	8.655E-01	1.443E+00	9.170E-02	1.333
		319.02		-7.882E-02	2.431E-01	3.949E-01	2.620E-02	-0.200
		367.43		-1.054E-01	8.199E-01	1.335E+00	9.040E-02	-0.079
		413.65	*	-4.866E-02	1.794E-01	2.872E-01	1.947E-02	-0.169
		56.28		-8.390E-02	1.509E+00	2.515E+00	3.249E-01	-0.033
		57.53		2.684E-01	7.904E-01	1.336E+00	1.700E-01	0.201
		65.20		1.391E+00	1.332E+00	2.075E+00	2.397E-01	0.671
		133.02		-1.930E-02	7.119E-02	1.006E-01	6.250E-03	-0.192
		136.25		2.400E-02	4.435E-01	7.166E-01	4.386E-02	0.033
HF-181		345.85		1.924E-02	2.086E-01	2.838E-01	1.909E-02	0.068
		482.03	*	6.787E-03	3.908E-02	6.397E-02	4.199E-03	0.106
		56.28		-3.123E-02	5.842E-01	9.737E-01	1.258E-01	-0.032
		57.53		1.038E-01	3.062E-01	5.178E-01	6.588E-02	0.200
W-181		65.20	*	5.348E-01	5.119E-01	7.974E-01	9.213E-02	0.671
		67.75		-1.569E-01	1.394E-01	2.079E-01	2.348E-02	-0.755
TA-182		100.10		2.037E-01	1.674E-01	2.868E-01	2.549E-02	0.710
		152.43		-2.829E-01	3.396E-01	5.231E-01	3.001E-02	-0.541
		222.10		2.515E-01	3.256E-01	5.679E-01	3.391E-02	0.443
		1001.68		1.264E+00	1.789E+00	3.121E+00	2.815E-01	0.405
	+	1121.28		6.593E-01	2.399E-01	3.662E-01	2.625E-02	1.801
		1189.05		8.273E-02	2.945E-01	5.054E-01	3.236E-02	0.164
		1221.42	*	4.087E-03	2.114E-01	3.535E-01	2.438E-02	0.012
		1230.97		1.960E-01	4.543E-01	7.866E-01	5.541E-02	0.249
RE-183		57.98		2.021E-01	3.018E-01	5.154E-01	6.521E-02	0.392
		59.32		-6.505E-03	1.759E-01	2.626E-01	3.266E-02	-0.025
		67.20		-1.015E-01	2.559E-01	3.981E-01	4.517E-02	-0.255
		162.32	*	2.388E-02	1.107E-01	1.760E-01	9.733E-03	0.136
	+	208.81		2.137E+00	1.233E+00	1.752E+00	1.025E-01	1.220
		291.72		-1.138E+00	1.021E+00	1.365E+00	8.867E-02	-0.834
RE-184		57.98		7.400E-01	1.105E+00	1.888E+00	2.388E-01	0.392
		59.32		-2.381E-02	6.438E-01	9.611E-01	1.195E-01	-0.025
		67.20		-3.717E-01	9.370E-01	1.457E+00	1.654E-01	-0.255

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		-9.354E-02	3.492E-01	5.510E-01	3.059E-02	-0.170
		216.55		8.873E-02	2.548E-01	4.372E-01	2.589E-02	0.203
		252.85	*	6.531E-03	2.118E-01	3.561E-01	2.220E-02	0.018
		318.01		-1.712E-01	4.284E-01	6.930E-01	4.594E-02	-0.247
		792.07		-2.228E-02	1.060E+00	1.511E+00	1.142E-01	-0.015
		903.28		-6.484E-01	1.072E+00	1.367E+00	1.377E-01	-0.474
		920.93		-1.584E-01	4.495E-01	7.059E-01	7.001E-02	-0.224
		59.72		-2.457E-01	4.740E-01	6.876E-01	8.504E-02	-0.357
		61.14		1.619E-01	2.420E-01	3.734E-01	4.527E-02	0.434
		69.30		1.524E-01	3.638E-01	5.523E-01	6.173E-02	0.276
		592.07		8.625E-01	2.243E+00	3.886E+00	2.235E-01	0.222
		646.12	*	2.904E-03	4.074E-02	6.854E-02	3.521E-03	0.042
		717.42		1.862E-01	8.569E-01	1.448E+00	8.664E-02	0.129
		874.81		1.187E-01	5.680E-01	9.489E-01	9.040E-02	0.125
		880.27		-2.448E-01	7.913E-01	1.255E+00	1.213E-01	-0.195
RE-188		155.03	*	1.482E-01	1.703E-01	2.832E-01	1.609E-02	0.523
		477.96		7.926E-01	2.880E+00	4.751E+00	3.128E-01	0.167
		633.10		1.444E+00	2.494E+00	4.373E+00	2.317E-01	0.330
W-188	+	63.58		9.609E+01	9.341E+01	1.205E+02	1.417E+01	0.797
		227.08		-3.814E+00	1.204E+01	2.004E+01	1.206E+00	-0.190
IR-192		290.67	*	-1.363E+00	7.871E+00	1.138E+01	7.388E-01	-0.120
	+	295.96		1.140E+00	2.017E-01	2.878E-01	1.901E-02	3.962
		308.46		9.029E-02	9.215E-02	1.609E-01	1.069E-02	0.561
		316.51	*	3.095E-03	3.247E-02	5.412E-02	3.598E-03	0.057
		468.07		4.935E-02	6.676E-02	1.020E-01	7.561E-03	0.484
AU-195		604.41		5.887E-01	4.654E-01	7.618E-01	8.579E-02	0.773
		612.46		2.023E+00	8.886E-01	1.521E+00	1.121E-01	1.330
		65.12		2.518E-01	2.373E-01	3.698E-01	4.276E-02	0.681
		66.83		3.943E-02	1.277E-01	1.930E-01	2.196E-02	0.204
	+	75.70		1.577E+00	3.380E-01	5.508E-01	6.024E-02	2.863
		98.88	*	3.859E-02	2.173E-01	3.529E-01	3.202E-02	0.109
	+	129.76		6.290E+00	4.024E+00	5.041E+00	3.180E-01	1.248
TL-200		367.94	*	3.639E-04	4.024E+00	Half-Life	too short	
		579.30		7.851E-04	4.024E+00	Half-Life	too short	
		828.27		-6.887E-03	4.024E+00	Half-Life	too short	
		1205.75		4.680E-04	4.024E+00	Half-Life	too short	
TL-201		68.90		-3.893E+00	7.900E+00	1.143E+01	1.280E+00	-0.341
		70.82		5.091E+00	4.179E+00	6.536E+00	7.245E-01	0.779
		80.30		3.901E+00	8.656E+00	1.049E+01	1.151E+00	0.372
		135.34		1.913E+01	3.057E+01	5.067E+01	3.114E+00	0.378
TL-202		167.43	*	6.388E-01	8.526E+00	1.365E+01	7.467E-01	0.047
		68.90		-2.929E-01	5.944E-01	8.597E-01	9.634E-02	-0.341
		70.82		3.820E-01	3.136E-01	4.904E-01	5.437E-02	0.779
		80.30		2.928E-01	6.498E-01	7.870E-01	8.640E-02	0.372
HG-203		439.56	*	4.090E-02	6.727E-02	1.141E-01	7.672E-03	0.358
		70.83		1.595E+00	1.312E+00	2.036E+00	3.112E-01	0.784
	+	72.87		1.384E+00	9.047E-01	1.362E+00	2.025E-01	1.016
	+	82.60		2.284E+00	1.791E+00	1.989E+00	3.061E-01	1.148
		279.20	*	3.834E-02	3.959E-02	6.908E-02	4.662E-03	0.555

## ---- 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		3.995E-01	2.581E-01	3.858E-01	4.244E-02	1.035
	+	74.97		8.711E-01	1.867E-01	2.782E-01	3.046E-02	3.131
	+	84.90		3.912E-01	3.040E-01	3.525E-01	3.933E-02	1.110
		569.67		1.118E-02	2.914E-02	4.798E-02	2.862E-03	0.233
		1063.62	*	1.206E-02	5.068E-02	8.384E-02	6.825E-03	0.144
TL-207		1770.23		2.226E-01	4.472E-01	7.211E-01	4.784E-02	0.309
		81.07		1.021E-01	2.915E-01	3.502E-01	3.852E-02	0.292
	+	83.78		2.579E-01	2.004E-01	2.360E-01	2.620E-02	1.093
		94.90		3.315E-01	2.276E-01	3.581E-01	3.496E-02	0.926
		122.32		-5.232E-01	1.684E+00	2.689E+00	1.985E-01	-0.195
		144.24		-3.414E-02	6.647E-01	1.046E+00	7.663E-02	-0.033
		154.21		4.262E-01	3.856E-01	6.470E-01	4.484E-02	0.659
	+	269.46		6.899E-01	2.930E-01	3.561E-01	2.349E-02	1.937
		323.87	*	3.977E-01	6.528E-01	9.938E-01	1.673E-01	0.400
	+	338.28		7.212E+00	1.929E+00	2.492E+00	2.754E-01	2.895
PO-209		445.03		-2.012E+00	2.176E+00	3.262E+00	3.525E-01	-0.617
		260.50		-7.282E-01	8.740E+00	1.458E+01	9.176E-01	-0.050
		262.80		2.317E+00	2.430E+01	4.089E+01	2.580E+00	0.057
		896.60	*	1.314E+00	6.440E+00	1.076E+01	1.085E+00	0.122
BI-210		46.50	*	2.645E-01	8.614E+00	1.450E+01	1.422E+00	0.018
PB-210		46.50	*	2.645E-01	8.614E+00	1.450E+01	1.422E+00	0.018
PO-210		46.50	*	2.645E-01	8.614E+00	1.450E+01	1.301E+00	0.018
PB-211		404.84	*	-1.159E+00	1.157E+00	1.344E+00	8.395E-01	-0.862
		427.08		7.387E-01	1.928E+00	3.135E+00	1.941E+00	0.236
BI-212		831.96		-1.946E-01	1.188E+00	1.913E+00	1.199E+00	-0.102
	+	727.18	*	7.343E-01	4.979E-01	6.602E-01	5.281E-02	1.112
		785.46		1.352E+00	1.830E+00	3.189E+00	2.362E-01	0.424
PO-215		1620.62		-2.313E-01	1.315E+00	2.082E+00	1.588E-01	-0.111
		81.07		1.021E-01	2.915E-01	3.502E-01	3.852E-02	0.292
	+	83.78		2.579E-01	2.004E-01	2.360E-01	2.620E-02	1.093
		94.90		3.315E-01	2.276E-01	3.581E-01	3.496E-02	0.926
		122.32		-5.232E-01	1.684E+00	2.689E+00	1.985E-01	-0.195
		144.24		-3.414E-02	6.647E-01	1.046E+00	7.663E-02	-0.033
		154.21		4.262E-01	3.856E-01	6.470E-01	4.484E-02	0.659
	+	269.46		6.899E-01	2.930E-01	3.561E-01	2.349E-02	1.937
		323.87	*	3.977E-01	6.528E-01	9.938E-01	1.673E-01	0.400
	+	338.28		7.212E+00	1.929E+00	2.492E+00	2.754E-01	2.895
RN-219		445.03		-2.012E+00	2.176E+00	3.262E+00	3.525E-01	-0.617
	+	271.23		8.851E-01	3.789E-01	4.695E-01	4.001E-02	1.885
		401.81	*	2.951E-01	3.907E-01	6.665E-01	9.368E-02	0.443
RN-220		549.76	*	1.598E+00	2.554E+01	4.105E+01	2.517E+00	0.039
RA-223		81.07		1.021E-01	2.915E-01	3.502E-01	3.852E-02	0.292
	+	83.78		2.579E-01	2.004E-01	2.360E-01	2.620E-02	1.093
		94.90		3.315E-01	2.276E-01	3.581E-01	3.496E-02	0.926
		122.32		-5.232E-01	1.684E+00	2.689E+00	1.985E-01	-0.195
		144.24		-3.414E-02	6.647E-01	1.046E+00	7.663E-02	-0.033
		154.21		4.262E-01	3.856E-01	6.470E-01	4.484E-02	0.659
	+	269.46		6.899E-01	2.930E-01	3.561E-01	2.349E-02	1.937
		323.87	*	3.977E-01	6.528E-01	9.938E-01	1.673E-01	0.400

---- 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		7.212E+00	1.929E+00	2.492E+00	2.754E-01	2.895
		445.03		-2.012E+00	2.176E+00	3.262E+00	3.525E-01	-0.617
		79.80		4.084E-01	1.867E+00	2.785E+00	6.278E-01	0.147
		236.00		2.232E-01	2.462E-01	3.831E-01	4.069E-02	0.582
		256.20	*	2.499E-03	3.538E-01	5.936E-01	8.404E-02	0.004
		286.10		-1.005E+00	1.487E+00	2.382E+00	2.837E-01	-0.422
TH-227	+	299.80		3.654E+00	1.805E+00	2.498E+00	4.138E-01	1.463
		304.40		-6.703E-01	1.921E+00	2.719E+00	4.777E-01	-0.247
		334.20		9.328E-01	2.750E+00	3.491E+00	6.506E-01	0.267
		79.80		4.084E-01	1.867E+00	2.785E+00	6.351E-01	0.147
	+	94.00		3.949E+00	3.357E+00	3.472E+00	7.753E-01	1.138
		236.00		2.232E-01	2.460E-01	3.831E-01	3.544E-02	0.582
TH-229		256.20	*	2.499E-03	3.538E-01	5.936E-01	1.013E-01	0.004
		286.10		-1.005E+00	1.792E+00	2.382E+00	2.387E+00	-0.422
	+	299.80		3.654E+00	1.805E+00	2.498E+00	4.138E-01	1.463
		304.40		-6.703E-01	1.921E+00	2.719E+00	4.777E-01	-0.247
		334.20		9.328E-01	2.750E+00	3.491E+00	6.506E-01	0.267
		85.43		1.972E-01	2.367E-01	3.590E-01	4.016E-02	0.549
PA-231	+	88.47		4.787E-01	1.557E-01	2.107E-01	2.364E-02	2.272
		100.00		2.078E-01	1.726E-01	2.956E-01	2.632E-02	0.703
		193.63	*	-1.784E-01	4.763E-01	7.386E-01	4.212E-02	-0.242
		210.97		5.948E-01	7.951E-01	1.239E+00	7.271E-02	0.480
		283.67	*	-3.344E-01	1.409E+00	2.318E+00	3.260E-01	-0.144
	+	301.29		1.462E+00	6.987E-01	9.735E-01	1.060E-01	1.502
TH-231		81.07		1.021E-01	2.915E-01	3.502E-01	3.852E-02	0.292
	+	83.78		2.579E-01	2.004E-01	2.360E-01	2.620E-02	1.093
		94.90		3.315E-01	2.276E-01	3.581E-01	3.496E-02	0.926
		122.32		-5.232E-01	1.684E+00	2.689E+00	1.985E-01	-0.195
		144.24		-3.414E-02	6.647E-01	1.046E+00	7.663E-02	-0.033
		154.21		4.262E-01	3.856E-01	6.470E-01	4.484E-02	0.659
U-231	+	269.46		6.899E-01	2.930E-01	3.561E-01	2.349E-02	1.937
		323.87	*	3.977E-01	6.528E-01	9.938E-01	1.673E-01	0.400
	+	338.28		7.212E+00	1.929E+00	2.492E+00	2.754E-01	2.895
		445.03		-2.012E+00	2.176E+00	3.262E+00	3.525E-01	-0.617
	+	84.21		1.319E+01	1.025E+01	1.198E+01	1.332E+00	1.102
	+	92.29		4.633E+00	3.827E+00	4.696E+00	4.835E-01	0.986
PA-233		95.87	*	-8.479E-01	1.309E+00	1.836E+00	1.760E-01	-0.462
		108.00		-6.339E-01	2.365E+00	3.807E+00	2.997E-01	-0.167
	+	75.28		2.542E+01	6.333E+00	8.388E+00	1.406E+00	3.030
	+	86.59		6.864E+00	2.832E+00	3.274E+00	9.095E-01	2.096
	+	300.12		1.019E+00	4.945E-01	6.985E-01	9.622E-02	1.459
		311.98	*	-4.536E-02	6.263E-02	9.950E-02	6.885E-03	-0.456
PA-234		340.50		1.806E+00	8.085E-01	1.181E+00	2.742E-01	1.529
		398.62		-1.804E-01	1.971E+00	3.200E+00	8.350E-01	-0.056
		415.76		-1.028E+00	1.636E+00	2.528E+00	5.279E-01	-0.407
	+	63.00		2.758E+00	2.704E+00	3.615E+00	6.325E-01	0.763
		94.67		2.945E-01	1.708E-01	2.675E-01	3.546E-02	1.101
		98.44		1.403E-02	8.810E-02	1.424E-01	7.957E-02	0.098
		99.86		5.181E-01	4.367E-01	7.477E-01	6.672E-02	0.693

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00		-1.172E-02	1.786E-01	2.898E-01	3.290E-02	-0.040
		131.20		1.333E-02	1.143E-01	1.657E-01	1.038E-02	0.080
		152.70		-1.057E-01	3.262E-01	5.145E-01	8.120E-02	-0.205
	+	186.00		5.727E+00	2.815E+00	2.525E+00	7.708E-01	2.268
		226.40		-4.092E-01	3.804E-01	6.059E-01	7.070E-02	-0.675
		227.20		5.010E-02	3.963E-01	6.725E-01	4.047E-02	0.074
		248.90		-5.617E-02	8.370E-01	1.233E+00	2.664E-01	-0.046
	+	293.70		7.107E+00	1.647E+00	1.653E+00	2.702E-01	4.301
		369.80		-1.111E-01	7.932E-01	1.290E+00	2.723E-01	-0.086
		568.70		-1.832E-01	9.843E-01	1.545E+00	9.230E-02	-0.119
		569.50		8.561E-02	2.574E-01	4.223E-01	2.519E-02	0.203
		574.00		-4.529E-01	1.359E+00	2.235E+00	1.324E-01	-0.203
		699.00		-3.952E-01	6.827E-01	1.077E+00	1.931E-01	-0.367
		706.10		-5.458E-02	1.027E+00	1.700E+00	7.504E-01	-0.032
		733.00		-1.957E-01	3.969E-01	5.357E-01	1.146E-01	-0.365
		742.81		-4.289E-01	1.242E+00	1.935E+00	1.296E+00	-0.222
	+	796.30		1.859E+00	1.098E+00	1.676E+00	4.484E-01	1.109
		805.60		4.798E-01	9.601E-01	1.634E+00	4.975E-01	0.294
		819.60		-1.811E+00	1.394E+00	1.697E+00	6.437E-01	-1.067
		826.30		-1.195E+00	9.800E-01	1.158E+00	5.175E-01	-1.032
		831.60		-1.949E-01	6.161E-01	9.785E-01	2.916E-01	-0.199
		876.40		1.887E-01	8.302E-01	1.352E+00	1.391E+00	0.140
		880.51		-7.503E-02	2.851E-01	4.544E-01	4.395E-02	-0.165
		883.24		3.675E-03	2.861E-01	4.685E-01	3.157E-01	0.008
		899.00		-1.897E-01	7.533E-01	1.189E+00	5.235E-01	-0.160
		925.00		-1.013E-01	1.141E+00	1.842E+00	1.820E-01	-0.055
		926.50		-1.038E-01	1.719E-01	2.586E-01	6.653E-02	-0.402
		946.00	*	6.756E-02	2.742E-01	4.576E-01	8.818E-02	0.148
		949.00		-2.964E-01	4.072E-01	6.049E-01	5.830E-02	-0.490
		980.50		3.215E-02	6.495E-01	1.032E+00	9.577E-02	0.031
		1394.10		3.526E-01	1.199E+00	2.022E+00	1.316E+00	0.174
PA-234M		766.42		1.826E+01	1.563E+01	2.090E+01	1.055E+01	0.873
		1001.03	*	2.146E+00	3.952E+00	6.793E+00	7.011E-01	0.316
U-235		89.95		-1.379E-01	1.626E+00	1.875E+00	5.914E-01	-0.074
	+	93.35		1.229E+00	1.067E+00	1.195E+00	3.405E-01	1.028
		105.00		4.601E-01	1.020E+00	1.682E+00	5.000E-01	0.274
		143.76	*	5.835E-02	2.063E-01	3.293E-01	5.385E-02	0.177
		163.35		1.493E-01	4.748E-01	7.570E-01	1.354E-01	0.197
	+	185.71		2.121E-01	8.257E-02	9.278E-02	5.222E-03	2.286
		205.31		3.406E-01	5.500E-01	8.479E-01	1.525E-01	0.402
NP-236		94.67		2.251E-01	1.281E-01	2.031E-01	1.993E-02	1.108
		98.44		1.059E-02	6.634E-02	1.077E-01	9.845E-03	0.098
		111.00		-8.864E-03	1.351E-01	2.192E-01	1.656E-02	-0.040
		160.31	*	-9.542E-03	7.718E-02	1.227E-01	6.836E-03	-0.078
NP-239		99.55		1.018E-01	1.473E-01	2.478E-01	2.222E-02	0.411
		117.00	*	-8.551E-02	1.831E-01	2.907E-01	2.033E-02	-0.294
	+	209.75		1.669E+00	9.625E-01	1.362E+00	7.979E-02	1.225
		228.18		6.300E-02	2.078E-01	3.553E-01	2.141E-02	0.177
		277.60		3.690E-01	1.765E-01	3.206E-01	2.056E-02	1.151



----- 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			4.567E-01	1.552E+00	1.964E+00	1.314E-01	0.233
	59.54	*		-2.751E-02	2.436E-01	3.620E-01	4.649E-02	-0.076
CM-243	99.55			1.048E-01	1.516E-01	2.550E-01	2.287E-02	0.411
	103.76	*		-1.835E-02	9.250E-02	1.496E-01	1.253E-02	-0.123
	117.00			-8.798E-02	1.884E-01	2.991E-01	2.092E-02	-0.294
	209.75	+		1.645E+00	9.488E-01	1.343E+00	7.866E-02	1.225
	228.18			6.366E-02	2.099E-01	3.590E-01	2.164E-02	0.177
	277.60			3.721E-01	1.780E-01	3.233E-01	2.073E-02	1.151
AM-246	798.80			-8.243E-02	1.483E-01	1.952E-01	1.504E-02	-0.422
	1036.00			-6.924E-02	2.922E-01	4.594E-01	3.929E-02	-0.151
	1062.04			-3.590E-02	2.256E-01	3.572E-01	2.916E-02	-0.101
	1078.86	*		1.917E-02	1.285E-01	2.107E-01	1.664E-02	0.091
CM-247	278.00			1.173E+00	7.346E-01	1.311E+00	8.412E-02	0.895
	287.40			8.893E-01	1.172E+00	2.028E+00	1.313E-01	0.438
	402.60	*		1.656E-02	3.500E-02	5.893E-02	4.002E-03	0.281
CF-249	252.85			2.440E-02	7.915E-01	1.330E+00	8.295E-02	0.018
	333.44			1.878E-01	2.190E-01	2.602E-01	1.740E-02	0.722
	387.95	*		1.162E-02	3.877E-02	6.468E-02	4.395E-03	0.180
CF-251	176.60	*		5.345E-02	1.268E-01	2.057E-01	1.141E-02	0.260
	227.00			-2.714E-01	3.628E-01	5.913E-01	3.557E-02	-0.459
	285.00			-2.141E+00	1.653E+00	2.549E+00	1.646E-01	-0.840

# 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]G244148004      *
* Acquisition date   : 20-JAN-2010 15:50:06 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 02:00:01.01             Half life ratio : 8.000     *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148004             Analyst initials: MXR1         *
* Batch Number       : 940268                 Sample Quantity : 1.2757E+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	2.150E+01	2.379E+00	5.298E-01	0.000E+00
CD-109	3.573E+00	1.139E+00	1.508E+00	0.000E+00
SN-126	3.506E-01	1.117E-01	1.573E-01	0.000E+00
TL-208	4.930E-01	7.923E-02	5.694E-02	0.000E+00
BI-211	4.101E+00	5.180E-01	2.926E-01	0.000E+00
PB-212	1.826E+00	1.751E-01	8.160E-02	0.000E+00
PO-212	1.826E+00	1.751E-01	8.160E-02	0.000E+00
BI-214	1.238E+00	1.650E-01	1.166E-01	0.000E+00
PB-214	1.427E+00	1.944E-01	1.020E-01	0.000E+00
PO-214	1.427E+00	1.944E-01	1.020E-01	0.000E+00
PO-216	1.826E+00	1.751E-01	8.160E-02	0.000E+00
PO-218	1.427E+00	1.944E-01	1.020E-01	0.000E+00
RA-224	4.532E+00	1.176E+00	9.284E-01	0.000E+00
RA-226	1.238E+00	1.650E-01	1.166E-01	0.000E+00
AC-228	1.676E+00	3.643E-01	2.172E-01	0.000E+00
RA-228	1.676E+00	3.643E-01	2.172E-01	0.000E+00
TH-228	1.855E+00	1.780E-01	8.293E-02	0.000E+00
TH-230	1.238E+00	1.650E-01	1.166E-01	0.000E+00
TH-232	1.676E+00	3.643E-01	2.172E-01	0.000E+00
TH-234	2.366E+00	2.283E+00	3.168E+00	0.000E+00
U-234	1.238E+00	1.650E-01	1.166E-01	0.000E+00
NP-237	1.030E+00	3.886E-01	4.439E-01	0.000E+00
U-238	2.366E+00	2.283E+00	3.168E+00	0.000E+00
AM-243	4.853E-01	1.019E-01	1.002E-01	0.000E+00
ANH-511	1.346E-01	6.253E-02	4.465E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	5.895E-02	2.880E-01	4.906E-01	0.000E+00 NOT IDENT.
NA-22	-1.897E-02	4.410E-02	7.171E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.233E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.878E-02	2.859E-02	5.635E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.875E-02	8.183E-02	0.000E+00	NOT IDENT.
SC-46	2.346E-02	3.732E-02	6.643E-02	0.000E+00	FAIL ABUN
V-48	5.671E-03	6.083E-02	1.025E-01	0.000E+00	NOT IDENT.
CR-51	1.455E-01	3.449E-01	6.107E-01	0.000E+00	NOT IDENT.
MN-52	9.830E-02	2.969E-01	5.194E-01	0.000E+00	FAIL ABUN
MN-54	-5.372E-03	3.697E-02	6.173E-02	0.000E+00	NOT IDENT.
CO-56	6.748E-03	3.748E-02	6.434E-02	0.000E+00	NOT IDENT.
CO-57	-2.583E-03	2.376E-02	4.056E-02	0.000E+00	NOT IDENT.
CO-58	-2.148E-02	3.805E-02	6.109E-02	0.000E+00	NOT IDENT.
FE-59	-6.061E-02	9.469E-02	1.452E-01	0.000E+00	NOT IDENT.
CO-60	1.533E-03	3.853E-02	6.558E-02	0.000E+00	NOT IDENT.
ZN-65	-9.759E-02	1.055E-01	1.279E-01	0.000E+00	NOT IDENT.
GE-68	-1.249E-01	1.194E+00	1.949E+00	0.000E+00	NOT IDENT.
AS-73	9.894E-01	1.481E+00	2.652E+00	0.000E+00	NOT IDENT.
AS-74	4.461E-03	8.374E-02	1.463E-01	0.000E+00	NOT IDENT.
SE-75	4.142E-03	4.316E-02	6.713E-02	0.000E+00	NOT IDENT.
BR-77	2.211E+00	1.201E+01	2.031E+01	0.000E+00	FAIL ABUN
SR-82	8.004E-02	3.747E-01	6.489E-01	0.000E+00	NOT IDENT.
RB-83	9.662E-03	5.896E-02	9.956E-02	0.000E+00	NOT IDENT.
RB-84	4.101E-02	6.967E-02	1.235E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	7.546E+00	1.346E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.912E-02	6.976E-02	0.000E+00	NOT IDENT.
RB-86	-2.512E-01	8.153E-01	1.301E+00	0.000E+00	NOT IDENT.
Y-88	-2.150E-02	3.047E-02	4.092E-02	0.000E+00	NOT IDENT.
ZR-88	1.224E-03	2.791E-02	4.767E-02	0.000E+00	NOT IDENT.
Y-91	-1.468E+01	1.719E+01	2.688E+01	0.000E+00	NOT IDENT.
NB-94	2.457E-03	3.216E-02	5.552E-02	0.000E+00	NOT IDENT.
NB-95	3.506E-02	4.589E-02	7.349E-02	0.000E+00	NOT IDENT.
NB-95M	1.927E-02	1.274E-01	2.003E-01	0.000E+00	NOT IDENT.
ZR-95	8.795E-03	6.747E-02	1.163E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.449E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	4.963E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.378E+01	1.348E+01	2.482E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.317E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.355E-02	3.219E-02	5.458E-02	0.000E+00	NOT IDENT.
RH-102	6.832E-03	2.518E-02	4.316E-02	0.000E+00	NOT IDENT.
RU-103	-1.462E-02	3.667E-02	5.911E-02	0.000E+00	FAIL ABUN
RH-106	-9.245E-02	2.810E-01	4.742E-01	0.000E+00	FAIL ABUN
RU-106	-9.245E-02	2.809E-01	4.742E-01	0.000E+00	FAIL ABUN
AG-108M	-4.526E-03	2.937E-02	4.904E-02	0.000E+00	NOT IDENT.
AG-110M	2.154E-02	3.142E-02	5.705E-02	0.000E+00	NOT IDENT.
IN-111	7.678E-03	1.360E+00	2.114E+00	0.000E+00	NOT IDENT.
IN-113M	1.526E-03	4.039E-02	6.897E-02	0.000E+00	NOT IDENT.
SN-113	1.526E-03	4.039E-02	6.897E-02	0.000E+00	NOT IDENT.
IN-114M	7.371E-02	1.782E-01	2.717E-01	0.000E+00	NOT IDENT.
CD-115	6.032E+00	1.433E+01	2.461E+01	0.000E+00	NOT IDENT.
SN-117M	-2.799E-02	5.469E-02	9.003E-02	0.000E+00	NOT IDENT.
SB-122	3.811E+00	2.529E+00	4.665E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.015E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	4.857E-03	2.672E-02	4.548E-02	0.000E+00	NOT IDENT.
I-124	2.949E-01	7.412E-01	1.292E+00	0.000E+00	NOT IDENT.
SB-124	9.652E-03	6.773E-02	1.154E-01	0.000E+00	FAIL ABUN
SB-125	4.324E-02	8.225E-02	1.443E-01	0.000E+00	FAIL ABUN
TE-125M	-6.180E+00	8.875E+00	1.483E+01	0.000E+00	NOT IDENT.
I-126	2.350E-01	1.783E-01	3.359E-01	0.000E+00	NOT IDENT.
SB-126	-5.001E-02	1.416E-01	2.285E-01	0.000E+00	FAIL ABUN
SB-127	6.619E-01	1.438E+00	2.566E+00	0.000E+00	NOT IDENT.
XE-127	-8.762E-03	4.347E-02	7.692E-02	0.000E+00	NOT IDENT.
I-131	-6.865E-02	1.152E-01	1.894E-01	0.000E+00	NOT IDENT.
TE-132	2.373E-01	7.775E-01	1.394E+00	0.000E+00	NOT IDENT.
BA-133	1.736E-02	4.288E-02	6.625E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.341E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.993E-02	8.854E-02	0.000E+00	FAIL ABUN
CS-135	1.852E-01	1.611E-01	2.666E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.352E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.439E-02	1.221E-01	1.859E-01	0.000E+00	FAIL ABUN
BA-137M	-4.893E-02	3.447E-02	5.282E-02	0.000E+00	NOT IDENT.
CS-137	-5.173E-02	3.644E-02	5.583E-02	0.000E+00	NOT IDENT.
CE-139	-1.344E-02	2.897E-02	4.768E-02	0.000E+00	NOT IDENT.
BA-140	-1.634E-01	2.521E-01	4.323E-01	0.000E+00	NOT IDENT.
LA-140	3.251E-02	9.954E-02	1.731E-01	0.000E+00	FAIL ABUN
CE-141	-3.204E-03	5.918E-02	1.002E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.491E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	9.661E-03	2.138E-01	3.260E-01	0.000E+00	NOT IDENT.
PM-144	1.885E-02	3.129E-02	5.623E-02	0.000E+00	NOT IDENT.
PR-144	1.278E+00	2.122E+00	3.812E+00	0.000E+00	NOT IDENT.

PM-146	1.971E-02	4.015E-02	6.995E-02	0.000E+00	NOT IDENT.
ND-147	1.740E-02	5.740E-01	9.559E-01	0.000E+00	NOT IDENT.
PM-149	-1.060E+02	1.206E+02	1.989E+02	0.000E+00	NOT IDENT.
EU-152	5.544E-02	9.590E-02	1.520E-01	0.000E+00	FAIL ABUN
GD-153	-5.220E-02	7.675E-02	1.209E-01	0.000E+00	FAIL ABUN
EU-154	-5.120E-02	1.234E-01	2.008E-01	0.000E+00	NOT IDENT.
EU-155	5.920E-02	1.012E-01	1.794E-01	0.000E+00	FAIL ABUN
TB-160	-1.160E-02	1.397E-01	2.333E-01	0.000E+00	FAIL ABUN
HO-166M	2.579E-02	5.871E-02	1.040E-01	0.000E+00	FAIL ABUN
TM-171	2.347E+01	3.764E+01	6.156E+01	0.000E+00	NOT IDENT.
LU-176	-1.449E-03	2.311E-02	3.995E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.481E+00	2.214E+00	0.000E+00	FAIL ABUN
LU-177M	-4.866E-02	1.758E-01	2.928E-01	0.000E+00	NOT IDENT.
HF-181	6.787E-03	3.830E-02	6.506E-02	0.000E+00	NOT IDENT.
W-181	5.348E-01	5.017E-01	8.351E-01	0.000E+00	NOT IDENT.
TA-182	4.087E-03	2.072E-01	3.544E-01	0.000E+00	FAIL ABUN
RE-183	2.388E-02	1.085E-01	1.819E-01	0.000E+00	FAIL ABUN
RE-184	6.531E-03	2.076E-01	3.657E-01	0.000E+00	NOT IDENT.
OS-185	2.904E-03	3.993E-02	6.940E-02	0.000E+00	NOT IDENT.
RE-188	1.482E-01	1.669E-01	2.929E-01	0.000E+00	NOT IDENT.
W-188	-1.363E+00	7.713E+00	1.166E+01	0.000E+00	FAIL ABUN
IR-192	3.095E-03	3.182E-02	5.539E-02	0.000E+00	FAIL ABUN
AU-195	3.859E-02	2.130E-01	3.674E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	7.816E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	6.388E-01	8.356E+00	1.411E+01	0.000E+00	NOT IDENT.
TL-202	4.090E-02	6.592E-02	1.162E-01	0.000E+00	NOT IDENT.
HG-203	3.834E-02	3.880E-02	7.084E-02	0.000E+00	FAIL ABUN
BI-207	1.206E-02	4.966E-02	8.424E-02	0.000E+00	FAIL ABUN
TL-207	3.977E-01	6.398E-01	1.017E+00	0.000E+00	FAIL ABUN
PO-209	1.314E+00	6.312E+00	1.084E+01	0.000E+00	NOT IDENT.
BI-210	2.645E-01	8.441E+00	1.525E+01	0.000E+00	NOT IDENT.
PB-210	2.645E-01	8.441E+00	1.525E+01	0.000E+00	NOT IDENT.
PO-210	2.645E-01	8.441E+00	1.525E+01	0.000E+00	NOT IDENT.
PB-211	-1.159E+00	1.134E+00	1.371E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.879E-01	6.673E-01	0.000E+00	FAIL ABUN
PO-215	3.977E-01	6.398E-01	1.017E+00	0.000E+00	FAIL ABUN
RN-219	2.951E-01	3.829E-01	6.797E-01	0.000E+00	FAIL ABUN
RN-220	1.598E+00	2.503E+01	4.167E+01	0.000E+00	NOT IDENT.
RA-223	3.977E-01	6.398E-01	1.017E+00	0.000E+00	FAIL ABUN
AC-227	2.499E-03	3.467E-01	6.094E-01	0.000E+00	FAIL ABUN
TH-227	2.499E-03	3.467E-01	6.094E-01	0.000E+00	FAIL ABUN
TH-229	-1.784E-01	4.668E-01	7.615E-01	0.000E+00	FAIL ABUN
PA-231	-3.344E-01	1.381E+00	2.376E+00	0.000E+00	FAIL ABUN
TH-231	3.977E-01	6.398E-01	1.017E+00	0.000E+00	FAIL ABUN
U-231	-8.479E-01	1.283E+00	1.913E+00	0.000E+00	FAIL ABUN
PA-233	-4.536E-02	6.138E-02	1.019E-01	0.000E+00	FAIL ABUN
PA-234	6.756E-02	2.687E-01	4.607E-01	0.000E+00	FAIL ABUN
PA-234M	2.146E+00	3.873E+00	6.832E+00	0.000E+00	NOT IDENT.
U-235	5.835E-02	2.022E-01	3.410E-01	0.000E+00	FAIL ABUN
NP-236	-9.542E-03	7.564E-02	1.268E-01	0.000E+00	NOT IDENT.
NP-239	-8.551E-02	1.794E-01	3.019E-01	0.000E+00	FAIL ABUN
AM-241	-2.751E-02	2.387E-01	3.796E-01	0.000E+00	NOT IDENT.
CM-243	-1.835E-02	9.065E-02	1.556E-01	0.000E+00	FAIL ABUN
AM-246	1.917E-02	1.260E-01	2.116E-01	0.000E+00	NOT IDENT.
CM-247	1.656E-02	3.430E-02	6.010E-02	0.000E+00	NOT IDENT.
CF-249	1.162E-02	3.800E-02	6.600E-02	0.000E+00	NOT IDENT.
CF-251	5.345E-02	1.243E-01	2.124E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148004.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:50:06
Sample ID          : G244148004      Sample quantity   : 1.27570E+02 GRAM
Detector name      : GAM10           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.01  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 940268          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	863	10.67*	1.107E+00	2.150E+01	2.150E+01	11.29
CD-109	88.03	232	3.72*	5.254E+00	3.487E+00	3.573E+00	32.52
SN-126	64.28	68	9.60	2.226E+00	9.365E-01	9.365E-01	98.01
	86.94	232	8.90	5.254E+00	1.458E+00	1.458E+00	51.90
	87.57	232	37.00*	5.254E+00	3.506E-01	3.506E-01	32.52
TL-208	277.35	-----	6.80	4.610E+00	-----	Line Not Found	-----
	510.84	134	21.60	2.928E+00	6.232E-01	6.232E-01	48.13
	583.14	370	84.20*	2.626E+00	4.930E-01	4.930E-01	16.40
	860.37	-----	12.46	1.841E+00	-----	Line Not Found	-----
BI-211	72.87	106	1.27	3.582E+00	6.851E+00	6.851E+00	64.60
	351.07	701	12.94*	3.887E+00	4.101E+00	4.101E+00	12.89
PB-212	74.81	421	10.70	3.867E+00	2.993E+00	2.993E+00	23.39
	77.11	565	18.00	4.149E+00	2.226E+00	2.226E+00	18.33
	87.30	232	8.00	5.254E+00	1.622E+00	1.622E+00	34.02
	238.63	1415	44.60*	5.115E+00	1.826E+00	1.826E+00	9.79
	300.09	100	3.41	4.361E+00	1.972E+00	1.972E+00	47.36
PO-212	74.81	421	10.70	3.867E+00	2.993E+00	2.993E+00	23.39
	77.11	565	18.00	4.149E+00	2.226E+00	2.226E+00	18.33
	87.30	232	8.00	5.254E+00	1.622E+00	1.622E+00	34.02
	115.19	-----	0.60	6.657E+00	-----	Line Not Found	-----
	238.63	1415	44.60*	5.115E+00	1.826E+00	1.826E+00	9.79
	300.09	100	3.41	4.361E+00	1.972E+00	1.972E+00	47.36
BI-214	609.31	493	46.30*	2.530E+00	1.238E+00	1.238E+00	13.60
	1120.29	101	15.10	1.414E+00	1.386E+00	1.386E+00	36.99
	1764.49	98	15.80	9.762E-01	1.860E+00	1.860E+00	22.93
PB-214	74.81	421	6.21	3.867E+00	5.157E+00	5.158E+00	22.68
	77.11	565	10.50	4.149E+00	3.815E+00	3.815E+00	19.85
	87.30	232	4.67	5.254E+00	2.778E+00	2.778E+00	33.42
	241.98	309	7.49	5.072E+00	2.390E+00	2.390E+00	27.07
	295.21	426	19.20	4.411E+00	1.481E+00	1.481E+00	18.73
	351.92	701	37.20*	3.887E+00	1.427E+00	1.427E+00	13.91
PO-214	74.81	421	6.21	3.867E+00	5.157E+00	5.158E+00	22.68

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-216	77.11	565	10.50	4.149E+00	3.815E+00	3.815E+00	19.85
	87.30	232	4.67	5.254E+00	2.778E+00	2.778E+00	33.42
	241.98	309	7.49	5.072E+00	2.390E+00	2.390E+00	27.07
	295.21	426	19.20	4.411E+00	1.481E+00	1.481E+00	18.73
	351.92	701	37.20*	3.887E+00	1.427E+00	1.427E+00	13.91
	74.81	421	10.70	3.867E+00	2.993E+00	2.993E+00	23.39
	77.11	565	18.00	4.149E+00	2.226E+00	2.226E+00	18.33
	87.30	232	8.00	5.254E+00	1.622E+00	1.622E+00	34.02
	238.63	1415	44.60*	5.115E+00	1.826E+00	1.826E+00	9.79
	300.09	100	3.41	4.361E+00	1.972E+00	1.972E+00	47.36
PO-218	74.81	421	6.21	3.867E+00	5.157E+00	5.158E+00	22.68
	77.11	565	10.50	4.149E+00	3.815E+00	3.815E+00	19.85
	87.30	232	4.67	5.254E+00	2.778E+00	2.778E+00	33.42
	241.98	309	7.49	5.072E+00	2.390E+00	2.390E+00	27.07
	295.21	426	19.20	4.411E+00	1.481E+00	1.481E+00	18.73
	351.92	701	37.20*	3.887E+00	1.427E+00	1.427E+00	13.91
RA-224	240.98	309	3.95*	5.072E+00	4.532E+00	4.532E+00	26.48
RA-226	609.31	493	46.30*	2.530E+00	1.238E+00	1.238E+00	13.60
	1120.29	101	15.10	1.414E+00	1.386E+00	1.386E+00	36.99
	1764.49	98	15.80	9.762E-01	1.860E+00	1.860E+00	22.93
AC-228	338.32	268	11.40	3.999E+00	1.727E+00	1.727E+00	47.61
	911.07	274	27.70*	1.739E+00	1.676E+00	1.676E+00	22.18
	969.11	171	16.60	1.635E+00	1.848E+00	1.848E+00	31.46
RA-228	338.32	268	11.40	3.999E+00	1.727E+00	1.727E+00	47.61
	911.07	274	27.70*	1.739E+00	1.676E+00	1.676E+00	22.18
	969.11	171	16.60	1.635E+00	1.848E+00	1.848E+00	31.46
TH-228	74.81	421	10.70	3.867E+00	2.993E+00	3.042E+00	21.47
	77.11	565	18.00	4.149E+00	2.226E+00	2.262E+00	18.33
	87.30	232	8.00	5.254E+00	1.622E+00	1.648E+00	32.52
	238.63	1415	44.60*	5.115E+00	1.826E+00	1.855E+00	9.79
	300.09	100	3.41	4.361E+00	1.972E+00	2.004E+00	75.16
TH-230	609.31	493	46.30*	2.530E+00	1.238E+00	1.238E+00	13.60
	1120.29	101	15.10	1.414E+00	1.386E+00	1.386E+00	36.99
	1764.49	98	15.80	9.762E-01	1.860E+00	1.860E+00	22.93
TH-232	338.32	268	11.40	3.999E+00	1.727E+00	1.727E+00	25.27
	911.07	274	27.70*	1.739E+00	1.676E+00	1.676E+00	22.18
	969.11	171	16.60	1.635E+00	1.848E+00	1.848E+00	31.46
TH-234	63.29	68	3.80*	2.226E+00	2.366E+00	2.366E+00	98.48
	92.38	108	5.41	5.742E+00	1.022E+00	1.022E+00	84.12
U-234	609.31	493	46.30*	2.530E+00	1.238E+00	1.238E+00	13.60
	1120.29	101	15.10	1.414E+00	1.386E+00	1.386E+00	36.99
	1764.49	98	15.80	9.762E-01	1.860E+00	1.860E+00	22.93
NP-237	86.50	232	12.60*	5.254E+00	1.030E+00	1.030E+00	38.52
	95.87	-----	2.60	5.933E+00	-----	Line Not Found	-----
U-238	63.29	68	3.80*	2.226E+00	2.366E+00	2.366E+00	98.48
	92.38	108	5.41	5.742E+00	1.022E+00	1.022E+00	82.60
AM-243	74.67	421	66.00*	3.867E+00	4.853E-01	4.853E-01	21.44
	86.72	232	0.34	5.254E+00	3.861E+01	3.861E+01	32.52
	117.66	-----	0.55	6.694E+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	6.676E+00	-----	Line Not Found	-----
ANH-511	511.00	134	100.00*	2.928E+00	1.346E-01	1.346E-01	47.40

Flag: "\*" = Keyline

Total number of lines in spectrum 34  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 31 91.18%

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	2.150E+01	2.150E+01	0.243E+01	11.29	
CD-109	464.00D	1.02	3.487E+00	3.573E+00	1.162E+00	32.52	
SN-126	1.00E+05Y	1.00	3.506E-01	3.506E-01	1.140E-01	32.52	
TL-208	1.41E+10Y	1.00	4.930E-01	4.930E-01	0.808E-01	16.40	
BI-211	7.04E+08Y	1.00	4.101E+00	4.101E+00	0.529E+00	12.89	
PB-212	1.41E+10Y	1.00	1.826E+00	1.826E+00	0.179E+00	9.79	
PO-212	1.41E+10Y	1.00	1.826E+00	1.826E+00	0.179E+00	9.79	
BI-214	1600.00Y	1.00	1.238E+00	1.238E+00	0.168E+00	13.60	
PB-214	1600.00Y	1.00	1.427E+00	1.427E+00	0.198E+00	13.91	
PO-214	1600.00Y	1.00	1.427E+00	1.427E+00	0.198E+00	13.91	
PO-216	1.41E+10Y	1.00	1.826E+00	1.826E+00	0.179E+00	9.79	
PO-218	1600.00Y	1.00	1.427E+00	1.427E+00	0.198E+00	13.91	
RA-224	1.41E+10Y	1.00	4.532E+00	4.532E+00	1.200E+00	26.48	
RA-226	1600.00Y	1.00	1.238E+00	1.238E+00	0.168E+00	13.60	
AC-228	1.41E+10Y	1.00	1.676E+00	1.676E+00	0.372E+00	22.18	
RA-228	1.41E+10Y	1.00	1.676E+00	1.676E+00	0.372E+00	22.18	
TH-228	1.91Y	1.02	1.826E+00	1.855E+00	0.182E+00	9.79	
TH-230	4.47E+09Y	1.00	1.238E+00	1.238E+00	0.168E+00	13.60	
TH-232	1.41E+10Y	1.00	1.676E+00	1.676E+00	0.372E+00	22.18	
TH-234	4.47E+09Y	1.00	2.366E+00	2.366E+00	2.330E+00	98.48	
U-234	4.47E+09Y	1.00	1.238E+00	1.238E+00	0.168E+00	13.60	
NP-237	2.14E+06Y	1.00	1.030E+00	1.030E+00	0.397E+00	38.52	
U-238	4.47E+09Y	1.00	2.366E+00	2.366E+00	2.330E+00	98.48	
AM-243	7380.00Y	1.00	4.853E-01	4.853E-01	1.040E-01	21.44	
ANH-511	1.00E+09Y	1.00	1.346E-01	1.346E-01	0.638E-01	47.40	

Total Activity : 6.241E+01 6.252E+01

Grand Total Activity : 6.241E+01 6.252E+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	83.92	107	459	1.46	167.96	164	14	1.49E-02	76.9	4.96E+00	T
0	129.28	110	342	0.80	258.61	255	9	1.53E-02	63.7	6.76E+00	T
0	185.90	233	397	1.38	371.76	366	13	3.23E-02	38.5	5.98E+00	T
0	209.39	102	252	0.99	418.70	415	8	1.42E-02	57.4	5.57E+00	T
0	270.32	150	223	0.97	540.46	535	11	2.08E-02	42.0	4.69E+00	T
0	327.92	87	131	1.47	655.58	652	10	1.20E-02	53.5	4.09E+00	T
0	463.42	75	97	1.19	926.40	921	10	1.04E-02	55.0	3.16E+00	T
0	727.84	64	96	0.95	1455.01	1450	12	8.83E-03	67.3	2.16E+00	T
0	768.70	51	69	2.00	1536.71	1531	11	7.06E-03	69.1	2.05E+00	
0	795.46	49	42	1.47	1590.21	1584	10	6.80E-03	52.7	1.99E+00	T
0	934.74	51	22	1.75	1868.70	1864	10	7.13E-03	44.3	1.70E+00	T
4	965.07	55	46	2.56	1929.37	1922	29	7.70E-03	64.7	1.64E+00	T
0	1379.42	18	48	1.12	2758.11	2747	16	2.50E-03	****	1.16E+00	
0	1631.53	20	3	2.90	3262.49	3257	11	2.81E-03	54.6	1.02E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148004.CNF;1
* Acquisition date   : 20-JAN-2010 15:50:06   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 02:00:01.01          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G244148004             Analyst initials: MXR1
* Batch Number       : 940268                 Sample Quantity : 1.27570E+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	2.150E+01	2.427E+00	5.298E-01	4.563E-02	40.578
CD-109	3.573E+00	1.162E+00	1.446E+00	1.639E-01	2.471
SN-126	3.506E-01	1.140E-01	1.509E-01	1.707E-02	2.324
TL-208	4.930E-01	8.085E-02	5.614E-02	3.773E-03	8.781
BI-211	4.101E+00	5.286E-01	2.863E-01	2.087E-02	14.326
PB-212	1.826E+00	1.787E-01	7.940E-02	6.023E-03	22.996
PO-212	1.826E+00	1.787E-01	7.940E-02	6.023E-03	22.996
BI-214	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755
PB-214	1.427E+00	1.984E-01	9.979E-02	8.949E-03	14.296
PO-214	1.427E+00	1.984E-01	9.979E-02	8.949E-03	14.296
PO-216	1.826E+00	1.787E-01	7.940E-02	6.023E-03	22.996
PO-218	1.427E+00	1.984E-01	9.979E-02	8.949E-03	14.296
RA-224	4.532E+00	1.200E+00	9.034E-01	5.545E-02	5.017
RA-226	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755
AC-228	1.676E+00	3.717E-01	2.156E-01	2.661E-02	7.775
RA-228	1.676E+00	3.717E-01	2.156E-01	2.661E-02	7.775
TH-228	1.855E+00	1.816E-01	8.069E-02	6.121E-03	22.996
TH-230	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.676E+00	3.717E-01	2.156E-01	2.661E-02	7.775
TH-234	2.366E+00	2.330E+00	3.024E+00	5.960E-01	0.782
U-234	1.238E+00	1.684E-01	1.151E-01	8.758E-03	10.755
NP-237	1.030E+00	3.966E-01	4.256E-01	1.000E-01	2.419
U-238	2.366E+00	2.330E+00	3.024E+00	5.960E-01	0.782
AM-243	4.853E-01	1.040E-01	9.586E-02	1.050E-02	5.062
ANH-511	1.346E-01	6.381E-02	4.394E-02	2.815E-03	3.063

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.895E-02		2.939E-01	4.823E-01	3.587E-02	0.122
NA-22	-1.897E-02		4.500E-02	7.156E-02	5.543E-03	-0.265
NA-24	4.023E-01		1.139E+00	Half-Life too short		
AL-26	2.878E-02		2.918E-02	5.654E-02	3.585E-03	0.509
TI-44	1.779E-01		4.975E-02	7.834E-02	8.573E-03	2.271
SC-46	2.346E-02		3.809E-02	6.593E-02	6.525E-03	0.356
V-48	5.671E-03		6.208E-02	1.018E-01	9.417E-03	0.056
CR-51	1.455E-01		3.519E-01	5.968E-01	4.311E-02	0.244
MN-52	9.830E-02		3.029E-01	5.193E-01	4.388E-02	0.189
MN-54	-5.372E-03		3.773E-02	6.121E-02	5.229E-03	-0.088
CO-56	6.748E-03		3.825E-02	6.380E-02	5.634E-03	0.106
CO-57	-2.583E-03		2.424E-02	3.908E-02	2.578E-03	-0.066
CO-58	-2.148E-02		3.883E-02	6.054E-02	4.844E-03	-0.355
FE-59	-6.061E-02		9.662E-02	1.445E-01	1.206E-02	-0.419
CO-60	1.533E-03		3.932E-02	6.549E-02	5.691E-03	0.023
ZN-65	-9.759E-02		1.076E-01	1.273E-01	9.275E-03	-0.766
GE-68	-1.249E-01		1.219E+00	1.940E+00	1.537E-01	-0.064
AS-73	9.894E-01		1.511E+00	2.526E+00	3.342E-01	0.392
AS-74	4.461E-03		8.545E-02	1.443E-01	8.243E-03	0.031
SE-75	4.142E-03		4.404E-02	6.541E-02	4.172E-03	0.063
BR-77	2.211E+00		1.225E+01	1.999E+01	1.269E+00	0.111
SR-82	8.004E-02		3.823E-01	6.426E-01	4.633E-02	0.125
RB-83	9.662E-03		6.016E-02	9.800E-02	6.219E-03	0.099
RB-84	4.101E-02		7.109E-02	1.225E-01	1.188E-02	0.335
KR-85	1.927E+01		7.700E+00	1.324E+01	8.460E-01	1.455
SR-85	9.987E-02		3.992E-02	6.866E-02	4.385E-03	1.455
RB-86	-2.512E-01		8.319E-01	1.295E+00	1.027E-01	-0.194
Y-88	-2.150E-02		3.109E-02	4.107E-02	2.520E-03	-0.523
ZR-88	1.224E-03		2.848E-02	4.672E-02	3.175E-03	0.026
Y-91	-1.468E+01		1.754E+01	2.680E+01	1.780E+00	-0.548
NB-94	2.457E-03		3.282E-02	5.490E-02	3.125E-03	0.045
NB-95	3.506E-02		4.682E-02	7.277E-02	5.078E-03	0.482
NB-95M	1.927E-02		1.300E-01	1.949E-01	1.511E-02	0.099
ZR-95	8.795E-03		6.885E-02	1.152E-01	9.045E-03	0.076
NB-97	1.800E-01		1.250E-01	Half-Life too short		
ZR-97	2.963E+00		2.532E+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	1.378E+01		1.376E+01	2.456E+01	3.452E+00	0.561
TC-99M	2.375E+10		3.223E+11	Half-Life too short		
RH-101	2.355E-02		3.284E-02	5.296E-02	3.042E-03	0.445
RH-102	6.832E-03		2.570E-02	4.242E-02	2.798E-03	0.161
RU-103	-1.462E-02		3.742E-02	5.814E-02	7.543E-03	-0.252
RH-106	-9.245E-02		2.868E-01	4.681E-01	5.411E-02	-0.198
RU-106	-9.245E-02		2.866E-01	4.681E-01	2.542E-02	-0.198
AG-108M	-4.526E-03		2.997E-02	4.814E-02	3.452E-03	-0.094
AG-110M	2.154E-02		3.206E-02	5.636E-02	3.053E-03	0.382
IN-111	7.678E-03		1.388E+00	2.058E+00	1.271E-01	0.004
IN-113M	1.526E-03		4.121E-02	6.760E-02	4.820E-03	0.023
SN-113	1.526E-03		4.121E-02	6.760E-02	4.820E-03	0.023
IN-114M	7.371E-02		1.818E-01	2.635E-01	1.494E-02	0.280
CD-115	6.032E+00		1.462E+01	2.423E+01	1.526E+00	0.249
SN-117M	-2.799E-02		5.581E-02	8.707E-02	4.883E-03	-0.322
SB-122	3.811E+00		2.581E+00	4.598E+00	2.765E-01	0.829
I-123	3.663E+00		1.028E+01	Half-Life too short		
TE-123M	4.857E-03		2.727E-02	4.399E-02	2.498E-03	0.110
I-124	2.949E-01		7.563E-01	1.275E+00	7.193E-02	0.231
SB-124	9.652E-03		6.911E-02	1.157E-01	8.792E-03	0.083
SB-125	4.324E-02		8.393E-02	1.416E-01	9.863E-03	0.305
TE-125M	-6.180E+00		9.056E+00	1.426E+01	1.369E+00	-0.433
I-126	2.350E-01		1.819E-01	3.319E-01	1.665E-02	0.708
SB-126	-5.001E-02		1.445E-01	2.260E-01	1.366E-02	-0.221
SB-127	6.619E-01		1.468E+00	2.536E+00	2.422E-01	0.261
XE-127	-8.762E-03		4.435E-02	7.467E-02	4.324E-03	-0.117
I-131	-6.865E-02		1.176E-01	1.855E-01	1.366E-02	-0.370
TE-132	2.373E-01		7.934E-01	1.355E+00	1.988E-01	0.175
BA-133	1.736E-02		4.375E-02	6.484E-02	7.823E-03	0.268
I-133	1.354E-03		6.843E-03	Half-Life too short		
CS-134	9.573E-02	+	5.095E-02	8.772E-02	6.763E-03	1.091
CS-135	1.852E-01		1.644E-01	2.598E-01	2.100E-02	0.713
I-135	5.044E+10		3.751E+10	Half-Life too short		
CS-136	-9.439E-02		1.246E-01	1.849E-01	1.619E-02	-0.510
BA-137M	-4.893E-02		3.517E-02	5.218E-02	2.574E-03	-0.938
CS-137	-5.173E-02		3.718E-02	5.516E-02	2.737E-03	-0.938
CE-139	-1.344E-02		2.956E-02	4.614E-02	2.520E-03	-0.291
BA-140	1.634E-01		2.573E-01	4.257E-01	1.388E-01	0.384
LA-140	3.251E-02		1.016E-01	1.734E-01	1.345E-02	0.188
CE-141	-3.204E-03		6.039E-02	9.679E-02	5.924E-03	-0.033
CE-143	1.042E-03		1.781E-04	Half-Life too short		
CE-144	9.661E-03		2.181E-01	3.145E-01	4.519E-02	0.031
PM-144	1.885E-02		3.193E-02	5.559E-02	3.102E-03	0.339
PR-144	1.278E+00		2.165E+00	3.769E+00	2.102E-01	0.339
PM-146	1.971E-02		4.097E-02	6.871E-02	6.346E-03	0.287
ND-147	1.740E-02		5.857E-01	9.412E-01	1.293E-01	0.018
PM-149	-1.060E+02		1.230E+02	1.940E+02	2.806E+01	-0.546
EU-152	5.544E-02		9.786E-02	1.487E-01	1.095E-02	0.373

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-5.220E-02		7.831E-02	1.161E-01	1.081E-02	-0.450
EU-154	-5.120E-02		1.259E-01	2.004E-01	2.135E-02	-0.255
EU-155	5.920E-02		1.032E-01	1.725E-01	1.431E-02	0.343
TB-160	-1.160E-02		1.426E-01	2.315E-01	2.232E-02	-0.050
HO-166M	2.579E-02		5.991E-02	1.028E-01	6.035E-03	0.251
TM-171	2.347E+01		3.841E+01	5.880E+01	6.698E+00	0.399
LU-176	-1.449E-03		2.358E-02	3.902E-02	2.567E-03	-0.037
LU-177	2.620E+00	+	1.511E+00	2.150E+00	1.256E-01	1.219
LU-177M	-4.866E-02		1.794E-01	2.872E-01	1.947E-02	-0.169
HF-181	6.787E-03		3.908E-02	6.397E-02	4.199E-03	0.106
W-181	5.348E-01		5.119E-01	7.974E-01	9.213E-02	0.671
TA-182	4.087E-03		2.114E-01	3.535E-01	2.438E-02	0.012
RE-183	2.388E-02		1.107E-01	1.760E-01	9.733E-03	0.136
RE-184	6.531E-03		2.118E-01	3.561E-01	2.220E-02	0.018
OS-185	2.904E-03		4.074E-02	6.854E-02	3.521E-03	0.042
RE-188	1.482E-01		1.703E-01	2.832E-01	1.609E-02	0.523
W-188	-1.363E+00		7.871E+00	1.138E+01	7.388E-01	-0.120
IR-192	3.095E-03		3.247E-02	5.412E-02	3.598E-03	0.057
AU-195	3.859E-02		2.173E-01	3.529E-01	3.202E-02	0.109
TL-200	3.639E-04		3.988E-04	Half-Life too short		
TL-201	6.388E-01		8.526E+00	1.365E+01	7.467E-01	0.047
TL-202	4.090E-02		6.727E-02	1.141E-01	7.672E-03	0.358
HG-203	3.834E-02		3.959E-02	6.908E-02	4.662E-03	0.555
BI-207	1.206E-02		5.068E-02	8.384E-02	6.825E-03	0.144
TL-207	3.977E-01		6.528E-01	9.938E-01	1.673E-01	0.400
PO-209	1.314E+00		6.440E+00	1.076E+01	1.085E+00	0.122
BI-210	2.645E-01		8.614E+00	1.450E+01	1.422E+00	0.018
PB-210	2.645E-01		8.614E+00	1.450E+01	1.422E+00	0.018
PO-210	2.645E-01		8.614E+00	1.450E+01	1.301E+00	0.018
PB-211	-1.159E+00		1.157E+00	1.344E+00	8.395E-01	-0.862
BI-212	7.343E-01	+	4.979E-01	6.602E-01	5.281E-02	1.112
PO-215	3.977E-01		6.528E-01	9.938E-01	1.673E-01	0.400
RN-219	2.951E-01		3.907E-01	6.665E-01	9.368E-02	0.443
RN-220	1.598E+00		2.554E+01	4.105E+01	2.517E+00	0.039
RA-223	3.977E-01		6.528E-01	9.938E-01	1.673E-01	0.400
AC-227	2.499E-03		3.538E-01	5.936E-01	8.404E-02	0.004
TH-227	2.499E-03		3.538E-01	5.936E-01	1.013E-01	0.004
TH-229	-1.784E-01		4.763E-01	7.386E-01	4.212E-02	-0.242
PA-231	-3.344E-01		1.409E+00	2.318E+00	3.260E-01	-0.144
TH-231	3.977E-01		6.528E-01	9.938E-01	1.673E-01	0.400
U-231	-8.479E-01		1.309E+00	1.836E+00	1.760E-01	-0.462
PA-233	-4.536E-02		6.263E-02	9.950E-02	6.885E-03	-0.456
PA-234	6.756E-02		2.742E-01	4.576E-01	8.818E-02	0.148
PA-234M	2.146E+00		3.952E+00	6.793E+00	7.011E-01	0.316
U-235	5.835E-02		2.063E-01	3.293E-01	5.385E-02	0.177
NP-236	-9.542E-03		7.718E-02	1.227E-01	6.836E-03	-0.078
NP-239	-8.551E-02		1.831E-01	2.907E-01	2.033E-02	-0.294
AM-241	-2.751E-02		2.436E-01	3.620E-01	4.649E-02	-0.076

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.835E-02		9.250E-02	1.496E-01	1.253E-02	-0.123
AM-246	1.917E-02		1.285E-01	2.107E-01	1.664E-02	0.091
CM-247	1.656E-02		3.500E-02	5.893E-02	4.002E-03	0.281
CF-249	1.162E-02		3.877E-02	6.468E-02	4.395E-03	0.180
CF-251	5.345E-02		1.268E-01	2.057E-01	1.141E-02	0.260

# 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]G244148004          *
* Acquisition date   : 20-JAN-2010 15:50:06 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 02:00:01.01              Half life ratio : 8.000     *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148004              Analyst initials: MXR1        *
* Batch Number       : 940268                  Sample Quantity : 1.2757E+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	2.150E+01	2.379E+00	2.651E-01	1.214E+00
CD-109	3.573E+00	1.139E+00	7.543E-01	5.810E-01
SN-126	3.506E-01	1.117E-01	7.871E-02	5.701E-02
TL-208	4.930E-01	7.923E-02	2.849E-02	4.042E-02
BI-211	4.101E+00	5.180E-01	1.464E-01	2.643E-01
PB-212	1.826E+00	1.751E-01	4.083E-02	8.935E-02
PO-212	1.826E+00	1.751E-01	4.083E-02	8.935E-02
BI-214	1.238E+00	1.650E-01	5.836E-02	8.419E-02
PB-214	1.427E+00	1.944E-01	5.102E-02	9.919E-02
PO-214	1.427E+00	1.944E-01	5.102E-02	9.919E-02
PO-216	1.826E+00	1.751E-01	4.083E-02	8.935E-02
PO-218	1.427E+00	1.944E-01	5.102E-02	9.919E-02
RA-224	4.532E+00	1.176E+00	4.645E-01	6.000E-01
RA-226	1.238E+00	1.650E-01	5.836E-02	8.419E-02
AC-228	1.676E+00	3.643E-01	1.087E-01	1.859E-01
RA-228	1.676E+00	3.643E-01	1.087E-01	1.859E-01
TH-228	1.855E+00	1.780E-01	4.149E-02	9.080E-02
TH-230	1.238E+00	1.650E-01	5.836E-02	8.419E-02
TH-232	1.676E+00	3.643E-01	1.087E-01	1.859E-01
TH-234	2.366E+00	2.283E+00	1.585E+00	1.165E+00
U-234	1.238E+00	1.650E-01	5.836E-02	8.419E-02
NP-237	1.030E+00	3.886E-01	2.221E-01	1.983E-01
U-238	2.366E+00	2.283E+00	1.585E+00	1.165E+00
AM-243	4.853E-01	1.019E-01	5.013E-02	5.201E-02
ANH-511	1.346E-01	6.253E-02	2.234E-02	3.191E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	5.895E-02	2.880E-01	2.455E-01	1.469E-01 NOT IDENT.
NA-22	-1.897E-02	4.410E-02	3.588E-02	2.250E-02 NOT IDENT.

NA-24	4.023E+05	2.233E+06	0.000E+00	1.139E+06	SHORT HLIF
AL-26	2.878E-02	2.859E-02	2.819E-02	1.459E-02	NOT IDENT.
TI-44	1.779E-01	4.875E-02	4.094E-02	2.487E-02	NOT IDENT.
SC-46	2.346E-02	3.732E-02	3.324E-02	1.904E-02	FAIL ABUN
V-48	5.671E-03	6.083E-02	5.126E-02	3.104E-02	NOT IDENT.
CR-51	1.455E-01	3.449E-01	3.055E-01	1.760E-01	NOT IDENT.
MN-52	9.830E-02	2.969E-01	2.599E-01	1.515E-01	FAIL ABUN
MN-54	-5.372E-03	3.697E-02	3.088E-02	1.886E-02	NOT IDENT.
CO-56	6.748E-03	3.748E-02	3.219E-02	1.912E-02	NOT IDENT.
CO-57	-2.583E-03	2.376E-02	2.029E-02	1.212E-02	NOT IDENT.
CO-58	-2.148E-02	3.805E-02	3.056E-02	1.941E-02	NOT IDENT.
FE-59	-6.061E-02	9.469E-02	7.263E-02	4.831E-02	NOT IDENT.
CO-60	1.533E-03	3.853E-02	3.281E-02	1.966E-02	NOT IDENT.
ZN-65	-9.759E-02	1.055E-01	6.397E-02	5.380E-02	NOT IDENT.
GE-68	-1.249E-01	1.194E+00	9.751E-01	6.094E-01	NOT IDENT.
AS-73	9.894E-01	1.481E+00	1.327E+00	7.556E-01	NOT IDENT.
AS-74	4.461E-03	8.374E-02	7.319E-02	4.273E-02	NOT IDENT.
SE-75	4.142E-03	4.316E-02	3.358E-02	2.202E-02	NOT IDENT.
BR-77	2.211E+00	1.201E+01	1.016E+01	6.127E+00	FAIL ABUN
SR-82	8.004E-02	3.747E-01	3.246E-01	1.912E-01	NOT IDENT.
RB-83	9.662E-03	5.896E-02	4.981E-02	3.008E-02	NOT IDENT.
RB-84	4.101E-02	6.967E-02	6.177E-02	3.555E-02	NOT IDENT.
KR-85	1.927E+01	7.546E+00	6.733E+00	3.850E+00	NOT IDENT.
SR-85	9.987E-02	3.912E-02	3.490E-02	1.996E-02	NOT IDENT.
RB-86	-2.512E-01	8.153E-01	6.508E-01	4.160E-01	NOT IDENT.
Y-88	-2.150E-02	3.047E-02	2.047E-02	1.555E-02	NOT IDENT.
ZR-88	1.224E-03	2.791E-02	2.385E-02	1.424E-02	NOT IDENT.
Y-91	-1.468E+01	1.719E+01	1.345E+01	8.772E+00	NOT IDENT.
NB-94	2.457E-03	3.216E-02	2.778E-02	1.641E-02	NOT IDENT.
NB-95	3.506E-02	4.589E-02	3.677E-02	2.341E-02	NOT IDENT.
NB-95M	1.927E-02	1.274E-01	1.002E-01	6.499E-02	NOT IDENT.
ZR-95	8.795E-03	6.747E-02	5.820E-02	3.442E-02	NOT IDENT.
NB-97	1.800E+05	2.449E+05	0.000E+00	1.250E+05	SHORT HLIF
ZR-97	2.963E+06	4.963E+06	0.000E+00	2.532E+06	SHORT HLIF
MO-99	1.378E+01	1.348E+01	1.242E+01	6.878E+00	NOT IDENT.
TC-99M	2.375E+16	6.317E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.355E-02	3.219E-02	2.731E-02	1.642E-02	NOT IDENT.
RH-102	6.832E-03	2.518E-02	2.159E-02	1.285E-02	NOT IDENT.
RU-103	-1.462E-02	3.667E-02	2.957E-02	1.871E-02	FAIL ABUN
RH-106	-9.245E-02	2.810E-01	2.373E-01	1.434E-01	FAIL ABUN
RU-106	-9.245E-02	2.809E-01	2.373E-01	1.433E-01	FAIL ABUN
AG-108M	-4.526E-03	2.937E-02	2.453E-02	1.498E-02	NOT IDENT.
AG-110M	2.154E-02	3.142E-02	2.854E-02	1.603E-02	NOT IDENT.
IN-111	7.678E-03	1.360E+00	1.058E+00	6.940E-01	NOT IDENT.
IN-113M	1.526E-03	4.039E-02	3.450E-02	2.061E-02	NOT IDENT.
SN-113	1.526E-03	4.039E-02	3.450E-02	2.061E-02	NOT IDENT.
IN-114M	7.371E-02	1.782E-01	1.359E-01	9.091E-02	NOT IDENT.
CD-115	6.032E+00	1.433E+01	1.231E+01	7.312E+00	NOT IDENT.
SN-117M	-2.799E-02	5.469E-02	4.504E-02	2.790E-02	NOT IDENT.
SB-122	3.811E+00	2.529E+00	2.334E+00	1.291E+00	NOT IDENT.
I-123	3.663E+06	2.015E+07	0.000E+00	1.028E+07	SHORT HLIF
TE-123M	4.857E-03	2.672E-02	2.275E-02	1.363E-02	NOT IDENT.
I-124	2.949E-01	7.412E-01	6.466E-01	3.781E-01	NOT IDENT.
SB-124	9.652E-03	6.773E-02	5.776E-02	3.456E-02	FAIL ABUN
SB-125	4.324E-02	8.225E-02	7.219E-02	4.197E-02	FAIL ABUN
TE-125M	-6.180E+00	8.875E+00	7.417E+00	4.528E+00	NOT IDENT.
I-126	2.350E-01	1.783E-01	1.681E-01	9.095E-02	NOT IDENT.
SB-126	-5.001E-02	1.416E-01	1.143E-01	7.225E-02	FAIL ABUN
SB-127	6.619E-01	1.438E+00	1.284E+00	7.338E-01	NOT IDENT.
XE-127	-8.762E-03	4.347E-02	3.849E-02	2.218E-02	NOT IDENT.
I-131	-6.865E-02	1.152E-01	9.477E-02	5.879E-02	NOT IDENT.
TE-132	2.373E-01	7.775E-01	6.974E-01	3.967E-01	NOT IDENT.
BA-133	1.736E-02	4.288E-02	3.314E-02	2.188E-02	NOT IDENT.
I-133	1.354E+03	1.341E+04	0.000E+00	6.843E+03	SHORT HLIF
CS-134	9.573E-02	4.993E-02	4.430E-02	2.548E-02	FAIL ABUN
CS-135	1.852E-01	1.611E-01	1.334E-01	8.218E-02	NOT IDENT.
I-135	5.044E+16	7.352E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.439E-02	1.221E-01	9.300E-02	6.231E-02	FAIL ABUN
BA-137M	-4.893E-02	3.447E-02	2.642E-02	1.759E-02	NOT IDENT.
CS-137	-5.173E-02	3.644E-02	2.793E-02	1.859E-02	NOT IDENT.
CE-139	-1.344E-02	2.897E-02	2.385E-02	1.478E-02	NOT IDENT.
BA-140	1.634E-01	2.521E-01	2.163E-01	1.286E-01	NOT IDENT.
LA-140	3.251E-02	9.954E-02	8.661E-02	5.079E-02	FAIL ABUN
CE-141	-3.204E-03	5.918E-02	5.013E-02	3.019E-02	NOT IDENT.
CE-143	1.042E+03	3.491E+02	0.000E+00	1.781E+02	SHORT HLIF
CE-144	9.661E-03	2.138E-01	1.631E-01	1.091E-01	NOT IDENT.
PM-144	1.885E-02	3.129E-02	2.813E-02	1.597E-02	NOT IDENT.
PR-144	1.278E+00	2.122E+00	1.907E+00	1.083E+00	NOT IDENT.



PM-146	1.971E-02	4.015E-02	3.499E-02	2.049E-02	NOT IDENT.
ND-147	1.740E-02	5.740E-01	4.782E-01	2.928E-01	NOT IDENT.
PM-149	-1.060E+02	1.206E+02	9.949E+01	6.151E+01	NOT IDENT.
EU-152	5.544E-02	9.590E-02	7.602E-02	4.893E-02	FAIL ABUN
GD-153	-5.220E-02	7.675E-02	6.048E-02	3.916E-02	FAIL ABUN
EU-154	-5.120E-02	1.234E-01	1.005E-01	6.293E-02	NOT IDENT.
EU-155	5.920E-02	1.012E-01	8.975E-02	5.162E-02	FAIL ABUN
TB-160	-1.160E-02	1.397E-01	1.167E-01	7.130E-02	FAIL ABUN
HO-166M	2.579E-02	5.871E-02	5.202E-02	2.995E-02	FAIL ABUN
TM-171	2.347E+01	3.764E+01	3.080E+01	1.920E+01	NOT IDENT.
LU-176	-1.449E-03	2.311E-02	1.999E-02	1.179E-02	FAIL ABUN
LU-177	2.620E+00	1.481E+00	1.108E+00	7.557E-01	FAIL ABUN
LU-177M	-4.866E-02	1.758E-01	1.465E-01	8.968E-02	NOT IDENT.
HF-181	6.787E-03	3.830E-02	3.255E-02	1.954E-02	NOT IDENT.
W-181	5.348E-01	5.017E-01	4.178E-01	2.560E-01	NOT IDENT.
TA-182	4.087E-03	2.072E-01	1.773E-01	1.057E-01	FAIL ABUN
RE-183	2.388E-02	1.085E-01	9.101E-02	5.534E-02	FAIL ABUN
RE-184	6.531E-03	2.076E-01	1.829E-01	1.059E-01	NOT IDENT.
OS-185	2.904E-03	3.993E-02	3.472E-02	2.037E-02	NOT IDENT.
RE-188	1.482E-01	1.669E-01	1.465E-01	8.515E-02	NOT IDENT.
W-188	-1.363E+00	7.713E+00	5.835E+00	3.935E+00	FAIL ABUN
IR-192	3.095E-03	3.182E-02	2.771E-02	1.624E-02	FAIL ABUN
AU-195	3.859E-02	2.130E-01	1.838E-01	1.087E-01	FAIL ABUN
TL-200	3.639E+02	7.816E+02	0.000E+00	3.988E+02	SHORT HLIF
TL-201	6.388E-01	8.356E+00	7.057E+00	4.263E+00	NOT IDENT.
TL-202	4.090E-02	6.592E-02	5.814E-02	3.363E-02	NOT IDENT.
HG-203	3.834E-02	3.880E-02	3.544E-02	1.979E-02	FAIL ABUN
BI-207	1.206E-02	4.966E-02	4.215E-02	2.534E-02	FAIL ABUN
TL-207	3.977E-01	6.398E-01	5.087E-01	3.264E-01	FAIL ABUN
PO-209	1.314E+00	6.312E+00	5.424E+00	3.220E+00	NOT IDENT.
BI-210	2.645E-01	8.441E+00	7.631E+00	4.307E+00	NOT IDENT.
PB-210	2.645E-01	8.441E+00	7.631E+00	4.307E+00	NOT IDENT.
PO-210	2.645E-01	8.441E+00	7.631E+00	4.307E+00	NOT IDENT.
PB-211	-1.159E+00	1.134E+00	6.859E-01	5.787E-01	NOT IDENT.
BI-212	7.343E-01	4.879E-01	3.338E-01	2.489E-01	FAIL ABUN
PO-215	3.977E-01	6.398E-01	5.087E-01	3.264E-01	FAIL ABUN
RN-219	2.951E-01	3.829E-01	3.401E-01	1.954E-01	FAIL ABUN
RN-220	1.598E+00	2.503E+01	2.085E+01	1.277E+01	NOT IDENT.
RA-223	3.977E-01	6.398E-01	5.087E-01	3.264E-01	FAIL ABUN
AC-227	2.499E-03	3.467E-01	3.049E-01	1.769E-01	FAIL ABUN
TH-227	2.499E-03	3.467E-01	3.049E-01	1.769E-01	FAIL ABUN
TH-229	-1.784E-01	4.668E-01	3.810E-01	2.382E-01	FAIL ABUN
PA-231	-3.344E-01	1.381E+00	1.189E+00	7.044E-01	FAIL ABUN
TH-231	3.977E-01	6.398E-01	5.087E-01	3.264E-01	FAIL ABUN
U-231	-8.479E-01	1.283E+00	9.570E-01	6.545E-01	FAIL ABUN
PA-233	-4.536E-02	6.138E-02	5.096E-02	3.132E-02	FAIL ABUN
PA-234	6.756E-02	2.687E-01	2.305E-01	1.371E-01	FAIL ABUN
PA-234M	2.146E+00	3.873E+00	3.418E+00	1.976E+00	NOT IDENT.
U-235	5.835E-02	2.022E-01	1.706E-01	1.032E-01	FAIL ABUN
NP-236	-9.542E-03	7.564E-02	6.345E-02	3.859E-02	NOT IDENT.
NP-239	-8.551E-02	1.794E-01	1.510E-01	9.154E-02	FAIL ABUN
AM-241	-2.751E-02	2.387E-01	1.899E-01	1.218E-01	NOT IDENT.
CM-243	-1.835E-02	9.065E-02	7.786E-02	4.625E-02	FAIL ABUN
AM-246	1.917E-02	1.260E-01	1.059E-01	6.426E-02	NOT IDENT.
CM-247	1.656E-02	3.430E-02	3.007E-02	1.750E-02	NOT IDENT.
CF-249	1.162E-02	3.800E-02	3.302E-02	1.939E-02	NOT IDENT.
CF-251	5.345E-02	1.243E-01	1.063E-01	6.340E-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	270.3871
46.50	270.3871
46.50	270.3871
48.70	257.3061
49.72	268.1420
51.35	256.3329
52.39	232.8958
52.97	234.1697
53.15	226.8394
53.44	227.9361
54.07	259.9803
56.28	262.3419
56.28	262.3441
57.37	0.0000
57.53	264.0814
57.53	264.0824
57.60	261.3058
57.98	256.8408
57.98	256.8408
59.32	283.1444
59.32	283.1444
59.40	283.1978
59.54	283.2916
59.72	304.6681
60.01	300.6215
61.10	267.2680
61.14	267.2924
61.30	267.3914
63.00	337.9256
63.29	365.7715
63.29	365.7715
63.58	366.0117
64.28	287.8303
65.12	291.2410
65.20	291.2925
65.20	291.2925
66.05	286.0913
66.72	308.1083
66.83	319.7043
66.91	319.7602
67.20	337.8352
67.20	337.8352
67.75	348.6290
67.85	348.7046
68.90	338.5013
68.90	338.5013
69.30	280.8791
69.67	284.0005
70.82	278.8813
70.82	278.8813
70.83	278.8872
72.80	319.4190
72.87	319.4658
72.87	319.4658
74.67	320.6487
74.81	320.7406
74.81	320.7406
74.81	320.7406
74.81	320.7406
74.81	320.7406
74.81	320.7406
74.81	320.7406
74.97	320.8442
75.28	321.0464
75.70	321.3188
77.11	322.2293
77.11	322.2293

77.11	322.2293
77.11	322.2293
77.11	322.2293
77.11	322.2293
77.11	322.2293
78.38	323.0431
79.62	323.8300
79.80	323.9436
79.80	323.9436
80.11	324.1408
80.18	324.1842
80.30	290.2048
80.30	290.2048
80.57	290.3573
81.00	290.5995
81.07	290.6384
81.07	290.6384
81.07	290.6384
81.07	290.6384
82.60	291.4923
83.37	414.0476
83.78	414.3721
83.78	414.3721
83.78	414.3721
83.78	414.3721
84.21	414.7072
84.90	415.2460
85.43	415.6574
86.29	416.3213
86.50	416.4846
86.54	416.5143
86.59	416.5525
86.72	416.6543
86.79	416.7052
86.94	416.8218
87.30	468.1119
87.30	468.1119
87.30	468.1119
87.30	468.1119
87.30	468.1119
87.30	468.1119
87.30	468.1119
87.57	468.3428
87.88	420.5469
88.03	420.6622
88.36	393.8575
88.47	393.9355
89.95	422.1320
91.11	423.0121
92.29	361.3250
92.38	361.3832
92.38	361.3832
93.35	248.7502
94.00	238.4047
94.67	231.0801
94.67	231.0824
94.90	222.0498
94.90	222.0498
94.90	222.0498
94.90	222.0498
95.87	269.6498
95.87	269.6498
96.73	294.4622
97.43	257.8478
98.44	243.8065
98.44	243.8065
98.88	245.0098
99.55	236.0886
99.55	236.0886
99.86	218.8284
100.00	218.8807
100.10	218.9188
103.18	249.8584
103.76	262.4474
105.00	250.6036
105.31	248.6673
108.00	278.7621
109.28	283.4836

111.00	272.7981
111.00	272.7981
111.76	279.3780
112.95	274.6726
115.19	286.1010
116.30	249.8426
117.00	270.0743
117.00	270.0743
117.66	281.9147
121.11	234.7312
121.62	245.4899
121.78	251.8981
122.06	254.1187
122.32	262.6889
122.32	262.6889
122.32	262.6889
122.32	262.6889
123.07	281.0058
127.23	252.8293
129.76	267.6570
131.20	271.9534
133.02	266.1889
133.54	256.6937
135.34	243.8425
136.00	258.1022
136.25	257.1094
136.48	266.9175
140.51	265.1102
140.51	0.0000
142.18	254.8116
142.65	261.5063
143.76	257.5248
144.24	262.0532
144.24	262.0532
144.24	262.0532
144.24	262.0532
145.22	250.3639
145.44	261.3722
147.16	302.5095
152.43	305.6569
152.70	295.8267
153.22	267.3019
154.21	243.3016
154.21	243.3016
154.21	243.3016
154.21	243.3016
155.03	253.5158
156.02	274.8878
158.56	264.6317
159.00	0.0000
159.00	243.6371
160.31	258.5125
161.27	266.6237
162.32	250.2090
162.64	265.9487
163.35	251.6373
163.89	249.5616
165.85	271.4598
167.43	243.8734
171.28	257.3953
171.86	239.4942
172.10	221.4810
176.55	237.3807
176.60	247.6162
181.06	196.9245
184.41	245.7856
185.71	212.2859
186.00	212.3537
190.27	188.5496
192.34	223.2971
193.63	225.6889
197.04	232.3140
198.01	220.9225
198.60	233.8580
200.40	257.6107
201.83	271.4203
202.84	248.9160
205.31	239.0044

208.36	277.8248
208.81	273.7195
209.75	220.3138
209.75	220.3138
210.97	231.8962
215.65	231.7363
216.55	230.1660
218.09	218.0536
222.10	203.7183
223.80	198.6825
226.40	242.2444
227.00	237.8939
227.08	222.6498
227.20	206.5143
228.16	202.2085
228.18	202.2120
228.18	202.2120
231.56	0.0000
235.69	230.2511
236.00	230.3190
236.00	230.3190
238.63	175.1551
238.63	175.1551
238.63	175.1551
238.63	175.1551
239.00	175.2140
240.98	175.5321
241.98	175.6926
241.98	175.6926
241.98	175.6926
244.69	173.7528
245.39	179.7058
247.94	149.3655
248.90	171.4781
249.79	167.6339
252.40	178.2606
252.85	169.1393
252.85	169.1393
254.15	0.0000
256.20	177.0117
256.20	177.0117
260.50	167.4946
260.90	166.6269
262.80	162.2627
264.65	150.0772
268.24	157.9855
268.79	150.6049
269.46	153.8592
269.46	153.8592
269.46	153.8592
269.46	153.8592
271.23	158.3841
273.65	242.5491
276.40	160.7823
277.35	155.8124
277.60	150.2124
277.60	150.2124
278.00	162.4700
278.60	167.2498
279.20	161.6909
279.53	185.2436
280.46	194.7953
281.68	190.2781
283.67	159.4509
284.30	170.8613
285.00	185.1257
285.90	184.3151
286.10	182.4541
286.10	182.4541
287.40	150.4672
288.45	0.0000
290.67	165.4745
290.80	183.7097
291.72	189.9231
293.26	0.0000
293.70	156.7431
295.21	138.6461
295.21	138.6461

295.21	138.6461
295.96	118.1478
296.50	118.1970
297.23	118.2651
298.57	118.3900
299.80	134.5588
299.80	134.5588
300.09	134.5889
300.09	134.5889
300.09	134.5889
300.09	134.5889
300.12	134.5910
301.29	143.8985
302.84	139.4748
303.76	142.6401
303.91	142.6583
304.40	147.3141
304.40	147.3141
304.84	150.4357
306.84	151.8185
308.46	130.8411
311.98	166.8837
316.51	136.4797
318.01	150.1988
319.02	144.4938
319.41	139.6846
320.08	128.1086
323.87	113.6740
323.87	113.6740
323.87	113.6740
323.87	113.6740
325.23	121.5817
328.77	130.8839
333.44	101.9243
334.20	125.5156
334.20	125.5156
334.30	125.5234
338.28	140.6325
338.28	140.6325
338.28	140.6325
338.28	140.6325
338.32	140.6369
338.32	140.6369
338.32	140.6369
340.50	129.2321
340.57	129.2381
344.27	109.0338
345.85	112.7145
350.59	0.0000
351.07	111.1404
351.92	111.2070
351.92	111.2070
351.92	111.2070
355.39	0.0000
356.01	100.3678
364.48	124.1816
366.43	119.3323
367.43	109.3775
367.94	0.0000
369.80	116.5859
374.96	92.7819
383.85	115.6386
387.95	117.9807
388.63	117.0145
391.69	108.0687
391.69	108.0687
392.90	107.1309
398.62	113.6642
400.65	99.4555
401.10	96.4068
401.81	101.5801
402.60	106.7628
404.84	139.8080
410.95	117.6373
411.60	143.4922
413.65	131.2691
414.70	118.9429
415.30	112.7788

415.76	125.2299
417.63	0.0000
418.52	102.6330
423.70	110.2344
427.08	89.6166
427.89	87.5760
432.53	96.1819
433.93	95.2142
439.47	78.7296
439.56	83.9832
439.89	83.9990
443.98	107.3556
444.90	110.5708
445.03	110.5804
445.03	110.5804
445.03	110.5804
445.03	110.5804
453.90	87.8582
463.38	95.3559
468.07	71.7056
473.00	87.7381
475.06	74.9838
475.35	85.7092
476.78	91.1374
477.59	79.3781
477.96	82.6138
482.03	78.4971
484.57	100.1407
487.03	91.6497
490.36	0.0000
492.35	82.1810
497.08	82.3886
507.63	0.0000
510.53	0.0000
510.84	88.4498
511.00	88.4572
511.85	88.4955
511.85	88.4955
513.99	66.5005
513.99	66.5005
520.41	65.8447
520.65	65.8521
527.90	79.3169
528.96	0.0000
529.64	84.9002
529.87	0.0000
531.02	83.8556
537.32	66.4124
543.00	87.6913
546.56	0.0000
549.76	81.3041
552.65	65.8042
555.20	91.5718
563.23	81.8421
563.90	61.6820
568.70	87.6786
569.32	74.2117
569.50	74.2178
569.67	74.2238
573.80	83.8362
574.00	83.8430
574.64	82.9685
578.91	85.8479
579.30	0.0000
583.14	82.3977
585.48	54.3882
591.81	65.4592
592.07	65.4680
593.00	65.4961
595.88	73.7820
600.56	90.3713
602.52	0.0000
602.71	81.2218
602.71	81.2218
603.60	75.7427
604.41	64.0134
604.70	64.0220
609.31	97.1520

609.31	97.1520
609.31	97.1520
609.31	97.1520
610.33	84.0531
612.46	85.6634
614.37	81.1455
618.01	80.9725
621.84	72.8166
621.84	72.8166
631.29	48.1317
633.02	57.4317
633.10	57.4348
634.78	69.5288
635.90	69.5636
636.97	66.8127
645.85	73.5938
646.12	71.7382
656.30	63.6338
657.75	61.8009
657.90	0.0000
661.65	100.3595
661.65	100.3595
664.57	0.0000
666.33	60.1469
666.33	60.1469
675.00	65.0851
677.61	63.2672
685.20	56.8374
692.80	65.5685
695.00	72.2872
696.49	63.7645
696.49	63.7645
697.00	61.8754
697.49	65.6949
698.33	74.2904
698.50	78.1062
699.00	82.8858
702.63	78.2383
706.10	79.3039
706.58	0.0000
706.67	92.7018
709.31	75.5804
711.68	69.9061
713.82	76.6758
717.42	65.2690
720.50	69.4072
721.93	0.0000
722.20	70.5225
722.78	59.3165
722.78	59.3165
722.89	59.3195
722.95	59.3210
723.30	67.3477
724.18	72.1820
727.18	62.6323
733.00	61.1671
735.90	70.9074
739.58	46.4789
742.81	59.1414
744.21	61.1143
747.13	55.3565
751.79	63.2401
752.31	64.2259
753.82	67.1840
755.35	65.2743
756.15	63.3464
756.87	65.3135
763.93	70.0517
765.79	63.5797
766.42	60.3343
766.84	65.2360
776.49	62.8563
778.00	73.7018
778.57	67.8208
778.89	67.8275
783.80	52.1965
785.46	67.0106
792.07	60.9184



795.84	51.1117
796.30	46.1722
798.80	62.7210
801.93	50.6756
805.60	52.6183
810.29	63.6484
810.76	65.6487
815.85	45.8394
817.79	63.8219
818.51	66.8315
819.60	73.8428
826.30	76.0204
828.27	0.0000
831.60	65.1412
831.96	63.1446
834.83	70.2324
836.80	0.0000
846.75	53.4011
848.13	55.4431
856.28	0.0000
856.80	85.9442
860.37	39.4827
867.32	48.7113
867.82	44.6596
871.10	51.8230
873.19	56.9447
874.81	48.8367
875.33	0.0000
876.40	48.8637
879.36	57.0650
880.27	59.1215
880.51	59.1257
881.50	47.9283
883.24	54.0792
884.67	53.0842
889.25	43.9648
896.60	38.9491
898.02	41.0186
899.00	46.1613
903.28	53.0756
911.07	57.6762
911.07	57.6762
911.07	57.6762
919.63	50.1675
920.93	54.7649
925.00	49.6652
925.24	48.6340
926.50	54.8646
935.52	41.5293
937.48	39.8242
944.10	43.7278
946.00	40.6291
949.00	50.0531
962.29	40.1424
964.01	42.9589
966.15	42.9879
968.20	43.0160
969.11	43.0280
969.11	43.0280
969.11	43.0280
977.42	36.8278
980.50	36.2777
983.50	33.7352
989.30	45.4135
996.32	39.1616
1001.03	33.9188
1001.68	33.9250
1004.76	33.9570
1021.30	0.0000
1024.50	0.0000
1034.80	51.4008
1036.00	47.1346
1037.82	49.3040
1038.57	49.3152
1038.76	0.0000
1045.16	47.2635
1046.59	64.4795
1048.07	64.5059

1050.47	45.1869
1050.47	45.1869
1062.04	47.4998
1063.62	42.1211
1076.63	50.9541
1077.35	45.5437
1078.86	36.8854
1085.78	36.9584
1099.22	57.8342
1112.02	38.3308
1112.84	31.6452
1115.52	63.9473
1120.29	40.2492
1120.29	40.2492
1120.29	40.2492
1120.29	40.2492
1120.51	47.2055
1121.28	47.2160
1124.00	0.0000
1129.67	40.7226
1131.51	0.0000
1147.95	0.0000
1167.94	58.3934
1173.22	54.7651
1175.09	45.5048
1177.93	48.3289
1189.05	47.5406
1204.90	57.1031
1205.75	0.0000
1213.00	72.2345
1221.42	67.6934
1230.97	50.8953
1235.34	66.0522
1236.41	0.0000
1238.25	63.2678
1246.25	46.3662
1260.41	0.0000
1271.85	38.0973
1274.45	49.5604
1274.54	49.5604
1291.56	29.6730
1298.22	0.0000
1312.09	27.9002
1325.50	27.9923
1325.50	27.9923
1332.49	31.9070
1333.61	32.8835
1360.21	24.3347
1362.66	0.0000
1365.15	24.3632
1368.21	22.2359
1368.53	0.0000
1376.25	23.4502
1384.27	23.4951
1394.10	23.5498
1395.20	25.5186
1407.95	31.5013
1434.06	27.7300
1436.60	25.7641
1457.56	0.0000
1460.81	20.9248
1489.15	23.0627
1509.49	22.1593
1596.49	22.5774
1620.62	20.6283
1678.03	0.0000
1691.02	10.4626
1691.02	10.4626
1706.46	0.0000
1750.46	0.0000
1764.49	9.0981
1764.49	9.0981
1764.49	9.0981
1764.49	9.0981
1770.23	7.2866
1771.40	3.6441
1791.20	0.0000
1808.65	6.4226

1836.01

12.9111

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148004

Total Uranium Activity	7.0658E+00	ug/g
Total Uranium Counting Unc.	6.7938E+00	ug/g
Total Uranium Tpu	3.4662E-06	ug/g
Total Uranium Mda	4.7162E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940268          SAMPLE ID   : G244148004
*  ANALYST       : MXR1            DETECTOR    : GAM10
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 15:50:06.82  SAMPLE ALQT: 127.570 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.877E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.375E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.295E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.593E+00

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## VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:53:43.45

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148005.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:50:34
Sample ID        : G244148005      Sample quantity   : 1.34620E+02 GRAM
Detector name    : GAM12           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:01.47  0.0%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000        Sensitivity    : 5.00000
Batch ID        : 940268           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	63.10*	94	407	0.66	125.68	122	8	1.30E-02	40.0	
2	4	74.67	436	435	1.15	148.83	142	15	6.05E-02	9.3	2.86E+00
3	4	77.00*	611	345	0.96	153.49	142	15	8.48E-02	6.4	
4	0	86.96	156	452	1.04	173.43	171	7	2.17E-02	23.9	
5	0	92.68*	262	369	1.45	184.87	182	7	3.63E-02	14.5	
6	0	128.66	97	385	1.19	256.86	253	10	1.35E-02	39.2	
7	0	185.59*	196	435	1.34	370.78	366	13	2.72E-02	23.6	
8	0	209.08	121	230	1.06	417.78	414	8	1.68E-02	23.6	
9	5	238.43*	1146	176	1.09	476.52	470	19	1.59E-01	3.6	5.88E-01
10	5	241.52	337	201	1.81	482.69	470	19	4.68E-02	12.7	
11	0	277.25*	64	202	1.56	554.19	550	10	8.83E-03	44.7	
12	0	294.96*	437	174	1.26	589.62	584	12	6.07E-02	7.8	
13	0	299.69	85	122	0.70	599.09	595	8	1.17E-02	25.1	
14	0	327.99	50	156	0.94	655.70	652	9	6.88E-03	48.0	
15	0	338.15*	227	183	1.39	676.05	671	11	3.15E-02	13.5	
16	0	351.63*	612	174	1.17	703.01	698	11	8.50E-02	5.9	
17	0	462.87	83	93	1.07	925.56	920	10	1.16E-02	24.2	
18	0	510.65*	110	151	1.80	1021.16	1012	19	1.53E-02	31.7	
19	0	582.85*	395	88	1.31	1165.61	1158	14	5.48E-02	7.2	
20	0	608.94*	540	57	1.37	1217.81	1212	11	7.51E-02	5.2	
21	0	660.76*	81	104	1.11	1321.47	1318	11	1.12E-02	27.3	
22	0	727.05	85	82	1.16	1454.07	1450	12	1.17E-02	24.2	
23	0	767.50	83	44	1.62	1534.99	1529	11	1.15E-02	19.0	
24	0	796.67	118	67	6.59	1593.34	1585	23	1.64E-02	19.9	
25	0	860.49	54	59	1.51	1721.01	1716	13	7.44E-03	32.5	
26	0	910.68*	237	58	1.21	1821.40	1815	13	3.29E-02	9.4	
27	0	933.86	17	35	1.33	1867.75	1864	8	2.35E-03	64.8	
28	0	964.55	49	35	1.70	1929.14	1925	9	6.77E-03	26.3	
29	0	968.64*	164	41	1.62	1937.33	1933	13	2.28E-02	11.2	
30	0	1119.81*	134	47	1.96	2239.69	2232	16	1.87E-02	14.6	
31	0	1377.73*	20	25	0.98	2755.51	2751	11	2.83E-03	54.9	
32	0	1460.07*	912	10	2.05	2920.17	2910	18	1.27E-01	3.4	
33	0	1537.91	30	9	1.58	3075.80	3067	18	4.17E-03	29.7	
34	0	1729.10*	16	10	1.15	3458.11	3453	11	2.29E-03	49.3	
35	0	1763.77*	66	12	1.71	3527.41	3519	14	9.22E-03	17.0	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:50:34
Sample ID         : G244148005           Sample quantity  : 134.62 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA12              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:01.47   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	*	2.095E+01	2.074E+00	3.795E-01	2.706E-02	55.200
CD-109	+	88.03	*	2.131E+00	1.030E+00	1.351E+00	1.034E-01	1.578
SN-126	+	64.28		8.546E-01	6.933E-01	7.201E-01	1.011E-01	1.187
	+	86.94		8.696E-01	5.479E-01	5.656E-01	2.327E-01	1.538
	+	87.57	*	2.092E-01	1.011E-01	1.351E-01	1.030E-02	1.548
BA-137M	+	661.65	*	1.109E-01	6.089E-02	5.958E-02	3.863E-03	1.861
CS-137	+	661.65	*	1.172E-01	6.436E-02	6.298E-02	4.097E-03	1.861
TL-208	+	277.35		5.785E-01	5.202E-01	5.275E-01	5.524E-02	1.097
	+	510.84		5.096E-01	3.278E-01	1.879E-01	1.940E-02	2.712
	+	583.14	*	5.219E-01	8.375E-02	5.318E-02	3.804E-03	9.813
	+	860.37		6.684E-01	4.382E-01	4.069E-01	3.556E-02	1.642
BI-211		72.87		6.996E+00	2.847E+00	5.086E+00	3.412E-01	1.375
	+	351.07	*	3.502E+00	4.680E-01	3.179E-01	1.998E-02	11.018
PB-212	+	74.81		2.478E+00	5.405E-01	4.859E-01	5.616E-02	5.100
	+	77.11		1.964E+00	2.865E-01	2.757E-01	1.909E-02	7.123
	+	87.30		9.674E-01	4.773E-01	6.268E-01	7.872E-02	1.544
	+	238.63	*	1.428E+00	1.441E-01	7.848E-02	5.573E-03	18.193
	+	300.09		1.626E+00	8.274E-01	1.017E+00	8.305E-02	1.598
PO-212	+	74.81		2.478E+00	5.405E-01	4.859E-01	5.616E-02	5.100
	+	77.11		1.964E+00	2.865E-01	2.757E-01	1.909E-02	7.123
	+	87.30		9.674E-01	4.773E-01	6.268E-01	7.872E-02	1.544
	+	115.19		1.541E+00	3.145E+00	5.276E+00	3.347E-01	0.292
	+	238.63	*	1.428E+00	1.441E-01	7.848E-02	5.573E-03	18.193
	+	300.09		1.626E+00	8.274E-01	1.017E+00	8.305E-02	1.598
BI-214	+	609.31	*	1.348E+00	1.783E-01	1.113E-01	9.165E-03	12.105
	+	1120.29		1.743E+00	5.315E-01	4.377E-01	3.976E-02	3.981
	+	1764.49		1.183E+00	4.080E-01	2.851E-01	1.689E-02	4.148
PB-214	+	74.81		4.270E+00	8.990E-01	8.372E-01	8.419E-02	5.100
	+	77.11		3.367E+00	5.542E-01	4.727E-01	4.866E-02	7.123
	+	87.30		1.657E+00	8.108E-01	1.074E+00	1.162E-01	1.543
	+	241.98		2.523E+00	6.729E-01	4.727E-01	3.720E-02	5.338
	+	295.21		1.474E+00	2.618E-01	1.832E-01	1.547E-02	8.044
	+	351.92	*	1.218E+00	1.748E-01	1.108E-01	9.053E-03	10.994
PO-214	+	74.81		4.270E+00	8.990E-01	8.372E-01	8.419E-02	5.100

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		3.367E+00	5.542E-01	4.727E-01	4.866E-02	7.123
	+	87.30		1.657E+00	8.108E-01	1.074E+00	1.162E-01	1.543
	+	241.98		2.523E+00	6.729E-01	4.727E-01	3.720E-02	5.338
	+	295.21		1.474E+00	2.618E-01	1.832E-01	1.547E-02	8.044
	+	351.92	*	1.218E+00	1.748E-01	1.108E-01	9.053E-03	10.994
PO-216	+	74.81		2.478E+00	5.405E-01	4.859E-01	5.616E-02	5.100
	+	77.11		1.964E+00	2.865E-01	2.757E-01	1.909E-02	7.123
	+	87.30		9.674E-01	4.773E-01	6.268E-01	7.872E-02	1.544
	+	238.63	*	1.428E+00	1.441E-01	7.848E-02	5.573E-03	18.193
	+	300.09		1.626E+00	8.274E-01	1.017E+00	8.305E-02	1.598
PO-218	+	74.81		4.270E+00	8.990E-01	8.372E-01	8.419E-02	5.100
	+	77.11		3.367E+00	5.542E-01	4.727E-01	4.866E-02	7.123
	+	87.30		1.657E+00	8.108E-01	1.074E+00	1.162E-01	1.543
	+	241.98		2.523E+00	6.729E-01	4.727E-01	3.720E-02	5.338
	+	295.21		1.474E+00	2.618E-01	1.832E-01	1.547E-02	8.044
	+	351.92	*	1.218E+00	1.748E-01	1.108E-01	9.053E-03	10.994
RA-224	+	240.98	*	4.784E+00	1.247E+00	8.933E-01	4.928E-02	5.356
RA-226	+	609.31	*	1.348E+00	1.783E-01	1.113E-01	9.165E-03	12.105
	+	1120.29		1.743E+00	5.315E-01	4.377E-01	3.976E-02	3.981
	+	1764.49		1.183E+00	4.080E-01	2.851E-01	1.689E-02	4.148
AC-228	+	338.32		1.432E+00	7.006E-01	3.289E-01	1.340E-01	4.354
	+	911.07	*	1.395E+00	3.038E-01	2.165E-01	2.377E-02	6.443
	+	969.11		1.707E+00	5.491E-01	3.323E-01	7.662E-02	5.136
RA-228	+	338.32		1.432E+00	7.006E-01	3.289E-01	1.340E-01	4.354
	+	911.07	*	1.395E+00	3.038E-01	2.165E-01	2.377E-02	6.443
	+	969.11		1.707E+00	5.491E-01	3.323E-01	7.662E-02	5.136
TH-228	+	74.81		2.518E+00	4.971E-01	4.938E-01	3.404E-02	5.100
	+	77.11		1.996E+00	2.912E-01	2.802E-01	1.940E-02	7.123
	+	87.30		9.831E-01	4.750E-01	6.369E-01	4.841E-02	1.544
	+	238.63	*	1.451E+00	1.464E-01	7.976E-02	5.663E-03	18.193
	+	300.09		1.652E+00	1.279E+00	1.034E+00	6.092E-01	1.598
TH-230	+	609.31	*	1.348E+00	1.783E-01	1.113E-01	9.164E-03	12.106
	+	1120.29		1.743E+00	5.315E-01	4.377E-01	3.975E-02	3.982
	+	1764.49		1.183E+00	4.080E-01	2.851E-01	1.689E-02	4.148
TH-232	+	338.32		1.432E+00	3.962E-01	3.289E-01	1.863E-02	4.354
	+	911.07	*	1.395E+00	3.038E-01	2.165E-01	2.377E-02	6.443
	+	969.11		1.707E+00	5.491E-01	3.323E-01	7.662E-02	5.136
TH-234	+	63.29	*	2.159E+00	1.764E+00	1.873E+00	3.188E-01	1.153
	+	92.38		2.259E+00	7.632E-01	8.723E-01	1.525E-01	2.589
U-234	+	609.31	*	1.348E+00	1.783E-01	1.113E-01	9.164E-03	12.106
	+	1120.29		1.743E+00	5.315E-01	4.377E-01	3.975E-02	3.982
	+	1764.49		1.183E+00	4.080E-01	2.851E-01	1.689E-02	4.148
NP-237	+	86.50	*	6.142E-01	3.227E-01	3.920E-01	8.611E-02	1.567
	+	95.87		-2.068E-01	9.215E-01	1.350E+00	3.258E-01	-0.153
U-238	+	63.29	*	2.159E+00	1.764E+00	1.873E+00	3.188E-01	1.153
	+	92.38		2.259E+00	6.735E-01	8.723E-01	6.350E-02	2.589
AM-243	+	74.67	*	4.017E-01	7.917E-02	7.901E-02	5.368E-03	5.085
	+	86.72		2.303E+01	1.113E+01	1.466E+01	1.108E+00	1.571
	+	117.66		-1.878E+00	3.356E+00	5.361E+00	3.377E-01	-0.350



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		142.18		-2.343E-01	1.577E+01	2.559E+01	1.449E+00	-0.009
ANH-511	+	511.00	*	1.101E-01	7.021E-02	4.060E-02	2.474E-03	2.711

## ---- 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	*	2.161E-03	3.124E-01	5.032E-01	3.463E-02	0.004
NA-22		1274.54	*	2.683E-02	4.170E-02	7.303E-02	4.703E-03	0.367
NA-24		1368.53	*	-1.232E+00	4.170E-02	Half-Life too short		
AL-26		1129.67		5.291E-01	1.628E+00	2.785E+00	1.697E-01	0.190
		1808.65	*	-4.696E-03	2.796E-02	4.403E-02	2.526E-03	-0.107
TI-44		67.85		1.250E-02	4.287E-02	6.984E-02	4.546E-03	0.179
	+	78.38	*	3.625E-01	5.288E-02	6.783E-02	4.745E-03	5.343
SC-46		889.25	*	-3.319E-03	3.903E-02	6.270E-02	5.197E-03	-0.053
	+	1120.51		3.009E-01	8.958E-02	1.327E-01	8.245E-03	2.268
V-48		944.10		-6.113E-01	9.120E-01	1.361E+00	1.093E-01	-0.449
		983.50	*	1.010E-02	6.794E-02	1.109E-01	8.545E-03	0.091
		1312.09		-4.591E-02	8.201E-02	1.254E-01	8.512E-03	-0.366
CR-51		320.08	*	2.924E-02	3.413E-01	5.687E-01	3.615E-02	0.051
MN-52		744.21		5.907E-02	2.495E-01	4.190E-01	2.993E-02	0.141
		848.13		-1.378E+00	6.976E+00	1.111E+01	8.853E-01	-0.124
		935.52		3.082E-01	3.388E-01	5.265E-01	4.263E-02	0.585
		1246.25		-2.200E+00	7.188E+00	1.145E+01	7.055E-01	-0.192
		1333.61		-5.345E+00	5.281E+00	7.408E+00	5.174E-01	-0.721
		1434.06	*	9.919E-02	2.445E-01	4.215E-01	2.896E-02	0.235
MN-54		834.83	*	-4.294E-02	3.723E-02	5.391E-02	4.238E-03	-0.796
CO-56		846.75	*	-2.476E-02	3.558E-02	5.345E-02	4.252E-03	-0.463
		977.42		-5.277E-01	2.957E+00	4.361E+00	3.383E-01	-0.121
		1037.82		1.061E-01	2.967E-01	5.128E-01	3.961E-02	0.207
		1175.09		1.013E+00	2.238E+00	3.852E+00	2.124E-01	0.263
		1238.25		1.578E-01	8.689E-02	1.627E-01	1.047E-02	0.970
		1360.21		-2.864E-01	8.362E-01	1.293E+00	9.001E-02	-0.221
		1771.40		-2.981E-01	2.499E-01	3.230E-01	1.905E-02	-0.923
CO-57		122.06	*	4.262E-03	2.212E-02	3.654E-02	2.285E-03	0.117
		136.48		-1.234E-01	1.854E-01	2.918E-01	1.963E-02	-0.423
CO-58		810.76	*	1.255E-02	3.602E-02	6.080E-02	4.678E-03	0.206
FE-59		142.65		-9.175E-01	2.570E+00	4.081E+00	2.306E-01	-0.225
		192.34		1.096E-02	9.399E-01	1.425E+00	1.647E-01	0.008
		1099.22	*	-9.126E-02	8.863E-02	1.321E-01	9.753E-03	-0.691
		1291.56		-2.851E-02	1.168E-01	1.863E-01	1.501E-02	-0.153
CO-60		1173.22		4.512E-03	4.257E-02	7.119E-02	3.913E-03	0.063
		1332.49	*	6.267E-03	3.426E-02	5.746E-02	4.014E-03	0.109
ZN-65		1115.52	*	4.671E-02	9.743E-02	1.477E-01	9.288E-03	0.316
GE-68		1077.35	*	5.309E-01	1.145E+00	1.994E+00	1.344E-01	0.266
AS-73		53.44	*	-6.291E-02	7.438E-01	1.262E+00	8.145E-02	-0.050
AS-74		595.88	*	-2.185E-02	8.775E-02	1.440E-01	9.169E-03	-0.152
		634.78		2.083E-01	3.504E-01	6.100E-01	3.931E-02	0.342
SE-75		66.05		-2.447E+00	4.766E+00	7.045E+00	6.150E-01	-0.347

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		96.73		-8.260E-01	7.749E-01	1.071E+00	1.356E-01	-0.772
		121.11		-7.590E-02	1.239E-01	1.969E-01	1.875E-02	-0.385
		136.00		-1.024E-02	3.451E-02	5.538E-02	3.270E-03	-0.185
		198.60		-1.424E+00	1.723E+00	2.566E+00	1.724E-01	-0.555
		264.65	*	-1.957E-02	3.892E-02	6.357E-02	3.604E-03	-0.308
		279.53		8.142E-02	1.073E-01	1.667E-01	1.022E-02	0.488
		303.91		-2.346E-01	1.946E+00	2.818E+00	2.668E-01	-0.083
		400.65		1.421E-01	2.332E-01	3.958E-01	3.537E-02	0.359
BR-77	+	87.88		6.233E+02	3.011E+02	4.205E+02	3.215E+01	1.482
		200.40		6.431E-01	2.066E+02	3.284E+02	1.742E+01	0.002
	+	239.00		3.108E+02	2.810E+01	4.695E+01	2.586E+00	6.620
		249.79		-3.314E+00	7.588E+01	1.275E+02	7.083E+00	-0.026
		281.68		8.431E+01	1.145E+02	1.781E+02	1.006E+01	0.473
		297.23		3.059E+02	8.087E+01	1.276E+02	7.243E+00	2.397
		303.76		-4.691E+01	2.237E+02	3.213E+02	1.825E+01	-0.146
		439.47		1.195E+02	1.652E+02	2.828E+02	1.629E+01	0.422
		484.57		2.021E+02	2.900E+02	4.916E+02	2.941E+01	0.411
		520.65	*	-2.274E+00	1.394E+01	2.198E+01	1.348E+00	-0.103
		574.64		-7.173E+01	2.841E+02	4.408E+02	2.782E+01	-0.163
		578.91		-2.259E+01	1.252E+02	1.794E+02	1.134E+01	-0.126
		585.48		8.457E+02	2.782E+02	4.975E+02	3.154E+01	1.700
		755.35		3.115E+02	2.178E+02	3.978E+02	2.877E+01	0.783
		817.79		-2.357E+02	1.754E+02	2.453E+02	1.895E+01	-0.961
SR-82		698.33		-1.997E+01	3.485E+01	5.499E+01	3.727E+00	-0.363
		776.49	*	-2.516E-01	3.285E-01	4.937E-01	3.653E-02	-0.510
		1395.20		-7.649E+00	1.135E+01	1.675E+01	1.160E+00	-0.457
RB-83		520.41	*	-1.427E-02	6.743E-02	1.059E-01	6.493E-03	-0.135
		529.64		-3.676E-03	9.578E-02	1.524E-01	9.396E-03	-0.024
		552.65		-6.385E-02	1.828E-01	2.995E-01	1.870E-02	-0.213
RB-84		881.50	*	-1.283E-02	6.891E-02	1.096E-01	9.016E-03	-0.117
KR-85		513.99	*	8.940E+00	7.503E+00	1.173E+01	7.165E-01	0.762
SR-85		513.99	*	4.634E-02	3.889E-02	6.082E-02	3.714E-03	0.762
RB-86		1076.63	*	4.767E-01	7.358E-01	1.304E+00	8.802E-02	0.366
Y-88		898.02		-2.554E-02	4.257E-02	6.473E-02	5.438E-03	-0.395
		1836.01	*	-4.802E-03	3.395E-02	5.459E-02	3.073E-03	-0.088
ZR-88		392.90	*	1.631E-02	2.953E-02	4.996E-02	2.740E-03	0.327
Y-91		1204.90	*	7.075E+00	1.780E+01	3.047E+01	1.762E+00	0.232
NB-94		702.63	*	-5.394E-03	3.424E-02	5.590E-02	3.807E-03	-0.097
		871.10		-1.451E-02	3.258E-02	5.038E-02	4.104E-03	-0.288
NB-95		765.79	*	8.018E-02	4.985E-02	8.194E-02	5.993E-03	0.979
NB-95M		235.69	*	1.516E-01	1.259E-01	2.003E-01	1.461E-02	0.757
ZR-95		724.18		1.395E-01	1.092E-01	1.759E-01	1.387E-02	0.793
		756.15	*	1.008E-01	6.881E-02	1.259E-01	1.040E-02	0.801
NB-97		657.90	*	1.361E-01	6.881E-02	Half-Life too short		
		1024.50		7.379E+00	6.881E-02	Half-Life too short		
ZR-97		254.15		3.038E+00	6.881E-02	Half-Life too short		
		355.39		5.195E+00	6.881E-02	Half-Life too short		
		507.63	*	7.248E+00	6.881E-02	Half-Life too short		
		602.52		1.265E+01	6.881E-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		-6.400E+00	6.881E-02	Half-Life	too short	
		1147.95		-8.911E+00	6.881E-02	Half-Life	too short	
		1362.66		8.101E+00	6.881E-02	Half-Life	too short	
		1750.46		8.770E+00	6.881E-02	Half-Life	too short	
MO-99		140.51		-1.468E+01	3.088E+01	4.865E+01	1.310E+01	-0.302
		181.06		1.905E+01	2.236E+01	3.328E+01	5.639E+00	0.572
		366.43		-2.411E+01	1.057E+02	1.710E+02	9.560E+00	-0.141
		739.58	*	-1.757E+00	1.375E+01	2.235E+01	3.213E+00	-0.079
		778.00		8.503E+00	3.481E+01	5.853E+01	4.339E+00	0.145
TC-99M		140.51	*	-2.931E+11	3.481E+01	Half-Life	too short	
RH-101	+	127.23		6.049E-02	4.754E-02	4.850E-02	2.943E-03	1.247
		198.01	*	-1.435E-02	3.126E-02	4.758E-02	2.517E-03	-0.302
		325.23		9.423E-02	2.318E-01	3.479E-01	1.976E-02	0.271
RH-102		418.52		-5.226E-02	2.700E-01	4.330E-01	2.443E-02	-0.121
		475.06	*	2.182E-02	2.688E-02	4.600E-02	2.732E-03	0.474
		631.29		-2.110E-02	5.273E-02	8.507E-02	5.477E-03	-0.248
		697.49		4.163E-02	7.230E-02	1.249E-01	8.453E-03	0.333
	+	766.84		3.470E-01	1.341E-01	2.164E-01	1.585E-02	1.603
		1046.59		-2.789E-02	1.106E-01	1.805E-01	1.279E-02	-0.155
		1112.84		9.987E-02	2.328E-01	3.535E-01	2.231E-02	0.283
RU-103		497.08	*	-1.016E-02	3.916E-02	6.145E-02	7.839E-03	-0.165
	+	610.33		1.482E+01	2.782E+00	3.063E+00	4.794E-01	4.839
RH-106	+	511.85		5.508E-01	3.514E-01	4.063E-01	2.477E-02	1.356
		621.84	*	-1.363E-01	3.212E-01	5.184E-01	6.250E-02	-0.263
		1050.47		1.616E+00	2.146E+00	3.833E+00	2.700E-01	0.422
RU-106	+	511.85		5.508E-01	3.514E-01	4.063E-01	2.477E-02	1.356
		621.84	*	-1.363E-01	3.209E-01	5.184E-01	3.329E-02	-0.263
		1050.47		1.616E+00	2.146E+00	3.833E+00	2.700E-01	0.422
AG-108M		433.93	*	1.775E-02	2.750E-02	4.688E-02	2.921E-03	0.379
		614.37		-1.227E-02	4.472E-02	6.311E-02	4.327E-03	-0.194
		722.95		9.292E-03	4.630E-02	6.766E-02	4.998E-03	0.137
AG-110M		657.75	*	1.550E-02	3.554E-02	5.391E-02	3.674E-03	0.288
		677.61		-5.165E-02	3.054E-01	4.992E-01	3.457E-02	-0.103
		706.67		6.955E-03	2.118E-01	3.507E-01	2.504E-02	0.020
		763.93		1.651E-01	1.597E-01	2.566E-01	1.947E-02	0.643
		884.67		-3.291E-02	4.766E-02	7.147E-02	6.105E-03	-0.460
		937.48		-6.341E-02	1.352E-01	1.754E-01	1.475E-02	-0.362
		1384.27		1.751E-01	1.711E-01	2.853E-01	2.064E-02	0.614
IN-111		171.28		4.900E-03	1.137E+00	1.827E+00	9.395E-02	0.003
		245.39	*	-9.927E-01	1.234E+00	1.721E+00	9.524E-02	-0.577
IN-113M		391.69	*	-1.809E-03	4.272E-02	6.962E-02	4.099E-03	-0.026
SN-113		391.69	*	-1.809E-03	4.272E-02	6.962E-02	4.099E-03	-0.026
IN-114M		190.27	*	-5.541E-02	1.896E-01	2.634E-01	1.382E-02	-0.210
CD-115		260.90		-4.595E+01	1.653E+02	2.739E+02	1.532E+01	-0.168
		492.35		9.069E+00	4.727E+01	7.708E+01	4.638E+00	0.118
		527.90	*	-1.447E+01	1.455E+01	2.117E+01	1.304E+00	-0.684
SN-117M		156.02		7.494E-01	2.165E+00	3.551E+00	1.896E-01	0.211
		158.56	*	-2.805E-02	5.245E-02	8.237E-02	4.351E-03	-0.341
SB-122		563.90	*	5.509E-01	2.384E+00	4.075E+00	2.559E-01	0.135

## ----- 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			-3.728E+01	5.552E+01	8.677E+01	5.841E+00	-0.430
	159.00	*		-7.652E+00	5.552E+01	Half-Life	too short	
	528.96			-6.218E+02	5.552E+01	Half-Life	too short	
TE-123M	159.00	*		-1.014E-02	2.606E-02	4.124E-02	2.209E-03	-0.246
I-124	602.71	*		7.657E-01	7.614E-01	1.228E+00	7.837E-02	0.623
	722.78			6.906E-01	5.716E+00	8.280E+00	5.773E-01	0.083
	1325.50			2.176E+01	3.691E+01	6.490E+01	4.489E+00	0.335
	1376.25		+	4.317E+01	4.747E+01	7.229E+01	5.021E+00	0.597
	1509.49			1.237E+01	1.703E+01	3.054E+01	2.055E+00	0.405
	1691.02			-2.887E+00	3.978E+00	6.188E+00	3.841E-01	-0.467
SB-124	602.71			3.789E-02	3.767E-02	6.077E-02	3.879E-03	0.623
	645.85			5.272E-01	4.934E-01	8.841E-01	6.310E-02	0.596
	709.31			-1.288E-01	2.632E+00	4.327E+00	2.970E-01	-0.030
	713.82			-1.328E-01	1.485E+00	2.431E+00	2.643E-01	-0.055
	722.78			4.953E-02	4.100E-01	5.939E-01	4.277E-02	0.083
	968.20		+	1.778E+01	4.226E+00	7.097E+00	5.561E-01	2.506
	1045.16			-9.493E-01	2.437E+00	3.925E+00	2.787E-01	-0.242
	1325.50			1.667E+00	2.827E+00	4.972E+00	3.439E-01	0.335
	1368.21			-8.094E-01	1.630E+00	2.463E+00	3.073E-01	-0.329
	1436.60			2.002E+00	3.401E+00	6.016E+00	4.130E-01	0.333
	1691.02	*		-4.884E-02	6.730E-02	1.047E-01	6.986E-03	-0.467
SB-125	427.89	*		-5.057E-02	8.588E-02	1.332E-01	7.919E-03	-0.380
	463.38		+	7.507E-01	3.668E-01	5.428E-01	3.709E-02	1.383
	600.56			-3.424E-03	1.611E-01	2.690E-01	1.940E-02	-0.013
	635.90			1.802E-01	2.558E-01	4.487E-01	3.299E-02	0.402
TE-125M	109.28	*		-2.063E+00	8.073E+00	1.314E+01	1.133E+00	-0.157
I-126	388.63			8.392E-02	2.034E-01	3.414E-01	1.876E-02	0.246
	666.33	*		-4.385E-02	2.170E-01	3.056E-01	1.992E-02	-0.143
	753.82			1.360E+00	1.476E+00	2.609E+00	1.883E-01	0.521
SB-126	223.80			1.848E+00	3.806E+00	6.588E+00	3.579E-01	0.280
	278.60		+	4.054E+00	3.629E+00	4.246E+00	2.396E-01	0.955
	296.50			1.329E+01	2.034E+00	3.486E+00	1.979E-01	3.811
	414.70			-3.320E-02	7.688E-02	1.214E-01	6.819E-03	-0.274
	415.30			-6.497E-01	6.405E+00	1.035E+01	5.819E-01	-0.063
	555.20			-6.000E-01	3.730E+00	6.197E+00	3.875E-01	-0.097
	573.80			5.999E-01	1.013E+00	1.772E+00	1.118E-01	0.339
	593.00			-7.565E-02	8.962E-01	1.491E+00	9.478E-02	-0.051
	596.30			1.490E+00	3.563E+00	5.398E+00	3.496E-01	0.276
	666.33			-1.837E-02	9.091E-02	1.280E-01	8.346E-03	-0.143
	675.00			9.235E-01	2.079E+00	3.499E+00	2.306E-01	0.264
	695.00			8.286E-03	7.837E-02	1.307E-01	8.821E-03	0.063
	697.00			2.744E-01	2.681E-01	4.773E-01	3.230E-02	0.575
	720.50	*		-5.078E-02	1.603E-01	2.416E-01	1.680E-02	-0.210
	856.80			-1.293E-01	5.281E-01	7.145E-01	5.740E-02	-0.181
	989.30			7.281E+00	1.197E+00	2.052E+00	1.570E-01	0.355
	1034.80			-1.358E+00	8.765E+00	1.445E+01	1.042E+00	-0.094
	1213.00			2.389E+00	4.806E+00	8.275E+00	4.845E-01	0.289
SB-127	61.10			3.237E+01	6.394E+01	9.979E+01	9.841E+00	0.324
	252.40			-1.823E+00	4.568E+00	7.426E+00	3.089E+00	-0.245

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	290.80			-2.139E+01	2.505E+01	3.410E+01	3.227E+00	-0.627
	411.60			-2.907E+00	1.457E+01	2.286E+01	3.325E+00	-0.127
	444.90			-4.089E-01	1.041E+01	1.680E+01	1.866E+00	-0.024
	473.00			-1.351E+00	1.930E+00	2.924E+00	3.378E-01	-0.462
	543.00			1.247E+01	1.709E+01	3.025E+01	4.044E+00	0.412
	603.60			6.391E+00	1.354E+01	2.070E+01	2.360E+00	0.309
	685.20	*		-1.136E+00	1.578E+00	2.447E+00	2.531E-01	-0.464
	698.50			-1.091E+01	1.822E+01	2.858E+01	4.325E+00	-0.382
	722.20			1.580E+01	3.891E+01	5.818E+01	5.988E+00	0.272
	783.80			7.047E+00	4.149E+00	7.621E+00	9.102E-01	0.925
XE-127	57.60			-5.506E+00	5.355E+00	8.694E+00	5.494E-01	-0.633
	145.22			-2.640E-02	6.619E-01	1.065E+00	5.953E-02	-0.025
	172.10			8.975E-03	1.087E-01	1.752E-01	9.021E-03	0.051
	202.84	*		3.283E-02	4.471E-02	7.357E-02	3.912E-03	0.446
	374.96			6.200E-03	1.884E-01	3.096E-01	1.720E-02	0.020
I-131	80.18			2.427E+00	4.854E+00	7.457E+00	5.354E-01	0.326
	284.30			-1.038E+00	1.460E+00	2.341E+00	1.482E-01	-0.443
	364.48	*		2.771E-02	1.210E-01	2.016E-01	1.271E-02	0.137
	636.97			-7.665E-01	1.614E+00	2.583E+00	1.831E-01	-0.297
	722.89			1.460E+00	8.513E+00	1.240E+01	8.743E-01	0.118
TE-132	49.72			7.718E+00	1.946E+01	3.375E+01	3.246E+00	0.229
	111.76			-2.047E+01	3.265E+01	5.212E+01	4.969E+00	-0.393
	116.30			-3.553E+01	3.089E+01	4.773E+01	4.521E+00	-0.744
	228.16	*		-2.086E-01	7.412E-01	1.238E+00	1.789E-01	-0.168
BA-133	53.15			1.263E+00	3.114E+00	5.384E+00	3.481E-01	0.235
	79.62			2.576E-02	1.234E+00	1.855E+00	2.672E-01	0.014
	81.00			-1.146E-02	9.163E-02	1.455E-01	2.202E-02	-0.079
	276.40	+		5.718E-01	5.160E-01	6.186E-01	7.976E-02	0.924
	302.84			-9.713E-03	1.317E-01	1.915E-01	2.221E-02	-0.051
	356.01	*		2.115E-02	4.414E-02	6.632E-02	7.609E-03	0.319
	383.85			-2.497E-01	2.671E-01	4.053E-01	4.346E-02	-0.616
I-133	510.53	+		2.579E+00	2.671E-01	Half-Life	too short	
	529.87	*		-2.486E-04	2.671E-01	Half-Life	too short	
	706.58			4.801E-03	2.671E-01	Half-Life	too short	
	856.28			-8.133E-01	2.671E-01	Half-Life	too short	
	875.33			1.302E-01	2.671E-01	Half-Life	too short	
	1236.41			1.138E+00	2.671E-01	Half-Life	too short	
	1298.22			-3.645E-01	2.671E-01	Half-Life	too short	
CS-134	475.35			9.002E-01	1.794E+00	3.001E+00	1.782E-01	0.300
	563.23			3.361E-02	3.185E-01	5.394E-01	3.447E-02	0.062
	569.32			-4.984E-02	1.756E-01	2.884E-01	1.862E-02	-0.173
	604.70			-7.897E-03	3.346E-02	4.735E-02	3.038E-03	-0.167
	795.84	+	*	2.259E-01	9.152E-02	9.079E-02	6.922E-03	2.488
	801.93			7.446E-02	4.556E-01	6.572E-01	5.031E-02	0.113
	1038.57			-1.270E+00	3.810E+00	6.176E+00	4.429E-01	-0.206
	1167.94			7.263E-01	2.226E+00	3.805E+00	2.120E-01	0.191
	1365.15			7.133E-01	1.011E+00	1.824E+00	1.356E-01	0.391
CS-135	268.24	*		2.831E-02	1.440E-01	2.437E-01	1.833E-02	0.116
I-135	288.45			1.644E+11	1.440E-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		1.895E+10	1.440E-01	Half-Life too short		
		546.56		-5.664E+09	1.440E-01	Half-Life too short		
		836.80		2.924E+10	1.440E-01	Half-Life too short		
		1038.76		-9.883E+10	1.440E-01	Half-Life too short		
		1124.00		-7.301E+11	1.440E-01	Half-Life too short		
		1131.51		5.395E+09	1.440E-01	Half-Life too short		
		1260.41	*	1.255E+10	1.440E-01	Half-Life too short		
		1457.56		9.863E+12	1.440E-01	Half-Life too short		
		1678.03		1.287E+11	1.440E-01	Half-Life too short		
		1706.46		2.958E+10	1.440E-01	Half-Life too short		
		1791.20		-1.869E+11	1.440E-01	Half-Life too short		
CS-136		66.91		2.838E-01	7.993E-01	1.231E+00	1.766E-01	0.231
	+	86.29		2.884E+00	1.420E+00	1.969E+00	2.390E-01	1.465
		153.22		1.220E-01	6.246E-01	1.019E+00	7.038E-02	0.120
		163.89		1.002E-01	1.055E+00	1.689E+00	1.141E-01	0.059
		176.55		-1.160E-01	3.503E-01	5.516E-01	3.291E-02	-0.210
		273.65		-8.208E-01	5.249E-01	6.879E-01	4.451E-02	-1.193
		340.57		1.874E-01	1.365E-01	2.180E-01	1.316E-02	0.860
		818.51		-2.092E-02	7.389E-02	1.171E-01	9.069E-03	-0.179
		1048.07	*	3.786E-02	1.076E-01	1.857E-01	1.395E-02	0.204
		1235.34		6.909E-01	6.169E-01	1.100E+00	1.115E-01	0.628
CE-139		165.85	*	-9.287E-03	2.652E-02	4.190E-02	2.147E-03	-0.222
BA-140		162.64		3.232E-01	7.376E-01	1.200E+00	7.189E-02	0.269
		304.84		1.618E-01	1.136E+00	1.842E+00	5.024E-01	0.088
		423.70		1.942E+00	1.980E+00	3.275E+00	1.040E+00	0.593
		537.32	*	1.538E-01	2.424E-01	4.193E-01	1.367E-01	0.367
LA-140	+	328.77		4.084E-01	3.928E-01	5.202E-01	3.323E-02	0.785
		432.53		4.813E-01	1.927E+00	3.187E+00	2.019E-01	0.151
		487.03		7.637E-03	1.395E-01	2.253E-01	1.518E-02	0.034
		751.79		-1.450E+00	1.612E+00	2.407E+00	1.994E-01	-0.602
		815.85		-2.631E-01	3.135E-01	4.653E-01	4.098E-02	-0.565
		867.82		1.506E-01	1.568E+00	2.228E+00	1.917E-01	0.068
		919.63		-6.948E-01	2.682E+00	4.206E+00	4.340E-01	-0.165
		925.24		-1.285E-01	1.087E+00	1.732E+00	1.514E-01	-0.074
		1596.49	*	-1.418E-01	8.192E-02	9.367E-02	6.100E-03	-1.514
CE-141		145.44	*	7.512E-03	5.813E-02	9.480E-02	5.519E-03	0.079
CE-143		57.37		-1.331E-03	5.813E-02	Half-Life too short		
		231.56		-1.617E-03	5.813E-02	Half-Life too short		
		293.26	*	1.445E-03	5.813E-02	Half-Life too short		
	+	350.59		4.698E-02	5.813E-02	Half-Life too short		
		490.36		4.139E-04	5.813E-02	Half-Life too short		
		664.57		3.090E-03	5.813E-02	Half-Life too short		
		721.93		8.837E-04	5.813E-02	Half-Life too short		
CE-144		80.11		1.029E+00	2.048E+00	3.147E+00	2.234E-01	0.327
		133.54	*	1.510E-01	2.023E-01	3.061E-01	4.357E-02	0.493
PM-144		476.78		1.726E-04	6.504E-02	1.047E-01	7.401E-03	0.002
		618.01		-1.298E-03	3.228E-02	5.371E-02	3.615E-03	-0.024
		696.49	*	3.395E-02	3.218E-02	5.747E-02	3.889E-03	0.591
		778.57		-7.203E-02	1.857E+00	3.030E+00	2.248E-01	-0.024

---- Non-Identified Nuclides ----

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PR-144	696.49	*		2.302E+00	2.182E+00	3.897E+00	2.635E-01	0.591
	1489.15			-4.045E+00	1.192E+01	1.827E+01	1.237E+00	-0.221
PM-146	453.90	*		5.858E-03	4.032E-02	6.589E-02	5.696E-03	0.089
	633.02			9.092E-01	1.383E+00	2.349E+00	8.675E-01	0.387
	735.90			-3.499E-02	1.336E-01	2.139E-01	6.026E-02	-0.164
	747.13			-1.432E-02	7.967E-02	1.287E-01	1.698E-02	-0.111
ND-147	91.11			1.698E-01	3.817E-01	5.030E-01	4.125E-02	0.338
	319.41			2.333E+00	3.114E+00	5.387E+00	3.064E-01	0.433
	439.89			3.414E+00	5.303E+00	9.028E+00	5.204E-01	0.378
	531.02	*		1.301E-01	5.422E-01	8.836E-01	1.209E-01	0.147
PM-149	285.90	*		-3.739E+01	1.114E+02	1.823E+02	2.575E+01	-0.205
EU-152	121.78			-5.288E-03	6.446E-02	1.052E-01	8.364E-03	-0.050
	244.69			-1.738E-01	2.984E-01	4.246E-01	2.349E-02	-0.409
	344.27	*		-9.214E-02	9.692E-02	1.368E-01	8.769E-03	-0.673
	443.98			-7.969E-01	8.402E-01	1.250E+00	7.229E-02	-0.637
	778.89			-2.319E-02	2.124E-01	3.439E-01	2.551E-02	-0.067
	867.32			1.132E-01	8.987E-01	1.264E+00	1.026E-01	0.090
+	964.01			5.831E-01	3.106E-01	5.449E-01	4.289E-02	1.070
	1085.78			2.375E-01	3.733E-01	6.590E-01	4.378E-02	0.360
	1112.02			-4.876E-02	3.458E-01	4.855E-01	3.069E-02	-0.100
	1407.95			2.265E-01	1.554E-01	3.036E-01	2.097E-02	0.746
GD-153	69.67			-3.835E-01	1.629E+00	2.436E+00	1.602E-01	-0.157
	83.37			5.314E+00	1.558E+01	2.349E+01	1.717E+00	0.226
	97.43	*		-5.713E-02	7.508E-02	1.142E-01	7.944E-03	-0.500
	103.18			-1.264E-01	9.427E-02	1.459E-01	9.748E-03	-0.867
EU-154	123.07			-9.834E-03	4.592E-02	7.441E-02	7.190E-03	-0.132
	247.94			1.593E-01	3.070E-01	5.152E-01	4.837E-02	0.309
	591.81			1.309E-01	5.781E-01	9.842E-01	9.954E-02	0.133
	723.30			1.143E-01	1.908E-01	2.908E-01	2.347E-02	0.393
	756.87			8.679E-01	7.451E-01	1.332E+00	1.469E-01	0.651
	873.19			8.942E-02	2.887E-01	4.825E-01	5.754E-02	0.185
	996.32			-1.873E-01	3.144E-01	4.923E-01	8.510E-02	-0.381
	1004.76			-1.957E-01	2.015E-01	3.045E-01	3.301E-02	-0.643
	1274.45	*		7.826E-02	1.169E-01	2.050E-01	1.997E-02	0.382
EU-155	48.70			9.960E-02	1.996E+00	3.417E+00	2.232E-01	0.029
	60.01			3.790E+00	4.548E+00	7.227E+00	4.541E-01	0.524
+	86.54			2.520E-01	1.218E-01	1.732E-01	1.323E-02	1.455
	105.31	*		1.145E-01	9.622E-02	1.663E-01	1.121E-02	0.689
TB-160	86.79			6.797E-01	3.284E-01	4.664E-01	3.526E-02	1.457
	197.04			-1.912E-01	5.406E-01	8.280E-01	4.375E-02	-0.231
	215.65			6.168E-01	6.650E-01	1.105E+00	5.955E-02	0.558
+	298.57			2.389E-01	1.208E-01	1.851E-01	1.051E-02	1.291
	879.36	*		3.879E-02	1.389E-01	2.314E-01	1.900E-02	0.168
	962.29			9.067E-01	6.074E-01	9.900E-01	7.807E-02	0.916
	966.15			1.595E+00	2.967E-01	5.501E-01	4.320E-02	2.899
	1177.93			2.192E-01	3.856E-01	6.344E-01	3.513E-02	0.346
	1271.85			-2.825E-01	7.012E-01	1.103E+00	7.062E-02	-0.256
HO-166M	80.57			5.123E-02	2.642E-01	4.002E-01	2.852E-02	0.128
+	184.41			1.292E-01	6.142E-02	6.215E-02	3.240E-03	2.079

---- 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		-2.752E-02	8.464E-02	1.215E-01	6.866E-03	-0.226
		410.95		8.975E-02	2.371E-01	3.954E-01	2.213E-02	0.227
		711.68	*	-4.836E-02	5.658E-02	8.619E-02	5.933E-03	-0.561
		752.31		-3.495E-02	2.517E-01	4.083E-01	2.943E-02	-0.086
		810.29		-1.096E-02	5.494E-02	8.796E-02	6.744E-03	-0.125
		51.35		-1.330E+01	2.598E+01	4.333E+01	2.824E+00	-0.307
		52.39		2.896E+00	1.352E+01	2.323E+01	1.507E+00	0.125
		59.40		2.393E+01	2.449E+01	3.921E+01	2.459E+00	0.610
		66.72	*	8.959E+00	2.732E+01	4.207E+01	2.722E+00	0.213
		88.36		4.961E-01	2.397E-01	3.276E-01	2.496E-02	1.514
LU-176	+	201.83		9.328E-03	2.699E-02	4.361E-02	2.316E-03	0.214
		306.84	*	-1.784E-03	2.101E-02	3.475E-02	1.975E-03	-0.051
		401.10		1.974E+00	6.166E+00	1.028E+01	5.690E-01	0.192
LU-177		112.95		-7.529E-02	1.645E+00	2.701E+00	1.725E-01	-0.028
	+	208.36	*	2.987E+00	1.420E+00	2.058E+00	1.101E-01	1.452
LU-177M		52.97		4.209E-01	1.408E+00	2.426E+00	1.570E-01	0.174
		54.07		1.059E-01	7.530E-01	1.288E+00	8.288E-02	0.082
		61.30		7.732E-01	1.376E+00	2.155E+00	1.361E-01	0.359
		121.62		-4.188E-02	3.313E-01	5.395E-01	3.368E-02	-0.078
		147.16		1.973E-01	5.811E-01	9.563E-01	5.299E-02	0.206
		171.86		2.118E-02	4.308E-01	6.932E-01	3.568E-02	0.031
		218.09		-1.046E+00	8.059E-01	1.177E+00	6.361E-02	-0.888
		268.79		9.927E-01	7.304E-01	1.299E+00	7.301E-02	0.764
		319.02		7.186E-02	2.287E-01	3.863E-01	2.196E-02	0.186
		367.43		-5.985E-01	8.611E-01	1.348E+00	7.532E-02	-0.444
HF-181		413.65	*	-8.494E-02	1.768E-01	2.718E-01	1.525E-02	-0.313
		56.28		-1.293E-01	8.497E-01	1.434E+00	9.124E-02	-0.090
		57.53		-4.390E-01	4.504E-01	7.331E-01	4.634E-02	-0.599
		65.20		-2.559E-01	9.336E-01	1.398E+00	8.984E-02	-0.183
		133.02		4.871E-02	6.481E-02	9.860E-02	5.815E-03	0.494
		136.25		-2.004E-01	4.098E-01	6.512E-01	3.784E-02	-0.308
		345.85		-1.295E-01	1.913E-01	2.763E-01	1.561E-02	-0.469
		482.03	*	-2.275E-02	4.177E-02	6.424E-02	3.835E-03	-0.354
		56.28		-5.016E-02	3.289E-01	5.553E-01	3.532E-02	-0.090
		57.53		-1.698E-01	1.745E-01	2.841E-01	1.796E-02	-0.598
W-181		65.20	*	-9.835E-02	3.588E-01	5.374E-01	3.453E-02	-0.183
		67.75		2.965E-02	1.030E-01	1.677E-01	1.091E-02	0.177
		100.10		1.583E-01	1.560E-01	2.686E-01	1.831E-02	0.589
TA-182		152.43		7.821E-02	3.020E-01	4.943E-01	2.679E-02	0.158
		222.10		4.191E-01	3.105E-01	5.556E-01	3.014E-02	0.754
		1001.68		1.784E+00	1.848E+00	3.362E+00	2.534E-01	0.531
	+	1121.28		8.291E-01	2.468E-01	3.582E-01	2.222E-02	2.315
		1189.05		8.881E-02	2.697E-01	4.606E-01	2.597E-02	0.193
		1221.42	*	6.413E-02	1.861E-01	3.164E-01	1.877E-02	0.203
		1230.97		7.310E-02	4.533E-01	7.580E-01	4.563E-02	0.096
		57.98		-1.546E-01	1.737E-01	2.838E-01	1.790E-02	-0.545
		59.32		5.015E-02	1.042E-01	1.628E-01	1.021E-02	0.308
		67.20		1.355E-01	1.932E-01	3.024E-01	1.962E-02	0.448
RE-183		162.32	*	3.678E-02	1.036E-01	1.681E-01	8.737E-03	0.219



## ---- 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		2.436E+00	1.158E+00	1.683E+00	9.004E-02	1.448
		291.72		-2.080E-01	9.009E-01	1.298E+00	7.358E-02	-0.160
		57.98		-5.661E-01	6.362E-01	1.039E+00	6.557E-02	-0.545
		59.32		1.835E-01	3.813E-01	5.958E-01	3.738E-02	0.308
		67.20		4.961E-01	7.074E-01	1.107E+00	7.184E-02	0.448
		161.27		2.168E-02	3.280E-01	5.302E-01	2.769E-02	0.041
		216.55		2.332E-01	2.338E-01	3.899E-01	2.103E-02	0.598
		252.85	*	8.334E-05	2.010E-01	3.383E-01	1.883E-02	0.000
		318.01		-6.075E-02	3.982E-01	6.543E-01	3.719E-02	-0.093
		792.07		8.104E-01	1.037E+00	1.645E+00	1.237E-01	0.493
OS-185		903.28		6.792E-01	9.736E-01	1.558E+00	1.297E-01	0.436
		920.93		-1.314E-01	4.067E-01	6.323E-01	5.187E-02	-0.208
		59.72		2.538E-01	2.716E-01	4.337E-01	2.722E-02	0.585
		61.14		7.831E-02	1.518E-01	2.372E-01	1.498E-02	0.330
		69.30		1.003E-01	2.859E-01	4.398E-01	2.886E-02	0.228
		592.07		1.695E-01	2.347E+00	3.952E+00	2.512E-01	0.043
		646.12	*	4.732E-02	4.149E-02	7.476E-02	4.831E-03	0.633
		717.42		2.311E-01	8.483E-01	1.431E+00	9.916E-02	0.161
		874.81		2.494E-01	5.616E-01	9.508E-01	7.773E-02	0.262
		880.27		3.805E-01	7.444E-01	1.268E+00	1.042E-01	0.300
RE-188		155.03	*	1.691E-01	1.558E-01	2.639E-01	1.415E-02	0.641
		477.96		4.951E-01	2.914E+00	4.754E+00	2.830E-01	0.104
		633.10		1.856E+00	2.742E+00	4.796E+00	3.089E-01	0.387
W-188	+	63.58		8.768E+01	7.028E+01	8.507E+01	5.427E+00	1.031
		227.08		-8.442E+00	1.142E+01	1.844E+01	1.005E+00	-0.458
IR-192		290.67	*	-9.944E+00	7.472E+00	9.763E+00	5.533E-01	-1.019
	+	295.96		1.135E+00	1.890E-01	2.772E-01	1.599E-02	4.094
		308.46		2.617E-03	8.218E-02	1.368E-01	7.871E-03	0.019
		316.51	*	1.999E-02	3.002E-02	5.178E-02	2.959E-03	0.386
		468.07		-3.649E-02	6.607E-02	9.281E-02	6.291E-03	-0.393
AU-195		604.41		1.408E-02	4.465E-01	6.515E-01	7.596E-02	0.022
		612.46		4.474E-01	7.745E-01	1.188E+00	9.556E-02	0.377
		65.12		-8.643E-03	1.645E-01	2.492E-01	1.600E-02	-0.035
		66.83		3.626E-02	9.079E-02	1.402E-01	9.081E-03	0.259
	+	75.70		1.305E+00	2.572E-01	4.288E-01	2.936E-02	3.043
TL-200		98.88	*	1.732E-01	1.995E-01	3.417E-01	2.349E-02	0.507
	+	129.76		5.350E+00	4.205E+00	4.574E+00	2.741E-01	1.170
		367.94	*	-4.392E-04	4.205E+00	Half-Life	too short	
		579.30		2.632E-03	4.205E+00	Half-Life	too short	
TL-201		828.27		-7.556E-03	4.205E+00	Half-Life	too short	
		1205.75		6.090E-04	4.205E+00	Half-Life	too short	
		68.90		4.509E-01	5.923E+00	8.999E+00	5.891E-01	0.050
		70.82		-2.206E+00	3.397E+00	4.973E+00	3.292E-01	-0.444
TL-202		80.30		3.039E+00	6.128E+00	9.412E+00	6.692E-01	0.323
		135.34		-2.384E+00	2.849E+01	4.620E+01	2.696E+00	-0.052
		167.43	*	-4.241E+00	7.684E+00	1.199E+01	6.147E-01	-0.354
		68.90		3.392E-02	4.457E-01	6.771E-01	4.433E-02	0.050
		70.82		-1.656E-01	2.549E-01	3.731E-01	2.470E-02	-0.444
		80.30		2.281E-01	4.599E-01	7.065E-01	5.023E-02	0.323

## ---- 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	*		4.526E-02	6.258E-02	1.072E-01	6.171E-03	0.422
	70.83			-6.792E-01	1.060E+00	1.549E+00	1.926E-01	-0.439
	72.87			1.413E+00	5.922E-01	1.027E+00	1.237E-01	1.375
	82.60			6.038E-02	1.089E+00	1.717E+00	2.221E-01	0.035
BI-207	279.20	*		2.871E-02	4.211E-02	6.439E-02	3.872E-03	0.446
	72.80			3.671E-01	1.644E-01	2.926E-01	1.962E-02	1.255
	74.97	+		7.212E-01	1.421E-01	2.161E-01	1.471E-02	3.338
	84.90			2.084E-01	1.937E-01	3.005E-01	2.230E-02	0.693
TL-207	569.67			-6.987E-04	2.728E-02	4.573E-02	2.879E-03	-0.015
	1063.62	*		9.313E-03	4.327E-02	7.391E-02	5.099E-03	0.126
	1770.23			-1.904E+00	6.615E-01	5.761E-01	3.400E-02	-3.305
	81.07			-1.871E-02	2.023E-01	3.218E-01	2.304E-02	-0.058
PO-209	83.78			8.179E-02	1.305E-01	1.991E-01	1.462E-02	0.411
	94.90			3.421E-01	2.117E-01	3.401E-01	2.417E-02	1.006
	122.32			2.760E-01	1.524E+00	2.517E+00	1.782E-01	0.110
	144.24			5.137E-01	6.293E-01	1.050E+00	7.434E-02	0.489
BI-210	154.21			-3.917E-02	3.657E-01	5.880E-01	3.922E-02	-0.067
	269.46			2.760E-01	1.740E-01	3.117E-01	1.836E-02	0.885
	323.87	*		-8.374E-03	6.802E-01	9.889E-01	1.629E-01	-0.008
	338.28	+		5.980E+00	1.736E+00	2.372E+00	2.480E-01	2.521
PB-210	445.03			8.763E-01	1.959E+00	3.282E+00	3.368E-01	0.267
	260.50			2.538E+00	8.727E+00	1.487E+01	8.318E-01	0.171
	262.80			8.664E-01	2.338E+01	3.934E+01	2.203E+00	0.022
	896.60	*		3.511E+00	7.648E+00	1.290E+01	1.077E+00	0.272
PO-210	46.50	*		-2.445E+00	2.897E+00	4.634E+00	3.491E-01	-0.528
PB-211	46.50	*		-2.445E+00	2.897E+00	4.634E+00	3.491E-01	-0.528
BI-212	404.84	*		-6.818E-01	9.757E-01	1.355E+00	8.445E-01	-0.503
	427.08			-1.496E+00	2.136E+00	2.945E+00	1.820E+00	-0.508
	831.96			2.769E-01	1.088E+00	1.795E+00	1.123E+00	0.154
	727.18	+		9.614E-01	4.730E-01	6.501E-01	5.628E-02	1.479
PO-215	785.46			2.712E+00	1.683E+00	3.104E+00	2.319E-01	0.874
	1620.62			1.790E-01	1.007E+00	1.736E+00	1.118E-01	0.103
	81.07			-1.871E-02	2.023E-01	3.218E-01	2.304E-02	-0.058
	83.78			8.179E-02	1.305E-01	1.991E-01	1.462E-02	0.411
RN-219	94.90			3.421E-01	2.117E-01	3.401E-01	2.417E-02	1.006
	122.32			2.760E-01	1.524E+00	2.517E+00	1.782E-01	0.110
	144.24			5.137E-01	6.293E-01	1.050E+00	7.434E-02	0.489
	154.21			-3.917E-02	3.657E-01	5.880E-01	3.922E-02	-0.067
RA-223	269.46			2.760E-01	1.740E-01	3.117E-01	1.836E-02	0.885
	323.87	*		-8.374E-03	6.802E-01	9.889E-01	1.629E-01	-0.008
	338.28	+		5.980E+00	1.736E+00	2.372E+00	2.480E-01	2.521
	445.03			8.763E-01	1.959E+00	3.282E+00	3.368E-01	0.267
RN-220	271.23			3.004E-01	2.310E-01	3.974E-01	3.172E-02	0.756
	401.81	*		-7.354E-02	3.866E-01	6.222E-01	8.399E-02	-0.118
	549.76	*		1.712E+01	2.450E+01	4.323E+01	2.695E+00	0.396
	81.07			-1.871E-02	2.023E-01	3.218E-01	2.304E-02	-0.058
RA-223	83.78			8.179E-02	1.305E-01	1.991E-01	1.462E-02	0.411
	94.90			3.421E-01	2.117E-01	3.401E-01	2.417E-02	1.006

----- 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		2.760E-01	1.524E+00	2.517E+00	1.782E-01	0.110
		144.24		5.137E-01	6.293E-01	1.050E+00	7.434E-02	0.489
		154.21		-3.917E-02	3.657E-01	5.880E-01	3.922E-02	-0.067
		269.46		2.760E-01	1.740E-01	3.117E-01	1.836E-02	0.885
		323.87	*	-8.374E-03	6.802E-01	9.889E-01	1.629E-01	-0.008
	+	338.28		5.980E+00	1.736E+00	2.372E+00	2.480E-01	2.521
		445.03		8.763E-01	1.959E+00	3.282E+00	3.368E-01	0.267
		79.80		3.197E-01	1.576E+00	2.388E+00	4.998E-01	0.134
		236.00		6.107E-01	2.500E-01	4.096E-01	4.213E-02	1.491
		256.20	*	5.110E-02	3.428E-01	5.808E-01	8.055E-02	0.088
		286.10		1.717E-01	1.309E+00	2.202E+00	2.530E-01	0.078
	+	299.80		3.013E+00	1.591E+00	2.388E+00	3.878E-01	1.262
		304.40		3.360E-01	1.641E+00	2.569E+00	4.433E-01	0.131
		334.20		-1.272E+00	2.548E+00	3.262E+00	5.966E-01	-0.390
TH-227		79.80		3.197E-01	1.576E+00	2.388E+00	5.066E-01	0.134
	+	94.00		8.728E+00	3.134E+00	3.524E+00	7.487E-01	2.476
		236.00		6.107E-01	2.480E-01	4.096E-01	3.631E-02	1.491
		256.20	*	5.110E-02	3.429E-01	5.808E-01	9.771E-02	0.088
		286.10		1.717E-01	1.320E+00	2.202E+00	2.206E+00	0.078
	+	299.80		3.013E+00	1.591E+00	2.388E+00	3.878E-01	1.262
		304.40		3.360E-01	1.641E+00	2.569E+00	4.433E-01	0.131
		334.20		-1.272E+00	2.548E+00	3.262E+00	5.966E-01	-0.390
		85.43		1.504E-01	1.966E-01	3.012E-01	2.247E-02	0.499
		88.47		1.848E-01	1.288E-01	1.877E-01	1.429E-02	0.985
PA-231		100.00		1.443E-01	1.627E-01	2.788E-01	1.902E-02	0.518
		193.63	*	2.372E-01	4.684E-01	7.650E-01	4.028E-02	0.310
		210.97		8.781E-01	7.465E-01	1.135E+00	6.085E-02	0.774
		283.67	*	-5.369E-01	1.420E+00	2.240E+00	3.073E-01	-0.240
		301.29		1.223E+00	5.533E-01	9.221E-01	9.577E-02	1.327
		81.07		-1.871E-02	2.023E-01	3.218E-01	2.304E-02	-0.058
TH-231		83.78		8.179E-02	1.305E-01	1.991E-01	1.462E-02	0.411
		94.90		3.421E-01	2.117E-01	3.401E-01	2.417E-02	1.006
		122.32		2.760E-01	1.524E+00	2.517E+00	1.782E-01	0.110
		144.24		5.137E-01	6.293E-01	1.050E+00	7.434E-02	0.489
		154.21		-3.917E-02	3.657E-01	5.880E-01	3.922E-02	-0.067
		269.46		2.760E-01	1.740E-01	3.117E-01	1.836E-02	0.885
		323.87	*	-8.374E-03	6.802E-01	9.889E-01	1.629E-01	-0.008
	+	338.28		5.980E+00	1.736E+00	2.372E+00	2.480E-01	2.521
		445.03		8.763E-01	1.959E+00	3.282E+00	3.368E-01	0.267
		84.21		2.600E+00	6.737E+00	1.017E+01	7.498E-01	0.256
U-231	+	92.29		1.024E+01	3.053E+00	4.749E+00	3.461E-01	2.156
		95.87	*	-2.783E-01	1.239E+00	1.818E+00	1.280E-01	-0.153
		108.00		-2.820E+00	2.188E+00	3.387E+00	2.207E-01	-0.833
	+	75.28		2.104E+01	4.934E+00	6.523E+00	9.404E-01	3.226
	+	86.59		4.095E+00	2.235E+00	2.818E+00	7.466E-01	1.453
	+	300.12		8.399E-01	4.367E-01	6.624E-01	8.867E-02	1.268
PA-233		311.98	*	-2.223E-02	5.506E-02	8.912E-02	5.393E-03	-0.249
		340.50		1.020E+00	6.742E-01	1.028E+00	2.357E-01	0.992
		398.62		-1.054E-01	1.936E+00	3.147E+00	8.118E-01	-0.034

## ---- 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		6.783E-01	1.589E+00	2.650E+00	5.442E-01	0.256
		63.00		2.517E+00	2.043E+00	2.522E+00	3.624E-01	0.998
		94.67		3.611E-01	1.601E-01	2.578E-01	2.941E-02	1.401
		98.44		-3.673E-03	8.217E-02	1.358E-01	7.543E-02	-0.027
		99.86		5.548E-01	4.075E-01	7.103E-01	4.849E-02	0.781
		111.00		-2.242E-02	1.613E-01	2.639E-01	2.808E-02	-0.085
		131.20		3.021E-03	1.041E-01	1.519E-01	9.037E-03	0.020
		152.70		1.509E-01	2.896E-01	4.781E-01	7.492E-02	0.316
	+	186.00		4.652E+00	2.615E+00	2.392E+00	7.285E-01	1.944
		226.40		-3.580E-01	3.585E-01	5.684E-01	6.472E-02	-0.630
		227.20		-3.149E-02	3.665E-01	6.186E-01	3.371E-02	-0.051
		248.90		4.652E-01	6.918E-01	1.194E+00	2.557E-01	0.390
	+	293.70		7.075E+00	1.584E+00	1.660E+00	2.662E-01	4.263
		369.80		4.735E-01	7.898E-01	1.336E+00	2.775E-01	0.354
		568.70		-2.814E-01	8.757E-01	1.434E+00	9.025E-02	-0.196
		569.50		-5.460E-02	2.439E-01	4.026E-01	2.534E-02	-0.136
		574.00		7.468E-01	1.368E+00	2.385E+00	1.504E-01	0.313
		699.00		-3.639E-01	6.955E-01	1.096E+00	2.009E-01	-0.332
		706.10		2.470E-01	1.033E+00	1.729E+00	7.655E-01	0.143
		733.00		1.918E-01	3.659E-01	5.556E-01	1.202E-01	0.345
		742.81		-2.761E-01	1.276E+00	2.035E+00	1.365E+00	-0.136
	+	796.30		4.386E+00	2.102E+00	1.730E+00	4.625E-01	2.535
		805.60		2.830E-01	1.060E+00	1.548E+00	4.703E-01	0.183
		819.60		1.061E+00	1.252E+00	2.094E+00	7.923E-01	0.507
		826.30		-7.812E-01	8.724E-01	1.177E+00	5.250E-01	-0.663
		831.60		1.800E-01	5.567E-01	9.319E-01	2.761E-01	0.193
		876.40		9.113E-02	8.391E-01	1.367E+00	1.405E+00	0.067
		880.51		1.145E-01	2.676E-01	4.523E-01	3.718E-02	0.253
		883.24		-8.819E-02	2.851E-01	4.375E-01	2.939E-01	-0.202
		899.00		-1.026E+00	9.754E-01	1.235E+00	5.394E-01	-0.831
		925.00		-4.057E-01	1.077E+00	1.664E+00	1.360E-01	-0.244
		926.50		1.741E-02	1.626E-01	2.654E-01	6.667E-02	0.066
		946.00	*	-3.339E-01	3.065E-01	4.256E-01	7.871E-02	-0.785
		949.00		3.823E-01	4.156E-01	7.313E-01	5.846E-02	0.523
		980.50		-1.843E-01	6.741E-01	1.048E+00	8.104E-02	-0.176
		1394.10		7.743E-01	1.230E+00	1.999E+00	1.297E+00	0.387
PA-234M	+	766.42		3.648E+01	2.305E+01	2.235E+01	1.130E+01	1.632
		1001.03	*	2.676E+00	4.609E+00	7.518E+00	6.804E-01	0.356
U-235		89.95		8.323E-01	1.394E+00	1.694E+00	5.175E-01	0.491
	+	93.35		2.715E+00	1.086E+00	1.233E+00	3.407E-01	2.201
		105.00		1.146E+00	1.003E+00	1.639E+00	4.807E-01	0.699
		143.76	*	6.032E-02	1.945E-01	3.178E-01	5.161E-02	0.190
		163.35		1.757E-01	4.402E-01	7.134E-01	1.269E-01	0.246
	+	185.71		1.723E-01	8.189E-02	8.902E-02	4.647E-03	1.935
		205.31		-1.850E-01	5.448E-01	7.487E-01	1.335E-01	-0.247
NP-236		94.67		2.758E-01	1.191E-01	1.957E-01	1.394E-02	1.409
		98.44		-2.825E-03	6.210E-02	1.027E-01	7.082E-03	-0.028
		111.00		-1.696E-02	1.220E-01	1.996E-01	1.284E-02	-0.085
		160.31	*	-1.546E-02	7.240E-02	1.155E-01	6.056E-03	-0.134

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		2.039E-01	1.370E-01	2.397E-01	1.640E-02	0.851
		117.00	*	-1.803E-01	1.656E-01	2.570E-01	1.622E-02	-0.702
	+	209.75		1.902E+00	9.042E-01	1.310E+00	7.018E-02	1.452
		228.18		-5.812E-02	1.943E-01	3.246E-01	1.771E-02	-0.179
	+	277.60		2.790E-01	2.497E-01	3.021E-01	1.704E-02	0.924
AM-241		334.30		-7.488E-01	1.437E+00	1.842E+00	1.045E-01	-0.406
		59.54	*	1.379E-01	1.421E-01	2.272E-01	1.615E-02	0.607
	CM-243	99.55		2.098E-01	1.409E-01	2.466E-01	1.688E-02	0.851
		103.76	*	-1.279E-02	8.469E-02	1.390E-01	9.254E-03	-0.092
		117.00		-1.855E-01	1.703E-01	2.645E-01	1.669E-02	-0.702
AM-246	+	209.75		1.875E+00	8.915E-01	1.291E+00	6.918E-02	1.452
		228.18		-5.873E-02	1.964E-01	3.280E-01	1.789E-02	-0.179
	+	277.60		2.813E-01	2.517E-01	3.046E-01	1.719E-02	0.924
		798.80		5.982E-02	1.297E-01	2.208E-01	1.673E-02	0.271
		1036.00		1.155E-01	2.772E-01	4.820E-01	3.469E-02	0.240
CM-247		1062.04		5.680E-02	1.909E-01	3.288E-01	2.274E-02	0.173
		1078.86	*	-1.009E-01	1.333E-01	2.051E-01	1.379E-02	-0.492
	+	278.00		1.157E+00	1.035E+00	1.249E+00	7.046E-02	0.927
		287.40		4.931E-01	1.063E+00	1.820E+00	1.030E-01	0.271
		402.60	*	-3.386E-03	3.378E-02	5.471E-02	3.034E-03	-0.062
CF-249		252.85		3.114E-04	7.509E-01	1.264E+00	7.035E-02	0.000
		333.44		-1.407E-01	2.141E-01	2.418E-01	1.371E-02	-0.582
		387.95	*	2.384E-02	3.714E-02	6.325E-02	3.477E-03	0.377
CF-251		176.60	*	-4.050E-02	1.142E-01	1.797E-01	9.289E-03	-0.225
		227.00		-2.591E-01	3.387E-01	5.463E-01	2.977E-02	-0.474
		285.00		-9.288E-01	1.551E+00	2.503E+00	1.416E-01	-0.371

# 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]G244148005      *
* Acquisition date   : 20-JAN-2010 15:50:34 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 02:00:01.47 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244148005 Analyst initials: MXR1                  *
* Batch Number      : 940268 Sample Quantity : 1.3462E+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	2.095E+01	2.032E+00	3.803E-01	0.000E+00
CD-109	2.131E+00	1.009E+00	1.423E+00	0.000E+00
SN-126	2.092E-01	9.903E-02	1.424E-01	0.000E+00
BA-137M	1.109E-01	5.967E-02	6.059E-02	0.000E+00
CS-137	1.172E-01	6.308E-02	6.405E-02	0.000E+00
TL-208	5.219E-01	8.208E-02	5.421E-02	0.000E+00
BI-211	3.502E+00	4.586E-01	3.270E-01	0.000E+00
PB-212	1.428E+00	1.412E-01	8.129E-02	0.000E+00
PO-212	1.428E+00	1.412E-01	8.129E-02	0.000E+00
BI-214	1.348E+00	1.747E-01	1.134E-01	0.000E+00
PB-214	1.218E+00	1.713E-01	1.140E-01	0.000E+00
PO-214	1.218E+00	1.713E-01	1.140E-01	0.000E+00
PO-216	1.428E+00	1.412E-01	8.129E-02	0.000E+00
PO-218	1.218E+00	1.713E-01	1.140E-01	0.000E+00
RA-224	4.784E+00	1.222E+00	9.251E-01	0.000E+00
RA-226	1.348E+00	1.747E-01	1.134E-01	0.000E+00
AC-228	1.395E+00	2.977E-01	2.189E-01	0.000E+00
RA-228	1.395E+00	2.977E-01	2.189E-01	0.000E+00
TH-228	1.451E+00	1.435E-01	8.261E-02	0.000E+00
TH-230	1.348E+00	1.747E-01	1.134E-01	0.000E+00
TH-232	1.395E+00	2.977E-01	2.189E-01	0.000E+00
TH-234	2.159E+00	1.729E+00	1.984E+00	0.000E+00
U-234	1.348E+00	1.747E-01	1.134E-01	0.000E+00
NP-237	6.142E-01	3.162E-01	4.132E-01	0.000E+00
U-238	2.159E+00	1.729E+00	1.984E+00	0.000E+00
AM-243	4.017E-01	7.759E-02	8.350E-02	0.000E+00
ANH-511	1.101E-01	6.880E-02	4.148E-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	2.161E-03	3.062E-01	5.148E-01	0.000E+00	NOT IDENT.
NA-22	2.683E-02	4.086E-02	7.337E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.095E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-4.696E-03	2.741E-02	4.394E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.182E-02	7.163E-02	0.000E+00	FAIL ABUN
SC-46	-3.319E-03	3.825E-02	6.342E-02	0.000E+00	FAIL ABUN
V-48	1.010E-02	6.658E-02	1.120E-01	0.000E+00	NOT IDENT.
CR-51	2.924E-02	3.345E-01	5.860E-01	0.000E+00	NOT IDENT.
MN-52	9.919E-02	2.396E-01	4.226E-01	0.000E+00	NOT IDENT.
MN-54	-4.294E-02	3.649E-02	5.459E-02	0.000E+00	NOT IDENT.
CO-56	-2.476E-02	3.486E-02	5.411E-02	0.000E+00	NOT IDENT.
CO-57	4.262E-03	2.167E-02	3.829E-02	0.000E+00	NOT IDENT.
CO-58	1.255E-02	3.530E-02	6.160E-02	0.000E+00	NOT IDENT.
FE-59	-9.126E-02	8.686E-02	1.330E-01	0.000E+00	NOT IDENT.
CO-60	6.267E-03	3.358E-02	5.768E-02	0.000E+00	NOT IDENT.
ZN-65	4.671E-02	9.548E-02	1.487E-01	0.000E+00	NOT IDENT.
GE-68	5.309E-01	1.122E+00	2.009E+00	0.000E+00	NOT IDENT.
AS-73	-6.291E-02	7.289E-01	1.341E+00	0.000E+00	NOT IDENT.
AS-74	-2.185E-02	8.599E-02	1.468E-01	0.000E+00	NOT IDENT.
SE-75	-1.957E-02	3.814E-02	6.573E-02	0.000E+00	NOT IDENT.
BR-77	-2.274E+00	1.366E+01	2.245E+01	0.000E+00	FAIL ABUN
SR-82	-2.516E-01	3.220E-01	5.006E-01	0.000E+00	NOT IDENT.
RB-83	-1.427E-02	6.609E-02	1.082E-01	0.000E+00	NOT IDENT.
RB-84	-1.283E-02	6.753E-02	1.109E-01	0.000E+00	NOT IDENT.
KR-85	8.940E+00	7.353E+00	1.199E+01	0.000E+00	NOT IDENT.
SR-85	4.634E-02	3.811E-02	6.214E-02	0.000E+00	NOT IDENT.
RB-86	4.767E-01	7.211E-01	1.314E+00	0.000E+00	NOT IDENT.
Y-88	-4.802E-03	3.327E-02	5.446E-02	0.000E+00	NOT IDENT.
ZR-88	1.631E-02	2.894E-02	5.129E-02	0.000E+00	NOT IDENT.
Y-91	7.075E+00	1.745E+01	3.064E+01	0.000E+00	NOT IDENT.
NB-94	-5.394E-03	3.355E-02	5.678E-02	0.000E+00	NOT IDENT.
NB-95	8.018E-02	4.885E-02	8.310E-02	0.000E+00	NOT IDENT.
NB-95M	1.516E-01	1.234E-01	2.076E-01	0.000E+00	NOT IDENT.
ZR-95	1.008E-01	6.743E-02	1.277E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.716E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.121E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.757E+00	1.347E+01	2.268E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.053E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.435E-02	3.064E-02	4.944E-02	0.000E+00	FAIL ABUN
RH-102	2.182E-02	2.635E-02	4.706E-02	0.000E+00	FAIL ABUN
RU-103	-1.016E-02	3.837E-02	6.282E-02	0.000E+00	FAIL ABUN
RH-106	-1.363E-01	3.148E-01	5.278E-01	0.000E+00	FAIL ABUN
RU-106	-1.363E-01	3.145E-01	5.278E-01	0.000E+00	FAIL ABUN
AG-108M	1.775E-02	2.695E-02	4.804E-02	0.000E+00	NOT IDENT.
AG-110M	1.550E-02	3.483E-02	5.483E-02	0.000E+00	NOT IDENT.
IN-111	-9.927E-01	1.209E+00	1.781E+00	0.000E+00	NOT IDENT.
IN-113M	-1.809E-03	4.187E-02	7.148E-02	0.000E+00	NOT IDENT.
SN-113	-1.809E-03	4.187E-02	7.148E-02	0.000E+00	NOT IDENT.
IN-114M	-5.541E-02	1.858E-01	2.740E-01	0.000E+00	NOT IDENT.
CD-115	-1.447E+01	1.426E+01	2.161E+01	0.000E+00	NOT IDENT.
SN-117M	-2.805E-02	5.140E-02	8.593E-02	0.000E+00	NOT IDENT.
SB-122	5.509E-01	2.336E+00	4.156E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.927E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.014E-02	2.554E-02	4.302E-02	0.000E+00	NOT IDENT.
I-124	7.657E-01	7.462E-01	1.251E+00	0.000E+00	FAIL ABUN
SB-124	-4.884E-02	6.596E-02	1.046E-01	0.000E+00	FAIL ABUN
SB-125	-5.057E-02	8.416E-02	1.366E-01	0.000E+00	FAIL ABUN
TE-125M	-2.063E+00	7.911E+00	1.380E+01	0.000E+00	NOT IDENT.
I-126	-4.385E-02	2.127E-01	3.107E-01	0.000E+00	NOT IDENT.
SB-126	-5.078E-02	1.571E-01	2.453E-01	0.000E+00	FAIL ABUN
SB-127	-1.136E+00	1.547E+00	2.487E+00	0.000E+00	NOT IDENT.
XE-127	3.283E-02	4.381E-02	7.641E-02	0.000E+00	NOT IDENT.
I-131	2.771E-02	1.186E-01	2.073E-01	0.000E+00	NOT IDENT.
TE-132	-2.086E-01	7.264E-01	1.284E+00	0.000E+00	NOT IDENT.
BA-133	2.115E-02	4.325E-02	6.821E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.229E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.969E-02	9.201E-02	0.000E+00	FAIL ABUN
CS-135	2.831E-02	1.411E-01	2.519E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.481E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.786E-02	1.054E-01	1.872E-01	0.000E+00	FAIL ABUN
CE-139	-9.287E-03	2.599E-02	4.367E-02	0.000E+00	NOT IDENT.
BA-140	1.538E-01	2.376E-01	4.280E-01	0.000E+00	NOT IDENT.
LA-140	-1.418E-01	8.029E-02	9.371E-02	0.000E+00	FAIL ABUN
CE-141	7.512E-03	5.697E-02	9.904E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.048E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.510E-01	1.982E-01	3.202E-01	0.000E+00	NOT IDENT.
PM-144	3.395E-02	3.154E-02	5.839E-02	0.000E+00	NOT IDENT.
PR-144	2.302E+00	2.138E+00	3.959E+00	0.000E+00	NOT IDENT.

PM-146	5.858E-03	3.951E-02	6.746E-02	0.000E+00	NOT IDENT.
ND-147	1.301E-01	5.313E-01	9.022E-01	0.000E+00	NOT IDENT.
PM-149	-3.739E+01	1.091E+02	1.882E+02	0.000E+00	NOT IDENT.
EU-152	-9.214E-02	9.498E-02	1.408E-01	0.000E+00	FAIL ABUN
GD-153	-5.713E-02	7.358E-02	1.202E-01	0.000E+00	NOT IDENT.
EU-154	7.826E-02	1.146E-01	2.059E-01	0.000E+00	NOT IDENT.
EU-155	1.145E-01	9.430E-02	1.747E-01	0.000E+00	FAIL ABUN
TB-160	3.879E-02	1.362E-01	2.341E-01	0.000E+00	FAIL ABUN
HO-166M	-4.836E-02	5.545E-02	8.753E-02	0.000E+00	FAIL ABUN
TM-171	8.959E+00	2.677E+01	4.454E+01	0.000E+00	NOT IDENT.
LU-176	-1.784E-03	2.059E-02	3.584E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.392E+00	2.136E+00	0.000E+00	FAIL ABUN
LU-177M	-8.494E-02	1.733E-01	2.787E-01	0.000E+00	NOT IDENT.
HF-181	-2.275E-02	4.093E-02	6.570E-02	0.000E+00	NOT IDENT.
W-181	-9.835E-02	3.516E-01	5.693E-01	0.000E+00	NOT IDENT.
TA-182	6.413E-02	1.823E-01	3.182E-01	0.000E+00	FAIL ABUN
RE-183	3.678E-02	1.016E-01	1.753E-01	0.000E+00	FAIL ABUN
RE-184	8.334E-05	1.969E-01	3.501E-01	0.000E+00	NOT IDENT.
OS-185	4.732E-02	4.066E-02	7.606E-02	0.000E+00	NOT IDENT.
RE-188	1.691E-01	1.527E-01	2.754E-01	0.000E+00	NOT IDENT.
W-188	-9.944E+00	7.323E+00	1.008E+01	0.000E+00	FAIL ABUN
IR-192	1.999E-02	2.942E-02	5.336E-02	0.000E+00	FAIL ABUN
AU-195	1.732E-01	1.955E-01	3.594E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.253E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-4.241E+00	7.530E+00	1.250E+01	0.000E+00	NOT IDENT.
TL-202	4.526E-02	6.133E-02	1.098E-01	0.000E+00	NOT IDENT.
HG-203	2.871E-02	4.126E-02	6.650E-02	0.000E+00	NOT IDENT.
BI-207	9.313E-03	4.240E-02	7.451E-02	0.000E+00	FAIL ABUN
TL-207	-8.374E-03	6.666E-01	1.019E+00	0.000E+00	FAIL ABUN
PO-209	3.511E+00	7.495E+00	1.305E+01	0.000E+00	NOT IDENT.
BI-210	-2.445E+00	2.839E+00	4.936E+00	0.000E+00	NOT IDENT.
PB-210	-2.445E+00	2.839E+00	4.936E+00	0.000E+00	NOT IDENT.
PO-210	-2.445E+00	2.838E+00	4.936E+00	0.000E+00	NOT IDENT.
PB-211	-6.818E-01	9.562E-01	1.391E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.636E-01	6.600E-01	0.000E+00	FAIL ABUN
PO-215	-8.374E-03	6.666E-01	1.019E+00	0.000E+00	FAIL ABUN
RN-219	-7.354E-02	3.789E-01	6.385E-01	0.000E+00	NOT IDENT.
RN-220	1.712E+01	2.401E+01	4.411E+01	0.000E+00	NOT IDENT.
RA-223	-8.374E-03	6.666E-01	1.019E+00	0.000E+00	FAIL ABUN
AC-227	5.110E-02	3.360E-01	6.008E-01	0.000E+00	FAIL ABUN
TH-227	5.110E-02	3.360E-01	6.008E-01	0.000E+00	FAIL ABUN
TH-229	2.372E-01	4.591E-01	7.953E-01	0.000E+00	NOT IDENT.
PA-231	-5.369E-01	1.391E+00	2.313E+00	0.000E+00	NOT IDENT.
TH-231	-8.374E-03	6.666E-01	1.019E+00	0.000E+00	FAIL ABUN
U-231	-2.783E-01	1.214E+00	1.913E+00	0.000E+00	FAIL ABUN
PA-233	-2.223E-02	5.396E-02	9.187E-02	0.000E+00	FAIL ABUN
PA-234	-3.339E-01	3.003E-01	4.300E-01	0.000E+00	FAIL ABUN
PA-234M	2.676E+00	4.517E+00	7.587E+00	0.000E+00	FAIL ABUN
U-235	6.032E-02	1.907E-01	3.321E-01	0.000E+00	FAIL ABUN
NP-236	-1.546E-02	7.095E-02	1.205E-01	0.000E+00	NOT IDENT.
NP-239	-1.803E-01	1.623E-01	2.696E-01	0.000E+00	FAIL ABUN
AM-241	1.379E-01	1.392E-01	2.411E-01	0.000E+00	NOT IDENT.
CM-243	-1.279E-02	8.300E-02	1.460E-01	0.000E+00	FAIL ABUN
AM-246	-1.009E-01	1.306E-01	2.067E-01	0.000E+00	NOT IDENT.
CM-247	-3.386E-03	3.310E-02	5.614E-02	0.000E+00	FAIL ABUN
CF-249	2.384E-02	3.640E-02	6.495E-02	0.000E+00	NOT IDENT.
CF-251	-4.050E-02	1.119E-01	1.871E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148005.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:50:34
Sample ID          : G244148005          Sample quantity  : 1.34620E+02 GRAM
Detector name      : GAM12              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.47  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	912	10.67*	1.138E+00	2.095E+01	2.095E+01	9.90
CD-109	88.03	156	3.72*	5.634E+00	2.080E+00	2.131E+00	48.31
SN-126	64.28	94	9.60	3.180E+00	8.546E-01	8.546E-01	81.13
	86.94	156	8.90	5.634E+00	8.696E-01	8.696E-01	63.01
	87.57	156	37.00*	5.634E+00	2.092E-01	2.092E-01	48.31
BA-137M	661.65	81	89.98*	2.255E+00	1.108E-01	1.109E-01	54.91
CS-137	661.65	81	85.12*	2.255E+00	1.171E-01	1.172E-01	54.91
TL-208	277.35	64	6.80	4.506E+00	5.785E-01	5.785E-01	89.93
	510.84	110	21.60	2.795E+00	5.096E-01	5.096E-01	64.33
	583.14	395	84.20*	2.506E+00	5.219E-01	5.219E-01	16.05
	860.37	54	12.46	1.794E+00	6.684E-01	6.684E-01	65.56
BI-211	72.87	-----	1.27	4.387E+00	-----	Line Not Found	-----
	351.07	612	12.94*	3.763E+00	3.502E+00	3.502E+00	13.36
PB-212	74.81	436	10.70	4.580E+00	2.478E+00	2.478E+00	21.81
	77.11	611	18.00	4.816E+00	1.964E+00	1.964E+00	14.59
	87.30	156	8.00	5.634E+00	9.674E-01	9.674E-01	49.34
	238.63	1146	44.60*	5.017E+00	1.428E+00	1.428E+00	10.09
	300.09	85	3.41	4.253E+00	1.626E+00	1.626E+00	50.90
PO-212	74.81	436	10.70	4.580E+00	2.478E+00	2.478E+00	21.81
	77.11	611	18.00	4.816E+00	1.964E+00	1.964E+00	14.59
	87.30	156	8.00	5.634E+00	9.674E-01	9.674E-01	49.34
	115.19	-----	0.60	6.604E+00	-----	Line Not Found	-----
	238.63	1146	44.60*	5.017E+00	1.428E+00	1.428E+00	10.09
	300.09	85	3.41	4.253E+00	1.626E+00	1.626E+00	50.90
BI-214	609.31	540	46.30*	2.415E+00	1.348E+00	1.348E+00	13.23
	1120.29	134	15.10	1.423E+00	1.743E+00	1.743E+00	30.50
	1764.49	66	15.80	9.904E-01	1.183E+00	1.183E+00	34.50
PB-214	74.81	436	6.21	4.580E+00	4.270E+00	4.270E+00	21.05
	77.11	611	10.50	4.816E+00	3.367E+00	3.367E+00	16.46
	87.30	156	4.67	5.634E+00	1.657E+00	1.657E+00	48.92
	241.98	337	7.49	4.973E+00	2.523E+00	2.523E+00	26.67
	295.21	437	19.20	4.304E+00	1.474E+00	1.474E+00	17.76

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	612	37.20*	3.763E+00	1.218E+00	1.218E+00	14.35
	74.81	436	6.21	4.580E+00	4.270E+00	4.270E+00	21.05
	77.11	611	10.50	4.816E+00	3.367E+00	3.367E+00	16.46
	87.30	156	4.67	5.634E+00	1.657E+00	1.657E+00	48.92
	241.98	337	7.49	4.973E+00	2.523E+00	2.523E+00	26.67
PO-216	295.21	437	19.20	4.304E+00	1.474E+00	1.474E+00	17.76
	351.92	612	37.20*	3.763E+00	1.218E+00	1.218E+00	14.35
	74.81	436	10.70	4.580E+00	2.478E+00	2.478E+00	21.81
	77.11	611	18.00	4.816E+00	1.964E+00	1.964E+00	14.59
	87.30	156	8.00	5.634E+00	9.674E-01	9.674E-01	49.34
PO-218	238.63	1146	44.60*	5.017E+00	1.428E+00	1.428E+00	10.09
	300.09	85	3.41	4.253E+00	1.626E+00	1.626E+00	50.90
	74.81	436	6.21	4.580E+00	4.270E+00	4.270E+00	21.05
	77.11	611	10.50	4.816E+00	3.367E+00	3.367E+00	16.46
	87.30	156	4.67	5.634E+00	1.657E+00	1.657E+00	48.92
RA-224	241.98	337	7.49	4.973E+00	2.523E+00	2.523E+00	26.67
	295.21	437	19.20	4.304E+00	1.474E+00	1.474E+00	17.76
	351.92	612	37.20*	3.763E+00	1.218E+00	1.218E+00	14.35
	240.98	337	3.95*	4.973E+00	4.784E+00	4.784E+00	26.07
	609.31	540	46.30*	2.415E+00	1.348E+00	1.348E+00	13.23
AC-228	1120.29	134	15.10	1.423E+00	1.743E+00	1.743E+00	30.50
	1764.49	66	15.80	9.904E-01	1.183E+00	1.183E+00	34.50
	338.32	227	11.40	3.879E+00	1.432E+00	1.432E+00	48.92
	911.07	237	27.70*	1.707E+00	1.395E+00	1.395E+00	21.77
	969.11	164	16.60	1.617E+00	1.707E+00	1.707E+00	32.18
RA-228	338.32	227	11.40	3.879E+00	1.432E+00	1.432E+00	48.92
	911.07	237	27.70*	1.707E+00	1.395E+00	1.395E+00	21.77
	969.11	164	16.60	1.617E+00	1.707E+00	1.707E+00	32.18
	74.81	436	10.70	4.580E+00	2.478E+00	2.518E+00	19.74
	77.11	611	18.00	4.816E+00	1.964E+00	1.996E+00	14.59
TH-228	87.30	156	8.00	5.634E+00	9.674E-01	9.831E-01	48.31
	238.63	1146	44.60*	5.017E+00	1.428E+00	1.451E+00	10.09
	300.09	85	3.41	4.253E+00	1.626E+00	1.652E+00	77.44
	609.31	540	46.30*	2.415E+00	1.348E+00	1.348E+00	13.23
	1120.29	134	15.10	1.423E+00	1.743E+00	1.743E+00	30.50
TH-232	1764.49	66	15.80	9.904E-01	1.183E+00	1.183E+00	34.50
	338.32	227	11.40	3.879E+00	1.432E+00	1.432E+00	27.67
	911.07	237	27.70*	1.707E+00	1.395E+00	1.395E+00	21.77
	969.11	164	16.60	1.617E+00	1.707E+00	1.707E+00	32.18
	63.29	94	3.80*	3.180E+00	2.159E+00	2.159E+00	81.70
U-234	92.38	262	5.41	5.972E+00	2.259E+00	2.259E+00	33.79
	609.31	540	46.30*	2.415E+00	1.348E+00	1.348E+00	13.23
	1120.29	134	15.10	1.423E+00	1.743E+00	1.743E+00	30.50
	1764.49	66	15.80	9.904E-01	1.183E+00	1.183E+00	34.50
	86.50	156	12.60*	5.634E+00	6.142E-01	6.142E-01	52.53
NP-237	95.87	-----	2.60	6.124E+00	-----	Line Not Found	-----
U-238	63.29	94	3.80*	3.180E+00	2.159E+00	2.159E+00	81.70
	92.38	262	5.41	5.972E+00	2.259E+00	2.259E+00	29.82
AM-243	74.67	436	66.00*	4.580E+00	4.017E-01	4.017E-01	19.71

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	156	0.34	5.634E+00	2.303E+01	2.303E+01	48.31
	117.66	-----	0.55	6.624E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.534E+00	-----	Line Not Found	-----
ANH-511	511.00	110	100.00*	2.795E+00	1.101E-01	1.101E-01	63.79

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	2.095E+01	2.095E+01	0.207E+01	9.90	
CD-109	464.00D	1.02	2.080E+00	2.131E+00	1.030E+00	48.31	
SN-126	1.00E+05Y	1.00	2.092E-01	2.092E-01	1.011E-01	48.31	
BA-137M	30.17Y	1.00	1.108E-01	1.109E-01	0.609E-01	54.91	
CS-137	30.17Y	1.00	1.171E-01	1.172E-01	0.644E-01	54.91	
TL-208	1.41E+10Y	1.00	5.219E-01	5.219E-01	0.838E-01	16.05	
BI-211	7.04E+08Y	1.00	3.502E+00	3.502E+00	0.468E+00	13.36	
PB-212	1.41E+10Y	1.00	1.428E+00	1.428E+00	0.144E+00	10.09	
PO-212	1.41E+10Y	1.00	1.428E+00	1.428E+00	0.144E+00	10.09	
BI-214	1600.00Y	1.00	1.348E+00	1.348E+00	0.178E+00	13.23	
PB-214	1600.00Y	1.00	1.218E+00	1.218E+00	0.175E+00	14.35	
PO-214	1600.00Y	1.00	1.218E+00	1.218E+00	0.175E+00	14.35	
PO-216	1.41E+10Y	1.00	1.428E+00	1.428E+00	0.144E+00	10.09	
PO-218	1600.00Y	1.00	1.218E+00	1.218E+00	0.175E+00	14.35	
RA-224	1.41E+10Y	1.00	4.784E+00	4.784E+00	1.247E+00	26.07	
RA-226	1600.00Y	1.00	1.348E+00	1.348E+00	0.178E+00	13.23	
AC-228	1.41E+10Y	1.00	1.395E+00	1.395E+00	0.304E+00	21.77	
RA-228	1.41E+10Y	1.00	1.395E+00	1.395E+00	0.304E+00	21.77	
TH-228	1.91Y	1.02	1.428E+00	1.451E+00	0.146E+00	10.09	
TH-230	4.47E+09Y	1.00	1.348E+00	1.348E+00	0.178E+00	13.23	
TH-232	1.41E+10Y	1.00	1.395E+00	1.395E+00	0.304E+00	21.77	
TH-234	4.47E+09Y	1.00	2.159E+00	2.159E+00	1.764E+00	81.70	
U-234	4.47E+09Y	1.00	1.348E+00	1.348E+00	0.178E+00	13.23	
NP-237	2.14E+06Y	1.00	6.142E-01	6.142E-01	3.227E-01	52.53	
U-238	4.47E+09Y	1.00	2.159E+00	2.159E+00	1.764E+00	81.70	
AM-243	7380.00Y	1.00	4.017E-01	4.017E-01	0.792E-01	19.71	
ANH-511	1.00E+09Y	1.00	1.101E-01	1.101E-01	0.702E-01	63.79	
Total Activity :			5.666E+01	5.674E+01			

Grand Total Activity : 5.666E+01 5.674E+01

Flags: "K" = Keyline not found "M" = Manually accepted  
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.66	97	385	1.19	256.86	253	10	1.35E-02	78.4	6.64E+00	T
0	185.59	196	435	1.34	370.78	366	13	2.72E-02	47.2	5.86E+00	T
0	209.08	121	230	1.06	417.78	414	8	1.68E-02	47.2	5.47E+00	T
0	327.99	50	156	0.94	655.70	652	9	6.88E-03	96.0	3.97E+00	T
0	462.87	83	93	1.07	925.56	920	10	1.16E-02	48.4	3.03E+00	T
0	727.05	85	82	1.16	1454.07	1450	12	1.17E-02	48.4	2.08E+00	T
0	767.50	83	44	1.62	1534.99	1529	11	1.15E-02	37.9	1.98E+00	T
0	796.67	118	67	6.59	1593.34	1585	23	1.64E-02	39.8	1.92E+00	T
0	933.86	17	35	1.33	1867.75	1864	8	2.35E-03	****	1.67E+00	
0	964.55	49	35	1.70	1929.14	1925	9	6.77E-03	52.7	1.62E+00	T
0	1377.73	20	25	0.98	2755.51	2751	11	2.83E-03	****	1.19E+00	T
0	1537.91	30	9	1.58	3075.80	3067	18	4.17E-03	59.4	1.09E+00	
0	1729.10	16	10	1.15	3458.11	3453	11	2.29E-03	98.5	1.00E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148005.CNF;1  *
* Acquisition date   : 20-JAN-2010 15:50:34  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 02:00:01.47             Half life ratio : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID          *
* Sample ID          : G244148005             Analyst initials: MXR1          *
* Batch Number       : 940268                 Sample Quantity : 1.34620E+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	2.095E+01	2.074E+00	3.795E-01	2.706E-02	55.200
CD-109	2.131E+00	1.030E+00	1.351E+00	1.034E-01	1.578
SN-126	2.092E-01	1.011E-01	1.351E-01	1.030E-02	1.548
BA-137M	1.109E-01	6.089E-02	5.958E-02	3.863E-03	1.861
CS-137	1.172E-01	6.436E-02	6.298E-02	4.097E-03	1.861
TL-208	5.219E-01	8.375E-02	5.318E-02	3.804E-03	9.813
BI-211	3.502E+00	4.680E-01	3.179E-01	1.998E-02	11.018
PB-212	1.428E+00	1.441E-01	7.848E-02	5.573E-03	18.193
PO-212	1.428E+00	1.441E-01	7.848E-02	5.573E-03	18.193
BI-214	1.348E+00	1.783E-01	1.113E-01	9.165E-03	12.105
PB-214	1.218E+00	1.748E-01	1.108E-01	9.053E-03	10.994
PO-214	1.218E+00	1.748E-01	1.108E-01	9.053E-03	10.994
PO-216	1.428E+00	1.441E-01	7.848E-02	5.573E-03	18.193
PO-218	1.218E+00	1.748E-01	1.108E-01	9.053E-03	10.994
RA-224	4.784E+00	1.247E+00	8.933E-01	4.928E-02	5.356
RA-226	1.348E+00	1.783E-01	1.113E-01	9.165E-03	12.105
AC-228	1.395E+00	3.038E-01	2.165E-01	2.377E-02	6.443
RA-228	1.395E+00	3.038E-01	2.165E-01	2.377E-02	6.443

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.451E+00	1.464E-01	7.976E-02	5.663E-03	18.193
TH-230	1.348E+00	1.783E-01	1.113E-01	9.164E-03	12.106
TH-232	1.395E+00	3.038E-01	2.165E-01	2.377E-02	6.443
TH-234	2.159E+00	1.764E+00	1.873E+00	3.188E-01	1.153
U-234	1.348E+00	1.783E-01	1.113E-01	9.164E-03	12.106
NP-237	6.142E-01	3.227E-01	3.920E-01	8.611E-02	1.567
U-238	2.159E+00	1.764E+00	1.873E+00	3.188E-01	1.153
AM-243	4.017E-01	7.917E-02	7.901E-02	5.368E-03	5.085
ANH-511	1.101E-01	7.021E-02	4.060E-02	2.474E-03	2.711

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.161E-03		3.124E-01	5.032E-01	3.463E-02	0.004
NA-22	2.683E-02		4.170E-02	7.303E-02	4.703E-03	0.367
NA-24	-1.232E+00		1.069E+00	Half-Life	too short	
AL-26	-4.696E-03		2.796E-02	4.403E-02	2.526E-03	-0.107
TI-44	3.625E-01	+	5.288E-02	6.783E-02	4.745E-03	5.343
SC-46	-3.319E-03		3.903E-02	6.270E-02	5.197E-03	-0.053
V-48	1.010E-02		6.794E-02	1.109E-01	8.545E-03	0.091
CR-51	2.924E-02		3.413E-01	5.687E-01	3.615E-02	0.051
MN-52	9.919E-02		2.445E-01	4.215E-01	2.896E-02	0.235
MN-54	-4.294E-02		3.723E-02	5.391E-02	4.238E-03	-0.796
CO-56	-2.476E-02		3.558E-02	5.345E-02	4.252E-03	-0.463
CO-57	4.262E-03		2.212E-02	3.654E-02	2.285E-03	0.117
CO-58	1.255E-02		3.602E-02	6.080E-02	4.678E-03	0.206
FE-59	-9.126E-02		8.863E-02	1.321E-01	9.753E-03	-0.691
CO-60	6.267E-03		3.426E-02	5.746E-02	4.014E-03	0.109
ZN-65	4.671E-02		9.743E-02	1.477E-01	9.288E-03	0.316
GE-68	5.309E-01		1.145E+00	1.994E+00	1.344E-01	0.266
AS-73	-6.291E-02		7.438E-01	1.262E+00	8.145E-02	-0.050
AS-74	-2.185E-02		8.775E-02	1.440E-01	9.169E-03	-0.152
SE-75	-1.957E-02		3.892E-02	6.357E-02	3.604E-03	-0.308
BR-77	-2.274E+00		1.394E+01	2.198E+01	1.348E+00	-0.103
SR-82	-2.516E-01		3.285E-01	4.937E-01	3.653E-02	-0.510
RB-83	-1.427E-02		6.743E-02	1.059E-01	6.493E-03	-0.135
RB-84	-1.283E-02		6.891E-02	1.096E-01	9.016E-03	-0.117
KR-85	8.940E+00		7.503E+00	1.173E+01	7.165E-01	0.762
SR-85	4.634E-02		3.889E-02	6.082E-02	3.714E-03	0.762
RB-86	4.767E-01		7.358E-01	1.304E+00	8.802E-02	0.366
Y-88	-4.802E-03		3.395E-02	5.459E-02	3.073E-03	-0.088
ZR-88	1.631E-02		2.953E-02	4.996E-02	2.740E-03	0.327
Y-91	7.075E+00		1.780E+01	3.047E+01	1.762E+00	0.232
NB-94	-5.394E-03		3.424E-02	5.590E-02	3.807E-03	-0.097
NB-95	8.018E-02		4.985E-02	8.194E-02	5.993E-03	0.979
NB-95M	1.516E-01		1.259E-01	2.003E-01	1.461E-02	0.757
ZR-95	1.008E-01		6.881E-02	1.259E-01	1.040E-02	0.801

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	1.361E-01		1.386E-01	Half-Life too short		
ZR-97	7.248E+00		2.613E+00	Half-Life too short		
MO-99	-1.757E+00		1.375E+01	2.235E+01	3.213E+00	-0.079
TC-99M	-2.931E+11		3.088E+11	Half-Life too short		
RH-101	-1.435E-02		3.126E-02	4.758E-02	2.517E-03	-0.302
RH-102	2.182E-02		2.688E-02	4.600E-02	2.732E-03	0.474
RU-103	-1.016E-02		3.916E-02	6.145E-02	7.839E-03	-0.165
RH-106	-1.363E-01		3.212E-01	5.184E-01	6.250E-02	-0.263
RU-106	-1.363E-01		3.209E-01	5.184E-01	3.329E-02	-0.263
AG-108M	1.775E-02		2.750E-02	4.688E-02	2.921E-03	0.379
AG-110M	1.550E-02		3.554E-02	5.391E-02	3.674E-03	0.288
IN-111	-9.927E-01		1.234E+00	1.721E+00	9.524E-02	-0.577
IN-113M	-1.809E-03		4.272E-02	6.962E-02	4.099E-03	-0.026
SN-113	-1.809E-03		4.272E-02	6.962E-02	4.099E-03	-0.026
IN-114M	-5.541E-02		1.896E-01	2.634E-01	1.382E-02	-0.210
CD-115	-1.447E+01		1.455E+01	2.117E+01	1.304E+00	-0.684
SN-117M	-2.805E-02		5.245E-02	8.237E-02	4.351E-03	-0.341
SB-122	5.509E-01		2.384E+00	4.075E+00	2.559E-01	0.135
I-123	-7.652E+00		9.832E+00	Half-Life too short		
TE-123M	-1.014E-02		2.606E-02	4.124E-02	2.209E-03	-0.246
I-124	7.657E-01		7.614E-01	1.228E+00	7.837E-02	0.623
SB-124	-4.884E-02		6.730E-02	1.047E-01	6.986E-03	-0.467
SB-125	-5.057E-02		8.588E-02	1.332E-01	7.919E-03	-0.380
TE-125M	-2.063E+00		8.073E+00	1.314E+01	1.133E+00	-0.157
I-126	-4.385E-02		2.170E-01	3.056E-01	1.992E-02	-0.143
SB-126	-5.078E-02		1.603E-01	2.416E-01	1.680E-02	-0.210
SB-127	-1.136E+00		1.578E+00	2.447E+00	2.531E-01	-0.464
XE-127	3.283E-02		4.471E-02	7.357E-02	3.912E-03	0.446
I-131	2.771E-02		1.210E-01	2.016E-01	1.271E-02	0.137
TE-132	-2.086E-01		7.412E-01	1.238E+00	1.789E-01	-0.168
BA-133	2.115E-02		4.414E-02	6.632E-02	7.609E-03	0.319
I-133	-2.486E-04		6.272E-03	Half-Life too short		
CS-134	2.259E-01	+	9.152E-02	9.079E-02	6.922E-03	2.488
CS-135	2.831E-02		1.440E-01	2.437E-01	1.833E-02	0.116
I-135	1.255E+10		3.307E+10	Half-Life too short		
CS-136	3.786E-02		1.076E-01	1.857E-01	1.395E-02	0.204
CE-139	-9.287E-03		2.652E-02	4.190E-02	2.147E-03	-0.222
BA-140	1.538E-01		2.424E-01	4.193E-01	1.367E-01	0.367
LA-140	-1.418E-01		8.192E-02	9.367E-02	6.100E-03	-1.514
CE-141	7.512E-03		5.813E-02	9.480E-02	5.519E-03	0.079
CE-143	1.445E-03		2.066E-04	Half-Life too short		
CE-144	1.510E-01		2.023E-01	3.061E-01	4.357E-02	0.493
PM-144	3.395E-02		3.218E-02	5.747E-02	3.889E-03	0.591
PR-144	2.302E+00		2.182E+00	3.897E+00	2.635E-01	0.591
PM-146	5.858E-03		4.032E-02	6.589E-02	5.696E-03	0.089
ND-147	1.301E-01		5.422E-01	8.836E-01	1.209E-01	0.147
PM-149	-3.739E+01		1.114E+02	1.823E+02	2.575E+01	-0.205
EU-152	-9.214E-02		9.692E-02	1.368E-01	8.769E-03	-0.673



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-5.713E-02		7.508E-02	1.142E-01	7.944E-03	-0.500
EU-154	7.826E-02		1.169E-01	2.050E-01	1.997E-02	0.382
EU-155	1.145E-01		9.622E-02	1.663E-01	1.121E-02	0.689
TB-160	3.879E-02		1.389E-01	2.314E-01	1.900E-02	0.168
HO-166M	-4.836E-02		5.658E-02	8.619E-02	5.933E-03	-0.561
TM-171	8.959E+00		2.732E+01	4.207E+01	2.722E+00	0.213
LU-176	-1.784E-03		2.101E-02	3.475E-02	1.975E-03	-0.051
LU-177	2.987E+00	+	1.420E+00	2.058E+00	1.101E-01	1.452
LU-177M	-8.494E-02		1.768E-01	2.718E-01	1.525E-02	-0.313
HF-181	-2.275E-02		4.177E-02	6.424E-02	3.835E-03	-0.354
W-181	-9.835E-02		3.588E-01	5.374E-01	3.453E-02	-0.183
TA-182	6.413E-02		1.861E-01	3.164E-01	1.877E-02	0.203
RE-183	3.678E-02		1.036E-01	1.681E-01	8.737E-03	0.219
RE-184	8.334E-05		2.010E-01	3.383E-01	1.883E-02	0.000
OS-185	4.732E-02		4.149E-02	7.476E-02	4.831E-03	0.633
RE-188	1.691E-01		1.558E-01	2.639E-01	1.415E-02	0.641
W-188	-9.944E+00		7.472E+00	9.763E+00	5.533E-01	-1.019
IR-192	1.999E-02		3.002E-02	5.178E-02	2.959E-03	0.386
AU-195	1.732E-01		1.995E-01	3.417E-01	2.349E-02	0.507
TL-200	-4.392E-04		4.211E-04	Half-Life too short		
TL-201	-4.241E+00		7.684E+00	1.199E+01	6.147E-01	-0.354
TL-202	4.526E-02		6.258E-02	1.072E-01	6.171E-03	0.422
HG-203	2.871E-02		4.211E-02	6.439E-02	3.872E-03	0.446
BI-207	9.313E-03		4.327E-02	7.391E-02	5.099E-03	0.126
TL-207	-8.374E-03		6.802E-01	9.889E-01	1.629E-01	-0.008
PO-209	3.511E+00		7.648E+00	1.290E+01	1.077E+00	0.272
BI-210	-2.445E+00		2.897E+00	4.634E+00	3.491E-01	-0.528
PB-210	-2.445E+00		2.897E+00	4.634E+00	3.491E-01	-0.528
PO-210	-2.445E+00		2.896E+00	4.634E+00	2.972E-01	-0.528
PB-211	-6.818E-01		9.757E-01	1.355E+00	8.445E-01	-0.503
BI-212	9.614E-01	+	4.730E-01	6.501E-01	5.628E-02	1.479
PO-215	-8.374E-03		6.802E-01	9.889E-01	1.629E-01	-0.008
RN-219	-7.354E-02		3.866E-01	6.222E-01	8.399E-02	-0.118
RN-220	1.712E+01		2.450E+01	4.323E+01	2.695E+00	0.396
RA-223	-8.374E-03		6.802E-01	9.889E-01	1.629E-01	-0.008
AC-227	5.110E-02		3.428E-01	5.808E-01	8.055E-02	0.088
TH-227	5.110E-02		3.429E-01	5.808E-01	9.771E-02	0.088
TH-229	2.372E-01		4.684E-01	7.650E-01	4.028E-02	0.310
PA-231	-5.369E-01		1.420E+00	2.240E+00	3.073E-01	-0.240
TH-231	-8.374E-03		6.802E-01	9.889E-01	1.629E-01	-0.008
U-231	-2.783E-01		1.239E+00	1.818E+00	1.280E-01	-0.153
PA-233	-2.223E-02		5.506E-02	8.912E-02	5.393E-03	-0.249
PA-234	-3.339E-01		3.065E-01	4.256E-01	7.871E-02	-0.785
PA-234M	2.676E+00		4.609E+00	7.518E+00	6.804E-01	0.356
U-235	6.032E-02		1.945E-01	3.178E-01	5.161E-02	0.190
NP-236	-1.546E-02		7.240E-02	1.155E-01	6.056E-03	-0.134
NP-239	-1.803E-01		1.656E-01	2.570E-01	1.622E-02	-0.702
AM-241	1.379E-01		1.421E-01	2.272E-01	1.615E-02	0.607

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.279E-02		8.469E-02	1.390E-01	9.254E-03	-0.092
AM-246	-1.009E-01		1.333E-01	2.051E-01	1.379E-02	-0.492
CM-247	-3.386E-03		3.378E-02	5.471E-02	3.034E-03	-0.062
CF-249	2.384E-02		3.714E-02	6.325E-02	3.477E-03	0.377
CF-251	-4.050E-02		1.142E-01	1.797E-01	9.289E-03	-0.225

# 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]G244148005          *
* Acquisition date   : 20-JAN-2010 15:50:34 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 02:00:01.47             Half life ratio : 8.000    *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148005             Analyst initials: MXR1        *
* Batch Number       : 940268                 Sample Quantity : 1.3462E+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	2.095E+01	2.032E+00	1.903E-01	1.037E+00
CD-109	2.131E+00	1.009E+00	7.122E-01	5.149E-01
SN-126	2.092E-01	9.903E-02	7.126E-02	5.053E-02
BA-137M	1.109E-01	5.967E-02	3.031E-02	3.044E-02
CS-137	1.172E-01	6.308E-02	3.205E-02	3.218E-02
TL-208	5.219E-01	8.208E-02	2.712E-02	4.188E-02
BI-211	3.502E+00	4.586E-01	1.636E-01	2.340E-01
PB-212	1.428E+00	1.412E-01	4.067E-02	7.203E-02
PO-212	1.428E+00	1.412E-01	4.067E-02	7.203E-02
BI-214	1.348E+00	1.747E-01	5.672E-02	8.915E-02
PB-214	1.218E+00	1.713E-01	5.703E-02	8.739E-02
PO-214	1.218E+00	1.713E-01	5.703E-02	8.739E-02
PO-216	1.428E+00	1.412E-01	4.067E-02	7.203E-02
PO-218	1.218E+00	1.713E-01	5.703E-02	8.739E-02
RA-224	4.784E+00	1.222E+00	4.628E-01	6.237E-01
RA-226	1.348E+00	1.747E-01	5.672E-02	8.915E-02
AC-228	1.395E+00	2.977E-01	1.095E-01	1.519E-01
RA-228	1.395E+00	2.977E-01	1.095E-01	1.519E-01
TH-228	1.451E+00	1.435E-01	4.133E-02	7.320E-02
TH-230	1.348E+00	1.747E-01	5.672E-02	8.915E-02
TH-232	1.395E+00	2.977E-01	1.095E-01	1.519E-01
TH-234	2.159E+00	1.729E+00	9.928E-01	8.819E-01
U-234	1.348E+00	1.747E-01	5.672E-02	8.915E-02
NP-237	6.142E-01	3.162E-01	2.067E-01	1.613E-01
U-238	2.159E+00	1.729E+00	9.928E-01	8.819E-01
AM-243	4.017E-01	7.759E-02	4.177E-02	3.959E-02
ANH-511	1.101E-01	6.880E-02	2.075E-02	3.510E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	2.161E-03	3.062E-01	2.576E-01	1.562E-01	NOT IDENT.
NA-22	2.683E-02	4.086E-02	3.671E-02	2.085E-02	NOT IDENT.
NA-24	-1.232E+06	2.095E+06	0.000E+00	1.069E+06	SHORT HLIF
AL-26	-4.696E-03	2.741E-02	2.198E-02	1.398E-02	NOT IDENT.
TI-44	3.625E-01	5.182E-02	3.584E-02	2.644E-02	FAIL ABUN
SC-46	-3.319E-03	3.825E-02	3.173E-02	1.952E-02	FAIL ABUN
V-48	1.010E-02	6.658E-02	5.602E-02	3.397E-02	NOT IDENT.
CR-51	2.924E-02	3.345E-01	2.932E-01	1.707E-01	NOT IDENT.
MN-52	9.919E-02	2.396E-01	2.114E-01	1.222E-01	NOT IDENT.
MN-54	-4.294E-02	3.649E-02	2.731E-02	1.862E-02	NOT IDENT.
CO-56	-2.476E-02	3.486E-02	2.707E-02	1.779E-02	NOT IDENT.
CO-57	4.262E-03	2.167E-02	1.916E-02	1.106E-02	NOT IDENT.
CO-58	1.255E-02	3.530E-02	3.082E-02	1.801E-02	NOT IDENT.
FE-59	-9.126E-02	8.686E-02	6.656E-02	4.432E-02	NOT IDENT.
CO-60	6.267E-03	3.358E-02	2.886E-02	1.713E-02	NOT IDENT.
ZN-65	4.671E-02	9.548E-02	7.440E-02	4.872E-02	NOT IDENT.
GE-68	5.309E-01	1.122E+00	1.005E+00	5.723E-01	NOT IDENT.
AS-73	-6.291E-02	7.289E-01	6.708E-01	3.719E-01	NOT IDENT.
AS-74	-2.185E-02	8.599E-02	7.343E-02	4.387E-02	NOT IDENT.
SE-75	-1.957E-02	3.814E-02	3.288E-02	1.946E-02	NOT IDENT.
BR-77	-2.274E+00	1.366E+01	1.123E+01	6.969E+00	FAIL ABUN
SR-82	-2.516E-01	3.220E-01	2.505E-01	1.643E-01	NOT IDENT.
RB-83	-1.427E-02	6.609E-02	5.412E-02	3.372E-02	NOT IDENT.
RB-84	-1.283E-02	6.753E-02	5.546E-02	3.445E-02	NOT IDENT.
KR-85	8.940E+00	7.353E+00	5.997E+00	3.751E+00	NOT IDENT.
SR-85	4.634E-02	3.811E-02	3.109E-02	1.945E-02	NOT IDENT.
RB-86	4.767E-01	7.211E-01	6.575E-01	3.679E-01	NOT IDENT.
Y-88	-4.802E-03	3.327E-02	2.725E-02	1.697E-02	NOT IDENT.
ZR-88	1.631E-02	2.894E-02	2.566E-02	1.477E-02	NOT IDENT.
Y-91	7.075E+00	1.745E+01	1.533E+01	8.902E+00	NOT IDENT.
NB-94	-5.394E-03	3.355E-02	2.841E-02	1.712E-02	NOT IDENT.
NB-95	8.018E-02	4.885E-02	4.158E-02	2.493E-02	NOT IDENT.
NB-95M	1.516E-01	1.234E-01	1.038E-01	6.297E-02	NOT IDENT.
ZR-95	1.008E-01	6.743E-02	6.390E-02	3.440E-02	NOT IDENT.
NB-97	1.361E+05	2.716E+05	0.000E+00	1.386E+05	SHORT HLIF
ZR-97	7.248E+06	5.121E+06	0.000E+00	2.613E+06	SHORT HLIF
MO-99	-1.757E+00	1.347E+01	1.135E+01	6.873E+00	NOT IDENT.
TC-99M	-2.931E+17	6.053E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.435E-02	3.064E-02	2.474E-02	1.563E-02	FAIL ABUN
RH-102	2.182E-02	2.635E-02	2.354E-02	1.344E-02	FAIL ABUN
RU-103	-1.016E-02	3.837E-02	3.143E-02	1.958E-02	FAIL ABUN
RH-106	-1.363E-01	3.148E-01	2.640E-01	1.606E-01	FAIL ABUN
RU-106	-1.363E-01	3.145E-01	2.640E-01	1.605E-01	FAIL ABUN
AG-108M	1.775E-02	2.695E-02	2.403E-02	1.375E-02	NOT IDENT.
AG-110M	1.550E-02	3.483E-02	2.743E-02	1.777E-02	NOT IDENT.
IN-111	-9.927E-01	1.209E+00	8.912E-01	6.169E-01	NOT IDENT.
IN-113M	-1.809E-03	4.187E-02	3.576E-02	2.136E-02	NOT IDENT.
SN-113	-1.809E-03	4.187E-02	3.576E-02	2.136E-02	NOT IDENT.
IN-114M	-5.541E-02	1.858E-01	1.371E-01	9.480E-02	NOT IDENT.
CD-115	-1.447E+01	1.426E+01	1.081E+01	7.276E+00	NOT IDENT.
SN-117M	-2.805E-02	5.140E-02	4.299E-02	2.623E-02	NOT IDENT.
SB-122	5.509E-01	2.336E+00	2.079E+00	1.192E+00	NOT IDENT.
I-123	-7.652E+06	1.927E+07	0.000E+00	9.832E+06	SHORT HLIF
TE-123M	-1.014E-02	2.554E-02	2.152E-02	1.303E-02	NOT IDENT.
I-124	7.657E-01	7.462E-01	6.259E-01	3.807E-01	FAIL ABUN
SB-124	-4.884E-02	6.596E-02	5.234E-02	3.365E-02	FAIL ABUN
SB-125	-5.057E-02	8.416E-02	6.832E-02	4.294E-02	FAIL ABUN
TE-125M	-2.063E+00	7.911E+00	6.903E+00	4.036E+00	NOT IDENT.
I-126	-4.385E-02	2.127E-01	1.555E-01	1.085E-01	NOT IDENT.
SB-126	-5.078E-02	1.571E-01	1.227E-01	8.013E-02	FAIL ABUN
SB-127	-1.136E+00	1.547E+00	1.244E+00	7.892E-01	NOT IDENT.
XE-127	3.283E-02	4.381E-02	3.823E-02	2.235E-02	NOT IDENT.
I-131	2.771E-02	1.186E-01	1.037E-01	6.050E-02	NOT IDENT.
TE-132	-2.086E-01	7.264E-01	6.422E-01	3.706E-01	NOT IDENT.
BA-133	2.115E-02	4.325E-02	3.412E-02	2.207E-02	FAIL ABUN
I-133	-2.486E+02	1.229E+04	0.000E+00	6.272E+03	SHORT HLIF
CS-134	2.259E-01	8.969E-02	4.603E-02	4.576E-02	FAIL ABUN
CS-135	2.831E-02	1.411E-01	1.260E-01	7.199E-02	NOT IDENT.
I-135	1.255E+16	6.481E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.786E-02	1.054E-01	9.368E-02	5.379E-02	FAIL ABUN
CE-139	-9.287E-03	2.599E-02	2.185E-02	1.326E-02	NOT IDENT.
BA-140	1.538E-01	2.376E-01	2.141E-01	1.212E-01	NOT IDENT.
LA-140	-1.418E-01	8.029E-02	4.688E-02	4.096E-02	FAIL ABUN
CE-141	7.512E-03	5.697E-02	4.955E-02	2.906E-02	NOT IDENT.
CE-143	1.445E+03	4.048E+02	0.000E+00	2.066E+02	SHORT HLIF
CE-144	1.510E-01	1.982E-01	1.602E-01	1.011E-01	NOT IDENT.
PM-144	3.395E-02	3.154E-02	2.921E-02	1.609E-02	NOT IDENT.
PR-144	2.302E+00	2.138E+00	1.981E+00	1.091E+00	NOT IDENT.

PM-146	5.858E-03	3.951E-02	3.375E-02	2.016E-02	NOT IDENT.
ND-147	1.301E-01	5.313E-01	4.514E-01	2.711E-01	NOT IDENT.
PM-149	-3.739E+01	1.091E+02	9.417E+01	5.568E+01	NOT IDENT.
EU-152	-9.214E-02	9.498E-02	7.045E-02	4.846E-02	FAIL ABUN
GD-153	-5.713E-02	7.358E-02	6.013E-02	3.754E-02	NOT IDENT.
EU-154	7.826E-02	1.146E-01	1.030E-01	5.845E-02	NOT IDENT.
EU-155	1.145E-01	9.430E-02	8.739E-02	4.811E-02	FAIL ABUN
TB-160	3.879E-02	1.362E-01	1.171E-01	6.947E-02	FAIL ABUN
HO-166M	-4.836E-02	5.545E-02	4.379E-02	2.829E-02	FAIL ABUN
TM-171	8.959E+00	2.677E+01	2.228E+01	1.366E+01	NOT IDENT.
LU-176	-1.784E-03	2.059E-02	1.793E-02	1.051E-02	FAIL ABUN
LU-177	2.987E+00	1.392E+00	1.069E+00	7.100E-01	FAIL ABUN
LU-177M	-8.494E-02	1.733E-01	1.395E-01	8.842E-02	NOT IDENT.
HF-181	-2.275E-02	4.093E-02	3.287E-02	2.089E-02	NOT IDENT.
W-181	-9.835E-02	3.516E-01	2.848E-01	1.794E-01	NOT IDENT.
TA-182	6.413E-02	1.823E-01	1.592E-01	9.304E-02	FAIL ABUN
RE-183	3.678E-02	1.016E-01	8.768E-02	5.182E-02	FAIL ABUN
RE-184	8.334E-05	1.969E-01	1.751E-01	1.005E-01	NOT IDENT.
OS-185	4.732E-02	4.066E-02	3.805E-02	2.075E-02	NOT IDENT.
RE-188	1.691E-01	1.527E-01	1.378E-01	7.791E-02	NOT IDENT.
W-188	-9.944E+00	7.323E+00	5.041E+00	3.736E+00	FAIL ABUN
IR-192	1.999E-02	2.942E-02	2.670E-02	1.501E-02	FAIL ABUN
AU-195	1.732E-01	1.955E-01	1.798E-01	9.974E-02	FAIL ABUN
TL-200	-4.392E+02	8.253E+02	0.000E+00	4.211E+02	SHORT HLIF
TL-201	-4.241E+00	7.530E+00	6.253E+00	3.842E+00	NOT IDENT.
TL-202	4.526E-02	6.133E-02	5.492E-02	3.129E-02	NOT IDENT.
HG-203	2.871E-02	4.126E-02	3.327E-02	2.105E-02	NOT IDENT.
BI-207	9.313E-03	4.240E-02	3.728E-02	2.163E-02	FAIL ABUN
TL-207	-8.374E-03	6.666E-01	5.097E-01	3.401E-01	FAIL ABUN
PO-209	3.511E+00	7.495E+00	6.528E+00	3.824E+00	NOT IDENT.
BI-210	-2.445E+00	2.839E+00	2.470E+00	1.449E+00	NOT IDENT.
PB-210	-2.445E+00	2.839E+00	2.470E+00	1.449E+00	NOT IDENT.
PO-210	-2.445E+00	2.838E+00	2.470E+00	1.448E+00	NOT IDENT.
PB-211	-6.818E-01	9.562E-01	6.957E-01	4.879E-01	NOT IDENT.
BI-212	9.614E-01	4.636E-01	3.302E-01	2.365E-01	FAIL ABUN
PO-215	-8.374E-03	6.666E-01	5.097E-01	3.401E-01	FAIL ABUN
RN-219	-7.354E-02	3.789E-01	3.195E-01	1.933E-01	NOT IDENT.
RN-220	1.712E+01	2.401E+01	2.207E+01	1.225E+01	NOT IDENT.
RA-223	-8.374E-03	6.666E-01	5.097E-01	3.401E-01	FAIL ABUN
AC-227	5.110E-02	3.360E-01	3.006E-01	1.714E-01	FAIL ABUN
TH-227	5.110E-02	3.360E-01	3.006E-01	1.714E-01	FAIL ABUN
TH-229	2.372E-01	4.591E-01	3.979E-01	2.342E-01	NOT IDENT.
PA-231	-5.369E-01	1.391E+00	1.157E+00	7.099E-01	NOT IDENT.
TH-231	-8.374E-03	6.666E-01	5.097E-01	3.401E-01	FAIL ABUN
U-231	-2.783E-01	1.214E+00	9.569E-01	6.194E-01	FAIL ABUN
PA-233	-2.223E-02	5.396E-02	4.596E-02	2.753E-02	FAIL ABUN
PA-234	-3.339E-01	3.003E-01	2.151E-01	1.532E-01	FAIL ABUN
PA-234M	2.676E+00	4.517E+00	3.796E+00	2.304E+00	FAIL ABUN
U-235	6.032E-02	1.907E-01	1.661E-01	9.727E-02	FAIL ABUN
NP-236	-1.546E-02	7.095E-02	6.027E-02	3.620E-02	NOT IDENT.
NP-239	-1.803E-01	1.623E-01	1.349E-01	8.278E-02	FAIL ABUN
AM-241	1.379E-01	1.392E-01	1.206E-01	7.104E-02	NOT IDENT.
CM-243	-1.279E-02	8.300E-02	7.306E-02	4.235E-02	FAIL ABUN
AM-246	-1.009E-01	1.306E-01	1.034E-01	6.665E-02	NOT IDENT.
CM-247	-3.386E-03	3.310E-02	2.809E-02	1.689E-02	FAIL ABUN
CF-249	2.384E-02	3.640E-02	3.249E-02	1.857E-02	NOT IDENT.
CF-251	-4.050E-02	1.119E-01	9.359E-02	5.710E-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	242.1613
46.50	242.1613
46.50	242.1613
48.70	226.0691
49.72	208.0074
51.35	249.5683
52.39	239.1803
52.97	242.2179
53.15	242.3561
53.44	265.9697
54.07	256.0807
56.28	275.3126
56.28	275.3150
57.37	0.0000
57.53	291.2726
57.53	291.2742
57.60	291.3342
57.98	289.9090
57.98	289.9090
59.32	263.2797
59.32	263.2797
59.40	239.5213
59.54	239.6201
59.72	241.0710
60.01	246.5786
61.10	269.9675
61.14	269.9989
61.30	270.1228
63.00	309.3209
63.29	309.5733
63.29	309.5733
63.58	309.8261
64.28	316.6960
65.12	329.5403
65.20	340.3760
65.20	340.3760
66.05	353.3078
66.72	321.5284
66.83	321.6265
66.91	325.7523
67.20	309.7751
67.20	309.7751
67.75	337.0565
67.85	337.1495
68.90	343.8041
68.90	343.8041
69.30	323.7637
69.67	356.7619
70.82	381.0558
70.82	381.0558
70.83	381.0664
72.80	337.7076
72.87	337.7695
72.87	337.7695
74.67	339.3142
74.81	339.4343
74.81	339.4343
74.81	339.4343
74.81	339.4343
74.81	339.4343
74.81	339.4343
74.81	339.4343
74.97	339.5703
75.28	339.8340
75.70	340.1906
77.11	341.3806
77.11	341.3806

77.11	341.3806
77.11	341.3806
77.11	341.3806
77.11	341.3806
77.11	341.3806
78.38	371.6758
79.62	337.8864
79.80	338.0323
79.80	338.0323
80.11	334.0916
80.18	334.1463
80.30	334.2430
80.30	334.2430
80.57	349.8516
81.00	373.1840
81.07	373.2470
81.07	373.2470
81.07	373.2470
81.07	373.2470
82.60	363.3474
83.37	377.5232
83.78	362.3768
83.78	362.3768
83.78	362.3768
83.78	362.3768
84.21	381.0862
84.90	343.5245
85.43	380.7440
86.29	441.0547
86.50	455.4545
86.54	455.4962
86.59	455.5476
86.72	455.6823
86.79	455.7533
86.94	478.1611
87.30	478.5489
87.30	478.5489
87.30	478.5489
87.30	478.5489
87.30	478.5489
87.30	478.5489
87.57	478.8417
87.88	465.4172
88.03	465.5743
88.36	402.7513
88.47	402.8505
89.95	374.6261
91.11	375.5856
92.29	469.9727
92.38	470.0650
92.38	470.0650
93.35	298.1879
94.00	266.8690
94.67	235.4678
94.67	235.4703
94.90	235.5859
94.90	235.5859
94.90	235.5859
94.90	235.5859
95.87	286.7610
95.87	286.7610
96.73	306.1458
97.43	303.3966
98.44	276.6591
98.44	276.6606
98.88	244.8492
99.55	222.8093
99.55	222.8093
99.86	222.9514
100.00	240.5451
100.10	231.8299
103.18	293.0719
103.76	255.1414
105.00	236.0974
105.31	234.2740
108.00	294.8852
109.28	248.9931

111.00	253.7964
111.00	253.7964
111.76	270.1110
112.95	272.7167
115.19	239.7537
116.30	278.4455
117.00	259.6797
117.00	259.6797
117.66	254.9560
121.11	262.6359
121.62	236.4866
121.78	236.5541
122.06	227.5307
122.32	227.6356
122.32	227.6356
122.32	227.6356
122.32	227.6356
123.07	246.2551
127.23	238.3164
129.76	257.3700
131.20	249.2287
133.02	222.0432
133.54	225.3434
135.34	246.2819
136.00	243.4286
136.25	250.8161
136.48	257.1560
140.51	270.3746
140.51	0.0000
142.18	260.5912
142.65	270.2495
143.76	248.6062
144.24	235.0887
144.24	235.0887
144.24	235.0887
144.24	235.0887
145.22	260.7917
145.44	258.7698
147.16	241.4637
152.43	240.2229
152.70	233.9128
153.22	245.8537
154.21	265.4905
154.21	265.4905
154.21	265.4905
154.21	265.4905
155.03	224.0163
156.02	242.5964
158.56	254.2862
159.00	0.0000
159.00	253.3713
160.31	248.4577
161.27	247.7246
162.32	228.6005
162.64	223.2861
163.35	225.6846
163.89	233.4612
165.85	235.2063
167.43	227.0049
171.28	215.0669
171.86	219.6330
172.10	219.7062
176.55	233.2110
176.60	233.2271
181.06	211.8378
184.41	237.9133
185.71	213.7034
186.00	213.7850
190.27	236.3589
192.34	232.9244
193.63	218.1597
197.04	234.9955
198.01	234.1431
198.60	243.4146
200.40	232.5609
201.83	229.5457
202.84	217.2541
205.31	242.5675



208.36	217.5642
208.81	215.3779
209.75	183.3359
209.75	183.3359
210.97	185.3349
215.65	173.0103
216.55	168.5427
218.09	238.7121
222.10	186.8853
223.80	203.9505
226.40	221.3064
227.00	214.3974
227.08	214.4178
227.20	195.0307
228.16	202.3091
228.18	203.1978
228.18	203.1978
231.56	0.0000
235.69	210.9542
236.00	209.6006
236.00	209.6006
238.63	183.2131
238.63	183.2131
238.63	183.2131
238.63	183.2131
239.00	183.2851
240.98	183.6792
241.98	183.8763
241.98	183.8763
241.98	183.8763
244.69	168.3974
245.39	165.6424
247.94	144.4263
248.90	145.4763
249.79	160.9879
252.40	171.4024
252.85	164.2246
252.85	164.2246
254.15	0.0000
256.20	175.7191
256.20	175.7191
260.50	171.9212
260.90	185.7127
262.80	162.2401
264.65	172.6441
268.24	185.2447
268.79	162.2930
269.46	164.2458
269.46	164.2458
269.46	164.2458
269.46	164.2458
271.23	169.0234
273.65	241.6427
276.40	164.9933
277.35	155.2909
277.60	155.3266
277.60	155.3266
278.00	155.3878
278.60	156.4080
279.20	144.5764
279.53	144.6214
280.46	164.1514
281.68	126.9916
283.67	163.5844
284.30	167.5612
285.00	162.9896
285.90	154.6900
286.10	138.7794
286.10	138.7794
287.40	136.1322
288.45	0.0000
290.67	176.2912
290.80	159.7375
291.72	146.3004
293.26	0.0000
293.70	134.4799
295.21	136.1821
295.21	136.1821

295.21	136.1821
295.96	136.2766
296.50	68.1713
297.23	68.2174
298.57	68.3009
299.80	124.5996
299.80	124.5996
300.09	129.1934
300.09	129.1934
300.09	129.1934
300.09	129.1934
300.12	129.1954
301.29	106.5107
302.84	124.9439
303.76	126.5730
303.91	125.0640
304.40	119.5253
304.40	119.5253
304.84	119.9365
306.84	128.0704
308.46	124.4279
311.98	132.4978
316.51	113.7471
318.01	133.2011
319.02	124.6243
319.41	116.9344
320.08	132.4742
323.87	141.2500
323.87	141.2500
323.87	141.2500
323.87	141.2500
325.23	141.4166
328.77	160.5477
333.44	159.0949
334.20	148.7576
334.20	148.7576
334.30	148.7692
338.28	125.6953
338.28	125.6953
338.28	125.6953
338.28	125.6953
338.32	125.7012
338.32	125.7012
338.32	125.7012
340.50	125.9277
340.57	125.9336
344.27	147.3714
345.85	138.3380
350.59	0.0000
351.07	142.8948
351.92	142.9937
351.92	142.9937
351.92	142.9937
355.39	0.0000
356.01	113.1753
364.48	123.3641
366.43	130.5832
367.43	133.7001
367.94	0.0000
369.80	106.7537
374.96	118.3015
383.85	118.0833
387.95	106.1947
388.63	112.3784
391.69	120.8250
391.69	120.8250
392.90	110.6845
398.62	112.1784
400.65	97.9151
401.10	106.1952
401.81	117.5973
402.60	110.4384
404.84	128.1929
410.95	117.3330
411.60	121.5435
413.65	124.8413
414.70	121.8095
415.30	116.6536

415.76	106.2739
417.63	0.0000
418.52	109.6111
423.70	89.0544
427.08	113.4168
427.89	109.2781
432.53	85.3827
433.93	71.7468
439.47	72.0176
439.56	72.0217
439.89	73.0977
443.98	96.6694
444.90	86.0996
445.03	75.4765
445.03	75.4765
445.03	75.4765
445.03	75.4765
453.90	90.8923
463.38	79.1905
468.07	94.9703
473.00	101.7654
475.06	75.8821
475.35	83.4856
476.78	94.4142
477.59	93.3762
477.96	86.8823
482.03	100.1702
484.57	77.4287
487.03	89.5618
490.36	0.0000
492.35	83.2827
497.08	89.0202
507.63	0.0000
510.53	0.0000
510.84	76.4658
511.00	76.4732
511.85	76.5121
511.85	76.5121
513.99	79.9404
513.99	79.9404
520.41	88.0457
520.65	90.2895
527.90	96.2697
528.96	0.0000
529.64	72.8354
529.87	0.0000
531.02	69.5305
537.32	65.7321
543.00	61.4291
546.56	0.0000
549.76	75.2674
552.65	84.4720
555.20	76.4060
563.23	75.8348
563.90	74.0351
568.70	79.7295
569.32	81.5906
569.50	81.5993
569.67	77.9381
573.80	73.5195
574.00	73.5273
574.64	89.6424
578.91	89.0815
579.30	0.0000
583.14	74.8162
585.48	72.4430
591.81	76.0902
592.07	76.1022
593.00	76.1383
595.88	81.8340
600.56	80.1715
602.52	0.0000
602.71	59.1075
602.71	59.1075
603.60	66.9163
604.41	73.1717
604.70	79.4115
609.31	92.0891

609.31	92.0891
609.31	92.0891
609.31	92.0891
610.33	93.6987
612.46	84.4233
614.37	100.1563
618.01	90.3094
621.84	92.3703
621.84	92.3703
631.29	82.3972
633.02	69.1967
633.10	69.2003
634.78	66.4128
635.90	64.5519
636.97	80.7313
645.85	62.9643
646.12	61.0641
656.30	59.1329
657.75	60.7743
657.90	0.0000
661.65	86.5261
661.65	86.5261
664.57	0.0000
666.33	85.1157
666.33	85.1157
675.00	66.7646
677.61	79.4415
685.20	80.7001
692.80	86.8424
695.00	74.2336
696.49	59.6239
696.49	59.6239
697.00	61.5927
697.49	67.4738
698.33	90.9792
698.50	90.9861
699.00	86.1158
702.63	89.2004
706.10	76.5794
706.58	0.0000
706.67	83.4747
709.31	70.7924
711.68	77.7598
713.82	63.0563
717.42	64.1478
720.50	80.2959
721.93	0.0000
722.20	67.5826
722.78	74.1962
722.78	74.1962
722.89	74.1998
722.95	74.2017
723.30	67.6160
724.18	69.2925
727.18	77.6468
733.00	48.0348
735.90	60.7007
739.58	60.8004
742.81	63.8813
744.21	57.9278
747.13	56.0027
751.79	66.1370
752.31	62.1438
753.82	54.1608
755.35	50.1819
756.15	48.1910
756.87	52.2234
763.93	45.3318
765.79	60.4907
766.42	67.2298
766.84	78.6741
776.49	56.7164
778.00	40.5381
778.57	45.6163
778.89	45.6229
783.80	43.6855
785.46	46.7659
792.07	44.1776

795.84	55.1377
796.30	55.1483
798.80	55.2063
801.93	64.8316
805.60	52.9697
810.29	57.5230
810.76	49.3148
815.85	60.7429
817.79	72.1243
818.51	57.7158
819.60	47.4308
826.30	69.2720
828.27	0.0000
831.60	48.6971
831.96	49.7402
834.83	81.9586
836.80	0.0000
846.75	56.2887
848.13	52.1472
856.28	0.0000
856.80	55.8138
860.37	49.2548
867.32	45.5349
867.82	49.0467
871.10	56.8266
873.19	50.5535
874.81	47.4236
875.33	0.0000
876.40	55.8881
879.36	52.7844
880.27	46.4664
880.51	47.5269
881.50	54.9415
883.24	57.0916
884.67	59.2389
889.25	56.1637
896.60	55.2563
898.02	65.9189
899.00	74.4519
903.28	39.5686
911.07	62.3238
911.07	62.3238
911.07	62.3238
919.63	48.2311
920.93	47.1818
925.00	49.4006
925.24	46.1830
926.50	46.2040
935.52	50.3091
937.48	66.5280
944.10	58.3967
946.00	66.0114
949.00	38.9997
962.29	50.7956
964.01	65.3481
966.15	10.8997
968.20	10.9075
969.11	47.2816
969.11	47.2816
969.11	47.2816
977.42	47.8761
980.50	47.1058
983.50	42.7686
989.30	36.2621
996.32	48.6502
1001.03	39.5348
1001.68	40.4631
1004.76	62.6003
1021.30	0.0000
1024.50	0.0000
1034.80	50.2207
1036.00	43.7278
1037.82	46.5474
1038.57	57.7314
1038.76	0.0000
1045.16	57.8601
1046.59	55.0844
1048.07	46.7061

1050.47	41.1336
1050.47	41.1336
1062.04	36.5974
1063.62	36.6165
1076.63	38.6577
1077.35	42.4384
1078.86	56.6113
1085.78	42.5537
1099.22	62.6807
1112.02	53.9450
1112.84	44.1481
1115.52	49.0932
1120.29	52.5808
1120.29	52.5808
1120.29	52.5808
1120.29	52.5808
1120.51	52.5852
1121.28	47.5437
1124.00	0.0000
1129.67	50.8175
1131.51	0.0000
1147.95	0.0000
1167.94	44.6243
1173.22	53.4401
1175.09	54.4437
1177.93	49.6241
1189.05	43.9307
1204.90	51.9843
1205.75	0.0000
1213.00	56.0398
1221.42	55.1911
1230.97	60.2852
1235.34	59.3726
1236.41	0.0000
1238.25	47.5371
1246.25	47.6465
1260.41	0.0000
1271.85	49.9919
1274.45	38.0216
1274.54	38.0232
1291.56	41.2185
1298.22	0.0000
1312.09	43.4742
1325.50	25.3682
1325.50	25.3682
1332.49	26.4327
1333.61	38.6432
1360.21	24.5801
1362.66	0.0000
1365.15	16.4082
1368.21	29.7647
1368.53	0.0000
1376.25	31.7373
1384.27	19.4357
1394.10	21.6998
1395.20	35.1427
1407.95	12.4443
1434.06	19.8350
1436.60	17.7581
1457.56	0.0000
1460.81	12.6113
1489.15	25.4004
1509.49	17.0176
1596.49	30.7085
1620.62	13.1001
1678.03	0.0000
1691.02	12.3571
1691.02	12.3571
1706.46	0.0000
1750.46	0.0000
1764.49	11.8296
1764.49	11.8296
1764.49	11.8296
1764.49	11.8296
1770.23	55.1094
1771.40	25.1440
1791.20	0.0000
1808.65	11.6953

1836.01

14.7018

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148005

Total Uranium Activity	6.4510E+00	ug/g
Total Uranium Counting Unc.	5.1433E+00	ug/g
Total Uranium Tpu	2.6241E-06	ug/g
Total Uranium Mda	2.9547E+00	ug/g



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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940268          SAMPLE ID   : G244148005
*  ANALYST       : MXR1           DETECTOR    : GAM12
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 15:50:34.58  SAMPLE ALQT: 134.620 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.422E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.290E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.379E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.633E+00

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## VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:54:43.16

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148006.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:51:00
Sample ID          : G244148006          Sample quantity  : 1.34900E+02 GRAM
Detector name      : GAM16              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.93  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	63.77*	55	390	0.70	127.73	124	7	7.69E-03	63.0	
2	3	74.85	440	397	1.03	149.88	145	13	6.11E-02	8.6	2.00E+00
3	3	77.10*	652	375	0.94	154.38	145	13	9.05E-02	6.2	
4	2	84.09*	84	331	1.04	168.36	162	21	1.17E-02	36.6	1.69E+00
5	2	87.26	291	310	1.05	174.71	162	21	4.05E-02	11.4	
6	2	89.90	173	295	1.06	179.99	162	21	2.40E-02	17.7	
7	0	92.77*	252	369	1.41	185.74	183	7	3.51E-02	14.9	
8	0	128.92	76	350	1.14	258.04	255	8	1.05E-02	44.5	
9	0	185.86*	203	386	0.94	371.91	367	10	2.82E-02	20.1	
10	0	209.13	120	324	1.02	418.45	414	9	1.67E-02	28.5	
11	5	238.49*	1340	214	0.95	477.17	473	16	1.86E-01	3.3	4.66E+00
12	5	241.56	294	294	1.67	483.32	473	16	4.09E-02	14.7	
13	0	270.04	126	219	1.74	540.27	536	11	1.75E-02	24.4	
14	3	295.07*	415	126	1.06	590.33	586	19	5.76E-02	6.6	3.43E-01
15	3	299.88*	80	142	1.36	599.95	586	19	1.11E-02	29.6	
16	0	327.66	105	131	1.62	655.51	652	9	1.46E-02	21.9	
17	0	338.08	271	221	1.07	676.35	671	11	3.77E-02	12.2	
18	0	351.81*	737	141	1.15	703.81	699	12	1.02E-01	5.0	
19	0	409.13	64	97	1.14	818.43	814	9	8.84E-03	30.8	
20	0	462.70	84	111	1.29	925.56	921	10	1.17E-02	25.8	
21	0	510.69*	145	176	1.97	1021.53	1014	17	2.01E-02	25.1	
22	0	583.03*	395	85	1.37	1166.19	1160	10	5.49E-02	6.8	
23	0	609.19*	537	120	1.20	1218.51	1212	14	7.45E-02	6.2	
24	0	727.15	89	73	1.11	1454.40	1448	10	1.24E-02	20.8	
25	0	768.22	63	48	1.30	1536.52	1533	9	8.70E-03	23.5	
26	0	860.41	60	72	0.90	1720.85	1716	12	8.33E-03	31.1	
27	0	911.11*	317	37	1.66	1822.22	1816	13	4.41E-02	7.0	
28	4	964.43	71	44	2.35	1928.84	1921	23	9.87E-03	23.6	8.64E-01
29	4	968.66*	163	22	1.57	1937.30	1921	23	2.27E-02	10.0	
30	0	1120.34*	83	66	1.81	2240.56	2234	12	1.16E-02	22.8	
31	0	1377.41	47	12	2.21	2754.51	2748	12	6.54E-03	20.7	
32	0	1460.41*	995	33	1.95	2920.42	2912	16	1.38E-01	3.4	
33	0	1508.98	39	6	0.74	3017.51	3013	11	5.35E-03	20.0	
34	0	1729.17	36	3	2.03	3457.67	3451	14	4.97E-03	20.0	
35	0	1764.09*	102	9	2.24	3527.47	3520	17	1.42E-02	12.3	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:54:46

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00 Acquisition date : 20-JAN-2010 15:51:00
Sample ID         : G244148006 Sample quantity : 134.90 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA16 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00
    
```

Full Combined Activity-MDA Report

----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.149E+01	2.400E+00	4.203E-01	3.695E-02	51.123
CD-109	+	88.03	*	3.568E+00	8.816E-01	9.951E-01	9.589E-02	3.586
SN-126	+	64.28		4.453E-01	5.648E-01	6.698E-01	9.758E-02	0.665
	+	86.94		1.456E+00	6.900E-01	4.104E-01	1.705E-01	3.547
	+	87.57	*	3.502E-01	8.652E-02	9.809E-02	9.405E-03	3.570
TL-208		277.35		2.696E-01	3.296E-01	5.479E-01	8.145E-02	0.492
	+	510.84		6.293E-01	3.253E-01	1.863E-01	2.355E-02	3.378
	+	583.14	*	4.894E-01	8.267E-02	5.008E-02	4.964E-03	9.773
	+	860.37		6.981E-01	4.397E-01	3.375E-01	3.379E-02	2.068
BI-211		72.87		2.103E+00	2.583E+00	4.124E+00	3.353E-01	0.510
	+	351.07	*	4.020E+00	5.940E-01	2.518E-01	2.753E-02	15.964
PB-212	+	74.81		2.240E+00	4.751E-01	4.378E-01	5.470E-02	5.116
	+	77.11		1.880E+00	2.829E-01	2.484E-01	2.110E-02	7.568
	+	87.30		1.620E+00	4.317E-01	4.549E-01	6.292E-02	3.560
	+	238.63	*	1.600E+00	2.162E-01	8.041E-02	9.521E-03	19.897
	+	300.09		1.470E+00	8.908E-01	1.077E+00	1.411E-01	1.365
PO-212	+	74.81		2.240E+00	4.751E-01	4.378E-01	5.470E-02	5.116
	+	77.11		1.880E+00	2.829E-01	2.484E-01	2.110E-02	7.568
	+	87.30		1.620E+00	4.317E-01	4.549E-01	6.292E-02	3.560
		115.19		-1.034E-01	2.803E+00	4.702E+00	3.923E-01	-0.022
	+	238.63	*	1.600E+00	2.162E-01	8.041E-02	9.521E-03	19.897
	+	300.09		1.470E+00	8.908E-01	1.077E+00	1.411E-01	1.365
BI-214	+	609.31	*	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718
	+	1120.29		1.011E+00	4.735E-01	4.340E-01	4.659E-02	2.330
	+	1764.49		1.702E+00	4.410E-01	2.311E-01	1.913E-02	7.363
PB-214	+	74.81		3.860E+00	7.885E-01	7.544E-01	8.387E-02	5.116
	+	77.11		3.223E+00	5.435E-01	4.258E-01	4.859E-02	7.568
	+	87.30		2.774E+00	7.181E-01	7.793E-01	9.568E-02	3.560
	+	241.98		2.111E+00	6.746E-01	4.843E-01	6.000E-02	4.358
	+	295.21		1.339E+00	2.507E-01	1.886E-01	2.517E-02	7.100
	+	351.92	*	1.398E+00	2.191E-01	8.778E-02	1.062E-02	15.930
PO-214	+	74.81		3.860E+00	7.885E-01	7.544E-01	8.387E-02	5.116
	+	77.11		3.223E+00	5.435E-01	4.258E-01	4.859E-02	7.568
	+	87.30		2.774E+00	7.181E-01	7.793E-01	9.568E-02	3.560

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.111E+00	6.746E-01	4.843E-01	6.000E-02	4.358
	+	295.21		1.339E+00	2.507E-01	1.886E-01	2.517E-02	7.100
	+	351.92	*	1.398E+00	2.191E-01	8.778E-02	1.062E-02	15.930
	+	74.81		2.240E+00	4.751E-01	4.378E-01	5.470E-02	5.116
	+	77.11		1.880E+00	2.829E-01	2.484E-01	2.110E-02	7.568
	+	87.30		1.620E+00	4.317E-01	4.549E-01	6.292E-02	3.560
PO-218	+	238.63	*	1.600E+00	2.162E-01	8.041E-02	9.521E-03	19.897
	+	300.09		1.470E+00	8.908E-01	1.077E+00	1.411E-01	1.365
	+	74.81		3.860E+00	7.885E-01	7.544E-01	8.387E-02	5.116
	+	77.11		3.223E+00	5.435E-01	4.258E-01	4.859E-02	7.568
	+	87.30		2.774E+00	7.181E-01	7.793E-01	9.568E-02	3.560
	+	241.98		2.111E+00	6.746E-01	4.843E-01	6.000E-02	4.358
RA-224	+	295.21		1.339E+00	2.507E-01	1.886E-01	2.517E-02	7.100
	+	351.92	*	1.398E+00	2.191E-01	8.778E-02	1.062E-02	15.930
	+	240.98	*	4.002E+00	1.259E+00	9.153E-01	1.009E-01	4.373
RA-226	+	609.31	*	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718
	+	1120.29		1.011E+00	4.735E-01	4.340E-01	4.659E-02	2.330
	+	1764.49		1.702E+00	4.410E-01	2.311E-01	1.913E-02	7.363
AC-228	+	338.32		1.633E+00	7.902E-01	3.270E-01	1.367E-01	4.993
	+	911.07	*	1.747E+00	3.218E-01	1.705E-01	2.026E-02	10.244
	+	969.11		1.584E+00	4.897E-01	2.767E-01	6.525E-02	5.726
RA-228	+	338.32		1.633E+00	7.902E-01	3.270E-01	1.367E-01	4.993
	+	911.07	*	1.747E+00	3.218E-01	1.705E-01	2.026E-02	10.244
	+	969.11		1.584E+00	4.897E-01	2.767E-01	6.525E-02	5.726
TH-228	+	74.81		2.276E+00	4.341E-01	4.449E-01	3.722E-02	5.116
	+	77.11		1.910E+00	2.875E-01	2.524E-01	2.144E-02	7.568
	+	87.30		1.646E+00	4.067E-01	4.623E-01	4.418E-02	3.560
TH-230	+	238.63	*	1.626E+00	2.197E-01	8.172E-02	9.675E-03	19.897
	+	300.09		1.493E+00	1.257E+00	1.094E+00	6.546E-01	1.365
	+	609.31	*	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718
TH-232	+	1120.29		1.011E+00	4.735E-01	4.340E-01	4.659E-02	2.330
	+	1764.49		1.702E+00	4.410E-01	2.311E-01	1.913E-02	7.363
	+	338.32		1.633E+00	4.364E-01	3.270E-01	3.569E-02	4.993
TH-234	+	911.07	*	1.747E+00	3.218E-01	1.705E-01	2.026E-02	10.244
	+	969.11		1.584E+00	4.897E-01	2.767E-01	6.525E-02	5.726
	+	63.29	*	1.125E+00	1.431E+00	1.700E+00	2.966E-01	0.662
U-234	+	92.38		1.969E+00	6.894E-01	5.785E-01	1.063E-01	3.404
	+	609.31	*	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718
	+	1120.29		1.011E+00	4.735E-01	4.340E-01	4.659E-02	2.330
NP-237	+	1764.49		1.702E+00	4.410E-01	2.311E-01	1.913E-02	7.363
	+	86.50	*	1.028E+00	3.310E-01	2.912E-01	6.611E-02	3.531
	+	95.87		1.743E-01	8.292E-01	1.276E+00	3.159E-01	0.137
U-238	+	63.29	*	1.125E+00	1.431E+00	1.700E+00	2.966E-01	0.662
	+	92.38		1.969E+00	6.142E-01	5.785E-01	5.338E-02	3.404
AM-243	+	74.67	*	3.632E-01	6.914E-02	7.120E-02	5.894E-03	5.101
	+	86.72		3.856E+01	9.528E+00	1.090E+01	1.034E+00	3.539
	+	117.66		-2.739E+00	3.014E+00	4.842E+00	4.028E-01	-0.566
ANH-511	+	142.18		-8.393E+00	1.461E+01	2.367E+01	2.019E+00	-0.355
	+	511.00	*	1.359E-01	6.934E-02	4.024E-02	3.828E-03	3.377

---- 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	*		7.346E-02	2.666E-01	4.508E-01	4.560E-02	0.163
NA-22	1274.54	*		-7.993E-04	3.773E-02	6.103E-02	5.078E-03	-0.013
NA-24	1368.53	*		-3.372E-01	3.773E-02	Half-Life too short		
AL-26	1129.67			-5.732E-01	1.571E+00	2.481E+00	2.080E-01	-0.231
	1808.65	*		-5.527E-03	2.385E-02	3.715E-02	3.038E-03	-0.149
TI-44	67.85			-1.773E-02	3.726E-02	5.641E-02	4.369E-03	-0.314
	78.38	*		3.469E-01	5.220E-02	6.102E-02	5.254E-03	5.686
SC-46	889.25	*		1.557E-02	3.536E-02	6.133E-02	5.798E-03	0.254
	1120.51	+		1.746E-01	8.093E-02	1.199E-01	1.013E-02	1.457
V-48	944.10			4.582E-01	7.931E-01	1.390E+00	1.299E-01	0.330
	983.50	*		-1.192E-02	6.184E-02	1.004E-01	9.244E-03	-0.119
	1312.09			2.620E-02	6.832E-02	1.161E-01	9.744E-03	0.226
CR-51	320.08	*		2.670E-01	3.355E-01	5.573E-01	6.516E-02	0.479
MN-52	744.21			1.642E-01	2.371E-01	4.043E-01	3.712E-02	0.406
	848.13			-4.173E-01	6.645E+00	1.108E+01	1.043E+00	-0.038
	935.52			2.446E-01	2.648E-01	4.737E-01	4.438E-02	0.516
	1246.25			2.483E+00	6.801E+00	1.148E+01	9.462E-01	0.216
	1333.61			-1.166E+00	4.921E+00	7.700E+00	6.496E-01	-0.151
	1434.06	*		-2.539E-02	2.538E-01	4.011E-01	3.423E-02	-0.063
MN-54	834.83	*		8.681E-03	3.117E-02	5.356E-02	5.031E-03	0.162
CO-56	846.75	*		2.883E-02	3.380E-02	6.070E-02	5.712E-03	0.475
	977.42			-1.391E+00	2.372E+00	3.671E+00	3.387E-01	-0.379
	1037.82			1.033E-01	2.696E-01	4.618E-01	4.341E-02	0.224
	1175.09			-9.276E-01	1.885E+00	2.911E+00	2.342E-01	-0.319
	1238.25			1.206E-01	8.036E-02	1.463E-01	1.241E-02	0.825
	1360.21			3.834E-01	8.390E-01	1.442E+00	1.221E-01	0.266
	1771.40			-8.933E-02	2.221E-01	2.740E-01	2.264E-02	-0.326
CO-57	122.06	*		1.184E-02	2.020E-02	3.465E-02	2.880E-03	0.342
	136.48			-7.557E-02	1.707E-01	2.787E-01	2.534E-02	-0.271
CO-58	810.76	*		-2.146E-02	3.515E-02	5.593E-02	5.240E-03	-0.384
FE-59	142.65			1.175E-01	2.367E+00	3.865E+00	3.299E-01	0.030
	192.34			-8.416E-02	8.204E-01	1.335E+00	1.890E-01	-0.063
	1099.22	*		-1.262E-02	7.860E-02	1.269E-01	1.179E-02	-0.099
	1291.56			4.070E-02	1.084E-01	1.833E-01	1.750E-02	0.222
CO-60	1173.22			8.097E-03	3.597E-02	6.018E-02	4.838E-03	0.135
	1332.49	*		-2.138E-02	3.499E-02	5.180E-02	4.370E-03	-0.413
ZN-65	1115.52	*		2.814E-03	7.712E-02	1.101E-01	9.354E-03	0.026
GE-68	1077.35	*		7.240E-01	1.068E+00	1.875E+00	1.638E-01	0.386
AS-73	53.44	*		2.533E-01	6.941E-01	1.109E+00	8.459E-02	0.228
AS-74	595.88	*		-6.596E-02	8.553E-02	1.239E-01	1.150E-02	-0.532
	634.78			9.684E-02	3.120E-01	5.203E-01	4.717E-02	0.186
SE-75	66.05			4.916E-01	4.343E+00	6.236E+00	6.000E-01	0.079
	96.73			-4.375E-01	7.022E-01	1.032E+00	1.427E-01	-0.424
	121.11			1.101E-01	1.094E-01	1.901E-01	2.087E-02	0.579
	136.00			-2.158E-02	3.247E-02	5.245E-02	4.451E-03	-0.411
	198.60			3.125E-01	1.556E+00	2.551E+00	2.734E-01	0.122
	264.65	*		-1.885E-02	3.810E-02	5.587E-02	6.520E-03	-0.337
	279.53			-3.684E-02	9.838E-02	1.535E-01	1.879E-02	-0.240
	303.91			1.035E+00	2.092E+00	3.069E+00	4.265E-01	0.337

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	400.65		-6.246E-03	2.119E-01	3.547E-01	4.129E-02	-0.018
		87.88		1.044E+03	2.578E+02	3.875E+02	3.730E+01	2.693
	+	200.40		-3.195E+00	1.848E+02	3.012E+02	2.992E+01	-0.011
		239.00		3.483E+02	4.440E+01	4.851E+01	5.321E+00	7.180
	+	249.79		3.452E+01	7.924E+01	1.305E+02	1.468E+01	0.265
		281.68		-3.063E+01	1.068E+02	1.674E+02	2.005E+01	-0.183
	+	297.23		7.105E+01	6.635E+01	1.111E+02	1.307E+01	0.639
		303.76		3.780E+01	2.440E+02	3.488E+02	4.065E+01	0.108
	+	439.47		-2.177E+01	1.680E+02	2.775E+02	2.618E+01	-0.078
		484.57		-2.185E+02	2.507E+02	3.839E+02	3.651E+01	-0.569
	+	520.65	*	-7.197E+00	1.205E+01	1.885E+01	1.791E+00	-0.382
		574.64		1.794E+02	2.286E+02	3.976E+02	3.726E+01	0.451
	+	578.91		-3.541E+01	1.077E+02	1.479E+02	1.383E+01	-0.239
		585.48		7.640E+02	2.577E+02	4.500E+02	4.198E+01	1.698
	+	755.35		-1.442E+02	1.897E+02	2.781E+02	2.563E+01	-0.518
		817.79		-2.728E+01	1.430E+02	2.360E+02	2.210E+01	-0.116
SR-82	+	698.33		1.960E+01	3.068E+01	5.207E+01	4.699E+00	0.376
		776.49	*	1.767E-01	3.320E-01	5.579E-01	5.173E-02	0.317
	+	1395.20		-3.483E+00	8.918E+00	1.337E+01	1.137E+00	-0.260
RB-83	+	520.41	*	-3.878E-02	5.900E-02	9.175E-02	8.718E-03	-0.423
		529.64		1.365E-02	8.936E-02	1.488E-01	1.412E-02	0.092
	+	552.65		-8.329E-02	1.623E-01	2.536E-01	2.395E-02	-0.328
RB-84	+	881.50	*	-4.692E-03	6.032E-02	1.001E-01	9.457E-03	-0.047
KR-85	+	513.99	*	5.478E-01	6.750E+00	9.845E+00	9.361E-01	0.056
SR-85	+	513.99	*	2.840E-03	3.499E-02	5.103E-02	4.853E-03	0.056
RB-86	+	1076.63	*	3.551E-01	6.890E-01	1.193E+00	1.042E-01	0.298
Y-88	+	898.02		3.650E-02	3.642E-02	6.593E-02	6.262E-03	0.554
ZR-88	+	1836.01	*	1.638E-02	2.796E-02	5.140E-02	4.173E-03	0.319
		392.90	*	-8.575E-03	2.596E-02	4.263E-02	3.943E-03	-0.201
Y-91	+	1204.90	*	-7.245E+00	1.683E+01	2.624E+01	2.134E+00	-0.276
NB-94	+	702.63	*	1.369E-02	2.956E-02	4.947E-02	4.472E-03	0.277
		871.10		-2.597E-02	2.621E-02	3.887E-02	3.668E-03	-0.668
NB-95	+	765.79	*	3.245E-02	4.321E-02	6.563E-02	6.067E-03	0.494
NB-95M	+	235.69	*	-1.159E-01	1.275E-01	1.714E-01	2.038E-02	-0.676
ZR-95	+	724.18		4.910E-02	8.869E-02	1.330E-01	1.307E-02	0.369
NB-97	+	756.15	*	1.401E-02	5.686E-02	9.335E-02	9.371E-03	0.150
		657.90	*	-8.839E-02	5.686E-02	Half-Life	too short	
ZR-97	+	1024.50		9.629E+00	5.686E-02	Half-Life	too short	
		254.15		-5.377E+00	5.686E-02	Half-Life	too short	
+	+	355.39		7.919E-01	5.686E-02	Half-Life	too short	
		507.63	*	7.359E+00	5.686E-02	Half-Life	too short	
+	+	602.52		5.378E+00	5.686E-02	Half-Life	too short	
		1021.30		-8.088E+00	5.686E-02	Half-Life	too short	
+	+	1147.95		-5.449E+00	5.686E-02	Half-Life	too short	
		1362.66		4.382E+00	5.686E-02	Half-Life	too short	
MO-99	+	1750.46		-1.722E+01	5.686E-02	Half-Life	too short	
		140.51		-1.868E+01	2.839E+01	4.428E+01	1.224E+01	-0.422
+	+	181.06		-1.160E+01	2.033E+01	2.855E+01	5.335E+00	-0.406
		366.43		-9.605E+01	8.898E+01	1.384E+02	1.400E+01	-0.694

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	739.58	*		3.030E+00	1.370E+01	2.241E+01	3.473E+00	0.135
	778.00			-1.232E+01	3.665E+01	5.632E+01	5.224E+00	-0.219
TC-99M	140.51	*		-3.732E+11	3.665E+01	Half-Life	too short	
RH-101	127.23			3.358E-02	2.861E-02	4.550E-02	3.788E-03	0.738
	198.01	*		-5.263E-03	2.846E-02	4.581E-02	4.523E-03	-0.115
	325.23			1.063E-01	2.117E-01	3.104E-01	3.485E-02	0.343
RH-102	418.52			2.059E-01	2.392E-01	4.214E-01	3.947E-02	0.489
	475.06	*		1.313E-03	2.310E-02	3.847E-02	3.656E-03	0.034
	631.29			-1.433E-03	4.960E-02	8.031E-02	7.298E-03	-0.018
	697.49			3.071E-02	6.937E-02	1.158E-01	1.045E-02	0.265
	766.84		+	2.445E-01	1.173E-01	1.879E-01	1.738E-02	1.301
	1046.59			-1.480E-02	8.207E-02	1.323E-01	1.179E-02	-0.112
	1112.84			-1.562E-01	2.170E-01	2.908E-01	2.472E-02	-0.537
RU-103	497.08	*		-1.670E-02	3.339E-02	5.274E-02	7.766E-03	-0.317
	610.33		+	1.378E+01	2.904E+00	2.912E+00	4.950E-01	4.731
RH-106	511.85		+	6.802E-01	3.470E-01	4.000E-01	3.804E-02	1.700
	621.84	*		-1.163E-01	2.803E-01	4.380E-01	6.002E-02	-0.265
	1050.47			6.294E-01	1.902E+00	3.244E+00	2.884E-01	0.194
RU-106	511.85		+	6.802E-01	3.470E-01	4.000E-01	3.804E-02	1.700
	621.84	*		-1.163E-01	2.800E-01	4.380E-01	4.006E-02	-0.265
	1050.47			6.294E-01	1.902E+00	3.244E+00	2.884E-01	0.194
AG-108M	433.93	*		-1.698E-03	2.608E-02	4.329E-02	4.214E-03	-0.039
	614.37			-1.237E-02	3.361E-02	4.541E-02	4.317E-03	-0.272
	722.95			-1.342E-02	4.074E-02	5.452E-02	5.143E-03	-0.246
AG-110M	657.75	*		-1.506E-02	3.091E-02	4.778E-02	4.373E-03	-0.315
	677.61			2.294E-01	2.658E-01	4.611E-01	4.231E-02	0.498
	706.67			-1.358E-02	1.882E-01	3.008E-01	2.792E-02	-0.045
	763.93			1.282E-01	1.483E-01	2.309E-01	2.186E-02	0.555
	884.67			-2.316E-02	4.393E-02	6.970E-02	6.763E-03	-0.332
	937.48			-4.374E-02	1.046E-01	1.674E-01	1.615E-02	-0.261
	1384.27			7.876E-02	1.209E-01	2.067E-01	1.807E-02	0.381
IN-111	171.28			4.672E-01	1.146E+00	1.918E+00	1.763E-01	0.244
	245.39	*		-4.787E-01	1.314E+00	1.832E+00	2.041E-01	-0.261
IN-113M	391.69	*		-1.314E-02	3.844E-02	6.314E-02	5.993E-03	-0.208
SN-113	391.69	*		-1.314E-02	3.844E-02	6.314E-02	5.993E-03	-0.208
IN-114M	190.27	*		-2.637E-02	1.769E-01	2.562E-01	2.478E-02	-0.103
CD-115	260.90			-4.543E+01	1.619E+02	2.555E+02	2.949E+01	-0.178
	492.35			3.728E+01	4.236E+01	7.438E+01	7.078E+00	0.501
	527.90	*		-5.204E+00	1.236E+01	1.959E+01	1.859E+00	-0.266
SN-117M	156.02			9.620E-01	2.022E+00	3.409E+00	3.007E-01	0.282
	158.56	*		-1.142E-02	4.882E-02	7.983E-02	7.091E-03	-0.143
SB-122	563.90	*		2.526E+00	2.449E+00	4.296E+00	4.041E-01	0.588
	692.80			-1.186E+01	5.415E+01	8.406E+01	7.568E+00	-0.141
I-123	159.00	*		-5.807E+00	5.415E+01	Half-Life	too short	
	528.96			-2.098E+02	5.415E+01	Half-Life	too short	
TE-123M	159.00	*		-7.694E-03	2.388E-02	3.888E-02	3.477E-03	-0.198
I-124	602.71	*		1.777E-01	8.736E-01	1.238E+00	1.145E-01	0.144
	722.78			-2.537E+00	5.132E+00	6.708E+00	6.112E-01	-0.378
	1325.50			1.799E+01	3.430E+01	5.929E+01	4.993E+00	0.303

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124	+	1376.25		9.369E+01	3.961E+01	7.140E+01	6.060E+00	1.312
	+	1509.49		4.590E+01	1.875E+01	3.705E+01	3.168E+00	1.239
		1691.02		2.266E+00	3.455E+00	6.453E+00	5.426E-01	0.351
		602.71		8.794E-03	4.322E-02	6.124E-02	5.665E-03	0.144
		645.85		-3.260E-01	4.319E-01	6.473E-01	6.141E-02	-0.504
		709.31		6.023E-01	2.567E+00	4.125E+00	3.739E-01	0.146
		713.82		-1.594E+00	1.609E+00	2.296E+00	2.841E-01	-0.694
		722.78		-1.820E-01	3.681E-01	4.811E-01	4.469E-02	-0.378
	+	968.20		1.651E+01	3.635E+00	6.682E+00	6.189E-01	2.471
		1045.16		-5.965E-01	1.861E+00	2.948E+00	2.629E-01	-0.202
SB-125		1325.50		1.378E+00	2.628E+00	4.541E+00	3.824E-01	0.303
		1368.21		-3.216E-01	1.396E+00	2.162E+00	2.894E-01	-0.149
		1436.60		1.197E-01	3.389E+00	5.717E+00	4.879E-01	0.021
		1691.02	*	3.833E-02	5.846E-02	1.092E-01	9.560E-03	0.351
		427.89	*	-2.889E-02	6.919E-02	1.117E-01	1.067E-02	-0.259
	+	463.38		7.124E-01	3.751E-01	5.182E-01	5.238E-02	1.375
		600.56		8.875E-02	1.665E-01	2.816E-01	2.775E-02	0.315
		635.90		-1.172E-01	2.350E-01	3.632E-01	3.531E-02	-0.323
		109.28	*	2.390E+00	7.150E+00	1.220E+01	1.242E+00	0.196
		388.63		1.115E-02	1.874E-01	3.160E-01	2.956E-02	0.035
SB-126		666.33	*	1.827E-01	1.712E-01	3.000E-01	2.668E-02	0.609
		753.82		-5.826E-01	1.307E+00	1.992E+00	1.835E-01	-0.292
		223.80		2.849E+00	3.669E+00	6.163E+00	6.509E-01	0.462
		278.60		2.009E+00	2.298E+00	3.838E+00	4.604E-01	0.523
	+	296.50		1.413E+01	2.494E+00	3.290E+00	3.873E-01	4.296
		414.70		-6.948E-02	6.983E-02	1.040E-01	9.727E-03	-0.668
		415.30		-7.114E-01	5.594E+00	9.279E+00	8.680E-01	-0.077
		555.20		9.479E-01	3.485E+00	5.841E+00	5.511E-01	0.162
		573.80		2.953E-01	9.067E-01	1.523E+00	1.427E-01	0.194
		593.00		-2.708E-01	7.848E-01	1.238E+00	1.151E-01	-0.219
SB-127		656.30		-8.190E-02	2.898E+00	4.676E+00	4.169E-01	-0.018
		666.33		7.655E-02	7.173E-02	1.257E-01	1.118E-02	0.609
		675.00		9.840E-03	1.819E+00	2.938E+00	2.624E-01	0.003
		695.00		9.223E-03	7.653E-02	1.245E-01	1.122E-02	0.074
		697.00		1.038E-01	2.621E-01	4.359E-01	3.931E-02	0.238
		720.50	*	-1.426E-01	1.551E-01	2.040E-01	1.857E-02	-0.699
		856.80		2.722E-02	4.281E-01	6.299E-01	5.936E-02	0.043
		989.30		4.089E-01	1.090E+00	1.876E+00	1.723E-01	0.218
		1034.80		-2.117E+00	8.478E+00	1.364E+01	1.224E+00	-0.155
		1213.00		3.999E+00	4.615E+00	8.074E+00	6.584E-01	0.495
SB-127		61.10		6.901E+00	6.025E+01	8.690E+01	9.106E+00	0.079
		252.40		4.010E-01	4.478E+00	7.234E+00	3.093E+00	0.055
		290.80		-6.197E+00	2.567E+01	3.561E+01	5.011E+00	-0.174
		411.60		-2.313E+00	1.334E+01	1.933E+01	3.161E+00	-0.120
		444.90		-1.054E+00	9.846E+00	1.627E+01	2.178E+00	-0.065
		473.00		-5.971E-01	1.565E+00	2.510E+00	3.447E-01	-0.238
		543.00		3.048E+00	1.722E+01	2.866E+01	4.343E+00	0.106
		603.60		6.027E-02	1.497E+01	2.075E+01	2.744E+00	0.003
		685.20	*	3.149E-01	1.493E+00	2.451E+00	2.931E-01	0.128



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127	698.50			4.841E+00	1.642E+01	2.709E+01	4.405E+00	0.179
	722.20			-2.141E+01	3.603E+01	4.634E+01	5.491E+00	-0.462
	783.80			2.492E+00	3.695E+00	6.266E+00	8.249E-01	0.398
	57.60			2.689E+00	4.977E+00	7.992E+00	5.777E-01	0.337
	145.22			1.929E-01	6.159E-01	1.015E+00	8.716E-02	0.190
I-131	172.10			1.016E-01	1.061E-01	1.812E-01	1.670E-02	0.561
	202.84	*		2.353E-03	3.921E-02	6.410E-02	6.411E-03	0.037
	374.96			-9.950E-02	1.678E-01	2.715E-01	2.670E-02	-0.367
	80.18			4.725E+00	4.839E+00	6.385E+00	5.649E-01	0.740
	284.30			-3.791E-01	1.421E+00	2.227E+00	2.735E-01	-0.170
TE-132	364.48	*		2.301E-02	1.015E-01	1.737E-01	1.838E-02	0.132
	636.97			-1.226E-01	1.413E+00	2.273E+00	2.163E-01	-0.054
	722.89			-3.641E+00	7.624E+00	9.991E+00	9.163E-01	-0.364
	49.72			8.623E+00	2.075E+01	3.330E+01	3.574E+00	0.259
	111.76			-5.366E+00	2.848E+01	4.751E+01	5.207E+00	-0.113
BA-133	116.30			2.120E+01	2.667E+01	4.612E+01	5.034E+00	0.460
	228.16	*		-9.399E-03	7.381E-01	1.194E+00	2.043E-01	-0.008
	53.15			1.985E+00	2.965E+00	4.808E+00	3.684E-01	0.413
	79.62			-1.656E-01	1.327E+00	1.619E+00	2.475E-01	-0.102
	81.00			-2.705E-02	8.803E-02	1.219E-01	1.951E-02	-0.222
I-133	276.40			6.427E-02	3.226E-01	5.215E-01	8.679E-02	0.123
	302.84			-5.004E-02	1.425E-01	1.947E-01	3.007E-02	-0.257
	356.01	*		2.194E-02	3.489E-02	5.495E-02	7.940E-03	0.399
	383.85			-1.022E-02	2.517E-01	4.221E-01	5.590E-02	-0.024
	510.53	+		3.186E+00	2.517E-01	Half-Life	too short	
CS-134	529.87	*		-1.001E-04	2.517E-01	Half-Life	too short	
	706.58			-1.781E-02	2.517E-01	Half-Life	too short	
	856.28			5.189E-01	2.517E-01	Half-Life	too short	
	875.33			2.303E-01	2.517E-01	Half-Life	too short	
	1236.41			1.994E+00	2.517E-01	Half-Life	too short	
CS-135	1298.22			1.045E-01	2.517E-01	Half-Life	too short	
	475.35			8.379E-01	1.478E+00	2.556E+00	2.430E-01	0.328
	563.23			2.625E-01	3.280E-01	5.674E-01	5.381E-02	0.463
	569.32			-1.239E-01	1.691E-01	2.547E-01	2.419E-02	-0.486
	604.70			-2.070E-02	3.638E-02	4.868E-02	4.507E-03	-0.425
I-135	795.84	*		8.528E-02	4.238E-02	8.052E-02	7.550E-03	1.059
	801.93			-1.903E-01	3.758E-01	6.084E-01	5.704E-02	-0.313
	1038.57			1.947E+00	3.224E+00	5.645E+00	5.054E-01	0.345
	1167.94			-1.906E-01	2.102E+00	3.402E+00	2.750E-01	-0.056
	1365.15			-2.361E-01	9.903E-01	1.534E+00	1.361E-01	-0.154
CS-135	268.24	*		2.212E-01	1.428E-01	2.250E-01	2.869E-02	0.983
	288.45			5.470E+10	1.428E-01	Half-Life	too short	
	417.63			2.186E+11	1.428E-01	Half-Life	too short	
	546.56			-3.588E+10	1.428E-01	Half-Life	too short	
	836.80			2.632E+10	1.428E-01	Half-Life	too short	
I-135	1038.76			9.055E+10	1.428E-01	Half-Life	too short	
	1124.00			2.038E+11	1.428E-01	Half-Life	too short	
	1131.51			3.050E+10	1.428E-01	Half-Life	too short	
	1260.41	*		-1.700E+09	1.428E-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		6.544E+12	1.428E-01	Half-Life	too short	
		1678.03		8.401E+10	1.428E-01	Half-Life	too short	
		1706.46		-7.659E+10	1.428E-01	Half-Life	too short	
		1791.20		-3.541E+10	1.428E-01	Half-Life	too short	
	+	66.91		5.523E-02	7.325E-01	1.049E+00	1.566E-01	0.053
		86.29		4.828E+00	1.279E+00	1.787E+00	2.397E-01	2.702
		153.22		5.568E-02	5.889E-01	9.789E-01	9.552E-02	0.057
		163.89		-1.649E-01	9.324E-01	1.526E+00	1.528E-01	-0.108
		176.55		-2.712E-01	3.354E-01	5.286E-01	5.173E-02	-0.513
		273.65		-3.882E-01	4.526E-01	5.943E-01	7.303E-02	-0.653
		340.57		8.984E-02	1.253E-01	1.969E-01	2.178E-02	0.456
		818.51		-1.656E-02	6.230E-02	1.020E-01	9.561E-03	-0.162
		1048.07	*	-2.147E-02	9.141E-02	1.467E-01	1.358E-02	-0.146
		1235.34		4.118E-01	5.557E-01	9.585E-01	1.108E-01	0.430
BA-137M		661.65	*	-1.824E-02	3.392E-02	5.235E-02	4.646E-03	-0.348
CS-137		661.65	*	-1.928E-02	3.586E-02	5.534E-02	4.920E-03	-0.348
CE-139		165.85	*	-1.402E-03	2.495E-02	4.103E-02	3.721E-03	-0.034
BA-140		162.64		-1.032E-01	6.466E-01	1.059E+00	1.003E-01	-0.097
LA-140	+	304.84		9.474E-01	1.379E+00	2.018E+00	5.872E-01	0.469
		423.70		4.949E-01	1.556E+00	2.646E+00	8.634E-01	0.187
		537.32	*	-1.489E-01	2.362E-01	3.589E-01	1.198E-01	-0.415
		328.77		8.238E-01	3.725E-01	5.111E-01	5.890E-02	1.612
		432.53		-1.889E-01	1.787E+00	2.900E+00	2.843E-01	-0.065
		487.03		2.256E-02	1.183E-01	1.986E-01	1.986E-02	0.114
		751.79		1.131E+00	1.497E+00	2.572E+00	2.590E-01	0.440
		815.85		5.221E-02	2.700E-01	4.623E-01	4.753E-02	0.113
		867.82		1.087E-01	1.131E+00	1.811E+00	1.785E-01	0.060
		919.63		1.806E+00	2.417E+00	4.306E+00	4.864E-01	0.419
CE-141	*	925.24		-1.021E+00	9.782E-01	1.436E+00	1.421E-01	-0.711
		1596.49	*	-3.933E-02	7.109E-02	1.067E-01	9.090E-03	-0.368
		145.44	*	2.059E-02	5.372E-02	9.057E-02	7.923E-03	0.227
CE-143		57.37		4.380E-04	5.372E-02	Half-Life	too short	
CE-144	+	231.56		1.004E-03	5.372E-02	Half-Life	too short	
		293.26	*	8.875E-04	5.372E-02	Half-Life	too short	
		350.59		5.392E-02	5.372E-02	Half-Life	too short	
		490.36		-1.797E-04	5.372E-02	Half-Life	too short	
		664.57		-5.799E-04	5.372E-02	Half-Life	too short	
		721.93		-1.414E-03	5.372E-02	Half-Life	too short	
		80.11		1.988E+00	2.041E+00	2.693E+00	2.364E-01	0.738
		133.54	*	7.416E-03	1.870E-01	2.803E-01	4.329E-02	0.026
PM-144		476.78		2.402E-02	5.427E-02	9.289E-02	9.516E-03	0.259
PR-144	*	618.01		1.023E-02	2.531E-02	4.266E-02	4.007E-03	0.240
		696.49	*	2.622E-02	3.164E-02	5.432E-02	4.900E-03	0.483
		778.57		-8.152E-01	1.926E+00	2.931E+00	2.720E-01	-0.278
		696.49	*	1.777E+00	2.145E+00	3.683E+00	3.321E-01	0.483
PM-146	*	1489.15		-4.501E+00	9.933E+00	1.543E+01	1.319E+00	-0.292
		453.90	*	4.083E-02	3.724E-02	6.609E-02	7.547E-03	0.618
		633.02		5.815E-01	1.239E+00	2.061E+00	7.726E-01	0.282
		735.90		-7.754E-02	1.268E-01	1.870E-01	5.380E-02	-0.415

---- 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		-7.342E-02	8.250E-02	1.191E-01	1.715E-02	-0.616
		91.11		7.425E-01	2.731E-01	4.204E-01	4.202E-02	1.766
		319.41		1.929E+00	3.130E+00	5.150E+00	5.848E-01	0.375
		439.89		-1.379E+00	5.395E+00	8.830E+00	8.335E-01	-0.156
		531.02	*	1.551E-01	5.193E-01	8.729E-01	1.350E-01	0.178
PM-149		285.90	*	-7.387E+01	1.118E+02	1.694E+02	2.981E+01	-0.436
EU-152		121.78		6.016E-02	5.784E-02	1.008E-01	9.726E-03	0.597
		244.69		2.037E-03	3.126E-01	4.489E-01	4.991E-02	0.005
		344.27	*	-3.084E-02	8.531E-02	1.365E-01	1.526E-02	-0.226
		443.98		-1.609E-01	8.092E-01	1.328E+00	1.255E-01	-0.121
		778.89		-1.140E-01	2.201E-01	3.309E-01	3.070E-02	-0.345
	+	867.32		8.604E-01	5.975E-01	1.090E+00	1.028E-01	0.790
		964.01		7.941E-01	3.821E-01	5.469E-01	5.074E-02	1.452
		1085.78		-1.260E-01	3.100E-01	4.847E-01	4.208E-02	-0.260
		1112.02		-1.460E-01	2.764E-01	4.142E-01	3.524E-02	-0.352
		1407.95		1.162E-01	1.615E-01	2.900E-01	2.469E-02	0.401
GD-153	+	69.67		5.244E-01	1.252E+00	2.091E+00	1.648E-01	0.251
		83.37		1.855E+01	1.369E+01	1.997E+01	1.820E+00	0.929
		97.43	*	-6.746E-02	6.863E-02	1.040E-01	9.235E-03	-0.649
EU-154		103.18		-8.941E-02	8.333E-02	1.338E-01	1.153E-02	-0.668
		123.07		-5.412E-03	4.212E-02	7.013E-02	7.803E-03	-0.077
		247.94		-1.313E-01	3.220E-01	5.057E-01	6.839E-02	-0.260
		591.81		1.841E-01	5.005E-01	8.424E-01	1.026E-01	0.219
		723.30		-4.418E-02	1.712E-01	2.316E-01	2.311E-02	-0.191
		756.87		4.354E-02	6.153E-01	9.917E-01	1.231E-01	0.044
		873.19		-3.956E-02	2.314E-01	3.801E-01	4.879E-02	-0.104
		996.32		-4.014E-01	3.294E-01	4.629E-01	8.346E-02	-0.867
		1004.76		-1.052E-01	1.745E-01	2.691E-01	3.232E-02	-0.391
		1274.45	*	-2.602E-03	1.053E-01	1.702E-01	1.886E-02	-0.015
EU-155		48.70		-1.536E+00	2.163E+00	3.271E+00	2.688E-01	-0.470
		60.01		2.203E+00	4.313E+00	6.376E+00	4.554E-01	0.346
		86.54		4.219E-01	1.044E-01	1.595E-01	1.523E-02	2.644
TB-160	+	105.31	*	2.493E-02	8.419E-02	1.437E-01	1.243E-02	0.174
		86.79		1.138E+00	2.811E-01	4.379E-01	4.158E-02	2.598
		197.04		-3.666E-01	4.912E-01	7.673E-01	7.556E-02	-0.478
		215.65		-3.016E-01	6.253E-01	9.882E-01	1.022E-01	-0.305
		298.57		2.160E-01	1.303E-01	1.699E-01	1.995E-02	1.271
	+	879.36	*	-1.206E-03	1.172E-01	1.958E-01	1.850E-02	-0.006
		962.29		6.849E-01	5.194E-01	8.612E-01	7.995E-02	0.795
		966.15		1.046E+00	2.441E-01	4.735E-01	4.390E-02	2.208
		1177.93		1.385E-01	2.993E-01	5.119E-01	4.123E-02	0.271
		1271.85		-1.254E-01	5.995E-01	9.472E-01	7.867E-02	-0.132
HO-166M	+	80.57		-1.072E-02	2.786E-01	3.419E-01	3.017E-02	-0.031
		184.41		1.276E-01	5.264E-02	5.641E-02	5.370E-03	2.262
		280.46		-8.782E-03	7.554E-02	1.198E-01	1.437E-02	-0.073
		410.95		5.543E-02	2.362E-01	3.554E-01	3.318E-02	0.156
		711.68	*	1.988E-02	5.316E-02	8.836E-02	8.017E-03	0.225
		752.31		1.332E-01	2.341E-01	3.952E-01	3.638E-02	0.337
		810.29		-3.461E-02	5.367E-02	8.523E-02	7.968E-03	-0.406

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		-2.250E+01	2.647E+01	3.956E+01	3.117E+00	-0.569
		52.39		4.832E-02	1.323E+01	2.077E+01	1.610E+00	0.002
		59.40		-1.700E+01	2.223E+01	3.328E+01	2.363E+00	-0.511
LU-176		66.72	*	-1.083E+00	2.535E+01	3.605E+01	2.762E+00	-0.030
	+	88.36		8.305E-01	2.052E-01	2.968E-01	2.850E-02	2.798
		201.83		-2.007E-02	2.395E-02	3.725E-02	3.716E-03	-0.539
		306.84	*	1.102E-02	2.240E-02	3.663E-02	4.249E-03	0.301
LU-177		401.10		1.822E+00	5.526E+00	9.457E+00	8.787E-01	0.193
		112.95		4.422E-01	1.399E+00	2.383E+00	1.995E-01	0.186
	+	208.36	*	2.834E+00	1.643E+00	2.007E+00	2.037E-01	1.412
LU-177M		52.97		1.036E+00	1.356E+00	2.208E+00	1.696E-01	0.469
		54.07		2.330E-01	7.138E-01	1.137E+00	8.597E-02	0.205
		61.30		1.188E-01	1.293E+00	1.862E+00	1.351E-01	0.064
		121.62		2.146E-01	3.049E-01	5.251E-01	4.358E-02	0.409
HF-181		147.16		-2.977E-01	5.355E-01	8.658E-01	7.467E-02	-0.344
		171.86		3.896E-01	4.201E-01	7.171E-01	6.604E-02	0.543
		218.09		-5.626E-02	6.955E-01	1.124E+00	1.170E-01	-0.050
	+	268.79		2.312E+00	1.159E+00	1.239E+00	1.455E-01	1.866
		319.02		1.169E-01	2.309E-01	3.775E-01	4.288E-02	0.310
		367.43		-9.519E-01	7.560E-01	1.160E+00	1.169E-01	-0.821
		413.65	*	-6.677E-02	1.688E-01	2.394E-01	2.238E-02	-0.279
		56.28		-3.296E-01	7.876E-01	1.203E+00	8.832E-02	-0.274
		57.53		2.282E-01	4.179E-01	6.713E-01	4.856E-02	0.340
	+	65.20		8.843E-01	1.116E+00	1.269E+00	9.581E-02	0.697
W-181		133.02		2.046E-02	5.980E-02	9.120E-02	7.648E-03	0.224
		136.25		-1.799E-01	3.789E-01	6.176E-01	5.206E-02	-0.291
		345.85		5.390E-02	1.727E-01	2.840E-01	3.044E-02	0.190
		482.03	*	1.177E-02	3.372E-02	5.737E-02	5.456E-03	0.205
		56.28		-1.275E-01	3.049E-01	4.658E-01	3.419E-02	-0.274
TA-182		57.53		8.844E-02	1.619E-01	2.601E-01	1.881E-02	0.340
	+	65.20	*	3.399E-01	4.290E-01	4.876E-01	3.682E-02	0.697
		67.75		-5.969E-02	9.138E-02	1.365E-01	1.056E-02	-0.437
RE-183		100.10		8.780E-02	1.443E-01	2.493E-01	2.180E-02	0.352
		152.43		-2.936E-02	2.780E-01	4.583E-01	4.004E-02	-0.064
		222.10		-1.722E-01	2.974E-01	4.665E-01	4.905E-02	-0.369
		1001.68		1.240E+00	1.741E+00	3.055E+00	2.790E-01	0.406
	+	1121.28		4.812E-01	2.230E-01	3.326E-01	2.808E-02	1.447
		1189.05		8.530E-02	2.518E-01	4.253E-01	3.439E-02	0.201
		1221.42	*	2.975E-02	1.739E-01	2.876E-01	2.352E-02	0.103
		1230.97		-1.037E-01	4.086E-01	6.477E-01	5.313E-02	-0.160
RE-184		57.98		2.784E-02	1.640E-01	2.584E-01	1.860E-02	0.108
		59.32		-4.873E-02	9.126E-02	1.384E-01	9.835E-03	-0.352
		67.20		-6.198E-03	1.790E-01	2.547E-01	1.960E-02	-0.024
		162.32	*	1.128E-02	8.987E-02	1.492E-01	1.339E-02	0.076
	+	208.81		2.311E+00	1.340E+00	1.645E+00	1.672E-01	1.405
RE-184		291.72		1.139E-01	9.244E-01	1.322E+00	1.566E-01	0.086
		57.98		1.020E-01	6.007E-01	9.464E-01	6.814E-02	0.108
		59.32		-1.783E-01	3.340E-01	5.065E-01	3.599E-02	-0.352
		67.20		-2.269E-02	6.555E-01	9.325E-01	7.177E-02	-0.024

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		6.400E-02	2.865E-01	4.778E-01	4.276E-02	0.134
		216.55		3.070E-02	2.159E-01	3.532E-01	3.661E-02	0.087
		252.85	*	-9.424E-02	2.017E-01	3.149E-01	3.568E-02	-0.299
		318.01		-3.784E-01	4.062E-01	5.975E-01	6.801E-02	-0.633
		792.07		-7.030E-01	8.660E-01	1.357E+00	1.264E-01	-0.518
		903.28		-3.739E-01	8.757E-01	1.359E+00	1.284E-01	-0.275
		920.93		1.049E-02	3.664E-01	6.123E-01	5.760E-02	0.017
		59.72		-3.718E-02	2.649E-01	3.766E-01	2.680E-02	-0.099
		61.14		1.574E-02	1.431E-01	2.063E-01	1.494E-02	0.076
		69.30		-7.242E-02	2.196E-01	3.724E-01	2.924E-02	-0.194
		592.07		4.757E-01	2.032E+00	3.384E+00	3.147E-01	0.141
		646.12	*	-2.679E-02	3.635E-02	5.458E-02	4.906E-03	-0.491
		717.42		6.081E-01	7.959E-01	1.365E+00	1.241E-01	0.446
		874.81		6.115E-01	4.468E-01	8.433E-01	7.962E-02	0.725
		880.27		-4.334E-01	6.597E-01	1.029E+00	9.723E-02	-0.421
RE-188		155.03	*	7.512E-02	1.499E-01	2.530E-01	2.226E-02	0.297
		477.96		6.103E-01	2.508E+00	4.233E+00	4.025E-01	0.144
		633.10		1.154E+00	2.490E+00	4.200E+00	3.811E-01	0.275
W-188	+	63.58		4.569E+01	5.766E+01	7.600E+01	5.649E+00	0.601
		227.08		-8.525E-01	1.115E+01	1.799E+01	1.915E+00	-0.047
IR-192		290.67	*	-1.892E+00	7.438E+00	1.031E+01	1.223E+00	-0.184
	+	295.96		1.031E+00	1.822E-01	2.667E-01	3.155E-02	3.866
		308.46		-6.451E-02	8.795E-02	1.321E-01	1.533E-02	-0.488
		316.51	*	2.878E-03	2.940E-02	4.689E-02	5.359E-03	0.061
		468.07		1.826E-02	6.186E-02	9.295E-02	9.353E-03	0.196
AU-195		604.41		-2.795E-01	4.972E-01	6.647E-01	8.932E-02	-0.420
		612.46		4.627E-01	6.122E-01	9.501E-01	9.888E-02	0.487
	+	65.12		1.567E-01	1.978E-01	2.257E-01	1.703E-02	0.694
		66.83		-1.944E-03	8.405E-02	1.197E-01	9.179E-03	-0.016
	+	75.70		1.180E+00	2.246E-01	3.758E-01	3.145E-02	3.140
		98.88	*	3.944E-02	1.879E-01	3.140E-01	2.765E-02	0.126
	+	129.76		3.872E+00	3.464E+00	4.217E+00	3.521E-01	0.918
TL-200		367.94	*	-6.099E-04	3.464E+00	Half-Life	too short	
		579.30		-4.374E-03	3.464E+00	Half-Life	too short	
		828.27		5.017E-03	3.464E+00	Half-Life	too short	
		1205.75		-3.258E-03	3.464E+00	Half-Life	too short	
TL-201		68.90		-1.813E+00	4.482E+00	7.583E+00	5.931E-01	-0.239
		70.82		9.008E-01	2.778E+00	4.364E+00	3.476E-01	0.206
		80.30		5.990E+00	6.111E+00	8.065E+00	7.095E-01	0.743
		135.34		-1.713E+00	2.620E+01	4.355E+01	3.665E+00	-0.039
TL-202		167.43	*	-3.748E-01	7.348E+00	1.208E+01	1.100E+00	-0.031
		68.90		-1.364E-01	3.372E-01	5.705E-01	4.462E-02	-0.239
		70.82		6.759E-02	2.084E-01	3.274E-01	2.608E-02	0.206
		80.30		4.496E-01	4.586E-01	6.054E-01	5.325E-02	0.743
HG-203		439.56	*	-1.596E-02	6.400E-02	1.048E-01	9.892E-03	-0.152
		70.83		2.846E-01	8.654E-01	1.359E+00	1.794E-01	0.209
		72.87		4.248E-01	5.235E-01	8.332E-01	1.074E-01	0.510
	+	82.60		1.396E+00	1.042E+00	1.440E+00	2.016E-01	0.970
		279.20	*	5.055E-04	3.636E-02	5.814E-02	7.086E-03	0.009

----- 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		1.077E-01	1.503E-01	2.391E-01	1.942E-02	0.451
	+	74.97		6.519E-01	1.241E-01	1.927E-01	1.600E-02	3.383
	+	84.90		2.392E-01	1.766E-01	2.565E-01	2.381E-02	0.932
		569.67		-2.712E-02	2.680E-02	3.927E-02	3.687E-03	-0.691
		1063.62	*	8.834E-03	4.416E-02	7.423E-02	6.543E-03	0.119
		1770.23		-1.222E-01	4.461E-01	5.789E-01	4.784E-02	-0.211
TL-207		81.07		-6.560E-02	1.938E-01	2.680E-01	2.379E-02	-0.245
	+	83.78		1.577E-01	1.164E-01	1.737E-01	1.591E-02	0.908
		94.90		2.241E-01	1.990E-01	3.185E-01	2.879E-02	0.704
		122.32		6.793E-01	1.411E+00	2.410E+00	2.158E-01	0.282
		144.24		6.181E-01	5.934E-01	1.003E+00	9.621E-02	0.616
		154.21		1.553E-01	3.349E-01	5.647E-01	5.434E-02	0.275
	+	269.46		5.388E-01	2.702E-01	3.116E-01	3.706E-02	1.729
		323.87	*	-6.542E-02	6.659E-01	9.266E-01	1.772E-01	-0.071
	+	338.28		6.817E+00	1.918E+00	2.366E+00	3.317E-01	2.881
		445.03		-7.234E-02	1.911E+00	3.173E+00	4.027E-01	-0.023
PO-209		260.50		1.146E+00	8.551E+00	1.383E+01	1.595E+00	0.083
		262.80		3.403E+00	2.243E+01	3.631E+01	4.209E+00	0.094
		896.60	*	-3.142E-01	6.256E+00	1.039E+01	9.831E-01	-0.030
BI-210		46.50	*	-7.417E-01	3.210E+00	4.991E+00	4.655E-01	-0.149
PB-210		46.50	*	-7.417E-01	3.210E+00	4.991E+00	4.655E-01	-0.149
PO-210		46.50	*	-7.417E-01	3.210E+00	4.991E+00	4.216E-01	-0.149
PB-211		404.84	*	3.437E-01	9.026E-01	1.340E+00	8.408E-01	0.257
		427.08		-9.222E-01	1.613E+00	2.393E+00	1.490E+00	-0.385
		831.96		-5.997E-01	1.088E+00	1.625E+00	1.020E+00	-0.369
BI-212	+	727.18	*	9.443E-01	4.055E-01	6.088E-01	6.360E-02	1.551
		785.46		1.954E+00	1.442E+00	2.680E+00	2.491E-01	0.729
		1620.62		1.232E+00	1.148E+00	2.189E+00	1.860E-01	0.563
PO-215		81.07		-6.560E-02	1.938E-01	2.680E-01	2.379E-02	-0.245
	+	83.78		1.577E-01	1.164E-01	1.737E-01	1.591E-02	0.908
		94.90		2.241E-01	1.990E-01	3.185E-01	2.879E-02	0.704
		122.32		6.793E-01	1.411E+00	2.410E+00	2.158E-01	0.282
		144.24		6.181E-01	5.934E-01	1.003E+00	9.621E-02	0.616
		154.21		1.553E-01	3.349E-01	5.647E-01	5.434E-02	0.275
	+	269.46		5.388E-01	2.702E-01	3.116E-01	3.706E-02	1.729
		323.87	*	-6.542E-02	6.659E-01	9.266E-01	1.772E-01	-0.071
	+	338.28		6.817E+00	1.918E+00	2.366E+00	3.317E-01	2.881
		445.03		-7.234E-02	1.911E+00	3.173E+00	4.027E-01	-0.023
RN-219	+	271.23		6.914E-01	3.487E-01	3.919E-01	5.132E-02	1.764
		401.81	*	-4.976E-02	3.515E-01	5.838E-01	9.004E-02	-0.085
RN-220		549.76	*	4.320E+00	2.083E+01	3.477E+01	3.285E+00	0.124
RA-223		81.07		-6.560E-02	1.938E-01	2.680E-01	2.379E-02	-0.245
	+	83.78		1.577E-01	1.164E-01	1.737E-01	1.591E-02	0.908
		94.90		2.241E-01	1.990E-01	3.185E-01	2.879E-02	0.704
		122.32		6.793E-01	1.411E+00	2.410E+00	2.158E-01	0.282
		144.24		6.181E-01	5.934E-01	1.003E+00	9.621E-02	0.616
		154.21		1.553E-01	3.349E-01	5.647E-01	5.434E-02	0.275
	+	269.46		5.388E-01	2.702E-01	3.116E-01	3.706E-02	1.729
		323.87	*	-6.542E-02	6.659E-01	9.266E-01	1.772E-01	-0.071

---- 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		6.817E+00	1.918E+00	2.366E+00	3.317E-01	2.881
		445.03		-7.234E-02	1.911E+00	3.173E+00	4.027E-01	-0.023
		79.80		-1.126E-01	1.686E+00	2.065E+00	4.451E-01	-0.055
		236.00		-8.523E-02	2.275E-01	3.190E-01	4.445E-02	-0.267
		256.20	*	-2.178E-01	3.287E-01	5.034E-01	8.598E-02	-0.433
		286.10		-4.029E-01	1.325E+00	2.069E+00	3.219E-01	-0.195
TH-227	+	299.80		2.723E+00	1.695E+00	2.230E+00	4.283E-01	1.222
		304.40		7.651E-02	1.916E+00	2.713E+00	5.434E-01	0.028
		334.20		-6.715E-02	2.092E+00	3.128E+00	6.440E-01	-0.021
		79.80		-1.126E-01	1.686E+00	2.065E+00	4.507E-01	-0.055
	+	94.00		7.609E+00	2.820E+00	3.090E+00	6.791E-01	2.462
		236.00		-8.523E-02	2.275E-01	3.190E-01	4.121E-02	-0.267
TH-229		256.20	*	-2.178E-01	3.293E-01	5.034E-01	9.844E-02	-0.433
		286.10		-4.029E-01	1.384E+00	2.069E+00	2.083E+00	-0.195
	+	299.80		2.723E+00	1.695E+00	2.230E+00	4.283E-01	1.222
		304.40		7.651E-02	1.916E+00	2.713E+00	5.434E-01	0.028
		334.20		-6.715E-02	2.092E+00	3.128E+00	6.440E-01	-0.021
	+	85.43		2.361E-01	1.743E-01	2.531E-01	2.364E-02	0.933
PA-231	+	88.47		4.781E-01	1.181E-01	1.707E-01	1.637E-02	2.801
		100.00		6.569E-02	1.524E-01	2.567E-01	2.246E-02	0.256
		193.63	*	7.317E-02	4.312E-01	7.104E-01	6.932E-02	0.103
		210.97		9.946E-01	7.105E-01	1.113E+00	1.137E-01	0.894
		283.67	*	-1.442E-01	1.312E+00	2.079E+00	3.596E-01	-0.069
	+	301.29		1.089E+00	6.640E-01	8.490E-01	1.237E-01	1.283
TH-231		81.07		-6.560E-02	1.938E-01	2.680E-01	2.379E-02	-0.245
	+	83.78		1.577E-01	1.164E-01	1.737E-01	1.591E-02	0.908
		94.90		2.241E-01	1.990E-01	3.185E-01	2.879E-02	0.704
		122.32		6.793E-01	1.411E+00	2.410E+00	2.158E-01	0.282
		144.24		6.181E-01	5.934E-01	1.003E+00	9.621E-02	0.616
		154.21		1.553E-01	3.349E-01	5.647E-01	5.434E-02	0.275
U-231	+	269.46		5.388E-01	2.702E-01	3.116E-01	3.706E-02	1.729
		323.87	*	-6.542E-02	6.659E-01	9.266E-01	1.772E-01	-0.071
	+	338.28		6.817E+00	1.918E+00	2.366E+00	3.317E-01	2.881
		445.03		-7.234E-02	1.911E+00	3.173E+00	4.027E-01	-0.023
	+	84.21		8.067E+00	5.956E+00	8.843E+00	8.141E-01	0.912
	+	92.29		8.927E+00	2.784E+00	4.065E+00	3.754E-01	2.196
PA-233		95.87	*	2.347E-01	1.115E+00	1.717E+00	1.542E-01	0.137
		108.00		2.016E-02	1.888E+00	3.182E+00	2.695E-01	0.006
	+	75.28		1.902E+01	4.353E+00	5.685E+00	8.635E-01	3.346
	+	86.59		6.855E+00	2.429E+00	2.602E+00	7.052E-01	2.635
	+	300.12		7.593E-01	4.672E-01	6.210E-01	1.047E-01	1.223
		311.98	*	5.782E-03	5.581E-02	8.911E-02	1.042E-02	0.065
PA-234		340.50		4.766E-01	5.888E-01	9.156E-01	2.265E-01	0.521
		398.62		-1.133E+00	1.727E+00	2.723E+00	7.313E-01	-0.416
		415.76		-3.348E-01	1.382E+00	2.271E+00	4.963E-01	-0.147
	+	63.00		1.311E+00	1.664E+00	2.173E+00	3.227E-01	0.603
		94.67		2.672E-01	1.475E-01	2.381E-01	3.026E-02	1.122
		98.44		-4.073E-03	7.682E-02	1.272E-01	7.098E-02	-0.032
		99.86		1.621E-01	3.852E-01	6.482E-01	5.677E-02	0.250

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00		-1.193E-01	1.431E-01	2.310E-01	2.757E-02	-0.517
		131.20		-4.285E-02	9.456E-02	1.378E-01	1.152E-02	-0.311
		152.70		-5.192E-02	2.672E-01	4.385E-01	7.502E-02	-0.118
	+	186.00		4.593E+00	2.343E+00	2.345E+00	7.384E-01	1.958
		226.40		-8.181E-02	3.555E-01	5.684E-01	8.296E-02	-0.144
		227.20		-4.803E-02	3.720E-01	5.980E-01	6.371E-02	-0.080
		248.90		3.494E-01	7.188E-01	1.181E+00	2.781E-01	0.296
	+	293.70		6.428E+00	1.489E+00	1.540E+00	2.940E-01	4.175
		369.80		4.202E-01	7.220E-01	1.250E+00	2.795E-01	0.336
		568.70		-4.042E-01	8.328E-01	1.283E+00	1.205E-01	-0.315
		569.50		-1.780E-01	2.332E-01	3.501E-01	3.287E-02	-0.508
		574.00		4.824E-01	1.236E+00	2.085E+00	1.954E-01	0.231
		699.00		9.020E-02	6.469E-01	1.054E+00	2.030E-01	0.086
		706.10		2.933E-01	9.331E-01	1.528E+00	6.827E-01	0.192
		733.00		-1.557E-01	3.211E-01	4.821E-01	1.080E-01	-0.323
		742.81		5.294E-01	1.339E+00	2.143E+00	1.442E+00	0.247
		796.30		1.409E+00	9.039E-01	1.550E+00	4.229E-01	0.909
		805.60		3.961E-01	9.936E-01	1.709E+00	5.272E-01	0.232
		819.60		2.829E-01	9.494E-01	1.632E+00	6.236E-01	0.173
		826.30		9.943E-02	6.754E-01	1.148E+00	5.152E-01	0.087
		831.60		-3.894E-01	5.503E-01	8.452E-01	2.542E-01	-0.461
		876.40		3.138E-01	7.599E-01	1.201E+00	1.235E+00	0.261
		880.51		-1.238E-01	2.330E-01	3.685E-01	3.481E-02	-0.336
		883.24		-4.785E-02	2.484E-01	4.041E-01	2.721E-01	-0.118
		899.00		8.756E-01	8.057E-01	1.314E+00	5.766E-01	0.666
		925.00		-9.787E-01	9.417E-01	1.380E+00	1.297E-01	-0.709
		926.50		3.867E-02	1.382E-01	2.363E-01	6.038E-02	0.164
		946.00	*	-1.414E-01	2.562E-01	3.996E-01	7.634E-02	-0.354
		949.00		-6.165E-02	3.725E-01	6.087E-01	5.677E-02	-0.101
		980.50		4.211E-01	5.958E-01	1.057E+00	9.742E-02	0.398
		1394.10		-1.857E-02	8.605E-01	1.379E+00	8.971E-01	-0.013
PA-234M		766.42		1.458E+01	1.446E+01	1.954E+01	9.935E+00	0.746
		1001.03	*	1.586E+00	3.951E+00	6.751E+00	7.029E-01	0.235
U-235	+	89.95		2.769E+00	1.304E+00	1.517E+00	4.716E-01	1.826
	+	93.35		2.367E+00	9.715E-01	1.079E+00	3.043E-01	2.194
		105.00		4.077E-01	8.222E-01	1.400E+00	4.176E-01	0.291
		143.76	*	1.928E-01	1.839E-01	3.074E-01	5.372E-02	0.627
		163.35		-1.429E-01	3.903E-01	6.316E-01	1.216E-01	-0.226
	+	185.71		1.701E-01	7.018E-02	8.687E-02	8.298E-03	1.958
		205.31		1.206E-01	4.805E-01	7.095E-01	1.403E-01	0.170
NP-236		94.67		2.039E-01	1.105E-01	1.807E-01	1.637E-02	1.128
		98.44		-3.069E-03	5.805E-02	9.613E-02	8.487E-03	-0.032
		111.00		-9.028E-02	1.080E-01	1.747E-01	1.469E-02	-0.517
		160.31	*	-3.545E-02	6.628E-02	1.067E-01	9.522E-03	-0.332
NP-239		99.55		4.520E-02	1.303E-01	2.188E-01	1.919E-02	0.207
		117.00	*	1.105E-02	1.487E-01	2.504E-01	2.085E-02	0.044
	+	209.75		1.805E+00	1.046E+00	1.290E+00	1.314E-01	1.399
		228.18		-4.199E-03	1.933E-01	3.124E-01	3.337E-02	-0.013
		277.60		1.376E-01	1.592E-01	2.657E-01	3.181E-02	0.518



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		-3.800E-02	1.185E+00	1.773E+00	1.953E-01	-0.021
AM-241		59.54	*	-3.847E-02	1.380E-01	1.945E-01	1.526E-02	-0.198
CM-243		99.55		4.651E-02	1.341E-01	2.252E-01	1.975E-02	0.207
		103.76	*	-2.996E-02	7.565E-02	1.255E-01	1.079E-02	-0.239
		117.00		1.137E-02	1.530E-01	2.577E-01	2.145E-02	0.044
	+	209.75		1.779E+00	1.031E+00	1.272E+00	1.295E-01	1.399
		228.18		-4.244E-03	1.953E-01	3.157E-01	3.372E-02	-0.013
		277.60		1.388E-01	1.605E-01	2.679E-01	3.207E-02	0.518
AM-246		798.80		-2.634E-01	1.326E-01	1.827E-01	1.704E-02	-1.442
		1036.00		-9.507E-02	2.702E-01	4.300E-01	3.855E-02	-0.221
		1062.04		-8.859E-03	1.985E-01	3.254E-01	2.872E-02	-0.027
		1078.86	*	7.755E-02	1.185E-01	2.079E-01	1.814E-02	0.373
CM-247		278.00		6.795E-01	6.615E-01	1.112E+00	1.332E-01	0.611
		287.40		7.341E-01	1.048E+00	1.740E+00	2.072E-01	0.422
		402.60	*	1.339E-02	3.119E-02	5.367E-02	4.990E-03	0.250
CF-249		252.85		-3.521E-01	7.537E-01	1.176E+00	1.333E-01	-0.299
		333.44		-2.419E-03	1.644E-01	2.300E-01	2.538E-02	-0.011
		387.95	*	-7.440E-04	3.442E-02	5.776E-02	5.419E-03	-0.013
CF-251		176.60	*	-8.680E-02	1.095E-01	1.728E-01	1.611E-02	-0.502
		227.00		-3.255E-02	3.326E-01	5.358E-01	5.704E-02	-0.061
		285.00		-5.782E-01	1.525E+00	2.371E+00	2.831E-01	-0.244

# 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]G244148006      *
* Acquisition date   : 20-JAN-2010 15:51:00 Detector SN#                   *
* Detector ID        : GAM16                                           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 02:00:01.93                               Half life ratio  : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148006                               Analyst initials: MXR1        *
* Batch Number       : 940268                                   Sample Quantity : 1.3490E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                       *
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 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	2.149E+01	2.352E+00	4.212E-01	0.000E+00
CD-109	3.568E+00	8.640E-01	1.049E+00	0.000E+00
SN-126	3.502E-01	8.479E-02	1.034E-01	0.000E+00
TL-208	4.894E-01	8.102E-02	5.106E-02	0.000E+00
BI-211	4.020E+00	5.821E-01	2.591E-01	0.000E+00
PB-212	1.600E+00	2.119E-01	8.331E-02	0.000E+00
PO-212	1.600E+00	2.119E-01	8.331E-02	0.000E+00
BI-214	1.253E+00	2.006E-01	9.303E-02	0.000E+00
PB-214	1.398E+00	2.147E-01	9.032E-02	0.000E+00
PO-214	1.398E+00	2.147E-01	9.032E-02	0.000E+00
PO-216	1.600E+00	2.119E-01	8.331E-02	0.000E+00
PO-218	1.398E+00	2.147E-01	9.032E-02	0.000E+00
RA-224	4.002E+00	1.234E+00	9.481E-01	0.000E+00
RA-226	1.253E+00	2.006E-01	9.303E-02	0.000E+00
AC-228	1.747E+00	3.153E-01	1.724E-01	0.000E+00
RA-228	1.747E+00	3.153E-01	1.724E-01	0.000E+00
TH-228	1.626E+00	2.153E-01	8.467E-02	0.000E+00
TH-230	1.253E+00	2.006E-01	9.303E-02	0.000E+00
TH-232	1.747E+00	3.153E-01	1.724E-01	0.000E+00
TH-234	1.125E+00	1.402E+00	1.803E+00	0.000E+00
U-234	1.253E+00	2.006E-01	9.303E-02	0.000E+00
NP-237	1.028E+00	3.244E-01	3.071E-01	0.000E+00
U-238	1.125E+00	1.402E+00	1.803E+00	0.000E+00
AM-243	3.632E-01	6.775E-02	7.527E-02	0.000E+00
ANH-511	1.359E-01	6.796E-02	4.113E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	7.346E-02	2.612E-01	4.612E-01	0.000E+00 NOT IDENT.
NA-22	-7.993E-04	3.698E-02	6.132E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	1.825E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-5.527E-03	2.337E-02	3.708E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.116E-02	6.446E-02	0.000E+00	FAIL ABUN
SC-46	1.557E-02	3.465E-02	6.204E-02	0.000E+00	FAIL ABUN
V-48	-1.192E-02	6.061E-02	1.014E-01	0.000E+00	NOT IDENT.
CR-51	2.670E-01	3.288E-01	5.744E-01	0.000E+00	NOT IDENT.
MN-52	-2.539E-02	2.487E-01	4.021E-01	0.000E+00	NOT IDENT.
MN-54	8.681E-03	3.055E-02	5.424E-02	0.000E+00	NOT IDENT.
CO-56	2.883E-02	3.312E-02	6.146E-02	0.000E+00	NOT IDENT.
CO-57	1.184E-02	1.980E-02	3.633E-02	0.000E+00	NOT IDENT.
CO-58	-2.146E-02	3.445E-02	5.668E-02	0.000E+00	NOT IDENT.
FE-59	-1.262E-02	7.703E-02	1.278E-01	0.000E+00	NOT IDENT.
CO-60	-2.138E-02	3.429E-02	5.201E-02	0.000E+00	NOT IDENT.
ZN-65	2.814E-03	7.558E-02	1.109E-01	0.000E+00	NOT IDENT.
GE-68	7.240E-01	1.047E+00	1.890E+00	0.000E+00	NOT IDENT.
AS-73	2.533E-01	6.802E-01	1.179E+00	0.000E+00	NOT IDENT.
AS-74	-6.596E-02	8.382E-02	1.262E-01	0.000E+00	NOT IDENT.
SE-75	-1.885E-02	3.734E-02	5.778E-02	0.000E+00	NOT IDENT.
BR-77	-7.197E+00	1.181E+01	1.926E+01	0.000E+00	FAIL ABUN
SR-82	1.767E-01	3.254E-01	5.658E-01	0.000E+00	NOT IDENT.
RB-83	-3.878E-02	5.782E-02	9.373E-02	0.000E+00	NOT IDENT.
RB-84	-4.692E-03	5.912E-02	1.013E-01	0.000E+00	NOT IDENT.
KR-85	5.478E-01	6.615E+00	1.006E+01	0.000E+00	NOT IDENT.
SR-85	2.840E-03	3.429E-02	5.215E-02	0.000E+00	NOT IDENT.
RB-86	3.551E-01	6.752E-01	1.203E+00	0.000E+00	NOT IDENT.
Y-88	1.638E-02	2.740E-02	5.128E-02	0.000E+00	NOT IDENT.
ZR-88	-8.575E-03	2.544E-02	4.378E-02	0.000E+00	NOT IDENT.
Y-91	-7.245E+00	1.650E+01	2.639E+01	0.000E+00	NOT IDENT.
NB-94	1.369E-02	2.897E-02	5.027E-02	0.000E+00	NOT IDENT.
NB-95	3.245E-02	4.234E-02	6.658E-02	0.000E+00	NOT IDENT.
NB-95M	-1.159E-01	1.249E-01	1.776E-01	0.000E+00	NOT IDENT.
ZR-95	1.401E-02	5.572E-02	9.472E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.339E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	4.685E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	3.030E+00	1.343E+01	2.274E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.581E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-5.263E-03	2.789E-02	4.762E-02	0.000E+00	NOT IDENT.
RH-102	1.313E-03	2.264E-02	3.936E-02	0.000E+00	FAIL ABUN
RU-103	-1.670E-02	3.272E-02	5.393E-02	0.000E+00	FAIL ABUN
RH-106	-1.163E-01	2.747E-01	4.461E-01	0.000E+00	FAIL ABUN
RU-106	-1.163E-01	2.744E-01	4.461E-01	0.000E+00	FAIL ABUN
AG-108M	-1.698E-03	2.555E-02	4.437E-02	0.000E+00	NOT IDENT.
AG-110M	-1.506E-02	3.030E-02	4.860E-02	0.000E+00	NOT IDENT.
IN-111	-4.787E-01	1.288E+00	1.897E+00	0.000E+00	NOT IDENT.
IN-113M	-1.314E-02	3.767E-02	6.484E-02	0.000E+00	NOT IDENT.
SN-113	-1.314E-02	3.767E-02	6.484E-02	0.000E+00	NOT IDENT.
IN-114M	-2.637E-02	1.734E-01	2.665E-01	0.000E+00	NOT IDENT.
CD-115	-5.204E+00	1.211E+01	2.001E+01	0.000E+00	NOT IDENT.
SN-117M	-1.142E-02	4.784E-02	8.331E-02	0.000E+00	NOT IDENT.
SB-122	2.526E+00	2.400E+00	4.382E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.767E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-7.694E-03	2.341E-02	4.057E-02	0.000E+00	NOT IDENT.
I-124	1.777E-01	8.561E-01	1.261E+00	0.000E+00	FAIL ABUN
SB-124	3.833E-02	5.729E-02	1.091E-01	0.000E+00	FAIL ABUN
SB-125	-2.889E-02	6.780E-02	1.145E-01	0.000E+00	FAIL ABUN
TE-125M	2.390E+00	7.007E+00	1.282E+01	0.000E+00	NOT IDENT.
I-126	1.827E-01	1.678E-01	3.051E-01	0.000E+00	NOT IDENT.
SB-126	-1.426E-01	1.520E-01	2.071E-01	0.000E+00	FAIL ABUN
SB-127	3.149E-01	1.463E+00	2.492E+00	0.000E+00	NOT IDENT.
XE-127	2.353E-03	3.842E-02	6.660E-02	0.000E+00	NOT IDENT.
I-131	2.301E-02	9.946E-02	1.786E-01	0.000E+00	NOT IDENT.
TE-132	-9.399E-03	7.233E-01	1.238E+00	0.000E+00	NOT IDENT.
BA-133	2.194E-02	3.419E-02	5.652E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.183E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.154E-02	8.163E-02	0.000E+00	NOT IDENT.
CS-135	2.212E-01	1.400E-01	2.326E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.520E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.147E-02	8.958E-02	1.480E-01	0.000E+00	FAIL ABUN
BA-137M	-1.824E-02	3.325E-02	5.325E-02	0.000E+00	NOT IDENT.
CS-137	-1.928E-02	3.514E-02	5.629E-02	0.000E+00	NOT IDENT.
CE-139	-1.402E-03	2.445E-02	4.279E-02	0.000E+00	NOT IDENT.
BA-140	-1.489E-01	2.315E-01	3.664E-01	0.000E+00	NOT IDENT.
LA-140	-3.933E-02	6.967E-02	1.068E-01	0.000E+00	FAIL ABUN
CE-141	2.059E-02	5.265E-02	9.466E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.257E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	7.416E-03	1.832E-01	2.934E-01	0.000E+00	NOT IDENT.
PM-144	2.622E-02	3.100E-02	5.520E-02	0.000E+00	NOT IDENT.
PR-144	1.777E+00	2.102E+00	3.743E+00	0.000E+00	NOT IDENT.

PM-146	4.083E-02	3.650E-02	6.768E-02	0.000E+00	NOT IDENT.
ND-147	1.551E-01	5.089E-01	8.914E-01	0.000E+00	FAIL ABUN
PM-149	-7.387E+01	1.095E+02	1.750E+02	0.000E+00	NOT IDENT.
EU-152	-3.084E-02	8.361E-02	1.405E-01	0.000E+00	FAIL ABUN
GD-153	-6.746E-02	6.726E-02	1.094E-01	0.000E+00	FAIL ABUN
EU-154	-2.602E-03	1.032E-01	1.710E-01	0.000E+00	NOT IDENT.
EU-155	2.493E-02	8.250E-02	1.510E-01	0.000E+00	FAIL ABUN
TB-160	-1.206E-03	1.149E-01	1.981E-01	0.000E+00	FAIL ABUN
HO-166M	1.988E-02	5.210E-02	8.975E-02	0.000E+00	FAIL ABUN
TM-171	-1.083E+00	2.484E+01	3.819E+01	0.000E+00	NOT IDENT.
LU-176	1.102E-02	2.196E-02	3.778E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.610E+00	2.084E+00	0.000E+00	FAIL ABUN
LU-177M	-6.677E-02	1.654E-01	2.456E-01	0.000E+00	FAIL ABUN
HF-181	1.177E-02	3.305E-02	5.869E-02	0.000E+00	FAIL ABUN
W-181	3.399E-01	4.204E-01	5.167E-01	0.000E+00	FAIL ABUN
TA-182	2.975E-02	1.704E-01	2.892E-01	0.000E+00	FAIL ABUN
RE-183	1.128E-02	8.808E-02	1.556E-01	0.000E+00	FAIL ABUN
RE-184	-9.424E-02	1.977E-01	3.259E-01	0.000E+00	NOT IDENT.
OS-185	-2.679E-02	3.563E-02	5.554E-02	0.000E+00	NOT IDENT.
RE-188	7.512E-02	1.469E-01	2.642E-01	0.000E+00	NOT IDENT.
W-188	-1.892E+00	7.289E+00	1.064E+01	0.000E+00	FAIL ABUN
IR-192	2.878E-03	2.881E-02	4.834E-02	0.000E+00	FAIL ABUN
AU-195	3.944E-02	1.841E-01	3.304E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	7.324E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.748E-01	7.201E+00	1.259E+01	0.000E+00	NOT IDENT.
TL-202	-1.596E-02	6.272E-02	1.074E-01	0.000E+00	NOT IDENT.
HG-203	5.055E-04	3.563E-02	6.007E-02	0.000E+00	FAIL ABUN
BI-207	8.834E-03	4.328E-02	7.484E-02	0.000E+00	FAIL ABUN
TL-207	-6.542E-02	6.526E-01	9.548E-01	0.000E+00	FAIL ABUN
PO-209	-3.142E-01	6.131E+00	1.051E+01	0.000E+00	NOT IDENT.
BI-210	-7.417E-01	3.146E+00	5.320E+00	0.000E+00	NOT IDENT.
PB-210	-7.417E-01	3.146E+00	5.320E+00	0.000E+00	NOT IDENT.
PO-210	-7.417E-01	3.145E+00	5.320E+00	0.000E+00	NOT IDENT.
PB-211	3.437E-01	8.846E-01	1.375E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	3.974E-01	6.182E-01	0.000E+00	FAIL ABUN
PO-215	-6.542E-02	6.526E-01	9.548E-01	0.000E+00	FAIL ABUN
RN-219	-4.976E-02	3.444E-01	5.993E-01	0.000E+00	FAIL ABUN
RN-220	4.320E+00	2.041E+01	3.549E+01	0.000E+00	NOT IDENT.
RA-223	-6.542E-02	6.526E-01	9.548E-01	0.000E+00	FAIL ABUN
AC-227	-2.178E-01	3.221E-01	5.209E-01	0.000E+00	FAIL ABUN
TH-227	-2.178E-01	3.228E-01	5.209E-01	0.000E+00	FAIL ABUN
TH-229	7.317E-02	4.226E-01	7.387E-01	0.000E+00	FAIL ABUN
PA-231	-1.442E-01	1.286E+00	2.147E+00	0.000E+00	FAIL ABUN
TH-231	-6.542E-02	6.526E-01	9.548E-01	0.000E+00	FAIL ABUN
U-231	2.347E-01	1.093E+00	1.808E+00	0.000E+00	FAIL ABUN
PA-233	5.782E-03	5.469E-02	9.188E-02	0.000E+00	FAIL ABUN
PA-234	-1.414E-01	2.510E-01	4.038E-01	0.000E+00	FAIL ABUN
PA-234M	1.586E+00	3.872E+00	6.814E+00	0.000E+00	NOT IDENT.
U-235	1.928E-01	1.802E-01	3.213E-01	0.000E+00	FAIL ABUN
NP-236	-3.545E-02	6.495E-02	1.113E-01	0.000E+00	NOT IDENT.
NP-239	1.105E-02	1.458E-01	2.627E-01	0.000E+00	FAIL ABUN
AM-241	-3.847E-02	1.353E-01	2.064E-01	0.000E+00	NOT IDENT.
CM-243	-2.996E-02	7.414E-02	1.320E-01	0.000E+00	FAIL ABUN
AM-246	7.755E-02	1.162E-01	2.096E-01	0.000E+00	NOT IDENT.
CM-247	1.339E-02	3.057E-02	5.508E-02	0.000E+00	NOT IDENT.
CF-249	-7.440E-04	3.373E-02	5.933E-02	0.000E+00	NOT IDENT.
CF-251	-8.680E-02	1.073E-01	1.800E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148006.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:51:00
Sample ID          : G244148006          Sample quantity  : 1.34900E+02 GRAM
Detector name      : GAM16              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.93  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	995	10.67*	1.208E+00	2.149E+01	2.149E+01	11.17
CD-109	88.03	291	3.72*	6.260E+00	3.483E+00	3.568E+00	24.71
SN-126	64.28	55	9.60	3.604E+00	4.453E-01	4.453E-01	126.84
	86.94	291	8.90	6.260E+00	1.456E+00	1.456E+00	47.40
	87.57	291	37.00*	6.260E+00	3.502E-01	3.502E-01	24.71
TL-208	277.35	-----	6.80	4.695E+00	-----	Line Not Found	-----
	510.84	145	21.60	2.965E+00	6.293E-01	6.293E-01	51.69
	583.14	395	84.20*	2.668E+00	4.894E-01	4.894E-01	16.89
	860.37	60	12.46	1.919E+00	6.981E-01	6.981E-01	62.98
BI-211	72.87	-----	1.27	4.872E+00	-----	Line Not Found	-----
	351.07	737	12.94*	3.940E+00	4.020E+00	4.020E+00	14.78
PB-212	74.81	440	10.70	5.109E+00	2.240E+00	2.240E+00	21.21
	77.11	652	18.00	5.361E+00	1.880E+00	1.880E+00	15.05
	87.30	291	8.00	6.260E+00	1.620E+00	1.620E+00	26.66
	238.63	1340	44.60*	5.227E+00	1.600E+00	1.600E+00	13.51
	300.09	80	3.41	4.435E+00	1.470E+00	1.470E+00	60.61
PO-212	74.81	440	10.70	5.109E+00	2.240E+00	2.240E+00	21.21
	77.11	652	18.00	5.361E+00	1.880E+00	1.880E+00	15.05
	87.30	291	8.00	6.260E+00	1.620E+00	1.620E+00	26.66
	115.19	-----	0.60	7.166E+00	-----	Line Not Found	-----
	238.63	1340	44.60*	5.227E+00	1.600E+00	1.600E+00	13.51
	300.09	80	3.41	4.435E+00	1.470E+00	1.470E+00	60.61
BI-214	609.31	537	46.30*	2.575E+00	1.253E+00	1.253E+00	16.34
	1120.29	83	15.10	1.516E+00	1.011E+00	1.011E+00	46.82
	1764.49	102	15.80	1.056E+00	1.702E+00	1.702E+00	25.92
PB-214	74.81	440	6.21	5.109E+00	3.860E+00	3.860E+00	20.43
	77.11	652	10.50	5.361E+00	3.223E+00	3.223E+00	16.87
	87.30	291	4.67	6.260E+00	2.774E+00	2.774E+00	25.88
	241.98	294	7.49	5.180E+00	2.111E+00	2.111E+00	31.96
	295.21	415	19.20	4.488E+00	1.339E+00	1.339E+00	18.72
	351.92	737	37.20*	3.940E+00	1.398E+00	1.398E+00	15.67
PO-214	74.81	440	6.21	5.109E+00	3.860E+00	3.860E+00	20.43

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	652	10.50	5.361E+00	3.223E+00	3.223E+00	16.87
	87.30	291	4.67	6.260E+00	2.774E+00	2.774E+00	25.88
	241.98	294	7.49	5.180E+00	2.111E+00	2.111E+00	31.96
	295.21	415	19.20	4.488E+00	1.339E+00	1.339E+00	18.72
	351.92	737	37.20*	3.940E+00	1.398E+00	1.398E+00	15.67
PO-216	74.81	440	10.70	5.109E+00	2.240E+00	2.240E+00	21.21
	77.11	652	18.00	5.361E+00	1.880E+00	1.880E+00	15.05
	87.30	291	8.00	6.260E+00	1.620E+00	1.620E+00	26.66
	238.63	1340	44.60*	5.227E+00	1.600E+00	1.600E+00	13.51
	300.09	80	3.41	4.435E+00	1.470E+00	1.470E+00	60.61
PO-218	74.81	440	6.21	5.109E+00	3.860E+00	3.860E+00	20.43
	77.11	652	10.50	5.361E+00	3.223E+00	3.223E+00	16.87
	87.30	291	4.67	6.260E+00	2.774E+00	2.774E+00	25.88
	241.98	294	7.49	5.180E+00	2.111E+00	2.111E+00	31.96
	295.21	415	19.20	4.488E+00	1.339E+00	1.339E+00	18.72
	351.92	737	37.20*	3.940E+00	1.398E+00	1.398E+00	15.67
RA-224	240.98	294	3.95*	5.180E+00	4.002E+00	4.002E+00	31.47
RA-226	609.31	537	46.30*	2.575E+00	1.253E+00	1.253E+00	16.34
	1120.29	83	15.10	1.516E+00	1.011E+00	1.011E+00	46.82
	1764.49	102	15.80	1.056E+00	1.702E+00	1.702E+00	25.92
AC-228	338.32	271	11.40	4.059E+00	1.633E+00	1.633E+00	48.40
	911.07	317	27.70*	1.824E+00	1.747E+00	1.747E+00	18.42
	969.11	163	16.60	1.727E+00	1.584E+00	1.584E+00	30.91
RA-228	338.32	271	11.40	4.059E+00	1.633E+00	1.633E+00	48.40
	911.07	317	27.70*	1.824E+00	1.747E+00	1.747E+00	18.42
	969.11	163	16.60	1.727E+00	1.584E+00	1.584E+00	30.91
TH-228	74.81	440	10.70	5.109E+00	2.240E+00	2.276E+00	19.07
	77.11	652	18.00	5.361E+00	1.880E+00	1.910E+00	15.05
	87.30	291	8.00	6.260E+00	1.620E+00	1.646E+00	24.71
	238.63	1340	44.60*	5.227E+00	1.600E+00	1.626E+00	13.51
	300.09	80	3.41	4.435E+00	1.470E+00	1.493E+00	84.14
TH-230	609.31	537	46.30*	2.575E+00	1.253E+00	1.253E+00	16.34
	1120.29	83	15.10	1.516E+00	1.011E+00	1.011E+00	46.82
	1764.49	102	15.80	1.056E+00	1.702E+00	1.702E+00	25.92
TH-232	338.32	271	11.40	4.059E+00	1.633E+00	1.633E+00	26.73
	911.07	317	27.70*	1.824E+00	1.747E+00	1.747E+00	18.42
	969.11	163	16.60	1.727E+00	1.584E+00	1.584E+00	30.91
TH-234	63.29	55	3.80*	3.604E+00	1.125E+00	1.125E+00	127.20
	92.38	252	5.41	6.595E+00	1.969E+00	1.969E+00	35.01
U-234	609.31	537	46.30*	2.575E+00	1.253E+00	1.253E+00	16.34
	1120.29	83	15.10	1.516E+00	1.011E+00	1.011E+00	46.82
	1764.49	102	15.80	1.056E+00	1.702E+00	1.702E+00	25.92
NP-237	86.50	291	12.60*	6.260E+00	1.028E+00	1.028E+00	32.19
	95.87	-----	2.60	6.742E+00	-----	Line Not Found	-----
U-238	63.29	55	3.80*	3.604E+00	1.125E+00	1.125E+00	127.20
	92.38	252	5.41	6.595E+00	1.969E+00	1.969E+00	31.19
AM-243	74.67	440	66.00*	5.109E+00	3.632E-01	3.632E-01	19.04
	86.72	291	0.34	6.260E+00	3.856E+01	3.856E+01	24.71
	117.66	-----	0.55	7.175E+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	6.968E+00	-----	Line Not Found	-----
ANH-511	511.00	145	100.00*	2.965E+00	1.359E-01	1.359E-01	51.02

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	2.149E+01	2.149E+01	0.240E+01	11.17	
CD-109	464.00D	1.02	3.483E+00	3.568E+00	0.882E+00	24.71	
SN-126	1.00E+05Y	1.00	3.502E-01	3.502E-01	0.865E-01	24.71	
TL-208	1.41E+10Y	1.00	4.894E-01	4.894E-01	0.827E-01	16.89	
BI-211	7.04E+08Y	1.00	4.020E+00	4.020E+00	0.594E+00	14.78	
PB-212	1.41E+10Y	1.00	1.600E+00	1.600E+00	0.216E+00	13.51	
PO-212	1.41E+10Y	1.00	1.600E+00	1.600E+00	0.216E+00	13.51	
BI-214	1600.00Y	1.00	1.253E+00	1.253E+00	0.205E+00	16.34	
PB-214	1600.00Y	1.00	1.398E+00	1.398E+00	0.219E+00	15.67	
PO-214	1600.00Y	1.00	1.398E+00	1.398E+00	0.219E+00	15.67	
PO-216	1.41E+10Y	1.00	1.600E+00	1.600E+00	0.216E+00	13.51	
PO-218	1600.00Y	1.00	1.398E+00	1.398E+00	0.219E+00	15.67	
RA-224	1.41E+10Y	1.00	4.002E+00	4.002E+00	1.259E+00	31.47	
RA-226	1600.00Y	1.00	1.253E+00	1.253E+00	0.205E+00	16.34	
AC-228	1.41E+10Y	1.00	1.747E+00	1.747E+00	0.322E+00	18.42	
RA-228	1.41E+10Y	1.00	1.747E+00	1.747E+00	0.322E+00	18.42	
TH-228	1.91Y	1.02	1.600E+00	1.626E+00	0.220E+00	13.51	
TH-230	4.47E+09Y	1.00	1.253E+00	1.253E+00	0.205E+00	16.34	
TH-232	1.41E+10Y	1.00	1.747E+00	1.747E+00	0.322E+00	18.42	
TH-234	4.47E+09Y	1.00	1.125E+00	1.125E+00	1.431E+00	127.20	
U-234	4.47E+09Y	1.00	1.253E+00	1.253E+00	0.205E+00	16.34	
NP-237	2.14E+06Y	1.00	1.028E+00	1.028E+00	0.331E+00	32.19	
U-238	4.47E+09Y	1.00	1.125E+00	1.125E+00	1.431E+00	127.20	
AM-243	7380.00Y	1.00	3.632E-01	3.632E-01	0.691E-01	19.04	
ANH-511	1.00E+09Y	1.00	1.359E-01	1.359E-01	0.693E-01	51.02	

Total Activity : 5.846E+01 5.857E+01

Grand Total Activity : 5.846E+01 5.857E+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
2	84.09	84	331	1.04	168.36	162	21	1.17E-02	73.3	6.02E+00	T
2	89.90	173	295	1.06	179.99	162	21	2.40E-02	35.4	6.43E+00	T
0	128.92	76	350	1.14	258.04	255	8	1.05E-02	89.1	7.13E+00	T
0	185.86	203	386	0.94	371.91	367	10	2.82E-02	40.1	6.15E+00	T
0	209.13	120	324	1.02	418.45	414	9	1.67E-02	57.1	5.71E+00	T
0	270.04	126	219	1.74	540.27	536	11	1.75E-02	48.7	4.79E+00	T
0	327.66	105	131	1.62	655.51	652	9	1.46E-02	43.7	4.15E+00	T
0	409.13	64	97	1.14	818.43	814	9	8.84E-03	61.6	3.52E+00	
0	462.70	84	111	1.29	925.56	921	10	1.17E-02	51.7	3.20E+00	T
0	727.15	89	73	1.11	1454.40	1448	10	1.24E-02	41.7	2.22E+00	T
0	768.22	63	48	1.30	1536.52	1533	9	8.70E-03	47.1	2.12E+00	T
4	964.43	71	44	2.35	1928.84	1921	23	9.87E-03	47.2	1.73E+00	T
0	1377.41	47	12	2.21	2754.51	2748	12	6.54E-03	41.4	1.27E+00	T
0	1508.98	39	6	0.74	3017.51	3013	11	5.35E-03	39.9	1.18E+00	T
0	1729.17	36	3	2.03	3457.67	3451	14	4.97E-03	40.0	1.07E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148006.CNF;1  *
* Acquisition date   : 20-JAN-2010 15:51:00  Detector SN#      :              *
* Detector ID        : GAM16                      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 02:00:01.93             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID          *
* Sample ID          : G244148006             Analyst initials: MXR1          *
* Batch Number       : 940268                 Sample Quantity : 1.34900E+02 GRAM  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16.1MS 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	2.149E+01	2.400E+00	4.203E-01	3.695E-02	51.123
CD-109	3.568E+00	8.816E-01	9.951E-01	9.589E-02	3.586
SN-126	3.502E-01	8.652E-02	9.809E-02	9.405E-03	3.570
TL-208	4.894E-01	8.267E-02	5.008E-02	4.964E-03	9.773
BI-211	4.020E+00	5.940E-01	2.518E-01	2.753E-02	15.964
PB-212	1.600E+00	2.162E-01	8.041E-02	9.521E-03	19.897
PO-212	1.600E+00	2.162E-01	8.041E-02	9.521E-03	19.897
BI-214	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718
PB-214	1.398E+00	2.191E-01	8.778E-02	1.062E-02	15.930
PO-214	1.398E+00	2.191E-01	8.778E-02	1.062E-02	15.930
PO-216	1.600E+00	2.162E-01	8.041E-02	9.521E-03	19.897
PO-218	1.398E+00	2.191E-01	8.778E-02	1.062E-02	15.930
RA-224	4.002E+00	1.259E+00	9.153E-01	1.009E-01	4.373
RA-226	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718
AC-228	1.747E+00	3.218E-01	1.705E-01	2.026E-02	10.244
RA-228	1.747E+00	3.218E-01	1.705E-01	2.026E-02	10.244
TH-228	1.626E+00	2.197E-01	8.172E-02	9.675E-03	19.897
TH-230	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.747E+00	3.218E-01	1.705E-01	2.026E-02	10.244
TH-234	1.125E+00	1.431E+00	1.700E+00	2.966E-01	0.662
U-234	1.253E+00	2.047E-01	9.132E-02	9.655E-03	13.718
NP-237	1.028E+00	3.310E-01	2.912E-01	6.611E-02	3.531
U-238	1.125E+00	1.431E+00	1.700E+00	2.966E-01	0.662
AM-243	3.632E-01	6.914E-02	7.120E-02	5.894E-03	5.101
ANH-511	1.359E-01	6.934E-02	4.024E-02	3.828E-03	3.377

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.346E-02		2.666E-01	4.508E-01	4.560E-02	0.163
NA-22	-7.993E-04		3.773E-02	6.103E-02	5.078E-03	-0.013
NA-24	-3.372E-01		9.313E-01	Half-Life too short		
AL-26	-5.527E-03		2.385E-02	3.715E-02	3.038E-03	-0.149
TI-44	3.469E-01	+	5.220E-02	6.102E-02	5.254E-03	5.686
SC-46	1.557E-02		3.536E-02	6.133E-02	5.798E-03	0.254
V-48	-1.192E-02		6.184E-02	1.004E-01	9.244E-03	-0.119
CR-51	2.670E-01		3.355E-01	5.573E-01	6.516E-02	0.479
MN-52	-2.539E-02		2.538E-01	4.011E-01	3.423E-02	-0.063
MN-54	8.681E-03		3.117E-02	5.356E-02	5.031E-03	0.162
CO-56	2.883E-02		3.380E-02	6.070E-02	5.712E-03	0.475
CO-57	1.184E-02		2.020E-02	3.465E-02	2.880E-03	0.342
CO-58	-2.146E-02		3.515E-02	5.593E-02	5.240E-03	-0.384
FE-59	-1.262E-02		7.860E-02	1.269E-01	1.179E-02	-0.099
CO-60	-2.138E-02		3.499E-02	5.180E-02	4.370E-03	-0.413
ZN-65	2.814E-03		7.712E-02	1.101E-01	9.354E-03	0.026
GE-68	7.240E-01		1.068E+00	1.875E+00	1.638E-01	0.386
AS-73	2.533E-01		6.941E-01	1.109E+00	8.459E-02	0.228
AS-74	-6.596E-02		8.553E-02	1.239E-01	1.150E-02	-0.532
SE-75	-1.885E-02		3.810E-02	5.587E-02	6.520E-03	-0.337
BR-77	-7.197E+00		1.205E+01	1.885E+01	1.791E+00	-0.382
SR-82	1.767E-01		3.320E-01	5.579E-01	5.173E-02	0.317
RB-83	-3.878E-02		5.900E-02	9.175E-02	8.718E-03	-0.423
RB-84	-4.692E-03		6.032E-02	1.001E-01	9.457E-03	-0.047
KR-85	5.478E-01		6.750E+00	9.845E+00	9.361E-01	0.056
SR-85	2.840E-03		3.499E-02	5.103E-02	4.853E-03	0.056
RB-86	3.551E-01		6.890E-01	1.193E+00	1.042E-01	0.298
Y-88	1.638E-02		2.796E-02	5.140E-02	4.173E-03	0.319
ZR-88	-8.575E-03		2.596E-02	4.263E-02	3.943E-03	-0.201
Y-91	-7.245E+00		1.683E+01	2.624E+01	2.134E+00	-0.276
NB-94	1.369E-02		2.956E-02	4.947E-02	4.472E-03	0.277
NB-95	3.245E-02		4.321E-02	6.563E-02	6.067E-03	0.494
NB-95M	-1.159E-01		1.275E-01	1.714E-01	2.038E-02	-0.676
ZR-95	1.401E-02		5.686E-02	9.335E-02	9.371E-03	0.150
NB-97	-8.839E-02		1.194E-01	Half-Life too short		
ZR-97	7.359E+00		2.390E+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	3.030E+00		1.370E+01	2.241E+01	3.473E+00	0.135
TC-99M	-3.732E+11		2.847E+11	Half-Life too short		
RH-101	-5.263E-03		2.846E-02	4.581E-02	4.523E-03	-0.115
RH-102	1.313E-03		2.310E-02	3.847E-02	3.656E-03	0.034
RU-103	-1.670E-02		3.339E-02	5.274E-02	7.766E-03	-0.317
RH-106	-1.163E-01		2.803E-01	4.380E-01	6.002E-02	-0.265
RU-106	-1.163E-01		2.800E-01	4.380E-01	4.006E-02	-0.265
AG-108M	-1.698E-03		2.608E-02	4.329E-02	4.214E-03	-0.039
AG-110M	-1.506E-02		3.091E-02	4.778E-02	4.373E-03	-0.315
IN-111	-4.787E-01		1.314E+00	1.832E+00	2.041E-01	-0.261
IN-113M	-1.314E-02		3.844E-02	6.314E-02	5.993E-03	-0.208
SN-113	-1.314E-02		3.844E-02	6.314E-02	5.993E-03	-0.208
IN-114M	-2.637E-02		1.769E-01	2.562E-01	2.478E-02	-0.103
CD-115	-5.204E+00		1.236E+01	1.959E+01	1.859E+00	-0.266
SN-117M	-1.142E-02		4.882E-02	7.983E-02	7.091E-03	-0.143
SB-122	2.526E+00		2.449E+00	4.296E+00	4.041E-01	0.588
I-123	-5.807E+00		9.014E+00	Half-Life too short		
TE-123M	-7.694E-03		2.388E-02	3.888E-02	3.477E-03	-0.198
I-124	1.777E-01		8.736E-01	1.238E+00	1.145E-01	0.144
SB-124	3.833E-02		5.846E-02	1.092E-01	9.560E-03	0.351
SB-125	-2.889E-02		6.919E-02	1.117E-01	1.067E-02	-0.259
TE-125M	2.390E+00		7.150E+00	1.220E+01	1.242E+00	0.196
I-126	1.827E-01		1.712E-01	3.000E-01	2.668E-02	0.609
SB-126	-1.426E-01		1.551E-01	2.040E-01	1.857E-02	-0.699
SB-127	3.149E-01		1.493E+00	2.451E+00	2.931E-01	0.128
XE-127	2.353E-03		3.921E-02	6.410E-02	6.411E-03	0.037
I-131	2.301E-02		1.015E-01	1.737E-01	1.838E-02	0.132
TE-132	-9.399E-03		7.381E-01	1.194E+00	2.043E-01	-0.008
BA-133	2.194E-02		3.489E-02	5.495E-02	7.940E-03	0.399
I-133	-1.001E-04		6.034E-03	Half-Life too short		
CS-134	8.528E-02		4.238E-02	8.052E-02	7.550E-03	1.059
CS-135	2.212E-01		1.428E-01	2.250E-01	2.869E-02	0.983
I-135	-1.700E+09		3.326E+10	Half-Life too short		
CS-136	-2.147E-02		9.141E-02	1.467E-01	1.358E-02	-0.146
BA-137M	-1.824E-02		3.392E-02	5.235E-02	4.646E-03	-0.348
CS-137	-1.928E-02		3.586E-02	5.534E-02	4.920E-03	-0.348
CE-139	-1.402E-03		2.495E-02	4.103E-02	3.721E-03	-0.034
BA-140	-1.489E-01		2.362E-01	3.589E-01	1.198E-01	-0.415
LA-140	-3.933E-02		7.109E-02	1.067E-01	9.090E-03	-0.368
CE-141	2.059E-02		5.372E-02	9.057E-02	7.923E-03	0.227
CE-143	8.875E-04		1.662E-04	Half-Life too short		
CE-144	7.416E-03		1.870E-01	2.803E-01	4.329E-02	0.026
PM-144	2.622E-02		3.164E-02	5.432E-02	4.900E-03	0.483
PR-144	1.777E+00		2.145E+00	3.683E+00	3.321E-01	0.483
PM-146	4.083E-02		3.724E-02	6.609E-02	7.547E-03	0.618
ND-147	1.551E-01		5.193E-01	8.729E-01	1.350E-01	0.178
PM-149	-7.387E+01		1.118E+02	1.694E+02	2.981E+01	-0.436
EU-152	-3.084E-02		8.531E-02	1.365E-01	1.526E-02	-0.226

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-6.746E-02		6.863E-02	1.040E-01	9.235E-03	-0.649
EU-154	-2.602E-03		1.053E-01	1.702E-01	1.886E-02	-0.015
EU-155	2.493E-02		8.419E-02	1.437E-01	1.243E-02	0.174
TB-160	-1.206E-03		1.172E-01	1.958E-01	1.850E-02	-0.006
HO-166M	1.988E-02		5.316E-02	8.836E-02	8.017E-03	0.225
TM-171	-1.083E+00		2.535E+01	3.605E+01	2.762E+00	-0.030
LU-176	1.102E-02		2.240E-02	3.663E-02	4.249E-03	0.301
LU-177	2.834E+00	+	1.643E+00	2.007E+00	2.037E-01	1.412
LU-177M	-6.677E-02		1.688E-01	2.394E-01	2.238E-02	-0.279
HF-181	1.177E-02		3.372E-02	5.737E-02	5.456E-03	0.205
W-181	3.399E-01	+	4.290E-01	4.876E-01	3.682E-02	0.697
TA-182	2.975E-02		1.739E-01	2.876E-01	2.352E-02	0.103
RE-183	1.128E-02		8.987E-02	1.492E-01	1.339E-02	0.076
RE-184	-9.424E-02		2.017E-01	3.149E-01	3.568E-02	-0.299
OS-185	-2.679E-02		3.635E-02	5.458E-02	4.906E-03	-0.491
RE-188	7.512E-02		1.499E-01	2.530E-01	2.226E-02	0.297
W-188	-1.892E+00		7.438E+00	1.031E+01	1.223E+00	-0.184
IR-192	2.878E-03		2.940E-02	4.689E-02	5.359E-03	0.061
AU-195	3.944E-02		1.879E-01	3.140E-01	2.765E-02	0.126
TL-200	-6.099E-04		3.737E-04	Half-Life too short		
TL-201	-3.748E-01		7.348E+00	1.208E+01	1.100E+00	-0.031
TL-202	-1.596E-02		6.400E-02	1.048E-01	9.892E-03	-0.152
HG-203	5.055E-04		3.636E-02	5.814E-02	7.086E-03	0.009
BI-207	8.834E-03		4.416E-02	7.423E-02	6.543E-03	0.119
TL-207	-6.542E-02		6.659E-01	9.266E-01	1.772E-01	-0.071
PO-209	-3.142E-01		6.256E+00	1.039E+01	9.831E-01	-0.030
BI-210	-7.417E-01		3.210E+00	4.991E+00	4.655E-01	-0.149
PB-210	-7.417E-01		3.210E+00	4.991E+00	4.655E-01	-0.149
PO-210	-7.417E-01		3.210E+00	4.991E+00	4.216E-01	-0.149
PB-211	3.437E-01		9.026E-01	1.340E+00	8.408E-01	0.257
BI-212	9.443E-01	+	4.055E-01	6.088E-01	6.360E-02	1.551
PO-215	-6.542E-02		6.659E-01	9.266E-01	1.772E-01	-0.071
RN-219	-4.976E-02		3.515E-01	5.838E-01	9.004E-02	-0.085
RN-220	4.320E+00		2.083E+01	3.477E+01	3.285E+00	0.124
RA-223	-6.542E-02		6.659E-01	9.266E-01	1.772E-01	-0.071
AC-227	-2.178E-01		3.287E-01	5.034E-01	8.598E-02	-0.433
TH-227	-2.178E-01		3.293E-01	5.034E-01	9.844E-02	-0.433
TH-229	7.317E-02		4.312E-01	7.104E-01	6.932E-02	0.103
PA-231	-1.442E-01		1.312E+00	2.079E+00	3.596E-01	-0.069
TH-231	-6.542E-02		6.659E-01	9.266E-01	1.772E-01	-0.071
U-231	2.347E-01		1.115E+00	1.717E+00	1.542E-01	0.137
PA-233	5.782E-03		5.581E-02	8.911E-02	1.042E-02	0.065
PA-234	-1.414E-01		2.562E-01	3.996E-01	7.634E-02	-0.354
PA-234M	1.586E+00		3.951E+00	6.751E+00	7.029E-01	0.235
U-235	1.928E-01		1.839E-01	3.074E-01	5.372E-02	0.627
NP-236	-3.545E-02		6.628E-02	1.067E-01	9.522E-03	-0.332
NP-239	1.105E-02		1.487E-01	2.504E-01	2.085E-02	0.044
AM-241	-3.847E-02		1.380E-01	1.945E-01	1.526E-02	-0.198

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.996E-02		7.565E-02	1.255E-01	1.079E-02	-0.239
AM-246	7.755E-02		1.185E-01	2.079E-01	1.814E-02	0.373
CM-247	1.339E-02		3.119E-02	5.367E-02	4.990E-03	0.250
CF-249	-7.440E-04		3.442E-02	5.776E-02	5.419E-03	-0.013
CF-251	-8.680E-02		1.095E-01	1.728E-01	1.611E-02	-0.502

# 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]G244148006          *
* Acquisition date   : 20-JAN-2010 15:51:00 Detector SN# :                 *
* Detector ID        : GAM16 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 02:00:01.93 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148006 Analyst initials: MXR1                 *
* Batch Number       : 940268 Sample Quantity : 1.3490E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 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	2.149E+01	2.352E+00	2.107E-01	1.200E+00
CD-109	3.568E+00	8.640E-01	5.249E-01	4.408E-01
SN-126	3.502E-01	8.479E-02	5.174E-02	4.326E-02
TL-208	4.894E-01	8.102E-02	2.554E-02	4.134E-02
BI-211	4.020E+00	5.821E-01	1.296E-01	2.970E-01
PB-212	1.600E+00	2.119E-01	4.168E-02	1.081E-01
PO-212	1.600E+00	2.119E-01	4.168E-02	1.081E-01
BI-214	1.253E+00	2.006E-01	4.654E-02	1.024E-01
PB-214	1.398E+00	2.147E-01	4.519E-02	1.096E-01
PO-214	1.398E+00	2.147E-01	4.519E-02	1.096E-01
PO-216	1.600E+00	2.119E-01	4.168E-02	1.081E-01
PO-218	1.398E+00	2.147E-01	4.519E-02	1.096E-01
RA-224	4.002E+00	1.234E+00	4.743E-01	6.296E-01
RA-226	1.253E+00	2.006E-01	4.654E-02	1.024E-01
AC-228	1.747E+00	3.153E-01	8.627E-02	1.609E-01
RA-228	1.747E+00	3.153E-01	8.627E-02	1.609E-01
TH-228	1.626E+00	2.153E-01	4.236E-02	1.098E-01
TH-230	1.253E+00	2.006E-01	4.654E-02	1.024E-01
TH-232	1.747E+00	3.153E-01	8.627E-02	1.609E-01
TH-234	1.125E+00	1.402E+00	9.019E-01	7.155E-01
U-234	1.253E+00	2.006E-01	4.654E-02	1.024E-01
NP-237	1.028E+00	3.244E-01	1.537E-01	1.655E-01
U-238	1.125E+00	1.402E+00	9.019E-01	7.155E-01
AM-243	3.632E-01	6.775E-02	3.766E-02	3.457E-02
ANH-511	1.359E-01	6.796E-02	2.058E-02	3.467E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	7.346E-02	2.612E-01	2.308E-01	1.333E-01 NOT IDENT.
NA-22	-7.993E-04	3.698E-02	3.068E-02	1.887E-02 NOT IDENT.

NA-24	-3.372E+05	1.825E+06	0.000E+00	9.313E+05	SHORT HLIF
AL-26	-5.527E-03	2.337E-02	1.855E-02	1.192E-02	NOT IDENT.
TI-44	3.469E-01	5.116E-02	3.225E-02	2.610E-02	FAIL ABUN
SC-46	1.557E-02	3.465E-02	3.104E-02	1.768E-02	FAIL ABUN
V-48	-1.192E-02	6.061E-02	5.073E-02	3.092E-02	NOT IDENT.
CR-51	2.670E-01	3.288E-01	2.874E-01	1.677E-01	NOT IDENT.
MN-52	-2.539E-02	2.487E-01	2.012E-01	1.269E-01	NOT IDENT.
MN-54	8.681E-03	2.855E-02	2.714E-02	1.559E-02	NOT IDENT.
CO-56	2.883E-02	3.312E-02	3.075E-02	1.690E-02	NOT IDENT.
CO-57	1.184E-02	1.980E-02	1.818E-02	1.010E-02	NOT IDENT.
CO-58	-2.146E-02	3.445E-02	2.836E-02	1.758E-02	NOT IDENT.
FE-59	-1.262E-02	7.703E-02	6.396E-02	3.930E-02	NOT IDENT.
CO-60	-2.138E-02	3.429E-02	2.602E-02	1.750E-02	NOT IDENT.
ZN-65	2.814E-03	7.558E-02	5.551E-02	3.856E-02	NOT IDENT.
GE-68	7.240E-01	1.047E+00	9.455E-01	5.342E-01	NOT IDENT.
AS-73	2.533E-01	6.802E-01	5.898E-01	3.471E-01	NOT IDENT.
AS-74	-6.596E-02	8.382E-02	6.316E-02	4.277E-02	NOT IDENT.
SE-75	-1.885E-02	3.734E-02	2.891E-02	1.905E-02	NOT IDENT.
BR-77	-7.197E+00	1.181E+01	9.634E+00	6.025E+00	FAIL ABUN
SR-82	1.767E-01	3.254E-01	2.831E-01	1.660E-01	NOT IDENT.
RB-83	-3.878E-02	5.782E-02	4.689E-02	2.950E-02	NOT IDENT.
RB-84	-4.692E-03	5.912E-02	5.067E-02	3.016E-02	NOT IDENT.
KR-85	5.478E-01	6.615E+00	5.033E+00	3.375E+00	NOT IDENT.
SR-85	2.840E-03	3.429E-02	2.609E-02	1.750E-02	NOT IDENT.
RB-86	3.551E-01	6.752E-01	6.016E-01	3.445E-01	NOT IDENT.
Y-88	1.638E-02	2.740E-02	2.566E-02	1.398E-02	NOT IDENT.
ZR-88	-8.575E-03	2.544E-02	2.190E-02	1.298E-02	NOT IDENT.
Y-91	-7.245E+00	1.650E+01	1.320E+01	8.416E+00	NOT IDENT.
NB-94	1.369E-02	2.897E-02	2.515E-02	1.478E-02	NOT IDENT.
NB-95	3.245E-02	4.234E-02	3.331E-02	2.160E-02	NOT IDENT.
NB-95M	-1.159E-01	1.249E-01	8.888E-02	6.373E-02	NOT IDENT.
ZR-95	1.401E-02	5.572E-02	4.739E-02	2.843E-02	NOT IDENT.
NB-97	-8.839E+04	2.339E+05	0.000E+00	1.194E+05	SHORT HLIF
ZR-97	7.359E+06	4.685E+06	0.000E+00	2.390E+06	SHORT HLIF
MO-99	3.030E+00	1.343E+01	1.138E+01	6.852E+00	NOT IDENT.
TC-99M	-3.732E+17	5.581E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-5.263E-03	2.789E-02	2.383E-02	1.423E-02	NOT IDENT.
RH-102	1.313E-03	2.264E-02	1.969E-02	1.155E-02	FAIL ABUN
RU-103	-1.670E-02	3.272E-02	2.698E-02	1.670E-02	FAIL ABUN
RH-106	-1.163E-01	2.747E-01	2.232E-01	1.401E-01	FAIL ABUN
RU-106	-1.163E-01	2.744E-01	2.232E-01	1.400E-01	FAIL ABUN
AG-108M	-1.698E-03	2.555E-02	2.220E-02	1.304E-02	NOT IDENT.
AG-110M	-1.506E-02	3.030E-02	2.431E-02	1.546E-02	NOT IDENT.
IN-111	-4.787E-01	1.288E+00	9.493E-01	6.572E-01	NOT IDENT.
IN-113M	-1.314E-02	3.767E-02	3.244E-02	1.922E-02	NOT IDENT.
SN-113	-1.314E-02	3.767E-02	3.244E-02	1.922E-02	NOT IDENT.
IN-114M	-2.637E-02	1.734E-01	1.333E-01	8.846E-02	NOT IDENT.
CD-115	-5.204E+00	1.211E+01	1.001E+01	6.178E+00	NOT IDENT.
SN-117M	-1.142E-02	4.784E-02	4.168E-02	2.441E-02	NOT IDENT.
SB-122	2.526E+00	2.400E+00	2.192E+00	1.224E+00	NOT IDENT.
I-123	-5.807E+06	1.767E+07	0.000E+00	9.014E+06	SHORT HLIF
TE-123M	-7.694E-03	2.341E-02	2.030E-02	1.194E-02	NOT IDENT.
I-124	1.777E-01	8.561E-01	6.310E-01	4.368E-01	FAIL ABUN
SB-124	3.833E-02	5.729E-02	5.458E-02	2.923E-02	FAIL ABUN
SB-125	-2.889E-02	6.780E-02	5.728E-02	3.459E-02	FAIL ABUN
TE-125M	2.390E+00	7.007E+00	6.412E+00	3.575E+00	NOT IDENT.
I-126	1.827E-01	1.678E-01	1.526E-01	8.562E-02	NOT IDENT.
SB-126	-1.426E-01	1.520E-01	1.036E-01	7.757E-02	FAIL ABUN
SB-127	3.149E-01	1.463E+00	1.247E+00	7.464E-01	NOT IDENT.
XE-127	2.353E-03	3.842E-02	3.332E-02	1.960E-02	NOT IDENT.
I-131	2.301E-02	9.946E-02	8.934E-02	5.075E-02	NOT IDENT.
TE-132	-9.399E-03	7.233E-01	6.193E-01	3.690E-01	NOT IDENT.
BA-133	2.194E-02	3.419E-02	2.828E-02	1.745E-02	NOT IDENT.
I-133	-1.001E+02	1.183E+04	0.000E+00	6.034E+03	SHORT HLIF
CS-134	8.528E-02	4.154E-02	4.084E-02	2.119E-02	NOT IDENT.
CS-135	2.212E-01	1.400E-01	1.164E-01	7.141E-02	NOT IDENT.
I-135	-1.700E+15	6.520E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.147E-02	8.958E-02	7.403E-02	4.571E-02	FAIL ABUN
BA-137M	-1.824E-02	3.325E-02	2.664E-02	1.696E-02	NOT IDENT.
CS-137	-1.928E-02	3.514E-02	2.816E-02	1.793E-02	NOT IDENT.
CE-139	-1.402E-03	2.445E-02	2.141E-02	1.248E-02	NOT IDENT.
BA-140	-1.489E-01	2.315E-01	1.833E-01	1.181E-01	NOT IDENT.
LA-140	-3.933E-02	6.967E-02	5.342E-02	3.555E-02	FAIL ABUN
CE-141	2.059E-02	5.265E-02	4.736E-02	2.686E-02	NOT IDENT.
CE-143	8.875E+02	3.257E+02	0.000E+00	1.662E+02	SHORT HLIF
CE-144	7.416E-03	1.832E-01	1.468E-01	9.348E-02	NOT IDENT.
PM-144	2.622E-02	3.100E-02	2.762E-02	1.582E-02	NOT IDENT.
PR-144	1.777E+00	2.102E+00	1.873E+00	1.073E+00	NOT IDENT.



PM-146	4.083E-02	3.650E-02	3.386E-02	1.862E-02	NOT IDENT.
ND-147	1.551E-01	5.089E-01	4.460E-01	2.596E-01	FAIL ABUN
PM-149	-7.387E+01	1.095E+02	8.754E+01	5.589E+01	NOT IDENT.
EU-152	-3.084E-02	8.361E-02	7.031E-02	4.266E-02	FAIL ABUN
GD-153	-6.746E-02	6.726E-02	5.474E-02	3.432E-02	FAIL ABUN
EU-154	-2.602E-03	1.032E-01	8.558E-02	5.265E-02	NOT IDENT.
EU-155	2.493E-02	8.250E-02	7.555E-02	4.209E-02	FAIL ABUN
TB-160	-1.206E-03	1.149E-01	9.912E-02	5.861E-02	FAIL ABUN
HO-166M	1.988E-02	5.210E-02	4.490E-02	2.658E-02	FAIL ABUN
TM-171	-1.083E+00	2.484E+01	1.911E+01	1.267E+01	NOT IDENT.
LU-176	1.102E-02	2.196E-02	1.890E-02	1.120E-02	FAIL ABUN
LU-177	2.834E+00	1.610E+00	1.043E+00	8.216E-01	FAIL ABUN
LU-177M	-6.677E-02	1.654E-01	1.229E-01	8.441E-02	FAIL ABUN
HF-181	1.177E-02	3.305E-02	2.936E-02	1.686E-02	FAIL ABUN
W-181	3.399E-01	4.204E-01	2.585E-01	2.145E-01	FAIL ABUN
TA-182	2.975E-02	1.704E-01	1.447E-01	8.694E-02	FAIL ABUN
RE-183	1.128E-02	8.808E-02	7.787E-02	4.494E-02	FAIL ABUN
RE-184	-9.424E-02	1.977E-01	1.630E-01	1.009E-01	NOT IDENT.
OS-185	-2.679E-02	3.563E-02	2.778E-02	1.818E-02	NOT IDENT.
RE-188	7.512E-02	1.469E-01	1.322E-01	7.496E-02	NOT IDENT.
W-188	-1.892E+00	7.289E+00	5.324E+00	3.719E+00	FAIL ABUN
IR-192	2.878E-03	2.881E-02	2.418E-02	1.470E-02	FAIL ABUN
AU-195	3.944E-02	1.841E-01	1.653E-01	9.393E-02	FAIL ABUN
TL-200	-6.099E+02	7.324E+02	0.000E+00	3.737E+02	SHORT HLIF
TL-201	-3.748E-01	7.201E+00	6.301E+00	3.674E+00	NOT IDENT.
TL-202	-1.596E-02	6.272E-02	5.374E-02	3.200E-02	NOT IDENT.
HG-203	5.055E-04	3.563E-02	3.005E-02	1.818E-02	FAIL ABUN
BI-207	8.834E-03	4.328E-02	3.744E-02	2.208E-02	FAIL ABUN
TL-207	-6.542E-02	6.526E-01	4.777E-01	3.330E-01	FAIL ABUN
PO-209	-3.142E-01	6.131E+00	5.260E+00	3.128E+00	NOT IDENT.
BI-210	-7.417E-01	3.146E+00	2.661E+00	1.605E+00	NOT IDENT.
PB-210	-7.417E-01	3.146E+00	2.661E+00	1.605E+00	NOT IDENT.
PO-210	-7.417E-01	3.145E+00	2.661E+00	1.605E+00	NOT IDENT.
PB-211	3.437E-01	8.846E-01	6.878E-01	4.513E-01	NOT IDENT.
BI-212	9.443E-01	3.974E-01	3.093E-01	2.028E-01	FAIL ABUN
PO-215	-6.542E-02	6.526E-01	4.777E-01	3.330E-01	FAIL ABUN
RN-219	-4.976E-02	3.444E-01	2.998E-01	1.757E-01	FAIL ABUN
RN-220	4.320E+00	2.041E+01	1.775E+01	1.041E+01	NOT IDENT.
RA-223	-6.542E-02	6.526E-01	4.777E-01	3.330E-01	FAIL ABUN
AC-227	-2.178E-01	3.221E-01	2.606E-01	1.643E-01	FAIL ABUN
TH-227	-2.178E-01	3.228E-01	2.606E-01	1.647E-01	FAIL ABUN
TH-229	7.317E-02	4.226E-01	3.696E-01	2.156E-01	FAIL ABUN
PA-231	-1.442E-01	1.286E+00	1.074E+00	6.561E-01	FAIL ABUN
TH-231	-6.542E-02	6.526E-01	4.777E-01	3.330E-01	FAIL ABUN
U-231	2.347E-01	1.093E+00	9.045E-01	5.575E-01	FAIL ABUN
PA-233	5.782E-03	5.469E-02	4.597E-02	2.790E-02	FAIL ABUN
PA-234	-1.414E-01	2.510E-01	2.020E-01	1.281E-01	FAIL ABUN
PA-234M	1.586E+00	3.872E+00	3.409E+00	1.976E+00	NOT IDENT.
U-235	1.928E-01	1.802E-01	1.607E-01	9.196E-02	FAIL ABUN
NP-236	-3.545E-02	6.495E-02	5.569E-02	3.314E-02	NOT IDENT.
NP-239	1.105E-02	1.458E-01	1.314E-01	7.436E-02	FAIL ABUN
AM-241	-3.847E-02	1.353E-01	1.033E-01	6.902E-02	NOT IDENT.
CM-243	-2.996E-02	7.414E-02	6.602E-02	3.783E-02	FAIL ABUN
AM-246	7.755E-02	1.162E-01	1.049E-01	5.927E-02	NOT IDENT.
CM-247	1.339E-02	3.057E-02	2.756E-02	1.560E-02	NOT IDENT.
CF-249	-7.440E-04	3.373E-02	2.968E-02	1.721E-02	NOT IDENT.
CF-251	-8.680E-02	1.073E-01	9.006E-02	5.476E-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	232.7443
46.50	232.7443
46.50	232.7443
48.70	259.1995
49.72	220.8282
51.35	251.7361
52.39	224.9834
52.97	207.3833
53.15	207.4919
53.44	216.0688
54.07	221.2711
56.28	240.8088
56.28	240.8103
57.37	0.0000
57.53	221.0033
57.53	221.0044
57.60	221.0460
57.98	238.2978
57.98	238.2978
59.32	274.5544
59.32	274.5544
59.40	285.5981
59.54	266.9846
59.72	267.1135
60.01	242.8715
61.10	264.8287
61.14	264.8564
61.30	264.9680
63.00	310.5074
63.29	310.7409
63.29	310.7409
63.58	310.9736
64.28	334.6086
65.12	262.6446
65.20	262.6968
65.20	262.6968
66.05	291.4087
66.72	295.2145
66.83	295.2960
66.91	290.3778
67.20	292.2466
67.20	292.2466
67.75	308.0245
67.85	308.1017
68.90	324.3210
68.90	324.3210
69.30	319.6303
69.67	291.6856
70.82	309.0784
70.82	309.0784
70.83	309.0859
72.80	342.0953
72.87	342.1512
72.87	342.1512
74.67	341.4791
74.81	341.5880
74.81	341.5880
74.81	341.5880
74.81	341.5880
74.81	341.5880
74.81	341.5880
74.81	341.5880
74.97	341.7155
75.28	341.9600
75.70	342.2888
77.11	343.3901
77.11	343.3901

77.11	343.3901
77.11	343.3901
77.11	343.3901
77.11	343.3901
77.11	343.3901
78.38	327.3262
79.62	328.2324
79.80	328.3633
79.80	328.3633
80.11	266.9777
80.18	267.0189
80.30	267.0887
80.30	267.0887
80.57	328.9199
81.00	336.0894
81.07	336.1413
81.07	336.1413
81.07	336.1413
81.07	336.1413
82.60	307.1491
83.37	307.6576
83.78	307.9299
83.78	307.9299
83.78	307.9299
83.78	307.9299
84.21	308.2132
84.90	308.6653
85.43	309.0121
86.29	309.5732
86.50	309.7094
86.54	309.7348
86.59	309.7675
86.72	309.8510
86.79	309.8946
86.94	309.9945
87.30	310.2269
87.30	310.2269
87.30	310.2269
87.30	310.2269
87.30	310.2269
87.30	310.2269
87.30	310.2269
87.57	310.4012
87.88	310.6010
88.03	310.6972
88.36	310.9097
88.47	310.9805
89.95	251.6367
91.11	252.2300
92.29	252.8306
92.38	252.8760
92.38	252.8760
93.35	302.1908
94.00	293.3329
94.67	272.5486
94.67	272.5518
94.90	280.6163
94.90	280.6163
94.90	280.6163
94.90	280.6163
95.87	287.7809
95.87	287.7809
96.73	314.8344
97.43	309.6724
98.44	287.8819
98.44	287.8835
98.88	274.7867
99.55	269.7954
99.55	269.7954
99.86	260.1546
100.00	261.1141
100.10	261.1662
103.18	282.3990
103.76	261.1641
105.00	233.8754
105.31	245.7094
108.00	247.8150
109.28	230.2547

111.00	261.8730
111.00	261.8730
111.76	246.7447
112.95	236.3101
115.19	247.3036
116.30	215.6557
117.00	234.2896
117.00	234.2896
117.66	260.3062
121.11	213.7086
121.62	225.9266
121.78	206.5366
122.06	223.3119
122.32	231.7505
122.32	231.7505
122.32	231.7505
122.32	231.7505
123.07	251.5277
127.23	228.4689
129.76	247.6853
131.20	260.9438
133.02	239.0539
133.54	251.9856
135.34	250.7936
136.00	267.1547
136.25	257.7780
136.48	257.8693
140.51	254.6745
140.51	0.0000
142.18	280.1687
142.65	261.2279
143.76	235.7775
144.24	239.7792
144.24	239.7792
144.24	239.7792
144.24	239.7792
145.22	257.4140
145.44	257.4958
147.16	263.9185
152.43	249.4158
152.70	253.3933
153.22	261.3517
154.21	250.0380
154.21	250.0380
154.21	250.0380
154.21	250.0380
155.03	260.0659
156.02	246.7692
158.56	253.5093
159.00	0.0000
159.00	249.7420
160.31	252.1530
161.27	219.0801
162.32	225.2938
162.64	233.2631
163.35	244.3243
163.89	239.5714
165.85	238.2224
167.43	232.7768
171.28	245.8970
171.86	223.1683
172.10	223.2366
176.55	258.5905
176.60	258.6089
181.06	234.3590
184.41	218.6323
185.71	240.2692
186.00	240.3560
190.27	238.5441
192.34	229.9393
193.63	221.0801
197.04	232.2464
198.01	219.1362
198.60	208.9906
200.40	215.6184
201.83	231.4762
202.84	205.8807
205.31	210.0929

208.36	223.8315
208.81	223.9452
209.75	209.5836
209.75	209.5836
210.97	187.9431
215.65	203.6108
216.55	181.7500
218.09	185.2132
222.10	209.2692
223.80	182.1201
226.40	213.4153
227.00	202.9258
227.08	200.8183
227.20	200.8433
228.16	194.6646
228.18	194.6683
228.18	194.6683
231.56	0.0000
235.69	260.5185
236.00	241.2987
236.00	241.2987
238.63	209.6889
238.63	209.6889
238.63	209.6889
238.63	209.6889
239.00	209.7662
240.98	210.1888
241.98	210.4010
241.98	210.4010
241.98	210.4010
244.69	176.8922
245.39	181.8889
247.94	186.6903
248.90	161.8790
249.79	165.2836
252.40	159.1662
252.85	172.3239
252.85	172.3239
254.15	0.0000
256.20	172.8840
256.20	172.8840
260.50	167.0077
260.90	176.9618
262.80	146.4510
264.65	148.2496
268.24	117.8711
268.79	132.8809
269.46	149.5844
269.46	149.5844
269.46	149.5844
269.46	149.5844
271.23	149.8288
273.65	173.5227
276.40	162.8094
277.35	151.7881
277.60	151.8241
277.60	151.8241
278.00	148.5291
278.60	148.6103
279.20	162.1043
279.53	175.5741
280.46	164.5286
281.68	159.1057
283.67	144.7996
284.30	150.4965
285.00	152.8367
285.90	158.5848
286.10	148.4866
286.10	148.4866
287.40	127.2606
288.45	0.0000
290.67	160.9474
290.80	160.9648
291.72	150.9208
293.26	0.0000
293.70	161.3736
295.21	157.6165
295.21	157.6165

295.21	157.6165
295.96	157.7211
296.50	157.7946
297.23	157.8936
298.57	158.0746
299.80	158.2415
299.80	158.2415
300.09	158.2810
300.09	158.2810
300.09	158.2810
300.09	158.2810
300.12	158.2867
301.29	145.3363
302.84	152.3766
303.76	147.3558
303.91	137.0923
304.40	152.5776
304.40	152.5776
304.84	135.4847
306.84	135.1411
308.46	153.6753
311.98	127.6730
316.51	117.7611
318.01	149.1169
319.02	123.7884
319.41	120.3558
320.08	115.7898
323.87	139.3774
323.87	139.3774
323.87	139.3774
323.87	139.3774
325.23	118.6016
328.77	134.6795
333.44	128.1599
334.20	130.6950
334.20	130.6950
334.30	130.7063
338.28	136.5781
338.28	136.5781
338.28	136.5781
338.28	136.5781
338.32	136.5829
338.32	136.5829
338.32	136.5829
340.50	134.1666
340.57	134.1736
344.27	136.5820
345.85	118.5160
350.59	0.0000
351.07	98.7764
351.92	98.8407
351.92	98.8407
351.92	98.8407
355.39	0.0000
356.01	80.0317
364.48	100.6729
366.43	119.7215
367.43	127.9161
367.94	0.0000
369.80	103.7748
374.96	118.6568
383.85	110.2988
387.95	117.0195
388.63	117.0742
391.69	119.1594
391.69	119.1594
392.90	112.8388
398.62	110.5243
400.65	104.2219
401.10	99.6416
401.81	113.5351
402.60	102.5144
404.84	100.6354
410.95	108.4841
411.60	99.6102
413.65	110.1689
414.70	118.1214
415.30	105.2599

415.76	104.3608
417.63	0.0000
418.52	85.8822
423.70	78.6833
427.08	81.6740
427.89	82.6571
432.53	82.9069
433.93	85.8096
439.47	101.2578
439.56	104.1019
439.89	103.1771
443.98	95.8541
444.90	92.1112
445.03	92.1201
445.03	92.1201
445.03	92.1201
445.03	92.1201
453.90	77.3539
463.38	113.7353
468.07	80.1506
473.00	77.2986
475.06	75.4601
475.35	65.7972
476.78	72.6322
477.59	77.5122
477.96	75.5911
482.03	68.0026
484.57	87.5638
487.03	75.0249
490.36	0.0000
492.35	70.3729
497.08	80.3684
507.63	0.0000
510.53	0.0000
510.84	84.9568
511.00	84.9646
511.85	85.0047
511.85	85.0047
513.99	91.8371
513.99	91.8371
520.41	86.4079
520.65	86.4212
527.90	77.7929
528.96	0.0000
529.64	73.8758
529.87	0.0000
531.02	75.9304
537.32	83.2102
543.00	75.4211
546.56	0.0000
549.76	63.5864
552.65	73.7931
555.20	66.8077
563.23	77.2571
563.90	73.2151
568.70	71.3608
569.32	78.5227
569.50	78.5298
569.67	84.6566
573.80	66.4401
574.00	66.4461
574.64	58.2872
578.91	73.7886
579.30	0.0000
583.14	75.5923
585.48	64.1653
591.81	59.8337
592.07	59.8408
593.00	66.0625
595.88	79.5966
600.56	84.9654
602.52	0.0000
602.71	89.6194
602.71	89.6194
603.60	87.9986
604.41	106.3063
604.70	106.3219
609.31	70.7642

609.31	70.7642
609.31	70.7642
609.31	70.7642
610.33	70.7994
612.46	55.0317
614.37	63.4292
618.01	55.3906
621.84	76.4352
621.84	76.4352
631.29	74.6813
633.02	64.2168
633.10	64.2187
634.78	60.0563
635.90	72.7376
636.97	63.2831
645.85	72.0217
646.12	70.9728
656.30	60.6669
657.75	76.6846
657.90	0.0000
661.65	90.6938
661.65	90.6938
664.57	0.0000
666.33	60.9487
666.33	60.9487
675.00	64.4110
677.61	53.7399
685.20	67.9449
692.80	76.8329
695.00	76.9087
696.49	66.1193
696.49	66.1193
697.00	72.6392
697.49	69.4023
698.33	62.9189
698.50	70.5185
699.00	73.7898
702.63	65.2130
706.10	66.4004
706.58	0.0000
706.67	72.9500
709.31	64.3134
711.68	61.1064
713.82	74.2692
717.42	55.7890
720.50	77.4060
721.93	0.0000
722.20	73.6620
722.78	71.9262
722.78	71.9262
722.89	71.9302
722.95	68.4233
723.30	68.4328
724.18	56.1719
727.18	70.3047
733.00	59.4679
735.90	61.7456
739.58	61.8413
742.81	65.2443
744.21	52.0044
747.13	72.0082
751.79	45.5094
752.31	51.0706
753.82	59.9903
755.35	63.3631
756.15	46.7040
756.87	48.9427
763.93	44.6228
765.79	60.7335
766.42	69.6839
766.84	69.6954
776.49	49.3375
778.00	54.9785
778.57	57.2349
778.89	57.2427
783.80	49.4839
785.46	43.2152
792.07	76.7283



795.84	46.1067
796.30	51.5407
798.80	99.5613
801.93	74.3105
805.60	73.5111
810.29	71.8291
810.76	68.2050
815.85	45.5603
817.79	49.2420
818.51	50.1674
819.60	41.0636
826.30	49.4042
828.27	0.0000
831.60	67.8412
831.96	64.1826
834.83	55.9916
836.80	0.0000
846.75	45.1814
848.13	56.2761
856.28	0.0000
856.80	43.1929
860.37	38.9259
867.32	19.9114
867.82	37.1748
871.10	50.2466
873.19	43.7665
874.81	27.0211
875.33	0.0000
876.40	42.8858
879.36	48.5329
880.27	56.0186
880.51	53.2218
881.50	50.4391
883.24	53.2747
884.67	59.8484
889.25	50.5815
896.60	49.7768
898.02	42.2853
899.00	37.6006
903.28	56.4873
911.07	44.3712
911.07	44.3712
911.07	44.3712
919.63	37.8779
920.93	43.5798
925.00	52.1802
925.24	54.0818
926.50	38.9190
935.52	48.5633
937.48	65.7488
944.10	42.0234
946.00	53.5186
949.00	48.7912
962.29	46.4500
964.01	37.5023
966.15	37.5299
968.20	37.5556
969.11	37.5680
969.11	37.5680
969.11	37.5680
977.42	46.3664
980.50	35.7778
983.50	46.4613
989.30	38.7930
996.32	63.1846
1001.03	37.9698
1001.68	34.0831
1004.76	49.7138
1021.30	0.0000
1024.50	0.0000
1034.80	53.1536
1036.00	54.1594
1037.82	42.3659
1038.57	37.4489
1038.76	0.0000
1045.16	37.5287
1046.59	33.5933
1048.07	42.5045

1050.47	39.5703
1050.47	39.5703
1062.04	47.6578
1063.62	42.7145
1076.63	38.8972
1077.35	38.9067
1078.86	36.9277
1085.78	41.0080
1099.22	47.2020
1112.02	52.6506
1112.84	57.6283
1115.52	38.6890
1120.29	58.9600
1120.29	58.9600
1120.29	58.9600
1120.29	58.9600
1120.51	58.9628
1121.28	62.3472
1124.00	0.0000
1129.67	59.8009
1131.51	0.0000
1147.95	0.0000
1167.94	48.1750
1173.22	41.0625
1175.09	51.3574
1177.93	41.1191
1189.05	42.2813
1204.90	60.0815
1205.75	0.0000
1213.00	52.9523
1221.42	55.1583
1230.97	58.4336
1235.34	57.4600
1236.41	0.0000
1238.25	48.0956
1246.25	40.8681
1260.41	0.0000
1271.85	39.0415
1274.45	40.1264
1274.54	40.1264
1291.56	33.9453
1298.22	0.0000
1312.09	26.6638
1325.50	24.6172
1325.50	24.6172
1332.49	26.8054
1333.61	21.4512
1360.21	21.5977
1362.66	0.0000
1365.15	23.7875
1368.21	22.7237
1368.53	0.0000
1376.25	27.1069
1384.27	13.5809
1394.10	17.4266
1395.20	22.8785
1407.95	17.4867
1434.06	27.4988
1436.60	25.6815
1457.56	0.0000
1460.81	17.5288
1489.15	22.2910
1509.49	19.5978
1596.49	19.9900
1620.62	13.3979
1678.03	0.0000
1691.02	7.7728
1691.02	7.7728
1706.46	0.0000
1750.46	0.0000
1764.49	8.8788
1764.49	8.8788
1764.49	8.8788
1764.49	8.8788
1770.23	13.5452
1771.40	13.5485
1791.20	0.0000
1808.65	10.9490

1836.01

8.0062

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148006

Total Uranium Activity	3.4358E+00	ug/g
Total Uranium Counting Unc.	4.1727E+00	ug/g
Total Uranium Tpu	2.1289E-06	ug/g
Total Uranium Mda	2.6841E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148006
*  ANALYST       : MXR1                             DETECTOR    : GAM16
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 15:51:00.65          SAMPLE ALQT  : 134.900 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.574E+00
GROSS GAMMA ERROR  (pCi/GRAM )  : 1.208E+00
GROSS GAMMA MDA     (pCi/GRAM )  : 2.897E+00
GROSS GAMMA DLC     (pCi/GRAM )  : 1.399E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:55:40.88

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148007.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:51:27
Sample ID          : G244148007      Sample quantity   : 1.27710E+02 GRAM
Detector name      : GAM22           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:02.18  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 940268          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	63.11*	48	494	1.05	126.47	124	7	6.64E-03	82.0	
2	3	74.85*	585	564	1.05	149.92	146	15	8.13E-02	7.6	2.46E+00
3	3	77.14*	895	508	1.07	154.50	146	15	1.24E-01	5.5	
4	5	87.32*	303	553	1.17	174.85	171	21	4.21E-02	14.0	7.93E-01
5	5	89.82*	191	510	1.14	179.85	171	21	2.65E-02	21.5	
6	5	92.87*	351	578	1.46	185.92	171	21	4.88E-02	14.6	
7	0	128.60	130	420	1.41	257.32	254	8	1.80E-02	28.6	
8	0	186.14*	403	581	1.48	372.29	366	14	5.60E-02	14.1	
9	0	209.30	92	427	0.71	418.57	415	8	1.28E-02	40.1	
10	3	238.69*	1925	284	1.27	477.30	469	22	2.67E-01	2.8	2.53E+00
11	3	241.75	503	337	1.89	483.41	469	22	6.99E-02	10.5	
12	0	270.16	169	225	1.59	540.18	536	9	2.35E-02	17.7	
13	0	276.80	46	245	1.73	553.45	551	8	6.35E-03	61.0	
14	0	295.40*	553	356	1.24	590.63	585	11	7.68E-02	8.0	
15	0	299.80	103	272	1.42	599.41	596	9	1.44E-02	30.2	
16	0	328.49	106	294	1.09	656.74	651	12	1.48E-02	33.6	
17	0	338.32*	409	202	1.34	676.39	672	9	5.68E-02	8.2	
18	0	351.97*	1025	277	1.41	703.68	697	11	1.42E-01	4.5	
19	0	462.84	162	180	1.30	925.24	918	14	2.26E-02	19.3	
20	0	510.72*	129	266	2.08	1020.94	1012	17	1.79E-02	34.6	
21	0	583.14*	732	185	1.66	1165.70	1157	18	1.02E-01	5.9	
22	0	609.30*	782	233	1.79	1217.99	1208	19	1.09E-01	6.0	
23	0	727.50*	136	164	2.11	1454.26	1446	18	1.90E-02	24.2	
24	0	767.66	61	138	2.59	1534.54	1530	13	8.46E-03	41.6	
25	0	795.27	97	126	2.15	1589.74	1581	15	1.35E-02	27.3	
26	0	911.32*	496	94	1.62	1821.76	1814	15	6.89E-02	6.4	
27	1	965.19	88	90	2.56	1929.46	1923	22	1.22E-02	25.0	9.22E-01
28	1	969.12*	318	79	2.34	1937.33	1923	22	4.42E-02	8.7	
29	0	1120.87*	150	169	3.30	2240.76	2230	22	2.09E-02	23.9	
30	0	1460.92*	1425	69	2.40	2920.86	2909	23	1.98E-01	3.1	
31	0	1729.32	64	15	2.56	3457.81	3446	20	8.83E-03	19.5	
32	0	1764.69*	179	10	2.28	3528.59	3520	19	2.48E-02	9.5	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:55:43

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:51:27
Sample ID         : G244148007           Sample quantity  : 127.71 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA22              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:02.18   0.0%
Peak Width (FWHM): 3.00                  Confidence level  : 5.00 %
Energy tolerance  : 1.50 keV              Half life ratio   : 8.00
Errors propagated: Yes                    Systematic Error  : 0.00 %
Efficiency type   : Empirical              Efficiencies at   : Peak Energy
Abundance limit   : 75.00                 WTM error limit   : 3.00
    
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.057E+01	2.275E+00	5.272E-01	4.829E-02	39.017
CD-109	+	88.03	*	3.274E+00	9.642E-01	1.150E+00	1.091E-01	2.848
SN-126	+	64.28		3.405E-01	5.607E-01	6.842E-01	9.937E-02	0.498
	+	86.94		1.336E+00	6.684E-01	4.737E-01	1.967E-01	2.820
	+	87.57	*	3.213E-01	9.462E-02	1.133E-01	1.070E-02	2.836
TL-208	+	277.35		3.195E-01	3.934E-01	5.596E-01	9.228E-02	0.571
	+	510.84		4.086E-01	2.877E-01	2.010E-01	2.619E-02	2.033
	+	583.14	*	6.498E-01	1.040E-01	5.068E-02	5.496E-03	12.821
		860.37		3.712E-01	2.619E-01	4.651E-01	5.419E-02	0.798
BI-211		72.87		2.805E+00	3.125E+00	4.680E+00	3.746E-01	0.599
	+	351.07	*	4.313E+00	6.357E-01	2.959E-01	3.453E-02	14.574
PB-212	+	74.81		2.604E+00	5.105E-01	4.915E-01	6.099E-02	5.299
	+	77.11		2.261E+00	3.109E-01	2.799E-01	2.340E-02	8.078
	+	87.30		1.486E+00	4.622E-01	5.252E-01	7.213E-02	2.829
	+	238.63	*	1.891E+00	2.716E-01	8.618E-02	1.139E-02	21.945
	+	300.09		1.505E+00	9.367E-01	1.092E+00	1.592E-01	1.379
PO-212	+	74.81		2.604E+00	5.105E-01	4.915E-01	6.099E-02	5.299
	+	77.11		2.261E+00	3.109E-01	2.799E-01	2.340E-02	8.078
	+	87.30		1.486E+00	4.622E-01	5.252E-01	7.213E-02	2.829
		115.19		6.755E-01	3.387E+00	5.433E+00	4.501E-01	0.124
	+	238.63	*	1.891E+00	2.716E-01	8.618E-02	1.139E-02	21.945
	+	300.09		1.505E+00	9.367E-01	1.092E+00	1.592E-01	1.379
BI-214	+	609.31	*	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491
	+	1120.29		1.248E+00	6.114E-01	3.886E-01	4.294E-02	3.212
	+	1764.49		1.936E+00	4.012E-01	2.515E-01	2.096E-02	7.697
PB-214	+	74.81		4.487E+00	8.416E-01	8.469E-01	9.334E-02	5.299
	+	77.11		3.876E+00	6.093E-01	4.798E-01	5.427E-02	8.078
	+	87.30		2.546E+00	7.750E-01	8.998E-01	1.095E-01	2.829
	+	241.98		2.965E+00	7.422E-01	5.182E-01	7.126E-02	5.721
	+	295.21		1.418E+00	3.096E-01	2.062E-01	3.070E-02	6.879
	+	351.92	*	1.500E+00	2.346E-01	1.037E-01	1.322E-02	14.467
PO-214	+	74.81		4.487E+00	8.416E-01	8.469E-01	9.334E-02	5.299
	+	77.11		3.876E+00	6.093E-01	4.798E-01	5.427E-02	8.078
	+	87.30		2.546E+00	7.750E-01	8.998E-01	1.095E-01	2.829

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.965E+00	7.422E-01	5.182E-01	7.126E-02	5.721
	+	295.21		1.418E+00	3.096E-01	2.062E-01	3.070E-02	6.879
	+	351.92	*	1.500E+00	2.346E-01	1.037E-01	1.322E-02	14.467
	+	74.81		2.604E+00	5.105E-01	4.915E-01	6.099E-02	5.299
	+	77.11		2.261E+00	3.109E-01	2.799E-01	2.340E-02	8.078
PO-218	+	87.30		1.486E+00	4.622E-01	5.252E-01	7.213E-02	2.829
	+	238.63	*	1.891E+00	2.716E-01	8.618E-02	1.139E-02	21.945
	+	300.09		1.505E+00	9.367E-01	1.092E+00	1.592E-01	1.379
	+	74.81		4.487E+00	8.416E-01	8.469E-01	9.334E-02	5.299
	+	77.11		3.876E+00	6.093E-01	4.798E-01	5.427E-02	8.078
RA-224	+	87.30		2.546E+00	7.750E-01	8.998E-01	1.095E-01	2.829
	+	241.98		2.965E+00	7.422E-01	5.182E-01	7.126E-02	5.721
	+	295.21		1.418E+00	3.096E-01	2.062E-01	3.070E-02	6.879
	+	351.92	*	1.500E+00	2.346E-01	1.037E-01	1.322E-02	14.467
	+	240.98	*	5.622E+00	1.372E+00	9.797E-01	1.226E-01	5.738
RA-226	+	609.31	*	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491
	+	1120.29		1.248E+00	6.114E-01	3.886E-01	4.294E-02	3.212
	+	1764.49		1.936E+00	4.012E-01	2.515E-01	2.096E-02	7.697
	+	338.32		1.909E+00	8.625E-01	3.342E-01	1.406E-01	5.714
	+	911.07	*	1.887E+00	3.474E-01	1.881E-01	2.492E-02	10.036
RA-228	+	969.11		2.129E+00	6.326E-01	2.929E-01	7.074E-02	7.269
	+	338.32		1.909E+00	8.625E-01	3.342E-01	1.406E-01	5.714
	+	911.07	*	1.887E+00	3.474E-01	1.881E-01	2.492E-02	10.036
	+	969.11		2.129E+00	6.326E-01	2.929E-01	7.074E-02	7.269
	+	74.81		2.647E+00	4.570E-01	4.995E-01	4.115E-02	5.299
TH-228	+	77.11		2.297E+00	3.160E-01	2.844E-01	2.378E-02	8.078
	+	87.30		1.510E+00	4.447E-01	5.338E-01	5.023E-02	2.829
	+	238.63	*	1.922E+00	2.760E-01	8.758E-02	1.157E-02	21.945
	+	300.09		1.530E+00	1.305E+00	1.110E+00	6.674E-01	1.379
	+	609.31	*	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491
TH-230	+	1120.29		1.248E+00	6.114E-01	3.886E-01	4.294E-02	3.212
	+	1764.49		1.936E+00	4.012E-01	2.515E-01	2.096E-02	7.697
	+	338.32		1.909E+00	3.877E-01	3.342E-01	3.974E-02	5.714
	+	911.07	*	1.887E+00	3.474E-01	1.881E-01	2.492E-02	10.036
	+	969.11		2.129E+00	6.326E-01	2.929E-01	7.074E-02	7.269
TH-234	+	63.29	*	8.601E-01	1.419E+00	1.749E+00	3.044E-01	0.492
	+	92.38		2.427E+00	8.364E-01	7.471E-01	1.369E-01	3.248
	+	609.31	*	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491
	+	1120.29		1.248E+00	6.114E-01	3.886E-01	4.294E-02	3.212
	+	1764.49		1.936E+00	4.012E-01	2.515E-01	2.096E-02	7.697
NP-237	+	86.50	*	9.436E-01	3.393E-01	3.734E-01	8.455E-02	2.527
	+	95.87		-8.125E-01	9.517E-01	1.279E+00	3.162E-01	-0.635
	+	63.29	*	8.601E-01	1.419E+00	1.749E+00	3.044E-01	0.492
	+	92.38		2.427E+00	7.421E-01	7.471E-01	6.808E-02	3.248
	+	74.67	*	4.222E-01	7.275E-02	7.990E-02	6.513E-03	5.284
AM-243	+	86.72		3.538E+01	1.042E+01	1.397E+01	1.306E+00	2.532
	+	117.66		-2.399E+00	3.722E+00	5.762E+00	4.759E-01	-0.416
	+	142.18		-9.115E+00	1.614E+01	2.670E+01	2.357E+00	-0.341
	+	511.00	*	8.825E-02	6.172E-02	4.343E-02	4.351E-03	2.032
	+							



## ---- 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	*	-2.384E-01	2.867E-01	4.386E-01	4.577E-02	-0.544
NA-22		1274.54	*	-9.749E-03	3.875E-02	6.297E-02	5.427E-03	-0.155
NA-24		1368.53	*	-3.171E+00	3.875E-02	Half-Life too short		
AL-26		1129.67		-6.031E-01	1.781E+00	2.361E+00	2.056E-01	-0.255
		1808.65	*	6.785E-03	2.496E-02	4.256E-02	3.480E-03	0.159
TI-44		67.85		-3.606E-02	4.194E-02	6.337E-02	4.837E-03	-0.569
	+	78.38	*	4.172E-01	5.738E-02	7.129E-02	6.044E-03	5.852
SC-46		889.25	*	-2.894E-03	3.392E-02	5.593E-02	6.261E-03	-0.052
	+	1120.51		2.155E-01	1.046E-01	1.123E-01	9.924E-03	1.920
V-48		944.10		-2.364E-01	7.672E-01	1.236E+00	1.341E-01	-0.191
		983.50	*	4.918E-02	5.984E-02	1.039E-01	1.090E-02	0.473
		1312.09		4.828E-02	6.682E-02	1.168E-01	1.029E-02	0.413
CR-51		320.08	*	1.522E-01	3.482E-01	5.923E-01	7.669E-02	0.257
MN-52		744.21		-8.868E-02	2.609E-01	3.812E-01	4.142E-02	-0.233
		848.13		-3.082E+00	6.550E+00	1.056E+01	1.176E+00	-0.292
		935.52		3.430E-01	2.526E-01	4.487E-01	4.899E-02	0.764
		1246.25		-6.769E+00	7.771E+00	1.216E+01	1.028E+00	-0.557
		1333.61		5.980E-01	4.780E+00	7.961E+00	7.100E-01	0.075
		1434.06	*	5.312E-02	2.166E-01	3.634E-01	3.248E-02	0.146
MN-54		834.83	*	-2.643E-03	3.238E-02	5.376E-02	5.973E-03	-0.049
CO-56		846.75	*	-2.900E-02	3.480E-02	5.463E-02	6.082E-03	-0.531
		977.42		-2.407E+00	2.894E+00	3.834E+00	4.043E-01	-0.628
		1037.82		-9.126E-02	2.833E-01	4.521E-01	4.661E-02	-0.202
		1175.09		5.160E-01	1.831E+00	3.111E+00	2.506E-01	0.166
		1238.25		1.343E-01	8.273E-02	1.466E-01	1.271E-02	0.916
		1360.21		2.999E-02	7.813E-01	1.290E+00	1.152E-01	0.023
		1771.40		-1.334E-01	2.659E-01	3.371E-01	2.801E-02	-0.396
CO-57		122.06	*	-3.454E-02	2.596E-02	3.780E-02	3.117E-03	-0.914
		136.48		1.120E-01	1.959E-01	3.366E-01	3.123E-02	0.333
CO-58		810.76	*	1.954E-02	3.306E-02	5.724E-02	6.338E-03	0.341
FE-59		142.65		-1.255E+00	2.627E+00	4.218E+00	3.732E-01	-0.298
		192.34		7.361E-01	1.034E+00	1.541E+00	2.288E-01	0.478
		1099.22	*	-4.561E-03	7.818E-02	1.264E-01	1.239E-02	-0.036
		1291.56		4.213E-03	1.090E-01	1.807E-01	1.781E-02	0.023
CO-60		1173.22		-5.605E-03	3.588E-02	5.922E-02	4.762E-03	-0.095
		1332.49	*	-3.859E-03	3.323E-02	5.420E-02	4.833E-03	-0.071
ZN-65		1115.52	*	9.423E-02	9.407E-02	1.417E-01	1.264E-02	0.665
GE-68		1077.35	*	-1.902E-01	9.716E-01	1.556E+00	1.466E-01	-0.122
AS-73		53.44	*	5.787E-01	6.964E-01	1.184E+00	8.944E-02	0.489
AS-74		595.88	*	3.263E-02	8.435E-02	1.426E-01	1.478E-02	0.229
		634.78		1.506E-01	3.225E-01	5.456E-01	5.718E-02	0.276
SE-75		66.05		-2.227E+00	4.562E+00	6.579E+00	6.276E-01	-0.338
		96.73		-9.395E-01	8.059E-01	1.076E+00	1.481E-01	-0.873
		121.11		-2.685E-02	1.371E-01	2.105E-01	2.302E-02	-0.128
		136.00		2.589E-02	3.683E-02	6.351E-02	5.511E-03	0.408
		198.60		-9.196E-01	1.819E+00	2.849E+00	3.330E-01	-0.323
		264.65	*	2.880E-02	4.676E-02	6.788E-02	9.137E-03	0.424
		279.53		1.608E-02	1.213E-01	1.705E-01	2.420E-02	0.094
		303.91		-8.204E-01	2.165E+00	3.091E+00	4.710E-01	-0.265

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA	
BR-77	+	400.65		2.146E-01	2.407E-01	4.094E-01	4.792E-02	0.524	
		87.88		9.577E+02	2.820E+02	4.238E+02	4.017E+01	2.260	
	+	200.40		-9.463E+00	2.142E+02	3.515E+02	3.866E+01	-0.027	
		239.00		4.118E+02	5.618E+01	4.901E+01	6.098E+00	8.402	
		249.79		-3.755E+01	8.490E+01	1.343E+02	1.726E+01	-0.280	
		281.68		8.855E+01	1.298E+02	1.879E+02	2.617E+01	0.471	
		297.23		6.487E+02	1.431E+02	1.672E+02	2.248E+01	3.880	
		303.76		-9.277E+01	2.485E+02	3.551E+02	4.696E+01	-0.261	
		439.47		8.458E+01	1.766E+02	2.944E+02	2.833E+01	0.287	
		484.57		-3.866E+01	2.824E+02	4.521E+02	4.469E+01	-0.086	
		520.65	*	-1.045E+00	1.248E+01	2.085E+01	2.098E+00	-0.050	
		574.64		-4.478E+01	2.833E+02	4.176E+02	4.297E+01	-0.107	
		578.91		1.644E+02	1.153E+02	1.813E+02	1.868E+01	0.907	
		585.48		3.176E+03	4.697E+02	6.788E+02	7.012E+01	4.679	
		755.35		1.607E+02	2.033E+02	3.446E+02	3.757E+01	0.467	
		817.79		-5.489E+01	1.450E+02	2.360E+02	2.613E+01	-0.233	
SR-82		698.33		-6.921E+00	3.180E+01	5.128E+01	5.487E+00	-0.135	
	*	776.49		-4.741E-01	3.951E-01	5.267E-01	5.776E-02	-0.900	
		1395.20		-3.874E+00	9.756E+00	1.538E+01	1.375E+00	-0.252	
RB-83	*	520.41		1.432E-03	6.173E-02	1.037E-01	1.044E-02	0.014	
		529.64		-1.159E-02	9.076E-02	1.510E-01	1.526E-02	-0.077	
		552.65		1.314E-01	1.642E-01	2.855E-01	2.913E-02	0.460	
RB-84	*	881.50		-2.170E-02	5.992E-02	9.689E-02	1.084E-02	-0.224	
KR-85	*	513.99		1.987E+01	8.666E+00	1.341E+01	1.346E+00	1.482	
SR-85	*	513.99		1.030E-01	4.492E-02	6.952E-02	6.975E-03	1.482	
RB-86	*	1076.63		-1.409E-01	6.459E-01	1.032E+00	9.742E-02	-0.136	
Y-88		898.02		-3.391E-02	3.619E-02	5.576E-02	6.265E-03	-0.608	
	*	1836.01		3.821E-03	2.812E-02	4.703E-02	3.802E-03	0.081	
ZR-88	*	392.90		2.686E-03	2.861E-02	4.726E-02	4.401E-03	0.057	
Y-91	*	1204.90		1.310E+01	1.622E+01	2.828E+01	2.325E+00	0.463	
NB-94	*	702.63		-7.939E-03	3.136E-02	5.045E-02	5.406E-03	-0.157	
		871.10		4.673E-03	3.151E-02	5.284E-02	5.903E-03	0.088	
NB-95	*	765.79		8.053E-02	4.447E-02	6.978E-02	7.630E-03	1.154	
NB-95M	*	235.69		1.308E-01	1.383E-01	2.039E-01	2.696E-02	0.641	
ZR-95		724.18		1.081E-01	1.041E-01	1.559E-01	1.778E-02	0.693	
	*	756.15		2.341E-02	6.513E-02	1.079E-01	1.252E-02	0.217	
NB-97	*	657.90		-2.773E-01	6.513E-02	Half-Life	too short		
		1024.50		-1.465E+01	6.513E-02	Half-Life	too short		
ZR-97		254.15		-4.177E+00	6.513E-02	Half-Life	too short		
		355.39		1.093E+01	6.513E-02	Half-Life	too short		
	*	507.63		1.057E+01	6.513E-02	Half-Life	too short		
		602.52		6.415E+00	6.513E-02	Half-Life	too short		
		1021.30		-3.882E+00	6.513E-02	Half-Life	too short		
		1147.95		-6.130E+00	6.513E-02	Half-Life	too short		
		1362.66		6.094E+00	6.513E-02	Half-Life	too short		
		1750.46		1.116E+00	6.513E-02	Half-Life	too short		
	MO-99		140.51		-3.070E+01	3.345E+01	5.175E+01	1.435E+01	-0.593
			181.06		-1.373E+01	2.460E+01	3.467E+01	6.637E+00	-0.396
		366.43		-3.688E+01	9.983E+01	1.621E+02	1.720E+01	-0.227	

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	739.58	*		7.589E+00	1.323E+01	2.220E+01	3.674E+00	0.342
	778.00			-4.195E+01	3.998E+01	5.957E+01	6.536E+00	-0.704
TC-99M	140.51	*		-6.139E+11	3.998E+01	Half-Life	too short	
RH-101	127.23	+		6.644E-02	3.842E-02	5.104E-02	4.266E-03	1.302
	198.01	*		-2.167E-02	3.312E-02	5.153E-02	5.622E-03	-0.421
	325.23			2.747E-02	2.302E-01	3.368E-01	4.187E-02	0.082
RH-102	418.52			6.567E-02	2.629E-01	4.351E-01	4.130E-02	0.151
	475.06	*		-1.668E-02	2.610E-02	3.961E-02	3.895E-03	-0.421
	631.29			-7.966E-03	4.722E-02	7.706E-02	8.069E-03	-0.103
	697.49			-3.335E-03	6.888E-02	1.122E-01	1.200E-02	-0.030
	766.84	+		1.661E-01	1.394E-01	1.781E-01	1.948E-02	0.932
	1046.59			-4.266E-02	1.013E-01	1.602E-01	1.571E-02	-0.266
	1112.84			1.556E-01	2.096E-01	3.125E-01	2.796E-02	0.498
RU-103	497.08	*		-2.513E-02	3.708E-02	5.694E-02	8.546E-03	-0.441
	610.33	+		1.433E+01	3.064E+00	2.607E+00	4.608E-01	5.497
RH-106	511.85	+		4.417E-01	3.089E-01	3.888E-01	3.897E-02	1.136
	621.84	*		1.273E-01	2.744E-01	4.643E-01	6.780E-02	0.274
	1050.47			2.817E-01	2.004E+00	3.303E+00	3.224E-01	0.085
RU-106	511.85	+		4.417E-01	3.089E-01	3.888E-01	3.897E-02	1.136
	621.84	*		1.273E-01	2.741E-01	4.643E-01	4.850E-02	0.274
	1050.47			2.817E-01	2.004E+00	3.303E+00	3.224E-01	0.085
AG-108M	433.93	*		-2.300E-02	2.998E-02	4.672E-02	4.625E-03	-0.492
	614.37			1.713E-02	3.637E-02	5.370E-02	5.748E-03	0.319
	722.95			-7.931E-03	4.324E-02	5.957E-02	6.591E-03	-0.133
AG-110M	657.75	*		-3.380E-02	3.045E-02	4.622E-02	4.968E-03	-0.731
	677.61			1.841E-01	2.575E-01	4.396E-01	4.753E-02	0.419
	706.67			2.195E-01	1.878E-01	3.246E-01	3.546E-02	0.676
	763.93			1.698E-01	1.563E-01	2.373E-01	2.639E-02	0.716
	884.67			-1.474E-02	4.093E-02	6.614E-02	7.543E-03	-0.223
	937.48			3.855E-02	9.512E-02	1.611E-01	1.796E-02	0.239
	1384.27			-1.883E-01	1.586E-01	2.323E-01	2.131E-02	-0.811
IN-111	171.28			-2.520E-01	1.229E+00	2.029E+00	2.026E-01	-0.124
	245.39	*		1.330E+00	1.439E+00	2.129E+00	2.701E-01	0.625
IN-113M	391.69	*		1.117E-02	4.103E-02	6.835E-02	6.527E-03	0.163
SN-113	391.69	*		1.117E-02	4.103E-02	6.835E-02	6.527E-03	0.163
IN-114M	190.27	*		3.932E-02	1.931E-01	2.827E-01	3.005E-02	0.139
CD-115	260.90			-1.570E+02	1.766E+02	2.712E+02	3.603E+01	-0.579
	492.35			2.002E+01	4.463E+01	7.372E+01	7.318E+00	0.272
	527.90	*		1.815E+00	1.296E+01	2.188E+01	2.209E+00	0.083
SN-117M	156.02			-1.719E-01	2.351E+00	3.929E+00	3.683E-01	-0.044
	158.56	*		2.884E-02	5.622E-02	9.547E-02	9.054E-03	0.302
SB-122	563.90	*		-5.946E-02	2.406E+00	4.003E+00	4.103E-01	-0.015
	692.80			-4.057E+01	5.128E+01	7.954E+01	8.493E+00	-0.510
I-123	159.00	*		1.232E+01	5.128E+01	Half-Life	too short	
	528.96			-1.347E+01	5.128E+01	Half-Life	too short	
TE-123M	159.00	*		1.632E-02	2.759E-02	4.694E-02	4.482E-03	0.348
I-124	602.71	*		2.939E-01	8.439E-01	1.232E+00	1.280E-01	0.239
	722.78			-1.436E+00	5.350E+00	7.310E+00	7.889E-01	-0.196
	1325.50			4.103E+01	3.445E+01	6.207E+01	5.512E+00	0.661

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25		6.581E+01	3.703E+01	6.701E+01	5.989E+00	0.982
		1509.49		1.347E+01	1.506E+01	2.673E+01	2.376E+00	0.504
		1691.02		1.272E-01	3.956E+00	6.577E+00	5.624E-01	0.019
		602.71		1.454E-02	4.175E-02	6.096E-02	6.333E-03	0.239
		645.85		-1.035E-01	4.068E-01	6.528E-01	7.140E-02	-0.159
		709.31		-6.567E-01	2.664E+00	4.283E+00	4.600E-01	-0.153
		713.82		-1.261E+00	1.540E+00	2.369E+00	3.234E-01	-0.532
		722.78		-1.030E-01	3.837E-01	5.243E-01	5.736E-02	-0.196
	+	968.20		2.218E+01	4.506E+00	6.952E+00	7.392E-01	3.191
		1045.16		-1.286E+00	2.226E+00	3.477E+00	3.415E-01	-0.370
SB-125		1325.50		3.143E+00	2.639E+00	4.754E+00	4.222E-01	0.661
		1368.21		-1.886E+00	1.615E+00	2.329E+00	3.186E-01	-0.810
		1436.60		1.545E+00	3.128E+00	5.369E+00	4.798E-01	0.288
		1691.02	*	2.152E-03	6.693E-02	1.113E-01	9.896E-03	0.019
		427.89	*	4.391E-02	8.274E-02	1.386E-01	1.344E-02	0.317
	+	463.38		1.018E+00	4.063E-01	5.054E-01	5.241E-02	2.015
TE-125M		600.56		-4.127E-02	1.939E-01	2.718E-01	2.966E-02	-0.152
		635.90		5.988E-02	2.406E-01	4.020E-01	4.448E-02	0.149
		109.28	*	3.752E+00	9.444E+00	1.496E+01	1.515E+00	0.251
I-126		388.63		1.217E-01	1.937E-01	3.279E-01	3.105E-02	0.371
		666.33	*	1.706E-01	1.655E-01	2.861E-01	3.023E-02	0.596
SB-126		753.82		1.822E+00	1.395E+00	2.422E+00	2.640E-01	0.752
		223.80		1.198E+00	4.202E+00	6.916E+00	8.206E-01	0.173
		278.60		2.225E+00	2.931E+00	4.248E+00	5.938E-01	0.524
	+	296.50		1.497E+01	3.131E+00	3.651E+00	4.918E-01	4.101
		414.70		-1.823E-02	7.277E-02	1.176E-01	1.113E-02	-0.155
		415.30		-9.391E-01	6.022E+00	9.775E+00	9.256E-01	-0.096
		555.20		-2.613E+00	3.568E+00	5.687E+00	5.809E-01	-0.459
		573.80		1.190E-01	1.056E+00	1.641E+00	1.688E-01	0.072
		593.00		-4.125E-01	8.827E-01	1.390E+00	1.440E-01	-0.297
		656.30		-8.859E-01	2.962E+00	4.773E+00	5.028E-01	-0.186
SB-127		666.33		7.147E-02	6.931E-02	1.198E-01	1.266E-02	0.596
		675.00		1.087E+00	1.753E+00	2.980E+00	3.159E-01	0.365
		695.00		-2.223E-03	7.252E-02	1.183E-01	1.264E-02	-0.019
		697.00		2.177E-01	2.509E-01	4.287E-01	4.585E-02	0.508
		720.50	*	-4.429E-02	1.586E-01	2.154E-01	2.323E-02	-0.206
		856.80		-2.853E-01	4.470E-01	7.131E-01	7.950E-02	-0.400
		989.30		-6.470E-01	1.140E+00	1.790E+00	1.867E-01	-0.361
		1034.80		2.660E+00	8.288E+00	1.385E+01	1.377E+00	0.192
		1213.00		-1.704E+00	4.254E+00	6.892E+00	5.699E-01	-0.247
		61.10		4.118E+01	6.182E+01	9.450E+01	9.864E+00	0.436
SB-127		252.40		-1.005E+00	5.008E+00	7.980E+00	3.449E+00	-0.126
		290.80		8.669E+00	2.768E+01	4.131E+01	6.452E+00	0.210
		411.60		2.633E+00	1.357E+01	2.242E+01	3.679E+00	0.117
		444.90		4.879E-01	1.056E+01	1.721E+01	2.330E+00	0.028
		473.00		-4.871E-01	1.730E+00	2.749E+00	3.837E-01	-0.177
		543.00		-3.369E+00	1.693E+01	2.798E+01	4.364E+00	-0.120
		603.60		1.061E+01	1.455E+01	2.173E+01	3.053E+00	0.488
		685.20	*	1.314E+00	1.399E+00	2.405E+00	3.188E-01	0.546

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127	698.50			-5.196E+00	1.654E+01	2.648E+01	4.567E+00	-0.196
	722.20			6.047E+00	3.483E+01	4.959E+01	6.538E+00	0.122
	783.80			8.036E+00	3.906E+00	6.844E+00	9.864E-01	1.174
	57.60			-3.179E+00	5.097E+00	8.295E+00	5.958E-01	-0.383
	145.22			4.661E-01	6.883E-01	1.145E+00	1.024E-01	0.407
	172.10			1.623E-03	1.155E-01	1.921E-01	1.923E-02	0.008
I-131	202.84	*		-1.259E-02	4.689E-02	7.627E-02	8.454E-03	-0.165
	374.96			-7.841E-03	1.758E-01	2.896E-01	2.949E-02	-0.027
	80.18			3.018E-01	4.721E+00	6.903E+00	6.015E-01	0.044
	284.30			-9.549E-02	1.558E+00	2.481E+00	3.509E-01	-0.038
	364.48	*		3.866E-02	1.128E-01	1.896E-01	2.102E-02	0.204
	636.97			7.239E-01	1.498E+00	2.535E+00	2.761E-01	0.286
TE-132	722.89			-1.698E+00	7.958E+00	1.093E+01	1.185E+00	-0.155
	49.72			-1.527E+01	1.879E+01	3.044E+01	3.249E+00	-0.502
	111.76			-2.634E+01	3.601E+01	5.571E+01	6.081E+00	-0.473
	116.30			-4.043E+00	3.327E+01	5.268E+01	5.727E+00	-0.077
BA-133	228.16	*		-5.651E-01	8.559E-01	1.348E+00	2.425E-01	-0.419
	53.15			1.923E+00	2.977E+00	5.033E+00	3.819E-01	0.382
	79.62			4.032E-01	1.208E+00	1.786E+00	2.717E-01	0.226
	81.00			-9.967E-02	9.740E-02	1.338E-01	2.133E-02	-0.745
	276.40	+		3.158E-01	3.896E-01	5.962E-01	1.079E-01	0.530
I-133	302.84			8.433E-02	1.478E-01	2.224E-01	3.709E-02	0.379
	356.01	*		5.093E-03	4.462E-02	6.470E-02	9.668E-03	0.079
	383.85			1.227E-01	2.669E-01	4.488E-01	6.006E-02	0.273
	510.53	+		2.069E+00	2.669E-01	Half-Life	too short	
	529.87	*		2.227E-03	2.669E-01	Half-Life	too short	
	706.58			1.036E+00	2.669E-01	Half-Life	too short	
	856.28			-1.111E+00	2.669E-01	Half-Life	too short	
	875.33			-1.474E-01	2.669E-01	Half-Life	too short	
	1236.41			2.956E+00	2.669E-01	Half-Life	too short	
	1298.22			-4.414E-01	2.669E-01	Half-Life	too short	
CS-134	475.35			-5.897E-01	1.666E+00	2.575E+00	2.532E-01	-0.229
	563.23			1.330E-01	3.163E-01	5.382E-01	5.552E-02	0.247
	569.32			1.143E-01	1.731E-01	2.975E-01	3.084E-02	0.384
	604.70			4.729E-02	3.568E-02	5.514E-02	5.741E-03	0.858
	795.84	+	*	1.209E-01	6.732E-02	8.201E-02	9.077E-03	1.474
	801.93			-5.823E-01	4.513E-01	5.458E-01	6.044E-02	-1.067
	1038.57			6.353E-01	3.451E+00	5.710E+00	5.653E-01	0.111
	1167.94			-7.740E-01	1.918E+00	3.106E+00	2.524E-01	-0.249
	1365.15			-3.742E-02	1.005E+00	1.647E+00	1.534E-01	-0.023
	268.24	*		1.444E-01	1.693E-01	2.473E-01	3.576E-02	0.584
CS-135	288.45			2.247E+11	1.693E-01	Half-Life	too short	
	417.63			6.888E+10	1.693E-01	Half-Life	too short	
	546.56			-7.957E+10	1.693E-01	Half-Life	too short	
	836.80			1.350E+11	1.693E-01	Half-Life	too short	
	1038.76			9.666E+09	1.693E-01	Half-Life	too short	
	1124.00			1.387E+12	1.693E-01	Half-Life	too short	
	1131.51			-1.867E+09	1.693E-01	Half-Life	too short	
	1260.41	*		7.145E+09	1.693E-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		9.776E+12	1.693E-01	Half-Life	too short	
		1678.03		3.631E+10	1.693E-01	Half-Life	too short	
		1706.46		-1.750E+11	1.693E-01	Half-Life	too short	
		1791.20		-1.093E+10	1.693E-01	Half-Life	too short	
		66.91		-1.981E-01	7.766E-01	1.131E+00	1.683E-01	-0.175
	+	86.29		4.430E+00	1.371E+00	1.915E+00	2.550E-01	2.313
		153.22		8.555E-01	6.799E-01	1.174E+00	1.199E-01	0.729
		163.89		-5.071E-01	1.098E+00	1.758E+00	1.872E-01	-0.288
		176.55		4.148E-02	3.795E-01	6.322E-01	6.691E-02	0.066
		273.65		4.518E-02	6.756E-01	6.799E-01	9.618E-02	0.066
		340.57		6.583E-01	1.687E-01	2.628E-01	3.149E-02	2.505
		818.51		-2.928E-02	6.502E-02	1.053E-01	1.167E-02	-0.278
		1048.07	*	-4.284E-03	1.012E-01	1.647E-01	1.666E-02	-0.026
		1235.34		7.856E-01	5.441E-01	9.631E-01	1.125E-01	0.816
BA-137M		661.65	*	2.022E-02	3.144E-02	5.340E-02	5.631E-03	0.379
CS-137		661.65	*	2.138E-02	3.323E-02	5.645E-02	5.960E-03	0.379
CE-139		165.85	*	1.178E-02	2.781E-02	4.700E-02	4.610E-03	0.251
BA-140		162.64		-3.388E-01	7.763E-01	1.246E+00	1.260E-01	-0.272
		304.84		-3.303E-01	1.367E+00	1.966E+00	5.848E-01	-0.168
		423.70		-4.878E-01	1.827E+00	2.931E+00	9.577E-01	-0.166
LA-140		537.32	*	-8.098E-02	2.327E-01	3.792E-01	1.273E-01	-0.214
	+	328.77		6.536E-01	4.473E-01	5.227E-01	6.603E-02	1.250
		432.53		-1.268E+00	1.979E+00	3.110E+00	3.097E-01	-0.408
		487.03		-8.547E-03	1.298E-01	2.085E-01	2.161E-02	-0.041
		751.79		-4.042E-01	1.621E+00	2.585E+00	3.007E-01	-0.156
		815.85		-2.149E-02	2.763E-01	4.595E-01	5.449E-02	-0.047
		867.82		1.846E-01	1.351E+00	2.264E+00	2.609E-01	0.082
		919.63		1.461E+00	2.812E+00	4.425E+00	5.616E-01	0.330
		925.24		-6.452E-01	1.060E+00	1.675E+00	1.914E-01	-0.385
		1596.49	*	-7.207E-02	8.110E-02	1.226E-01	1.074E-02	-0.588
CE-141		145.44	*	3.858E-02	6.057E-02	1.038E-01	9.447E-03	0.372
CE-143		57.37		-1.553E-03	6.057E-02	Half-Life	too short	
		231.56		7.684E-03	6.057E-02	Half-Life	too short	
		293.26	*	1.340E-03	6.057E-02	Half-Life	too short	
	+	350.59		5.786E-02	6.057E-02	Half-Life	too short	
		490.36		2.012E-03	6.057E-02	Half-Life	too short	
		664.57		3.344E-03	6.057E-02	Half-Life	too short	
		721.93		5.022E-04	6.057E-02	Half-Life	too short	
CE-144		80.11		1.587E-01	1.992E+00	2.915E+00	2.520E-01	0.054
		133.54	*	-4.016E-02	2.032E-01	3.173E-01	4.926E-02	-0.127
PM-144		476.78		-2.761E-02	5.984E-02	9.184E-02	9.697E-03	-0.301
		618.01		-3.003E-02	3.049E-02	4.307E-02	4.579E-03	-0.697
		696.49	*	1.783E-02	3.053E-02	5.149E-02	5.506E-03	0.346
		778.57		-1.605E+00	2.051E+00	3.126E+00	3.431E-01	-0.513
PR-144		696.49	*	1.209E+00	2.070E+00	3.491E+00	3.732E-01	0.346
		1489.15		-3.459E+00	1.007E+01	1.575E+01	1.403E+00	-0.220
PM-146		453.90	*	3.430E-03	3.994E-02	6.339E-02	7.366E-03	0.054
		633.02		9.832E-02	1.209E+00	2.002E+00	7.575E-01	0.049
		735.90		-3.899E-02	1.525E-01	2.063E-01	6.053E-02	-0.189

---- 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		-3.304E-02	8.102E-02	1.277E-01	1.982E-02	-0.259
		91.11		7.254E-01	3.205E-01	4.920E-01	4.861E-02	1.474
		319.41		3.753E-01	3.180E+00	5.348E+00	6.770E-01	0.070
		439.89		3.290E+00	5.666E+00	9.490E+00	9.139E-01	0.347
		531.02	*	2.750E-01	5.060E-01	8.691E-01	1.378E-01	0.316
PM-149		285.90	*	-1.118E+02	1.277E+02	1.929E+02	3.650E+01	-0.580
EU-152		121.78		-6.893E-02	7.432E-02	1.103E-01	1.058E-02	-0.625
		244.69		4.860E-01	3.576E-01	5.361E-01	6.788E-02	0.907
		344.27	*	-1.606E-02	9.906E-02	1.415E-01	1.701E-02	-0.113
		443.98		-1.870E-01	8.836E-01	1.421E+00	1.372E-01	-0.132
		778.89		-1.374E-01	2.319E-01	3.587E-01	3.936E-02	-0.383
		867.32		-7.554E-02	7.841E-01	1.296E+00	1.447E-01	-0.058
		964.01	+	6.766E-01	3.465E-01	5.065E-01	5.405E-02	1.336
		1085.78		-1.303E-01	3.198E-01	5.026E-01	4.683E-02	-0.259
		1112.02		1.175E-01	3.052E-01	4.386E-01	3.930E-02	0.268
		1407.95		6.714E-02	1.939E-01	3.098E-01	2.770E-02	0.217
GD-153		69.67		-1.045E+00	1.503E+00	2.299E+00	1.784E-01	-0.455
		83.37		8.471E+00	1.495E+01	2.189E+01	1.965E+00	0.387
		97.43	*	-3.304E-02	8.167E-02	1.149E-01	1.010E-02	-0.288
		103.18		-1.128E-01	9.990E-02	1.528E-01	1.305E-02	-0.739
EU-154		123.07		-3.791E-02	5.059E-02	7.750E-02	8.597E-03	-0.489
		247.94		1.828E-01	3.882E-01	5.621E-01	8.354E-02	0.325
		591.81		-6.543E-01	6.232E-01	8.430E-01	1.096E-01	-0.776
		723.30		-2.661E-02	1.855E-01	2.564E-01	2.957E-02	-0.104
		756.87		3.282E-01	7.038E-01	1.172E+00	1.607E-01	0.280
		873.19		-7.019E-02	2.697E-01	4.404E-01	6.236E-02	-0.159
		996.32		-4.245E-01	3.203E-01	4.563E-01	8.520E-02	-0.930
		1004.76		6.673E-02	1.787E-01	3.004E-01	3.878E-02	0.222
		1274.45	*	-2.155E-02	1.086E-01	1.772E-01	2.002E-02	-0.122
		48.70		-1.100E+00	1.922E+00	3.158E+00	2.572E-01	-0.348
EU-155		60.01		4.821E+00	4.441E+00	6.921E+00	4.915E-01	0.697
		86.54	+	3.872E-01	1.141E-01	1.692E-01	1.592E-02	2.288
TB-160		105.31	*	-4.451E-02	1.063E-01	1.649E-01	1.415E-02	-0.270
		86.79	+	1.044E+00	3.075E-01	4.566E-01	4.270E-02	2.287
		197.04		-4.576E-01	5.650E-01	8.725E-01	9.488E-02	-0.524
		215.65		-6.760E-01	7.291E-01	1.143E+00	1.322E-01	-0.591
		298.57	+	2.213E-01	1.371E-01	1.935E-01	2.593E-02	1.144
		879.36	*	4.253E-02	1.194E-01	2.028E-01	2.268E-02	0.210
		962.29		1.124E+00	5.126E-01	8.431E-01	9.010E-02	1.333
		966.15	+	4.692E-01	2.403E-01	5.043E-01	5.371E-02	0.930
		1177.93		6.975E-02	2.920E-01	4.948E-01	3.993E-02	0.141
		1271.85		2.784E-01	6.004E-01	1.027E+00	8.828E-02	0.271
HO-166M		80.57		2.150E-02	2.545E-01	3.722E-01	3.234E-02	0.058
		184.41		9.357E-02	4.174E-02	6.563E-02	6.842E-03	1.426
		280.46		-8.881E-03	9.319E-02	1.291E-01	1.803E-02	-0.069
		410.95		1.219E-01	2.237E-01	3.755E-01	3.544E-02	0.325
		711.68	*	4.046E-02	5.483E-02	9.302E-02	1.000E-02	0.435
		752.31		8.066E-02	2.469E-01	4.084E-01	4.448E-02	0.198
		810.29		9.320E-03	5.048E-02	8.540E-02	9.442E-03	0.109

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		-2.378E+01	2.459E+01	3.961E+01	3.090E+00	-0.600
		52.39		2.848E+00	1.291E+01	2.153E+01	1.652E+00	0.132
		59.40		2.869E+01	2.386E+01	3.739E+01	2.643E+00	0.767
		66.72	*	-5.797E+00	2.677E+01	3.908E+01	2.953E+00	-0.148
LU-176	+	88.36		7.621E-01	2.244E-01	3.400E-01	3.215E-02	2.242
		201.83		1.400E-03	2.768E-02	4.557E-02	5.035E-03	0.031
		306.84	*	-8.760E-03	2.321E-02	3.728E-02	4.891E-03	-0.235
		401.10		2.955E+00	6.269E+00	1.051E+01	9.846E-01	0.281
LU-177	+	112.95		-7.432E-01	1.737E+00	2.723E+00	2.264E-01	-0.273
		208.36	*	1.830E+00	1.483E+00	2.132E+00	2.407E-01	0.859
LU-177M	+	52.97		1.001E+00	1.340E+00	2.272E+00	1.729E-01	0.441
		54.07		5.989E-01	7.169E-01	1.218E+00	9.122E-02	0.492
		61.30		9.177E-01	1.328E+00	2.034E+00	1.463E-01	0.451
		121.62		-3.251E-01	3.831E-01	5.715E-01	4.707E-02	-0.569
		147.16		-3.433E-01	6.220E-01	1.027E+00	9.259E-02	-0.334
		171.86		2.998E-02	4.590E-01	7.652E-01	7.652E-02	0.039
		218.09		4.403E-01	8.116E-01	1.350E+00	1.572E-01	0.326
		268.79		2.501E+00	9.482E-01	1.327E+00	1.804E-01	1.885
		319.02		-2.712E-02	2.338E-01	3.892E-01	4.933E-02	-0.070
		367.43		9.002E-02	8.227E-01	1.368E+00	1.444E-01	0.066
		413.65	*	-8.675E-02	1.648E-01	2.625E-01	2.482E-02	-0.331
		56.28		-7.547E-01	7.895E-01	1.268E+00	9.240E-02	-0.595
		57.53		-4.098E-01	4.326E-01	6.951E-01	4.996E-02	-0.590
		65.20		-4.153E-01	9.008E-01	1.302E+00	9.709E-02	-0.319
HF-181		133.02		-1.954E-02	7.052E-02	1.031E-01	8.791E-03	-0.190
		136.25		3.094E-01	4.346E-01	7.496E-01	6.466E-02	0.413
		345.85		-7.978E-02	2.016E-01	2.832E-01	3.276E-02	-0.282
		482.03	*	2.160E-02	3.825E-02	6.366E-02	6.285E-03	0.339
		56.28		-2.920E-01	3.056E-01	4.910E-01	3.577E-02	-0.595
		57.53		-1.590E-01	1.676E-01	2.693E-01	1.935E-02	-0.590
W-181		65.20	*	-1.596E-01	3.462E-01	5.006E-01	3.732E-02	-0.319
		67.75		-8.722E-02	1.007E-01	1.522E-01	1.161E-02	-0.573
		100.10		1.304E-01	1.673E-01	2.760E-01	2.391E-02	0.473
		152.43		1.069E-01	3.266E-01	5.532E-01	5.104E-02	0.193
TA-182		222.10		-9.515E-02	3.443E-01	5.555E-01	6.555E-02	-0.171
		1001.68		1.098E+00	1.764E+00	2.854E+00	2.941E-01	0.385
		1121.28		5.939E-01	2.882E-01	3.110E-01	2.746E-02	1.910
		1189.05		-4.548E-02	2.504E-01	4.121E-01	3.351E-02	-0.110
		1221.42	*	-8.376E-03	1.656E-01	2.744E-01	2.281E-02	-0.031
		1230.97		-9.451E-01	4.437E-01	6.291E-01	5.265E-02	-1.502
		57.98		-8.569E-02	1.663E-01	2.718E-01	1.945E-02	-0.315
		59.32		1.165E-01	9.899E-02	1.550E-01	1.096E-02	0.752
RE-183		67.20		-1.232E-01	1.927E-01	2.758E-01	2.093E-02	-0.447
		162.32	*	-5.862E-02	1.090E-01	1.743E-01	1.681E-02	-0.336
		208.81		1.493E+00	1.210E+00	1.733E+00	1.959E-01	0.861
		291.72		1.556E-01	1.008E+00	1.492E+00	2.033E-01	0.104
RE-184		57.98		-3.139E-01	6.091E-01	9.954E-01	7.123E-02	-0.315
		59.32		4.265E-01	3.622E-01	5.671E-01	4.011E-02	0.752
		67.20		-4.512E-01	7.054E-01	1.010E+00	7.663E-02	-0.447



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		-2.916E-01	3.401E-01	5.503E-01	5.284E-02	-0.530
		216.55		-2.328E-01	2.567E-01	4.028E-01	4.669E-02	-0.578
		252.85	*	-1.301E-03	2.213E-01	3.569E-01	4.631E-02	-0.004
		318.01		2.060E-02	4.025E-01	6.752E-01	8.582E-02	0.031
		792.07		9.605E-01	1.130E+00	1.663E+00	1.831E-01	0.578
		903.28		3.623E-01	9.449E-01	1.389E+00	1.551E-01	0.261
		920.93		5.197E-02	4.228E-01	6.778E-01	7.479E-02	0.077
		59.72		2.972E-01	2.670E-01	4.166E-01	2.949E-02	0.713
		61.14		9.524E-02	1.466E-01	2.241E-01	1.610E-02	0.425
		69.30		-1.630E-01	2.556E-01	4.122E-01	3.188E-02	-0.396
		592.07		-2.196E+00	2.450E+00	3.514E+00	3.638E-01	-0.625
		646.12	*	-1.938E-02	3.485E-02	5.471E-02	5.750E-03	-0.354
		717.42		1.474E-02	8.619E-01	1.317E+00	1.418E-01	0.011
		874.81		-1.541E-01	5.285E-01	8.610E-01	9.623E-02	-0.179
		880.27		-3.419E-01	6.675E-01	1.068E+00	1.194E-01	-0.320
RE-188		155.03	*	7.793E-02	1.701E-01	2.888E-01	2.696E-02	0.270
		477.96		-1.566E+00	2.736E+00	4.264E+00	4.200E-01	-0.367
		633.10		5.838E-01	2.447E+00	4.090E+00	4.285E-01	0.143
W-188	+	63.58		3.493E+01	5.737E+01	7.788E+01	5.722E+00	0.449
		227.08		-1.218E+01	1.282E+01	1.999E+01	2.396E+00	-0.609
IR-192		290.67	*	2.289E+00	8.016E+00	1.195E+01	1.632E+00	0.192
	+	295.96		1.092E+00	2.287E-01	2.680E-01	3.626E-02	4.075
		308.46		5.858E-02	8.766E-02	1.506E-01	1.971E-02	0.389
		316.51	*	-2.732E-02	3.090E-02	4.939E-02	6.312E-03	-0.553
		468.07		4.003E-02	6.559E-02	9.604E-02	9.935E-03	0.417
AU-195		604.41		5.778E-01	4.860E-01	7.416E-01	1.057E-01	0.779
		612.46		6.430E+00	1.163E+00	1.760E+00	2.024E-01	3.653
		65.12		-9.349E-02	1.613E-01	2.319E-01	1.728E-02	-0.403
		66.83		-2.121E-02	8.868E-02	1.293E-01	9.782E-03	-0.164
	+	75.70		1.372E+00	2.364E-01	4.283E-01	3.529E-02	3.203
		98.88	*	2.468E-01	2.101E-01	3.506E-01	3.058E-02	0.704
TL-200	+	129.76		5.875E+00	3.398E+00	4.660E+00	3.927E-01	1.261
		367.94	*	2.874E-04	3.398E+00	Half-Life	too short	
		579.30		1.364E-02	3.398E+00	Half-Life	too short	
		828.27		4.747E-03	3.398E+00	Half-Life	too short	
TL-201		1205.75		1.842E-03	3.398E+00	Half-Life	too short	
		68.90		-1.394E+00	5.102E+00	8.334E+00	6.422E-01	-0.167
		70.82		2.580E+00	3.204E+00	4.865E+00	3.817E-01	0.530
		80.30		4.156E-01	5.964E+00	8.721E+00	7.555E-01	0.048
		135.34		-2.585E-01	3.013E+01	5.096E+01	4.381E+00	-0.005
TL-202		167.43	*	9.579E-01	8.395E+00	1.404E+01	1.384E+00	0.068
		68.90		-1.048E-01	3.838E-01	6.270E-01	4.832E-02	-0.167
		70.82		1.936E-01	2.404E-01	3.650E-01	2.864E-02	0.530
		80.30		3.119E-02	4.476E-01	6.545E-01	5.670E-02	0.048
HG-203		439.56	*	2.787E-02	6.720E-02	1.117E-01	1.075E-02	0.250
		70.83		8.147E-01	1.001E+00	1.515E+00	1.989E-01	0.538
		72.87		5.667E-01	6.338E-01	9.454E-01	1.211E-01	0.599
		82.60		-3.736E-01	1.443E+00	1.623E+00	2.259E-01	-0.230
		279.20	*	1.326E-02	4.605E-02	6.528E-02	9.240E-03	0.203

----- 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		1.143E-01	1.810E-01	2.688E-01	2.150E-02	0.425
	+	74.97		7.579E-01	1.306E-01	2.089E-01	1.708E-02	3.629
		84.90		1.838E-01	1.912E-01	2.833E-01	2.589E-02	0.649
		569.67		2.614E-02	2.712E-02	4.717E-02	4.845E-03	0.554
		1063.62	*	3.497E-02	4.363E-02	7.512E-02	7.211E-03	0.465
TL-207		1770.23		7.914E-01	5.774E-01	9.563E-01	7.949E-02	0.828
		81.07		-2.235E-01	2.128E-01	2.949E-01	2.577E-02	-0.758
		83.78		3.054E-02	1.288E-01	1.863E-01	1.680E-02	0.164
		94.90		4.403E-01	2.291E-01	3.531E-01	3.157E-02	1.247
		122.32		-2.472E+00	1.790E+00	2.596E+00	2.310E-01	-0.952
		144.24		2.234E-01	6.600E-01	1.089E+00	1.078E-01	0.205
		154.21		5.004E-01	3.875E-01	6.695E-01	6.762E-02	0.747
	+	269.46		5.830E-01	2.212E-01	3.144E-01	4.319E-02	1.854
		323.87	*	-1.262E-01	6.979E-01	1.003E+00	1.993E-01	-0.126
	+	338.28		7.973E+00	1.764E+00	2.290E+00	3.387E-01	3.482
PO-209		445.03		1.083E-01	2.039E+00	3.325E+00	4.273E-01	0.033
		260.50		-6.093E+00	9.420E+00	1.468E+01	1.949E+00	-0.415
		262.80		-7.960E+00	2.557E+01	4.053E+01	5.415E+00	-0.196
		896.60	*	-1.049E+00	6.366E+00	1.043E+01	1.168E+00	-0.101
		46.50	*	1.101E+00	2.889E+00	4.769E+00	4.431E-01	0.231
PB-210		46.50	*	1.101E+00	2.889E+00	4.769E+00	4.431E-01	0.231
PO-210		46.50	*	1.101E+00	2.889E+00	4.769E+00	4.010E-01	0.231
PB-211		404.84	*	-5.399E-01	9.505E-01	1.415E+00	8.882E-01	-0.382
BI-212		427.08		1.086E+00	1.947E+00	3.073E+00	1.914E+00	0.353
		831.96		-6.072E-01	1.108E+00	1.672E+00	1.054E+00	-0.363
	+	727.18	*	1.017E+00	5.078E-01	5.680E-01	6.784E-02	1.791
		785.46		1.601E+00	1.665E+00	2.658E+00	2.922E-01	0.602
		1620.62		1.957E+00	1.161E+00	2.210E+00	1.927E-01	0.886
PO-215		81.07		-2.235E-01	2.128E-01	2.949E-01	2.577E-02	-0.758
		83.78		3.054E-02	1.288E-01	1.863E-01	1.680E-02	0.164
		94.90		4.403E-01	2.291E-01	3.531E-01	3.157E-02	1.247
		122.32		-2.472E+00	1.790E+00	2.596E+00	2.310E-01	-0.952
		144.24		2.234E-01	6.600E-01	1.089E+00	1.078E-01	0.205
		154.21		5.004E-01	3.875E-01	6.695E-01	6.762E-02	0.747
	+	269.46		5.830E-01	2.212E-01	3.144E-01	4.319E-02	1.854
		323.87	*	-1.262E-01	6.979E-01	1.003E+00	1.993E-01	-0.126
	+	338.28		7.973E+00	1.764E+00	2.290E+00	3.387E-01	3.482
		445.03		1.083E-01	2.039E+00	3.325E+00	4.273E-01	0.033
RN-219	+	271.23		7.480E-01	2.867E-01	4.111E-01	6.090E-02	1.819
		401.81	*	-1.466E-01	3.876E-01	6.235E-01	9.647E-02	-0.235
RN-220		549.76	*	-1.006E+01	2.149E+01	3.487E+01	3.555E+00	-0.288
RA-223		81.07		-2.235E-01	2.128E-01	2.949E-01	2.577E-02	-0.758
		83.78		3.054E-02	1.288E-01	1.863E-01	1.680E-02	0.164
		94.90		4.403E-01	2.291E-01	3.531E-01	3.157E-02	1.247
		122.32		-2.472E+00	1.790E+00	2.596E+00	2.310E-01	-0.952
		144.24		2.234E-01	6.600E-01	1.089E+00	1.078E-01	0.205
		154.21		5.004E-01	3.875E-01	6.695E-01	6.762E-02	0.747
	+	269.46		5.830E-01	2.212E-01	3.144E-01	4.319E-02	1.854
		323.87	*	-1.262E-01	6.979E-01	1.003E+00	1.993E-01	-0.126

## ---- 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		7.973E+00	1.764E+00	2.290E+00	3.387E-01	3.482
		445.03		1.083E-01	2.039E+00	3.325E+00	4.273E-01	0.033
		79.80		3.284E-01	1.527E+00	2.246E+00	4.828E-01	0.146
		236.00		9.099E-01	3.080E-01	4.470E-01	6.744E-02	2.035
		256.20	*	1.605E-01	3.702E-01	6.056E-01	1.105E-01	0.265
		286.10		-1.087E+00	1.532E+00	2.349E+00	4.002E-01	-0.463
TH-227	+	299.80		2.790E+00	1.780E+00	2.421E+00	4.902E-01	1.153
		304.40		-1.387E+00	1.967E+00	2.725E+00	5.716E-01	-0.509
		334.20		2.935E-01	3.387E+00	3.327E+00	7.042E-01	0.088
		79.80		3.284E-01	1.527E+00	2.246E+00	4.890E-01	0.146
	+	94.00		9.377E+00	3.427E+00	3.481E+00	7.634E-01	2.694
		236.00		9.099E-01	3.043E-01	4.470E-01	6.328E-02	2.035
TH-229		256.20	*	1.605E-01	3.705E-01	6.056E-01	1.247E-01	0.265
		286.10		-1.087E+00	1.875E+00	2.349E+00	2.371E+00	-0.463
	+	299.80		2.790E+00	1.780E+00	2.421E+00	4.902E-01	1.153
		304.40		-1.387E+00	1.967E+00	2.725E+00	5.716E-01	-0.509
		334.20		2.935E-01	3.387E+00	3.327E+00	7.042E-01	0.088
		85.43		2.795E-01	1.932E-01	2.900E-01	2.668E-02	0.964
PA-231	+	88.47		4.387E-01	1.292E-01	1.952E-01	1.844E-02	2.248
		100.00		1.471E-01	1.728E-01	2.857E-01	2.477E-02	0.515
		193.63	*	1.865E-01	5.065E-01	8.174E-01	8.788E-02	0.228
		210.97		1.676E+00	8.603E-01	1.316E+00	1.498E-01	1.274
		283.67	*	-7.317E-01	1.493E+00	2.322E+00	4.335E-01	-0.315
	+	301.29		1.116E+00	6.981E-01	9.793E-01	1.557E-01	1.140
TH-231		81.07		-2.235E-01	2.128E-01	2.949E-01	2.577E-02	-0.758
		83.78		3.054E-02	1.288E-01	1.863E-01	1.680E-02	0.164
		94.90		4.403E-01	2.291E-01	3.531E-01	3.157E-02	1.247
		122.32		-2.472E+00	1.790E+00	2.596E+00	2.310E-01	-0.952
		144.24		2.234E-01	6.600E-01	1.089E+00	1.078E-01	0.205
		154.21		5.004E-01	3.875E-01	6.695E-01	6.762E-02	0.747
U-231	+	269.46		5.830E-01	2.212E-01	3.144E-01	4.319E-02	1.854
		323.87	*	-1.262E-01	6.979E-01	1.003E+00	1.993E-01	-0.126
	+	338.28		7.973E+00	1.764E+00	2.290E+00	3.387E-01	3.482
		445.03		1.083E-01	2.039E+00	3.325E+00	4.273E-01	0.033
		84.21		3.292E+00	6.494E+00	9.484E+00	8.597E-01	0.347
	+	92.29		1.100E+01	3.364E+00	4.430E+00	4.040E-01	2.483
PA-233		95.87	*	-1.094E+00	1.256E+00	1.721E+00	1.529E-01	-0.635
		108.00		2.476E-03	2.411E+00	3.856E+00	3.242E-01	0.001
	+	75.28		2.212E+01	4.734E+00	6.372E+00	9.632E-01	3.471
	+	86.59		6.291E+00	2.446E+00	2.753E+00	7.449E-01	2.285
	+	300.12		7.778E-01	4.909E-01	6.815E-01	1.229E-01	1.141
		311.98	*	2.427E-02	5.869E-02	9.993E-02	1.309E-02	0.243
PA-234		340.50		3.244E+00	1.070E+00	1.230E+00	3.094E-01	2.638
		398.62		3.895E-01	2.022E+00	3.254E+00	8.747E-01	0.120
		415.76		-4.183E-01	1.528E+00	2.461E+00	5.391E-01	-0.170
	+	63.00		1.003E+00	1.652E+00	2.273E+00	3.368E-01	0.441
		94.67		4.706E-01	1.760E-01	2.675E-01	3.380E-02	1.759
		98.44		9.405E-02	1.027E-01	1.411E-01	7.876E-02	0.666
		99.86		4.153E-01	4.392E-01	7.279E-01	6.315E-02	0.571

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00		-9.557E-02	1.847E-01	2.821E-01	3.355E-02	-0.339
		131.20		-6.343E-03	1.095E-01	1.620E-01	1.372E-02	-0.039
		152.70		1.585E-01	3.164E-01	5.369E-01	9.324E-02	0.295
	+	186.00		7.792E+00	3.313E+00	2.513E+00	7.987E-01	3.100
		226.40		-6.768E-02	3.942E-01	6.375E-01	9.940E-02	-0.106
		227.20		-3.469E-01	4.237E-01	6.647E-01	7.972E-02	-0.522
		248.90		-1.183E-01	8.419E-01	1.246E+00	3.033E-01	-0.095
		293.70		5.592E+00	1.451E+00	1.622E+00	3.280E-01	3.448
		369.80		-7.560E-02	7.775E-01	1.279E+00	2.886E-01	-0.059
		568.70		-3.315E-02	8.907E-01	1.480E+00	1.520E-01	-0.022
		569.50		2.115E-01	2.393E-01	4.150E-01	4.262E-02	0.510
		574.00		-1.577E-01	1.447E+00	2.216E+00	2.280E-01	-0.071
		699.00		-2.571E-01	6.501E-01	1.034E+00	2.079E-01	-0.249
		706.10		9.306E-01	1.036E+00	1.632E+00	7.351E-01	0.570
		733.00		-2.644E-01	3.778E-01	4.820E-01	1.115E-01	-0.549
		742.81		-3.124E-01	1.343E+00	1.958E+00	1.323E+00	-0.160
	+	796.30		2.347E+00	1.439E+00	1.584E+00	4.421E-01	1.482
		805.60		1.132E+00	9.221E-01	1.536E+00	4.826E-01	0.737
		819.60		-5.466E-01	1.048E+00	1.654E+00	6.395E-01	-0.330
		826.30		-2.799E-01	7.049E-01	1.128E+00	5.107E-01	-0.248
		831.60		-4.075E-01	5.545E-01	8.595E-01	2.635E-01	-0.474
		876.40		1.349E-01	7.479E-01	1.235E+00	1.273E+00	0.109
		880.51		-1.291E-01	2.380E-01	3.796E-01	4.245E-02	-0.340
		883.24		-6.309E-02	2.427E-01	3.892E-01	2.631E-01	-0.162
		899.00		-6.532E-01	7.757E-01	1.118E+00	4.952E-01	-0.584
		925.00		-3.892E-01	1.032E+00	1.661E+00	1.827E-01	-0.234
		926.50		-7.449E-03	1.569E-01	2.585E-01	6.767E-02	-0.029
		946.00	*	4.622E-02	2.447E-01	4.087E-01	8.123E-02	0.113
		949.00		3.579E-02	3.565E-01	5.919E-01	6.396E-02	0.060
		980.50		9.372E-02	5.994E-01	9.963E-01	1.048E-01	0.094
		1394.10		-1.042E+00	1.231E+00	1.515E+00	9.864E-01	-0.688
PA-234M	+	766.42		1.746E+01	1.706E+01	1.870E+01	9.573E+00	0.933
		1001.03	*	4.081E-01	4.071E+00	6.369E+00	7.299E-01	0.064
U-235	+	89.95		2.705E+00	1.436E+00	1.695E+00	5.263E-01	1.596
	+	93.35		2.917E+00	1.184E+00	1.166E+00	3.284E-01	2.501
		105.00		-1.667E-01	1.033E+00	1.617E+00	4.820E-01	-0.103
		143.76	*	1.946E-02	2.022E-01	3.311E-01	5.842E-02	0.059
		163.35		-2.953E-01	4.629E-01	7.321E-01	1.434E-01	-0.403
	+	185.71		2.886E-01	8.697E-02	9.359E-02	9.800E-03	3.084
		205.31		2.816E-02	5.890E-01	8.344E-01	1.699E-01	0.034
NP-236		94.67		3.598E-01	1.298E-01	2.032E-01	1.819E-02	1.771
		98.44		7.107E-02	6.699E-02	1.067E-01	9.326E-03	0.666
		111.00		-7.229E-02	1.396E-01	2.134E-01	1.781E-02	-0.339
		160.31	*	-3.709E-02	7.646E-02	1.257E-01	1.201E-02	-0.295
NP-239		99.55		1.703E-01	1.463E-01	2.440E-01	2.121E-02	0.698
		117.00	*	-9.650E-02	1.845E-01	2.873E-01	2.375E-02	-0.336
	+	209.75		1.166E+00	9.444E-01	1.362E+00	1.544E-01	0.856
		228.18		-1.485E-01	2.233E-01	3.531E-01	4.248E-02	-0.421
	+	277.60		1.541E-01	1.892E-01	2.861E-01	3.988E-02	0.539

----- 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		2.219E-01	1.920E+00	1.893E+00	2.284E-01	0.117
		59.54	*	1.727E-01	1.387E-01	2.175E-01	1.700E-02	0.794
CM-243		99.55		1.752E-01	1.506E-01	2.511E-01	2.182E-02	0.698
		103.76	*	-2.087E-02	9.075E-02	1.443E-01	1.230E-02	-0.145
		117.00		-9.928E-02	1.899E-01	2.956E-01	2.443E-02	-0.336
	+	209.75		1.149E+00	9.311E-01	1.342E+00	1.522E-01	0.856
		228.18		-1.501E-01	2.257E-01	3.568E-01	4.292E-02	-0.421
	+	277.60		1.554E-01	1.908E-01	2.885E-01	4.021E-02	0.539
AM-246		798.80		1.183E-03	1.415E-01	1.950E-01	2.150E-02	0.006
		1036.00		-5.414E-02	2.730E-01	4.398E-01	4.368E-02	-0.123
		1062.04		1.717E-01	1.921E-01	3.326E-01	3.199E-02	0.516
		1078.86	*	8.505E-03	1.087E-01	1.781E-01	1.675E-02	0.048
CM-247	+	278.00		6.391E-01	7.848E-01	1.202E+00	1.677E-01	0.532
		287.40		4.056E-01	1.197E+00	1.937E+00	2.666E-01	0.209
		402.60	*	-4.438E-03	3.442E-02	5.612E-02	5.265E-03	-0.079
		252.85		-4.860E-03	8.267E-01	1.334E+00	1.730E-01	-0.004
CF-249		333.44		7.884E-02	2.423E-01	2.453E-01	2.968E-02	0.321
		387.95	*	4.868E-03	3.563E-02	5.904E-02	5.611E-03	0.082
CF-251		176.60	*	9.489E-03	1.237E-01	2.059E-01	2.092E-02	0.046
		227.00		-3.450E-01	3.811E-01	5.956E-01	7.138E-02	-0.579
		285.00		-6.060E-01	1.691E+00	2.652E+00	3.668E-01	-0.229

# 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]G244148007      *
* Acquisition date   : 20-JAN-2010 15:51:27 Detector SN#                   *
* Detector ID        : GAM22                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance : 1.500      *
* Elapsed live time   : 0 02:00:00.00                               Abundance limit  : 75.000      *
* Elapsed real time   : 0 02:00:02.18                               Half life ratio   : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148007                               Analyst initials : MXR1         *
* Batch Number       : 940268                                   Sample Quantity  : 1.2771E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight    : 0.00000      *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                         *
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope                  :      *
* MSD DPM             : 0.000                                           MSD Isotope       :      *
* LCS DPM             : 0.000                                           LCS Isotope       :      *
* LCSD DPM            : 0.000                                           LCSD Isotope      :      *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.057E+01	2.230E+00	5.272E-01	0.000E+00
CD-109	3.274E+00	9.449E-01	1.199E+00	0.000E+00
SN-126	3.213E-01	9.273E-02	1.182E-01	0.000E+00
TL-208	6.498E-01	1.019E-01	5.140E-02	0.000E+00
BI-211	4.313E+00	6.230E-01	3.025E-01	0.000E+00
PB-212	1.891E+00	2.662E-01	8.859E-02	0.000E+00
PO-212	1.891E+00	2.662E-01	8.859E-02	0.000E+00
BI-214	1.303E+00	2.136E-01	1.057E-01	0.000E+00
PB-214	1.500E+00	2.299E-01	1.060E-01	0.000E+00
PO-214	1.500E+00	2.299E-01	1.060E-01	0.000E+00
PO-216	1.891E+00	2.662E-01	8.859E-02	0.000E+00
PO-218	1.500E+00	2.299E-01	1.060E-01	0.000E+00
RA-224	5.622E+00	1.344E+00	1.007E+00	0.000E+00
RA-226	1.303E+00	2.136E-01	1.057E-01	0.000E+00
AC-228	1.887E+00	3.405E-01	1.894E-01	0.000E+00
RA-228	1.887E+00	3.405E-01	1.894E-01	0.000E+00
TH-228	1.922E+00	2.705E-01	9.003E-02	0.000E+00
TH-230	1.303E+00	2.136E-01	1.057E-01	0.000E+00
TH-232	1.887E+00	3.405E-01	1.894E-01	0.000E+00
TH-234	8.601E-01	1.391E+00	1.833E+00	0.000E+00
U-234	1.303E+00	2.136E-01	1.057E-01	0.000E+00
NP-237	9.436E-01	3.325E-01	3.896E-01	0.000E+00
U-238	8.601E-01	1.391E+00	1.833E+00	0.000E+00
AM-243	4.222E-01	7.129E-02	8.354E-02	0.000E+00
ANH-511	8.825E-02	6.048E-02	4.414E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-2.384E-01	2.810E-01	4.462E-01	0.000E+00 NOT IDENT.
NA-22	-9.749E-03	3.798E-02	6.310E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.180E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	6.785E-03	2.446E-02	4.241E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.623E-02	7.448E-02	0.000E+00	FAIL ABUN
SC-46	-2.894E-03	3.324E-02	5.636E-02	0.000E+00	FAIL ABUN
V-48	4.918E-02	5.864E-02	1.046E-01	0.000E+00	NOT IDENT.
CR-51	1.522E-01	3.413E-01	6.062E-01	0.000E+00	NOT IDENT.
MN-52	5.312E-02	2.123E-01	3.635E-01	0.000E+00	NOT IDENT.
MN-54	-2.643E-03	3.173E-02	5.423E-02	0.000E+00	NOT IDENT.
CO-56	-2.900E-02	3.410E-02	5.509E-02	0.000E+00	NOT IDENT.
CO-57	-3.454E-02	2.544E-02	3.924E-02	0.000E+00	NOT IDENT.
CO-58	1.954E-02	3.240E-02	5.776E-02	0.000E+00	NOT IDENT.
FE-59	-4.561E-03	7.662E-02	1.270E-01	0.000E+00	NOT IDENT.
CO-60	-3.859E-03	3.257E-02	5.428E-02	0.000E+00	NOT IDENT.
ZN-65	9.423E-02	9.219E-02	1.423E-01	0.000E+00	NOT IDENT.
GE-68	-1.902E-01	9.521E-01	1.563E+00	0.000E+00	NOT IDENT.
AS-73	5.787E-01	6.825E-01	1.243E+00	0.000E+00	NOT IDENT.
AS-74	3.263E-02	8.266E-02	1.446E-01	0.000E+00	NOT IDENT.
SE-75	2.880E-02	4.583E-02	6.968E-02	0.000E+00	NOT IDENT.
BR-77	-1.045E+00	1.223E+01	2.118E+01	0.000E+00	FAIL ABUN
SR-82	-4.741E-01	3.872E-01	5.318E-01	0.000E+00	NOT IDENT.
RB-83	1.432E-03	6.049E-02	1.054E-01	0.000E+00	NOT IDENT.
RB-84	-2.170E-02	5.872E-02	9.765E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	8.492E+00	1.363E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.402E-02	7.064E-02	0.000E+00	NOT IDENT.
RB-86	-1.409E-01	6.330E-01	1.037E+00	0.000E+00	NOT IDENT.
Y-88	3.821E-03	2.756E-02	4.686E-02	0.000E+00	NOT IDENT.
ZR-88	2.686E-03	2.804E-02	4.822E-02	0.000E+00	NOT IDENT.
Y-91	1.310E+01	1.590E+01	2.836E+01	0.000E+00	NOT IDENT.
NB-94	-7.939E-03	3.074E-02	5.102E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.358E-02	7.048E-02	0.000E+00	NOT IDENT.
NB-95M	1.308E-01	1.355E-01	2.097E-01	0.000E+00	NOT IDENT.
ZR-95	2.341E-02	6.383E-02	1.090E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.311E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.554E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	7.589E+00	1.297E+01	2.243E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.608E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.167E-02	3.245E-02	5.312E-02	0.000E+00	FAIL ABUN
RH-102	-1.668E-02	2.557E-02	4.030E-02	0.000E+00	FAIL ABUN
RU-103	-2.513E-02	3.634E-02	5.789E-02	0.000E+00	FAIL ABUN
RH-106	1.273E-01	2.689E-01	4.705E-01	0.000E+00	FAIL ABUN
RU-106	1.273E-01	2.686E-01	4.705E-01	0.000E+00	FAIL ABUN
AG-108M	-2.300E-02	2.938E-02	4.760E-02	0.000E+00	NOT IDENT.
AG-110M	-3.380E-02	2.984E-02	4.679E-02	0.000E+00	NOT IDENT.
IN-111	1.330E+00	1.410E+00	2.187E+00	0.000E+00	NOT IDENT.
IN-113M	1.117E-02	4.021E-02	6.974E-02	0.000E+00	NOT IDENT.
SN-113	1.117E-02	4.021E-02	6.974E-02	0.000E+00	NOT IDENT.
IN-114M	3.932E-02	1.893E-01	2.915E-01	0.000E+00	NOT IDENT.
CD-115	1.815E+00	1.270E+01	2.222E+01	0.000E+00	NOT IDENT.
SN-117M	2.884E-02	5.510E-02	9.874E-02	0.000E+00	NOT IDENT.
SB-122	-5.946E-02	2.358E+00	4.062E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.041E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.632E-02	2.703E-02	4.854E-02	0.000E+00	NOT IDENT.
I-124	2.939E-01	8.270E-01	1.249E+00	0.000E+00	NOT IDENT.
SB-124	2.152E-03	6.559E-02	1.110E-01	0.000E+00	FAIL ABUN
SB-125	4.391E-02	8.108E-02	1.412E-01	0.000E+00	FAIL ABUN
TE-125M	3.752E+00	9.255E+00	1.556E+01	0.000E+00	NOT IDENT.
I-126	1.706E-01	1.621E-01	2.896E-01	0.000E+00	NOT IDENT.
SB-126	-4.429E-02	1.554E-01	2.178E-01	0.000E+00	FAIL ABUN
SB-127	1.314E+00	1.371E+00	2.433E+00	0.000E+00	NOT IDENT.
XE-127	-1.259E-02	4.595E-02	7.859E-02	0.000E+00	NOT IDENT.
I-131	3.866E-02	1.105E-01	1.937E-01	0.000E+00	NOT IDENT.
TE-132	-5.651E-01	8.388E-01	1.387E+00	0.000E+00	NOT IDENT.
BA-133	5.093E-03	4.373E-02	6.611E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.143E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.597E-02	8.278E-02	0.000E+00	FAIL ABUN
CS-135	1.444E-01	1.659E-01	2.537E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.243E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.284E-03	9.919E-02	1.656E-01	0.000E+00	FAIL ABUN
BA-137M	2.022E-02	3.081E-02	5.406E-02	0.000E+00	NOT IDENT.
CS-137	2.138E-02	3.257E-02	5.714E-02	0.000E+00	NOT IDENT.
CE-139	1.178E-02	2.726E-02	4.858E-02	0.000E+00	NOT IDENT.
BA-140	-8.098E-02	2.281E-01	3.851E-01	0.000E+00	NOT IDENT.
LA-140	-7.207E-02	7.948E-02	1.224E-01	0.000E+00	FAIL ABUN
CE-141	3.858E-02	5.936E-02	1.075E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.326E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.016E-02	1.991E-01	3.290E-01	0.000E+00	NOT IDENT.
PM-144	1.783E-02	2.992E-02	5.208E-02	0.000E+00	NOT IDENT.
PR-144	1.209E+00	2.029E+00	3.531E+00	0.000E+00	NOT IDENT.

PM-146	3.430E-03	3.914E-02	6.453E-02	0.000E+00	NOT IDENT.
ND-147	2.750E-01	4.958E-01	8.828E-01	0.000E+00	FAIL ABUN
PM-149	-1.118E+02	1.251E+02	1.978E+02	0.000E+00	NOT IDENT.
EU-152	-1.606E-02	9.708E-02	1.447E-01	0.000E+00	FAIL ABUN
GD-153	-3.304E-02	8.004E-02	1.196E-01	0.000E+00	NOT IDENT.
EU-154	-2.155E-02	1.064E-01	1.775E-01	0.000E+00	NOT IDENT.
EU-155	-4.451E-02	1.041E-01	1.715E-01	0.000E+00	FAIL ABUN
TB-160	4.253E-02	1.170E-01	2.044E-01	0.000E+00	FAIL ABUN
HO-166M	4.046E-02	5.373E-02	9.406E-02	0.000E+00	NOT IDENT.
TM-171	-5.797E+00	2.623E+01	4.093E+01	0.000E+00	NOT IDENT.
LU-176	-8.760E-03	2.275E-02	3.818E-02	0.000E+00	FAIL ABUN
LU-177	1.830E+00	1.454E+00	2.196E+00	0.000E+00	FAIL ABUN
LU-177M	-8.675E-02	1.615E-01	2.676E-01	0.000E+00	FAIL ABUN
HF-181	2.160E-02	3.749E-02	6.476E-02	0.000E+00	NOT IDENT.
W-181	-1.596E-01	3.393E-01	5.244E-01	0.000E+00	NOT IDENT.
TA-182	-8.376E-03	1.623E-01	2.751E-01	0.000E+00	FAIL ABUN
RE-183	-5.862E-02	1.068E-01	1.802E-01	0.000E+00	FAIL ABUN
RE-184	-1.301E-03	2.168E-01	3.666E-01	0.000E+00	NOT IDENT.
OS-185	-1.938E-02	3.415E-02	5.540E-02	0.000E+00	NOT IDENT.
RE-188	7.793E-02	1.667E-01	2.988E-01	0.000E+00	NOT IDENT.
W-188	2.289E+00	7.855E+00	1.225E+01	0.000E+00	FAIL ABUN
IR-192	-2.732E-02	3.029E-02	5.056E-02	0.000E+00	FAIL ABUN
AU-195	2.468E-01	2.059E-01	3.651E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	7.819E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	9.579E-01	8.227E+00	1.451E+01	0.000E+00	NOT IDENT.
TL-202	2.787E-02	6.586E-02	1.138E-01	0.000E+00	NOT IDENT.
HG-203	1.326E-02	4.513E-02	6.695E-02	0.000E+00	NOT IDENT.
BI-207	3.497E-02	4.275E-02	7.549E-02	0.000E+00	FAIL ABUN
TL-207	-1.262E-01	6.839E-01	1.026E+00	0.000E+00	FAIL ABUN
PO-209	-1.049E+00	6.238E+00	1.051E+01	0.000E+00	NOT IDENT.
BI-210	1.101E+00	2.832E+00	5.020E+00	0.000E+00	NOT IDENT.
PB-210	1.101E+00	2.832E+00	5.020E+00	0.000E+00	NOT IDENT.
PO-210	1.101E+00	2.831E+00	5.020E+00	0.000E+00	NOT IDENT.
PB-211	-5.399E-01	9.315E-01	1.443E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.976E-01	5.741E-01	0.000E+00	FAIL ABUN
PO-215	-1.262E-01	6.839E-01	1.026E+00	0.000E+00	FAIL ABUN
RN-219	-1.466E-01	3.798E-01	6.360E-01	0.000E+00	FAIL ABUN
RN-220	-1.006E+01	2.106E+01	3.540E+01	0.000E+00	NOT IDENT.
RA-223	-1.262E-01	6.839E-01	1.026E+00	0.000E+00	FAIL ABUN
AC-227	1.605E-01	3.628E-01	6.219E-01	0.000E+00	FAIL ABUN
TH-227	1.605E-01	3.631E-01	6.219E-01	0.000E+00	FAIL ABUN
TH-229	1.865E-01	4.963E-01	8.428E-01	0.000E+00	FAIL ABUN
PA-231	-7.317E-01	1.463E+00	2.380E+00	0.000E+00	FAIL ABUN
TH-231	-1.262E-01	6.839E-01	1.026E+00	0.000E+00	FAIL ABUN
U-231	-1.094E+00	1.231E+00	1.793E+00	0.000E+00	FAIL ABUN
PA-233	2.427E-02	5.752E-02	1.023E-01	0.000E+00	FAIL ABUN
PA-234	4.622E-02	2.398E-01	4.114E-01	0.000E+00	FAIL ABUN
PA-234M	4.081E-01	3.990E+00	6.406E+00	0.000E+00	FAIL ABUN
U-235	1.946E-02	1.982E-01	3.429E-01	0.000E+00	FAIL ABUN
NP-236	-3.709E-02	7.493E-02	1.300E-01	0.000E+00	NOT IDENT.
NP-239	-9.650E-02	1.809E-01	2.984E-01	0.000E+00	FAIL ABUN
AM-241	1.727E-01	1.360E-01	2.281E-01	0.000E+00	NOT IDENT.
CM-243	-2.087E-02	8.894E-02	1.502E-01	0.000E+00	FAIL ABUN
AM-246	8.505E-03	1.065E-01	1.789E-01	0.000E+00	NOT IDENT.
CM-247	-4.438E-03	3.373E-02	5.724E-02	0.000E+00	FAIL ABUN
CF-249	4.868E-03	3.492E-02	6.025E-02	0.000E+00	NOT IDENT.
CF-251	9.489E-03	1.213E-01	2.126E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148007.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:51:27
Sample ID          : G244148007          Sample quantity  : 1.27710E+02 GRAM
Detector name      : GAM22              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:02.18  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 940268             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	1425	10.67*	1.909E+00	2.057E+01	2.057E+01	11.06
CD-109	88.03	303	3.72*	7.488E+00	3.196E+00	3.274E+00	29.45
SN-126	64.28	48	9.60	4.301E+00	3.405E-01	3.405E-01	164.69
	86.94	303	8.90	7.488E+00	1.336E+00	1.336E+00	50.03
	87.57	303	37.00*	7.488E+00	3.213E-01	3.213E-01	29.45
TL-208	277.35	46	6.80	6.189E+00	3.195E-01	3.195E-01	123.12
	510.84	129	21.60	4.299E+00	4.086E-01	4.086E-01	70.43
	583.14	732	84.20*	3.931E+00	6.498E-01	6.498E-01	16.00
	860.37	-----	12.46	2.924E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	5.897E+00	-----	Line Not Found	-----
	351.07	1025	12.94*	5.401E+00	4.313E+00	4.313E+00	14.74
PB-212	74.81	585	10.70	6.170E+00	2.604E+00	2.604E+00	19.60
	77.11	895	18.00	6.465E+00	2.261E+00	2.261E+00	13.75
	87.30	303	8.00	7.488E+00	1.486E+00	1.486E+00	31.10
	238.63	1925	44.60*	6.709E+00	1.891E+00	1.891E+00	14.36
	300.09	103	3.41	5.919E+00	1.505E+00	1.505E+00	62.22
PO-212	74.81	585	10.70	6.170E+00	2.604E+00	2.604E+00	19.60
	77.11	895	18.00	6.465E+00	2.261E+00	2.261E+00	13.75
	87.30	303	8.00	7.488E+00	1.486E+00	1.486E+00	31.10
	115.19	-----	0.60	8.535E+00	-----	Line Not Found	-----
	238.63	1925	44.60*	6.709E+00	1.891E+00	1.891E+00	14.36
	300.09	103	3.41	5.919E+00	1.505E+00	1.505E+00	62.22
BI-214	609.31	782	46.30*	3.811E+00	1.303E+00	1.303E+00	16.73
	1120.29	150	15.10	2.345E+00	1.248E+00	1.248E+00	48.98
	1764.49	179	15.80	1.716E+00	1.936E+00	1.936E+00	20.72
PB-214	74.81	585	6.21	6.170E+00	4.487E+00	4.487E+00	18.75
	77.11	895	10.50	6.465E+00	3.875E+00	3.876E+00	15.72
	87.30	303	4.67	7.488E+00	2.546E+00	2.546E+00	30.44
	241.98	503	7.49	6.664E+00	2.965E+00	2.965E+00	25.04
	295.21	553	19.20	5.968E+00	1.418E+00	1.418E+00	21.83
	351.92	1025	37.20*	5.401E+00	1.500E+00	1.500E+00	15.64
PO-214	74.81	585	6.21	6.170E+00	4.487E+00	4.487E+00	18.75

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-216	77.11	895	10.50	6.465E+00	3.875E+00	3.876E+00	15.72
	87.30	303	4.67	7.488E+00	2.546E+00	2.546E+00	30.44
	241.98	503	7.49	6.664E+00	2.965E+00	2.965E+00	25.04
	295.21	553	19.20	5.968E+00	1.418E+00	1.418E+00	21.83
	351.92	1025	37.20*	5.401E+00	1.500E+00	1.500E+00	15.64
	74.81	585	10.70	6.170E+00	2.604E+00	2.604E+00	19.60
	77.11	895	18.00	6.465E+00	2.261E+00	2.261E+00	13.75
	87.30	303	8.00	7.488E+00	1.486E+00	1.486E+00	31.10
	238.63	1925	44.60*	6.709E+00	1.891E+00	1.891E+00	14.36
	300.09	103	3.41	5.919E+00	1.505E+00	1.505E+00	62.22
PO-218	74.81	585	6.21	6.170E+00	4.487E+00	4.487E+00	18.75
	77.11	895	10.50	6.465E+00	3.875E+00	3.876E+00	15.72
	87.30	303	4.67	7.488E+00	2.546E+00	2.546E+00	30.44
	241.98	503	7.49	6.664E+00	2.965E+00	2.965E+00	25.04
	295.21	553	19.20	5.968E+00	1.418E+00	1.418E+00	21.83
	351.92	1025	37.20*	5.401E+00	1.500E+00	1.500E+00	15.64
RA-224	240.98	503	3.95*	6.664E+00	5.622E+00	5.622E+00	24.40
RA-226	609.31	782	46.30*	3.811E+00	1.303E+00	1.303E+00	16.73
	1120.29	150	15.10	2.345E+00	1.248E+00	1.248E+00	48.98
	1764.49	179	15.80	1.716E+00	1.936E+00	1.936E+00	20.72
AC-228	338.32	409	11.40	5.526E+00	1.909E+00	1.909E+00	45.17
	911.07	496	27.70*	2.788E+00	1.887E+00	1.887E+00	18.41
	969.11	318	16.60	2.649E+00	2.129E+00	2.129E+00	29.71
RA-228	338.32	409	11.40	5.526E+00	1.909E+00	1.909E+00	45.17
	911.07	496	27.70*	2.788E+00	1.887E+00	1.887E+00	18.41
	969.11	318	16.60	2.649E+00	2.129E+00	2.129E+00	29.71
TH-228	74.81	585	10.70	6.170E+00	2.604E+00	2.647E+00	17.27
	77.11	895	18.00	6.465E+00	2.261E+00	2.297E+00	13.75
	87.30	303	8.00	7.488E+00	1.486E+00	1.510E+00	29.45
	238.63	1925	44.60*	6.709E+00	1.891E+00	1.922E+00	14.36
TH-230	300.09	103	3.41	5.919E+00	1.505E+00	1.530E+00	85.30
	609.31	782	46.30*	3.811E+00	1.303E+00	1.303E+00	16.73
	1120.29	150	15.10	2.345E+00	1.248E+00	1.248E+00	48.98
	1764.49	179	15.80	1.716E+00	1.936E+00	1.936E+00	20.72
TH-232	338.32	409	11.40	5.526E+00	1.909E+00	1.909E+00	20.30
	911.07	496	27.70*	2.788E+00	1.887E+00	1.887E+00	18.41
	969.11	318	16.60	2.649E+00	2.129E+00	2.129E+00	29.71
TH-234	63.29	48	3.80*	4.301E+00	8.601E-01	8.601E-01	164.97
	92.38	351	5.41	7.870E+00	2.427E+00	2.427E+00	30.58
U-234	609.31	782	46.30*	3.811E+00	1.303E+00	1.303E+00	16.73
	1120.29	150	15.10	2.345E+00	1.248E+00	1.248E+00	48.98
	1764.49	179	15.80	1.716E+00	1.936E+00	1.936E+00	20.72
NP-237	86.50	303	12.60*	7.488E+00	9.436E-01	9.436E-01	35.96
	95.87	-----	2.60	8.032E+00	-----	Line Not Found	-----
U-238	63.29	48	3.80*	4.301E+00	8.601E-01	8.601E-01	164.97
	92.38	351	5.41	7.870E+00	2.427E+00	2.427E+00	30.58
AM-243	74.67	585	66.00*	6.170E+00	4.222E-01	4.222E-01	17.23
	86.72	303	0.34	7.488E+00	3.538E+01	3.538E+01	29.45
	117.66	-----	0.55	8.550E+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	8.387E+00	-----	Line Not Found	-----
ANH-511	511.00	129	100.00*	4.299E+00	8.825E-02	8.825E-02	69.93

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	2.057E+01	2.057E+01	0.228E+01	11.06	
CD-109	464.00D	1.02	3.196E+00	3.274E+00	0.964E+00	29.45	
SN-126	1.00E+05Y	1.00	3.213E-01	3.213E-01	0.946E-01	29.45	
TL-208	1.41E+10Y	1.00	6.498E-01	6.498E-01	1.040E-01	16.00	
BI-211	7.04E+08Y	1.00	4.313E+00	4.313E+00	0.636E+00	14.74	
PB-212	1.41E+10Y	1.00	1.891E+00	1.891E+00	0.272E+00	14.36	
PO-212	1.41E+10Y	1.00	1.891E+00	1.891E+00	0.272E+00	14.36	
BI-214	1600.00Y	1.00	1.303E+00	1.303E+00	0.218E+00	16.73	
PB-214	1600.00Y	1.00	1.500E+00	1.500E+00	0.235E+00	15.64	
PO-214	1600.00Y	1.00	1.500E+00	1.500E+00	0.235E+00	15.64	
PO-216	1.41E+10Y	1.00	1.891E+00	1.891E+00	0.272E+00	14.36	
PO-218	1600.00Y	1.00	1.500E+00	1.500E+00	0.235E+00	15.64	
RA-224	1.41E+10Y	1.00	5.622E+00	5.622E+00	1.372E+00	24.40	
RA-226	1600.00Y	1.00	1.303E+00	1.303E+00	0.218E+00	16.73	
AC-228	1.41E+10Y	1.00	1.887E+00	1.887E+00	0.347E+00	18.41	
RA-228	1.41E+10Y	1.00	1.887E+00	1.887E+00	0.347E+00	18.41	
TH-228	1.91Y	1.02	1.891E+00	1.922E+00	0.276E+00	14.36	
TH-230	4.47E+09Y	1.00	1.303E+00	1.303E+00	0.218E+00	16.73	
TH-232	1.41E+10Y	1.00	1.887E+00	1.887E+00	0.347E+00	18.41	
TH-234	4.47E+09Y	1.00	8.601E-01	8.601E-01	14.19E-01	164.97	
U-234	4.47E+09Y	1.00	1.303E+00	1.303E+00	0.218E+00	16.73	
NP-237	2.14E+06Y	1.00	9.436E-01	9.436E-01	3.393E-01	35.96	
U-238	4.47E+09Y	1.00	8.601E-01	8.601E-01	14.19E-01	164.97	
AM-243	7380.00Y	1.00	4.222E-01	4.222E-01	0.727E-01	17.23	
ANH-511	1.00E+09Y	1.00	8.825E-02	8.825E-02	6.172E-02	69.93	
Total Activity :			6.078E+01	6.089E+01			

Grand Total Activity : 6.078E+01 6.089E+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	89.82	191	510	1.14	179.85	171	21	2.65E-02	43.0	7.67E+00	T
0	128.60	130	420	1.41	257.32	254	8	1.80E-02	57.2	8.53E+00	T
0	186.14	403	581	1.48	372.29	366	14	5.60E-02	28.3	7.60E+00	T
0	209.30	92	427	0.71	418.57	415	8	1.28E-02	80.2	7.18E+00	T
0	270.16	169	225	1.59	540.18	536	9	2.35E-02	35.4	6.27E+00	T
0	328.49	106	294	1.09	656.74	651	12	1.48E-02	67.3	5.62E+00	T
0	462.84	162	180	1.30	925.24	918	14	2.26E-02	38.5	4.58E+00	T
0	727.50	136	164	2.11	1454.26	1446	18	1.90E-02	48.5	3.34E+00	T
0	767.66	61	138	2.59	1534.54	1530	13	8.46E-03	83.2	3.20E+00	T
0	795.27	97	126	2.15	1589.74	1581	15	1.35E-02	54.6	3.12E+00	T
1	965.19	88	90	2.56	1929.46	1923	22	1.22E-02	50.1	2.66E+00	T
0	1729.32	64	15	2.56	3457.81	3446	20	8.83E-03	39.0	1.73E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148007.CNF;1
* Acquisition date   : 20-JAN-2010 15:51:27  Detector SN#      :
* Detector ID        : GAM22                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:02.18             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244148007             Analyst initials: MXR1
* Batch Number       : 940268                 Sample Quantity : 1.27710E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28.08MS Isotope      :
* MSD ID             :                      MSD Isotope      :
* LCS ID             : 1032-A                 LCS Isotope     :
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.057E+01	2.275E+00	5.272E-01	4.829E-02	39.017
CD-109	3.274E+00	9.642E-01	1.150E+00	1.091E-01	2.848
SN-126	3.213E-01	9.462E-02	1.133E-01	1.070E-02	2.836
TL-208	6.498E-01	1.040E-01	5.068E-02	5.496E-03	12.821
BI-211	4.313E+00	6.357E-01	2.959E-01	3.453E-02	14.574
PB-212	1.891E+00	2.716E-01	8.618E-02	1.139E-02	21.945
PO-212	1.891E+00	2.716E-01	8.618E-02	1.139E-02	21.945
BI-214	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491
PB-214	1.500E+00	2.346E-01	1.037E-01	1.322E-02	14.467
PO-214	1.500E+00	2.346E-01	1.037E-01	1.322E-02	14.467
PO-216	1.891E+00	2.716E-01	8.618E-02	1.139E-02	21.945
PO-218	1.500E+00	2.346E-01	1.037E-01	1.322E-02	14.467
RA-224	5.622E+00	1.372E+00	9.797E-01	1.226E-01	5.738
RA-226	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491
AC-228	1.887E+00	3.474E-01	1.881E-01	2.492E-02	10.036
RA-228	1.887E+00	3.474E-01	1.881E-01	2.492E-02	10.036
TH-228	1.922E+00	2.760E-01	8.758E-02	1.157E-02	21.945
TH-230	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.887E+00	3.474E-01	1.881E-01	2.492E-02	10.036
TH-234	8.601E-01	1.419E+00	1.749E+00	3.044E-01	0.492
U-234	1.303E+00	2.180E-01	1.043E-01	1.213E-02	12.491
NP-237	9.436E-01	3.393E-01	3.734E-01	8.455E-02	2.527
U-238	8.601E-01	1.419E+00	1.749E+00	3.044E-01	0.492
AM-243	4.222E-01	7.275E-02	7.990E-02	6.513E-03	5.284
ANH-511	8.825E-02	6.172E-02	4.343E-02	4.351E-03	2.032

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.384E-01		2.867E-01	4.386E-01	4.577E-02	-0.544
NA-22	-9.749E-03		3.875E-02	6.297E-02	5.427E-03	-0.155
NA-24	-3.171E+00		1.112E+00	Half-Life too short		
AL-26	6.785E-03		2.496E-02	4.256E-02	3.480E-03	0.159
TI-44	4.172E-01	+	5.738E-02	7.129E-02	6.044E-03	5.852
SC-46	-2.894E-03		3.392E-02	5.593E-02	6.261E-03	-0.052
V-48	4.918E-02		5.984E-02	1.039E-01	1.090E-02	0.473
CR-51	1.522E-01		3.482E-01	5.923E-01	7.669E-02	0.257
MN-52	5.312E-02		2.166E-01	3.634E-01	3.248E-02	0.146
MN-54	-2.643E-03		3.238E-02	5.376E-02	5.973E-03	-0.049
CO-56	-2.900E-02		3.480E-02	5.463E-02	6.082E-03	-0.531
CO-57	-3.454E-02		2.596E-02	3.780E-02	3.117E-03	-0.914
CO-58	1.954E-02		3.306E-02	5.724E-02	6.338E-03	0.341
FE-59	-4.561E-03		7.818E-02	1.264E-01	1.239E-02	-0.036
CO-60	-3.859E-03		3.323E-02	5.420E-02	4.833E-03	-0.071
ZN-65	9.423E-02		9.407E-02	1.417E-01	1.264E-02	0.665
GE-68	-1.902E-01		9.716E-01	1.556E+00	1.466E-01	-0.122
AS-73	5.787E-01		6.964E-01	1.184E+00	8.944E-02	0.489
AS-74	3.263E-02		8.435E-02	1.426E-01	1.478E-02	0.229
SE-75	2.880E-02		4.676E-02	6.788E-02	9.137E-03	0.424
BR-77	-1.045E+00		1.248E+01	2.085E+01	2.098E+00	-0.050
SR-82	-4.741E-01		3.951E-01	5.267E-01	5.776E-02	-0.900
RB-83	1.432E-03		6.173E-02	1.037E-01	1.044E-02	0.014
RB-84	-2.170E-02		5.992E-02	9.689E-02	1.084E-02	-0.224
KR-85	1.987E+01		8.666E+00	1.341E+01	1.346E+00	1.482
SR-85	1.030E-01		4.492E-02	6.952E-02	6.975E-03	1.482
RB-86	-1.409E-01		6.459E-01	1.032E+00	9.742E-02	-0.136
Y-88	3.821E-03		2.812E-02	4.703E-02	3.802E-03	0.081
ZR-88	2.686E-03		2.861E-02	4.726E-02	4.401E-03	0.057
Y-91	1.310E+01		1.622E+01	2.828E+01	2.325E+00	0.463
NB-94	-7.939E-03		3.136E-02	5.045E-02	5.406E-03	-0.157
NB-95	8.053E-02		4.447E-02	6.978E-02	7.630E-03	1.154
NB-95M	1.308E-01		1.383E-01	2.039E-01	2.696E-02	0.641
ZR-95	2.341E-02		6.513E-02	1.079E-01	1.252E-02	0.217
NB-97	-2.773E-01		1.179E-01	Half-Life too short		
ZR-97	1.057E+01		2.834E+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	7.589E+00		1.323E+01	2.220E+01	3.674E+00	0.342
TC-99M	-6.139E+11		3.371E+11	Half-Life too short		
RH-101	-2.167E-02		3.312E-02	5.153E-02	5.622E-03	-0.421
RH-102	-1.668E-02		2.610E-02	3.961E-02	3.895E-03	-0.421
RU-103	-2.513E-02		3.708E-02	5.694E-02	8.546E-03	-0.441
RH-106	1.273E-01		2.744E-01	4.643E-01	6.780E-02	0.274
RU-106	1.273E-01		2.741E-01	4.643E-01	4.850E-02	0.274
AG-108M	-2.300E-02		2.998E-02	4.672E-02	4.625E-03	-0.492
AG-110M	-3.380E-02		3.045E-02	4.622E-02	4.968E-03	-0.731
IN-111	1.330E+00		1.439E+00	2.129E+00	2.701E-01	0.625
IN-113M	1.117E-02		4.103E-02	6.835E-02	6.527E-03	0.163
SN-113	1.117E-02		4.103E-02	6.835E-02	6.527E-03	0.163
IN-114M	3.932E-02		1.931E-01	2.827E-01	3.005E-02	0.139
CD-115	1.815E+00		1.296E+01	2.188E+01	2.209E+00	0.083
SN-117M	2.884E-02		5.622E-02	9.547E-02	9.054E-03	0.302
SB-122	-5.946E-02		2.406E+00	4.003E+00	4.103E-01	-0.015
I-123	1.232E+01		1.041E+01	Half-Life too short		
TE-123M	1.632E-02		2.759E-02	4.694E-02	4.482E-03	0.348
I-124	2.939E-01		8.439E-01	1.232E+00	1.280E-01	0.239
SB-124	2.152E-03		6.693E-02	1.113E-01	9.896E-03	0.019
SB-125	4.391E-02		8.274E-02	1.386E-01	1.344E-02	0.317
TE-125M	3.752E+00		9.444E+00	1.496E+01	1.515E+00	0.251
I-126	1.706E-01		1.655E-01	2.861E-01	3.023E-02	0.596
SB-126	-4.429E-02		1.586E-01	2.154E-01	2.323E-02	-0.206
SB-127	1.314E+00		1.399E+00	2.405E+00	3.188E-01	0.546
XE-127	-1.259E-02		4.689E-02	7.627E-02	8.454E-03	-0.165
I-131	3.866E-02		1.128E-01	1.896E-01	2.102E-02	0.204
TE-132	-5.651E-01		8.559E-01	1.348E+00	2.425E-01	-0.419
BA-133	5.093E-03		4.462E-02	6.470E-02	9.668E-03	0.079
I-133	2.227E-03		5.834E-03	Half-Life too short		
CS-134	1.209E-01	+	6.732E-02	8.201E-02	9.077E-03	1.474
CS-135	1.444E-01		1.693E-01	2.473E-01	3.576E-02	0.584
I-135	7.145E+09		3.185E+10	Half-Life too short		
CS-136	-4.284E-03		1.012E-01	1.647E-01	1.666E-02	-0.026
BA-137M	2.022E-02		3.144E-02	5.340E-02	5.631E-03	0.379
CS-137	2.138E-02		3.323E-02	5.645E-02	5.960E-03	0.379
CE-139	1.178E-02		2.781E-02	4.700E-02	4.610E-03	0.251
BA-140	-8.098E-02		2.327E-01	3.792E-01	1.273E-01	-0.214
LA-140	-7.207E-02		8.110E-02	1.226E-01	1.074E-02	-0.588
CE-141	3.858E-02		6.057E-02	1.038E-01	9.447E-03	0.372
CE-143	1.340E-03		2.207E-04	Half-Life too short		
CE-144	-4.016E-02		2.032E-01	3.173E-01	4.926E-02	-0.127
PM-144	1.783E-02		3.053E-02	5.149E-02	5.506E-03	0.346
PR-144	1.209E+00		2.070E+00	3.491E+00	3.732E-01	0.346
PM-146	3.430E-03		3.994E-02	6.339E-02	7.366E-03	0.054
ND-147	2.750E-01		5.060E-01	8.691E-01	1.378E-01	0.316
PM-149	-1.118E+02		1.277E+02	1.929E+02	3.650E+01	-0.580
EU-152	-1.606E-02		9.906E-02	1.415E-01	1.701E-02	-0.113



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-3.304E-02		8.167E-02	1.149E-01	1.010E-02	-0.288
EU-154	-2.155E-02		1.086E-01	1.772E-01	2.002E-02	-0.122
EU-155	-4.451E-02		1.063E-01	1.649E-01	1.415E-02	-0.270
TB-160	4.253E-02		1.194E-01	2.028E-01	2.268E-02	0.210
HO-166M	4.046E-02		5.483E-02	9.302E-02	1.000E-02	0.435
TM-171	-5.797E+00		2.677E+01	3.908E+01	2.953E+00	-0.148
LU-176	-8.760E-03		2.321E-02	3.728E-02	4.891E-03	-0.235
LU-177	1.830E+00	+	1.483E+00	2.132E+00	2.407E-01	0.859
LU-177M	-8.675E-02		1.648E-01	2.625E-01	2.482E-02	-0.331
HF-181	2.160E-02		3.825E-02	6.366E-02	6.285E-03	0.339
W-181	-1.596E-01		3.462E-01	5.006E-01	3.732E-02	-0.319
TA-182	-8.376E-03		1.656E-01	2.744E-01	2.281E-02	-0.031
RE-183	-5.862E-02		1.090E-01	1.743E-01	1.681E-02	-0.336
RE-184	-1.301E-03		2.213E-01	3.569E-01	4.631E-02	-0.004
OS-185	-1.938E-02		3.485E-02	5.471E-02	5.750E-03	-0.354
RE-188	7.793E-02		1.701E-01	2.888E-01	2.696E-02	0.270
W-188	2.289E+00		8.016E+00	1.195E+01	1.632E+00	0.192
IR-192	-2.732E-02		3.090E-02	4.939E-02	6.312E-03	-0.553
AU-195	2.468E-01		2.101E-01	3.506E-01	3.058E-02	0.704
TL-200	2.874E-04		3.989E-04	Half-Life too short		
TL-201	9.579E-01		8.395E+00	1.404E+01	1.384E+00	0.068
TL-202	2.787E-02		6.720E-02	1.117E-01	1.075E-02	0.250
HG-203	1.326E-02		4.605E-02	6.528E-02	9.240E-03	0.203
BI-207	3.497E-02		4.363E-02	7.512E-02	7.211E-03	0.465
TL-207	-1.262E-01		6.979E-01	1.003E+00	1.993E-01	-0.126
PO-209	-1.049E+00		6.366E+00	1.043E+01	1.168E+00	-0.101
BI-210	1.101E+00		2.889E+00	4.769E+00	4.431E-01	0.231
PB-210	1.101E+00		2.889E+00	4.769E+00	4.431E-01	0.231
PO-210	1.101E+00		2.889E+00	4.769E+00	4.010E-01	0.231
PB-211	-5.399E-01		9.505E-01	1.415E+00	8.882E-01	-0.382
BI-212	1.017E+00	+	5.078E-01	5.680E-01	6.784E-02	1.791
PO-215	-1.262E-01		6.979E-01	1.003E+00	1.993E-01	-0.126
RN-219	-1.466E-01		3.876E-01	6.235E-01	9.647E-02	-0.235
RN-220	-1.006E+01		2.149E+01	3.487E+01	3.555E+00	-0.288
RA-223	-1.262E-01		6.979E-01	1.003E+00	1.993E-01	-0.126
AC-227	1.605E-01		3.702E-01	6.056E-01	1.105E-01	0.265
TH-227	1.605E-01		3.705E-01	6.056E-01	1.247E-01	0.265
TH-229	1.865E-01		5.065E-01	8.174E-01	8.788E-02	0.228
PA-231	-7.317E-01		1.493E+00	2.322E+00	4.335E-01	-0.315
TH-231	-1.262E-01		6.979E-01	1.003E+00	1.993E-01	-0.126
U-231	-1.094E+00		1.256E+00	1.721E+00	1.529E-01	-0.635
PA-233	2.427E-02		5.869E-02	9.993E-02	1.309E-02	0.243
PA-234	4.622E-02		2.447E-01	4.087E-01	8.123E-02	0.113
PA-234M	4.081E-01		4.071E+00	6.369E+00	7.299E-01	0.064
U-235	1.946E-02		2.022E-01	3.311E-01	5.842E-02	0.059
NP-236	-3.709E-02		7.646E-02	1.257E-01	1.201E-02	-0.295
NP-239	-9.650E-02		1.845E-01	2.873E-01	2.375E-02	-0.336
AM-241	1.727E-01		1.387E-01	2.175E-01	1.700E-02	0.794

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.087E-02		9.075E-02	1.443E-01	1.230E-02	-0.145
AM-246	8.505E-03		1.087E-01	1.781E-01	1.675E-02	0.048
CM-247	-4.438E-03		3.442E-02	5.612E-02	5.265E-03	-0.079
CF-249	4.868E-03		3.563E-02	5.904E-02	5.611E-03	0.082
CF-251	9.489E-03		1.237E-01	2.059E-01	2.092E-02	0.046

# 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]G244148007          *
* Acquisition date   : 20-JAN-2010 15:51:27 Detector SN#                  *
* Detector ID        : GAM22                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:02.18                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148007                               Analyst initials: MXR1        *
* Batch Number       : 940268                                   Sample Quantity : 1.2771E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight  : 0.00000      *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope                  :      *
* MSD DPM             : 0.000                                         MSD Isotope       :      *
* LCS DPM             : 0.000                                         LCS Isotope       :      *
* LCSD DPM            : 0.000                                         LCSD Isotope      :      *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.057E+01	2.230E+00	2.637E-01	1.138E+00
CD-109	3.274E+00	9.449E-01	6.000E-01	4.821E-01
SN-126	3.213E-01	9.273E-02	5.912E-02	4.731E-02
TL-208	6.498E-01	1.019E-01	2.572E-02	5.198E-02
BI-211	4.313E+00	6.230E-01	1.513E-01	3.178E-01
PB-212	1.891E+00	2.662E-01	4.432E-02	1.358E-01
PO-212	1.891E+00	2.662E-01	4.432E-02	1.358E-01
BI-214	1.303E+00	2.136E-01	5.290E-02	1.090E-01
PB-214	1.500E+00	2.299E-01	5.302E-02	1.173E-01
PO-214	1.500E+00	2.299E-01	5.302E-02	1.173E-01
PO-216	1.891E+00	2.662E-01	4.432E-02	1.358E-01
PO-218	1.500E+00	2.299E-01	5.302E-02	1.173E-01
RA-224	5.622E+00	1.344E+00	5.038E-01	6.858E-01
RA-226	1.303E+00	2.136E-01	5.290E-02	1.090E-01
AC-228	1.887E+00	3.405E-01	9.478E-02	1.737E-01
RA-228	1.887E+00	3.405E-01	9.478E-02	1.737E-01
TH-228	1.922E+00	2.705E-01	4.504E-02	1.380E-01
TH-230	1.303E+00	2.136E-01	5.290E-02	1.090E-01
TH-232	1.887E+00	3.405E-01	9.478E-02	1.737E-01
TH-234	8.601E-01	1.391E+00	9.170E-01	7.095E-01
U-234	1.303E+00	2.136E-01	5.290E-02	1.090E-01
NP-237	9.436E-01	3.325E-01	1.949E-01	1.696E-01
U-238	8.601E-01	1.391E+00	9.170E-01	7.095E-01
AM-243	4.222E-01	7.129E-02	4.180E-02	3.637E-02
ANH-511	8.825E-02	6.048E-02	2.208E-02	3.086E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-2.384E-01	2.810E-01	2.232E-01	1.434E-01 NOT IDENT.
NA-22	-9.749E-03	3.798E-02	3.157E-02	1.938E-02 NOT IDENT.

NA-24	-3.171E+06	2.180E+06	0.000E+00	1.112E+06	SHORT HLIF
AL-26	6.785E-03	2.446E-02	2.122E-02	1.248E-02	NOT IDENT.
TI-44	4.172E-01	5.623E-02	3.726E-02	2.869E-02	FAIL ABUN
SC-46	-2.894E-03	3.324E-02	2.820E-02	1.696E-02	FAIL ABUN
V-48	4.918E-02	5.864E-02	5.231E-02	2.992E-02	NOT IDENT.
CR-51	1.522E-01	3.413E-01	3.033E-01	1.741E-01	NOT IDENT.
MN-52	5.312E-02	2.123E-01	1.818E-01	1.083E-01	NOT IDENT.
MN-54	-2.643E-03	3.173E-02	2.713E-02	1.619E-02	NOT IDENT.
CO-56	-2.900E-02	3.410E-02	2.756E-02	1.740E-02	NOT IDENT.
CO-57	-3.454E-02	2.544E-02	1.963E-02	1.298E-02	NOT IDENT.
CO-58	1.954E-02	3.240E-02	2.890E-02	1.653E-02	NOT IDENT.
FE-59	-4.561E-03	7.662E-02	6.354E-02	3.909E-02	NOT IDENT.
CO-60	-3.859E-03	3.257E-02	2.716E-02	1.662E-02	NOT IDENT.
ZN-65	9.423E-02	9.219E-02	7.119E-02	4.703E-02	NOT IDENT.
GE-68	-1.902E-01	9.521E-01	7.819E-01	4.858E-01	NOT IDENT.
AS-73	5.787E-01	6.825E-01	6.221E-01	3.482E-01	NOT IDENT.
AS-74	3.263E-02	8.266E-02	7.236E-02	4.217E-02	NOT IDENT.
SE-75	2.880E-02	4.583E-02	3.486E-02	2.338E-02	NOT IDENT.
BR-77	-1.045E+00	1.223E+01	1.060E+01	6.240E+00	FAIL ABUN
SR-82	-4.741E-01	3.872E-01	2.661E-01	1.976E-01	NOT IDENT.
RB-83	1.432E-03	6.049E-02	5.271E-02	3.086E-02	NOT IDENT.
RB-84	-2.170E-02	5.872E-02	4.886E-02	2.996E-02	NOT IDENT.
KR-85	1.987E+01	8.492E+00	6.818E+00	4.333E+00	NOT IDENT.
SR-85	1.030E-01	4.402E-02	3.534E-02	2.246E-02	NOT IDENT.
RB-86	-1.409E-01	6.330E-01	5.189E-01	3.229E-01	NOT IDENT.
Y-88	3.821E-03	2.756E-02	2.344E-02	1.406E-02	NOT IDENT.
ZR-88	2.686E-03	2.804E-02	2.412E-02	1.431E-02	NOT IDENT.
Y-91	1.310E+01	1.590E+01	1.419E+01	8.110E+00	NOT IDENT.
NB-94	-7.939E-03	3.074E-02	2.552E-02	1.568E-02	NOT IDENT.
NB-95	8.053E-02	4.358E-02	3.526E-02	2.223E-02	NOT IDENT.
NB-95M	1.308E-01	1.355E-01	1.049E-01	6.914E-02	NOT IDENT.
ZR-95	2.341E-02	6.383E-02	5.451E-02	3.257E-02	NOT IDENT.
NB-97	-2.773E+05	2.311E+05	0.000E+00	1.179E+05	SHORT HLIF
ZR-97	1.057E+07	5.554E+06	0.000E+00	2.834E+06	SHORT HLIF
MO-99	7.589E+00	1.297E+01	1.122E+01	6.617E+00	NOT IDENT.
TC-99M	-6.139E+17	6.608E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.167E-02	3.245E-02	2.658E-02	1.656E-02	FAIL ABUN
RH-102	-1.668E-02	2.557E-02	2.016E-02	1.305E-02	FAIL ABUN
RU-103	-2.513E-02	3.634E-02	2.896E-02	1.854E-02	FAIL ABUN
RH-106	1.273E-01	2.689E-01	2.354E-01	1.372E-01	FAIL ABUN
RU-106	1.273E-01	2.686E-01	2.354E-01	1.370E-01	FAIL ABUN
AG-108M	-2.300E-02	2.938E-02	2.381E-02	1.499E-02	NOT IDENT.
AG-110M	-3.380E-02	2.984E-02	2.341E-02	1.523E-02	NOT IDENT.
IN-111	1.330E+00	1.410E+00	1.094E+00	7.193E-01	NOT IDENT.
IN-113M	1.117E-02	4.021E-02	3.489E-02	2.052E-02	NOT IDENT.
SN-113	1.117E-02	4.021E-02	3.489E-02	2.052E-02	NOT IDENT.
IN-114M	3.932E-02	1.893E-01	1.459E-01	9.657E-02	NOT IDENT.
CD-115	1.815E+00	1.270E+01	1.112E+01	6.480E+00	NOT IDENT.
SN-117M	2.884E-02	5.510E-02	4.940E-02	2.811E-02	NOT IDENT.
SB-122	-5.946E-02	2.358E+00	2.032E+00	1.203E+00	NOT IDENT.
I-123	1.232E+07	2.041E+07	0.000E+00	1.041E+07	SHORT HLIF
TE-123M	1.632E-02	2.703E-02	2.428E-02	1.379E-02	NOT IDENT.
I-124	2.939E-01	8.270E-01	6.249E-01	4.219E-01	NOT IDENT.
SB-124	2.152E-03	6.559E-02	5.553E-02	3.346E-02	FAIL ABUN
SB-125	4.391E-02	8.108E-02	7.064E-02	4.137E-02	FAIL ABUN
TE-125M	3.752E+00	9.255E+00	7.783E+00	4.722E+00	NOT IDENT.
I-126	1.706E-01	1.621E-01	1.449E-01	8.273E-02	NOT IDENT.
SB-126	-4.429E-02	1.554E-01	1.089E-01	7.929E-02	FAIL ABUN
SB-127	1.314E+00	1.371E+00	1.217E+00	6.995E-01	NOT IDENT.
XE-127	-1.259E-02	4.595E-02	3.932E-02	2.345E-02	NOT IDENT.
I-131	3.866E-02	1.105E-01	9.688E-02	5.640E-02	NOT IDENT.
TE-132	-5.651E-01	8.388E-01	6.938E-01	4.280E-01	NOT IDENT.
BA-133	5.093E-03	4.373E-02	3.308E-02	2.231E-02	FAIL ABUN
I-133	2.227E+03	1.143E+04	0.000E+00	5.834E+03	SHORT HLIF
CS-134	1.209E-01	6.597E-02	4.142E-02	3.366E-02	FAIL ABUN
CS-135	1.444E-01	1.659E-01	1.269E-01	8.463E-02	NOT IDENT.
I-135	7.145E+15	6.243E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.284E-03	9.919E-02	8.283E-02	5.061E-02	FAIL ABUN
BA-137M	2.022E-02	3.081E-02	2.704E-02	1.572E-02	NOT IDENT.
CS-137	2.138E-02	3.257E-02	2.859E-02	1.662E-02	NOT IDENT.
CE-139	1.178E-02	2.726E-02	2.430E-02	1.391E-02	NOT IDENT.
BA-140	-8.098E-02	2.281E-01	1.927E-01	1.164E-01	NOT IDENT.
LA-140	-7.207E-02	7.948E-02	6.123E-02	4.055E-02	FAIL ABUN
CE-141	3.858E-02	5.936E-02	5.376E-02	3.028E-02	NOT IDENT.
CE-143	1.340E+03	4.326E+02	0.000E+00	2.207E+02	SHORT HLIF
CE-144	-4.016E-02	1.991E-01	1.646E-01	1.016E-01	NOT IDENT.
PM-144	1.783E-02	2.992E-02	2.605E-02	1.527E-02	NOT IDENT.
PR-144	1.209E+00	2.029E+00	1.767E+00	1.035E+00	NOT IDENT.

PM-146	3.430E-03	3.914E-02	3.229E-02	1.997E-02	NOT IDENT.
ND-147	2.750E-01	4.958E-01	4.417E-01	2.530E-01	FAIL ABUN
PM-149	-1.118E+02	1.251E+02	9.893E+01	6.384E+01	NOT IDENT.
EU-152	-1.606E-02	9.708E-02	7.239E-02	4.953E-02	FAIL ABUN
GD-153	-3.304E-02	8.004E-02	5.985E-02	4.083E-02	NOT IDENT.
EU-154	-2.155E-02	1.064E-01	8.882E-02	5.430E-02	NOT IDENT.
EU-155	-4.451E-02	1.041E-01	8.582E-02	5.314E-02	FAIL ABUN
TB-160	4.253E-02	1.170E-01	1.023E-01	5.970E-02	FAIL ABUN
HO-166M	4.046E-02	5.373E-02	4.706E-02	2.741E-02	NOT IDENT.
TM-171	-5.797E+00	2.623E+01	2.048E+01	1.338E+01	NOT IDENT.
LU-176	-8.760E-03	2.275E-02	1.910E-02	1.160E-02	FAIL ABUN
LU-177	1.830E+00	1.454E+00	1.099E+00	7.416E-01	FAIL ABUN
LU-177M	-8.675E-02	1.615E-01	1.339E-01	8.240E-02	FAIL ABUN
HF-181	2.160E-02	3.749E-02	3.240E-02	1.913E-02	NOT IDENT.
W-181	-1.596E-01	3.393E-01	2.624E-01	1.731E-01	NOT IDENT.
TA-182	-8.376E-03	1.623E-01	1.376E-01	8.280E-02	FAIL ABUN
RE-183	-5.862E-02	1.068E-01	9.015E-02	5.449E-02	FAIL ABUN
RE-184	-1.301E-03	2.168E-01	1.834E-01	1.106E-01	NOT IDENT.
OS-185	-1.938E-02	3.415E-02	2.772E-02	1.742E-02	NOT IDENT.
RE-188	7.793E-02	1.667E-01	1.495E-01	8.506E-02	NOT IDENT.
W-188	2.289E+00	7.855E+00	6.129E+00	4.008E+00	FAIL ABUN
IR-192	-2.732E-02	2.029E-02	2.529E-02	1.545E-02	FAIL ABUN
AU-195	2.468E-01	2.059E-01	1.827E-01	1.050E-01	FAIL ABUN
TL-200	2.874E+02	7.819E+02	0.000E+00	3.989E+02	SHORT HLIF
TL-201	9.579E-01	8.227E+00	7.260E+00	4.198E+00	NOT IDENT.
TL-202	2.787E-02	6.586E-02	5.692E-02	3.360E-02	NOT IDENT.
HG-203	1.326E-02	4.513E-02	3.350E-02	2.303E-02	NOT IDENT.
BI-207	3.497E-02	4.275E-02	3.777E-02	2.181E-02	FAIL ABUN
TL-207	-1.262E-01	6.839E-01	5.134E-01	3.489E-01	FAIL ABUN
PO-209	-1.049E+00	6.238E+00	5.258E+00	3.183E+00	NOT IDENT.
BI-210	1.101E+00	2.832E+00	2.511E+00	1.445E+00	NOT IDENT.
PB-210	1.101E+00	2.832E+00	2.511E+00	1.445E+00	NOT IDENT.
PO-210	1.101E+00	2.831E+00	2.511E+00	1.445E+00	NOT IDENT.
PB-211	-5.399E-01	9.315E-01	7.219E-01	4.753E-01	NOT IDENT.
BI-212	1.017E+00	4.976E-01	2.872E-01	2.539E-01	FAIL ABUN
PO-215	-1.262E-01	6.839E-01	5.134E-01	3.489E-01	FAIL ABUN
RN-219	-1.466E-01	3.798E-01	3.182E-01	1.938E-01	FAIL ABUN
RN-220	-1.006E+01	2.106E+01	1.771E+01	1.075E+01	NOT IDENT.
RA-223	-1.262E-01	6.839E-01	5.134E-01	3.489E-01	FAIL ABUN
AC-227	1.605E-01	3.628E-01	3.111E-01	1.851E-01	FAIL ABUN
TH-227	1.605E-01	3.631E-01	3.111E-01	1.853E-01	FAIL ABUN
TH-229	1.865E-01	4.963E-01	4.217E-01	2.532E-01	FAIL ABUN
PA-231	-7.317E-01	1.463E+00	1.191E+00	7.464E-01	FAIL ABUN
TH-231	-1.262E-01	6.839E-01	5.134E-01	3.489E-01	FAIL ABUN
U-231	-1.094E+00	1.231E+00	8.972E-01	6.280E-01	FAIL ABUN
PA-233	2.427E-02	5.752E-02	5.119E-02	2.935E-02	FAIL ABUN
PA-234	4.622E-02	2.398E-01	2.058E-01	1.223E-01	FAIL ABUN
PA-234M	4.081E-01	3.990E+00	3.205E+00	2.036E+00	FAIL ABUN
U-235	1.946E-02	1.982E-01	1.716E-01	1.011E-01	FAIL ABUN
NP-236	-3.709E-02	7.493E-02	6.501E-02	3.823E-02	NOT IDENT.
NP-239	-9.650E-02	1.809E-01	1.493E-01	9.227E-02	FAIL ABUN
AM-241	1.727E-01	1.360E-01	1.141E-01	6.937E-02	NOT IDENT.
CM-243	-2.087E-02	8.894E-02	7.513E-02	4.538E-02	FAIL ABUN
AM-246	8.505E-03	1.065E-01	8.952E-02	5.436E-02	NOT IDENT.
CM-247	-4.438E-03	3.373E-02	2.864E-02	1.721E-02	FAIL ABUN
CF-249	4.868E-03	3.492E-02	3.014E-02	1.782E-02	NOT IDENT.
CF-251	9.489E-03	1.213E-01	1.064E-01	6.186E-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	304.3692
46.50	304.3692
46.50	304.3692
48.70	331.2434
49.72	325.4564
51.35	351.8526
52.39	314.4994
52.97	305.0626
53.15	315.5391
53.44	312.2052
54.07	318.6555
56.28	393.3066
56.28	393.3109
57.37	0.0000
57.53	416.1924
57.53	416.1957
57.60	399.2421
57.98	403.6579
57.98	403.6579
59.32	355.2266
59.32	355.2266
59.40	355.3392
59.54	355.5369
59.72	365.8339
60.01	366.2542
61.10	393.7882
61.14	393.8491
61.30	394.0944
63.00	450.4445
63.29	444.1540
63.29	444.1540
63.58	444.6420
64.28	470.1516
65.12	480.4181
65.20	470.3055
65.20	470.3055
66.05	473.2544
66.72	471.4697
66.83	471.6602
66.91	471.7993
67.20	495.9122
67.20	495.9122
67.75	508.7301
67.85	508.9151
68.90	505.8850
68.90	505.8850
69.30	534.3641
69.67	546.7827
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70.82	478.4253
70.83	478.4424
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72.87	582.7115
72.87	582.7115
74.67	562.5414
74.81	562.8049
74.81	562.8049
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74.81	562.8049
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77.11	567.1111

77.11	567.1111
77.11	567.1111
77.11	567.1111
77.11	567.1111
77.11	567.1111
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79.80	480.6612
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80.30	493.7720
80.30	493.7720
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81.07	572.3184
81.07	572.3184
81.07	572.3184
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83.78	545.9725
83.78	545.9725
83.78	545.9725
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84.90	510.2828
85.43	523.6486
86.29	652.3319
86.50	652.7435
86.54	652.8227
86.59	652.9208
86.72	653.1773
86.79	528.9452
86.94	529.1862
87.30	529.7552
87.30	529.7552
87.30	529.7552
87.30	529.7552
87.30	529.7552
87.30	529.7552
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87.88	530.6704
88.03	530.9063
88.36	531.4241
88.47	531.5984
89.95	533.9106
91.11	535.7128
92.29	537.5328
92.38	537.6713
92.38	537.6713
93.35	539.1555
94.00	540.1476
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94.67	399.4334
94.90	399.6907
94.90	399.6907
94.90	399.6907
94.90	399.6907
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95.87	439.5575
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98.44	390.5951
98.88	391.0620
99.55	392.8607
99.55	392.8607
99.86	401.9008
100.00	402.0529
100.10	403.2554
103.18	456.0086
103.76	422.5879
105.00	428.3693
105.31	444.1817
108.00	462.8267
109.28	433.0701

111.00	451.7475
111.00	451.7475
111.76	461.5827
112.95	440.4080
115.19	405.4376
116.30	421.2830
117.00	428.8114
117.00	428.8114
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122.32	453.7609
122.32	453.7609
122.32	453.7609
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131.20	414.4675
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136.25	409.7191
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140.51	0.0000
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142.65	444.0807
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144.24	431.0264
144.24	431.0264
144.24	431.0264
145.22	419.1775
145.44	432.9800
147.16	471.8127
152.43	449.1043
152.70	452.1012
153.22	426.7469
154.21	423.8655
154.21	423.8655
154.21	423.8655
154.21	423.8655
155.03	458.7523
156.02	474.4453
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159.00	0.0000
159.00	420.2732
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161.27	451.9981
162.32	429.4309
162.64	421.2424
163.35	425.5481
163.89	416.5630
165.85	389.7398
167.43	410.7259
171.28	409.7355
171.86	401.5676
172.10	401.7378
176.55	426.0130
176.60	426.0502
181.06	454.2966
184.41	425.6660
185.71	394.5497
186.00	394.7408
190.27	376.2499
192.34	371.1893
193.63	397.9612
197.04	407.7916
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200.40	412.9370
201.83	409.8456
202.84	430.5547
205.31	420.7000



208.36	424.2660
208.81	418.2747
209.75	401.6225
209.75	401.6225
210.97	372.2787
215.65	405.1423
216.55	399.5274
218.09	348.0600
222.10	396.5449
223.80	373.6969
226.40	382.3441
227.00	408.6634
227.08	408.7084
227.20	397.3357
228.16	397.8691
228.18	397.8807
228.18	397.8807
231.56	0.0000
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236.00	404.2969
236.00	404.2969
238.63	356.0750
238.63	356.0750
238.63	356.0750
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240.98	357.1986
241.98	357.6768
241.98	357.6768
241.98	357.6768
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245.39	281.4648
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248.90	308.4653
249.79	310.9659
252.40	307.7132
252.85	300.3541
252.85	300.3541
254.15	0.0000
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256.20	302.7242
260.50	328.2849
260.90	330.6260
262.80	304.1558
264.65	260.4917
268.24	282.7130
268.79	293.4487
269.46	276.1031
269.46	276.1031
269.46	276.1031
269.46	276.1031
271.23	304.0144
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277.60	297.4638
277.60	297.4638
278.00	297.6069
278.60	300.4866
279.20	302.4805
279.53	302.5967
280.46	295.8010
281.68	255.1831
283.67	299.5984
284.30	277.4447
285.00	291.1075
285.90	319.4334
286.10	315.0231
286.10	315.0231
287.40	278.4437
288.45	0.0000
290.67	303.5343
290.80	303.5795
291.72	305.4045
293.26	0.0000
293.70	345.2937
295.21	299.0625
295.21	299.0625

295.21	299.0625
295.96	235.8250
296.50	235.9678
297.23	236.1614
298.57	236.5168
299.80	268.7230
299.80	268.7230
300.09	259.7007
300.09	259.7007
300.09	259.7007
300.09	259.7007
300.12	259.7076
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302.84	258.9706
303.76	274.4824
303.91	274.5264
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304.84	261.0679
306.84	271.3324
308.46	238.1934
311.98	248.3324
316.51	256.0345
318.01	241.5791
319.02	249.2773
319.41	242.8683
320.08	243.0371
323.87	269.5628
323.87	269.5628
323.87	269.5628
323.87	269.5628
325.23	259.0204
328.77	253.7084
333.44	217.1608
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334.20	236.2274
334.30	236.2518
338.28	237.2040
338.28	237.2040
338.28	237.2040
338.28	237.2040
338.32	237.2162
338.32	237.2162
338.32	237.2162
340.50	223.4709
340.57	223.4852
344.27	232.2657
345.85	242.1913
350.59	0.0000
351.07	229.6641
351.92	232.4183
351.92	232.4183
351.92	232.4183
355.39	0.0000
356.01	225.2954
364.48	203.4408
366.43	224.2949
367.43	212.7922
367.94	0.0000
369.80	221.0894
374.96	200.5286
383.85	195.2277
387.95	205.8958
388.63	197.0646
391.69	211.5756
391.69	211.5756
392.90	217.7977
398.62	215.8871
400.65	204.1994
401.10	216.3569
401.81	235.6225
402.60	226.7166
404.84	249.3669
410.95	207.0406
411.60	216.2943
413.65	229.8954
414.70	211.7756
415.30	206.7889

415.76	215.0232
417.63	0.0000
418.52	198.1585
423.70	201.0723
427.08	174.8892
427.89	179.1231
432.53	201.5079
433.93	206.9116
439.47	179.7853
439.56	182.9158
439.89	177.7674
443.98	196.0827
444.90	179.5271
445.03	179.5460
445.03	179.5460
445.03	179.5460
445.03	179.5460
453.90	176.3715
463.38	153.5563
468.07	148.7961
473.00	161.0900
475.06	169.8885
475.35	157.1027
476.78	163.6906
477.59	178.7769
477.96	174.5445
482.03	153.5941
484.57	175.4081
487.03	166.0237
490.36	0.0000
492.35	153.6883
497.08	173.7676
507.63	0.0000
510.53	0.0000
510.84	186.4604
511.00	186.4812
511.85	190.2509
511.85	190.2509
513.99	205.1966
513.99	205.1966
520.41	168.3941
520.65	168.4239
527.90	155.3979
528.96	0.0000
529.64	156.5086
529.87	0.0000
531.02	139.0472
537.32	155.4719
543.00	152.3316
546.56	0.0000
549.76	147.3887
552.65	124.1582
555.20	158.2861
563.23	156.2787
563.90	169.6152
568.70	170.1432
569.32	151.1910
569.50	146.4554
569.67	146.4711
573.80	162.7535
574.00	170.4044
574.64	170.3180
578.91	131.2137
579.30	0.0000
583.14	150.6148
585.48	144.9367
591.81	175.0711
592.07	171.0773
593.00	160.0629
595.88	151.8222
600.56	191.1947
602.52	0.0000
602.71	178.1293
602.71	178.1293
603.60	164.9010
604.41	161.6509
604.70	161.6779
609.31	181.3568

609.31	181.3568
609.31	181.3568
609.31	181.3568
610.33	181.4703
612.46	122.2531
614.37	130.7762
618.01	165.9778
621.84	131.6473
621.84	131.6473
631.29	140.2897
633.02	138.4562
633.10	133.5168
634.78	130.6787
635.90	139.6804
636.97	134.8130
645.85	113.5895
646.12	120.5840
656.30	134.3217
657.75	158.5111
657.90	0.0000
661.65	136.7415
661.65	136.7415
664.57	0.0000
666.33	123.9985
666.33	123.9985
675.00	113.4583
677.61	111.5934
685.20	111.0446
692.80	163.6784
695.00	146.4621
696.49	137.3560
696.49	137.3560
697.00	131.2422
697.49	153.8391
698.33	161.0917
698.50	161.1077
699.00	164.2285
702.63	169.6930
706.10	136.0068
706.58	0.0000
706.67	126.7737
709.31	167.2042
711.68	131.2452
713.82	163.4679
717.42	130.0437
720.50	144.1711
721.93	0.0000
722.20	117.5763
722.78	142.5614
722.78	142.5614
722.89	142.5698
722.95	142.5726
723.30	149.7305
724.18	151.5812
727.18	115.6498
733.00	132.5713
735.90	129.1841
739.58	115.3465
742.81	127.0928
744.21	125.0793
747.13	133.6869
751.79	135.0599
752.31	127.7083
753.82	108.7921
755.35	120.5034
756.15	129.0119
756.87	128.0012
763.93	101.9160
765.79	114.7610
766.42	127.5513
766.84	140.3359
776.49	155.2520
778.00	144.3192
778.57	137.9443
778.89	130.4789
783.80	88.9828
785.46	111.5876
792.07	143.9295

795.84	103.5215
796.30	103.5449
798.80	120.3312
801.93	148.3231
805.60	98.4360
810.29	113.5474
810.76	101.4709
815.85	102.6474
817.79	104.6094
818.51	112.1191
819.60	114.0452
826.30	116.2803
828.27	0.0000
831.60	135.3666
831.96	131.6284
834.83	131.8042
836.80	0.0000
846.75	130.6336
848.13	117.4544
856.28	0.0000
856.80	138.8380
860.37	107.6282
867.32	133.7622
867.82	122.3237
871.10	120.5881
873.19	121.6581
874.81	119.8273
875.33	0.0000
876.40	108.4007
879.36	97.9765
880.27	111.4688
880.51	110.5198
881.50	105.7607
883.24	102.9547
884.67	102.0572
889.25	106.1213
896.60	107.4287
898.02	121.0523
899.00	120.1336
903.28	91.7232
911.07	112.9677
911.07	112.9677
911.07	112.9677
919.63	98.5236
920.93	109.5313
925.00	111.6780
925.24	116.5886
926.50	111.7496
935.52	88.5576
937.48	98.4776
944.10	96.7729
946.00	88.9437
949.00	88.0641
962.29	81.8297
964.01	78.4012
966.15	88.6834
968.20	88.7563
969.11	88.7905
969.11	88.7905
969.11	88.7905
977.42	108.9952
980.50	87.1927
983.50	75.2563
989.30	103.5909
996.32	116.9912
1001.03	86.8953
1001.68	73.7791
1004.76	91.0704
1021.30	0.0000
1024.50	0.0000
1034.80	96.2294
1036.00	110.6104
1037.82	110.6857
1038.57	100.4678
1038.76	0.0000
1045.16	112.0223
1046.59	107.9700
1048.07	103.9167

1050.47	96.7998
1050.47	96.7998
1062.04	79.6372
1063.62	79.6855
1076.63	83.1892
1077.35	81.1312
1078.86	74.9330
1085.78	88.6850
1099.22	95.4116
1112.02	88.4766
1112.84	79.2839
1115.52	103.3525
1120.29	101.4141
1120.29	101.4141
1120.29	101.4141
1120.29	101.4141
1120.51	101.4241
1121.28	101.4509
1124.00	0.0000
1129.67	113.1464
1131.51	0.0000
1147.95	0.0000
1167.94	93.9850
1173.22	98.8605
1175.09	95.1560
1177.93	94.3054
1189.05	104.1254
1204.90	103.7276
1205.75	0.0000
1213.00	126.9077
1221.42	117.6923
1230.97	181.4095
1235.34	115.3455
1236.41	0.0000
1238.25	109.6826
1246.25	144.6899
1260.41	0.0000
1271.85	78.7753
1274.45	99.2794
1274.54	99.2825
1291.56	85.1362
1298.22	0.0000
1312.09	56.1355
1325.50	51.4224
1325.50	51.4224
1332.49	67.3878
1333.61	62.4540
1360.21	48.9656
1362.66	0.0000
1365.15	53.0404
1368.21	77.1292
1368.53	0.0000
1376.25	60.2435
1384.27	90.5795
1394.10	67.6257
1395.20	60.5786
1407.95	65.8708
1434.06	42.8818
1436.60	41.8921
1457.56	0.0000
1460.81	61.7249
1489.15	45.6207
1509.49	35.4485
1596.49	58.7961
1620.62	30.5347
1678.03	0.0000
1691.02	33.0177
1691.02	33.0177
1706.46	0.0000
1750.46	0.0000
1764.49	24.9067
1764.49	24.9067
1764.49	24.9067
1764.49	24.9067
1770.23	35.6289
1771.40	42.7664
1791.20	0.0000
1808.65	23.9655

1836.01

25.1207

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148007

Total Uranium Activity	2.5679E+00	ug/g
Total Uranium Counting Unc.	4.1381E+00	ug/g
Total Uranium Tpu	2.1113E-06	ug/g
Total Uranium Mda	2.7292E+00	ug/g



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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940268          SAMPLE ID   : G244148007
*  ANALYST       : MXR1           DETECTOR    : GAM22
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 15:51:27.37  SAMPLE ALQT: 127.710 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.982E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.210E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.149E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.043E+00

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VAX/VMS Nuclide Identification Report Generated 21-JAN-2010 13:26:06.03

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148008.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:51:56
Sample ID        : G244148008           Sample quantity  : 1.39900E+02 GRAM
Detector name    : GAM23                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.68  0.0%
Energy tolerance : 1.54000 keV          Analyst Initials : MXR1
Abundance limit  : 75.00000             Sensitivity       : 5.00000
Batch ID        : 940268                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	63.28*	74	379	0.86	126.56	123	8	1.02E-02	48.3	
2	3	74.73	360	447	1.24	149.47	141	19	5.00E-02	11.0	1.64E+00
3	3	77.00*	566	364	1.04	154.01	141	19	7.86E-02	7.0	
4	0	87.01	213	402	1.32	174.01	171	7	2.95E-02	17.1	
5	5	89.71*	151	338	0.98	179.43	177	13	2.10E-02	20.7	7.39E-01
6	5	92.79*	200	465	1.51	185.57	177	13	2.78E-02	21.5	
7	0	129.06	116	316	1.63	258.11	254	9	1.61E-02	29.2	
8	0	185.79*	192	292	1.12	371.57	368	9	2.67E-02	18.3	
9	0	208.97	57	264	0.87	417.95	415	8	7.92E-03	51.1	
10	3	238.29*	1163	194	1.10	476.58	471	17	1.61E-01	3.6	8.38E-01
11	3	241.32	325	212	1.92	482.64	471	17	4.51E-02	11.3	
12	0	269.68*	112	210	1.52	539.36	534	11	1.56E-02	27.1	
13	0	294.67	422	138	1.30	589.34	583	12	5.87E-02	7.4	
14	0	299.61	114	105	1.24	599.23	595	9	1.58E-02	18.8	
15	0	327.37	70	195	0.87	654.74	649	12	9.69E-03	41.8	
16	0	337.93	186	178	1.22	675.85	671	10	2.58E-02	15.3	
17	0	351.46*	667	154	1.24	702.92	697	12	9.26E-02	5.4	
18	0	409.18	47	119	1.37	818.36	813	10	6.49E-03	46.2	
19	0	462.22	78	141	2.01	924.43	920	15	1.09E-02	34.4	
20	0	510.17*	86	128	1.81	1020.34	1013	15	1.20E-02	34.6	
21	0	582.54*	361	56	1.43	1165.08	1160	13	5.01E-02	6.8	
22	0	608.67*	460	111	1.53	1217.34	1210	16	6.39E-02	7.1	
23	0	726.53	99	55	1.13	1453.06	1448	12	1.38E-02	17.9	
24	0	793.79	43	38	1.40	1587.58	1583	9	5.96E-03	30.1	
25	0	859.29	71	41	2.02	1718.57	1712	14	9.84E-03	22.7	
26	0	909.99	241	39	1.84	1819.99	1814	12	3.35E-02	8.3	
27	0	968.56	102	131	1.73	1937.11	1929	18	1.42E-02	29.7	
28	0	1119.13	100	68	1.38	2238.26	2230	16	1.39E-02	21.0	
29	0	1241.31	30	91	7.04	2482.62	2468	21	4.17E-03	86.3	
30	0	1376.65	35	10	2.44	2753.31	2747	14	4.86E-03	25.8	
31	0	1459.28*	701	26	2.21	2918.56	2908	20	9.74E-02	4.2	
32	0	1586.80	26	9	1.82	3173.61	3167	12	3.63E-03	30.2	
33	0	1762.35	112	0	3.04	3524.70	3516	17	1.56E-02	9.4	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 21-JAN-2010 13:26:09

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148008.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:51:56
Sample ID        : G244148008             Sample quantity  : 139.90 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA23               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.68   0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance  : 1.54 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	*	1.768E+01	1.987E+00	3.183E-01	2.381E-02	55.536
CD-109	+	88.03	*	3.014E+00	1.069E+00	1.337E+00	1.305E-01	2.255
SN-126	+	64.28		7.960E-01	7.792E-01	9.261E-01	1.410E-01	0.860
	+	86.94		1.230E+00	6.614E-01	6.717E-01	2.794E-01	1.831
	+	87.57	*	2.958E-01	1.049E-01	1.459E-01	1.420E-02	2.027
CS-135	+	268.24	*	4.455E-01	2.439E-01	2.291E-01	1.751E-02	1.944
TL-208		277.35		2.003E-01	3.957E-01	6.474E-01	6.841E-02	0.309
	+	510.84		4.215E-01	2.947E-01	2.113E-01	2.146E-02	1.995
	+	583.14	*	5.050E-01	7.631E-02	5.619E-02	3.648E-03	8.986
	+	860.37		9.466E-01	4.386E-01	4.028E-01	3.641E-02	2.350
BI-211		72.87		1.176E+01	3.664E+00	6.418E+00	5.661E-01	1.832
	+	351.07	*	4.018E+00	5.101E-01	3.274E-01	2.133E-02	12.271
PB-212	+	74.81		2.230E+00	5.673E-01	5.848E-01	7.545E-02	3.813
	+	77.11		1.962E+00	3.253E-01	3.277E-01	2.948E-02	5.987
	+	87.30		1.368E+00	5.039E-01	6.773E-01	9.439E-02	2.020
	+	238.63	*	1.508E+00	1.531E-01	8.944E-02	6.431E-03	16.858
	+	300.09		2.298E+00	8.833E-01	1.175E+00	9.758E-02	1.955
PO-212	+	74.81		2.230E+00	5.673E-01	5.848E-01	7.545E-02	3.813
	+	77.11		1.962E+00	3.253E-01	3.277E-01	2.948E-02	5.987
	+	87.30		1.368E+00	5.039E-01	6.773E-01	9.439E-02	2.020
		115.19		-8.270E-01	3.595E+00	5.868E+00	3.744E-01	-0.141
	+	238.63	*	1.508E+00	1.531E-01	8.944E-02	6.431E-03	16.858
	+	300.09		2.298E+00	8.833E-01	1.175E+00	9.758E-02	1.955
BI-214	+	609.31	*	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
	+	1120.29		1.408E+00	6.065E-01	4.946E-01	4.596E-02	2.848
		1764.49		1.451E+00	4.360E-01	8.698E-01	5.408E-02	1.668
PB-214	+	74.81		3.843E+00	9.527E-01	1.008E+00	1.166E-01	3.813
	+	77.11		3.363E+00	6.137E-01	5.617E-01	6.623E-02	5.987
	+	87.30		2.344E+00	8.503E-01	1.160E+00	1.438E-01	2.020
	+	241.98		2.532E+00	6.076E-01	4.890E-01	3.889E-02	5.177
	+	295.21		1.494E+00	2.552E-01	1.756E-01	1.505E-02	8.508
	+	351.92	*	1.398E+00	1.919E-01	1.070E-01	8.932E-03	13.060
PO-214	+	74.81		3.843E+00	9.527E-01	1.008E+00	1.166E-01	3.813
	+	77.11		3.363E+00	6.137E-01	5.617E-01	6.623E-02	5.987

----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	87.30		2.344E+00	8.503E-01	1.160E+00	1.438E-01	2.020
	+	241.98		2.532E+00	6.076E-01	4.890E-01	3.889E-02	5.177
	+	295.21		1.494E+00	2.552E-01	1.756E-01	1.505E-02	8.508
	+	351.92	*	1.398E+00	1.919E-01	1.070E-01	8.932E-03	13.060
PO-216	+	74.81		2.230E+00	5.673E-01	5.848E-01	7.545E-02	3.813
	+	77.11		1.962E+00	3.253E-01	3.277E-01	2.948E-02	5.987
	+	87.30		1.368E+00	5.039E-01	6.773E-01	9.439E-02	2.020
	+	238.63	*	1.508E+00	1.531E-01	8.944E-02	6.431E-03	16.858
	+	300.09		2.298E+00	8.833E-01	1.175E+00	9.758E-02	1.955
PO-218	+	74.81		3.843E+00	9.527E-01	1.008E+00	1.166E-01	3.813
	+	77.11		3.363E+00	6.137E-01	5.617E-01	6.623E-02	5.987
	+	87.30		2.344E+00	8.503E-01	1.160E+00	1.438E-01	2.020
	+	241.98		2.532E+00	6.076E-01	4.890E-01	3.889E-02	5.177
	+	295.21		1.494E+00	2.552E-01	1.756E-01	1.505E-02	8.508
	+	351.92	*	1.398E+00	1.919E-01	1.070E-01	8.932E-03	13.060
RA-224	+	240.98	*	4.800E+00	1.120E+00	1.018E+00	5.736E-02	4.715
RA-226	+	609.31	*	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
	+	1120.29		1.408E+00	6.065E-01	4.946E-01	4.596E-02	2.848
	+	1764.49		1.451E+00	4.360E-01	8.698E-01	5.408E-02	1.668
AC-228	+	338.32		1.231E+00	6.278E-01	4.032E-01	1.644E-01	3.054
	+	911.07	*	1.530E+00	3.084E-01	2.167E-01	2.501E-02	7.060
	+	969.11		1.146E+00	7.315E-01	4.445E-01	1.035E-01	2.578
RA-228	+	338.32		1.231E+00	6.278E-01	4.032E-01	1.644E-01	3.054
	+	911.07	*	1.530E+00	3.084E-01	2.167E-01	2.501E-02	7.060
	+	969.11		1.146E+00	7.315E-01	4.445E-01	1.035E-01	2.578
TH-228	+	74.81		2.266E+00	5.368E-01	5.943E-01	5.327E-02	3.813
	+	77.11		1.993E+00	3.306E-01	3.330E-01	2.996E-02	5.986
	+	87.30		1.390E+00	4.929E-01	6.883E-01	6.681E-02	2.020
	+	238.63	*	1.532E+00	1.556E-01	9.090E-02	6.535E-03	16.858
	+	300.09		2.335E+00	1.632E+00	1.194E+00	7.039E-01	1.955
TH-230	+	609.31	*	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
	+	1120.29		1.408E+00	6.064E-01	4.946E-01	4.596E-02	2.848
	+	1764.49		1.450E+00	4.360E-01	8.698E-01	5.408E-02	1.668
TH-232	+	338.32		1.231E+00	3.838E-01	4.032E-01	2.381E-02	3.054
	+	911.07	*	1.530E+00	3.084E-01	2.167E-01	2.501E-02	7.060
	+	969.11		1.146E+00	7.315E-01	4.445E-01	1.035E-01	2.578
TH-234	+	63.29	*	2.011E+00	1.978E+00	2.435E+00	4.389E-01	0.826
	+	92.38		1.776E+00	8.309E-01	8.060E-01	1.470E-01	2.204
U-234	+	609.31	*	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
	+	1120.29		1.408E+00	6.064E-01	4.946E-01	4.596E-02	2.848
	+	1764.49		1.450E+00	4.360E-01	8.698E-01	5.408E-02	1.668
NP-237	+	86.50	*	8.686E-01	3.563E-01	4.270E-01	9.724E-02	2.034
	+	95.87		9.200E-01	1.094E+00	1.626E+00	3.992E-01	0.566
U-238	+	63.29	*	2.011E+00	1.978E+00	2.435E+00	4.389E-01	0.826
	+	92.38		1.776E+00	7.815E-01	8.060E-01	7.202E-02	2.204
AM-243	+	74.67	*	3.616E-01	8.554E-02	9.518E-02	8.458E-03	3.799
	+	86.72		3.257E+01	1.155E+01	1.640E+01	1.584E+00	1.986
	+	117.66		-1.198E+00	3.841E+00	6.244E+00	3.867E-01	-0.192
	+	142.18		1.951E+01	1.880E+01	3.189E+01	1.736E+00	0.612

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	+	511.00	*	9.104E-02	6.320E-02	4.565E-02	2.651E-03	1.994

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	5.585E-02	3.196E-01	5.330E-01	3.622E-02	0.105
NA-22		1274.54	*	-1.999E-02	3.935E-02	5.977E-02	4.014E-03	-0.334
NA-24		1368.53	*	-1.954E-01	3.935E-02	Half-Life too short		
AL-26		1129.67		-7.278E-01	1.652E+00	2.583E+00	1.646E-01	-0.282
		1808.65	*	1.614E-02	2.554E-02	4.817E-02	2.895E-03	0.335
TI-44		67.85		-5.309E-02	8.241E-02	8.341E-02	7.263E-03	-0.637
	+	78.38	*	3.620E-01	6.003E-02	8.858E-02	8.029E-03	4.087
SC-46		889.25	*	6.106E-03	3.610E-02	6.119E-02	5.467E-03	0.100
	+	1120.51		2.432E-01	1.035E-01	1.364E-01	8.885E-03	1.783
V-48		944.10		8.987E-01	1.019E+00	1.815E+00	1.581E-01	0.495
		983.50	*	-2.939E-02	6.761E-02	1.064E-01	8.855E-03	-0.276
		1312.09		2.118E-02	8.417E-02	1.412E-01	1.004E-02	0.150
CR-51		320.08	*	-2.519E-02	3.847E-01	6.069E-01	3.980E-02	-0.042
MN-52		744.21		-7.777E-02	2.787E-01	4.361E-01	2.776E-02	-0.178
		848.13		-6.308E-01	7.841E+00	1.301E+01	1.061E+00	-0.048
		935.52		6.615E-02	3.130E-01	5.294E-01	4.654E-02	0.125
		1246.25		-7.126E+00	9.654E+00	1.187E+01	7.596E-01	-0.600
		1333.61		3.075E+00	6.076E+00	1.048E+01	7.692E-01	0.294
		1434.06	*	-3.479E-02	2.831E-01	4.492E-01	3.250E-02	-0.077
MN-54		834.83	*	-1.817E-03	3.818E-02	6.358E-02	5.034E-03	-0.029
CO-56		846.75	*	-9.840E-03	3.960E-02	6.466E-02	5.260E-03	-0.152
		977.42		1.921E-01	2.957E+00	4.432E+00	3.716E-01	0.043
		1037.82		-2.408E-02	2.893E-01	4.732E-01	3.879E-02	-0.051
		1175.09		1.501E-01	2.004E+00	3.311E+00	1.874E-01	0.045
		1238.25		1.330E-01	9.180E-02	1.677E-01	1.116E-02	0.793
		1360.21		-3.640E-01	8.164E-01	1.216E+00	8.900E-02	-0.299
		1771.40		-1.762E-01	2.607E-01	3.786E-01	2.342E-02	-0.465
CO-57		122.06	*	2.655E-03	2.625E-02	4.333E-02	2.555E-03	0.061
		136.48		-1.161E-01	2.139E-01	3.426E-01	2.228E-02	-0.339
CO-58		810.76	*	-6.609E-03	4.073E-02	6.727E-02	5.054E-03	-0.098
FE-59		142.65		2.276E+00	3.002E+00	4.965E+00	2.700E-01	0.458
		192.34		-1.025E+00	1.055E+00	1.559E+00	1.804E-01	-0.657
		1099.22	*	6.608E-02	1.009E-01	1.757E-01	1.353E-02	0.376
		1291.56		1.035E-01	1.170E-01	2.105E-01	1.747E-02	0.492
CO-60		1173.22		-5.517E-03	4.186E-02	6.759E-02	3.813E-03	-0.082
		1332.49	*	2.892E-02	3.988E-02	7.063E-02	5.185E-03	0.409
ZN-65		1115.52	*	1.641E-01	9.531E-02	1.664E-01	1.099E-02	0.986
GE-68		1077.35	*	-3.011E-01	1.180E+00	1.889E+00	1.352E-01	-0.159
AS-73		53.44	*	1.349E-01	1.158E+00	1.954E+00	1.725E-01	0.069
AS-74		595.88	*	7.799E-02	1.012E-01	1.742E-01	9.607E-03	0.448
		634.78		2.011E-02	3.748E-01	6.109E-01	3.234E-02	0.033
SE-75		66.05		-1.223E+00	6.151E+00	8.944E+00	9.386E-01	-0.137
		96.73		8.126E-01	8.870E-01	1.341E+00	1.799E-01	0.606

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		121.11		3.844E-02	1.390E-01	2.311E-01	2.156E-02	0.166
		136.00		-2.478E-02	4.026E-02	6.430E-02	3.631E-03	-0.385
		198.60		-1.192E+00	1.935E+00	3.011E+00	2.033E-01	-0.396
		264.65	*	-1.785E-02	5.248E-02	7.113E-02	4.140E-03	-0.251
		279.53		3.767E-03	1.100E-01	1.858E-01	1.169E-02	0.020
		303.91		3.402E-01	2.264E+00	3.352E+00	3.216E-01	0.101
		400.65		1.084E-01	2.755E-01	4.676E-01	4.255E-02	0.232
BR-77	+	87.88		8.817E+02	3.126E+02	5.210E+02	5.084E+01	1.692
		200.40		-1.877E+02	2.368E+02	3.691E+02	1.975E+01	-0.508
	+	239.00		3.283E+02	2.992E+01	5.163E+01	2.903E+00	6.359
		249.79		-1.005E+02	9.245E+01	1.388E+02	7.892E+00	-0.724
		281.68		-4.337E+00	1.167E+02	1.964E+02	1.145E+01	-0.022
		297.23		3.894E+02	1.100E+02	1.551E+02	9.109E+00	2.510
		303.76		1.914E+01	2.589E+02	3.811E+02	2.243E+01	0.050
		439.47		-2.618E+01	1.817E+02	2.972E+02	1.739E+01	-0.088
		484.57		5.183E+01	3.151E+02	5.247E+02	3.067E+01	0.099
		520.65	*	-2.614E+00	1.423E+01	2.300E+01	1.332E+00	-0.114
		574.64		7.004E-01	2.785E+02	4.545E+02	2.551E+01	0.002
		578.91		1.759E+02	1.334E+02	2.143E+02	1.199E+01	0.821
		585.48		6.728E+02	2.780E+02	4.782E+02	2.661E+01	1.407
		755.35		1.696E+02	2.316E+02	3.965E+02	2.596E+01	0.428
		817.79		-4.784E+01	1.743E+02	2.842E+02	2.164E+01	-0.168
SR-82		698.33		-3.778E+00	3.725E+01	5.961E+01	3.367E+00	-0.063
		776.49	*	-2.487E-01	3.714E-01	5.853E-01	4.038E-02	-0.425
		1395.20		-1.898E+00	1.176E+01	1.859E+01	1.355E+00	-0.102
RB-83		520.41	*	-1.667E-02	6.968E-02	1.121E-01	6.491E-03	-0.149
		529.64		9.159E-02	9.924E-02	1.744E-01	1.006E-02	0.525
		552.65		4.552E-02	2.122E-01	3.524E-01	2.008E-02	0.129
RB-84		881.50	*	1.196E-02	6.649E-02	1.128E-01	9.912E-03	0.106
KR-85		513.99	*	7.056E+00	7.887E+00	1.219E+01	7.072E-01	0.579
SR-85		513.99	*	3.658E-02	4.088E-02	6.318E-02	3.666E-03	0.579
RB-86		1076.63	*	1.454E-01	7.576E-01	1.274E+00	9.133E-02	0.114
Y-88		898.02		3.357E-03	4.347E-02	7.288E-02	6.664E-03	0.046
		1836.01	*	2.419E-02	3.728E-02	6.854E-02	4.036E-03	0.353
ZR-88		392.90	*	-2.092E-03	3.063E-02	5.069E-02	2.926E-03	-0.041
Y-91		1204.90	*	6.657E+00	1.917E+01	3.240E+01	1.933E+00	0.205
NB-94		702.63	*	-2.829E-02	3.665E-02	5.522E-02	3.155E-03	-0.512
		871.10		-7.784E-03	3.479E-02	5.637E-02	4.841E-03	-0.138
NB-95		765.79	*	6.218E-02	4.879E-02	8.571E-02	5.760E-03	0.725
NB-95M		235.69	*	6.627E-01	1.785E-01	2.879E-01	2.124E-02	2.302
ZR-95		724.18		2.312E-01	1.233E-01	2.031E-01	1.436E-02	1.138
		756.15	*	5.761E-02	7.619E-02	1.304E-01	1.001E-02	0.442
NB-97		657.90	*	8.753E-02	7.619E-02	Half-Life	too short	
		1024.50		3.649E+00	7.619E-02	Half-Life	too short	
ZR-97		254.15		3.672E+00	7.619E-02	Half-Life	too short	
		355.39		1.395E+01	7.619E-02	Half-Life	too short	
		507.63	*	2.231E+01	7.619E-02	Half-Life	too short	
		602.52		-8.550E+00	7.619E-02	Half-Life	too short	
		1021.30		-5.008E-01	7.619E-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			-1.794E+00	7.619E-02	Half-Life	too short	
	1362.66			-1.479E+00	7.619E-02	Half-Life	too short	
	1750.46			2.488E+00	7.619E-02	Half-Life	too short	
MO-99	140.51			1.028E+01	3.709E+01	6.017E+01	1.617E+01	0.171
	181.06			1.090E+01	2.517E+01	3.656E+01	6.196E+00	0.298
	366.43			1.648E+00	1.062E+02	1.773E+02	1.039E+01	0.009
	739.58	*		4.168E+00	1.596E+01	2.626E+01	3.675E+00	0.159
	778.00			-3.616E+01	4.153E+01	6.398E+01	4.430E+00	-0.565
TC-99M	140.51	*		2.058E+11	4.153E+01	Half-Life	too short	
RH-101	127.23			3.307E-02	3.731E-02	5.619E-02	3.227E-03	0.588
	198.01	*		-2.367E-02	3.540E-02	5.499E-02	2.931E-03	-0.430
	325.23			1.945E-01	2.606E-01	4.002E-01	2.364E-02	0.486
RH-102	418.52			-2.068E-01	2.926E-01	4.620E-01	2.692E-02	-0.447
	475.06	*		-2.501E-02	2.976E-02	4.596E-02	2.690E-03	-0.544
	631.29			-1.361E-02	5.612E-02	8.916E-02	4.739E-03	-0.153
	697.49			1.229E-02	8.065E-02	1.318E-01	7.430E-03	0.093
	766.84			1.921E-01	1.260E-01	2.240E-01	1.509E-02	0.858
	1046.59			-4.725E-03	1.021E-01	1.675E-01	1.269E-02	-0.028
	1112.84			-5.512E-02	2.280E-01	3.083E-01	2.045E-02	-0.179
RU-103	497.08	*		-1.937E-02	4.255E-02	6.678E-02	8.454E-03	-0.290
	610.33			1.151E+01	2.297E+00	2.985E+00	4.563E-01	3.856
RH-106	511.85			1.478E-01	2.332E-01	4.060E-01	2.358E-02	0.364
	621.84	*		-2.252E-01	3.271E-01	4.978E-01	5.741E-02	-0.452
	1050.47			4.699E-02	1.988E+00	3.290E+00	2.475E-01	0.014
RU-106	511.85			1.478E-01	2.332E-01	4.060E-01	2.358E-02	0.364
	621.84	*		-2.252E-01	3.263E-01	4.978E-01	2.675E-02	-0.452
	1050.47			4.699E-02	1.988E+00	3.290E+00	2.475E-01	0.014
AG-108M	433.93	*		-7.739E-03	3.069E-02	4.984E-02	3.160E-03	-0.155
	614.37			1.277E-02	4.354E-02	6.323E-02	3.756E-03	0.202
	722.95			5.874E-02	4.744E-02	7.566E-02	4.919E-03	0.776
AG-110M	657.75	*		7.784E-03	3.751E-02	6.176E-02	3.432E-03	0.126
	677.61			2.984E-02	3.202E-01	5.218E-01	2.986E-02	0.057
	706.67			1.044E-01	2.165E-01	3.633E-01	2.225E-02	0.287
	763.93			-1.444E-01	1.944E-01	2.927E-01	2.049E-02	-0.493
	884.67			8.746E-03	4.435E-02	7.542E-02	6.876E-03	0.116
	937.48			-9.304E-02	1.206E-01	1.856E-01	1.686E-02	-0.501
	1384.27			4.767E-02	1.575E-01	2.345E-01	1.779E-02	0.203
IN-111	171.28			1.790E-01	1.344E+00	2.198E+00	1.127E-01	0.081
	245.39	*		8.330E-01	1.434E+00	2.097E+00	1.187E-01	0.397
IN-113M	391.69	*		4.796E-03	4.481E-02	7.498E-02	4.619E-03	0.064
SN-113	391.69	*		4.796E-03	4.481E-02	7.498E-02	4.619E-03	0.064
IN-114M	190.27	*		7.731E-02	2.173E-01	3.142E-01	1.656E-02	0.246
CD-115	260.90			3.434E+01	1.893E+02	3.057E+02	1.756E+01	0.112
	492.35			4.023E+01	5.213E+01	9.023E+01	5.268E+00	0.446
	527.90	*		-1.146E+00	1.473E+01	2.399E+01	1.385E+00	-0.048
SN-117M	156.02			1.106E+00	2.479E+00	4.115E+00	2.153E-01	0.269
	158.56	*		-1.450E-02	6.020E-02	9.717E-02	5.050E-03	-0.149
SB-122	563.90	*		7.331E-02	2.638E+00	4.318E+00	2.442E-01	0.017
	692.80			8.441E+00	5.731E+01	9.372E+01	5.216E+00	0.090

---- 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	*		-7.074E+00	5.731E+01	Half-Life too short		
	528.96			5.982E+02	5.731E+01	Half-Life too short		
TE-123M	159.00	*		-9.365E-03	2.951E-02	4.747E-02	2.505E-03	-0.197
I-124	602.71	*		-2.851E-01	1.022E+00	1.388E+00	7.608E-02	-0.205
	722.78			6.562E+00	5.833E+00	9.214E+00	5.552E-01	0.712
	1325.50			-1.014E+01	3.589E+01	5.577E+01	4.050E+00	-0.182
+	1376.25			8.140E+01	4.245E+01	7.169E+01	5.239E+00	1.136
	1509.49			2.921E+01	1.987E+01	3.836E+01	2.721E+00	0.761
	1691.02			1.771E+00	4.157E+00	7.473E+00	4.878E-01	0.237
SB-124	602.71			-1.410E-02	5.057E-02	6.868E-02	3.766E-03	-0.205
	645.85			-2.014E-01	5.302E-01	8.308E-01	5.015E-02	-0.242
	709.31			-2.650E+00	2.895E+00	4.265E+00	2.481E-01	-0.621
	713.82			1.693E+00	1.725E+00	3.001E+00	3.079E-01	0.564
	722.78			4.706E-01	4.184E-01	6.608E-01	4.156E-02	0.712
+	968.20			1.194E+01	7.168E+00	7.542E+00	6.395E-01	1.583
	1045.16			3.233E-01	2.121E+00	3.564E+00	2.706E-01	0.091
	1325.50			-7.765E-01	2.749E+00	4.271E+00	3.102E-01	-0.182
	1368.21			2.215E-01	1.611E+00	2.633E+00	3.339E-01	0.084
	1436.60			1.704E+00	4.238E+00	7.228E+00	5.227E-01	0.236
	1691.02	*		2.995E-02	7.032E-02	1.264E-01	8.813E-03	0.237
SB-125	427.89	*		6.717E-02	9.026E-02	1.566E-01	9.528E-03	0.429
+	463.38			7.435E-01	5.136E-01	5.535E-01	3.771E-02	1.343
	600.56			-2.211E-01	2.121E-01	2.943E-01	1.896E-02	-0.751
	635.90			7.456E-02	2.734E-01	4.539E-01	2.886E-02	0.164
TE-125M	109.28	*		-6.512E+00	9.427E+00	1.510E+01	1.348E+00	-0.431
I-126	388.63			-4.550E-02	2.184E-01	3.548E-01	2.052E-02	-0.128
	666.33	*		1.159E-01	2.117E-01	3.569E-01	1.847E-02	0.325
	753.82			4.433E-01	1.683E+00	2.767E+00	1.805E-01	0.160
SB-126	223.80			2.106E+00	4.577E+00	7.521E+00	4.153E-01	0.280
	278.60			3.194E+00	2.572E+00	4.572E+00	2.660E-01	0.699
	296.50			1.277E+01	2.456E+00	3.717E+00	2.182E-01	3.435
	414.70			4.641E-02	8.802E-02	1.382E-01	8.046E-03	0.336
	415.30			1.720E-01	7.137E+00	1.119E+01	6.511E-01	0.015
	555.20			-1.112E-01	4.437E+00	7.237E+00	4.117E-01	-0.015
	573.80			-2.599E-01	1.105E+00	1.769E+00	9.934E-02	-0.147
	593.00			-1.671E-01	1.027E+00	1.650E+00	9.122E-02	-0.101
	656.30			-3.871E+00	3.969E+00	5.879E+00	3.026E-01	-0.658
	666.33			4.855E-02	8.867E-02	1.495E-01	7.736E-03	0.325
	675.00			2.634E-01	2.214E+00	3.617E+00	1.917E-01	0.073
	695.00			-5.092E-02	8.666E-02	1.327E-01	7.428E-03	-0.384
	697.00			3.825E-02	2.966E-01	4.840E-01	2.724E-02	0.079
	720.50	*		-9.673E-02	1.971E-01	2.570E-01	1.539E-02	-0.376
	856.80			7.819E-01	6.235E-01	1.020E+00	8.485E-02	0.767
	989.30			3.897E-02	1.273E+00	2.115E+00	1.746E-01	0.018
	1034.80			-3.013E+00	9.178E+00	1.426E+01	1.101E+00	-0.211
	1213.00			2.637E+00	4.552E+00	7.885E+00	4.770E-01	0.334
SB-127	61.10			-9.285E+00	9.269E+01	1.361E+02	1.569E+01	-0.068
	252.40			3.799E+00	5.592E+00	8.919E+00	3.712E+00	0.426
	290.80			1.359E+01	2.654E+01	4.041E+01	3.870E+00	0.336



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		411.60		1.079E+01	1.714E+01	2.593E+01	3.792E+00	0.416
		444.90		-1.474E+00	1.209E+01	1.981E+01	2.207E+00	-0.074
		473.00		1.073E-01	2.075E+00	3.431E+00	3.951E-01	0.031
		543.00		-1.486E+01	2.098E+01	3.228E+01	4.244E+00	-0.460
		603.60		3.778E+00	1.737E+01	2.484E+01	2.713E+00	0.152
		685.20	*	3.329E-01	1.689E+00	2.776E+00	2.665E-01	0.120
		698.50		2.383E+00	1.914E+01	3.120E+01	4.575E+00	0.076
		722.20		1.278E+01	4.152E+01	5.988E+01	5.793E+00	0.213
		783.80		3.530E+00	4.312E+00	7.676E+00	8.962E-01	0.460
XE-127		57.60		6.387E+00	8.144E+00	1.359E+01	1.191E+00	0.470
		145.22		-1.244E-02	7.569E-01	1.216E+00	6.559E-02	-0.010
		172.10		-4.527E-03	1.276E-01	2.071E-01	1.064E-02	-0.022
		202.84	*	2.512E-02	5.075E-02	8.372E-02	4.494E-03	0.300
		374.96		3.750E-02	2.067E-01	3.479E-01	2.030E-02	0.108
I-131		80.18		-4.047E+00	6.063E+00	8.587E+00	7.926E-01	-0.471
		284.30		-1.695E+00	1.564E+00	2.479E+00	1.610E-01	-0.684
		364.48	*	5.493E-02	1.198E-01	2.054E-01	1.344E-02	0.267
		636.97		-6.440E-01	1.730E+00	2.714E+00	1.641E-01	-0.237
		722.89		1.044E+01	8.710E+00	1.385E+01	8.470E-01	0.754
TE-132		49.72		-6.841E-01	3.558E+01	5.984E+01	6.560E+00	-0.011
		111.76		1.518E+01	3.706E+01	6.203E+01	6.015E+00	0.245
		116.30		9.659E+00	3.468E+01	5.773E+01	5.457E+00	0.167
		228.16	*	-1.002E+00	9.250E-01	1.390E+00	2.013E-01	-0.721
BA-133		53.15		5.704E-01	4.978E+00	8.400E+00	7.409E-01	0.068
		79.62		1.920E+00	1.537E+00	2.335E+00	3.625E-01	0.822
		81.00		-1.667E-01	1.209E-01	1.612E-01	2.613E-02	-1.034
		276.40		1.868E-01	4.051E-01	6.390E-01	8.287E-02	0.292
		302.84		3.254E-03	1.510E-01	2.215E-01	2.591E-02	0.015
		356.01	*	3.867E-02	4.366E-02	6.815E-02	7.907E-03	0.567
		383.85		-1.450E-02	2.977E-01	4.938E-01	5.369E-02	-0.029
I-133	+	510.53		2.135E+00	2.977E-01	Half-Life	too short	
		529.87	*	9.693E-03	2.977E-01	Half-Life	too short	
		706.58		4.886E-01	2.977E-01	Half-Life	too short	
		856.28		1.324E+00	2.977E-01	Half-Life	too short	
		875.33		-8.591E-02	2.977E-01	Half-Life	too short	
		1236.41		2.512E+00	2.977E-01	Half-Life	too short	
		1298.22		3.406E-02	2.977E-01	Half-Life	too short	
CS-134		475.35		-1.165E+00	1.939E+00	3.053E+00	1.787E-01	-0.382
		563.23		1.544E-01	3.610E-01	6.089E-01	3.521E-02	0.254
		569.32		-9.068E-02	1.868E-01	2.922E-01	1.698E-02	-0.310
		604.70		4.734E-02	4.205E-02	6.558E-02	3.609E-03	0.722
		795.84	*	2.714E-02	5.877E-02	8.921E-02	6.515E-03	0.304
		801.93		6.385E-03	4.177E-01	7.008E-01	5.180E-02	0.009
		1038.57		6.087E-01	3.500E+00	5.890E+00	4.521E-01	0.103
		1167.94		6.091E-01	2.351E+00	3.959E+00	2.270E-01	0.154
		1365.15		-5.204E-01	1.124E+00	1.683E+00	1.309E-01	-0.309
I-135		288.45		1.835E+09	1.124E+00	Half-Life	too short	
		417.63		-2.444E+11	1.124E+00	Half-Life	too short	
		546.56		-6.006E+10	1.124E+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		836.80		1.811E+11	1.124E+00	Half-Life	too short	
		1038.76		5.302E+10	1.124E+00	Half-Life	too short	
		1124.00		1.957E+11	1.124E+00	Half-Life	too short	
		1131.51		4.983E+09	1.124E+00	Half-Life	too short	
		1260.41	*	5.468E+09	1.124E+00	Half-Life	too short	
		1457.56		1.066E+13	1.124E+00	Half-Life	too short	
		1678.03		9.522E+10	1.124E+00	Half-Life	too short	
		1706.46		-4.669E+10	1.124E+00	Half-Life	too short	
		1791.20		6.730E+10	1.124E+00	Half-Life	too short	
	+	66.91		-7.651E-01	1.255E+00	1.494E+00	2.312E-01	-0.512
		86.29		4.078E+00	1.497E+00	2.307E+00	3.125E-01	1.768
		153.22		4.472E-01	7.230E-01	1.208E+00	8.224E-02	0.370
		163.89		-1.884E-01	1.146E+00	1.854E+00	1.246E-01	-0.102
		176.55		-1.626E-01	3.936E-01	6.275E-01	3.742E-02	-0.259
		273.65		-5.921E-01	5.903E-01	7.570E-01	5.008E-02	-0.782
		340.57		3.225E-01	1.517E-01	2.519E-01	1.578E-02	1.280
		818.51		-1.491E-02	7.500E-02	1.232E-01	9.406E-03	-0.121
		1048.07	*	4.841E-02	9.681E-02	1.690E-01	1.347E-02	0.287
		1235.34		1.048E+00	7.409E-01	1.206E+00	1.239E-01	0.869
BA-137M		661.65	*	2.406E-02	4.009E-02	6.781E-02	3.464E-03	0.355
CS-137		661.65	*	2.544E-02	4.238E-02	7.169E-02	3.682E-03	0.355
CE-139		165.85	*	-3.077E-03	3.063E-02	4.966E-02	2.532E-03	-0.062
BA-140		162.64		-4.075E-02	8.042E-01	1.307E+00	7.771E-02	-0.031
		304.84		5.411E-01	1.497E+00	2.240E+00	6.116E-01	0.242
		423.70		1.465E-01	1.985E+00	3.303E+00	1.050E+00	0.044
LA-140	+	537.32	*	1.779E-01	2.843E-01	4.776E-01	1.553E-01	0.372
		328.77		6.039E-01	5.061E-01	5.907E-01	3.895E-02	1.022
		432.53		-1.261E+00	2.084E+00	3.295E+00	2.124E-01	-0.383
		487.03		3.670E-02	1.471E-01	2.463E-01	1.627E-02	0.149
		751.79		-7.002E-01	1.924E+00	2.986E+00	2.291E-01	-0.234
		815.85		3.679E-02	3.321E-01	5.616E-01	4.881E-02	0.066
		867.82		-5.024E-01	1.518E+00	2.360E+00	2.121E-01	-0.213
		919.63		7.162E-01	2.853E+00	4.860E+00	5.297E-01	0.147
		925.24		-3.673E-01	1.133E+00	1.819E+00	1.712E-01	-0.202
		1596.49	*	-6.891E-02	8.062E-02	1.131E-01	7.756E-03	-0.609
CE-141		145.44	*	8.997E-03	6.684E-02	1.099E-01	6.197E-03	0.082
CE-143		57.37		1.745E-03	6.684E-02	Half-Life	too short	
		231.56		-1.090E-03	6.684E-02	Half-Life	too short	
	+	293.26	*	2.408E-03	6.684E-02	Half-Life	too short	
	+	350.59		5.391E-02	6.684E-02	Half-Life	too short	
		490.36		-4.552E-03	6.684E-02	Half-Life	too short	
		664.57		-3.660E-04	6.684E-02	Half-Life	too short	
		721.93		2.920E-04	6.684E-02	Half-Life	too short	
CE-144		80.11		-1.523E+00	2.563E+00	3.645E+00	3.341E-01	-0.418
		133.54	*	1.632E-01	2.279E-01	3.394E-01	4.793E-02	0.481
PM-144		476.78		9.964E-03	6.747E-02	1.123E-01	7.846E-03	0.089
		618.01		7.923E-03	3.241E-02	5.372E-02	3.100E-03	0.147
		696.49	*	3.025E-03	3.513E-02	5.712E-02	3.214E-03	0.053
		778.57		-2.317E+00	2.236E+00	3.394E+00	2.355E-01	-0.683

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144		696.49	*	2.051E-01	2.382E+00	3.873E+00	2.177E-01	0.053
		1489.15		-8.370E+00	1.335E+01	1.932E+01	1.379E+00	-0.433
PM-146		453.90	*	-3.324E-02	4.337E-02	6.751E-02	5.847E-03	-0.492
		633.02		7.521E-01	1.419E+00	2.363E+00	8.685E-01	0.318
		735.90		3.810E-02	1.579E-01	2.590E-01	7.246E-02	0.147
		747.13		-1.643E-02	9.580E-02	1.515E-01	1.939E-02	-0.108
ND-147	+	91.11		7.452E-01	3.180E-01	6.105E-01	6.002E-02	1.221
		319.41		5.133E-01	3.376E+00	5.710E+00	3.374E-01	0.090
		439.89		-1.664E+00	5.984E+00	9.695E+00	5.676E-01	-0.172
		531.02	*	-2.530E-01	5.949E-01	9.395E-01	1.269E-01	-0.269
PM-149		285.90	*	-1.544E+01	1.217E+02	2.037E+02	2.892E+01	-0.076
EU-152		121.78		3.513E-03	7.581E-02	1.249E-01	9.604E-03	0.028
		244.69		5.947E-01	3.367E-01	5.332E-01	3.016E-02	1.115
		344.27	*	-9.246E-02	1.153E-01	1.565E-01	1.038E-02	-0.591
		443.98		-2.695E-01	9.696E-01	1.572E+00	9.200E-02	-0.171
		778.89		-2.517E-01	2.590E-01	3.961E-01	2.749E-02	-0.635
		867.32		-2.433E-01	8.806E-01	1.338E+00	1.139E-01	-0.182
		964.01		6.869E-01	3.760E-01	6.327E-01	5.391E-02	1.086
		1085.78		1.440E-01	3.903E-01	6.670E-01	4.693E-02	0.216
		1112.02		-2.134E-01	3.387E-01	4.260E-01	2.832E-02	-0.501
		1407.95		8.205E-02	1.910E-01	3.272E-01	2.379E-02	0.251
GD-153		69.67		-5.045E-01	2.090E+00	3.038E+00	2.654E-01	-0.166
		83.37		5.849E-01	1.865E+01	2.549E+01	2.393E+00	0.023
		97.43	*	1.301E-01	8.883E-02	1.382E-01	1.129E-02	0.941
		103.18		5.127E-02	1.088E-01	1.829E-01	1.367E-02	0.280
EU-154		123.07		1.301E-02	5.526E-02	8.864E-02	8.367E-03	0.147
		247.94		-1.563E-01	3.687E-01	5.544E-01	5.247E-02	-0.282
		591.81		-2.608E-01	6.171E-01	9.680E-01	9.312E-02	-0.269
		723.30		2.278E-01	2.077E-01	3.249E-01	2.363E-02	0.701
		756.87		2.536E-01	8.282E-01	1.366E+00	1.448E-01	0.186
		873.19		2.580E-02	2.922E-01	4.874E-01	5.971E-02	0.053
		996.32		-5.425E-02	3.707E-01	6.044E-01	1.061E-01	-0.090
		1004.76		-7.079E-02	2.071E-01	3.302E-01	3.714E-02	-0.214
		1274.45	*	-5.824E-02	1.096E-01	1.658E-01	1.646E-02	-0.351
EU-155		48.70		2.150E+00	3.563E+00	6.128E+00	4.942E-01	0.351
		60.01		-1.599E+00	6.692E+00	9.761E+00	8.478E-01	-0.164
	+	86.54		3.564E-01	1.264E-01	2.008E-01	1.951E-02	1.775
		105.31	*	2.025E-01	1.121E-01	1.957E-01	1.443E-02	1.034
TB-160	+	86.79		9.612E-01	3.408E-01	5.391E-01	5.209E-02	1.783
		197.04		2.401E-01	5.974E-01	9.731E-01	5.180E-02	0.247
		215.65		2.817E-01	8.112E-01	1.328E+00	7.255E-02	0.212
	+	298.57		3.377E-01	1.283E-01	2.069E-01	1.215E-02	1.633
		879.36	*	7.956E-02	1.245E-01	2.208E-01	1.931E-02	0.360
		962.29		6.256E-01	6.696E-01	1.053E+00	8.994E-02	0.594
		966.15		1.341E+00	3.552E-01	6.265E-01	5.325E-02	2.140
		1177.93		-1.231E-01	3.386E-01	5.322E-01	3.028E-02	-0.231
		1271.85		-7.470E-02	6.468E-01	1.038E+00	6.931E-02	-0.072
HO-166M		80.57		-4.165E-01	3.313E-01	4.537E-01	4.172E-02	-0.918
	+	184.41		1.307E-01	4.840E-02	7.099E-02	3.710E-03	1.841

## ---- 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		-1.208E-02	8.426E-02	1.411E-01	8.217E-03	-0.086
		410.95		2.610E-01	2.927E-01	4.522E-01	2.629E-02	0.577
		711.68	*	-6.477E-02	6.602E-02	9.697E-02	5.676E-03	-0.668
		752.31		-5.470E-02	2.952E-01	4.663E-01	3.030E-02	-0.117
		810.29		-1.917E-02	6.165E-02	1.005E-01	7.518E-03	-0.191
		51.35		-2.075E+00	4.394E+01	7.376E+01	6.411E+00	-0.028
		52.39		1.392E+01	2.207E+01	3.790E+01	3.329E+00	0.367
		59.40		9.914E+00	3.638E+01	5.446E+01	4.731E+00	0.182
		66.72	*	-1.708E+01	3.870E+01	5.176E+01	4.501E+00	-0.330
		88.36		7.016E-01	2.487E-01	4.199E-01	4.070E-02	1.671
LU-176	+	201.83		1.711E-04	3.052E-02	4.934E-02	2.645E-03	0.003
		306.84	*	2.833E-03	2.450E-02	4.141E-02	2.440E-03	0.068
LU-177		401.10		3.762E+00	7.065E+00	1.209E+01	7.003E-01	0.311
		112.95		9.095E-01	1.791E+00	3.010E+00	1.974E-01	0.302
LU-177M	+	208.36	*	1.457E+00	1.491E+00	2.241E+00	1.212E-01	0.650
		52.97		2.902E-01	2.273E+00	3.837E+00	3.382E-01	0.076
HF-181		54.07		-2.176E-01	1.184E+00	1.976E+00	1.746E-01	-0.110
		61.30		-4.602E-01	2.055E+00	3.003E+00	2.609E-01	-0.153
		121.62		3.036E-02	3.892E-01	6.421E-01	3.795E-02	0.047
		147.16		-4.279E-01	6.848E-01	1.091E+00	5.853E-02	-0.392
		171.86		1.689E-03	5.072E-01	8.247E-01	4.234E-02	0.002
		218.09		-5.854E-01	9.360E-01	1.464E+00	8.027E-02	-0.400
	+	268.79		2.249E+00	1.226E+00	1.585E+00	9.160E-02	1.419
		319.02		-1.315E-02	2.485E-01	4.155E-01	2.454E-02	-0.032
		367.43		4.222E-01	8.860E-01	1.519E+00	8.897E-02	0.278
		413.65	*	7.188E-02	2.048E-01	3.039E-01	1.768E-02	0.237
W-181		56.28		-1.979E-01	1.268E+00	2.117E+00	1.864E-01	-0.094
		57.53		4.834E-01	6.861E-01	1.142E+00	1.001E-01	0.423
		65.20		1.060E+00	1.210E+00	1.846E+00	1.604E-01	0.574
		133.02		6.874E-03	7.467E-02	1.079E-01	6.059E-03	0.064
		136.25		-3.330E-01	4.740E-01	7.541E-01	4.185E-02	-0.442
		345.85		-1.876E-01	2.284E-01	3.091E-01	1.823E-02	-0.607
TA-182		482.03	*	-2.986E-02	4.518E-02	7.080E-02	4.141E-03	-0.422
		56.28		-7.564E-02	4.910E-01	8.194E-01	7.215E-02	-0.092
		57.53		1.873E-01	2.658E-01	4.425E-01	3.877E-02	0.423
RE-183		65.20	*	4.075E-01	4.652E-01	7.096E-01	6.165E-02	0.574
		67.75		-1.232E-01	1.982E-01	2.011E-01	1.751E-02	-0.613
		100.10		-2.172E-01	1.831E-01	2.878E-01	2.252E-02	-0.755
		152.43		2.094E-01	3.547E-01	5.923E-01	3.130E-02	0.354
RE-183		222.10		7.128E-02	3.773E-01	6.127E-01	3.376E-02	0.116
		1001.68		-1.408E+00	2.117E+00	3.212E+00	2.608E-01	-0.438
		1121.28		5.772E-01	2.036E-01	3.643E-01	2.369E-02	1.584
		1189.05		-1.356E-01	3.048E-01	4.757E-01	2.760E-02	-0.285
		1221.42	*	-8.530E-02	1.945E-01	3.036E-01	1.863E-02	-0.281
		1230.97		-2.377E-01	5.799E-01	7.650E-01	4.772E-02	-0.311
		57.98		1.978E-01	2.733E-01	4.382E-01	3.832E-02	0.451
		59.32		3.915E-02	1.512E-01	2.262E-01	1.965E-02	0.173
RE-183		67.20		-2.683E-01	3.110E-01	3.644E-01	3.170E-02	-0.736
		162.32	*	-4.910E-03	1.130E-01	1.838E-01	9.455E-03	-0.027

----- 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		1.188E+00	1.216E+00	1.805E+00	9.773E-02	0.658
		291.72		1.196E+00	1.044E+00	1.650E+00	9.668E-02	0.725
		57.98		7.245E-01	1.001E+00	1.605E+00	1.404E-01	0.451
		59.32		1.433E-01	5.532E-01	8.276E-01	7.193E-02	0.173
		67.20		-9.822E-01	1.139E+00	1.334E+00	1.161E-01	-0.736
		161.27		9.872E-02	3.637E-01	5.994E-01	3.092E-02	0.165
		216.55		1.237E-01	2.877E-01	4.725E-01	2.585E-02	0.262
		252.85	*	9.992E-02	2.452E-01	4.010E-01	2.287E-02	0.249
		318.01		-2.948E-01	4.372E-01	7.050E-01	4.163E-02	-0.418
		792.07		1.428E+00	1.191E+00	1.944E+00	1.393E-01	0.734
OS-185		903.28		7.563E-01	1.225E+00	1.889E+00	1.712E-01	0.400
		920.93		-1.528E-01	4.397E-01	7.051E-01	6.289E-02	-0.217
		59.72		-4.094E-02	4.054E-01	5.957E-01	5.173E-02	-0.069
		61.14		-2.220E-02	2.213E-01	3.250E-01	2.823E-02	-0.068
		69.30		-1.400E-01	3.759E-01	5.430E-01	4.740E-02	-0.258
		592.07		-1.079E+00	2.588E+00	4.067E+00	2.251E-01	-0.265
		646.12	*	-2.573E-02	4.487E-02	6.903E-02	3.603E-03	-0.373
		717.42		-2.384E-01	9.829E-01	1.550E+00	9.211E-02	-0.154
		874.81		1.240E-01	5.554E-01	9.464E-01	8.194E-02	0.131
		880.27		-6.054E-02	6.911E-01	1.141E+00	1.000E-01	-0.053
RE-188		155.03	*	2.301E-01	1.803E-01	3.082E-01	1.617E-02	0.747
		477.96		7.531E-01	3.053E+00	5.117E+00	2.995E-01	0.147
		633.10		1.536E+00	2.843E+00	4.825E+00	2.559E-01	0.318
W-188	+	63.58		8.168E+01	7.929E+01	1.082E+02	9.398E+00	0.755
		227.08		-5.997E+00	1.379E+01	2.171E+01	1.204E+00	-0.276
IR-192		290.67	*	3.734E+00	7.679E+00	1.168E+01	6.840E-01	0.320
	+	295.96		1.150E+00	1.833E-01	2.817E-01	1.679E-02	4.083
		308.46		-7.844E-03	9.766E-02	1.633E-01	9.733E-03	-0.048
		316.51	*	-1.303E-02	3.421E-02	5.618E-02	3.333E-03	-0.232
		468.07		4.038E-02	8.000E-02	1.197E-01	8.065E-03	0.337
		604.41		4.688E-01	5.642E-01	8.568E-01	9.584E-02	0.547
		612.46		7.889E-02	7.913E-01	1.124E+00	8.196E-02	0.070
AU-195		65.12		2.002E-01	2.158E-01	3.298E-01	2.865E-02	0.607
		66.83		-5.992E-02	1.281E-01	1.710E-01	1.487E-02	-0.351
	+	75.70		1.175E+00	2.779E-01	5.341E-01	4.770E-02	2.199
		98.88	*	1.102E-01	2.285E-01	3.848E-01	3.070E-02	0.286
	+	129.76		6.463E+00	3.789E+00	5.093E+00	2.895E-01	1.269
TL-200		367.94	*	4.152E-04	3.789E+00	Half-Life	too short	
		579.30		2.041E-02	3.789E+00	Half-Life	too short	
		828.27		2.645E-03	3.789E+00	Half-Life	too short	
		1205.75		2.217E-03	3.789E+00	Half-Life	too short	
TL-201		68.90		-4.385E+00	8.260E+00	1.099E+01	9.588E-01	-0.399
		70.82		2.491E+00	4.180E+00	6.303E+00	5.523E-01	0.395
		80.30		-5.624E+00	7.639E+00	1.078E+01	9.893E-01	-0.522
		135.34		-5.601E-01	3.238E+01	5.305E+01	2.954E+00	-0.011
TL-202		167.43	*	4.815E+00	9.095E+00	1.512E+01	7.719E-01	0.318
		68.90		-3.299E-01	6.214E-01	8.268E-01	7.213E-02	-0.399
		70.82		1.869E-01	3.136E-01	4.729E-01	4.143E-02	0.395
		80.30		-4.221E-01	5.733E-01	8.089E-01	7.425E-02	-0.522

## ---- 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	*		-8.535E-03	6.891E-02	1.129E-01	6.606E-03	-0.076
	70.83			7.784E-01	1.304E+00	1.962E+00	2.687E-01	0.397
	72.87			2.375E+00	7.774E-01	1.296E+00	1.729E-01	1.832
	82.60			6.036E-01	1.784E+00	1.941E+00	2.757E-01	0.311
BI-207	279.20	*		2.033E-02	4.128E-02	7.116E-02	4.396E-03	0.286
	72.80			6.302E-01	2.110E-01	3.697E-01	3.260E-02	1.705
	74.97		+	6.491E-01	1.536E-01	2.668E-01	2.374E-02	2.433
	84.90			4.763E-01	2.268E-01	3.539E-01	3.365E-02	1.346
TL-207	569.67			-1.495E-02	2.904E-02	4.528E-02	2.551E-03	-0.330
	1063.62	*		-1.922E-02	5.974E-02	9.555E-02	7.020E-03	-0.201
	1770.23			-1.168E+00	6.433E-01	7.495E-01	4.641E-02	-1.558
	81.07			-3.697E-01	2.621E-01	3.551E-01	3.277E-02	-1.041
PO-209	83.78			5.729E-06	1.475E-01	2.150E-01	2.025E-02	0.000
	94.90			4.089E-01	2.748E-01	4.243E-01	3.620E-02	0.964
	122.32			4.852E-01	1.802E+00	2.994E+00	2.026E-01	0.162
	144.24			-1.477E-01	7.518E-01	1.201E+00	8.316E-02	-0.123
BI-210	154.21			1.101E-01	4.180E-01	6.892E-01	4.530E-02	0.160
	269.46		+	5.241E-01	2.859E-01	3.746E-01	2.265E-02	1.399
	323.87	*		-6.451E-03	7.222E-01	1.053E+00	1.743E-01	-0.006
	338.28		+	5.142E+00	1.665E+00	2.453E+00	2.598E-01	2.096
PB-210	445.03			-9.621E-02	2.346E+00	3.866E+00	3.982E-01	-0.025
	260.50			1.129E+00	1.020E+01	1.642E+01	9.425E-01	0.069
	262.80			-1.251E+01	2.939E+01	4.412E+01	2.538E+00	-0.284
	896.60	*		-2.266E+00	7.621E+00	1.234E+01	1.120E+00	-0.184
BI-211	46.50	*		-5.623E+00	5.575E+00	8.704E+00	6.778E-01	-0.646
PB-211	46.50	*		-5.623E+00	5.575E+00	8.704E+00	6.778E-01	-0.646
PO-211	46.50	*		-5.623E+00	5.571E+00	8.704E+00	5.840E-01	-0.646
PB-211	404.84	*		-2.531E-01	1.144E+00	1.602E+00	9.986E-01	-0.158
BI-212	427.08			7.491E-01	2.083E+00	3.445E+00	2.129E+00	0.217
	831.96			-1.279E-01	1.243E+00	2.057E+00	1.287E+00	-0.062
	727.18	*	+	1.203E+00	4.410E-01	6.905E-01	5.481E-02	1.742
	785.46			8.094E-01	1.768E+00	3.073E+00	2.166E-01	0.263
PO-215	1620.62			4.886E-01	1.301E+00	2.289E+00	1.552E-01	0.213
	81.07			-3.697E-01	2.621E-01	3.551E-01	3.277E-02	-1.041
	83.78			5.729E-06	1.475E-01	2.150E-01	2.025E-02	0.000
	94.90			4.089E-01	2.748E-01	4.243E-01	3.620E-02	0.964
RN-219	122.32			4.852E-01	1.802E+00	2.994E+00	2.026E-01	0.162
	144.24			-1.477E-01	7.518E-01	1.201E+00	8.316E-02	-0.123
	154.21			1.101E-01	4.180E-01	6.892E-01	4.530E-02	0.160
	269.46		+	5.241E-01	2.859E-01	3.746E-01	2.265E-02	1.399
RN-220	323.87	*		-6.451E-03	7.222E-01	1.053E+00	1.743E-01	-0.006
	338.28		+	5.142E+00	1.665E+00	2.453E+00	2.598E-01	2.096
	445.03			-9.621E-02	2.346E+00	3.866E+00	3.982E-01	-0.025
	271.23			4.621E-01	3.085E-01	4.691E-01	3.798E-02	0.985
RA-223	401.81	*		1.221E-01	4.474E-01	7.353E-01	1.000E-01	0.166
RN-220	549.76	*		7.390E+00	2.835E+01	4.722E+01	2.695E+00	0.156
RA-223	81.07			-3.697E-01	2.621E-01	3.551E-01	3.277E-02	-1.041
	83.78			5.729E-06	1.475E-01	2.150E-01	2.025E-02	0.000
	94.90			4.089E-01	2.748E-01	4.243E-01	3.620E-02	0.964

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		4.852E-01	1.802E+00	2.994E+00	2.026E-01	0.162
		144.24		-1.477E-01	7.518E-01	1.201E+00	8.316E-02	-0.123
		154.21		1.101E-01	4.180E-01	6.892E-01	4.530E-02	0.160
	+	269.46		5.241E-01	2.859E-01	3.746E-01	2.265E-02	1.399
		323.87	*	-6.451E-03	7.222E-01	1.053E+00	1.743E-01	-0.006
	+	338.28		5.142E+00	1.665E+00	2.453E+00	2.598E-01	2.096
		445.03		-9.621E-02	2.346E+00	3.866E+00	3.982E-01	-0.025
		79.80		1.946E+00	1.941E+00	2.905E+00	6.310E-01	0.670
		236.00		2.541E+00	4.344E-01	6.400E-01	6.620E-02	3.970
		256.20	*	-1.745E-01	4.088E-01	6.382E-01	8.888E-02	-0.273
		286.10		3.178E-01	1.435E+00	2.444E+00	2.831E-01	0.130
	+	299.80		4.259E+00	1.743E+00	2.577E+00	4.203E-01	1.653
TH-227		304.40		1.264E+00	2.018E+00	3.078E+00	5.334E-01	0.411
		334.20		-1.920E+00	3.010E+00	3.556E+00	6.531E-01	-0.540
		79.80		1.946E+00	1.943E+00	2.905E+00	6.389E-01	0.670
	+	94.00		6.864E+00	3.317E+00	3.877E+00	8.452E-01	1.770
		236.00		2.541E+00	4.137E-01	6.400E-01	5.717E-02	3.970
		256.20	*	-1.745E-01	4.091E-01	6.382E-01	1.077E-01	-0.273
		286.10		3.178E-01	1.469E+00	2.444E+00	2.448E+00	0.130
	+	299.80		4.259E+00	1.743E+00	2.577E+00	4.203E-01	1.653
		304.40		1.264E+00	2.018E+00	3.078E+00	5.334E-01	0.411
		334.20		-1.920E+00	3.010E+00	3.556E+00	6.531E-01	-0.540
		85.43		7.173E-01	2.360E-01	3.720E-01	3.552E-02	1.928
	+	88.47		2.769E-01	1.177E-01	2.398E-01	2.319E-02	1.154
PA-231		100.00		-2.090E-01	1.894E-01	2.989E-01	2.343E-02	-0.699
		193.63	*	-7.377E-01	5.517E-01	8.389E-01	4.444E-02	-0.879
		210.97		4.684E-01	9.323E-01	1.352E+00	7.342E-02	0.346
		283.67	*	-1.302E+00	1.491E+00	2.382E+00	3.286E-01	-0.547
		301.29		1.060E+00	6.416E-01	1.031E+00	1.083E-01	1.028
	TH-231	81.07		-3.697E-01	2.621E-01	3.551E-01	3.277E-02	-1.041
		83.78		5.729E-06	1.475E-01	2.150E-01	2.025E-02	0.000
		94.90		4.089E-01	2.748E-01	4.243E-01	3.620E-02	0.964
		122.32		4.852E-01	1.802E+00	2.994E+00	2.026E-01	0.162
		144.24		-1.477E-01	7.518E-01	1.201E+00	8.316E-02	-0.123
		154.21		1.101E-01	4.180E-01	6.892E-01	4.530E-02	0.160
	+	269.46		5.241E-01	2.859E-01	3.746E-01	2.265E-02	1.399
U-231		323.87	*	-6.451E-03	7.222E-01	1.053E+00	1.743E-01	-0.006
	+	338.28		5.142E+00	1.665E+00	2.453E+00	2.598E-01	2.096
		445.03		-9.621E-02	2.346E+00	3.866E+00	3.982E-01	-0.025
		84.21		4.591E+00	7.461E+00	1.116E+01	1.055E+00	0.411
	+	92.29		8.053E+00	3.543E+00	4.873E+00	4.362E-01	1.653
		95.87	*	1.239E+00	1.445E+00	2.189E+00	1.836E-01	0.566
		108.00		-3.499E+00	2.527E+00	3.928E+00	2.745E-01	-0.891
	PA-233	75.28		1.894E+01	5.085E+00	8.318E+00	1.290E+00	2.277
	+	86.59		5.791E+00	2.525E+00	3.259E+00	8.854E-01	1.777
	+	300.12		1.187E+00	4.734E-01	7.172E-01	9.662E-02	1.655
		311.98	*	3.222E-02	6.366E-02	1.097E-01	6.855E-03	0.294
		340.50		1.653E+00	7.951E-01	1.183E+00	2.720E-01	1.397
		398.62		1.345E+00	2.178E+00	3.704E+00	9.576E-01	0.363

---- 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		3.119E-01	1.705E+00	2.785E+00	5.735E-01	0.112
		63.00		2.344E+00	2.296E+00	3.177E+00	4.937E-01	0.738
		94.67		3.777E-01	2.050E-01	3.152E-01	3.897E-02	1.198
		98.44		5.652E-02	1.015E-01	1.581E-01	8.804E-02	0.358
		99.86		-4.776E-01	4.814E-01	7.638E-01	6.001E-02	-0.625
		111.00		8.000E-03	1.850E-01	3.056E-01	3.306E-02	0.026
		131.20		4.171E-02	1.209E-01	1.772E-01	1.001E-02	0.235
		152.70		1.363E-01	3.432E-01	5.679E-01	8.874E-02	0.240
		186.00		4.705E+00	2.242E+00	2.580E+00	7.856E-01	1.824
		226.40		1.299E-01	4.234E-01	6.907E-01	7.897E-02	0.188
		227.20		-2.453E-01	4.590E-01	7.190E-01	3.987E-02	-0.341
		248.90		-6.908E-01	8.219E-01	1.232E+00	2.642E-01	-0.561
		293.70		7.171E+00	1.568E+00	1.778E+00	2.863E-01	4.034
		369.80		-3.340E-01	8.474E-01	1.373E+00	2.862E-01	-0.243
		568.70		-1.957E-01	9.341E-01	1.497E+00	8.440E-02	-0.131
		569.50		-1.291E-01	2.580E-01	4.028E-01	2.269E-02	-0.321
		574.00		-3.889E-01	1.495E+00	2.386E+00	1.340E-01	-0.163
		699.00		7.513E-02	7.354E-01	1.197E+00	2.147E-01	0.063
		706.10		7.280E-01	1.102E+00	1.802E+00	7.953E-01	0.404
		733.00		1.544E-01	4.437E-01	6.416E-01	1.371E-01	0.241
		742.81		1.439E-01	1.413E+00	2.288E+00	1.532E+00	0.063
		796.30		6.137E-01	1.113E+00	1.692E+00	4.507E-01	0.363
		805.60		6.232E-01	1.074E+00	1.854E+00	5.622E-01	0.336
		819.60		4.063E-02	1.188E+00	1.994E+00	7.541E-01	0.020
		826.30		3.536E-01	8.619E-01	1.468E+00	6.544E-01	0.241
		831.60		-6.772E-02	6.283E-01	1.041E+00	3.083E-01	-0.065
		876.40		-9.704E-01	1.275E+00	1.155E+00	1.187E+00	-0.840
		880.51		-3.263E-03	2.471E-01	4.114E-01	3.607E-02	-0.008
		883.24		2.587E-02	2.568E-01	4.316E-01	2.902E-01	0.060
		899.00		-2.067E-01	8.859E-01	1.436E+00	6.293E-01	-0.144
		925.00		-3.459E-01	1.126E+00	1.812E+00	1.610E-01	-0.191
		926.50		-2.002E-01	1.783E-01	2.491E-01	6.317E-02	-0.804
		946.00	*	2.352E-01	3.211E-01	5.627E-01	1.058E-01	0.418
		949.00		2.532E-01	4.568E-01	7.960E-01	6.899E-02	0.318
		980.50		5.146E-03	6.509E-01	1.079E+00	9.013E-02	0.005
		1394.10		1.873E-01	1.192E+00	1.965E+00	1.276E+00	0.095
PA-234M	+	766.42		2.046E+01	1.651E+01	2.315E+01	1.168E+01	0.884
		1001.03	*	-5.021E-01	4.769E+00	7.684E+00	7.332E-01	-0.065
U-235	+	89.95		2.779E+00	1.440E+00	2.085E+00	6.481E-01	1.333
		93.35		2.135E+00	1.099E+00	1.260E+00	3.538E-01	1.694
		105.00		1.670E+00	1.207E+00	1.921E+00	5.665E-01	0.869
		143.76	*	6.326E-02	2.266E-01	3.680E-01	5.952E-02	0.172
		163.35		-1.218E-01	4.800E-01	7.726E-01	1.374E-01	-0.158
		185.71		1.742E-01	6.453E-02	9.598E-02	5.026E-03	1.815
NP-236	+	205.31		-6.005E-02	6.365E-01	8.927E-01	1.594E-01	-0.067
		94.67		2.882E-01	1.534E-01	2.392E-01	2.050E-02	1.205
		98.44		4.277E-02	7.302E-02	1.195E-01	9.601E-03	0.358
		111.00		6.052E-03	1.399E-01	2.312E-01	1.554E-02	0.026
		160.31	*	9.956E-03	8.118E-02	1.330E-01	6.878E-03	0.075



---- 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		-4.623E-02	1.596E-01	2.612E-01	2.062E-02	-0.177
		117.00	*	5.084E-02	1.882E-01	3.133E-01	1.956E-02	0.162
	+	209.75		9.275E-01	9.496E-01	1.407E+00	7.629E-02	0.659
		228.18		-2.634E-01	2.397E-01	3.640E-01	2.021E-02	-0.724
		277.60		9.283E-02	1.917E-01	3.135E-01	1.823E-02	0.296
AM-241		334.30		-1.044E+00	1.697E+00	2.024E+00	1.196E-01	-0.516
		59.54	*	5.756E-03	2.128E-01	3.147E-01	2.928E-02	0.018
CM-243		99.55		-4.758E-02	1.643E-01	2.688E-01	2.122E-02	-0.177
		103.76	*	1.477E-01	1.005E-01	1.741E-01	1.290E-02	0.848
		117.00		5.231E-02	1.937E-01	3.224E-01	2.012E-02	0.162
	+	209.75		9.144E-01	9.361E-01	1.388E+00	7.521E-02	0.659
		228.18		-2.661E-01	2.422E-01	3.679E-01	2.042E-02	-0.724
AM-246		277.60		9.359E-02	1.933E-01	3.161E-01	1.838E-02	0.296
		798.80		6.212E-02	1.616E-01	2.444E-01	1.779E-02	0.254
		1036.00		1.262E-01	2.837E-01	4.793E-01	3.695E-02	0.263
		1062.04		4.813E-03	2.540E-01	4.195E-01	3.091E-02	0.011
		1078.86	*	-4.131E-02	1.370E-01	2.182E-01	1.557E-02	-0.189
CM-247		278.00		7.772E-01	7.436E-01	1.311E+00	7.626E-02	0.593
		287.40		-8.847E-01	1.234E+00	1.875E+00	1.096E-01	-0.472
		402.60	*	3.410E-02	4.231E-02	6.768E-02	3.923E-03	0.504
CF-249		252.85		3.733E-01	9.161E-01	1.498E+00	8.544E-02	0.249
		333.44		-1.201E-01	2.926E-01	2.677E-01	1.581E-02	-0.449
		387.95	*	9.521E-03	4.087E-02	6.822E-02	3.947E-03	0.140
CF-251		176.60	*	-5.361E-02	1.285E-01	2.047E-01	1.058E-02	-0.262
		227.00		-1.003E-02	4.025E-01	6.467E-01	3.585E-02	-0.016
		285.00		-8.510E-01	1.663E+00	2.726E+00	1.592E-01	-0.312

# 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]G244148008      *
* Acquisition date   : 20-JAN-2010 15:51:56 Detector SN#      :             *
* Detector ID        : GAM23                      Sensitivity    : 5.000      *
* Geometry           : CAN                      Energy tolerance: 1.540      *
* Elapsed live time   : 0 02:00:00.00           Abundance limit : 75.000      *
* Elapsed real time   : 0 02:00:01.68           Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148008           Analyst initials: MXR1          *
* Batch Number       : 940268              Sample Quantity : 1.3990E+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	1.768E+01	1.947E+00	3.195E-01	0.000E+00
CD-109	3.014E+00	1.047E+00	1.420E+00	0.000E+00
SN-126	2.958E-01	1.028E-01	1.550E-01	0.000E+00
CS-135	4.455E-01	2.391E-01	2.381E-01	0.000E+00
TL-208	5.050E-01	7.479E-02	5.749E-02	0.000E+00
BI-211	4.018E+00	4.999E-01	3.385E-01	0.000E+00
PB-212	1.508E+00	1.501E-01	9.317E-02	0.000E+00
PO-212	1.508E+00	1.501E-01	9.317E-02	0.000E+00
BI-214	1.215E+00	1.918E-01	1.218E-01	0.000E+00
PB-214	1.398E+00	1.880E-01	1.106E-01	0.000E+00
PO-214	1.398E+00	1.880E-01	1.106E-01	0.000E+00
PO-216	1.508E+00	1.501E-01	9.317E-02	0.000E+00
PO-218	1.398E+00	1.880E-01	1.106E-01	0.000E+00
RA-224	4.800E+00	1.098E+00	1.060E+00	0.000E+00
RA-226	1.215E+00	1.918E-01	1.218E-01	0.000E+00
AC-228	1.530E+00	3.022E-01	2.197E-01	0.000E+00
RA-228	1.530E+00	3.022E-01	2.197E-01	0.000E+00
TH-228	1.532E+00	1.525E-01	9.469E-02	0.000E+00
TH-230	1.215E+00	1.918E-01	1.218E-01	0.000E+00
TH-232	1.530E+00	3.022E-01	2.197E-01	0.000E+00
TH-234	2.011E+00	1.938E+00	2.603E+00	0.000E+00
U-234	1.215E+00	1.918E-01	1.218E-01	0.000E+00
NP-237	8.686E-01	3.492E-01	4.536E-01	0.000E+00
U-238	2.011E+00	1.938E+00	2.603E+00	0.000E+00
AM-243	3.616E-01	8.383E-02	1.014E-01	0.000E+00
ANH-511	9.104E-02	6.194E-02	4.683E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	5.585E-02	3.132E-01	5.475E-01	0.000E+00 NOT IDENT.

NA-22	-1.999E-02	3.856E-02	6.017E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.334E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.614E-02	2.503E-02	4.813E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.883E-02	9.428E-02	0.000E+00	FAIL ABUN
SC-46	6.106E-03	3.538E-02	6.206E-02	0.000E+00	FAIL ABUN
V-48	-2.939E-02	6.626E-02	1.077E-01	0.000E+00	NOT IDENT.
CR-51	-2.519E-02	3.770E-01	6.286E-01	0.000E+00	NOT IDENT.
MN-52	-3.479E-02	2.774E-01	4.510E-01	0.000E+00	NOT IDENT.
MN-54	-1.817E-03	3.741E-02	6.458E-02	0.000E+00	NOT IDENT.
CO-56	-9.840E-03	3.881E-02	6.565E-02	0.000E+00	NOT IDENT.
CO-57	2.655E-03	2.572E-02	4.573E-02	0.000E+00	NOT IDENT.
CO-58	-6.609E-03	3.992E-02	6.836E-02	0.000E+00	NOT IDENT.
FE-59	6.608E-02	9.885E-02	1.774E-01	0.000E+00	NOT IDENT.
CO-60	2.892E-02	3.908E-02	7.104E-02	0.000E+00	NOT IDENT.
ZN-65	1.641E-01	9.341E-02	1.679E-01	0.000E+00	NOT IDENT.
GE-68	-3.011E-01	1.157E+00	1.908E+00	0.000E+00	NOT IDENT.
AS-73	1.349E-01	1.135E+00	2.095E+00	0.000E+00	NOT IDENT.
AS-74	7.799E-02	9.918E-02	1.781E-01	0.000E+00	NOT IDENT.
SE-75	-1.785E-02	5.143E-02	7.394E-02	0.000E+00	NOT IDENT.
BR-77	-2.614E+00	1.395E+01	2.359E+01	0.000E+00	FAIL ABUN
SR-82	-2.487E-01	3.640E-01	5.954E-01	0.000E+00	NOT IDENT.
RB-83	-1.667E-02	6.829E-02	1.150E-01	0.000E+00	NOT IDENT.
RB-84	1.196E-02	6.516E-02	1.144E-01	0.000E+00	NOT IDENT.
KR-85	7.056E+00	7.729E+00	1.250E+01	0.000E+00	NOT IDENT.
SR-85	3.658E-02	4.007E-02	6.481E-02	0.000E+00	NOT IDENT.
RB-86	1.454E-01	7.424E-01	1.287E+00	0.000E+00	NOT IDENT.
Y-88	2.419E-02	3.654E-02	6.846E-02	0.000E+00	NOT IDENT.
ZR-88	-2.092E-03	3.001E-02	5.228E-02	0.000E+00	NOT IDENT.
Y-91	6.657E+00	1.879E+01	3.266E+01	0.000E+00	NOT IDENT.
NB-94	-2.829E-02	3.592E-02	5.628E-02	0.000E+00	NOT IDENT.
NB-95	6.218E-02	4.781E-02	8.721E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.750E-01	2.999E-01	0.000E+00	NOT IDENT.
ZR-95	5.761E-02	7.467E-02	1.327E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.877E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.093E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	4.168E+00	1.564E+01	2.674E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.278E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.367E-02	3.469E-02	5.749E-02	0.000E+00	NOT IDENT.
RH-102	-2.501E-02	2.916E-02	4.722E-02	0.000E+00	NOT IDENT.
RU-103	-1.937E-02	4.170E-02	6.855E-02	0.000E+00	NOT IDENT.
RH-106	-2.252E-01	3.206E-01	5.087E-01	0.000E+00	NOT IDENT.
RU-106	-2.252E-01	3.198E-01	5.087E-01	0.000E+00	NOT IDENT.
AG-108M	-7.739E-03	3.008E-02	5.130E-02	0.000E+00	NOT IDENT.
AG-110M	7.784E-03	3.676E-02	6.303E-02	0.000E+00	NOT IDENT.
IN-111	8.330E-01	1.405E+00	2.183E+00	0.000E+00	NOT IDENT.
IN-113M	4.796E-03	4.391E-02	7.733E-02	0.000E+00	NOT IDENT.
SN-113	4.796E-03	4.391E-02	7.733E-02	0.000E+00	NOT IDENT.
IN-114M	7.731E-02	2.129E-01	3.287E-01	0.000E+00	NOT IDENT.
CD-115	-1.146E+00	1.444E+01	2.460E+01	0.000E+00	NOT IDENT.
SN-117M	-1.450E-02	5.899E-02	1.020E-01	0.000E+00	NOT IDENT.
SB-122	7.331E-02	2.586E+00	4.421E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.184E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-9.365E-03	2.892E-02	4.984E-02	0.000E+00	NOT IDENT.
I-124	-2.851E-01	1.002E+00	1.419E+00	0.000E+00	FAIL ABUN
SB-124	2.995E-02	6.892E-02	1.265E-01	0.000E+00	FAIL ABUN
SB-125	6.717E-02	8.845E-02	1.613E-01	0.000E+00	FAIL ABUN
TE-125M	-6.512E+00	9.238E+00	1.597E+01	0.000E+00	NOT IDENT.
I-126	1.159E-01	2.075E-01	3.642E-01	0.000E+00	NOT IDENT.
SB-126	-9.673E-02	1.932E-01	2.618E-01	0.000E+00	NOT IDENT.
SB-127	3.329E-01	1.655E+00	2.831E+00	0.000E+00	NOT IDENT.
XE-127	2.512E-02	4.973E-02	8.749E-02	0.000E+00	NOT IDENT.
I-131	5.493E-02	1.174E-01	2.122E-01	0.000E+00	NOT IDENT.
TE-132	-1.002E+00	9.065E-01	1.449E+00	0.000E+00	NOT IDENT.
BA-133	3.867E-02	4.279E-02	7.043E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.286E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.714E-02	5.760E-02	9.070E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.964E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.841E-02	9.487E-02	1.708E-01	0.000E+00	FAIL ABUN
BA-137M	2.406E-02	3.928E-02	6.921E-02	0.000E+00	NOT IDENT.
CS-137	2.544E-02	4.153E-02	7.316E-02	0.000E+00	NOT IDENT.
CE-139	-3.077E-03	3.002E-02	5.210E-02	0.000E+00	NOT IDENT.
BA-140	1.779E-01	2.786E-01	4.895E-01	0.000E+00	NOT IDENT.
LA-140	-6.891E-02	7.901E-02	1.133E-01	0.000E+00	FAIL ABUN
CE-141	8.997E-03	6.551E-02	1.156E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.304E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.632E-01	2.233E-01	3.576E-01	0.000E+00	NOT IDENT.
PM-144	3.025E-03	3.443E-02	5.823E-02	0.000E+00	NOT IDENT.
PR-144	2.051E-01	2.334E+00	3.948E+00	0.000E+00	NOT IDENT.

PM-146	-3.324E-02	4.251E-02	6.943E-02	0.000E+00	NOT IDENT.
ND-147	-2.530E-01	5.830E-01	9.631E-01	0.000E+00	FAIL ABUN
PM-149	-1.544E+01	1.193E+02	2.115E+02	0.000E+00	NOT IDENT.
EU-152	-9.246E-02	1.130E-01	1.619E-01	0.000E+00	NOT IDENT.
GD-153	1.301E-01	8.705E-02	1.465E-01	0.000E+00	NOT IDENT.
EU-154	-5.824E-02	1.074E-01	1.669E-01	0.000E+00	NOT IDENT.
EU-155	2.025E-01	1.099E-01	2.072E-01	0.000E+00	FAIL ABUN
TB-160	7.956E-02	1.220E-01	2.240E-01	0.000E+00	FAIL ABUN
HO-166M	-6.477E-02	6.470E-02	9.881E-02	0.000E+00	FAIL ABUN
TM-171	-1.708E+01	3.793E+01	5.525E+01	0.000E+00	NOT IDENT.
LU-176	2.833E-03	2.401E-02	4.292E-02	0.000E+00	FAIL ABUN
LU-177	1.457E+00	1.462E+00	2.341E+00	0.000E+00	FAIL ABUN
LU-177M	7.188E-02	2.007E-01	3.131E-01	0.000E+00	FAIL ABUN
HF-181	-2.986E-02	4.428E-02	7.272E-02	0.000E+00	NOT IDENT.
W-181	4.075E-01	4.559E-01	7.579E-01	0.000E+00	NOT IDENT.
TA-182	-8.530E-02	1.906E-01	3.059E-01	0.000E+00	NOT IDENT.
RE-183	-4.910E-03	1.108E-01	1.929E-01	0.000E+00	FAIL ABUN
RE-184	9.992E-02	2.403E-01	4.173E-01	0.000E+00	NOT IDENT.
OS-185	-2.573E-02	4.397E-02	7.048E-02	0.000E+00	NOT IDENT.
RE-188	2.301E-01	1.767E-01	3.238E-01	0.000E+00	NOT IDENT.
W-188	3.734E+00	7.525E+00	1.212E+01	0.000E+00	FAIL ABUN
IR-192	-1.303E-02	3.353E-02	5.820E-02	0.000E+00	FAIL ABUN
AU-195	1.102E-01	2.240E-01	4.077E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.476E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	4.815E+00	8.913E+00	1.586E+01	0.000E+00	NOT IDENT.
TL-202	-8.535E-03	6.753E-02	1.162E-01	0.000E+00	NOT IDENT.
HG-203	2.033E-02	4.045E-02	7.390E-02	0.000E+00	NOT IDENT.
BI-207	-1.922E-02	5.854E-02	9.655E-02	0.000E+00	FAIL ABUN
TL-207	-6.451E-03	7.077E-01	1.090E+00	0.000E+00	FAIL ABUN
PO-209	-2.266E+00	7.469E+00	1.251E+01	0.000E+00	NOT IDENT.
BI-210	-5.623E+00	5.464E+00	9.356E+00	0.000E+00	NOT IDENT.
PB-210	-5.623E+00	5.464E+00	9.356E+00	0.000E+00	NOT IDENT.
PO-210	-5.623E+00	5.460E+00	9.356E+00	0.000E+00	NOT IDENT.
PB-211	-2.531E-01	1.122E+00	1.651E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.322E-01	7.033E-01	0.000E+00	FAIL ABUN
PO-215	-6.451E-03	7.077E-01	1.090E+00	0.000E+00	FAIL ABUN
RN-219	1.221E-01	4.384E-01	7.581E-01	0.000E+00	NOT IDENT.
RN-220	7.390E+00	2.778E+01	4.838E+01	0.000E+00	NOT IDENT.
RA-223	-6.451E-03	7.077E-01	1.090E+00	0.000E+00	FAIL ABUN
AC-227	-1.745E-01	4.006E-01	6.639E-01	0.000E+00	FAIL ABUN
TH-227	-1.745E-01	4.009E-01	6.639E-01	0.000E+00	FAIL ABUN
TH-229	-7.377E-01	5.407E-01	8.775E-01	0.000E+00	FAIL ABUN
PA-231	-1.302E+00	1.461E+00	2.473E+00	0.000E+00	NOT IDENT.
TH-231	-6.451E-03	7.077E-01	1.090E+00	0.000E+00	FAIL ABUN
U-231	1.239E+00	1.416E+00	2.321E+00	0.000E+00	FAIL ABUN
PA-233	3.222E-02	6.239E-02	1.136E-01	0.000E+00	FAIL ABUN
PA-234	2.352E-01	3.147E-01	5.700E-01	0.000E+00	FAIL ABUN
PA-234M	-5.021E-01	4.673E+00	7.775E+00	0.000E+00	NOT IDENT.
U-235	6.326E-02	2.221E-01	3.872E-01	0.000E+00	FAIL ABUN
NP-236	9.956E-03	7.956E-02	1.396E-01	0.000E+00	NOT IDENT.
NP-239	5.084E-02	1.845E-01	3.309E-01	0.000E+00	FAIL ABUN
AM-241	5.756E-03	2.085E-01	3.367E-01	0.000E+00	NOT IDENT.
CM-243	1.477E-01	9.849E-02	1.843E-01	0.000E+00	FAIL ABUN
AM-246	-4.131E-02	1.343E-01	2.204E-01	0.000E+00	NOT IDENT.
CM-247	3.410E-02	4.147E-02	6.977E-02	0.000E+00	NOT IDENT.
CF-249	9.521E-03	4.005E-02	7.038E-02	0.000E+00	NOT IDENT.
CF-251	-5.361E-02	1.259E-01	2.145E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148008.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:51:56
Sample ID          : G244148008          Sample quantity  : 1.39900E+02 GRAM
Detector name      : GAM23              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.68  0.0%
Energy tolerance   : 1.54000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID          : 940268              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	701	10.67*	9.975E-01	1.768E+01	1.768E+01	11.24
CD-109	88.03	213	3.72*	5.210E+00	2.942E+00	3.014E+00	35.45
SN-126	64.28	74	9.60	2.588E+00	7.960E-01	7.960E-01	97.88
	86.94	213	8.90	5.210E+00	1.230E+00	1.230E+00	53.79
	87.57	213	37.00*	5.210E+00	2.958E-01	2.958E-01	35.45
CS-135	268.24	112	16.00*	4.229E+00	4.455E-01	4.455E-01	54.76
TL-208	277.35	-----	6.80	4.140E+00	-----	Line Not Found	-----
	510.84	86	21.60	2.547E+00	4.215E-01	4.215E-01	69.92
	583.14	361	84.20*	2.278E+00	5.050E-01	5.050E-01	15.11
	860.37	71	12.46	1.611E+00	9.466E-01	9.466E-01	46.34
BI-211	72.87	-----	1.27	3.829E+00	-----	Line Not Found	-----
	351.07	667	12.94*	3.442E+00	4.018E+00	4.018E+00	12.70
PB-212	74.81	360	10.70	4.047E+00	2.230E+00	2.230E+00	25.44
	77.11	566	18.00	4.298E+00	1.962E+00	1.962E+00	16.58
	87.30	213	8.00	5.210E+00	1.368E+00	1.368E+00	36.83
	238.63	1163	44.60*	4.639E+00	1.508E+00	1.508E+00	10.16
	300.09	114	3.41	3.900E+00	2.298E+00	2.298E+00	38.44
PO-212	74.81	360	10.70	4.047E+00	2.230E+00	2.230E+00	25.44
	77.11	566	18.00	4.298E+00	1.962E+00	1.962E+00	16.58
	87.30	213	8.00	5.210E+00	1.368E+00	1.368E+00	36.83
	115.19	-----	0.60	6.293E+00	-----	Line Not Found	-----
	238.63	1163	44.60*	4.639E+00	1.508E+00	1.508E+00	10.16
	300.09	114	3.41	3.900E+00	2.298E+00	2.298E+00	38.44
BI-214	609.31	460	46.30*	2.194E+00	1.215E+00	1.215E+00	16.11
	1120.29	100	15.10	1.259E+00	1.408E+00	1.408E+00	43.06
	1764.49	-----	15.80	8.740E-01	-----	Line Not Found	-----
PB-214	74.81	360	6.21	4.047E+00	3.843E+00	3.843E+00	24.79
	77.11	566	10.50	4.298E+00	3.363E+00	3.363E+00	18.25
	87.30	213	4.67	5.210E+00	2.344E+00	2.344E+00	36.28
	241.98	325	7.49	4.596E+00	2.531E+00	2.532E+00	24.00
	295.21	422	19.20	3.951E+00	1.494E+00	1.494E+00	17.08
	351.92	667	37.20*	3.442E+00	1.398E+00	1.398E+00	13.73

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	74.81	360	6.21	4.047E+00	3.843E+00	3.843E+00	24.79
	77.11	566	10.50	4.298E+00	3.363E+00	3.363E+00	18.25
	87.30	213	4.67	5.210E+00	2.344E+00	2.344E+00	36.28
	241.98	325	7.49	4.596E+00	2.531E+00	2.532E+00	24.00
	295.21	422	19.20	3.951E+00	1.494E+00	1.494E+00	17.08
	351.92	667	37.20*	3.442E+00	1.398E+00	1.398E+00	13.73
PO-216	74.81	360	10.70	4.047E+00	2.230E+00	2.230E+00	25.44
	77.11	566	18.00	4.298E+00	1.962E+00	1.962E+00	16.58
	87.30	213	8.00	5.210E+00	1.368E+00	1.368E+00	36.83
	238.63	1163	44.60*	4.639E+00	1.508E+00	1.508E+00	10.16
	300.09	114	3.41	3.900E+00	2.298E+00	2.298E+00	38.44
	74.81	360	6.21	4.047E+00	3.843E+00	3.843E+00	24.79
PO-218	77.11	566	10.50	4.298E+00	3.363E+00	3.363E+00	18.25
	87.30	213	4.67	5.210E+00	2.344E+00	2.344E+00	36.28
	241.98	325	7.49	4.596E+00	2.531E+00	2.532E+00	24.00
	295.21	422	19.20	3.951E+00	1.494E+00	1.494E+00	17.08
	351.92	667	37.20*	3.442E+00	1.398E+00	1.398E+00	13.73
	240.98	325	3.95*	4.596E+00	4.800E+00	4.800E+00	23.34
RA-224	609.31	460	46.30*	2.194E+00	1.215E+00	1.215E+00	16.11
RA-226	1120.29	100	15.10	1.259E+00	1.408E+00	1.408E+00	43.06
AC-228	1764.49	-----	15.80	8.740E-01	-----	Line Not Found	-----
	338.32	186	11.40	3.550E+00	1.231E+00	1.231E+00	50.99
	911.07	241	27.70*	1.527E+00	1.530E+00	1.530E+00	20.15
	969.11	102	16.60	1.441E+00	1.146E+00	1.146E+00	63.84
RA-228	338.32	186	11.40	3.550E+00	1.231E+00	1.231E+00	50.99
	911.07	241	27.70*	1.527E+00	1.530E+00	1.530E+00	20.15
	969.11	102	16.60	1.441E+00	1.146E+00	1.146E+00	63.84
TH-228	74.81	360	10.70	4.047E+00	2.230E+00	2.266E+00	23.68
	77.11	566	18.00	4.298E+00	1.962E+00	1.993E+00	16.58
	87.30	213	8.00	5.210E+00	1.368E+00	1.390E+00	35.45
	238.63	1163	44.60*	4.639E+00	1.508E+00	1.532E+00	10.16
TH-230	300.09	114	3.41	3.900E+00	2.298E+00	2.335E+00	69.88
	609.31	460	46.30*	2.194E+00	1.215E+00	1.215E+00	16.11
	1120.29	100	15.10	1.259E+00	1.408E+00	1.408E+00	43.06
	1764.49	-----	15.80	8.740E-01	-----	Line Not Found	-----
TH-232	338.32	186	11.40	3.550E+00	1.231E+00	1.231E+00	31.17
	911.07	241	27.70*	1.527E+00	1.530E+00	1.530E+00	20.15
	969.11	102	16.60	1.441E+00	1.146E+00	1.146E+00	63.84
TH-234	63.29	74	3.80*	2.588E+00	2.011E+00	2.011E+00	98.36
	92.38	200	5.41	5.593E+00	1.776E+00	1.776E+00	46.78
U-234	609.31	460	46.30*	2.194E+00	1.215E+00	1.215E+00	16.11
	1120.29	100	15.10	1.259E+00	1.408E+00	1.408E+00	43.06
	1764.49	-----	15.80	8.740E-01	-----	Line Not Found	-----
NP-237	86.50	213	12.60*	5.210E+00	8.686E-01	8.686E-01	41.02
	95.87	-----	2.60	5.757E+00	-----	Line Not Found	-----
U-238	63.29	74	3.80*	2.588E+00	2.011E+00	2.011E+00	98.36
	92.38	200	5.41	5.593E+00	1.776E+00	1.776E+00	44.00
AM-243	74.67	360	66.00*	4.047E+00	3.616E-01	3.616E-01	23.66
	86.72	213	0.34	5.210E+00	3.257E+01	3.257E+01	35.45

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	117.66	-----	0.55	6.314E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.209E+00	-----	Line Not Found	-----
ANH-511	511.00	86	100.00*	2.547E+00	9.104E-02	9.104E-02	69.43

Flag: "\*" = Keyline

Total number of lines in spectrum 33  
Number of unidentified lines 5  
Number of lines tentatively identified by NID 28 84.85%

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	1.768E+01	1.768E+01	0.199E+01	11.24	
CD-109	464.00D	1.02	2.942E+00	3.014E+00	1.069E+00	35.45	
SN-126	1.00E+05Y	1.00	2.958E-01	2.958E-01	1.049E-01	35.45	
CS-135	2.30E+06Y	1.00	4.455E-01	4.455E-01	2.439E-01	54.76	
TL-208	1.41E+10Y	1.00	5.050E-01	5.050E-01	0.763E-01	15.11	
BI-211	7.04E+08Y	1.00	4.018E+00	4.018E+00	0.510E+00	12.70	
PB-212	1.41E+10Y	1.00	1.508E+00	1.508E+00	0.153E+00	10.16	
PO-212	1.41E+10Y	1.00	1.508E+00	1.508E+00	0.153E+00	10.16	
BI-214	1600.00Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.11	
PB-214	1600.00Y	1.00	1.398E+00	1.398E+00	0.192E+00	13.73	
PO-214	1600.00Y	1.00	1.398E+00	1.398E+00	0.192E+00	13.73	
PO-216	1.41E+10Y	1.00	1.508E+00	1.508E+00	0.153E+00	10.16	
PO-218	1600.00Y	1.00	1.398E+00	1.398E+00	0.192E+00	13.73	
RA-224	1.41E+10Y	1.00	4.800E+00	4.800E+00	1.120E+00	23.34	
RA-226	1600.00Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.11	
AC-228	1.41E+10Y	1.00	1.530E+00	1.530E+00	0.308E+00	20.15	
RA-228	1.41E+10Y	1.00	1.530E+00	1.530E+00	0.308E+00	20.15	
TH-228	1.91Y	1.02	1.508E+00	1.532E+00	0.156E+00	10.16	
TH-230	4.47E+09Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.11	
TH-232	1.41E+10Y	1.00	1.530E+00	1.530E+00	0.308E+00	20.15	
TH-234	4.47E+09Y	1.00	2.011E+00	2.011E+00	1.978E+00	98.36	
U-234	4.47E+09Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.11	
NP-237	2.14E+06Y	1.00	8.686E-01	8.686E-01	3.563E-01	41.02	
U-238	4.47E+09Y	1.00	2.011E+00	2.011E+00	1.978E+00	98.36	
AM-243	7380.00Y	1.00	3.616E-01	3.616E-01	0.855E-01	23.66	
ANH-511	1.00E+09Y	1.00	9.104E-02	9.104E-02	6.320E-02	69.43	

Total Activity : 5.570E+01 5.580E+01

Grand Total Activity : 5.570E+01 5.580E+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	89.71	151	338	0.98	179.43	177	13	2.10E-02	41.5	5.40E+00	T
0	129.06	116	316	1.63	258.11	254	9	1.61E-02	58.3	6.32E+00	T
0	185.79	192	292	1.12	371.57	368	9	2.67E-02	36.7	5.49E+00	T
0	208.97	57	264	0.87	417.95	415	8	7.92E-03	****	5.09E+00	T
0	327.37	70	195	0.87	654.74	649	12	9.69E-03	83.5	3.64E+00	T
0	409.18	47	119	1.37	818.36	813	10	6.49E-03	92.4	3.05E+00	
0	462.22	78	141	2.01	924.43	920	15	1.09E-02	68.7	2.76E+00	T
0	726.53	99	55	1.13	1453.06	1448	12	1.38E-02	35.8	1.88E+00	T
0	793.79	43	38	1.40	1587.58	1583	9	5.96E-03	60.2	1.73E+00	
0	1241.31	30	91	7.04	2482.62	2468	21	4.17E-03	****	1.15E+00	
0	1376.65	35	10	2.44	2753.31	2747	14	4.86E-03	51.6	1.05E+00	T
0	1586.80	26	9	1.82	3173.61	3167	12	3.63E-03	60.3	9.36E-01	
0	1762.35	112	0	3.04	3524.70	3516	17	1.56E-02	18.9	8.75E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148008.CNF;1
* Acquisition date   : 20-JAN-2010 15:51:56  Detector SN#      :
* Detector ID        : GAM23                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.54000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.68          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244148008            Analyst initials: MXR1
* Batch Number       : 940268                Sample Quantity : 1.39900E+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	1.768E+01	1.987E+00	3.183E-01	2.381E-02	55.536
CD-109	3.014E+00	1.069E+00	1.337E+00	1.305E-01	2.255
SN-126	2.958E-01	1.049E-01	1.459E-01	1.420E-02	2.027
CS-135	4.455E-01	2.439E-01	2.291E-01	1.751E-02	1.944
TL-208	5.050E-01	7.631E-02	5.619E-02	3.648E-03	8.986
BI-211	4.018E+00	5.101E-01	3.274E-01	2.133E-02	12.271
PB-212	1.508E+00	1.531E-01	8.944E-02	6.431E-03	16.858
PO-212	1.508E+00	1.531E-01	8.944E-02	6.431E-03	16.858
BI-214	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
PB-214	1.398E+00	1.919E-01	1.070E-01	8.932E-03	13.060
PO-214	1.398E+00	1.919E-01	1.070E-01	8.932E-03	13.060
PO-216	1.508E+00	1.531E-01	8.944E-02	6.431E-03	16.858
PO-218	1.398E+00	1.919E-01	1.070E-01	8.932E-03	13.060
RA-224	4.800E+00	1.120E+00	1.018E+00	5.736E-02	4.715
RA-226	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
AC-228	1.530E+00	3.084E-01	2.167E-01	2.501E-02	7.060
RA-228	1.530E+00	3.084E-01	2.167E-01	2.501E-02	7.060
TH-228	1.532E+00	1.556E-01	9.090E-02	6.535E-03	16.858

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
TH-232	1.530E+00	3.084E-01	2.167E-01	2.501E-02	7.060
TH-234	2.011E+00	1.978E+00	2.435E+00	4.389E-01	0.826
U-234	1.215E+00	1.957E-01	1.192E-01	8.960E-03	10.193
NP-237	8.686E-01	3.563E-01	4.270E-01	9.724E-02	2.034
U-238	2.011E+00	1.978E+00	2.435E+00	4.389E-01	0.826
AM-243	3.616E-01	8.554E-02	9.518E-02	8.458E-03	3.799
ANH-511	9.104E-02	6.320E-02	4.565E-02	2.651E-03	1.994

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.585E-02		3.196E-01	5.330E-01	3.622E-02	0.105
NA-22	-1.999E-02		3.935E-02	5.977E-02	4.014E-03	-0.334
NA-24	-1.954E-01		1.191E+00	Half-Life too short		
AL-26	1.614E-02		2.554E-02	4.817E-02	2.895E-03	0.335
TI-44	3.620E-01	+	6.003E-02	8.858E-02	8.029E-03	4.087
SC-46	6.106E-03		3.610E-02	6.119E-02	5.467E-03	0.100
V-48	-2.939E-02		6.761E-02	1.064E-01	8.855E-03	-0.276
CR-51	-2.519E-02		3.847E-01	6.069E-01	3.980E-02	-0.042
MN-52	-3.479E-02		2.831E-01	4.492E-01	3.250E-02	-0.077
MN-54	-1.817E-03		3.818E-02	6.358E-02	5.034E-03	-0.029
CO-56	-9.840E-03		3.960E-02	6.466E-02	5.260E-03	-0.152
CO-57	2.655E-03		2.625E-02	4.333E-02	2.555E-03	0.061
CO-58	-6.609E-03		4.073E-02	6.727E-02	5.054E-03	-0.098
FE-59	6.608E-02		1.009E-01	1.757E-01	1.353E-02	0.376
CO-60	2.892E-02		3.988E-02	7.063E-02	5.185E-03	0.409
ZN-65	1.641E-01		9.531E-02	1.664E-01	1.099E-02	0.986
GE-68	-3.011E-01		1.180E+00	1.889E+00	1.352E-01	-0.159
AS-73	1.349E-01		1.158E+00	1.954E+00	1.725E-01	0.069
AS-74	7.799E-02		1.012E-01	1.742E-01	9.607E-03	0.448
SE-75	-1.785E-02		5.248E-02	7.113E-02	4.140E-03	-0.251
BR-77	-2.614E+00		1.423E+01	2.300E+01	1.332E+00	-0.114
SR-82	-2.487E-01		3.714E-01	5.853E-01	4.038E-02	-0.425
RB-83	-1.667E-02		6.968E-02	1.121E-01	6.491E-03	-0.149
RB-84	1.196E-02		6.649E-02	1.128E-01	9.912E-03	0.106
KR-85	7.056E+00		7.887E+00	1.219E+01	7.072E-01	0.579
SR-85	3.658E-02		4.088E-02	6.318E-02	3.666E-03	0.579
RB-86	1.454E-01		7.576E-01	1.274E+00	9.133E-02	0.114
Y-88	2.419E-02		3.728E-02	6.854E-02	4.036E-03	0.353
ZR-88	-2.092E-03		3.063E-02	5.069E-02	2.926E-03	-0.041
Y-91	6.657E+00		1.917E+01	3.240E+01	1.933E+00	0.205
NB-94	-2.829E-02		3.665E-02	5.522E-02	3.155E-03	-0.512
NB-95	6.218E-02		4.879E-02	8.571E-02	5.760E-03	0.725
NB-95M	6.627E-01		1.785E-01	2.879E-01	2.124E-02	2.302
ZR-95	5.761E-02		7.619E-02	1.304E-01	1.001E-02	0.442
NB-97	8.753E-02		1.468E-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	2.231E+01		3.108E+00	Half-Life too short		
MO-99	4.168E+00		1.596E+01	2.626E+01	3.675E+00	0.159
TC-99M	2.058E+11		3.713E+11	Half-Life too short		
RH-101	-2.367E-02		3.540E-02	5.499E-02	2.931E-03	-0.430
RH-102	-2.501E-02		2.976E-02	4.596E-02	2.690E-03	-0.544
RU-103	-1.937E-02		4.255E-02	6.678E-02	8.454E-03	-0.290
RH-106	-2.252E-01		3.271E-01	4.978E-01	5.741E-02	-0.452
RU-106	-2.252E-01		3.263E-01	4.978E-01	2.675E-02	-0.452
AG-108M	-7.739E-03		3.069E-02	4.984E-02	3.160E-03	-0.155
AG-110M	7.784E-03		3.751E-02	6.176E-02	3.432E-03	0.126
IN-111	8.330E-01		1.434E+00	2.097E+00	1.187E-01	0.397
IN-113M	4.796E-03		4.481E-02	7.498E-02	4.619E-03	0.064
SN-113	4.796E-03		4.481E-02	7.498E-02	4.619E-03	0.064
IN-114M	7.731E-02		2.173E-01	3.142E-01	1.656E-02	0.246
CD-115	-1.146E+00		1.473E+01	2.399E+01	1.385E+00	-0.048
SN-117M	-1.450E-02		6.020E-02	9.717E-02	5.050E-03	-0.149
SB-122	7.331E-02		2.638E+00	4.318E+00	2.442E-01	0.017
I-123	-7.074E+00		1.114E+01	Half-Life too short		
TE-123M	-9.365E-03		2.951E-02	4.747E-02	2.505E-03	-0.197
I-124	-2.851E-01		1.022E+00	1.388E+00	7.608E-02	-0.205
SB-124	2.995E-02		7.032E-02	1.264E-01	8.813E-03	0.237
SB-125	6.717E-02		9.026E-02	1.566E-01	9.528E-03	0.429
TE-125M	-6.512E+00		9.427E+00	1.510E+01	1.348E+00	-0.431
I-126	1.159E-01		2.117E-01	3.569E-01	1.847E-02	0.325
SB-126	-9.673E-02		1.971E-01	2.570E-01	1.539E-02	-0.376
SB-127	3.329E-01		1.689E+00	2.776E+00	2.665E-01	0.120
XE-127	2.512E-02		5.075E-02	8.372E-02	4.494E-03	0.300
I-131	5.493E-02		1.198E-01	2.054E-01	1.344E-02	0.267
TE-132	-1.002E+00		9.250E-01	1.390E+00	2.013E-01	-0.721
BA-133	3.867E-02		4.366E-02	6.815E-02	7.907E-03	0.567
I-133	9.693E-03		6.559E-03	Half-Life too short		
CS-134	2.714E-02		5.877E-02	8.921E-02	6.515E-03	0.304
I-135	5.468E+09		4.063E+10	Half-Life too short		
CS-136	4.841E-02		9.681E-02	1.690E-01	1.347E-02	0.287
BA-137M	2.406E-02		4.009E-02	6.781E-02	3.464E-03	0.355
CS-137	2.544E-02		4.238E-02	7.169E-02	3.682E-03	0.355
CE-139	-3.077E-03		3.063E-02	4.966E-02	2.532E-03	-0.062
BA-140	1.779E-01		2.843E-01	4.776E-01	1.553E-01	0.372
LA-140	-6.891E-02		8.062E-02	1.131E-01	7.756E-03	-0.609
CE-141	8.997E-03		6.684E-02	1.099E-01	6.197E-03	0.082
CE-143	2.408E-03	+	3.216E-04	Half-Life too short		
CE-144	1.632E-01		2.279E-01	3.394E-01	4.793E-02	0.481
PM-144	3.025E-03		3.513E-02	5.712E-02	3.214E-03	0.053
PR-144	2.051E-01		2.382E+00	3.873E+00	2.177E-01	0.053
PM-146	-3.324E-02		4.337E-02	6.751E-02	5.847E-03	-0.492
ND-147	-2.530E-01		5.949E-01	9.395E-01	1.269E-01	-0.269
PM-149	-1.544E+01		1.217E+02	2.037E+02	2.892E+01	-0.076
EU-152	-9.246E-02		1.153E-01	1.565E-01	1.038E-02	-0.591

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	1.301E-01		8.883E-02	1.382E-01	1.129E-02	0.941
EU-154	-5.824E-02		1.096E-01	1.658E-01	1.646E-02	-0.351
EU-155	2.025E-01		1.121E-01	1.957E-01	1.443E-02	1.034
TB-160	7.956E-02		1.245E-01	2.208E-01	1.931E-02	0.360
HO-166M	-6.477E-02		6.602E-02	9.697E-02	5.676E-03	-0.668
TM-171	-1.708E+01		3.870E+01	5.176E+01	4.501E+00	-0.330
LU-176	2.833E-03		2.450E-02	4.141E-02	2.440E-03	0.068
LU-177	1.457E+00	+	1.491E+00	2.241E+00	1.212E-01	0.650
LU-177M	7.188E-02		2.048E-01	3.039E-01	1.768E-02	0.237
HF-181	-2.986E-02		4.518E-02	7.080E-02	4.141E-03	-0.422
W-181	4.075E-01		4.652E-01	7.096E-01	6.165E-02	0.574
TA-182	-8.530E-02		1.945E-01	3.036E-01	1.863E-02	-0.281
RE-183	-4.910E-03		1.130E-01	1.838E-01	9.455E-03	-0.027
RE-184	9.992E-02		2.452E-01	4.010E-01	2.287E-02	0.249
OS-185	-2.573E-02		4.487E-02	6.903E-02	3.603E-03	-0.373
RE-188	2.301E-01		1.803E-01	3.082E-01	1.617E-02	0.747
W-188	3.734E+00		7.679E+00	1.168E+01	6.840E-01	0.320
IR-192	-1.303E-02		3.421E-02	5.618E-02	3.333E-03	-0.232
AU-195	1.102E-01		2.285E-01	3.848E-01	3.070E-02	0.286
TL-200	4.152E-04		4.325E-04	Half-Life too short		
TL-201	4.815E+00		9.095E+00	1.512E+01	7.719E-01	0.318
TL-202	-8.535E-03		6.891E-02	1.129E-01	6.606E-03	-0.076
HG-203	2.033E-02		4.128E-02	7.116E-02	4.396E-03	0.286
BI-207	-1.922E-02		5.974E-02	9.555E-02	7.020E-03	-0.201
TL-207	-6.451E-03		7.222E-01	1.053E+00	1.743E-01	-0.006
PO-209	-2.266E+00		7.621E+00	1.234E+01	1.120E+00	-0.184
BI-210	-5.623E+00		5.575E+00	8.704E+00	6.778E-01	-0.646
PB-210	-5.623E+00		5.575E+00	8.704E+00	6.778E-01	-0.646
PO-210	-5.623E+00		5.571E+00	8.704E+00	5.840E-01	-0.646
PB-211	-2.531E-01		1.144E+00	1.602E+00	9.986E-01	-0.158
BI-212	1.203E+00	+	4.410E-01	6.905E-01	5.481E-02	1.742
PO-215	-6.451E-03		7.222E-01	1.053E+00	1.743E-01	-0.006
RN-219	1.221E-01		4.474E-01	7.353E-01	1.000E-01	0.166
RN-220	7.390E+00		2.835E+01	4.722E+01	2.695E+00	0.156
RA-223	-6.451E-03		7.222E-01	1.053E+00	1.743E-01	-0.006
AC-227	-1.745E-01		4.088E-01	6.382E-01	8.888E-02	-0.273
TH-227	-1.745E-01		4.091E-01	6.382E-01	1.077E-01	-0.273
TH-229	-7.377E-01		5.517E-01	8.389E-01	4.444E-02	-0.879
PA-231	-1.302E+00		1.491E+00	2.382E+00	3.286E-01	-0.547
TH-231	-6.451E-03		7.222E-01	1.053E+00	1.743E-01	-0.006
U-231	1.239E+00		1.445E+00	2.189E+00	1.836E-01	0.566
PA-233	3.222E-02		6.366E-02	1.097E-01	6.855E-03	0.294
PA-234	2.352E-01		3.211E-01	5.627E-01	1.058E-01	0.418
PA-234M	-5.021E-01		4.769E+00	7.684E+00	7.332E-01	-0.065
U-235	6.326E-02		2.266E-01	3.680E-01	5.952E-02	0.172
NP-236	9.956E-03		8.118E-02	1.330E-01	6.878E-03	0.075
NP-239	5.084E-02		1.882E-01	3.133E-01	1.956E-02	0.162
AM-241	5.756E-03		2.128E-01	3.147E-01	2.928E-02	0.018

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.477E-01		1.005E-01	1.741E-01	1.290E-02	0.848
AM-246	-4.131E-02		1.370E-01	2.182E-01	1.557E-02	-0.189
CM-247	3.410E-02		4.231E-02	6.768E-02	3.923E-03	0.504
CF-249	9.521E-03		4.087E-02	6.822E-02	3.947E-03	0.140
CF-251	-5.361E-02		1.285E-01	2.047E-01	1.058E-02	-0.262

## 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]G244148008          *
* Acquisition date   : 20-JAN-2010 15:51:56 Detector SN#                  *
* Detector ID        : GAM23                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance: 1.540      *
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:01.68                               Half life ratio  : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148008                               Analyst initials: MXR1        *
* Batch Number       : 940268                                   Sample Quantity : 1.3990E+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	1.768E+01	1.947E+00	1.598E-01	9.935E-01
CD-109	3.014E+00	1.047E+00	7.104E-01	5.343E-01
SN-126	2.958E-01	1.028E-01	7.753E-02	5.243E-02
CS-135	4.455E-01	2.391E-01	1.191E-01	1.220E-01
TL-208	5.050E-01	7.479E-02	2.876E-02	3.816E-02
BI-211	4.018E+00	4.999E-01	1.693E-01	2.551E-01
PB-212	1.508E+00	1.501E-01	4.662E-02	7.657E-02
PO-212	1.508E+00	1.501E-01	4.662E-02	7.657E-02
BI-214	1.215E+00	1.918E-01	6.096E-02	9.785E-02
PB-214	1.398E+00	1.880E-01	5.534E-02	9.593E-02
PO-214	1.398E+00	1.880E-01	5.534E-02	9.593E-02
PO-216	1.508E+00	1.501E-01	4.662E-02	7.657E-02
PO-218	1.398E+00	1.880E-01	5.534E-02	9.593E-02
RA-224	4.800E+00	1.098E+00	5.304E-01	5.601E-01
RA-226	1.215E+00	1.918E-01	6.096E-02	9.785E-02
AC-228	1.530E+00	3.022E-01	1.099E-01	1.542E-01
RA-228	1.530E+00	3.022E-01	1.099E-01	1.542E-01
TH-228	1.532E+00	1.525E-01	4.737E-02	7.781E-02
TH-230	1.215E+00	1.918E-01	6.096E-02	9.785E-02
TH-232	1.530E+00	3.022E-01	1.099E-01	1.542E-01
TH-234	2.011E+00	1.938E+00	1.302E+00	9.890E-01
U-234	1.215E+00	1.918E-01	6.096E-02	9.785E-02
NP-237	8.686E-01	3.492E-01	2.269E-01	1.782E-01
U-238	2.011E+00	1.938E+00	1.302E+00	9.890E-01
AM-243	3.616E-01	8.383E-02	5.073E-02	4.277E-02
ANH-511	9.104E-02	6.194E-02	2.343E-02	3.160E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	5.585E-02	3.132E-01	2.739E-01	1.598E-01 NOT IDENT.

NA-22	-1.999E-02	3.856E-02	3.010E-02	1.967E-02	NOT IDENT.
NA-24	-1.954E+05	2.334E+06	0.000E+00	1.191E+06	SHORT HLIF
AL-26	1.614E-02	2.503E-02	2.408E-02	1.277E-02	NOT IDENT.
TI-44	3.620E-01	5.883E-02	4.717E-02	3.001E-02	FAIL ABUN
SC-46	6.106E-03	3.538E-02	3.105E-02	1.805E-02	FAIL ABUN
V-48	-2.939E-02	6.626E-02	5.390E-02	3.380E-02	NOT IDENT.
CR-51	-2.519E-02	3.770E-01	3.145E-01	1.923E-01	NOT IDENT.
MN-52	-3.479E-02	2.774E-01	2.257E-01	1.415E-01	NOT IDENT.
MN-54	-1.817E-03	3.741E-02	3.231E-02	1.909E-02	NOT IDENT.
CO-56	-9.840E-03	3.881E-02	3.284E-02	1.980E-02	NOT IDENT.
CO-57	2.655E-03	2.572E-02	2.288E-02	1.312E-02	NOT IDENT.
CO-58	-6.609E-03	3.992E-02	3.420E-02	2.037E-02	NOT IDENT.
FE-59	6.608E-02	9.885E-02	8.877E-02	5.044E-02	NOT IDENT.
CO-60	2.892E-02	3.908E-02	3.554E-02	1.994E-02	NOT IDENT.
ZN-65	1.641E-01	9.341E-02	8.401E-02	4.766E-02	NOT IDENT.
GE-68	-3.011E-01	1.157E+00	9.546E-01	5.901E-01	NOT IDENT.
AS-73	1.349E-01	1.135E+00	1.048E+00	5.791E-01	NOT IDENT.
AS-74	7.799E-02	9.918E-02	8.912E-02	5.060E-02	NOT IDENT.
SE-75	-1.785E-02	5.143E-02	3.699E-02	2.624E-02	NOT IDENT.
BR-77	-2.614E+00	1.395E+01	1.180E+01	7.116E+00	FAIL ABUN
SR-82	-2.487E-01	3.640E-01	2.979E-01	1.857E-01	NOT IDENT.
RB-83	-1.667E-02	6.829E-02	5.753E-02	3.484E-02	NOT IDENT.
RB-84	1.196E-02	6.516E-02	5.726E-02	3.325E-02	NOT IDENT.
KR-85	7.056E+00	7.729E+00	6.255E+00	3.943E+00	NOT IDENT.
SR-85	3.658E-02	4.007E-02	3.242E-02	2.044E-02	NOT IDENT.
RB-86	1.454E-01	7.424E-01	6.441E-01	3.788E-01	NOT IDENT.
Y-88	2.419E-02	3.654E-02	3.425E-02	1.864E-02	NOT IDENT.
ZR-88	-2.092E-03	3.001E-02	2.615E-02	1.531E-02	NOT IDENT.
Y-91	6.657E+00	1.879E+01	1.634E+01	9.587E+00	NOT IDENT.
NB-94	-2.829E-02	3.592E-02	2.816E-02	1.833E-02	NOT IDENT.
NB-95	6.218E-02	4.781E-02	4.363E-02	2.439E-02	NOT IDENT.
NB-95M	6.627E-01	1.750E-01	1.501E-01	8.927E-02	NOT IDENT.
ZR-95	5.761E-02	7.467E-02	6.640E-02	3.810E-02	NOT IDENT.
NB-97	8.753E+04	2.877E+05	0.000E+00	1.468E+05	SHORT HLIF
ZR-97	2.231E+07	6.093E+06	0.000E+00	3.108E+06	SHORT HLIF
MO-99	4.168E+00	1.564E+01	1.338E+01	7.980E+00	NOT IDENT.
TC-99M	2.058E+17	7.278E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.367E-02	3.469E-02	2.876E-02	1.770E-02	NOT IDENT.
RH-102	-2.501E-02	2.916E-02	2.362E-02	1.488E-02	NOT IDENT.
RU-103	-1.937E-02	4.170E-02	3.430E-02	2.127E-02	NOT IDENT.
RH-106	-2.252E-01	3.206E-01	2.545E-01	1.635E-01	NOT IDENT.
RU-106	-2.252E-01	3.198E-01	2.545E-01	1.631E-01	NOT IDENT.
AG-108M	-7.739E-03	3.008E-02	2.567E-02	1.535E-02	NOT IDENT.
AG-110M	7.784E-03	3.676E-02	3.153E-02	1.875E-02	NOT IDENT.
IN-111	8.330E-01	1.405E+00	1.092E+00	7.168E-01	NOT IDENT.
IN-113M	4.796E-03	4.391E-02	3.869E-02	2.240E-02	NOT IDENT.
SN-113	4.796E-03	4.391E-02	3.869E-02	2.240E-02	NOT IDENT.
IN-114M	7.731E-02	2.129E-01	1.645E-01	1.086E-01	NOT IDENT.
CD-115	-1.146E+00	1.444E+01	1.231E+01	7.367E+00	NOT IDENT.
SN-117M	-1.450E-02	5.899E-02	5.105E-02	3.010E-02	NOT IDENT.
SB-122	7.331E-02	2.586E+00	2.212E+00	1.319E+00	NOT IDENT.
I-123	-7.074E+06	2.184E+07	0.000E+00	1.114E+07	SHORT HLIF
TE-123M	-9.365E-03	2.892E-02	2.494E-02	1.475E-02	NOT IDENT.
I-124	-2.851E-01	1.002E+00	7.102E-01	5.111E-01	FAIL ABUN
SB-124	2.995E-02	6.892E-02	6.328E-02	3.516E-02	FAIL ABUN
SB-125	6.717E-02	8.845E-02	8.068E-02	4.513E-02	FAIL ABUN
TE-125M	-6.512E+00	9.238E+00	7.991E+00	4.713E+00	NOT IDENT.
I-126	1.159E-01	2.075E-01	1.822E-01	1.058E-01	NOT IDENT.
SB-126	-9.673E-02	1.932E-01	1.310E-01	9.857E-02	NOT IDENT.
SB-127	3.329E-01	1.655E+00	1.416E+00	8.445E-01	NOT IDENT.
XE-127	2.512E-02	4.973E-02	4.377E-02	2.537E-02	NOT IDENT.
I-131	5.493E-02	1.174E-01	1.061E-01	5.990E-02	NOT IDENT.
TE-132	-1.002E+00	9.065E-01	7.252E-01	4.625E-01	NOT IDENT.
BA-133	3.867E-02	4.279E-02	3.524E-02	2.183E-02	NOT IDENT.
I-133	9.693E+03	1.286E+04	0.000E+00	6.559E+03	SHORT HLIF
CS-134	2.714E-02	5.760E-02	4.538E-02	2.939E-02	NOT IDENT.
I-135	5.468E+15	7.964E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.841E-02	9.487E-02	8.544E-02	4.840E-02	FAIL ABUN
BA-137M	2.406E-02	3.928E-02	3.462E-02	2.004E-02	NOT IDENT.
CS-137	2.544E-02	4.153E-02	3.660E-02	2.119E-02	NOT IDENT.
CE-139	-3.077E-03	3.002E-02	2.606E-02	1.532E-02	NOT IDENT.
BA-140	1.779E-01	2.786E-01	2.449E-01	1.421E-01	NOT IDENT.
LA-140	-6.891E-02	7.901E-02	5.667E-02	4.031E-02	FAIL ABUN
CE-141	8.997E-03	6.551E-02	5.782E-02	3.342E-02	NOT IDENT.
CE-143	2.408E+03	6.304E+02	0.000E+00	3.216E+02	SHORT HLIF
CE-144	1.632E-01	2.233E-01	1.789E-01	1.140E-01	NOT IDENT.
PM-144	3.025E-03	3.443E-02	2.913E-02	1.756E-02	NOT IDENT.
PR-144	2.051E-01	2.334E+00	1.975E+00	1.191E+00	NOT IDENT.



PM-146	-3.324E-02	4.251E-02	3.473E-02	2.169E-02	NOT IDENT.
ND-147	-2.530E-01	5.830E-01	4.818E-01	2.974E-01	FAIL ABUN
PM-149	-1.544E+01	1.193E+02	1.058E+02	6.087E+01	NOT IDENT.
EU-152	-9.246E-02	1.130E-01	8.099E-02	5.766E-02	NOT IDENT.
GD-153	1.301E-01	8.705E-02	7.327E-02	4.442E-02	NOT IDENT.
EU-154	-5.824E-02	1.074E-01	8.349E-02	5.481E-02	NOT IDENT.
EU-155	2.025E-01	1.099E-01	1.036E-01	5.605E-02	FAIL ABUN
TB-160	7.956E-02	1.220E-01	1.121E-01	6.224E-02	FAIL ABUN
HO-166M	-6.477E-02	6.470E-02	4.944E-02	3.301E-02	FAIL ABUN
TM-171	-1.708E+01	3.793E+01	2.764E+01	1.935E+01	NOT IDENT.
LU-176	2.833E-03	2.401E-02	2.147E-02	1.225E-02	FAIL ABUN
LU-177	1.457E+00	1.462E+00	1.171E+00	7.457E-01	FAIL ABUN
LU-177M	7.188E-02	2.007E-01	1.567E-01	1.024E-01	FAIL ABUN
HF-181	-2.986E-02	4.428E-02	3.638E-02	2.259E-02	NOT IDENT.
W-181	4.075E-01	4.559E-01	3.792E-01	2.326E-01	NOT IDENT.
TA-182	-8.530E-02	1.906E-01	1.530E-01	9.724E-02	NOT IDENT.
RE-183	-4.910E-03	1.108E-01	9.652E-02	5.652E-02	FAIL ABUN
RE-184	9.992E-02	2.403E-01	2.088E-01	1.226E-01	NOT IDENT.
OS-185	-2.573E-02	4.397E-02	3.526E-02	2.243E-02	NOT IDENT.
RE-188	2.301E-01	1.767E-01	1.620E-01	9.015E-02	NOT IDENT.
W-188	3.734E+00	7.525E+00	6.063E+00	3.839E+00	FAIL ABUN
IR-192	-1.303E-02	3.353E-02	2.912E-02	1.710E-02	FAIL ABUN
AU-195	1.102E-01	2.240E-01	2.040E-01	1.143E-01	FAIL ABUN
TL-200	4.152E+02	8.476E+02	0.000E+00	4.325E+02	SHORT HLIF
TL-201	4.815E+00	8.913E+00	7.937E+00	4.548E+00	NOT IDENT.
TL-202	-8.535E-03	6.753E-02	5.813E-02	3.446E-02	NOT IDENT.
HG-203	2.033E-02	4.045E-02	3.697E-02	2.064E-02	NOT IDENT.
BI-207	-1.922E-02	5.854E-02	4.831E-02	2.987E-02	FAIL ABUN
TL-207	-6.451E-03	7.077E-01	5.453E-01	3.611E-01	FAIL ABUN
PO-209	-2.266E+00	7.469E+00	6.259E+00	3.811E+00	NOT IDENT.
BI-210	-5.623E+00	5.464E+00	4.681E+00	2.788E+00	NOT IDENT.
PB-210	-5.623E+00	5.464E+00	4.681E+00	2.788E+00	NOT IDENT.
PO-210	-5.623E+00	5.460E+00	4.681E+00	2.785E+00	NOT IDENT.
PB-211	-2.531E-01	1.122E+00	8.261E-01	5.722E-01	NOT IDENT.
BI-212	1.203E+00	4.322E-01	3.519E-01	2.205E-01	FAIL ABUN
PO-215	-6.451E-03	7.077E-01	5.453E-01	3.611E-01	FAIL ABUN
RN-219	1.221E-01	4.384E-01	3.793E-01	2.237E-01	NOT IDENT.
RN-220	7.390E+00	2.778E+01	2.420E+01	1.417E+01	NOT IDENT.
RA-223	-6.451E-03	7.077E-01	5.453E-01	3.611E-01	FAIL ABUN
AC-227	-1.745E-01	4.006E-01	3.321E-01	2.044E-01	FAIL ABUN
TH-227	-1.745E-01	4.009E-01	3.321E-01	2.045E-01	FAIL ABUN
TH-229	-7.377E-01	5.407E-01	4.390E-01	2.759E-01	FAIL ABUN
PA-231	-1.302E+00	1.461E+00	1.237E+00	7.456E-01	NOT IDENT.
TH-231	-6.451E-03	7.077E-01	5.453E-01	3.611E-01	FAIL ABUN
U-231	1.239E+00	1.416E+00	1.161E+00	7.224E-01	FAIL ABUN
PA-233	3.222E-02	6.239E-02	5.684E-02	3.183E-02	FAIL ABUN
PA-234	2.352E-01	3.147E-01	2.852E-01	1.606E-01	FAIL ABUN
PA-234M	-5.021E-01	4.673E+00	3.890E+00	2.384E+00	NOT IDENT.
U-235	6.326E-02	2.221E-01	1.937E-01	1.133E-01	FAIL ABUN
NP-236	9.956E-03	7.956E-02	6.985E-02	4.059E-02	NOT IDENT.
NP-239	5.084E-02	1.845E-01	1.656E-01	9.412E-02	FAIL ABUN
AM-241	5.756E-03	2.085E-01	1.684E-01	1.064E-01	NOT IDENT.
CM-243	1.477E-01	9.849E-02	9.220E-02	5.025E-02	FAIL ABUN
AM-246	-4.131E-02	1.343E-01	1.103E-01	6.850E-02	NOT IDENT.
CM-247	3.410E-02	4.147E-02	3.490E-02	2.116E-02	NOT IDENT.
CF-249	9.521E-03	4.005E-02	3.521E-02	2.043E-02	NOT IDENT.
CF-251	-5.361E-02	1.259E-01	1.073E-01	6.423E-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	304.4556
46.50	304.4556
46.50	304.4556
48.70	281.1752
49.72	314.3940
51.35	320.7537
52.39	302.1557
52.97	323.4694
53.15	323.5680
53.44	325.5550
54.07	342.3773
56.28	349.1405
56.28	349.1420
57.37	0.0000
57.53	327.2289
57.53	327.2296
57.60	323.0563
57.98	326.7635
57.98	326.7635
59.32	339.7722
59.32	339.7722
59.40	339.8150
59.54	353.1902
59.72	356.2473
60.01	356.4098
61.10	374.7941
61.14	379.2617
61.30	379.3563
63.00	364.0068
63.29	368.8122
63.29	368.8122
63.58	369.9048
64.28	376.6232
65.12	350.2696
65.20	350.3112
65.20	350.3112
66.05	391.0555
66.72	407.1284
66.83	407.1966
66.91	420.9442
67.20	441.0578
67.20	441.0578
67.75	433.9309
67.85	433.9946
68.90	442.1525
68.90	442.1525
69.30	434.9097
69.67	436.6439
70.82	402.7917
70.82	402.7917
70.83	402.7982
72.80	412.5866
72.87	412.6267
72.87	412.6267
74.67	413.6592
74.81	413.7394
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	415.0394
77.11	415.0394

77.11	415.0394
77.11	415.0394
77.11	415.0394
77.11	415.0394
77.11	415.0394
78.38	366.0114
79.62	389.4344
79.80	389.5266
79.80	389.5266
80.11	470.3650
80.18	470.4084
80.30	470.4819
80.30	470.4819
80.57	498.0663
81.00	495.2997
81.07	495.3453
81.07	495.3453
81.07	495.3453
81.07	495.3453
82.60	412.3400
83.37	420.3922
83.78	422.1449
83.78	422.1449
83.78	422.1449
83.78	422.1449
84.21	400.9540
84.90	375.2684
85.43	380.1193
86.29	480.2708
86.50	497.2819
86.54	497.3056
86.59	497.3372
86.72	525.0547
86.79	525.0986
86.94	621.9459
87.30	516.2185
87.30	516.2185
87.30	516.2185
87.30	516.2185
87.30	516.2185
87.30	516.2185
87.57	516.3928
87.88	422.8075
88.03	422.8864
88.36	423.0592
88.47	423.1180
89.95	755.3010
91.11	378.1888
92.29	378.7317
92.38	378.7735
92.38	378.7735
93.35	373.0263
94.00	385.7099
94.67	384.4658
94.67	384.4681
94.90	375.2699
94.90	375.2699
94.90	375.2699
94.90	375.2699
95.87	329.1279
95.87	329.1279
96.73	320.1386
97.43	287.7391
98.44	325.8951
98.44	325.8963
98.88	322.3065
99.55	346.9202
99.55	346.9202
99.86	368.4903
100.00	368.5494
100.10	368.5941
103.18	328.7928
103.76	301.5908
105.00	309.8559
105.31	294.2688
108.00	381.7244
109.28	341.8667

111.00	322.7663
111.00	322.7663
111.76	314.1400
112.95	303.6612
115.19	329.1732
116.30	310.6980
117.00	296.0254
117.00	296.0254
117.66	322.0756
121.11	304.2717
121.62	317.4068
121.78	320.4526
122.06	320.5445
122.32	313.6371
122.32	313.6371
122.32	313.6371
122.32	313.6371
123.07	317.5894
127.23	316.3946
129.76	299.4754
131.20	314.4089
133.02	298.8116
133.54	276.3387
135.34	313.6447
136.00	335.1011
136.25	336.1946
136.48	334.2423
140.51	343.6474
140.51	0.0000
142.18	337.0532
142.65	337.1997
143.76	340.6050
144.24	371.3621
144.24	371.3621
144.24	371.3621
144.24	371.3621
145.22	340.0400
145.44	339.0872
147.16	358.0322
152.43	319.6439
152.70	331.0283
153.22	314.7244
154.21	332.4974
154.21	332.4974
154.21	332.4974
154.21	332.4974
155.03	294.6233
156.02	312.4063
158.56	321.3641
159.00	0.0000
159.00	317.3503
160.31	299.0808
161.27	295.1848
162.32	302.7045
162.64	298.6392
163.35	306.0823
163.89	302.0708
165.85	301.5317
167.43	284.2306
171.28	291.4055
171.86	299.9057
172.10	299.9648
176.55	289.5145
176.60	289.5250
181.06	267.8214
184.41	288.7963
185.71	328.6081
186.00	338.1958
190.27	278.2394
192.34	313.1508
193.63	340.1880
197.04	266.4585
198.01	302.9179
198.60	298.7817
200.40	315.2133
201.83	294.1534
202.84	279.3874
205.31	305.4182

208.36	294.0607
208.81	282.7603
209.75	298.0130
209.75	298.0130
210.97	291.1681
215.65	266.8622
216.55	264.8696
218.09	293.2966
222.10	263.7326
223.80	248.8317
226.40	241.6574
227.00	247.2023
227.08	264.6411
227.20	264.6633
228.16	273.5546
228.18	273.5584
228.18	273.5584
231.56	0.0000
235.69	269.9117
236.00	250.6847
236.00	250.6847
238.63	219.5145
238.63	219.5145
238.63	219.5145
238.63	219.5145
239.00	219.5679
240.98	219.8563
241.98	181.2810
241.98	181.2810
241.98	181.2810
244.69	135.7614
245.39	158.7546
247.94	190.5682
248.90	198.8951
249.79	217.8044
252.40	179.4085
252.85	194.9694
252.85	194.9694
254.15	0.0000
256.20	218.6972
256.20	218.6972
260.50	199.2528
260.90	192.6241
262.80	206.3873
264.65	192.8496
268.24	155.6952
268.79	170.0699
269.46	177.9749
269.46	177.9749
269.46	177.9749
269.46	177.9749
271.23	193.6327
273.65	237.0103
276.40	193.9822
277.35	192.3254
277.60	194.6039
277.60	194.6039
278.00	177.3241
278.60	167.4817
279.20	184.6577
279.53	196.4049
280.46	191.1054
281.68	172.3010
283.67	186.0513
284.30	184.3147
285.00	171.7352
285.90	167.3062
286.10	152.8530
286.10	152.8530
287.40	173.1102
288.45	0.0000
290.67	142.0786
290.80	142.0882
291.72	154.2638
293.26	0.0000
293.70	158.9847
295.21	113.6581
295.21	113.6581

295.21	113.6581
295.96	113.7085
296.50	113.7436
297.23	113.7909
298.57	113.8779
299.80	147.3866
299.80	147.3866
300.09	156.5285
300.09	156.5285
300.09	156.5285
300.09	156.5285
300.12	156.5306
301.29	147.5110
302.84	147.6412
303.76	149.2411
303.91	149.2530
304.40	140.1544
304.40	140.1544
304.84	152.3783
306.84	157.4329
308.46	164.9048
311.98	146.8691
316.51	156.4386
318.01	157.4903
319.02	142.8320
319.41	138.2538
320.08	141.7627
323.87	144.7503
323.87	144.7503
323.87	144.7503
323.87	144.7503
325.23	157.1836
328.77	148.2207
333.44	167.1636
334.20	167.2317
334.20	167.2317
334.30	167.2405
338.28	170.6956
338.28	170.6956
338.28	170.6956
338.28	170.6956
338.32	170.6978
338.32	170.6978
338.32	170.6978
340.50	128.9479
340.57	128.9512
344.27	166.5605
345.85	162.0218
350.59	0.0000
351.07	136.8411
351.92	120.3344
351.92	120.3344
351.92	120.3344
355.39	0.0000
356.01	83.0001
364.48	108.5186
366.43	119.0156
367.43	113.4038
367.94	0.0000
369.80	131.5138
374.96	129.9510
383.85	122.8933
387.95	117.4085
388.63	121.2655
391.69	121.4422
391.69	121.4422
392.90	120.5552
398.62	118.0031
400.65	132.5201
401.10	126.7857
401.81	131.3114
402.60	119.4596
404.84	139.5147
410.95	119.0034
411.60	114.2136
413.65	114.3205
414.70	109.0824
415.30	118.4356

415.76	112.8200
417.63	0.0000
418.52	127.8073
423.70	106.7559
427.08	101.0864
427.89	93.3445
432.53	105.2301
433.93	96.5202
439.47	93.8250
439.56	93.8285
439.89	100.6853
443.98	109.6785
444.90	109.7223
445.03	109.7291
445.03	109.7291
445.03	109.7291
445.03	109.7291
453.90	111.1337
463.38	103.6849
468.07	100.5919
473.00	100.1394
475.06	111.1400
475.35	107.1839
476.78	93.3448
477.59	89.4034
477.96	88.4231
482.03	111.4613
484.57	93.6454
487.03	90.7490
490.36	0.0000
492.35	86.9480
497.08	94.1239
507.63	0.0000
510.53	0.0000
510.84	86.5874
511.00	86.5926
511.85	95.6877
511.85	95.6877
513.99	85.6869
513.99	85.6869
520.41	88.9346
520.65	88.9432
527.90	82.0995
528.96	0.0000
529.64	61.8697
529.87	0.0000
531.02	87.2724
537.32	77.3100
543.00	98.8851
546.56	0.0000
549.76	91.9841
552.65	87.9904
555.20	89.0985
563.23	78.0651
563.90	79.1130
568.70	75.1351
569.32	80.3004
569.50	80.3061
569.67	80.3099
573.80	84.5565
574.00	84.5625
574.64	78.3936
578.91	67.1503
579.30	0.0000
583.14	74.4961
585.48	67.3105
591.81	80.9555
592.07	84.0771
593.00	85.1431
595.88	77.9535
600.56	117.1252
602.52	0.0000
602.71	102.4530
602.71	102.4530
603.60	90.3271
604.41	86.8774
604.70	86.8856
609.31	93.9880

609.31	93.9880
609.31	93.9880
609.31	93.9880
610.33	76.6097
612.46	78.4094
614.37	73.2317
618.01	73.3240
621.84	83.9082
621.84	83.9082
631.29	76.8158
633.02	64.2257
633.10	64.2272
634.78	70.5855
635.90	67.4500
636.97	76.9637
645.85	79.3085
646.12	81.4309
656.30	95.5020
657.75	78.5618
657.90	0.0000
661.65	82.9150
661.65	82.9150
664.57	0.0000
666.33	80.9133
666.33	80.9133
675.00	72.6003
677.61	70.5246
685.20	67.4835
692.80	68.7219
695.00	84.8884
696.49	72.0283
696.49	72.0283
697.00	75.2654
697.49	76.3527
698.33	81.7501
698.50	76.3770
699.00	74.2373
702.63	93.7098
706.10	62.5412
706.58	0.0000
706.67	67.9449
709.31	82.0340
711.68	89.6566
713.82	58.3690
717.42	78.9954
720.50	86.6523
721.93	0.0000
722.20	65.0237
722.78	54.1956
722.78	54.1956
722.89	54.1980
722.95	54.1992
723.30	61.4327
724.18	66.8713
727.18	61.5060
733.00	61.6153
735.90	65.2983
739.58	64.2806
742.81	63.2534
744.21	66.5534
747.13	67.7050
751.79	72.1730
752.31	72.1843
753.82	67.8413
755.35	55.8298
756.15	59.1284
756.87	65.7129
763.93	100.9709
765.79	71.3778
766.42	69.1939
766.84	73.5969
776.49	65.1772
778.00	65.2061
778.57	71.6460
778.89	71.6523
783.80	55.1965
785.46	61.6661
792.07	58.4913



795.84	74.3801
796.30	68.0588
798.80	60.1888
801.93	68.4340
805.60	61.0989
810.29	67.6697
810.76	63.9702
815.85	52.9214
817.79	55.7373
818.51	53.8900
819.60	52.0477
826.30	55.8704
828.27	0.0000
831.60	62.4813
831.96	65.2861
834.83	67.2056
836.80	0.0000
846.75	58.9984
848.13	59.0215
856.28	0.0000
856.80	54.7342
860.37	41.8963
867.32	52.7381
867.82	53.1217
871.10	50.9063
873.19	43.3889
874.81	44.3522
875.33	0.0000
876.40	59.4752
879.36	34.9577
880.27	41.5821
880.51	40.6397
881.50	43.4862
883.24	40.6686
884.67	39.7382
889.25	41.6815
896.60	57.8986
898.02	56.0207
899.00	60.7839
903.28	53.7896
911.07	53.8989
911.07	53.8989
911.07	53.8989
919.63	44.8791
920.93	50.6256
925.00	48.7661
925.24	47.8129
926.50	59.3082
935.52	59.4457
937.48	69.0674
944.10	49.0057
946.00	48.0682
949.00	47.1428
962.29	62.8832
964.01	57.9431
966.15	76.1955
968.20	72.5052
969.11	72.5220
969.11	72.5220
969.11	72.5220
977.42	37.7892
980.50	37.8177
983.50	43.6688
989.30	42.7593
996.32	51.5939
1001.03	49.7040
1001.68	55.5597
1004.76	49.7487
1021.30	0.0000
1024.50	0.0000
1034.80	43.2319
1036.00	33.4148
1037.82	40.3127
1038.57	36.3857
1038.76	0.0000
1045.16	32.5032
1046.59	37.4403
1048.07	29.5679

1050.47	34.5158
1050.47	34.5158
1062.04	57.3534
1063.62	64.2991
1076.63	37.7031
1077.35	43.6634
1078.86	45.6631
1085.78	40.7648
1099.22	48.8684
1112.02	46.2951
1112.84	39.4446
1115.52	29.1713
1120.29	56.6888
1120.29	56.6888
1120.29	56.6888
1120.29	56.6888
1120.51	56.6911
1121.28	49.8276
1124.00	0.0000
1129.67	50.2075
1131.51	0.0000
1147.95	0.0000
1167.94	41.5172
1173.22	44.6069
1175.09	38.5396
1177.93	46.6813
1189.05	53.9144
1204.90	50.0129
1205.75	0.0000
1213.00	39.8744
1221.42	57.3581
1230.97	65.0958
1235.34	49.3066
1236.41	0.0000
1238.25	47.2803
1246.25	54.7127
1260.41	0.0000
1271.85	33.1185
1274.45	36.2419
1274.54	36.2433
1291.56	24.9375
1298.22	0.0000
1312.09	31.3000
1325.50	25.1064
1325.50	25.1064
1332.49	25.1416
1333.61	29.3376
1360.21	20.0112
1362.66	0.0000
1365.15	24.2466
1368.21	12.6582
1368.53	0.0000
1376.25	28.9777
1384.27	16.3251
1394.10	23.3213
1395.20	27.5679
1407.95	24.4450
1434.06	25.6328
1436.60	24.5760
1457.56	0.0000
1460.81	7.3599
1489.15	28.0503
1509.49	14.0759
1596.49	20.7301
1620.62	17.0307
1678.03	0.0000
1691.02	9.5728
1691.02	9.5728
1706.46	0.0000
1750.46	0.0000
1764.49	15.2562
1764.49	15.2562
1764.49	15.2562
1764.49	15.2562
1770.23	38.7807
1771.40	20.3635
1791.20	0.0000
1808.65	5.8523

1836.01

10.7744

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148008

Total Uranium Activity	6.0121E+00	ug/g
Total Uranium Counting Unc.	5.7677E+00	ug/g
Total Uranium Tpu	2.9427E-06	ug/g
Total Uranium Mda	3.8747E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148008
*  ANALYST       : MXR1                             DETECTOR    : GAM23
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 15:51:56.86          SAMPLE ALQT  : 139.900 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.946E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.307E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.529E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.712E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:57:35.37

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148009.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:56:22
Sample ID          : G244148009          Sample quantity  : 1.26620E+02 GRAM
Detector name      : GAM01              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.08  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940268             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	74.82	333	471	1.21	150.36	146	28	4.62E-02	11.9	1.36E+00
2	3	77.12	533	430	1.11	154.96	146	28	7.40E-02	7.8	
3	0	87.20	131	330	1.05	175.10	173	6	1.82E-02	23.5	
4	0	93.27*	166	539	1.45	187.24	183	12	2.31E-02	30.5	
5	0	186.14*	133	321	1.70	372.86	368	10	1.84E-02	28.1	
6	0	209.81	106	277	1.15	420.18	416	9	1.47E-02	30.1	
7	3	239.05*	1186	189	1.20	478.63	473	16	1.65E-01	3.6	7.39E-01
8	3	242.00	263	173	1.64	484.54	473	16	3.65E-02	11.3	
9	0	270.78	131	185	1.95	542.06	537	11	1.82E-02	22.0	
10	0	295.63*	305	220	1.40	591.72	584	13	4.24E-02	11.6	
11	0	300.33	103	110	1.37	601.13	597	8	1.43E-02	20.2	
12	0	338.69*	219	160	1.03	677.80	672	10	3.04E-02	13.1	
13	0	352.25*	477	245	1.36	704.90	699	14	6.63E-02	8.4	
14	0	463.53	81	109	2.14	927.33	920	13	1.13E-02	28.8	
15	0	510.91*	127	148	1.46	1022.03	1014	16	1.77E-02	25.7	
16	0	583.66*	390	84	1.57	1167.43	1162	14	5.41E-02	7.3	
17	0	609.74*	356	119	1.44	1219.57	1212	13	4.94E-02	8.4	
18	0	727.92	116	68	1.61	1455.78	1450	15	1.60E-02	18.1	
19	0	794.88	56	46	1.68	1589.60	1584	12	7.78E-03	27.5	
20	0	860.45	63	33	3.60	1720.67	1714	12	8.79E-03	22.1	
21	0	911.41*	228	41	1.67	1822.50	1817	11	3.17E-02	8.7	
22	2	964.83	67	43	2.11	1929.27	1922	33	9.32E-03	24.7	2.17E+00
23	2	969.33*	136	38	1.49	1938.28	1922	33	1.88E-02	12.2	
24	0	1121.56*	36	90	1.07	2242.51	2234	12	4.97E-03	56.5	
25	0	1238.03	71	47	1.41	2475.29	2467	16	9.80E-03	25.0	
26	0	1408.78	19	12	1.27	2816.53	2810	12	2.64E-03	43.1	
27	0	1461.09*	662	19	1.96	2921.06	2914	15	9.19E-02	4.2	
28	0	1510.96	19	16	4.12	3020.74	3013	16	2.64E-03	52.4	
29	0	1621.31	25	3	1.84	3241.26	3236	11	3.49E-03	23.7	
30	0	1765.00*	70	0	2.04	3528.40	3522	16	9.70E-03	13.1	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:57:38

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148009.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 4-JAN-2010 12:00:00 Acquisition date : 20-JAN-2010 15:56:22  
 Sample ID : G244148009 Sample quantity : 126.62 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA1 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.08 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	*	1.945E+01	2.378E+00	5.568E-01	4.950E-02	34.937
CD-109	+	88.03	*	2.057E+00	9.844E-01	1.542E+00	1.459E-01	1.334
SN-126		64.28		-8.578E-02	5.864E-01	9.380E-01	1.380E-01	-0.091
	+	86.94		8.394E-01	5.259E-01	7.068E-01	2.934E-01	1.188
	+	87.57	*	2.019E-01	9.660E-02	1.585E-01	1.493E-02	1.274
TL-208		277.35		3.422E-01	4.317E-01	7.160E-01	9.100E-02	0.478
	+	510.84		7.305E-01	3.861E-01	2.308E-01	2.744E-02	3.165
	+	583.14	*	6.405E-01	1.103E-01	6.093E-02	5.533E-03	10.513
	+	860.37		9.889E-01	4.467E-01	4.910E-01	4.706E-02	2.014
BI-211		72.87		9.024E+00	3.935E+00	6.168E+00	5.059E-01	1.463
	+	351.07	*	3.388E+00	6.478E-01	3.542E-01	3.222E-02	9.565
BI-212	+	727.18	*	1.640E+00	6.149E-01	4.967E-01	4.923E-02	3.301
		785.46		9.294E-01	1.918E+00	3.299E+00	2.883E-01	0.282
	+	1620.62		3.104E+00	1.496E+00	2.230E+00	1.920E-01	1.392
PB-212	+	74.81		2.219E+00	5.958E-01	6.461E-01	8.087E-02	3.435
	+	77.11		2.002E+00	3.563E-01	3.646E-01	3.094E-02	5.492
	+	87.30		9.338E-01	4.564E-01	7.364E-01	1.010E-01	1.268
	+	238.63	*	1.815E+00	2.244E-01	9.817E-02	9.940E-03	18.486
	+	300.09		2.445E+00	1.025E+00	1.196E+00	1.293E-01	2.045
PO-212	+	74.81		2.219E+00	5.958E-01	6.461E-01	8.087E-02	3.435
	+	77.11		2.002E+00	3.563E-01	3.646E-01	3.094E-02	5.492
	+	87.30		9.338E-01	4.564E-01	7.364E-01	1.010E-01	1.268
		115.19		-1.636E+00	3.992E+00	6.219E+00	5.404E-01	-0.263
	+	238.63	*	1.815E+00	2.244E-01	9.817E-02	9.940E-03	18.486
	+	300.09		2.445E+00	1.025E+00	1.196E+00	1.293E-01	2.045
BI-214	+	609.31	*	1.104E+00	2.153E-01	1.283E-01	1.265E-02	8.602
	+	1120.29		5.896E-01	6.694E-01	5.171E-01	5.533E-02	1.140
	+	1764.49		1.588E+00	4.364E-01	3.144E-01	2.637E-02	5.050
PB-214	+	74.81		3.824E+00	1.003E+00	1.113E+00	1.241E-01	3.435
	+	77.11		3.433E+00	6.645E-01	6.250E-01	7.128E-02	5.492
	+	87.30		1.600E+00	7.753E-01	1.262E+00	1.533E-01	1.268
	+	241.98		2.417E+00	6.034E-01	5.914E-01	6.317E-02	4.087
	+	295.21		1.275E+00	3.284E-01	2.511E-01	2.773E-02	5.077
	+	351.92	*	1.179E+00	2.336E-01	1.335E-01	1.399E-02	8.826

## ----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		3.824E+00	1.003E+00	1.113E+00	1.241E-01	3.435
	+	77.11		3.433E+00	6.645E-01	6.250E-01	7.128E-02	5.492
	+	87.30		1.600E+00	7.753E-01	1.262E+00	1.533E-01	1.268
	+	241.98		2.417E+00	6.034E-01	5.914E-01	6.317E-02	4.087
	+	295.21		1.275E+00	3.284E-01	2.511E-01	2.773E-02	5.077
	+	351.92	*	1.179E+00	2.336E-01	1.335E-01	1.399E-02	8.826
PO-216	+	74.81		2.219E+00	5.958E-01	6.461E-01	8.087E-02	3.435
	+	77.11		2.002E+00	3.563E-01	3.646E-01	3.094E-02	5.492
	+	87.30		9.338E-01	4.564E-01	7.364E-01	1.010E-01	1.268
	+	238.63	*	1.815E+00	2.244E-01	9.817E-02	9.940E-03	18.486
	+	300.09		2.445E+00	1.025E+00	1.196E+00	1.293E-01	2.045
	+	74.81		3.824E+00	1.003E+00	1.113E+00	1.241E-01	3.435
PO-218	+	77.11		3.433E+00	6.645E-01	6.250E-01	7.128E-02	5.492
	+	87.30		1.600E+00	7.753E-01	1.262E+00	1.533E-01	1.268
	+	241.98		2.417E+00	6.034E-01	5.914E-01	6.317E-02	4.087
	+	295.21		1.275E+00	3.284E-01	2.511E-01	2.773E-02	5.077
	+	351.92	*	1.179E+00	2.336E-01	1.335E-01	1.399E-02	8.826
	+	240.98	*	4.582E+00	1.115E+00	1.117E+00	1.016E-01	4.101
RA-224	+	609.31	*	1.104E+00	2.153E-01	1.283E-01	1.265E-02	8.602
RA-226	+	1120.29		5.896E-01	6.694E-01	5.171E-01	5.533E-02	1.140
	+	1764.49		1.588E+00	4.364E-01	3.144E-01	2.637E-02	5.050
	+	338.32		1.710E+00	8.354E-01	4.412E-01	1.822E-01	3.875
AC-228	+	911.07	*	1.691E+00	3.524E-01	2.472E-01	2.861E-02	6.840
	+	969.11		1.776E+00	6.009E-01	3.683E-01	8.643E-02	4.822
	+	338.32		1.710E+00	8.354E-01	4.412E-01	1.822E-01	3.875
RA-228	+	911.07	*	1.691E+00	3.524E-01	2.472E-01	2.861E-02	6.840
	+	969.11		1.776E+00	6.009E-01	3.683E-01	8.643E-02	4.822
	+	74.81		2.255E+00	5.682E-01	6.566E-01	5.516E-02	3.435
TH-228	+	77.11		2.035E+00	3.621E-01	3.705E-01	3.144E-02	5.492
	+	87.30		9.490E-01	4.540E-01	7.484E-01	7.028E-02	1.268
	+	238.63	*	1.844E+00	2.281E-01	9.977E-02	1.010E-02	18.486
TH-230	+	300.09		2.485E+00	1.785E+00	1.215E+00	7.211E-01	2.045
	+	609.31	*	1.104E+00	2.152E-01	1.283E-01	1.265E-02	8.602
	+	1120.29		5.896E-01	6.694E-01	5.171E-01	5.533E-02	1.140
TH-232	+	1764.49		1.588E+00	4.364E-01	3.144E-01	2.637E-02	5.050
	+	338.32		1.710E+00	4.710E-01	4.412E-01	3.884E-02	3.875
	+	911.07	*	1.691E+00	3.524E-01	2.472E-01	2.861E-02	6.840
U-234	+	969.11		1.776E+00	6.009E-01	3.683E-01	8.643E-02	4.822
	+	609.31	*	1.104E+00	2.152E-01	1.283E-01	1.265E-02	8.602
	+	1120.29		5.896E-01	6.694E-01	5.171E-01	5.533E-02	1.140
NP-237	+	1764.49		1.588E+00	4.364E-01	3.144E-01	2.637E-02	5.050
	+	86.50	*	5.929E-01	3.089E-01	3.183E-01	7.206E-02	1.862
	+	95.87		8.176E-01	1.125E+00	1.644E+00	4.070E-01	0.497
AM-243	+	74.67	*	3.598E-01	9.055E-02	1.051E-01	8.741E-03	3.423
	+	86.72		2.223E+01	1.064E+01	1.191E+01	1.111E+00	1.867
		117.66		-2.156E+00	4.182E+00	6.468E+00	5.639E-01	-0.333
ANH-511		142.18		1.130E+01	1.858E+01	3.218E+01	2.752E+00	0.351
	+	511.00	*	1.578E-01	8.235E-02	4.987E-02	4.227E-03	3.164

## ----- 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	*	-2.209E-01	3.668E-01	5.569E-01	5.066E-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	*		-1.867E-02	4.412E-02	6.975E-02	5.857E-03	-0.268
NA-24	1368.53	*		-1.141E+00	4.412E-02	Half-Life too short		
AL-26	1129.67			7.334E-01	1.744E+00	2.946E+00	2.461E-01	0.249
	1808.65	*		1.050E-02	2.888E-02	5.128E-02	4.249E-03	0.205
TI-44	67.85			-1.549E-02	5.179E-02	8.276E-02	6.563E-03	-0.187
	78.38	*		3.695E-01	6.575E-02	8.700E-02	7.466E-03	4.247
SC-46	889.25	*		-4.824E-02	4.033E-02	5.553E-02	5.020E-03	-0.869
	1120.51	+		1.018E-01	1.154E-01	1.499E-01	1.260E-02	0.679
V-48	944.10			1.054E-01	9.499E-01	1.567E+00	1.411E-01	0.067
	983.50	*		-3.093E-02	7.818E-02	1.207E-01	1.078E-02	-0.256
	1312.09			6.091E-02	8.479E-02	1.539E-01	1.305E-02	0.396
CR-51	320.08	*		-3.857E-02	4.215E-01	6.866E-01	6.459E-02	-0.056
MN-52	744.21			-2.943E-01	2.775E-01	4.052E-01	3.476E-02	-0.726
	848.13			8.677E-01	8.437E+00	1.398E+01	1.250E+00	0.062
	935.52			2.750E-01	3.016E-01	5.386E-01	4.857E-02	0.511
	1246.25			-5.877E-02	9.984E+00	1.548E+01	1.287E+00	-0.004
	1333.61			-4.919E+00	6.299E+00	9.159E+00	7.809E-01	-0.537
	1434.06	*		-1.117E-01	2.244E-01	3.376E-01	2.915E-02	-0.331
MN-54	834.83	*		3.518E-03	4.428E-02	7.319E-02	6.515E-03	0.048
CO-56	846.75	*		-1.791E-02	4.422E-02	6.942E-02	6.203E-03	-0.258
	977.42			-8.024E-01	3.981E+00	5.403E+00	4.832E-01	-0.148
	1037.82			-1.557E-01	3.542E-01	5.429E-01	5.005E-02	-0.287
	1175.09			-1.013E+00	2.223E+00	3.539E+00	2.867E-01	-0.286
	1238.25	+		3.303E-01	1.673E-01	2.128E-01	1.819E-02	1.552
	1360.21			-3.910E-01	1.179E+00	1.872E+00	1.603E-01	-0.209
	1771.40			-5.673E-02	2.801E-01	3.632E-01	3.040E-02	-0.156
CO-57	122.06	*		-7.106E-03	2.864E-02	4.487E-02	3.950E-03	-0.158
	136.48			2.796E-02	2.135E-01	3.642E-01	3.365E-02	0.077
CO-58	810.76	*		-3.297E-02	4.199E-02	6.301E-02	5.574E-03	-0.523
FE-59	142.65			2.054E+00	3.062E+00	5.165E+00	4.417E-01	0.398
	192.34			-5.023E-01	1.034E+00	1.693E+00	2.287E-01	-0.297
	1099.22	*		-5.393E-02	1.066E-01	1.614E-01	1.487E-02	-0.334
	1291.56			-6.226E-02	1.348E-01	2.119E-01	2.039E-02	-0.294
CO-60	1173.22			-3.367E-02	4.683E-02	7.246E-02	5.865E-03	-0.465
	1332.49	*		-3.418E-02	4.121E-02	6.024E-02	5.135E-03	-0.567
ZN-65	1115.52	*		3.460E-03	1.155E-01	1.609E-01	1.358E-02	0.022
GE-68	1077.35	*		2.936E-01	1.463E+00	2.413E+00	2.077E-01	0.122
AS-73	53.44	*		-4.237E-01	1.002E+00	1.599E+00	1.294E-01	-0.265
AS-74	595.88	*		-2.299E-02	1.045E-01	1.720E-01	1.449E-02	-0.134
	634.78			-1.528E-01	4.032E-01	6.506E-01	5.404E-02	-0.235
SE-75	66.05			-2.080E+00	5.464E+00	8.705E+00	8.536E-01	-0.239
	96.73			-7.407E-02	9.380E-01	1.313E+00	1.814E-01	-0.056
	121.11			1.765E-02	1.517E-01	2.420E-01	2.744E-02	0.073
	136.00			5.337E-03	4.043E-02	6.900E-02	5.972E-03	0.077
	198.60			9.790E-01	2.081E+00	3.472E+00	3.378E-01	0.282
	264.65	*		1.802E-02	4.972E-02	7.806E-02	7.171E-03	0.231
	279.53			5.627E-02	1.204E-01	2.034E-01	1.922E-02	0.277
	303.91			-2.341E-01	2.480E+00	3.542E+00	4.185E-01	-0.066
	400.65			3.393E-01	2.891E-01	5.028E-01	5.388E-02	0.675

## ---- 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		6.024E+02	2.882E+02	4.949E+02	4.678E+01	1.217
		200.40		-1.163E+02	2.569E+02	4.121E+02	3.634E+01	-0.282
	+	239.00		3.955E+02	4.559E+01	5.887E+01	5.345E+00	6.719
		249.79		-1.350E+01	1.009E+02	1.660E+02	1.514E+01	-0.081
		281.68		-1.146E+02	1.345E+02	2.102E+02	1.921E+01	-0.545
		297.23		5.595E+02	1.319E+02	1.927E+02	1.753E+01	2.903
		303.76		-1.984E+01	2.854E+02	4.086E+02	3.704E+01	-0.049
		439.47		1.496E+01	2.218E+02	3.593E+02	2.979E+01	0.042
		484.57		-6.351E+01	3.514E+02	5.543E+02	4.674E+01	-0.115
		520.65	*	5.188E-02	1.603E+01	2.559E+01	2.171E+00	0.002
		574.64		-8.717E+01	3.044E+02	4.992E+02	4.226E+01	-0.175
		578.91		-1.998E+01	1.448E+02	2.081E+02	1.760E+01	-0.096
		585.48		2.792E+03	4.804E+02	8.591E+02	7.257E+01	3.250
		755.35		1.313E+02	2.462E+02	4.260E+02	3.674E+01	0.308
		817.79		-2.473E+02	1.966E+02	2.759E+02	2.441E+01	-0.896
		698.33		3.360E+00	3.504E+01	5.867E+01	4.913E+00	0.057
SR-82		776.49	*	-2.249E-01	4.147E-01	6.456E-01	5.621E-02	-0.348
		1395.20		6.596E+00	1.192E+01	2.133E+01	1.835E+00	0.309
RB-83		520.41	*	4.729E-03	7.911E-02	1.269E-01	1.077E-02	0.037
		529.64		-1.096E-01	1.160E-01	1.806E-01	1.533E-02	-0.607
		552.65		-1.458E-01	2.249E-01	3.589E-01	3.046E-02	-0.406
RB-84		881.50	*	1.898E-02	8.083E-02	1.354E-01	1.221E-02	0.140
KR-85		513.99	*	2.008E+01	9.605E+00	1.591E+01	1.349E+00	1.262
SR-85		513.99	*	1.041E-01	4.979E-02	8.248E-02	6.993E-03	1.262
RB-86		1076.63	*	-1.768E-02	9.515E-01	1.532E+00	1.320E-01	-0.012
Y-88		898.02		-2.557E-02	4.051E-02	6.074E-02	5.527E-03	-0.421
		1836.01	*	2.726E-03	4.040E-02	6.661E-02	5.479E-03	0.041
		392.90	*	-1.371E-02	3.622E-02	5.715E-02	4.602E-03	-0.240
ZR-88		1204.90	*	-6.997E+00	1.990E+01	3.215E+01	2.634E+00	-0.218
Y-91		702.63	*	-1.357E-02	3.566E-02	5.711E-02	4.794E-03	-0.238
		871.10		-1.250E-05	3.479E-02	5.695E-02	5.124E-03	0.000
		765.79	*	1.250E-02	5.003E-02	8.423E-02	7.299E-03	0.148
NB-95		235.69	*	1.523E-01	1.455E-01	2.261E-01	2.318E-02	0.674
NB-95M		724.18		-9.149E-03	1.178E-01	1.675E-01	1.549E-02	-0.055
		756.15	*	4.268E-02	7.936E-02	1.373E-01	1.304E-02	0.311
		657.90	*	-2.524E-01	7.936E-02	Half-Life	too short	
NB-97		1024.50		-3.466E+00	7.936E-02	Half-Life	too short	
		254.15		-2.976E+00	7.936E-02	Half-Life	too short	
		355.39		-9.371E+00	7.936E-02	Half-Life	too short	
ZR-97		507.63	*	1.020E+01	7.936E-02	Half-Life	too short	
		602.52		1.772E+00	7.936E-02	Half-Life	too short	
		1021.30		-2.375E+00	7.936E-02	Half-Life	too short	
		1147.95		-1.052E+01	7.936E-02	Half-Life	too short	
		1362.66		6.244E+00	7.936E-02	Half-Life	too short	
		1750.46		1.956E+00	7.936E-02	Half-Life	too short	
		140.51		-2.697E+01	3.787E+01	5.925E+01	1.640E+01	-0.455
MO-99		181.06		1.310E+01	2.711E+01	4.112E+01	7.526E+00	0.319
		366.43		1.050E+02	1.254E+02	2.149E+02	1.817E+01	0.489
		739.58	*	7.804E+00	1.570E+01	2.712E+01	4.109E+00	0.288

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	778.00			-3.464E+01	4.541E+01	6.862E+01	5.978E+00	-0.505
TC-99M	140.51	*		-5.439E+11	4.541E+01	Half-Life too short		
RH-101	127.23			-1.055E-03	3.706E-02	5.862E-02	5.099E-03	-0.018
	198.01	*		3.285E-02	3.817E-02	6.459E-02	5.684E-03	0.509
	325.23			-2.378E-01	2.653E-01	4.102E-01	3.661E-02	-0.580
RH-102	418.52			1.355E-01	3.383E-01	5.618E-01	4.604E-02	0.241
	475.06	*		2.751E-03	3.203E-02	5.176E-02	4.352E-03	0.053
	631.29			2.409E-02	5.946E-02	1.026E-01	8.533E-03	0.235
	697.49			-2.888E-02	7.951E-02	1.275E-01	1.067E-02	-0.226
	766.84			1.036E-01	1.260E-01	2.209E-01	1.915E-02	0.469
	1046.59			-2.789E-02	1.401E-01	2.217E-01	1.936E-02	-0.126
	1112.84			-5.766E-02	2.857E-01	4.037E-01	3.408E-02	-0.143
RU-103	497.08	*		2.290E-02	4.665E-02	7.757E-02	1.091E-02	0.295
+	610.33			1.214E+01	2.866E+00	3.383E+00	5.604E-01	3.589
RH-106	511.85	+		7.897E-01	4.121E-01	5.220E-01	4.424E-02	1.513
	621.84	*		3.634E-01	3.545E-01	6.346E-01	8.369E-02	0.573
	1050.47			1.305E+00	2.824E+00	4.779E+00	4.167E-01	0.273
RU-106	511.85	+		7.897E-01	4.121E-01	5.220E-01	4.424E-02	1.513
	621.84	*		3.634E-01	3.525E-01	6.346E-01	5.301E-02	0.573
	1050.47			1.305E+00	2.824E+00	4.779E+00	4.167E-01	0.273
AG-108M	433.93	*		-1.499E-02	4.047E-02	6.349E-02	5.475E-03	-0.236
	614.37			1.568E-02	4.464E-02	6.763E-02	5.901E-03	0.232
	722.95			-1.095E-02	4.994E-02	6.964E-02	6.149E-03	-0.157
AG-110M	657.75	*		-2.731E-02	3.565E-02	5.497E-02	4.661E-03	-0.497
	677.61			2.002E-01	3.347E-01	5.843E-01	4.981E-02	0.343
	706.67			3.924E-02	2.393E-01	4.022E-01	3.481E-02	0.098
	763.93			-1.814E-02	1.863E-01	3.048E-01	2.713E-02	-0.060
	884.67			1.405E-02	5.258E-02	8.848E-02	8.224E-03	0.159
	937.48			-5.894E-02	1.151E-01	1.758E-01	1.638E-02	-0.335
	1384.27			-1.508E-01	1.911E-01	2.820E-01	2.491E-02	-0.535
IN-111	171.28			-5.068E-02	1.350E+00	2.268E+00	1.942E-01	-0.022
	245.39	*		-4.599E-01	1.658E+00	2.367E+00	2.155E-01	-0.194
IN-113M	391.69	*		2.752E-02	5.240E-02	8.790E-02	7.321E-03	0.313
SN-113	391.69	*		2.752E-02	5.240E-02	8.790E-02	7.321E-03	0.313
IN-114M	190.27	*		3.564E-02	2.218E-01	3.309E-01	2.889E-02	0.108
CD-115	260.90			-3.182E+01	1.868E+02	3.060E+02	2.798E+01	-0.104
	492.35			3.409E+01	5.478E+01	9.229E+01	7.796E+00	0.369
	527.90	*		-5.637E+00	1.608E+01	2.638E+01	2.239E+00	-0.214
SN-117M	156.02			2.080E+00	2.582E+00	4.488E+00	3.821E-01	0.464
	158.56	*		-2.113E-02	6.208E-02	1.033E-01	8.798E-03	-0.205
SB-122	563.90	*		1.648E+00	3.047E+00	5.313E+00	4.504E-01	0.310
	692.80			3.576E+01	6.148E+01	1.070E+02	8.932E+00	0.334
I-123	159.00	*		7.771E+00	6.148E+01	Half-Life too short		
	528.96			-7.494E+02	6.148E+01	Half-Life too short		
TE-123M	159.00	*		1.025E-02	3.012E-02	5.154E-02	4.415E-03	0.199
I-124	602.71	*		-3.619E-02	1.012E+00	1.469E+00	1.235E-01	-0.025
	722.78			-1.203E+00	6.218E+00	8.704E+00	7.386E-01	-0.138
	1325.50			7.431E+00	4.235E+01	7.217E+01	6.141E+00	0.103
	1376.25			2.794E+01	3.682E+01	6.726E+01	5.772E+00	0.415

----- 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		3.089E+01	3.246E+01	3.901E+01	3.378E+00	0.792
		1691.02		1.545E+00	4.251E+00	7.542E+00	6.426E-01	0.205
		602.71		-1.789E-03	5.006E-02	7.262E-02	6.108E-03	-0.025
		645.85		-5.123E-01	5.571E-01	8.498E-01	7.479E-02	-0.603
		709.31		2.418E+00	3.238E+00	5.682E+00	4.787E-01	0.426
		713.82		-1.281E+00	1.846E+00	2.858E+00	3.405E-01	-0.448
		722.78		-8.627E-02	4.457E-01	6.239E-01	5.412E-02	-0.138
	+	968.20		1.851E+01	4.805E+00	8.837E+00	7.920E-01	2.094
		1045.16		-1.459E+00	3.033E+00	4.642E+00	4.057E-01	-0.314
		1325.50		5.689E-01	3.242E+00	5.525E+00	4.701E-01	0.103
SB-125		1368.21		-4.475E-01	1.805E+00	2.883E+00	3.876E-01	-0.155
		1436.60		-6.948E-01	3.375E+00	5.366E+00	4.633E-01	-0.129
		1691.02	*	2.613E-02	7.187E-02	1.275E-01	1.130E-02	0.205
		427.89	*	-3.996E-02	1.073E-01	1.682E-01	1.416E-02	-0.238
	+	463.38		9.084E-01	5.303E-01	6.338E-01	5.748E-02	1.433
		600.56		-3.826E-02	2.169E-01	3.382E-01	3.065E-02	-0.113
		635.90		3.445E-02	2.863E-01	4.828E-01	4.357E-02	0.071
		109.28	*	2.109E-01	1.070E+01	1.706E+01	1.769E+00	0.012
		388.63		9.279E-02	2.459E-01	4.090E-01	3.313E-02	0.227
		666.33	*	5.458E-02	2.055E-01	3.495E-01	2.871E-02	0.156
SB-126		753.82		9.760E-01	1.735E+00	3.007E+00	2.591E-01	0.325
		223.80		1.757E+00	4.642E+00	7.865E+00	7.076E-01	0.223
		278.60		2.762E-01	2.932E+00	4.859E+00	4.444E-01	0.057
	+	296.50		1.346E+01	3.363E+00	4.254E+00	3.871E-01	3.163
		414.70		-7.090E-02	9.335E-02	1.422E-01	1.163E-02	-0.499
		415.30		2.143E+00	7.504E+00	1.238E+01	1.012E+00	0.173
		555.20		2.108E+00	4.483E+00	7.807E+00	6.625E-01	0.270
		573.80		-4.202E-01	1.207E+00	1.969E+00	1.667E-01	-0.213
		593.00		1.703E-01	1.042E+00	1.769E+00	1.491E-01	0.096
		656.30		-4.401E-01	3.598E+00	5.926E+00	4.869E-01	-0.074
SB-127		666.33		2.286E-02	8.607E-02	1.464E-01	1.203E-02	0.156
		675.00		3.340E-02	2.277E+00	3.791E+00	3.131E-01	0.009
		695.00		-3.602E-03	8.746E-02	1.447E-01	1.209E-02	-0.025
		697.00		-7.287E-02	2.885E-01	4.674E-01	3.911E-02	-0.156
		720.50	*	4.447E-02	1.700E-01	2.731E-01	2.315E-02	0.163
		856.80		3.470E-01	6.025E-01	9.255E-01	8.294E-02	0.375
		989.30		2.283E-01	1.407E+00	2.328E+00	2.075E-01	0.098
		1034.80		1.026E-01	9.735E+00	1.592E+01	1.398E+00	0.006
		1213.00		-1.966E+00	5.483E+00	8.866E+00	7.286E-01	-0.222
		61.10		-4.443E+01	7.749E+01	1.224E+02	1.315E+01	-0.363
SB-127		252.40		3.618E+00	6.037E+00	9.983E+00	4.215E+00	0.362
		290.80		2.285E+01	3.228E+01	4.901E+01	5.811E+00	0.466
		411.60		2.217E+01	1.643E+01	2.851E+01	4.479E+00	0.777
		444.90		-4.986E-01	1.329E+01	2.134E+01	2.691E+00	-0.023
		473.00		6.922E-01	2.197E+00	3.617E+00	4.703E-01	0.191
		543.00		1.129E+00	2.062E+01	3.486E+01	5.078E+00	0.032
		603.60		-1.110E+01	1.889E+01	2.573E+01	3.255E+00	-0.431
		685.20	*	-4.738E-02	1.728E+00	2.863E+00	3.283E-01	-0.017
		698.50		-5.088E+00	1.862E+01	3.010E+01	4.789E+00	-0.169

## ---- 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			5.669E+00	4.329E+01	6.326E+01	7.196E+00	0.090
	783.80			9.410E-01	4.568E+00	7.674E+00	9.807E-01	0.123
	57.60			-5.788E+00	7.098E+00	1.108E+01	8.510E-01	-0.522
	145.22			6.601E-01	7.939E-01	1.345E+00	1.149E-01	0.491
	172.10			2.395E-02	1.295E-01	2.196E-01	1.882E-02	0.109
I-131	202.84	*		-1.265E-02	5.190E-02	8.586E-02	7.591E-03	-0.147
	374.96			1.636E-01	2.092E-01	3.588E-01	2.988E-02	0.456
	80.18			-8.203E+00	6.450E+00	8.582E+00	7.541E-01	-0.956
	284.30			4.317E-01	1.754E+00	2.931E+00	2.804E-01	0.147
	364.48	*		-9.031E-02	1.452E-01	2.258E-01	2.025E-02	-0.400
TE-132	636.97			2.135E-01	1.802E+00	3.038E+00	2.675E-01	0.070
	722.89			-1.974E+00	9.208E+00	1.285E+01	1.099E+00	-0.154
	49.72			-1.431E+01	3.020E+01	4.812E+01	5.308E+00	-0.297
	111.76			-2.681E+01	4.390E+01	6.694E+01	7.479E+00	-0.401
	116.30			-1.268E+01	3.810E+01	5.954E+01	6.668E+00	-0.213
BA-133	228.16	*		3.423E-01	9.315E-01	1.575E+00	2.541E-01	0.217
	53.15			-1.444E+00	4.333E+00	6.947E+00	5.645E-01	-0.208
	79.62			-1.845E+00	1.681E+00	2.242E+00	3.421E-01	-0.823
	81.00			-1.619E-01	1.271E-01	1.663E-01	2.656E-02	-0.974
	276.40			5.140E-01	4.642E-01	7.178E-01	1.060E-01	0.716
I-133	302.84			8.651E-02	1.774E-01	2.652E-01	3.602E-02	0.326
	356.01	*		-2.118E-02	5.817E-02	8.016E-02	1.057E-02	-0.264
	383.85			1.678E-01	3.111E-01	5.244E-01	6.455E-02	0.320
	510.53	+		3.709E+00	3.111E-01	Half-Life	too short	
	529.87	*		-1.351E-02	3.111E-01	Half-Life	too short	
CS-134	706.58			1.451E-01	3.111E-01	Half-Life	too short	
	856.28			4.555E-01	3.111E-01	Half-Life	too short	
	875.33			1.313E-01	3.111E-01	Half-Life	too short	
	1236.41			4.446E+00	3.111E-01	Half-Life	too short	
	1298.22			1.201E-02	3.111E-01	Half-Life	too short	
+ CS-135	475.35			3.899E-02	2.098E+00	3.371E+00	2.835E-01	0.012
	563.23			4.407E-01	4.022E-01	7.258E-01	6.214E-02	0.607
	569.32			1.139E-01	2.054E-01	3.594E-01	3.088E-02	0.317
	604.70			-1.329E-02	4.483E-02	6.323E-02	5.328E-03	-0.210
	795.84	*		1.341E-01	7.464E-02	1.078E-01	9.529E-03	1.243
I-135	801.93			5.096E-01	4.492E-01	7.815E-01	6.912E-02	0.652
	1038.57			-1.199E+00	4.342E+00	6.793E+00	5.954E-01	-0.177
	1167.94			1.675E+00	2.608E+00	4.653E+00	3.781E-01	0.360
	1365.15			9.025E-01	1.326E+00	2.405E+00	2.156E-01	0.375
	268.24	*		1.285E-01	1.978E-01	2.998E-01	3.126E-02	0.429
I-135	288.45			1.078E+11	1.978E-01	Half-Life	too short	
	417.63			-9.484E+10	1.978E-01	Half-Life	too short	
	546.56			7.304E+10	1.978E-01	Half-Life	too short	
	836.80			-4.221E+10	1.978E-01	Half-Life	too short	
	1038.76			-1.109E+10	1.978E-01	Half-Life	too short	
I-135	1124.00			1.983E+11	1.978E-01	Half-Life	too short	
	1131.51			-4.875E+09	1.978E-01	Half-Life	too short	
	1260.41	*		-5.167E+09	1.978E-01	Half-Life	too short	
	1457.56			3.095E+12	1.978E-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		-3.714E+10	1.978E-01	Half-Life	too short	
		1706.46		1.281E+11	1.978E-01	Half-Life	too short	
		1791.20		1.144E+11	1.978E-01	Half-Life	too short	
		66.91		1.046E-01	8.963E-01	1.457E+00	2.191E-01	0.072
	+	86.29		2.784E+00	1.358E+00	2.177E+00	2.897E-01	1.279
		153.22		3.637E-01	7.441E-01	1.280E+00	1.222E-01	0.284
		163.89		2.868E-01	1.202E+00	1.981E+00	1.894E-01	0.145
		176.55		1.476E-02	4.126E-01	6.949E-01	6.328E-02	0.021
		273.65		1.510E-01	6.014E-01	8.871E-01	8.594E-02	0.170
		340.57		6.639E-01	2.100E-01	3.486E-01	3.147E-02	1.904
BA-137M		818.51		-8.921E-02	8.531E-02	1.235E-01	1.094E-02	-0.722
		1048.07	*	1.128E-01	1.369E-01	2.396E-01	2.178E-02	0.471
		1235.34		1.208E+00	7.585E-01	1.295E+00	1.503E-01	0.933
		661.65	*	-2.648E-02	3.701E-02	5.749E-02	4.709E-03	-0.461
		661.65	*	-2.800E-02	3.912E-02	6.077E-02	4.988E-03	-0.461
		165.85	*	-1.274E-02	3.105E-02	5.139E-02	4.377E-03	-0.248
		162.64		8.208E-02	8.456E-01	1.386E+00	1.250E-01	0.059
		304.84		4.745E-01	1.578E+00	2.325E+00	6.547E-01	0.204
		423.70		6.122E-01	2.426E+00	3.973E+00	1.284E+00	0.154
		537.32	*	1.577E-01	2.955E-01	5.101E-01	1.689E-01	0.309
LA-140		328.77		4.352E-01	3.762E-01	6.504E-01	6.090E-02	0.669
		432.53		8.621E-01	2.563E+00	4.235E+00	3.683E-01	0.204
		487.03		2.026E-02	1.703E-01	2.755E-01	2.474E-02	0.074
		751.79		-1.699E+00	2.054E+00	3.119E+00	2.974E-01	-0.545
		815.85		1.694E-01	3.747E-01	6.430E-01	6.310E-02	0.263
		867.82		-1.246E-01	1.526E+00	2.407E+00	2.269E-01	-0.052
		919.63		3.581E-02	3.212E+00	5.246E+00	5.765E-01	0.007
		925.24		-2.946E-01	1.005E+00	1.566E+00	1.496E-01	-0.188
		1596.49	*	1.730E-02	1.073E-01	1.807E-01	1.559E-02	0.096
		145.44	*	4.639E-02	7.159E-02	1.206E-01	1.049E-02	0.385
CE-141		57.37		-5.868E-04	7.159E-02	Half-Life	too short	
CE-143		231.56		-6.253E-03	7.159E-02	Half-Life	too short	
		293.26	*	3.585E-04	7.159E-02	Half-Life	too short	
		350.59		3.760E-02	7.159E-02	Half-Life	too short	
		490.36		-1.349E-03	7.159E-02	Half-Life	too short	
		664.57		9.533E-04	7.159E-02	Half-Life	too short	
		721.93		4.956E-04	7.159E-02	Half-Life	too short	
CE-144		80.11		-3.408E+00	2.721E+00	3.626E+00	3.162E-01	-0.940
		133.54	*	-6.039E-03	2.278E-01	3.596E-01	5.598E-02	-0.017
PM-144		476.78		-3.920E-02	7.640E-02	1.171E-01	1.081E-02	-0.335
		618.01		-2.071E-02	3.532E-02	5.611E-02	4.832E-03	-0.369
		696.49	*	-1.224E-02	3.501E-02	5.619E-02	4.702E-03	-0.218
		778.57		-2.183E+00	2.316E+00	3.410E+00	2.973E-01	-0.640
PR-144		696.49	*	-8.302E-01	2.374E+00	3.810E+00	3.187E-01	-0.218
		1489.15		-1.833E+00	1.238E+01	1.991E+01	1.723E+00	-0.092
PM-146		453.90	*	2.958E-02	4.855E-02	8.170E-02	8.582E-03	0.362
		633.02		1.153E-01	1.487E+00	2.498E+00	9.319E-01	0.046
		735.90		-3.253E-02	1.618E-01	2.362E-01	6.750E-02	-0.138
		747.13		-3.380E-02	9.350E-02	1.486E-01	2.084E-02	-0.227

---- 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			2.480E-01	4.995E-01	5.782E-01	5.715E-02	0.429
	319.41			-1.599E+00	4.049E+00	6.470E+00	5.805E-01	-0.247
	439.89			-1.097E-01	7.153E+00	1.151E+01	9.548E-01	-0.010
	531.02	*		-6.285E-01	6.610E-01	1.020E+00	1.518E-01	-0.616
PM-149	285.90	*		-1.403E+00	1.415E+02	2.331E+02	3.691E+01	-0.006
EU-152	121.78			-1.866E-02	8.297E-02	1.302E-01	1.311E-02	-0.143
	244.69			2.560E-01	4.053E-01	6.160E-01	5.607E-02	0.416
	344.27	*		1.081E-02	1.182E-01	1.875E-01	1.734E-02	0.058
	443.98			-8.472E-02	1.060E+00	1.696E+00	1.410E-01	-0.050
	778.89			-2.556E-01	2.636E-01	3.860E-01	3.364E-02	-0.662
	867.32			-5.885E-02	9.022E-01	1.380E+00	1.240E-01	-0.043
	+	964.01		1.011E+00	5.068E-01	6.914E-01	6.203E-02	1.462
	1085.78			-5.073E-01	4.162E-01	5.549E-01	4.757E-02	-0.914
	1112.02			2.203E-02	3.663E-01	5.775E-01	4.878E-02	0.038
	+	1407.95		2.799E-01	2.424E-01	3.865E-01	3.329E-02	0.724
	GD-153	69.67		-1.312E+00	1.946E+00	2.899E+00	2.325E-01	-0.452
		83.37		-1.822E+01	1.906E+01	2.586E+01	2.329E+00	-0.704
		97.43	*	-8.800E-02	1.006E-01	1.336E-01	1.187E-02	-0.659
		103.18		-1.768E-01	1.225E-01	1.811E-01	1.579E-02	-0.976
EU-154	123.07			1.595E-02	5.869E-02	9.421E-02	1.082E-02	0.169
	247.94			-9.680E-02	3.979E-01	6.511E-01	7.716E-02	-0.149
	591.81			-9.934E-02	7.158E-01	1.118E+00	1.290E-01	-0.089
	723.30			-1.309E-01	2.195E-01	2.904E-01	2.733E-02	-0.451
	756.87			8.229E-01	8.489E-01	1.514E+00	1.815E-01	0.543
	873.19			-6.454E-02	3.208E-01	5.132E-01	6.424E-02	-0.126
	996.32			-3.669E-01	4.105E-01	5.863E-01	1.049E-01	-0.626
	1004.76			7.897E-02	2.347E-01	3.944E-01	4.665E-02	0.200
	1274.45	*		-6.604E-02	1.252E-01	1.951E-01	2.172E-02	-0.338
	EU-155	48.70		1.073E+00	3.090E+00	5.122E+00	4.383E-01	0.209
TB-160		60.01		-2.721E+00	5.602E+00	8.897E+00	6.725E-01	-0.306
	+	86.54		2.433E-01	1.164E-01	1.902E-01	1.787E-02	1.279
		105.31	*	1.248E-01	1.206E-01	2.005E-01	1.763E-02	0.623
	+	86.79		6.561E-01	3.139E-01	5.164E-01	4.822E-02	1.271
		197.04		5.901E-01	6.315E-01	1.094E+00	9.621E-02	0.539
HO-166M		215.65		-1.954E-01	8.601E-01	1.371E+00	1.226E-01	-0.142
		298.57		2.530E-01	1.711E-01	2.152E-01	1.956E-02	1.176
		879.36	*	5.154E-02	1.587E-01	2.683E-01	2.419E-02	0.192
		962.29		6.807E-01	6.400E-01	1.031E+00	9.250E-02	0.660
	+	966.15		7.011E-01	3.515E-01	5.376E-01	4.820E-02	1.304
		1177.93		-6.521E-02	3.556E-01	5.846E-01	4.741E-02	-0.112
		1271.85		-4.333E-01	6.869E-01	1.049E+00	8.793E-02	-0.413
		80.57		-4.897E-01	3.459E-01	4.553E-01	3.988E-02	-1.075
		184.41		4.222E-02	4.507E-02	6.946E-02	6.028E-03	0.608
		280.46		-2.948E-02	9.250E-02	1.497E-01	1.369E-02	-0.197
TM-171		410.95		2.732E-01	2.768E-01	4.768E-01	3.889E-02	0.573
		711.68	*	4.052E-03	6.788E-02	1.131E-01	9.542E-03	0.036
		752.31		-1.839E-01	3.142E-01	4.906E-01	4.225E-02	-0.375
		810.29		-5.860E-02	6.297E-02	9.273E-02	8.183E-03	-0.632
		51.35		6.040E+00	3.721E+01	6.111E+01	5.086E+00	0.099

## ----- 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		-3.224E+00	1.910E+01	3.087E+01	2.534E+00	-0.104
		59.40		6.546E+00	2.931E+01	4.806E+01	3.623E+00	0.136
		66.72	*	3.517E-01	3.108E+01	5.032E+01	3.963E+00	0.007
		88.36		4.789E-01	2.291E-01	4.032E-01	3.803E-02	1.188
		201.83		-1.757E-02	3.122E-02	5.086E-02	4.493E-03	-0.345
LU-177	+	306.84	*	-1.091E-02	2.708E-02	4.332E-02	3.921E-03	-0.252
		401.10		6.665E+00	7.513E+00	1.289E+01	1.044E+00	0.517
		112.95		7.378E-03	2.095E+00	3.290E+00	2.853E-01	0.002
LU-177M	+	208.36	*	3.181E+00	1.937E+00	2.493E+00	2.216E-01	1.276
		52.97		-5.166E-01	1.980E+00	3.186E+00	2.595E-01	-0.162
HF-181		54.07		-4.797E-03	1.003E+00	1.633E+00	1.311E-01	-0.003
		61.30		-7.793E-01	1.667E+00	2.649E+00	2.020E-01	-0.294
		121.62		-1.375E-01	4.303E-01	6.718E-01	5.901E-02	-0.205
		147.16		-3.519E-01	6.997E-01	1.160E+00	9.901E-02	-0.303
		171.86		3.166E-02	5.108E-01	8.621E-01	7.384E-02	0.037
		218.09		3.398E-01	9.574E-01	1.621E+00	1.452E-01	0.210
		268.79		1.099E+00	1.033E+00	1.601E+00	1.465E-01	0.686
		319.02		-3.094E-02	2.931E-01	4.772E-01	4.282E-02	-0.065
		367.43		1.048E+00	1.027E+00	1.778E+00	1.501E-01	0.589
		413.65	*	-2.163E-01	2.123E-01	3.171E-01	2.590E-02	-0.682
		56.28		1.849E-01	1.102E+00	1.805E+00	1.408E-01	0.102
		57.53		-4.774E-01	5.964E-01	9.319E-01	7.162E-02	-0.512
		65.20		-1.739E+00	1.154E+00	1.734E+00	1.354E-01	-1.003
		133.02		-3.216E-02	7.554E-02	1.169E-01	1.008E-02	-0.275
		136.25		8.716E-02	4.756E-01	8.132E-01	6.988E-02	0.107
W-181		345.85		-1.597E-01	2.517E-01	3.608E-01	3.146E-02	-0.443
		482.03	*	-1.111E-02	4.858E-02	7.633E-02	6.431E-03	-0.146
		56.28		7.191E-02	4.265E-01	6.989E-01	5.451E-02	0.103
TA-182		57.53		-1.848E-01	2.311E-01	3.611E-01	2.775E-02	-0.512
		65.20	*	-6.685E-01	4.435E-01	6.665E-01	5.203E-02	-1.003
		67.75		3.885E-02	1.214E-01	1.989E-01	1.576E-02	0.195
		100.10		2.321E-01	1.978E-01	3.308E-01	2.908E-02	0.702
		152.43		-1.049E-01	3.593E-01	6.004E-01	5.115E-02	-0.175
RE-183		222.10		-1.787E-01	3.868E-01	6.301E-01	5.662E-02	-0.284
		1001.68		-6.799E-01	2.474E+00	3.917E+00	3.479E-01	-0.174
		1121.28	+	2.805E-01	3.180E-01	4.208E-01	3.534E-02	0.667
		1189.05		-1.219E-01	3.244E-01	5.228E-01	4.258E-02	-0.233
		1221.42	*	1.306E-01	2.206E-01	3.885E-01	3.202E-02	0.336
		1230.97		8.814E-02	5.455E-01	7.966E-01	6.588E-02	0.111
		57.98		-2.028E-01	2.296E-01	3.572E-01	2.732E-02	-0.568
RE-184		59.32		2.637E-02	1.218E-01	1.996E-01	1.506E-02	0.132
		67.20		2.834E-02	2.195E-01	3.570E-01	2.820E-02	0.079
		162.32	*	4.213E-02	1.145E-01	1.961E-01	1.670E-02	0.215
		208.81	+	2.593E+00	1.579E+00	2.067E+00	1.837E-01	1.255
		291.72		1.216E-01	1.194E+00	1.738E+00	1.585E-01	0.070



----- 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		1.396E-01	2.931E-01	4.989E-01	4.464E-02	0.280
		252.85	*	9.120E-02	2.608E-01	4.396E-01	4.013E-02	0.207
		318.01		-2.299E-01	5.113E-01	8.141E-01	7.310E-02	-0.282
		792.07		2.718E-01	1.310E+00	1.919E+00	1.681E-01	0.142
		903.28		6.399E-01	1.072E+00	1.859E+00	1.683E-01	0.344
		920.93		3.627E-01	4.552E-01	8.091E-01	7.312E-02	0.448
		59.72		9.909E-02	3.257E-01	5.358E-01	4.042E-02	0.185
		61.14		-1.016E-01	1.838E-01	2.910E-01	2.217E-02	-0.349
		69.30		-2.220E-01	3.444E-01	5.136E-01	4.110E-02	-0.432
		592.07		4.448E-01	2.804E+00	4.640E+00	3.913E-01	0.096
		646.12	*	-2.144E-02	4.588E-02	7.324E-02	6.051E-03	-0.293
		717.42		4.231E-01	9.187E-01	1.587E+00	1.343E-01	0.267
		874.81		-8.507E-03	6.622E-01	1.082E+00	9.748E-02	-0.008
		880.27		2.997E-01	8.750E-01	1.481E+00	1.336E-01	0.202
RE-188		155.03	*	1.302E-01	1.883E-01	3.261E-01	2.777E-02	0.399
		477.96		-2.071E+00	3.529E+00	5.370E+00	4.520E-01	-0.386
		633.10		-4.469E-01	3.088E+00	5.091E+00	4.233E-01	-0.088
W-188		63.58		-7.569E+00	6.212E+01	9.950E+01	7.695E+00	-0.076
		227.08		8.217E+00	1.407E+01	2.403E+01	2.167E+00	0.342
IR-192		290.67	*	6.683E+00	9.345E+00	1.421E+01	1.296E+00	0.470
	+	295.96		9.816E-01	2.456E-01	3.123E-01	2.861E-02	3.143
		308.46		-2.713E-02	1.068E-01	1.726E-01	1.568E-02	-0.157
		316.51	*	-2.665E-03	4.049E-02	6.611E-02	5.957E-03	-0.040
		468.07		6.437E-02	7.761E-02	1.193E-01	1.077E-02	0.540
		604.41		-1.350E-01	6.040E-01	8.584E-01	1.105E-01	-0.157
		612.46		3.065E+00	1.027E+00	1.819E+00	1.764E-01	1.684
AU-195		65.12		-3.128E-01	2.051E-01	3.079E-01	2.403E-02	-1.016
		66.83		1.194E-02	1.024E-01	1.665E-01	1.312E-02	0.072
	+	75.70		1.169E+00	2.942E-01	5.230E-01	4.385E-02	2.235
		98.88	*	1.424E-01	2.854E-01	4.130E-01	3.646E-02	0.345
TL-200		129.76		1.270E+00	3.330E+00	5.356E+00	4.640E-01	0.237
		367.94	*	9.693E-04	3.330E+00	Half-Life	too short	
		579.30		-1.653E-04	3.330E+00	Half-Life	too short	
		828.27		3.450E-03	3.330E+00	Half-Life	too short	
		1205.75		3.298E-03	3.330E+00	Half-Life	too short	
TL-201		68.90		-6.296E+00	6.707E+00	1.040E+01	8.303E-01	-0.605
		70.82		5.338E-02	4.260E+00	6.139E+00	4.962E-01	0.009
		80.30		-1.068E+01	8.140E+00	1.080E+01	9.434E-01	-0.989
		135.34		3.504E+00	3.521E+01	5.590E+01	4.808E+00	0.063
		167.43	*	1.402E+00	9.118E+00	1.546E+01	1.319E+00	0.091
TL-202		68.90		-4.734E-01	5.043E-01	7.822E-01	6.243E-02	-0.605
		70.82		4.002E-03	3.194E-01	4.603E-01	3.721E-02	0.009
		80.30		-8.012E-01	6.106E-01	8.100E-01	7.076E-02	-0.989
		439.56	*	6.204E-03	8.400E-02	1.361E-01	1.129E-02	0.046
HG-203		70.83		2.388E-02	1.325E+00	1.910E+00	2.535E-01	0.013
		72.87		1.823E+00	8.156E-01	1.246E+00	1.612E-01	1.463
		82.60		-1.500E+00	1.457E+00	1.956E+00	2.727E-01	-0.767
		279.20	*	1.397E-02	4.582E-02	7.679E-02	7.199E-03	0.182
BI-207		72.80		4.685E-01	2.273E-01	3.542E-01	2.904E-02	1.323

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207	+	74.97		6.459E-01	1.625E-01	2.585E-01	2.155E-02	2.498
		84.90		4.427E-01	2.411E-01	3.128E-01	2.862E-02	1.415
		569.67		1.957E-02	3.195E-02	5.614E-02	4.756E-03	0.349
		1063.62	*	-7.836E-02	5.922E-02	7.907E-02	6.854E-03	-0.991
		1770.23		1.049E-01	5.427E-01	8.065E-01	6.754E-02	0.130
		81.07		-3.519E-01	2.763E-01	3.674E-01	3.234E-02	-0.958
		83.78		-1.591E-01	1.610E-01	2.179E-01	1.971E-02	-0.730
		94.90		-9.629E-02	2.776E-01	4.383E-01	3.941E-02	-0.220
		122.32		-1.144E+00	2.018E+00	3.109E+00	2.925E-01	-0.368
		144.24		5.591E-01	7.641E-01	1.291E+00	1.236E-01	0.433
		154.21		2.995E-01	4.255E-01	7.372E-01	6.919E-02	0.406
	+	269.46		7.202E-01	3.245E-01	3.888E-01	3.623E-02	1.853
		323.87	*	-4.444E-01	7.769E-01	1.222E+00	2.183E-01	-0.364
	+	338.28		7.140E+00	2.065E+00	2.864E+00	3.563E-01	2.493
PO-209		445.03		-1.523E-01	2.591E+00	4.153E+00	4.930E-01	-0.037
		260.50		-2.330E+00	9.857E+00	1.608E+01	1.470E+00	-0.145
		262.80		-2.107E+01	2.818E+01	4.449E+01	4.069E+00	-0.474
		896.60	*	-1.945E+00	7.109E+00	1.121E+01	1.015E+00	-0.173
		46.50	*	3.720E+00	4.474E+00	7.568E+00	7.144E-01	0.492
BI-210		46.50	*	3.720E+00	4.474E+00	7.568E+00	7.144E-01	0.492
PB-210		46.50	*	3.720E+00	4.472E+00	7.568E+00	6.488E-01	0.492
PB-211		404.84	*	-3.573E-01	1.011E+00	1.551E+00	9.706E-01	-0.230
		427.08		-2.441E+00	2.898E+00	3.694E+00	2.293E+00	-0.661
		831.96		6.098E-02	1.427E+00	2.351E+00	1.474E+00	0.026
PO-215		81.07		-3.519E-01	2.763E-01	3.674E-01	3.234E-02	-0.958
		83.78		-1.591E-01	1.610E-01	2.179E-01	1.971E-02	-0.730
		94.90		-9.629E-02	2.776E-01	4.383E-01	3.941E-02	-0.220
		122.32		-1.144E+00	2.018E+00	3.109E+00	2.925E-01	-0.368
		144.24		5.591E-01	7.641E-01	1.291E+00	1.236E-01	0.433
		154.21		2.995E-01	4.255E-01	7.372E-01	6.919E-02	0.406
	+	269.46		7.202E-01	3.245E-01	3.888E-01	3.623E-02	1.853
		323.87	*	-4.444E-01	7.769E-01	1.222E+00	2.183E-01	-0.364
	+	338.28		7.140E+00	2.065E+00	2.864E+00	3.563E-01	2.493
		445.03		-1.523E-01	2.591E+00	4.153E+00	4.930E-01	-0.037
RN-219	+	271.23		9.241E-01	4.193E-01	5.223E-01	5.620E-02	1.769
		401.81	*	5.128E-02	4.632E-01	7.559E-01	1.114E-01	0.068
RN-220		549.76	*	-4.556E-01	2.853E+01	4.794E+01	4.069E+00	-0.010
RA-223		81.07		-3.519E-01	2.763E-01	3.674E-01	3.234E-02	-0.958
		83.78		-1.591E-01	1.610E-01	2.179E-01	1.971E-02	-0.730
		94.90		-9.629E-02	2.776E-01	4.383E-01	3.941E-02	-0.220
		122.32		-1.144E+00	2.018E+00	3.109E+00	2.925E-01	-0.368
		144.24		5.591E-01	7.641E-01	1.291E+00	1.236E-01	0.433
		154.21		2.995E-01	4.255E-01	7.372E-01	6.919E-02	0.406
	+	269.46		7.202E-01	3.245E-01	3.888E-01	3.623E-02	1.853
		323.87	*	-4.444E-01	7.769E-01	1.222E+00	2.183E-01	-0.364
	+	338.28		7.140E+00	2.065E+00	2.864E+00	3.563E-01	2.493
		445.03		-1.523E-01	2.591E+00	4.153E+00	4.930E-01	-0.037
AC-227		79.80		-2.428E+00	2.162E+00	2.830E+00	6.093E-01	-0.858
		236.00		2.776E-01	2.724E-01	4.209E-01	5.288E-02	0.659

---- 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	*	-7.644E-02	4.161E-01	6.818E-01	1.067E-01	-0.112
		286.10		-4.198E-01	1.725E+00	2.801E+00	3.793E-01	-0.150
	+	299.80		4.532E+00	2.003E+00	2.967E+00	5.259E-01	1.527
		304.40		6.693E-01	2.179E+00	3.218E+00	6.001E-01	0.208
		334.20		5.064E-01	2.895E+00	4.206E+00	8.205E-01	0.120
		79.80		-2.428E+00	2.164E+00	2.830E+00	6.171E-01	-0.858
	+	94.00		6.373E+00	4.133E+00	4.134E+00	9.072E-01	1.542
		236.00		2.776E-01	2.720E-01	4.209E-01	4.810E-02	0.659
		256.20	*	-7.644E-02	4.161E-01	6.818E-01	1.249E-01	-0.112
		286.10		-4.198E-01	1.775E+00	2.801E+00	2.813E+00	-0.150
TH-229	+	299.80		4.532E+00	2.003E+00	2.967E+00	5.259E-01	1.527
		304.40		6.693E-01	2.179E+00	3.218E+00	6.001E-01	0.208
		334.20		5.064E-01	2.895E+00	4.206E+00	8.205E-01	0.120
		85.43		5.434E-01	2.415E-01	3.199E-01	2.944E-02	1.698
	+	88.47		2.757E-01	1.319E-01	2.329E-01	2.194E-02	1.184
		100.00		2.603E-01	2.126E-01	3.413E-01	3.002E-02	0.763
		193.63	*	-4.241E-01	5.511E-01	8.900E-01	7.798E-02	-0.476
	+	210.97		2.010E+00	1.224E+00	1.594E+00	1.420E-01	1.261
		283.67	*	-6.228E-01	1.663E+00	2.676E+00	4.144E-01	-0.233
	+	301.29		1.813E+00	7.686E-01	1.193E+00	1.500E-01	1.519
PA-231		81.07		-3.519E-01	2.763E-01	3.674E-01	3.234E-02	-0.958
		83.78		-1.591E-01	1.610E-01	2.179E-01	1.971E-02	-0.730
		94.90		-9.629E-02	2.776E-01	4.383E-01	3.941E-02	-0.220
		122.32		-1.144E+00	2.018E+00	3.109E+00	2.925E-01	-0.368
		144.24		5.591E-01	7.641E-01	1.291E+00	1.236E-01	0.433
		154.21		2.995E-01	4.255E-01	7.372E-01	6.919E-02	0.406
	+	269.46		7.202E-01	3.245E-01	3.888E-01	3.623E-02	1.853
		323.87	*	-4.444E-01	7.769E-01	1.222E+00	2.183E-01	-0.364
	+	338.28		7.140E+00	2.065E+00	2.864E+00	3.563E-01	2.493
		445.03		-1.523E-01	2.591E+00	4.153E+00	4.930E-01	-0.037
U-231		84.21		-8.761E+00	8.179E+00	1.101E+01	9.999E-01	-0.796
	+	92.29		7.481E+00	4.615E+00	5.028E+00	4.594E-01	1.488
		95.87	*	1.101E+00	1.493E+00	2.215E+00	1.981E-01	0.497
		108.00		-7.796E-01	2.758E+00	4.336E+00	3.759E-01	-0.180
	+	75.28		1.885E+01	5.313E+00	7.810E+00	1.187E+00	2.413
	+	86.59		3.953E+00	2.141E+00	3.095E+00	8.373E-01	1.277
	+	300.12		1.263E+00	5.462E-01	8.325E-01	1.261E-01	1.517
		311.98	*	4.108E-02	7.390E-02	1.250E-01	1.157E-02	0.329
		340.50		3.172E+00	1.199E+00	1.617E+00	3.863E-01	1.962
		398.62		-5.686E-01	2.430E+00	3.864E+00	1.023E+00	-0.147
PA-234		415.76		4.837E-01	1.883E+00	3.096E+00	6.619E-01	0.156
		63.00		-1.096E+00	1.820E+00	2.847E+00	4.274E-01	-0.385
	+	94.67		5.683E-01	3.542E-01	3.294E-01	4.174E-02	1.725
		98.44		1.485E-02	1.151E-01	1.627E-01	9.083E-02	0.091
		99.86		6.621E-01	5.385E-01	8.646E-01	7.608E-02	0.766
		111.00		1.798E-02	2.093E-01	3.343E-01	4.052E-02	0.054
		131.20		-4.489E-02	1.209E-01	1.877E-01	1.623E-02	-0.239
		152.70		9.160E-02	3.441E-01	5.873E-01	9.982E-02	0.156
	+	186.00		3.814E+00	2.452E+00	2.889E+00	9.025E-01	1.320

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		226.40		1.663E-01	4.393E-01	7.433E-01	1.001E-01	0.224
		227.20		2.802E-01	4.707E-01	8.042E-01	7.252E-02	0.348
		248.90		-1.260E-01	9.006E-01	1.481E+00	3.349E-01	-0.085
		293.70		3.040E+00	1.104E+00	1.658E+00	2.910E-01	1.833
		369.80		6.608E-01	9.395E-01	1.585E+00	3.439E-01	0.417
		568.70		-1.267E-01	1.053E+00	1.751E+00	1.484E-01	-0.072
		569.50		1.862E-01	2.846E-01	5.015E-01	4.248E-02	0.371
		574.00		1.817E-01	1.575E+00	2.667E+00	2.258E-01	0.068
		699.00		-5.128E-01	7.396E-01	1.137E+00	2.157E-01	-0.451
		706.10		9.790E-02	1.200E+00	2.003E+00	8.923E-01	0.049
		733.00		-5.865E-02	4.056E-01	5.688E-01	1.261E-01	-0.103
		742.81		-1.933E-01	1.369E+00	2.221E+00	1.493E+00	-0.087
	+	796.30		2.603E+00	1.595E+00	2.053E+00	5.565E-01	1.268
		805.60		-7.315E-01	1.149E+00	1.653E+00	5.076E-01	-0.442
		819.60		-1.139E+00	1.392E+00	1.968E+00	7.493E-01	-0.579
		826.30		-1.711E-01	9.044E-01	1.451E+00	6.499E-01	-0.118
		831.60		-2.389E-01	7.543E-01	1.197E+00	3.581E-01	-0.200
		876.40		2.982E-01	9.592E-01	1.539E+00	1.583E+00	0.194
		880.51		5.041E-02	3.183E-01	5.291E-01	4.772E-02	0.095
		883.24		1.939E-01	3.381E-01	5.436E-01	3.657E-01	0.357
		899.00		-6.281E-01	8.874E-01	1.252E+00	5.484E-01	-0.502
		925.00		-2.227E-01	9.954E-01	1.569E+00	1.418E-01	-0.142
		926.50		-2.083E-01	1.599E-01	1.919E-01	4.879E-02	-1.086
		946.00	*	2.006E-01	3.132E-01	5.434E-01	1.029E-01	0.369
		949.00		-4.935E-03	4.808E-01	7.817E-01	7.034E-02	-0.006
		980.50		7.489E-01	8.324E-01	1.344E+00	1.201E-01	0.557
PA-234M		1394.10		3.204E-01	1.237E+00	2.103E+00	1.369E+00	0.152
		766.42		9.126E+00	1.377E+01	2.261E+01	1.147E+01	0.404
		1001.03	*	1.876E-01	5.519E+00	9.023E+00	9.198E-01	0.021
TH-234		63.29	*	-5.853E-01	1.550E+00	2.452E+00	4.310E-01	-0.239
	+	92.38		1.649E+00	1.051E+00	1.109E+00	2.032E-01	1.488
U-235		89.95		-2.284E-01	1.855E+00	2.057E+00	6.389E-01	-0.111
	+	93.35		1.983E+00	1.332E+00	1.344E+00	3.786E-01	1.475
		105.00		1.831E+00	1.274E+00	1.968E+00	5.877E-01	0.930
		143.76	*	9.806E-02	2.334E-01	3.896E-01	6.806E-02	0.252
		163.35		2.875E-02	5.039E-01	8.245E-01	1.569E-01	0.035
	+	185.71		1.413E-01	8.032E-02	1.073E-01	9.323E-03	1.317
		205.31		7.785E-02	6.391E-01	9.336E-01	1.792E-01	0.083
NP-236		94.67		4.310E-01	2.659E-01	2.501E-01	2.252E-02	1.723
	+	98.44		1.118E-02	8.677E-02	1.230E-01	1.088E-02	0.091
		111.00		1.360E-02	1.583E-01	2.529E-01	2.191E-02	0.054
		160.31	*	-3.824E-02	8.408E-02	1.391E-01	1.185E-02	-0.275
U-238		63.29	*	-5.853E-01	1.550E+00	2.452E+00	4.310E-01	-0.239
	+	92.38		1.649E+00	1.017E+00	1.109E+00	1.012E-01	1.488
NP-239		99.55		2.562E-01	1.888E-01	2.883E-01	2.540E-02	0.889
		117.00	*	-8.184E-02	2.088E-01	3.251E-01	2.831E-02	-0.252
	+	209.75		2.025E+00	1.233E+00	1.639E+00	1.458E-01	1.235
		228.18		8.937E-02	2.435E-01	4.122E-01	3.719E-02	0.217
		277.60		1.131E-01	2.006E-01	3.403E-01	3.113E-02	0.332

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	334.30			3.130E-01	1.641E+00	2.388E+00	2.112E-01	0.131
AM-241	59.54	*		4.024E-02	1.702E-01	2.793E-01	2.301E-02	0.144
CM-243	99.55			2.636E-01	1.943E-01	2.967E-01	2.614E-02	0.889
	103.76	*		-1.469E-02	1.082E-01	1.716E-01	1.495E-02	-0.086
	117.00			-8.420E-02	2.148E-01	3.345E-01	2.913E-02	-0.252
	209.75	+		1.996E+00	1.216E+00	1.616E+00	1.438E-01	1.235
	228.18			9.031E-02	2.461E-01	4.165E-01	3.758E-02	0.217
	277.60			1.141E-01	2.023E-01	3.431E-01	3.139E-02	0.332
AM-246	798.80			-1.327E-01	1.902E-01	2.452E-01	2.154E-02	-0.541
	1036.00			-1.701E-02	3.081E-01	4.950E-01	4.343E-02	-0.034
	1062.04			-1.640E-01	2.361E-01	3.457E-01	2.999E-02	-0.474
	1078.86	*		-6.629E-03	1.626E-01	2.610E-01	2.246E-02	-0.025
CM-247	278.00			2.017E-01	8.415E-01	1.405E+00	1.285E-01	0.144
	287.40			-1.609E-01	1.391E+00	2.275E+00	2.077E-01	-0.071
	402.60	*		-1.182E-02	4.149E-02	6.576E-02	5.333E-03	-0.180
CF-249	252.85			3.407E-01	9.744E-01	1.642E+00	1.499E-01	0.207
	333.44			-1.193E-01	2.305E-01	3.092E-01	2.737E-02	-0.386
	387.95	*		-2.323E-02	4.555E-02	7.115E-02	5.772E-03	-0.326
CF-251	176.60	*		4.817E-03	1.347E-01	2.268E-01	1.952E-02	0.021
	227.00			1.748E-01	4.199E-01	7.120E-01	6.420E-02	0.246
	285.00			-9.292E-02	1.910E+00	3.138E+00	2.867E-01	-0.030

# 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]G244148009      *
* Acquisition date   : 20-JAN-2010 15:56:22 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 02:00:01.08 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148009 Analyst initials: MXR1                 *
* Batch Number       : 940268 Sample Quantity : 1.2662E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 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	1.945E+01	2.330E+00	5.566E-01	0.000E+00
CD-109	2.057E+00	9.647E-01	1.606E+00	0.000E+00
SN-126	2.019E-01	9.467E-02	1.650E-01	0.000E+00
TL-208	6.405E-01	1.081E-01	6.175E-02	0.000E+00
BI-211	3.388E+00	6.348E-01	3.617E-01	0.000E+00
BI-212	1.640E+00	6.026E-01	5.018E-01	0.000E+00
PB-212	1.815E+00	2.200E-01	1.008E-01	0.000E+00
PO-212	1.815E+00	2.200E-01	1.008E-01	0.000E+00
BI-214	1.104E+00	2.109E-01	1.299E-01	0.000E+00
PB-214	1.179E+00	2.289E-01	1.363E-01	0.000E+00
PO-214	1.179E+00	2.289E-01	1.363E-01	0.000E+00
PO-216	1.815E+00	2.200E-01	1.008E-01	0.000E+00
PO-218	1.179E+00	2.289E-01	1.363E-01	0.000E+00
RA-224	4.582E+00	1.093E+00	1.147E+00	0.000E+00
RA-226	1.104E+00	2.109E-01	1.299E-01	0.000E+00
AC-228	1.691E+00	3.453E-01	2.489E-01	0.000E+00
RA-228	1.691E+00	3.453E-01	2.489E-01	0.000E+00
TH-228	1.844E+00	2.235E-01	1.024E-01	0.000E+00
TH-230	1.104E+00	2.109E-01	1.299E-01	0.000E+00
TH-232	1.691E+00	3.453E-01	2.489E-01	0.000E+00
U-234	1.104E+00	2.109E-01	1.299E-01	0.000E+00
NP-237	5.929E-01	3.028E-01	3.316E-01	0.000E+00
AM-243	3.598E-01	8.874E-02	1.097E-01	0.000E+00
ANH-511	1.578E-01	8.070E-02	5.064E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-2.209E-01	3.594E-01	5.661E-01	0.000E+00 NOT IDENT.
NA-22	-1.867E-02	4.323E-02	6.986E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.328E+06	0.000E+00	0.000E+00 SHORT HLIF

AL-26	1.050E-02	2.830E-02	5.109E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.444E-02	9.074E-02	0.000E+00	FAIL ABUN
SC-46	-4.824E-02	3.952E-02	5.593E-02	0.000E+00	FAIL ABUN
V-48	-3.093E-02	7.662E-02	1.214E-01	0.000E+00	NOT IDENT.
CR-51	-3.857E-02	4.131E-01	7.020E-01	0.000E+00	NOT IDENT.
MN-52	-1.117E-01	2.199E-01	3.376E-01	0.000E+00	NOT IDENT.
MN-54	3.518E-03	4.340E-02	7.378E-02	0.000E+00	NOT IDENT.
CO-56	-1.791E-02	4.333E-02	6.997E-02	0.000E+00	FAIL ABUN
CO-57	-7.106E-03	2.807E-02	4.651E-02	0.000E+00	NOT IDENT.
CO-58	-3.297E-02	4.115E-02	6.354E-02	0.000E+00	NOT IDENT.
FE-59	-5.393E-02	1.044E-01	1.620E-01	0.000E+00	NOT IDENT.
CO-60	-3.418E-02	4.039E-02	6.030E-02	0.000E+00	NOT IDENT.
ZN-65	3.460E-03	1.132E-01	1.615E-01	0.000E+00	NOT IDENT.
GE-68	2.936E-01	1.434E+00	2.423E+00	0.000E+00	NOT IDENT.
AS-73	-4.237E-01	9.822E-01	1.677E+00	0.000E+00	NOT IDENT.
AS-74	-2.299E-02	1.024E-01	1.742E-01	0.000E+00	NOT IDENT.
SE-75	1.802E-02	4.873E-02	8.003E-02	0.000E+00	NOT IDENT.
BR-77	5.188E-02	1.571E+01	2.598E+01	0.000E+00	FAIL ABUN
SR-82	-2.249E-01	4.064E-01	6.515E-01	0.000E+00	NOT IDENT.
RB-83	4.729E-03	7.753E-02	1.288E-01	0.000E+00	NOT IDENT.
RB-84	1.898E-02	7.921E-02	1.364E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	9.413E+00	1.616E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.879E-02	8.375E-02	0.000E+00	NOT IDENT.
RB-86	-1.768E-02	9.324E-01	1.539E+00	0.000E+00	NOT IDENT.
Y-88	2.726E-03	3.959E-02	6.636E-02	0.000E+00	NOT IDENT.
ZR-88	-1.371E-02	3.550E-02	5.825E-02	0.000E+00	NOT IDENT.
Y-91	-6.997E+00	1.950E+01	3.223E+01	0.000E+00	NOT IDENT.
NB-94	-1.357E-02	3.494E-02	5.772E-02	0.000E+00	NOT IDENT.
NB-95	1.250E-02	4.903E-02	8.502E-02	0.000E+00	NOT IDENT.
NB-95M	1.523E-01	1.426E-01	2.321E-01	0.000E+00	NOT IDENT.
ZR-95	4.268E-02	7.778E-02	1.386E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.756E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.052E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	7.804E+00	1.538E+01	2.739E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.521E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	3.285E-02	3.741E-02	6.649E-02	0.000E+00	NOT IDENT.
RH-102	2.751E-03	3.139E-02	5.261E-02	0.000E+00	NOT IDENT.
RU-103	2.290E-02	4.572E-02	7.880E-02	0.000E+00	FAIL ABUN
RH-106	3.634E-01	3.474E-01	6.425E-01	0.000E+00	FAIL ABUN
RU-106	3.634E-01	3.455E-01	6.425E-01	0.000E+00	FAIL ABUN
AG-108M	-1.499E-02	3.966E-02	6.462E-02	0.000E+00	NOT IDENT.
AG-110M	-2.731E-02	3.494E-02	5.561E-02	0.000E+00	NOT IDENT.
IN-111	-4.599E-01	1.625E+00	2.429E+00	0.000E+00	NOT IDENT.
IN-113M	2.752E-02	5.136E-02	8.960E-02	0.000E+00	NOT IDENT.
SN-113	2.752E-02	5.136E-02	8.960E-02	0.000E+00	NOT IDENT.
IN-114M	3.564E-02	2.173E-01	3.408E-01	0.000E+00	NOT IDENT.
CD-115	-5.637E+00	1.576E+01	2.677E+01	0.000E+00	NOT IDENT.
SN-117M	-2.113E-02	6.084E-02	1.067E-01	0.000E+00	NOT IDENT.
SB-122	1.648E+00	2.986E+00	5.387E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.239E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.025E-02	2.952E-02	5.323E-02	0.000E+00	NOT IDENT.
I-124	-3.619E-02	9.921E-01	1.488E+00	0.000E+00	FAIL ABUN
SB-124	2.613E-02	7.043E-02	1.272E-01	0.000E+00	FAIL ABUN
SB-125	-3.996E-02	1.052E-01	1.713E-01	0.000E+00	FAIL ABUN
TE-125M	2.109E-01	1.049E+01	1.771E+01	0.000E+00	NOT IDENT.
I-126	5.458E-02	2.014E-01	3.535E-01	0.000E+00	NOT IDENT.
SB-126	4.447E-02	1.666E-01	2.759E-01	0.000E+00	FAIL ABUN
SB-127	-4.738E-02	1.693E+00	2.895E+00	0.000E+00	NOT IDENT.
XE-127	-1.265E-02	5.087E-02	8.836E-02	0.000E+00	NOT IDENT.
I-131	-9.031E-02	1.423E-01	2.304E-01	0.000E+00	NOT IDENT.
TE-132	3.423E-01	9.129E-01	1.618E+00	0.000E+00	NOT IDENT.
BA-133	-2.118E-02	5.701E-02	8.183E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.508E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.315E-02	1.088E-01	0.000E+00	FAIL ABUN
CS-135	1.285E-01	1.939E-01	3.073E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.566E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.128E-01	1.342E-01	2.407E-01	0.000E+00	FAIL ABUN
BA-137M	-2.648E-02	3.627E-02	5.815E-02	0.000E+00	NOT IDENT.
CS-137	-2.800E-02	3.834E-02	6.147E-02	0.000E+00	NOT IDENT.
CE-139	-1.274E-02	3.043E-02	5.304E-02	0.000E+00	NOT IDENT.
BA-140	1.577E-01	2.896E-01	5.176E-01	0.000E+00	NOT IDENT.
LA-140	1.730E-02	1.052E-01	1.804E-01	0.000E+00	NOT IDENT.
CE-141	4.639E-02	7.016E-02	1.247E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.106E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.039E-03	2.233E-01	3.723E-01	0.000E+00	NOT IDENT.
PM-144	-1.224E-02	3.431E-02	5.679E-02	0.000E+00	NOT IDENT.
PR-144	-8.302E-01	2.326E+00	3.851E+00	0.000E+00	NOT IDENT.
PM-146	2.958E-02	4.758E-02	8.310E-02	0.000E+00	NOT IDENT.

ND-147	-6.285E-01	6.478E-01	1.036E+00	0.000E+00	NOT IDENT.
PM-149	-1.403E+00	1.387E+02	2.387E+02	0.000E+00	NOT IDENT.
EU-152	1.081E-02	1.159E-01	1.915E-01	0.000E+00	FAIL ABUN
GD-153	-8.800E-02	9.858E-02	1.390E-01	0.000E+00	NOT IDENT.
EU-154	-6.604E-02	1.227E-01	1.954E-01	0.000E+00	NOT IDENT.
EU-155	1.248E-01	1.182E-01	2.082E-01	0.000E+00	FAIL ABUN
TB-160	5.154E-02	1.556E-01	2.702E-01	0.000E+00	FAIL ABUN
HO-166M	4.052E-03	6.652E-02	1.143E-01	0.000E+00	NOT IDENT.
TM-171	3.517E-01	3.046E+01	5.260E+01	0.000E+00	NOT IDENT.
LU-176	-1.091E-02	2.654E-02	4.432E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.899E+00	2.565E+00	0.000E+00	FAIL ABUN
LU-177M	-2.163E-01	2.081E-01	3.229E-01	0.000E+00	NOT IDENT.
HF-181	-1.111E-02	4.760E-02	7.757E-02	0.000E+00	NOT IDENT.
W-181	-6.685E-01	4.346E-01	6.969E-01	0.000E+00	NOT IDENT.
TA-182	1.306E-01	2.162E-01	3.894E-01	0.000E+00	FAIL ABUN
RE-183	4.213E-02	1.123E-01	2.025E-01	0.000E+00	FAIL ABUN
RE-184	9.120E-02	2.556E-01	4.510E-01	0.000E+00	NOT IDENT.
OS-185	-2.144E-02	4.496E-02	7.411E-02	0.000E+00	NOT IDENT.
RE-188	1.302E-01	1.845E-01	3.369E-01	0.000E+00	NOT IDENT.
W-188	6.683E+00	9.158E+00	1.455E+01	0.000E+00	NOT IDENT.
IR-192	-2.665E-03	3.968E-02	6.760E-02	0.000E+00	FAIL ABUN
AU-195	1.424E-01	2.797E-01	4.293E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.883E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.402E+00	8.936E+00	1.596E+01	0.000E+00	NOT IDENT.
TL-202	6.204E-03	8.232E-02	1.385E-01	0.000E+00	NOT IDENT.
HG-203	1.397E-02	4.491E-02	7.866E-02	0.000E+00	NOT IDENT.
BI-207	-7.836E-02	5.804E-02	7.942E-02	0.000E+00	FAIL ABUN
TL-207	-4.444E-01	7.614E-01	1.249E+00	0.000E+00	FAIL ABUN
PO-209	-1.945E+00	6.967E+00	1.129E+01	0.000E+00	NOT IDENT.
BI-210	3.720E+00	4.385E+00	7.951E+00	0.000E+00	NOT IDENT.
PB-210	3.720E+00	4.385E+00	7.951E+00	0.000E+00	NOT IDENT.
PO-210	3.720E+00	4.383E+00	7.951E+00	0.000E+00	NOT IDENT.
PB-211	-3.573E-01	9.904E-01	1.580E+00	0.000E+00	NOT IDENT.
PO-215	-4.444E-01	7.614E-01	1.249E+00	0.000E+00	FAIL ABUN
RN-219	5.128E-02	4.540E-01	7.703E-01	0.000E+00	FAIL ABUN
RN-220	-4.556E-01	2.796E+01	4.862E+01	0.000E+00	NOT IDENT.
RA-223	-4.444E-01	7.614E-01	1.249E+00	0.000E+00	FAIL ABUN
AC-227	-7.644E-02	4.077E-01	6.993E-01	0.000E+00	FAIL ABUN
TH-227	-7.644E-02	4.078E-01	6.993E-01	0.000E+00	FAIL ABUN
TH-229	-4.241E-01	5.401E-01	9.166E-01	0.000E+00	FAIL ABUN
PA-231	-6.228E-01	1.630E+00	2.741E+00	0.000E+00	FAIL ABUN
TH-231	-4.444E-01	7.614E-01	1.249E+00	0.000E+00	FAIL ABUN
U-231	1.101E+00	1.463E+00	2.304E+00	0.000E+00	FAIL ABUN
PA-233	4.108E-02	7.242E-02	1.278E-01	0.000E+00	FAIL ABUN
PA-234	2.006E-01	3.069E-01	5.468E-01	0.000E+00	FAIL ABUN
PA-234M	1.876E-01	5.408E+00	9.072E+00	0.000E+00	NOT IDENT.
TH-234	-5.853E-01	1.519E+00	2.565E+00	0.000E+00	FAIL ABUN
U-235	9.806E-02	2.288E-01	4.029E-01	0.000E+00	FAIL ABUN
NP-236	-3.824E-02	8.240E-02	1.437E-01	0.000E+00	FAIL ABUN
U-238	-5.853E-01	1.519E+00	2.565E+00	0.000E+00	FAIL ABUN
NP-239	-8.184E-02	2.046E-01	3.372E-01	0.000E+00	FAIL ABUN
AM-241	4.024E-02	1.668E-01	2.924E-01	0.000E+00	NOT IDENT.
CM-243	-1.469E-02	1.060E-01	1.782E-01	0.000E+00	FAIL ABUN
AM-246	-6.629E-03	1.593E-01	2.621E-01	0.000E+00	NOT IDENT.
CM-247	-1.182E-02	4.066E-02	6.701E-02	0.000E+00	NOT IDENT.
CF-249	-2.323E-02	4.463E-02	7.254E-02	0.000E+00	NOT IDENT.
CF-251	4.817E-03	1.320E-01	2.338E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148009.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:56:22
Sample ID          : G244148009          Sample quantity   : 1.26620E+02 GRAM
Detector name      : GAM01              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time  : 0 02:00:01.08  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940268             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	662	10.67*	9.455E-01	1.945E+01	1.945E+01	12.22
CD-109	88.03	131	3.72*	5.187E+00	2.008E+00	2.057E+00	47.85
SN-126	64.28	-----	9.60	2.906E+00	-----	Line Not Found	-----
	86.94	131	8.90	5.187E+00	8.394E-01	8.394E-01	62.65
	87.57	131	37.00*	5.187E+00	2.019E-01	2.019E-01	47.85
TL-208	277.35	-----	6.80	3.885E+00	-----	Line Not Found	-----
	510.84	127	21.60	2.393E+00	7.305E-01	7.305E-01	52.85
	583.14	390	84.20*	2.142E+00	6.405E-01	6.405E-01	17.22
	860.37	63	12.46	1.522E+00	9.889E-01	9.889E-01	45.17
BI-211	72.87	-----	1.27	3.944E+00	-----	Line Not Found	-----
	351.07	477	12.94*	3.226E+00	3.388E+00	3.388E+00	19.12
BI-212	727.18	116	11.80*	1.770E+00	1.640E+00	1.640E+00	37.50
	785.46	-----	1.97	1.653E+00	-----	Line Not Found	-----
	1620.62	25	2.75	8.733E-01	3.104E+00	3.104E+00	48.21
PB-212	74.81	333	10.70	4.152E+00	2.219E+00	2.219E+00	26.85
	77.11	533	18.00	4.382E+00	2.002E+00	2.002E+00	17.80
	87.30	131	8.00	5.187E+00	9.338E-01	9.338E-01	48.88
	238.63	1186	44.60*	4.345E+00	1.815E+00	1.815E+00	12.37
	300.09	103	3.41	3.654E+00	2.445E+00	2.445E+00	41.92
PO-212	74.81	333	10.70	4.152E+00	2.219E+00	2.219E+00	26.85
	77.11	533	18.00	4.382E+00	2.002E+00	2.002E+00	17.80
	87.30	131	8.00	5.187E+00	9.338E-01	9.338E-01	48.88
	115.19	-----	0.60	6.043E+00	-----	Line Not Found	-----
	238.63	1186	44.60*	4.345E+00	1.815E+00	1.815E+00	12.37
	300.09	103	3.41	3.654E+00	2.445E+00	2.445E+00	41.92
BI-214	609.31	356	46.30*	2.064E+00	1.104E+00	1.104E+00	19.50
	1120.29	36	15.10	1.192E+00	5.896E-01	5.896E-01	113.54
	1764.49	70	15.80	8.255E-01	1.588E+00	1.588E+00	27.49
PB-214	74.81	333	6.21	4.152E+00	3.824E+00	3.824E+00	26.23
	77.11	533	10.50	4.382E+00	3.432E+00	3.433E+00	19.36
	87.30	131	4.67	5.187E+00	1.600E+00	1.600E+00	48.46
	241.98	263	7.49	4.306E+00	2.417E+00	2.417E+00	24.97

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	305	19.20	3.699E+00	1.275E+00	1.275E+00	25.76
	351.92	477	37.20*	3.226E+00	1.179E+00	1.179E+00	19.82
	74.81	333	6.21	4.152E+00	3.824E+00	3.824E+00	26.23
	77.11	533	10.50	4.382E+00	3.432E+00	3.433E+00	19.36
	87.30	131	4.67	5.187E+00	1.600E+00	1.600E+00	48.46
PO-216	241.98	263	7.49	4.306E+00	2.417E+00	2.417E+00	24.97
	295.21	305	19.20	3.699E+00	1.275E+00	1.275E+00	25.76
	351.92	477	37.20*	3.226E+00	1.179E+00	1.179E+00	19.82
	74.81	333	10.70	4.152E+00	2.219E+00	2.219E+00	26.85
	77.11	533	18.00	4.382E+00	2.002E+00	2.002E+00	17.80
PO-218	87.30	131	8.00	5.187E+00	9.338E-01	9.338E-01	48.88
	238.63	1186	44.60*	4.345E+00	1.815E+00	1.815E+00	12.37
	300.09	103	3.41	3.654E+00	2.445E+00	2.445E+00	41.92
	74.81	333	6.21	4.152E+00	3.824E+00	3.824E+00	26.23
	77.11	533	10.50	4.382E+00	3.432E+00	3.433E+00	19.36
RA-224	87.30	131	4.67	5.187E+00	1.600E+00	1.600E+00	48.46
	241.98	263	7.49	4.306E+00	2.417E+00	2.417E+00	24.97
	295.21	305	19.20	3.699E+00	1.275E+00	1.275E+00	25.76
	351.92	477	37.20*	3.226E+00	1.179E+00	1.179E+00	19.82
	240.98	263	3.95*	4.306E+00	4.582E+00	4.582E+00	24.33
RA-226	609.31	356	46.30*	2.064E+00	1.104E+00	1.104E+00	19.50
	1120.29	36	15.10	1.192E+00	5.896E-01	5.896E-01	113.54
	1764.49	70	15.80	8.255E-01	1.588E+00	1.588E+00	27.49
	338.32	219	11.40	3.327E+00	1.710E+00	1.710E+00	48.86
	911.07	228	27.70*	1.444E+00	1.691E+00	1.691E+00	20.84
AC-228	969.11	136	16.60	1.364E+00	1.776E+00	1.776E+00	33.83
	338.32	219	11.40	3.327E+00	1.710E+00	1.710E+00	48.86
	911.07	228	27.70*	1.444E+00	1.691E+00	1.691E+00	20.84
	969.11	136	16.60	1.364E+00	1.776E+00	1.776E+00	33.83
	74.81	333	10.70	4.152E+00	2.219E+00	2.255E+00	25.19
TH-228	77.11	533	18.00	4.382E+00	2.002E+00	2.035E+00	17.80
	87.30	131	8.00	5.187E+00	9.338E-01	9.490E-01	47.85
	238.63	1186	44.60*	4.345E+00	1.815E+00	1.844E+00	12.37
	300.09	103	3.41	3.654E+00	2.445E+00	2.485E+00	71.85
	609.31	356	46.30*	2.064E+00	1.104E+00	1.104E+00	19.50
TH-230	1120.29	36	15.10	1.192E+00	5.896E-01	5.896E-01	113.54
	1764.49	70	15.80	8.255E-01	1.588E+00	1.588E+00	27.49
	338.32	219	11.40	3.327E+00	1.710E+00	1.710E+00	27.55
	911.07	228	27.70*	1.444E+00	1.691E+00	1.691E+00	20.84
	969.11	136	16.60	1.364E+00	1.776E+00	1.776E+00	33.83
U-234	609.31	356	46.30*	2.064E+00	1.104E+00	1.104E+00	19.50
	1120.29	36	15.10	1.192E+00	5.896E-01	5.896E-01	113.54
	1764.49	70	15.80	8.255E-01	1.588E+00	1.588E+00	27.49
	86.50	131	12.60*	5.187E+00	5.929E-01	5.929E-01	52.11
	95.87	-----	2.60	5.636E+00	-----	Line Not Found	-----
AM-243	74.67	333	66.00*	4.152E+00	3.598E-01	3.598E-01	25.17
	86.72	131	0.34	5.187E+00	2.223E+01	2.223E+01	47.85
	117.66	-----	0.55	6.054E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.887E+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	127	100.00*	2.393E+00	1.578E-01	1.578E-01	52.19

Flag: "\*" = Keyline

Total number of lines in spectrum 30  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 30 100.00%

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	1.945E+01	1.945E+01	0.238E+01	12.22	
CD-109	464.00D	1.02	2.008E+00	2.057E+00	0.984E+00	47.85	
SN-126	1.00E+05Y	1.00	2.019E-01	2.019E-01	0.966E-01	47.85	
TL-208	1.41E+10Y	1.00	6.405E-01	6.405E-01	1.103E-01	17.22	
BI-211	7.04E+08Y	1.00	3.388E+00	3.388E+00	0.648E+00	19.12	
BI-212	1.41E+10Y	1.00	1.640E+00	1.640E+00	0.615E+00	37.50	
PB-212	1.41E+10Y	1.00	1.815E+00	1.815E+00	0.224E+00	12.37	
PO-212	1.41E+10Y	1.00	1.815E+00	1.815E+00	0.224E+00	12.37	
BI-214	1600.00Y	1.00	1.104E+00	1.104E+00	0.215E+00	19.50	
PB-214	1600.00Y	1.00	1.179E+00	1.179E+00	0.234E+00	19.82	
PO-214	1600.00Y	1.00	1.179E+00	1.179E+00	0.234E+00	19.82	
PO-216	1.41E+10Y	1.00	1.815E+00	1.815E+00	0.224E+00	12.37	
PO-218	1600.00Y	1.00	1.179E+00	1.179E+00	0.234E+00	19.82	
RA-224	1.41E+10Y	1.00	4.582E+00	4.582E+00	1.115E+00	24.33	
RA-226	1600.00Y	1.00	1.104E+00	1.104E+00	0.215E+00	19.50	
AC-228	1.41E+10Y	1.00	1.691E+00	1.691E+00	0.352E+00	20.84	
RA-228	1.41E+10Y	1.00	1.691E+00	1.691E+00	0.352E+00	20.84	
TH-228	1.91Y	1.02	1.815E+00	1.844E+00	0.228E+00	12.37	
TH-230	4.47E+09Y	1.00	1.104E+00	1.104E+00	0.215E+00	19.50	
TH-232	1.41E+10Y	1.00	1.691E+00	1.691E+00	0.352E+00	20.84	
U-234	4.47E+09Y	1.00	1.104E+00	1.104E+00	0.215E+00	19.50	
NP-237	2.14E+06Y	1.00	5.929E-01	5.929E-01	3.089E-01	52.11	
AM-243	7380.00Y	1.00	3.598E-01	3.598E-01	0.906E-01	25.17	
ANH-511	1.00E+09Y	1.00	1.578E-01	1.578E-01	0.823E-01	52.19	
Total Activity :			5.331E+01	5.338E+01			

Grand Total Activity : 5.331E+01 5.338E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244148009

Page : 5  
Acquisition date : 20-JAN-2010 15:56:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.27	166	539	1.45	187.24	183	12	2.31E-02	61.0	5.52E+00	T
0	186.14	133	321	1.70	372.86	368	10	1.84E-02	56.2	5.16E+00	T
0	209.81	106	277	1.15	420.18	416	9	1.47E-02	60.3	4.77E+00	T
0	270.78	131	185	1.95	542.06	537	11	1.82E-02	44.1	3.96E+00	T
0	463.53	81	109	2.14	927.33	920	13	1.13E-02	57.7	2.59E+00	T
0	794.88	56	46	1.68	1589.60	1584	12	7.78E-03	55.0	1.64E+00	T
2	964.83	67	43	2.11	1929.27	1922	33	9.32E-03	49.3	1.37E+00	T
0	1238.03	71	47	1.41	2475.29	2467	16	9.80E-03	49.9	1.09E+00	T
0	1408.78	19	12	1.27	2816.53	2810	12	2.64E-03	86.2	9.74E-01	T
0	1510.96	19	16	4.12	3020.74	3013	16	2.64E-03	****	9.21E-01	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148009.CNF;1
* Acquisition date   : 20-JAN-2010 15:56:22  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 02:00:01.08             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244148009             Analyst initials: MXR1
* Batch Number       : 940268                 Sample Quantity : 1.26620E+02 GRAM
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS 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	1.945E+01	2.378E+00	5.568E-01	4.950E-02	34.937
CD-109	2.057E+00	9.844E-01	1.542E+00	1.459E-01	1.334
SN-126	2.019E-01	9.660E-02	1.585E-01	1.493E-02	1.274
TL-208	6.405E-01	1.103E-01	6.093E-02	5.533E-03	10.513
BI-211	3.388E+00	6.478E-01	3.542E-01	3.222E-02	9.565
BI-212	1.640E+00	6.149E-01	4.967E-01	4.923E-02	3.301
PB-212	1.815E+00	2.244E-01	9.817E-02	9.940E-03	18.486
PO-212	1.815E+00	2.244E-01	9.817E-02	9.940E-03	18.486
BI-214	1.104E+00	2.153E-01	1.283E-01	1.265E-02	8.602
PB-214	1.179E+00	2.336E-01	1.335E-01	1.399E-02	8.826
PO-214	1.179E+00	2.336E-01	1.335E-01	1.399E-02	8.826
PO-216	1.815E+00	2.244E-01	9.817E-02	9.940E-03	18.486
PO-218	1.179E+00	2.336E-01	1.335E-01	1.399E-02	8.826
RA-224	4.582E+00	1.115E+00	1.117E+00	1.016E-01	4.101
RA-226	1.104E+00	2.153E-01	1.283E-01	1.265E-02	8.602
AC-228	1.691E+00	3.524E-01	2.472E-01	2.861E-02	6.840
RA-228	1.691E+00	3.524E-01	2.472E-01	2.861E-02	6.840
TH-228	1.844E+00	2.281E-01	9.977E-02	1.010E-02	18.486

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.104E+00	2.152E-01	1.283E-01	1.265E-02	8.602
TH-232	1.691E+00	3.524E-01	2.472E-01	2.861E-02	6.840
U-234	1.104E+00	2.152E-01	1.283E-01	1.265E-02	8.602
NP-237	5.929E-01	3.089E-01	3.183E-01	7.206E-02	1.862
AM-243	3.598E-01	9.055E-02	1.051E-01	8.741E-03	3.423
ANH-511	1.578E-01	8.235E-02	4.987E-02	4.227E-03	3.164

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.209E-01		3.668E-01	5.569E-01	5.066E-02	-0.397
NA-22	-1.867E-02		4.412E-02	6.975E-02	5.857E-03	-0.268
NA-24	-1.141E+00		1.188E+00	Half-Life	too short	
AL-26	1.050E-02		2.888E-02	5.128E-02	4.249E-03	0.205
TI-44	3.695E-01	+	6.575E-02	8.700E-02	7.466E-03	4.247
SC-46	-4.824E-02		4.033E-02	5.553E-02	5.020E-03	-0.869
V-48	-3.093E-02		7.818E-02	1.207E-01	1.078E-02	-0.256
CR-51	-3.857E-02		4.215E-01	6.866E-01	6.459E-02	-0.056
MN-52	-1.117E-01		2.244E-01	3.376E-01	2.915E-02	-0.331
MN-54	3.518E-03		4.428E-02	7.319E-02	6.515E-03	0.048
CO-56	-1.791E-02		4.422E-02	6.942E-02	6.203E-03	-0.258
CO-57	-7.106E-03		2.864E-02	4.487E-02	3.950E-03	-0.158
CO-58	-3.297E-02		4.199E-02	6.301E-02	5.574E-03	-0.523
FE-59	-5.393E-02		1.066E-01	1.614E-01	1.487E-02	-0.334
CO-60	-3.418E-02		4.121E-02	6.024E-02	5.135E-03	-0.567
ZN-65	3.460E-03		1.155E-01	1.609E-01	1.358E-02	0.022
GE-68	2.936E-01		1.463E+00	2.413E+00	2.077E-01	0.122
AS-73	-4.237E-01		1.002E+00	1.599E+00	1.294E-01	-0.265
AS-74	-2.299E-02		1.045E-01	1.720E-01	1.449E-02	-0.134
SE-75	1.802E-02		4.972E-02	7.806E-02	7.171E-03	0.231
BR-77	5.188E-02		1.603E+01	2.559E+01	2.171E+00	0.002
SR-82	-2.249E-01		4.147E-01	6.456E-01	5.621E-02	-0.348
RB-83	4.729E-03		7.911E-02	1.269E-01	1.077E-02	0.037
RB-84	1.898E-02		8.083E-02	1.354E-01	1.221E-02	0.140
KR-85	2.008E+01		9.605E+00	1.591E+01	1.349E+00	1.262
SR-85	1.041E-01		4.979E-02	8.248E-02	6.993E-03	1.262
RB-86	-1.768E-02		9.515E-01	1.532E+00	1.320E-01	-0.012
Y-88	2.726E-03		4.040E-02	6.661E-02	5.479E-03	0.041
ZR-88	-1.371E-02		3.622E-02	5.715E-02	4.602E-03	-0.240
Y-91	-6.997E+00		1.990E+01	3.215E+01	2.634E+00	-0.218
NB-94	-1.357E-02		3.566E-02	5.711E-02	4.794E-03	-0.238
NB-95	1.250E-02		5.003E-02	8.423E-02	7.299E-03	0.148
NB-95M	1.523E-01		1.455E-01	2.261E-01	2.318E-02	0.674
ZR-95	4.268E-02		7.936E-02	1.373E-01	1.304E-02	0.311
NB-97	-2.524E-01		1.406E-01	Half-Life	too short	
ZR-97	1.020E+01		3.088E+00	Half-Life	too short	
MO-99	7.804E+00		1.570E+01	2.712E+01	4.109E+00	0.288

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	-5.439E+11		3.837E+11	Half-Life too short		
RH-101	3.285E-02		3.817E-02	6.459E-02	5.684E-03	0.509
RH-102	2.751E-03		3.203E-02	5.176E-02	4.352E-03	0.053
RU-103	2.290E-02		4.665E-02	7.757E-02	1.091E-02	0.295
RH-106	3.634E-01		3.545E-01	6.346E-01	8.369E-02	0.573
RU-106	3.634E-01		3.525E-01	6.346E-01	5.301E-02	0.573
AG-108M	-1.499E-02		4.047E-02	6.349E-02	5.475E-03	-0.236
AG-110M	-2.731E-02		3.565E-02	5.497E-02	4.661E-03	-0.497
IN-111	-4.599E-01		1.658E+00	2.367E+00	2.155E-01	-0.194
IN-113M	2.752E-02		5.240E-02	8.790E-02	7.321E-03	0.313
SN-113	2.752E-02		5.240E-02	8.790E-02	7.321E-03	0.313
IN-114M	3.564E-02		2.218E-01	3.309E-01	2.889E-02	0.108
CD-115	-5.637E+00		1.608E+01	2.638E+01	2.239E+00	-0.214
SN-117M	-2.113E-02		6.208E-02	1.033E-01	8.798E-03	-0.205
SB-122	1.648E+00		3.047E+00	5.313E+00	4.504E-01	0.310
I-123	7.771E+00		1.142E+01	Half-Life too short		
TE-123M	1.025E-02		3.012E-02	5.154E-02	4.415E-03	0.199
I-124	-3.619E-02		1.012E+00	1.469E+00	1.235E-01	-0.025
SB-124	2.613E-02		7.187E-02	1.275E-01	1.130E-02	0.205
SB-125	-3.996E-02		1.073E-01	1.682E-01	1.416E-02	-0.238
TE-125M	2.109E-01		1.070E+01	1.706E+01	1.769E+00	0.012
I-126	5.458E-02		2.055E-01	3.495E-01	2.871E-02	0.156
SB-126	4.447E-02		1.700E-01	2.731E-01	2.315E-02	0.163
SB-127	-4.738E-02		1.728E+00	2.863E+00	3.283E-01	-0.017
XE-127	-1.265E-02		5.190E-02	8.586E-02	7.591E-03	-0.147
I-131	-9.031E-02		1.452E-01	2.258E-01	2.025E-02	-0.400
TE-132	3.423E-01		9.315E-01	1.575E+00	2.541E-01	0.217
BA-133	-2.118E-02		5.817E-02	8.016E-02	1.057E-02	-0.264
I-133	-1.351E-02		7.691E-03	Half-Life too short		
CS-134	1.341E-01	+	7.464E-02	1.078E-01	9.529E-03	1.243
CS-135	1.285E-01		1.978E-01	2.998E-01	3.126E-02	0.429
I-135	-5.167E+09		4.370E+10	Half-Life too short		
CS-136	1.128E-01		1.369E-01	2.396E-01	2.178E-02	0.471
BA-137M	-2.648E-02		3.701E-02	5.749E-02	4.709E-03	-0.461
CS-137	-2.800E-02		3.912E-02	6.077E-02	4.988E-03	-0.461
CE-139	-1.274E-02		3.105E-02	5.139E-02	4.377E-03	-0.248
BA-140	1.577E-01		2.955E-01	5.101E-01	1.689E-01	0.309
LA-140	1.730E-02		1.073E-01	1.807E-01	1.559E-02	0.096
CE-141	4.639E-02		7.159E-02	1.206E-01	1.049E-02	0.385
CE-143	3.585E-04		1.585E-04	Half-Life too short		
CE-144	-6.039E-03		2.278E-02	3.596E-01	5.598E-02	-0.017
PM-144	-1.224E-02		3.501E-02	5.619E-02	4.702E-03	-0.218
PR-144	-8.302E-01		2.374E+00	3.810E+00	3.187E-01	-0.218
PM-146	2.958E-02		4.855E-02	8.170E-02	8.582E-03	0.362
ND-147	-6.285E-01		6.610E-01	1.020E+00	1.518E-01	-0.616
PM-149	-1.403E+00		1.415E+02	2.331E+02	3.691E+01	-0.006
EU-152	1.081E-02		1.182E-01	1.875E-01	1.734E-02	0.058
GD-153	-8.800E-02		1.006E-01	1.336E-01	1.187E-02	-0.659



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	-6.604E-02		1.252E-01	1.951E-01	2.172E-02	-0.338
EU-155	1.248E-01		1.206E-01	2.005E-01	1.763E-02	0.623
TB-160	5.154E-02		1.587E-01	2.683E-01	2.419E-02	0.192
HO-166M	4.052E-03		6.788E-02	1.131E-01	9.542E-03	0.036
TM-171	3.517E-01		3.108E+01	5.032E+01	3.963E+00	0.007
LU-176	-1.091E-02		2.708E-02	4.332E-02	3.921E-03	-0.252
LU-177	3.181E+00	+	1.937E+00	2.493E+00	2.216E-01	1.276
LU-177M	-2.163E-01		2.123E-01	3.171E-01	2.590E-02	-0.682
HF-181	-1.111E-02		4.858E-02	7.633E-02	6.431E-03	-0.146
W-181	-6.685E-01		4.435E-01	6.665E-01	5.203E-02	-1.003
TA-182	1.306E-01		2.206E-01	3.885E-01	3.202E-02	0.336
RE-183	4.213E-02		1.145E-01	1.961E-01	1.670E-02	0.215
RE-184	9.120E-02		2.608E-01	4.396E-01	4.013E-02	0.207
OS-185	-2.144E-02		4.588E-02	7.324E-02	6.051E-03	-0.293
RE-188	1.302E-01		1.883E-01	3.261E-01	2.777E-02	0.399
W-188	6.683E+00		9.345E+00	1.421E+01	1.296E+00	0.470
IR-192	-2.665E-03		4.049E-02	6.611E-02	5.957E-03	-0.040
AU-195	1.424E-01		2.854E-01	4.130E-01	3.646E-02	0.345
TL-200	9.693E-04		5.042E-04	Half-Life too short		
TL-201	1.402E+00		9.118E+00	1.546E+01	1.319E+00	0.091
TL-202	6.204E-03		8.400E-02	1.361E-01	1.129E-02	0.046
HG-203	1.397E-02		4.582E-02	7.679E-02	7.199E-03	0.182
BI-207	-7.836E-02		5.922E-02	7.907E-02	6.854E-03	-0.991
TL-207	-4.444E-01		7.769E-01	1.222E+00	2.183E-01	-0.364
PO-209	-1.945E+00		7.109E+00	1.121E+01	1.015E+00	-0.173
BI-210	3.720E+00		4.474E+00	7.568E+00	7.144E-01	0.492
PB-210	3.720E+00		4.474E+00	7.568E+00	7.144E-01	0.492
PO-210	3.720E+00		4.472E+00	7.568E+00	6.488E-01	0.492
PB-211	-3.573E-01		1.011E+00	1.551E+00	9.706E-01	-0.230
PO-215	-4.444E-01		7.769E-01	1.222E+00	2.183E-01	-0.364
RN-219	5.128E-02		4.632E-01	7.559E-01	1.114E-01	0.068
RN-220	-4.556E-01		2.853E+01	4.794E+01	4.069E+00	-0.010
RA-223	-4.444E-01		7.769E-01	1.222E+00	2.183E-01	-0.364
AC-227	-7.644E-02		4.161E-01	6.818E-01	1.067E-01	-0.112
TH-227	-7.644E-02		4.161E-01	6.818E-01	1.249E-01	-0.112
TH-229	-4.241E-01		5.511E-01	8.900E-01	7.798E-02	-0.476
PA-231	-6.228E-01		1.663E+00	2.676E+00	4.144E-01	-0.233
TH-231	-4.444E-01		7.769E-01	1.222E+00	2.183E-01	-0.364
U-231	1.101E+00		1.493E+00	2.215E+00	1.981E-01	0.497
PA-233	4.108E-02		7.390E-02	1.250E-01	1.157E-02	0.329
PA-234	2.006E-01		3.132E-01	5.434E-01	1.029E-01	0.369
PA-234M	1.876E-01		5.519E+00	9.023E+00	9.198E-01	0.021
TH-234	-5.853E-01		1.550E+00	2.452E+00	4.310E-01	-0.239
U-235	9.806E-02		2.334E-01	3.896E-01	6.806E-02	0.252
NP-236	-3.824E-02		8.408E-02	1.391E-01	1.185E-02	-0.275
U-238	-5.853E-01		1.550E+00	2.452E+00	4.310E-01	-0.239
NP-239	-8.184E-02		2.088E-01	3.251E-01	2.831E-02	-0.252
AM-241	4.024E-02		1.702E-01	2.793E-01	2.301E-02	0.144

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.469E-02		1.082E-01	1.716E-01	1.495E-02	-0.086
AM-246	-6.629E-03		1.626E-01	2.610E-01	2.246E-02	-0.025
CM-247	-1.182E-02		4.149E-02	6.576E-02	5.333E-03	-0.180
CF-249	-2.323E-02		4.555E-02	7.115E-02	5.772E-03	-0.326
CF-251	4.817E-03		1.347E-01	2.268E-01	1.952E-02	0.021

# 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]G244148009          *
* Acquisition date   : 20-JAN-2010 15:56:22 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 02:00:01.08 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148009 Analyst initials: MXR1                  *
* Batch Number       : 940268 Sample Quantity : 1.2662E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 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	1.945E+01	2.330E+00	2.784E-01	1.189E+00
CD-109	2.057E+00	9.647E-01	8.035E-01	4.922E-01
SN-126	2.019E-01	9.467E-02	8.256E-02	4.830E-02
TL-208	6.405E-01	1.081E-01	3.089E-02	5.514E-02
BI-211	3.388E+00	6.348E-01	1.809E-01	3.239E-01
BI-212	1.640E+00	6.026E-01	2.510E-01	3.074E-01
PB-212	1.815E+00	2.200E-01	5.043E-02	1.122E-01
PO-212	1.815E+00	2.200E-01	5.043E-02	1.122E-01
BI-214	1.104E+00	2.109E-01	6.501E-02	1.076E-01
PB-214	1.179E+00	2.289E-01	6.822E-02	1.168E-01
PO-214	1.179E+00	2.289E-01	6.822E-02	1.168E-01
PO-216	1.815E+00	2.200E-01	5.043E-02	1.122E-01
PO-218	1.179E+00	2.289E-01	6.822E-02	1.168E-01
RA-224	4.582E+00	1.093E+00	5.739E-01	5.575E-01
RA-226	1.104E+00	2.109E-01	6.501E-02	1.076E-01
AC-228	1.691E+00	3.453E-01	1.245E-01	1.762E-01
RA-228	1.691E+00	3.453E-01	1.245E-01	1.762E-01
TH-228	1.844E+00	2.235E-01	5.125E-02	1.140E-01
TH-230	1.104E+00	2.109E-01	6.501E-02	1.076E-01
TH-232	1.691E+00	3.453E-01	1.245E-01	1.762E-01
U-234	1.104E+00	2.109E-01	6.501E-02	1.076E-01
NP-237	5.929E-01	3.028E-01	1.659E-01	1.545E-01
AM-243	3.598E-01	8.874E-02	5.489E-02	4.528E-02
ANH-511	1.578E-01	8.070E-02	2.534E-02	4.117E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-2.209E-01	3.594E-01	2.832E-01	1.834E-01 NOT IDENT.
NA-22	-1.867E-02	4.323E-02	3.495E-02	2.206E-02 NOT IDENT.
NA-24	-1.141E+06	2.328E+06	0.000E+00	1.188E+06 SHORT HLIF

AL-26	1.050E-02	2.830E-02	2.556E-02	1.444E-02	NOT IDENT.
TI-44	3.695E-01	6.444E-02	4.540E-02	3.288E-02	FAIL ABUN
SC-46	-4.824E-02	3.952E-02	2.798E-02	2.016E-02	FAIL ABUN
V-48	-3.093E-02	7.662E-02	6.073E-02	3.909E-02	NOT IDENT.
CR-51	-3.857E-02	4.131E-01	3.512E-01	2.108E-01	NOT IDENT.
MN-52	-1.117E-01	2.199E-01	1.689E-01	1.122E-01	NOT IDENT.
MN-54	3.518E-03	4.340E-02	3.691E-02	2.214E-02	NOT IDENT.
CO-56	-1.791E-02	4.333E-02	3.500E-02	2.211E-02	FAIL ABUN
CO-57	-7.106E-03	2.807E-02	2.327E-02	1.432E-02	NOT IDENT.
CO-58	-3.297E-02	4.115E-02	3.179E-02	2.100E-02	NOT IDENT.
FE-59	-5.393E-02	1.044E-01	8.105E-02	5.328E-02	NOT IDENT.
CO-60	-3.418E-02	4.039E-02	3.017E-02	2.060E-02	NOT IDENT.
ZN-65	3.460E-03	1.132E-01	8.081E-02	5.775E-02	NOT IDENT.
GE-68	2.936E-01	1.434E+00	1.212E+00	7.316E-01	NOT IDENT.
AS-73	-4.237E-01	9.822E-01	8.389E-01	5.011E-01	NOT IDENT.
AS-74	-2.299E-02	1.024E-01	8.717E-02	5.226E-02	NOT IDENT.
SE-75	1.802E-02	4.873E-02	4.004E-02	2.486E-02	NOT IDENT.
BR-77	5.188E-02	1.571E+01	1.300E+01	8.017E+00	FAIL ABUN
SR-82	-2.249E-01	4.064E-01	3.259E-01	2.074E-01	NOT IDENT.
RB-83	4.729E-03	7.753E-02	6.445E-02	3.956E-02	NOT IDENT.
RB-84	1.898E-02	7.921E-02	6.822E-02	4.041E-02	NOT IDENT.
KR-85	2.008E+01	9.413E+00	8.082E+00	4.802E+00	NOT IDENT.
SR-85	1.041E-01	4.879E-02	4.190E-02	2.490E-02	NOT IDENT.
RB-86	-1.768E-02	9.324E-01	7.697E-01	4.757E-01	NOT IDENT.
Y-88	2.726E-03	3.959E-02	3.320E-02	2.020E-02	NOT IDENT.
ZR-88	-1.371E-02	3.550E-02	2.914E-02	1.811E-02	NOT IDENT.
Y-91	-6.997E+00	1.950E+01	1.612E+01	9.951E+00	NOT IDENT.
NB-94	-1.357E-02	3.494E-02	2.888E-02	1.783E-02	NOT IDENT.
NB-95	1.250E-02	4.903E-02	4.253E-02	2.502E-02	NOT IDENT.
NB-95M	1.523E-01	1.426E-01	1.161E-01	7.276E-02	NOT IDENT.
ZR-95	4.268E-02	7.778E-02	6.933E-02	3.968E-02	NOT IDENT.
NB-97	-2.524E+05	2.756E+05	0.000E+00	1.406E+05	SHORT HLIF
ZR-97	1.020E+07	6.052E+06	0.000E+00	3.088E+06	SHORT HLIF
MO-99	7.804E+00	1.538E+01	1.370E+01	7.848E+00	NOT IDENT.
TC-99M	-5.439E+17	7.521E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	3.285E-02	3.741E-02	3.327E-02	1.909E-02	NOT IDENT.
RH-102	2.751E-03	3.139E-02	2.632E-02	1.602E-02	NOT IDENT.
RU-103	2.290E-02	4.572E-02	3.942E-02	2.333E-02	FAIL ABUN
RH-106	3.634E-01	3.474E-01	3.215E-01	1.772E-01	FAIL ABUN
RU-106	3.634E-01	3.455E-01	3.215E-01	1.763E-01	FAIL ABUN
AG-108M	-1.499E-02	3.966E-02	3.233E-02	2.024E-02	NOT IDENT.
AG-110M	-2.731E-02	3.494E-02	2.782E-02	1.782E-02	NOT IDENT.
IN-111	-4.599E-01	1.625E+00	1.215E+00	8.289E-01	NOT IDENT.
IN-113M	2.752E-02	5.136E-02	4.483E-02	2.620E-02	NOT IDENT.
SN-113	2.752E-02	5.136E-02	4.483E-02	2.620E-02	NOT IDENT.
IN-114M	3.564E-02	2.173E-01	1.705E-01	1.109E-01	NOT IDENT.
CD-115	-5.637E+00	1.576E+01	1.339E+01	8.042E+00	NOT IDENT.
SN-117M	-2.113E-02	6.084E-02	5.339E-02	3.104E-02	NOT IDENT.
SB-122	1.648E+00	2.986E+00	2.695E+00	1.523E+00	NOT IDENT.
I-123	7.771E+06	2.239E+07	0.000E+00	1.142E+07	SHORT HLIF
TE-123M	1.025E-02	2.952E-02	2.663E-02	1.506E-02	NOT IDENT.
I-124	-3.619E-02	9.921E-01	7.442E-01	5.062E-01	FAIL ABUN
SB-124	2.613E-02	7.043E-02	6.363E-02	3.594E-02	FAIL ABUN
SB-125	-3.996E-02	1.052E-01	8.568E-02	5.365E-02	FAIL ABUN
TE-125M	2.109E-01	1.049E+01	8.862E+00	5.352E+00	NOT IDENT.
I-126	5.458E-02	2.014E-01	1.769E-01	1.027E-01	NOT IDENT.
SB-126	4.447E-02	1.666E-01	1.380E-01	8.500E-02	FAIL ABUN
SB-127	-4.738E-02	1.693E+00	1.448E+00	8.638E-01	NOT IDENT.
XE-127	-1.265E-02	5.087E-02	4.421E-02	2.595E-02	NOT IDENT.
I-131	-9.031E-02	1.423E-01	1.153E-01	7.260E-02	NOT IDENT.
TE-132	3.423E-01	9.129E-01	8.094E-01	4.658E-01	NOT IDENT.
BA-133	-2.118E-02	5.701E-02	4.094E-02	2.908E-02	NOT IDENT.
I-133	-1.351E+04	1.508E+04	0.000E+00	7.691E+03	SHORT HLIF
CS-134	1.341E-01	7.315E-02	5.442E-02	3.732E-02	FAIL ABUN
CS-135	1.285E-01	1.939E-01	1.537E-01	9.891E-02	NOT IDENT.
I-135	-5.167E+15	8.566E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.128E-01	1.342E-01	1.204E-01	6.846E-02	FAIL ABUN
BA-137M	-2.648E-02	3.627E-02	2.909E-02	1.850E-02	NOT IDENT.
CS-137	-2.800E-02	3.834E-02	3.075E-02	1.956E-02	NOT IDENT.
CE-139	-1.274E-02	3.043E-02	2.654E-02	1.552E-02	NOT IDENT.
BA-140	1.577E-01	2.896E-01	2.589E-01	1.478E-01	NOT IDENT.
LA-140	1.730E-02	1.052E-01	9.025E-02	5.365E-02	NOT IDENT.
CE-141	4.639E-02	7.016E-02	6.238E-02	3.579E-02	NOT IDENT.
CE-143	3.585E+02	3.106E+02	0.000E+00	1.585E+02	SHORT HLIF
CE-144	-6.039E-03	2.233E-01	1.863E-01	1.139E-01	NOT IDENT.
PM-144	-1.224E-02	3.431E-02	2.841E-02	1.750E-02	NOT IDENT.
PR-144	-8.302E-01	2.326E+00	1.926E+00	1.187E+00	NOT IDENT.
PM-146	2.958E-02	4.758E-02	4.158E-02	2.428E-02	NOT IDENT.

ND-147	-6.285E-01	6.478E-01	5.181E-01	3.305E-01	NOT IDENT.
PM-149	-1.403E+00	1.387E+02	1.194E+02	7.077E+01	NOT IDENT.
EU-152	1.081E-02	1.159E-01	9.581E-02	5.911E-02	FAIL ABUN
GD-153	-8.800E-02	9.858E-02	6.952E-02	5.030E-02	NOT IDENT.
EU-154	-6.604E-02	1.227E-01	9.777E-02	6.259E-02	NOT IDENT.
EU-155	1.248E-01	1.182E-01	1.042E-01	6.032E-02	FAIL ABUN
TB-160	5.154E-02	1.556E-01	1.352E-01	7.937E-02	FAIL ABUN
HO-166M	4.052E-03	6.652E-02	5.718E-02	3.394E-02	NOT IDENT.
TM-171	3.517E-01	3.046E+01	2.632E+01	1.554E+01	NOT IDENT.
LU-176	-1.091E-02	2.654E-02	2.217E-02	1.354E-02	FAIL ABUN
LU-177	3.181E+00	1.899E+00	1.283E+00	9.686E-01	FAIL ABUN
LU-177M	-2.163E-01	2.081E-01	1.616E-01	1.062E-01	NOT IDENT.
HF-181	-1.111E-02	4.760E-02	3.881E-02	2.429E-02	NOT IDENT.
W-181	-6.685E-01	4.346E-01	3.487E-01	2.217E-01	NOT IDENT.
TA-182	1.306E-01	2.162E-01	1.948E-01	1.103E-01	FAIL ABUN
RE-183	4.213E-02	1.123E-01	1.013E-01	5.727E-02	FAIL ABUN
RE-184	9.120E-02	2.556E-01	2.256E-01	1.304E-01	NOT IDENT.
OS-185	-2.144E-02	4.496E-02	3.708E-02	2.294E-02	NOT IDENT.
RE-188	1.302E-01	1.845E-01	1.685E-01	9.416E-02	NOT IDENT.
W-188	6.683E+00	9.158E+00	7.280E+00	4.672E+00	NOT IDENT.
IR-192	-2.665E-03	3.968E-02	3.382E-02	2.024E-02	FAIL ABUN
AU-195	1.424E-01	2.797E-01	2.148E-01	1.427E-01	FAIL ABUN
TL-200	9.693E+02	9.883E+02	0.000E+00	5.042E+02	SHORT HLIF
TL-201	1.402E+00	8.936E+00	7.984E+00	4.559E+00	NOT IDENT.
TL-202	6.204E-03	8.232E-02	6.931E-02	4.200E-02	NOT IDENT.
HG-203	1.397E-02	4.491E-02	3.935E-02	2.291E-02	NOT IDENT.
BI-207	-7.836E-02	5.804E-02	3.973E-02	2.961E-02	FAIL ABUN
TL-207	-4.444E-01	7.614E-01	6.251E-01	3.885E-01	FAIL ABUN
PO-209	-1.945E+00	6.967E+00	5.647E+00	3.555E+00	NOT IDENT.
BI-210	3.720E+00	4.385E+00	3.978E+00	2.237E+00	NOT IDENT.
PB-210	3.720E+00	4.385E+00	3.978E+00	2.237E+00	NOT IDENT.
PO-210	3.720E+00	4.383E+00	3.978E+00	2.236E+00	NOT IDENT.
PB-211	-3.573E-01	9.904E-01	7.904E-01	5.053E-01	NOT IDENT.
PO-215	-4.444E-01	7.614E-01	6.251E-01	3.885E-01	FAIL ABUN
RN-219	5.128E-02	4.540E-01	3.854E-01	2.316E-01	FAIL ABUN
RN-220	-4.556E-01	2.796E+01	2.433E+01	1.426E+01	NOT IDENT.
RA-223	-4.444E-01	7.614E-01	6.251E-01	3.885E-01	FAIL ABUN
AC-227	-7.644E-02	4.077E-01	3.499E-01	2.080E-01	FAIL ABUN
TH-227	-7.644E-02	4.078E-01	3.499E-01	2.081E-01	FAIL ABUN
TH-229	-4.241E-01	5.401E-01	4.586E-01	2.755E-01	FAIL ABUN
PA-231	-6.228E-01	1.630E+00	1.371E+00	8.316E-01	FAIL ABUN
TH-231	-4.444E-01	7.614E-01	6.251E-01	3.885E-01	FAIL ABUN
U-231	1.101E+00	1.463E+00	1.152E+00	7.467E-01	FAIL ABUN
PA-233	4.108E-02	7.242E-02	6.395E-02	3.695E-02	FAIL ABUN
PA-234	2.006E-01	3.069E-01	2.736E-01	1.566E-01	FAIL ABUN
PA-234M	1.876E-01	5.408E+00	4.539E+00	2.759E+00	NOT IDENT.
TH-234	-5.853E-01	1.519E+00	1.283E+00	7.749E-01	FAIL ABUN
U-235	9.806E-02	2.288E-01	2.016E-01	1.167E-01	FAIL ABUN
NP-236	-3.824E-02	8.240E-02	7.188E-02	4.204E-02	FAIL ABUN
U-238	-5.853E-01	1.519E+00	1.283E+00	7.749E-01	FAIL ABUN
NP-239	-8.184E-02	2.046E-01	1.687E-01	1.044E-01	FAIL ABUN
AM-241	4.024E-02	1.668E-01	1.463E-01	8.511E-02	NOT IDENT.
CM-243	-1.469E-02	1.060E-01	8.917E-02	5.410E-02	FAIL ABUN
AM-246	-6.629E-03	1.593E-01	1.312E-01	8.128E-02	NOT IDENT.
CM-247	-1.182E-02	4.066E-02	3.352E-02	2.074E-02	NOT IDENT.
CF-249	-2.323E-02	4.463E-02	3.629E-02	2.277E-02	NOT IDENT.
CF-251	4.817E-03	1.320E-01	1.170E-01	6.733E-02	NOT IDENT.

ENERGY	MDA COUNTS
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400	400
500	500
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800	800
900	900
1000	1000
1100	1100
1200	1200
1300	1300
1400	1400
1500	1500
1600	1600
1700	1700
1800	1800
1900	1900
2000	2000
2100	2100
2200	2200
2300	2300
2400	2400
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3300	3300
3400	3400
3500	3500
3600	3600
3700	3700
3800	3800
3900	3900
4000	4000
4100	4100
4200	4200
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4400	4400
4500	4500
4600	4600
4700	4700
4800	4800
4900	4900
5000	5000
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5200	5200
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5500	5500
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5700	5700
5800	5800
5900	5900
6000	6000
6100	6100
6200	6200
6300	6300
6400	6400
6500	6500
6600	6600
6700	6700
6800	6800
6900	6900
7000	7000
7100	7100
7200	7200
7300	7300
7400	7400
7500	7500
7600	7600
7700	7700
7800	7800
7900	7900
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8100	8100
8200	8200
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8500	8500
8600	8600
8700	8700
8800	8800
8900	8900
9000	9000
9100	9100
9200	9200
9300	9300
9400	9400
9500	9500
9600	9600
9700	9700
9800	9800
9900	9900
10000	10000

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77.11	434.8661
77.11	434.8661
77.11	434.8661
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80.30	437.0069
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81.07	437.5181
81.07	437.5181
81.07	437.5181
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86.72	223.8887
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86.94	556.6046
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92.38	549.3046
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94.67	417.3067
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94.90	417.4387
94.90	417.4387
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98.44	281.1172
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105.31	262.2708
108.00	301.5728
109.28	297.5324

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117.00	269.5248
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136.48	250.4726
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143.76	265.6669
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144.24	263.1509
144.24	263.1509
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154.21	257.8250
154.21	257.8250
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156.02	254.7153
158.56	270.5885
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159.00	244.7111
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161.27	248.8482
162.32	233.8139
162.64	233.8873
163.35	236.7486
163.89	229.6658
165.85	249.0490
167.43	229.5422
171.28	232.1914
171.86	235.9464
172.10	235.9999
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176.60	238.8067
181.06	243.0729
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185.71	260.0766
186.00	260.1436
190.27	231.7801
192.34	245.8783
193.63	255.4061
197.04	232.9513
198.01	231.2870
198.60	237.9082
200.40	257.8172
201.83	250.6709
202.84	241.5577
205.31	225.7940



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208.81	241.4430
209.75	231.6850
209.75	231.6850
210.97	204.3121
215.65	228.3518
216.55	210.3283
218.09	218.1416
222.10	227.3621
223.80	198.2576
226.40	198.6594
227.00	198.7519
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227.20	193.0771
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228.18	192.2708
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238.63	190.9275
238.63	190.9275
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241.98	191.4057
241.98	191.4057
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252.85	170.6343
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268.79	167.8589
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269.46	172.6458
269.46	172.6458
269.46	172.6458
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273.65	174.7166
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277.60	161.7703
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284.30	138.7183
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285.90	153.7441
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286.10	160.7097
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293.26	0.0000
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295.21	167.6591
295.21	167.6591

295.21	167.6591
295.96	167.7385
296.50	103.8746
297.23	103.9238
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300.09	116.9301
300.09	116.9301
300.12	116.9319
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303.91	128.4551
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304.40	118.8571
304.84	118.8896
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308.46	138.8886
311.98	135.1593
316.51	145.6567
318.01	144.7783
319.02	137.7764
319.41	145.9160
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323.87	160.5387
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334.30	132.5109
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338.28	147.5815
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338.32	147.5837
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351.92	135.3256
351.92	135.3256
355.39	0.0000
356.01	137.5052
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366.43	101.0288
367.43	95.8745
367.94	0.0000
369.80	93.9139
374.96	82.6694
383.85	84.1223
387.95	119.0831
388.63	105.4230
391.69	107.7057
391.69	107.7057
392.90	120.4553
398.62	115.5198
400.65	86.9974
401.10	92.3247
401.81	104.0353
402.60	109.3888
404.84	98.8835
410.95	92.7959
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413.65	131.3763
414.70	119.6921
415.30	97.2790

415.76	98.3719
417.63	0.0000
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427.08	122.5931
427.89	106.5063
432.53	95.9694
433.93	116.5364
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439.56	93.0560
439.89	95.2349
443.98	87.8349
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445.03	92.2191
445.03	92.2191
445.03	92.2191
445.03	92.2191
453.90	78.4501
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468.07	61.4269
473.00	73.6626
475.06	78.1351
475.35	79.2455
476.78	90.3119
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484.57	84.0040
487.03	85.2045
490.36	0.0000
492.35	66.5533
497.08	72.2532
507.63	0.0000
510.53	0.0000
510.84	74.9328
511.00	74.9380
511.85	74.9656
511.85	74.9656
513.99	71.6758
513.99	71.6758
520.41	75.2462
520.65	75.2544
527.90	78.4189
528.96	0.0000
529.64	88.4010
529.87	0.0000
531.02	88.4512
537.32	65.1603
543.00	66.2240
546.56	0.0000
549.76	74.5988
552.65	86.5298
555.20	63.8254
563.23	64.9522
563.90	74.1201
568.70	72.4308
569.32	62.3621
569.50	61.4499
569.67	61.4532
573.80	79.0125
574.00	67.9929
574.64	75.3635
578.91	76.7212
579.30	0.0000
583.14	63.6313
585.48	63.0765
591.81	71.7178
592.07	65.8125
593.00	63.8806
595.88	75.0753
600.56	76.1423
602.52	0.0000
602.71	80.5433
602.71	80.5433
603.60	97.6146
604.41	89.8958
604.70	93.0078
609.31	79.1978

609.31	79.1978
609.31	79.1978
609.31	79.1978
610.33	69.9078
612.46	57.5264
614.37	59.1245
618.01	76.6588
621.84	55.2369
621.84	55.2369
631.29	59.1932
633.02	61.1121
633.10	65.8147
634.78	67.7373
635.90	58.3551
636.97	59.3194
645.85	73.6868
646.12	65.1912
656.30	56.9004
657.75	64.5203
657.90	0.0000
661.65	67.4639
661.65	67.4639
664.57	0.0000
666.33	60.9156
666.33	60.9156
675.00	60.1515
677.61	53.5172
685.20	56.5369
692.80	55.7273
695.00	61.5406
696.49	59.6478
696.49	59.6478
697.00	58.6961
697.49	62.5562
698.33	53.9109
698.50	59.6901
699.00	65.4782
702.63	65.5612
706.10	69.5004
706.58	0.0000
706.67	67.5835
709.31	59.9142
711.68	62.8656
713.82	69.6867
717.42	46.5152
720.50	53.3551
721.93	0.0000
722.20	56.6215
722.78	59.8691
722.78	59.8691
722.89	59.8706
722.95	59.8721
723.30	69.5898
724.18	64.7542
727.18	56.7169
733.00	43.8398
735.90	47.3654
739.58	44.9129
742.81	47.8934
744.21	58.6729
747.13	51.8782
751.79	68.6243
752.31	67.6557
753.82	51.9933
755.35	50.0562
756.15	51.0504
756.87	45.1712
763.93	65.9449
765.79	68.9404
766.42	62.0587
766.84	63.0516
776.49	56.3320
778.00	54.3823
778.57	54.3917
778.89	53.4081
783.80	49.5300
785.46	50.5480
792.07	59.5928

795.84	48.0631
796.30	58.0157
798.80	69.6736
801.93	38.6081
805.60	50.8718
810.29	55.9412
810.76	53.9512
815.85	44.0301
817.79	59.0749
818.51	57.0863
819.60	54.0989
826.30	50.1953
828.27	0.0000
831.60	65.3610
831.96	59.3342
834.83	62.4057
836.80	0.0000
846.75	53.5409
848.13	46.4885
856.28	0.0000
856.80	40.5303
860.37	45.6460
867.32	40.6582
867.82	39.5345
871.10	38.6680
873.19	44.8014
874.81	46.8603
875.33	0.0000
876.40	40.7676
879.36	43.8629
880.27	42.8541
880.51	45.9185
881.50	44.9109
883.24	37.7859
884.67	38.8229
889.25	48.0821
896.60	35.8827
898.02	39.9998
899.00	44.1149
903.28	38.0063
911.07	51.4746
911.07	51.4746
911.07	51.4746
919.63	42.3123
920.93	28.9064
925.00	26.8728
925.24	26.8747
926.50	36.1903
935.52	32.1360
937.48	43.5627
944.10	35.3306
946.00	32.2299
949.00	41.6221
962.29	38.2932
964.01	36.5697
966.15	36.5911
968.20	36.6116
969.11	36.6210
969.11	36.6210
969.11	36.6210
977.42	47.1907
980.50	26.2390
983.50	40.9662
989.30	35.7697
996.32	50.5934
1001.03	39.0478
1001.68	43.2772
1004.76	39.0867
1021.30	0.0000
1024.50	0.0000
1034.80	33.0071
1036.00	35.1479
1037.82	45.8198
1038.57	43.6986
1038.76	0.0000
1045.16	53.3813
1046.59	51.2648
1048.07	39.5311

1050.47	44.9019
1050.47	44.9019
1062.04	40.7442
1063.62	53.6328
1076.63	44.1250
1077.35	43.0566
1078.86	43.0723
1085.78	45.3038
1099.22	48.7024
1112.02	43.4277
1112.84	48.0915
1115.52	45.2759
1120.29	45.6914
1120.29	45.6914
1120.29	45.6914
1120.29	45.6914
1120.51	41.7062
1121.28	39.9001
1124.00	0.0000
1129.67	32.7114
1131.51	0.0000
1147.95	0.0000
1167.94	35.7643
1173.22	48.6631
1175.09	41.3361
1177.93	38.6060
1189.05	47.0011
1204.90	48.0983
1205.75	0.0000
1213.00	54.6763
1221.42	46.4233
1230.97	38.2835
1235.34	36.7252
1236.41	0.0000
1238.25	40.0780
1246.25	47.3083
1260.41	0.0000
1271.85	32.8666
1274.45	36.6450
1274.54	34.7658
1291.56	36.7831
1298.22	0.0000
1312.09	20.8416
1325.50	23.7518
1325.50	23.7518
1332.49	31.3994
1333.61	29.5040
1360.21	30.6276
1362.66	0.0000
1365.15	18.2037
1368.21	22.0501
1368.53	0.0000
1376.25	18.2462
1384.27	33.6670
1394.10	18.3135
1395.20	17.3533
1407.95	26.0980
1434.06	12.6329
1436.60	14.5837
1457.56	0.0000
1460.81	16.6078
1489.15	16.7012
1509.49	15.2170
1596.49	19.0503
1620.62	15.1068
1678.03	0.0000
1691.02	7.1396
1691.02	7.1396
1706.46	0.0000
1750.46	0.0000
1764.49	8.8543
1764.49	8.8543
1764.49	8.8543
1764.49	8.8543
1770.23	8.8630
1771.40	10.6377
1791.20	0.0000
1808.65	6.2446

1836.01

11.5004

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148009

Total Uranium Activity	-1.6959E+00	ug/g
Total Uranium Counting Unc.	4.5199E+00	ug/g
Total Uranium Tpu	2.3061E-06	ug/g
Total Uranium Mda	3.8195E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148009
*  ANALYST       : MXR1                             DETECTOR    : GAM01
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 15:56:22.72          SAMPLE ALQT  : 126.620 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.393E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.241E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.770E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.821E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:58:33.63

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148010.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:56:55
Sample ID          : G244148010          Sample quantity  : 1.38000E+02 GRAM
Detector name      : GAM11              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.72  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940268             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	46.33*	18	351	1.02	91.50	88	7	2.53E-03	177.3	
2	0	62.92*	110	471	0.95	124.72	121	8	1.53E-02	36.3	
3	4	74.83*	471	432	0.96	148.56	144	16	6.54E-02	8.4	8.69E-01
4	4	77.12*	742	327	0.90	153.14	144	16	1.03E-01	5.3	
5	0	87.21*	257	460	1.10	173.33	170	7	3.57E-02	15.4	
6	4	89.95	186	239	1.00	178.82	177	16	2.59E-02	13.2	4.20E+00
7	4	92.84*	273	367	1.20	184.60	177	16	3.79E-02	14.1	
8	0	128.49	121	304	1.35	255.95	252	8	1.68E-02	26.5	
9	0	185.96*	166	313	1.43	370.99	367	8	2.31E-02	21.0	
10	0	209.36	116	309	1.08	417.83	414	9	1.61E-02	29.0	
11	5	238.64*	1441	167	0.98	476.43	471	16	2.00E-01	3.0	1.75E+00
12	5	241.64*	372	232	1.66	482.43	471	16	5.17E-02	11.9	
13	0	269.97*	115	153	1.16	539.12	535	9	1.59E-02	22.0	
14	0	277.65	111	172	1.05	554.49	551	9	1.54E-02	23.4	
15	0	295.13*	478	228	1.10	589.49	583	11	6.64E-02	7.7	
16	0	300.19	98	122	1.20	599.60	596	7	1.37E-02	21.3	
17	0	328.16	70	131	1.01	655.59	651	8	9.66E-03	31.1	
18	0	338.63	324	165	1.12	676.53	672	11	4.50E-02	9.7	
19	0	352.06*	797	172	1.12	703.41	698	12	1.11E-01	4.9	
20	0	463.76	53	105	1.12	926.96	922	10	7.40E-03	38.8	
21	0	510.99*	97	191	1.87	1021.47	1014	17	1.35E-02	37.9	
22	0	583.42*	379	119	1.20	1166.41	1160	13	5.26E-02	8.0	
23	0	609.54*	531	89	1.18	1218.69	1214	11	7.37E-02	5.6	
24	0	728.04	106	95	1.67	1455.82	1449	13	1.47E-02	21.7	
25	0	768.81	73	72	1.11	1537.40	1532	12	1.01E-02	26.0	
26	0	795.61*	26	31	1.28	1591.03	1587	8	3.57E-03	43.4	
27	0	861.50	60	63	1.52	1722.87	1717	15	8.28E-03	31.3	
28	0	911.48*	293	40	1.30	1822.87	1815	16	4.06E-02	7.7	
29	0	934.70	34	33	1.16	1869.33	1865	10	4.75E-03	35.6	
30	1	965.09	52	42	1.73	1930.15	1926	19	7.26E-03	25.2	2.86E+00
31	1	969.41*	158	45	1.74	1938.78	1926	19	2.20E-02	11.6	
32	0	1120.77*	94	44	1.66	2241.62	2236	10	1.30E-02	15.4	
33	0	1409.05	20	26	1.69	2818.37	2814	11	2.71E-03	56.4	
34	0	1461.47*	976	27	1.84	2923.23	2915	15	1.35E-01	3.4	
35	0	1588.46	36	11	1.76	3177.25	3172	11	5.00E-03	24.4	
36	0	1622.98	25	19	1.49	3246.31	3239	15	3.48E-03	42.7	
37	0	1730.19	31	7	1.55	3460.77	3454	13	4.24E-03	25.0	
38	0	1765.27*	110	4	1.62	3530.92	3525	13	1.53E-02	10.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
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Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:58:36

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148010.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 4-JAN-2010 12:00:00 Acquisition date : 20-JAN-2010 15:56:55  
 Sample ID : G244148010 Sample quantity : 138.00 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA11 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.030E+01	2.238E+00	4.753E-01	4.110E-02	42.711
CD-109	+	88.03	*	2.834E+00	9.104E-01	8.945E-01	8.482E-02	3.168
SN-126	+	64.28		7.399E-01	5.477E-01	5.372E-01	7.793E-02	1.377
	+	86.94		1.156E+00	5.972E-01	3.858E-01	1.602E-01	2.996
	+	87.57	*	2.781E-01	8.935E-02	8.807E-02	8.307E-03	3.158
TL-208	+	277.35		9.491E-01	4.750E-01	5.125E-01	9.086E-02	1.852
	+	510.84		4.145E-01	3.191E-01	1.863E-01	2.526E-02	2.225
	+	583.14	*	4.600E-01	8.891E-02	4.517E-02	4.878E-03	10.183
	+	860.37		6.764E-01	4.290E-01	3.043E-01	3.169E-02	2.223
BI-210	+	46.50	*	8.275E-01	2.935E+00	3.175E+00	2.956E-01	0.261
PB-210	+	46.50	*	8.275E-01	2.935E+00	3.175E+00	2.956E-01	0.261
PO-210	+	46.50	*	8.275E-01	2.935E+00	3.175E+00	2.676E-01	0.261
BI-211		72.87		1.204E+00	2.396E+00	3.550E+00	2.820E-01	0.339
	+	351.07	*	4.271E+00	6.996E-01	2.496E-01	3.294E-02	17.109
PB-212	+	74.81		2.067E+00	4.316E-01	3.987E-01	4.932E-02	5.186
	+	77.11		1.861E+00	2.520E-01	2.285E-01	1.899E-02	8.146
	+	87.30		1.286E+00	4.328E-01	4.281E-01	5.876E-02	3.004
	+	238.63	*	1.687E+00	2.573E-01	6.894E-02	9.655E-03	24.468
	+	300.09		1.780E+00	8.107E-01	9.485E-01	1.520E-01	1.876
PO-212	+	74.81		2.067E+00	4.316E-01	3.987E-01	4.932E-02	5.186
	+	77.11		1.861E+00	2.520E-01	2.285E-01	1.899E-02	8.146
	+	87.30		1.286E+00	4.328E-01	4.281E-01	5.876E-02	3.004
	+	115.19		2.049E-01	2.670E+00	4.562E+00	3.866E-01	0.045
	+	238.63	*	1.687E+00	2.573E-01	6.894E-02	9.655E-03	24.468
	+	300.09		1.780E+00	8.107E-01	9.485E-01	1.520E-01	1.876
BI-214	+	609.31	*	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
	+	1120.29		1.103E+00	3.609E-01	3.665E-01	3.958E-02	3.008
	+	1764.49		1.773E+00	3.982E-01	2.565E-01	2.113E-02	6.913
PB-214	+	74.81		3.562E+00	7.154E-01	6.869E-01	7.542E-02	5.186
	+	77.11		3.191E+00	4.957E-01	3.917E-01	4.416E-02	8.146
	+	87.30		2.203E+00	7.280E-01	7.334E-01	8.916E-02	3.004
	+	241.98		2.617E+00	7.312E-01	4.154E-01	6.051E-02	6.301
	+	295.21		1.515E+00	3.400E-01	1.784E-01	2.910E-02	8.492
	+	351.92	*	1.486E+00	2.554E-01	8.703E-02	1.231E-02	17.072

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		3.562E+00	7.154E-01	6.869E-01	7.542E-02	5.186
	+	77.11		3.191E+00	4.957E-01	3.917E-01	4.416E-02	8.146
	+	87.30		2.203E+00	7.280E-01	7.334E-01	8.916E-02	3.004
	+	241.98		2.617E+00	7.312E-01	4.154E-01	6.051E-02	6.301
	+	295.21		1.515E+00	3.400E-01	1.784E-01	2.910E-02	8.492
PO-216	+	351.92	*	1.486E+00	2.554E-01	8.703E-02	1.231E-02	17.072
	+	74.81		2.067E+00	4.316E-01	3.987E-01	4.932E-02	5.186
	+	77.11		1.861E+00	2.520E-01	2.285E-01	1.899E-02	8.146
	+	87.30		1.286E+00	4.328E-01	4.281E-01	5.876E-02	3.004
	+	238.63	*	1.687E+00	2.573E-01	6.894E-02	9.655E-03	24.468
PO-218	+	300.09		1.780E+00	8.107E-01	9.485E-01	1.520E-01	1.876
	+	74.81		3.562E+00	7.154E-01	6.869E-01	7.542E-02	5.186
	+	77.11		3.191E+00	4.957E-01	3.917E-01	4.416E-02	8.146
	+	87.30		2.203E+00	7.280E-01	7.334E-01	8.916E-02	3.004
	+	241.98		2.617E+00	7.312E-01	4.154E-01	6.051E-02	6.301
RA-224	+	295.21		1.515E+00	3.400E-01	1.784E-01	2.910E-02	8.492
	+	351.92	*	1.486E+00	2.554E-01	8.703E-02	1.231E-02	17.072
	+	240.98	*	4.963E+00	1.358E+00	7.849E-01	1.051E-01	6.323
	+	609.31	*	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
	+	1120.29		1.103E+00	3.609E-01	3.665E-01	3.958E-02	3.008
AC-228	+	1764.49		1.773E+00	3.982E-01	2.565E-01	2.113E-02	6.913
	+	338.32		1.917E+00	8.958E-01	3.107E-01	1.322E-01	6.171
	+	911.07	*	1.567E+00	3.084E-01	1.627E-01	1.980E-02	9.632
	+	969.11		1.493E+00	4.943E-01	3.223E-01	7.638E-02	4.633
	+	338.32		1.917E+00	8.958E-01	3.107E-01	1.322E-01	6.171
RA-228	+	911.07	*	1.567E+00	3.084E-01	1.627E-01	1.980E-02	9.632
	+	969.11		1.493E+00	4.943E-01	3.223E-01	7.638E-02	4.633
	+	74.81		2.101E+00	3.929E-01	4.051E-01	3.315E-02	5.186
	+	77.11		1.892E+00	2.561E-01	2.322E-01	1.930E-02	8.146
	+	87.30		1.307E+00	4.199E-01	4.351E-01	4.090E-02	3.004
TH-228	+	238.63	*	1.714E+00	2.615E-01	7.006E-02	9.812E-03	24.468
	+	300.09		1.809E+00	1.339E+00	9.639E-01	5.833E-01	1.876
	+	609.31	*	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
	+	1120.29		1.102E+00	3.609E-01	3.665E-01	3.958E-02	3.008
	+	1764.49		1.773E+00	3.982E-01	2.565E-01	2.113E-02	6.913
TH-232	+	338.32		1.917E+00	4.515E-01	3.107E-01	4.190E-02	6.171
	+	911.07	*	1.567E+00	3.084E-01	1.627E-01	1.980E-02	9.632
	+	969.11		1.493E+00	4.943E-01	3.223E-01	7.638E-02	4.633
	+	63.29	*	1.869E+00	1.395E+00	1.311E+00	2.281E-01	1.426
	+	92.38		1.943E+00	6.519E-01	5.217E-01	9.570E-02	3.725
U-234	+	609.31	*	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
	+	1120.29		1.102E+00	3.609E-01	3.665E-01	3.958E-02	3.008
	+	1764.49		1.773E+00	3.982E-01	2.565E-01	2.113E-02	6.913
	+	86.50	*	8.166E-01	3.118E-01	2.931E-01	6.635E-02	2.786
	+	95.87		2.218E-02	7.236E-01	1.034E+00	2.559E-01	0.021
U-238	+	63.29	*	1.869E+00	1.395E+00	1.311E+00	2.281E-01	1.426
	+	92.38		1.943E+00	5.741E-01	5.217E-01	4.777E-02	3.725
	+	74.67	*	3.352E-01	6.256E-02	6.479E-02	5.243E-03	5.173
	+	86.72		3.062E+01	9.839E+00	1.024E+01	9.551E-01	2.992
	+							

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-1.658E+00	2.786E+00	4.617E+00	3.905E-01	-0.359
		142.18		-1.495E+01	1.361E+01	2.177E+01	1.941E+00	-0.687
ANH-511	+	511.00	*	8.953E-02	6.852E-02	4.025E-02	4.304E-03	2.224

## ---- 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	*	-3.796E-01	2.771E-01	4.095E-01	4.635E-02	-0.927
NA-22		1274.54	*	-1.617E-02	3.489E-02	5.343E-02	4.387E-03	-0.303
NA-24		1368.53	*	-6.732E-01	3.489E-02	Half-Life	too short	
AL-26		1129.67		-4.914E-01	1.337E+00	2.109E+00	1.781E-01	-0.233
		1808.65	*	-1.057E-02	2.611E-02	3.944E-02	3.219E-03	-0.268
TI-44		67.85		-6.438E-03	3.175E-02	4.975E-02	3.770E-03	-0.129
	+	78.38	*	3.435E-01	4.650E-02	5.243E-02	4.420E-03	6.552
SC-46		889.25	*	-7.715E-03	3.403E-02	5.591E-02	5.507E-03	-0.138
	+	1120.51		1.904E-01	6.102E-02	1.127E-01	9.612E-03	1.689
V-48		944.10		7.128E-02	7.449E-01	1.256E+00	1.214E-01	0.057
		983.50	*	3.890E-02	5.908E-02	1.046E-01	9.921E-03	0.372
		1312.09		-4.702E-02	7.019E-02	1.035E-01	8.536E-03	-0.454
CR-51		320.08	*	3.827E-02	3.186E-01	5.135E-01	7.452E-02	0.075
MN-52		744.21		-1.053E-02	2.315E-01	3.713E-01	3.607E-02	-0.028
		848.13		-7.632E-01	6.561E+00	1.094E+01	1.078E+00	-0.070
	+	935.52		4.091E-01	2.941E-01	4.442E-01	4.313E-02	0.921
		1246.25		3.115E+00	6.747E+00	1.151E+01	9.397E-01	0.271
		1333.61		3.976E+00	5.086E+00	8.998E+00	7.437E-01	0.442
		1434.06	*	1.145E-01	2.153E-01	3.751E-01	3.143E-02	0.305
MN-54		834.83	*	5.323E-04	3.215E-02	5.429E-02	5.346E-03	0.010
CO-56		846.75	*	-1.836E-02	3.441E-02	5.521E-02	5.440E-03	-0.333
		977.42		-1.400E+00	2.423E+00	3.785E+00	3.603E-01	-0.370
		1037.82		-5.365E-02	2.419E-01	3.906E-01	3.748E-02	-0.137
		1175.09		-2.205E-01	1.983E+00	3.214E+00	2.583E-01	-0.069
		1238.25		7.682E-02	8.111E-02	1.421E-01	1.196E-02	0.541
		1360.21		-3.400E-01	7.915E-01	1.192E+00	9.895E-02	-0.285
		1771.40		2.989E-02	1.862E-01	2.784E-01	2.291E-02	0.107
CO-57		122.06	*	-7.644E-03	1.832E-02	3.053E-02	2.583E-03	-0.250
		136.48		-2.024E-01	1.535E-01	2.417E-01	2.270E-02	-0.837
CO-58		810.76	*	-1.145E-02	3.564E-02	5.478E-02	5.394E-03	-0.209
FE-59		142.65		-7.372E-01	2.173E+00	3.521E+00	3.144E-01	-0.209
		192.34		3.602E-01	7.622E-01	1.287E+00	1.930E-01	0.280
		1099.22	*	-1.262E-02	8.087E-02	1.312E-01	1.233E-02	-0.096
		1291.56		8.030E-03	1.046E-01	1.715E-01	1.618E-02	0.047
CO-60		1173.22		6.152E-03	3.706E-02	6.174E-02	4.960E-03	0.100
		1332.49	*	8.076E-03	3.564E-02	5.929E-02	4.900E-03	0.136
ZN-65		1115.52	*	-3.154E-02	7.834E-02	1.044E-01	8.961E-03	-0.302
GE-68		1077.35	*	-1.029E-01	1.017E+00	1.661E+00	1.475E-01	-0.062
AS-73		53.44	*	1.143E-01	4.955E-01	8.017E-01	6.020E-02	0.143
AS-74		595.88	*	2.730E-02	7.730E-02	1.305E-01	1.327E-02	0.209
		634.78		9.121E-02	3.024E-01	5.068E-01	4.958E-02	0.180

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75		66.05		1.172E+00	3.460E+00	5.113E+00	4.859E-01	0.229
		96.73		-7.908E-01	6.436E-01	8.287E-01	1.145E-01	-0.954
		121.11		-3.973E-02	9.753E-02	1.626E-01	1.804E-02	-0.244
		136.00		-3.536E-02	2.816E-02	4.450E-02	3.917E-03	-0.795
		198.60		4.256E-01	1.472E+00	2.419E+00	2.893E-01	0.176
		264.65	*	6.407E-03	3.777E-02	5.897E-02	8.668E-03	0.109
		279.53		1.004E-02	1.024E-01	1.485E-01	2.325E-02	0.068
		303.91		-1.925E-02	1.742E+00	2.486E+00	4.133E-01	-0.008
		400.65		9.833E-03	2.094E-01	3.551E-01	4.542E-02	0.028
BR-77	+	87.88		8.297E+02	2.666E+02	3.477E+02	3.293E+01	2.386
		200.40		2.054E+01	1.801E+02	2.989E+02	3.380E+01	0.069
	+	239.00		3.677E+02	5.361E+01	4.846E+01	6.439E+00	7.588
		249.79		-4.635E+01	6.984E+01	1.085E+02	1.504E+01	-0.427
		281.68		1.118E+02	1.073E+02	1.660E+02	2.560E+01	0.674
		297.23		1.246E+02	9.433E+01	1.193E+02	1.790E+01	1.044
		303.76		8.273E+01	1.899E+02	2.828E+02	4.185E+01	0.293
		439.47		1.094E+02	1.738E+02	3.026E+02	3.263E+01	0.362
		484.57		-2.203E+02	2.660E+02	4.148E+02	4.466E+01	-0.531
		520.65	*	2.877E+00	1.163E+01	1.965E+01	2.093E+00	0.146
		574.64		1.552E+02	2.333E+02	4.034E+02	4.171E+01	0.385
		578.91		-1.937E+01	1.114E+02	1.576E+02	1.624E+01	-0.123
		585.48		1.132E+03	2.976E+02	5.168E+02	5.300E+01	2.190
		755.35		1.292E+02	1.908E+02	3.260E+02	3.175E+01	0.396
		817.79		-7.151E+01	1.354E+02	2.017E+02	1.984E+01	-0.355
SR-82		698.33		7.131E+00	2.894E+01	4.789E+01	4.593E+00	0.149
		776.49	*	-4.517E-01	3.469E-01	4.777E-01	4.672E-02	-0.946
		1395.20		2.004E+00	8.669E+00	1.449E+01	1.209E+00	0.138
RB-83		520.41	*	2.640E-02	5.673E-02	9.736E-02	1.037E-02	0.271
		529.64		3.699E-02	8.099E-02	1.391E-01	1.477E-02	0.266
		552.65		-1.565E-01	1.590E-01	2.382E-01	2.498E-02	-0.657
RB-84		881.50	*	-3.507E-02	5.814E-02	9.171E-02	9.036E-03	-0.382
KR-85		513.99	*	8.173E+00	6.539E+00	1.060E+01	1.132E+00	0.771
SR-85		513.99	*	4.237E-02	3.390E-02	5.494E-02	5.868E-03	0.771
RB-86		1076.63	*	-1.839E-01	6.640E-01	1.063E+00	9.448E-02	-0.173
Y-88		898.02		-2.587E-02	3.079E-02	4.666E-02	4.611E-03	-0.554
		1836.01	*	-4.187E-03	3.309E-02	5.323E-02	4.321E-03	-0.079
ZR-88		392.90	*	-6.128E-03	2.509E-02	4.180E-02	4.459E-03	-0.147
Y-91		1204.90	*	-9.738E+00	1.646E+01	2.530E+01	2.048E+00	-0.385
NB-94		702.63	*	-2.094E-02	2.824E-02	4.245E-02	4.077E-03	-0.493
		871.10		1.487E-03	2.839E-02	4.794E-02	4.724E-03	0.031
NB-95		765.79	*	3.483E-02	3.846E-02	6.014E-02	5.870E-03	0.579
NB-95M		235.69	*	-3.234E-02	1.102E-01	1.574E-01	2.198E-02	-0.205
ZR-95		724.18		6.414E-02	8.422E-02	1.301E-01	1.345E-02	0.493
		756.15	*	-1.262E-02	6.260E-02	9.874E-02	1.039E-02	-0.128
NB-97		657.90	*	3.077E-02	6.260E-02	Half-Life	too short	
		1024.50		7.734E+00	6.260E-02	Half-Life	too short	
ZR-97		254.15		-1.520E+01	6.260E-02	Half-Life	too short	
		355.39		8.717E-01	6.260E-02	Half-Life	too short	
		507.63	*	1.784E+00	6.260E-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			-2.892E+00	6.260E-02	Half-Life	too short	
	1021.30			-3.880E+00	6.260E-02	Half-Life	too short	
	1147.95			1.999E+00	6.260E-02	Half-Life	too short	
	1362.66			1.316E+01	6.260E-02	Half-Life	too short	
	1750.46			7.410E+00	6.260E-02	Half-Life	too short	
MO-99	140.51			-5.160E-01	2.662E+01	4.405E+01	1.223E+01	-0.012
	181.06			9.249E-01	1.800E+01	2.861E+01	5.489E+00	0.032
	366.43			-7.661E+00	9.084E+01	1.428E+02	1.730E+01	-0.054
	739.58	*		2.523E+00	1.315E+01	2.156E+01	3.413E+00	0.117
	778.00			-2.092E+01	3.553E+01	5.325E+01	5.210E+00	-0.393
TC-99M	140.51	*		-1.041E+10	3.553E+01	Half-Life	too short	
RH-101	127.23	+		6.709E-02	3.598E-02	4.042E-02	3.452E-03	1.660
	198.01	*		1.163E-03	2.659E-02	4.321E-02	4.836E-03	0.027
	325.23			2.341E-02	2.082E-01	2.987E-01	4.191E-02	0.078
RH-102	418.52			-1.141E-01	2.289E-01	3.720E-01	3.999E-02	-0.307
	475.06	*		2.567E-04	2.359E-02	3.943E-02	4.250E-03	0.007
	631.29			4.575E-04	4.714E-02	7.706E-02	7.568E-03	0.006
	697.49			3.024E-03	6.396E-02	1.040E-01	9.976E-03	0.029
	766.84			2.363E-01	1.079E-01	1.850E-01	1.806E-02	1.277
	1046.59			2.725E-02	8.602E-02	1.473E-01	1.341E-02	0.185
	1112.84			4.715E-02	1.748E-01	2.888E-01	2.482E-02	0.163
RU-103	497.08	*		-1.170E-02	3.086E-02	4.962E-02	7.712E-03	-0.236
	610.33	+		1.335E+01	2.774E+00	2.870E+00	5.011E-01	4.653
RH-106	511.85	+		4.481E-01	3.429E-01	3.830E-01	4.094E-02	1.170
	621.84	*		-5.333E-02	2.698E-01	4.335E-01	6.169E-02	-0.123
	1050.47			7.240E-02	1.743E+00	2.897E+00	2.629E-01	0.025
RU-106	511.85	+		4.481E-01	3.429E-01	3.830E-01	4.094E-02	1.170
	621.84	*		-5.333E-02	2.698E-01	4.335E-01	4.301E-02	-0.123
	1050.47			7.240E-02	1.743E+00	2.897E+00	2.629E-01	0.025
AG-108M	433.93	*		-5.381E-03	2.512E-02	4.155E-02	4.594E-03	-0.129
	614.37			-3.193E-02	3.827E-02	4.934E-02	5.077E-03	-0.647
	722.95			2.689E-02	3.741E-02	5.758E-02	5.738E-03	0.467
AG-110M	657.75	*		-2.607E-03	2.817E-02	4.546E-02	4.430E-03	-0.057
	677.61			-1.355E-01	2.518E-01	3.869E-01	3.769E-02	-0.350
	706.67			-6.513E-02	1.766E-01	2.758E-01	2.711E-02	-0.236
	763.93			-3.000E-02	1.484E-01	2.021E-01	2.016E-02	-0.148
	884.67			4.353E-03	4.034E-02	6.840E-02	6.905E-03	0.064
	937.48			-3.941E-02	1.084E-01	1.494E-01	1.491E-02	-0.264
	1384.27			-7.083E-02	1.516E-01	2.290E-01	1.965E-02	-0.309
IN-111	171.28			-4.697E-01	1.021E+00	1.665E+00	1.656E-01	-0.282
	245.39	*		3.425E-01	1.109E+00	1.653E+00	2.252E-01	0.207
IN-113M	391.69	*		-1.003E-02	3.607E-02	5.996E-02	6.522E-03	-0.167
SN-113	391.69	*		-1.003E-02	3.607E-02	5.996E-02	6.522E-03	-0.167
IN-114M	190.27	*		-9.348E-02	1.558E-01	2.377E-01	2.572E-02	-0.393
CD-115	260.90			3.046E+01	1.510E+02	2.478E+02	3.585E+01	0.123
	492.35			2.093E+01	3.898E+01	6.753E+01	7.258E+00	0.310
	527.90	*		-1.142E+01	1.211E+01	1.837E+01	1.951E+00	-0.622
SN-117M	156.02			-1.199E+00	1.832E+00	2.975E+00	2.785E-01	-0.403
	158.56	*		5.544E-03	4.371E-02	7.361E-02	6.957E-03	0.075



----- 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	*	1.296E+00	2.346E+00	4.020E+00	4.188E-01	0.322
		692.80		2.300E+01	4.744E+01	8.013E+01	7.670E+00	0.287
I-123		159.00	*	-8.074E+00	4.744E+01	Half-Life too short		
		528.96		4.284E+02	4.744E+01	Half-Life too short		
TE-123M		159.00	*	-1.064E-02	2.197E-02	3.594E-02	3.419E-03	-0.296
I-124		602.71	*	-1.381E-01	6.431E-01	1.035E+00	1.046E-01	-0.133
		722.78		3.091E+00	4.626E+00	7.085E+00	6.846E-01	0.436
		1325.50		-1.883E+01	3.183E+01	4.693E+01	3.875E+00	-0.401
		1376.25		6.296E+00	3.314E+01	5.475E+01	4.557E+00	0.115
		1509.49		8.511E+00	1.572E+01	2.817E+01	2.371E+00	0.302
		1691.02		1.011E+00	3.357E+00	5.903E+00	4.922E-01	0.171
SB-124		602.71		-6.830E-03	3.180E-02	5.119E-02	5.174E-03	-0.133
		645.85		-2.060E-01	4.028E-01	6.232E-01	6.306E-02	-0.330
		709.31		4.626E-01	2.341E+00	3.854E+00	3.709E-01	0.120
		713.82		-1.420E+00	1.434E+00	2.078E+00	2.657E-01	-0.683
		722.78		2.215E-01	3.316E-01	5.078E-01	4.991E-02	0.436
	+	968.20		1.556E+01	3.891E+00	6.642E+00	6.351E-01	2.343
		1045.16		6.432E-01	1.949E+00	3.337E+00	3.041E-01	0.193
		1325.50		-1.441E+00	2.437E+00	3.593E+00	2.967E-01	-0.401
		1368.21		-6.916E-01	1.413E+00	2.100E+00	2.789E-01	-0.329
		1436.60		-2.258E+00	3.032E+00	4.217E+00	3.534E-01	-0.536
		1691.02	*	1.710E-02	5.676E-02	9.979E-02	8.672E-03	0.171
SB-125		427.89	*	3.328E-02	7.558E-02	1.307E-01	1.425E-02	0.255
	+	463.38		4.445E-01	3.486E-01	4.547E-01	5.155E-02	0.978
		600.56		5.044E-02	1.420E-01	2.396E-01	2.557E-02	0.210
		635.90		4.369E-02	2.230E-01	3.703E-01	3.847E-02	0.118
TE-125M		109.28	*	6.208E+00	6.554E+00	1.157E+01	1.188E+00	0.537
I-126		388.63		3.035E-02	1.766E-01	3.023E-01	3.279E-02	0.100
		666.33	*	2.435E-01	1.712E-01	3.069E-01	2.910E-02	0.793
		753.82		1.227E+00	1.264E+00	2.217E+00	2.159E-01	0.553
SB-126		223.80		7.174E-01	3.476E+00	5.757E+00	7.190E-01	0.125
	+	278.60		6.653E+00	3.278E+00	4.019E+00	6.209E-01	1.655
	+	296.50		1.600E+01	3.448E+00	3.496E+00	5.252E-01	4.576
		414.70		-8.840E-03	6.393E-02	1.068E-01	1.147E-02	-0.083
		415.30		-5.811E-01	5.221E+00	8.737E+00	9.386E-01	-0.067
		555.20		9.899E-01	3.382E+00	5.713E+00	5.984E-01	0.173
		573.80		3.916E-01	9.183E-01	1.561E+00	1.615E-01	0.251
		593.00		-2.970E-01	7.754E-01	1.228E+00	1.252E-01	-0.242
		656.30		8.359E-01	2.939E+00	4.904E+00	4.674E-01	0.170
		666.33		1.020E-01	7.170E-02	1.286E-01	1.219E-02	0.793
		675.00		2.453E-01	1.680E+00	2.767E+00	2.632E-01	0.089
		695.00		-2.790E-03	7.548E-02	1.140E-01	1.092E-02	-0.024
		697.00		-4.475E-02	2.590E-01	3.857E-01	3.698E-02	-0.116
		720.50	*	-1.494E-01	1.327E-01	1.798E-01	1.737E-02	-0.831
		856.80		-9.571E-02	4.065E-01	5.747E-01	5.664E-02	-0.167
		989.30		2.041E-01	1.038E+00	1.761E+00	1.665E-01	0.116
		1034.80		1.812E+00	7.199E+00	1.225E+01	1.125E+00	0.148
		1213.00		-2.943E+00	4.212E+00	6.390E+00	5.182E-01	-0.461
SB-127		61.10		7.259E+00	4.909E+01	7.247E+01	7.571E+00	0.100

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	252.40			2.582E+00	4.335E+00	7.055E+00	3.072E+00	0.366
	290.80			-2.112E+00	2.417E+01	3.442E+01	5.842E+00	-0.061
	411.60			8.231E+00	1.245E+01	2.170E+01	3.729E+00	0.379
	444.90			-1.040E+01	9.583E+00	1.460E+01	2.097E+00	-0.712
	473.00			1.502E+00	1.609E+00	2.846E+00	4.170E-01	0.528
	543.00			-6.274E+00	1.547E+01	2.462E+01	3.902E+00	-0.255
	603.60			2.462E+00	1.194E+01	1.848E+01	2.556E+00	0.133
	685.20	*		4.339E-01	1.358E+00	2.266E+00	2.808E-01	0.191
	698.50			2.847E+00	1.505E+01	2.477E+01	4.109E+00	0.115
	722.20			-1.542E+00	3.274E+01	4.589E+01	5.634E+00	-0.034
	783.80			1.416E+00	3.766E+00	6.246E+00	8.448E-01	0.227
XE-127	57.60			-4.420E+00	3.767E+00	5.614E+00	4.041E-01	-0.787
	145.22			3.995E-01	5.665E-01	9.563E-01	8.615E-02	0.418
	172.10			-5.656E-02	9.655E-02	1.563E-01	1.560E-02	-0.362
	202.84	*		-6.772E-03	3.836E-02	6.273E-02	7.170E-03	-0.108
	374.96			-8.808E-02	1.746E-01	2.646E-01	3.082E-02	-0.333
I-131	80.18			2.867E+00	3.760E+00	5.640E+00	4.890E-01	0.508
	284.30			-2.406E-01	1.316E+00	2.097E+00	3.275E-01	-0.115
	364.48	*		-7.089E-02	1.042E-01	1.553E-01	1.951E-02	-0.456
	636.97			-4.206E-01	1.444E+00	2.294E+00	2.338E-01	-0.183
	722.89			4.826E+00	6.883E+00	1.058E+01	1.028E+00	0.456
TE-132	49.72			-2.538E+00	1.514E+01	2.217E+01	2.355E+00	-0.114
	111.76			-1.779E+01	2.689E+01	4.407E+01	4.870E+00	-0.404
	116.30			4.414E+00	2.504E+01	4.294E+01	4.732E+00	0.103
	228.16	*		-4.114E-02	7.033E-01	1.148E+00	2.119E-01	-0.036
BA-133	53.15			3.136E-01	2.109E+00	3.400E+00	2.563E-01	0.092
	79.62			-5.537E-01	9.831E-01	1.368E+00	2.077E-01	-0.405
	81.00			7.988E-02	7.325E-02	1.104E-01	1.757E-02	0.724
	276.40	+		9.380E-01	4.748E-01	5.823E-01	1.119E-01	1.611
	302.84			-1.158E-01	1.250E-01	1.600E-01	2.872E-02	-0.724
	356.01	*		1.499E-02	3.756E-02	5.503E-02	8.876E-03	0.272
	383.85			6.815E-02	2.466E-01	4.247E-01	6.133E-02	0.160
I-133	510.53	+		2.105E+00	2.466E-01	Half-Life	too short	
	529.87	*		5.931E-03	2.466E-01	Half-Life	too short	
	706.58			-2.475E-01	2.466E-01	Half-Life	too short	
	856.28			-5.897E-01	2.466E-01	Half-Life	too short	
	875.33			-1.080E-01	2.466E-01	Half-Life	too short	
	1236.41			1.122E+00	2.466E-01	Half-Life	too short	
	1298.22			4.244E-03	2.466E-01	Half-Life	too short	
CS-134	475.35			-2.374E-01	1.540E+00	2.542E+00	2.740E-01	-0.093
	563.23			1.944E-01	3.108E-01	5.352E-01	5.615E-02	0.363
	569.32			-1.897E-01	1.732E-01	2.576E-01	2.699E-02	-0.736
	604.70			8.142E-03	2.949E-02	4.373E-02	4.420E-03	0.186
	795.84	+	*	4.486E-02	3.919E-02	6.500E-02	6.412E-03	0.690
	801.93			-1.615E-01	3.838E-01	5.935E-01	5.852E-02	-0.272
	1038.57			-4.908E-01	2.971E+00	4.830E+00	4.423E-01	-0.102
	1167.94			4.932E-01	2.245E+00	3.754E+00	3.036E-01	0.131
	1365.15			7.062E-02	9.681E-01	1.582E+00	1.379E-01	0.045
CS-135	268.24	*		5.294E-02	1.359E-01	2.022E-01	3.173E-02	0.262

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135	288.45			1.143E+11	1.359E-01	Half-Life	too short	
	417.63			1.012E+11	1.359E-01	Half-Life	too short	
	546.56			2.143E+10	1.359E-01	Half-Life	too short	
	836.80			7.379E+10	1.359E-01	Half-Life	too short	
	1038.76			-2.775E+10	1.359E-01	Half-Life	too short	
	1124.00			6.752E+11	1.359E-01	Half-Life	too short	
	1131.51			-3.950E+10	1.359E-01	Half-Life	too short	
	1260.41	*		2.028E+10	1.359E-01	Half-Life	too short	
	1457.56			9.609E+11	1.359E-01	Half-Life	too short	
	1678.03			-1.385E+10	1.359E-01	Half-Life	too short	
	1706.46			5.994E+10	1.359E-01	Half-Life	too short	
	1791.20			9.823E+10	1.359E-01	Half-Life	too short	
CS-136	66.91			-2.351E-01	6.230E-01	8.843E-01	1.313E-01	-0.266
	86.29	+		3.835E+00	1.285E+00	1.588E+00	2.112E-01	2.415
	153.22			2.580E-01	5.500E-01	9.396E-01	9.601E-02	0.275
	163.89			3.486E-01	9.095E-01	1.544E+00	1.633E-01	0.226
	176.55			4.716E-03	2.962E-01	4.932E-01	5.233E-02	0.010
	273.65			1.203E-01	5.071E-01	5.930E-01	9.193E-02	0.203
	340.57			2.599E-01	1.188E-01	1.933E-01	2.619E-02	1.344
	818.51			-7.179E-02	6.123E-02	8.265E-02	8.135E-03	-0.869
	1048.07	*		-8.291E-02	9.055E-02	1.338E-01	1.264E-02	-0.620
	1235.34			-3.001E-01	5.627E-01	8.736E-01	1.005E-01	-0.344
	661.65	*		-1.539E-02	2.971E-02	4.602E-02	4.354E-03	-0.334
BA-137M	661.65	*		-1.627E-02	3.141E-02	4.864E-02	4.610E-03	-0.334
CS-137	661.65	*		-1.627E-02	3.141E-02	4.864E-02	4.610E-03	-0.334
CE-139	165.85	*		2.129E-03	2.382E-02	3.994E-02	3.881E-03	0.053
BA-140	162.64			2.092E-01	6.312E-01	1.070E+00	1.075E-01	0.195
	304.84			-3.985E-01	1.044E+00	1.619E+00	4.934E-01	-0.246
LA-140	423.70			3.447E-01	1.698E+00	2.890E+00	9.550E-01	0.119
	537.32	*		6.845E-02	2.137E-01	3.608E-01	1.216E-01	0.190
	328.77	+		5.379E-01	3.435E-01	4.705E-01	6.679E-02	1.143
	432.53			-7.997E-01	1.600E+00	2.581E+00	2.869E-01	-0.310
	487.03			4.794E-02	1.165E-01	2.000E-01	2.239E-02	0.240
	751.79			-7.803E-01	1.554E+00	2.373E+00	2.505E-01	-0.329
	815.85			3.783E-02	2.692E-01	4.371E-01	4.683E-02	0.087
	867.82			-4.704E-01	1.389E+00	1.938E+00	1.988E-01	-0.243
	919.63			-1.795E+00	2.307E+00	3.401E+00	3.944E-01	-0.528
	925.24			4.027E-01	9.735E-01	1.691E+00	1.730E-01	0.238
	1596.49	*		-1.565E-02	8.616E-02	1.368E-01	1.151E-02	-0.114
CE-141	145.44	*		2.212E-02	5.094E-02	8.513E-02	7.802E-03	0.260
CE-143	57.37			-1.488E-03	5.094E-02	Half-Life	too short	
	231.56			-2.128E-03	5.094E-02	Half-Life	too short	
	293.26	*		5.735E-04	5.094E-02	Half-Life	too short	
	350.59	+		5.741E-02	5.094E-02	Half-Life	too short	
	490.36			2.896E-04	5.094E-02	Half-Life	too short	
	664.57			2.474E-03	5.094E-02	Half-Life	too short	
	721.93			-1.097E-03	5.094E-02	Half-Life	too short	
CE-144	80.11			1.161E+00	1.583E+00	2.372E+00	2.040E-01	0.490
	133.54	*		-6.002E-02	1.473E-01	2.441E-01	3.808E-02	-0.246
PM-144	476.78			-5.800E-02	5.566E-02	8.491E-02	9.709E-03	-0.683

## ---- Non-Identified Nuclides ----

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		618.01		2.073E-02	2.678E-02	4.649E-02	4.727E-03	0.446
		696.49	*	-1.952E-02	3.267E-02	4.689E-02	4.495E-03	-0.416
		778.57		-8.830E-01	1.860E+00	2.829E+00	2.768E-01	-0.312
PR-144		696.49	*	-1.324E+00	2.215E+00	3.179E+00	3.047E-01	-0.416
		1489.15		1.553E+00	9.996E+00	1.714E+01	1.441E+00	0.091
PM-146		453.90	*	2.063E-03	3.277E-02	5.517E-02	6.917E-03	0.037
		633.02		-5.257E-01	1.204E+00	1.863E+00	7.016E-01	-0.282
		735.90		4.269E-02	1.231E-01	2.042E-01	5.911E-02	0.209
		747.13		1.705E-03	7.357E-02	1.187E-01	1.751E-02	0.014
ND-147	+	91.11		7.263E-01	2.050E-01	3.687E-01	3.654E-02	1.970
		319.41		-2.018E+00	3.023E+00	4.588E+00	6.541E-01	-0.440
		439.89		3.773E+00	5.593E+00	9.756E+00	1.052E+00	0.387
		531.02	*	1.220E-02	4.777E-01	7.926E-01	1.282E-01	0.015
PM-149		285.90	*	-9.811E+01	1.034E+02	1.530E+02	3.067E+01	-0.641
EU-152		121.78		-3.246E-02	5.245E-02	8.650E-02	8.461E-03	-0.375
		244.69		-6.407E-02	2.728E-01	3.892E-01	5.289E-02	-0.165
		344.27	*	1.927E-02	8.496E-02	1.228E-01	1.665E-02	0.157
		443.98		2.242E-01	7.530E-01	1.290E+00	1.392E-01	0.174
		778.89		-1.416E-01	2.152E-01	3.200E-01	3.131E-02	-0.443
		867.32		1.132E-01	7.329E-01	1.096E+00	1.081E-01	0.103
	+	964.01		5.678E-01	2.915E-01	5.172E-01	4.956E-02	1.098
		1085.78		-9.895E-02	3.364E-01	5.380E-01	4.743E-02	-0.184
		1112.02		1.444E-01	2.357E-01	4.134E-01	3.556E-02	0.349
	+	1407.95		2.041E-01	2.310E-01	3.350E-01	2.799E-02	0.609
GD-153		69.67		9.002E-02	1.170E+00	1.853E+00	1.427E-01	0.049
		83.37		-1.054E+01	1.245E+01	1.704E+01	1.524E+00	-0.618
		97.43	*	-7.592E-02	6.868E-02	9.047E-02	8.037E-03	-0.839
		103.18		-6.009E-02	7.539E-02	1.247E-01	1.082E-02	-0.482
EU-154		123.07		6.775E-03	3.731E-02	6.383E-02	7.180E-03	0.106
		247.94		-1.143E-01	2.727E-01	4.314E-01	6.778E-02	-0.265
		591.81		-4.864E-01	4.913E-01	7.257E-01	9.350E-02	-0.670
		723.30		1.539E-01	1.556E-01	2.464E-01	2.582E-02	0.625
		756.87		3.345E-02	6.652E-01	1.075E+00	1.377E-01	0.031
		873.19		1.496E-01	2.431E-01	4.301E-01	5.653E-02	0.348
		996.32		1.759E-02	2.824E-01	4.724E-01	8.580E-02	0.037
		1004.76		6.940E-02	1.777E-01	3.059E-01	3.733E-02	0.227
		1274.45	*	-4.313E-02	9.767E-02	1.500E-01	1.649E-02	-0.288
EU-155		48.70		-2.518E-01	1.510E+00	2.214E+00	1.790E-01	-0.114
		60.01		5.744E+00	3.264E+00	5.238E+00	3.737E-01	1.096
	+	86.54		3.351E-01	1.077E-01	1.446E-01	1.358E-02	2.317
		105.31	*	1.116E-01	7.892E-02	1.412E-01	1.232E-02	0.790
TB-160	+	86.79		9.037E-01	2.903E-01	3.922E-01	3.662E-02	2.304
		197.04		-2.707E-01	4.618E-01	7.264E-01	8.095E-02	-0.373
		215.65		1.113E-01	6.253E-01	1.036E+00	1.251E-01	0.107
		298.57		5.948E-02	1.427E-01	1.680E-01	2.514E-02	0.354
		879.36	*	3.820E-02	1.156E-01	2.000E-01	1.971E-02	0.191
		962.29		2.803E-01	5.050E-01	7.801E-01	7.482E-02	0.359
	+	966.15		3.937E-01	2.021E-01	3.762E-01	3.601E-02	1.047
		1177.93		1.339E-01	3.057E-01	5.219E-01	4.198E-02	0.257

---- 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			2.501E-01	5.341E-01	9.192E-01	7.536E-02	0.272
	80.57			1.851E-01	2.039E-01	3.077E-01	2.661E-02	0.601
	184.41			2.640E-02	3.091E-02	5.021E-02	5.294E-03	0.526
	280.46			1.554E-03	7.952E-02	1.146E-01	1.771E-02	0.014
	410.95			2.479E-01	2.143E-01	3.827E-01	4.106E-02	0.648
	711.68	*		3.713E-02	4.934E-02	8.516E-02	8.202E-03	0.436
TM-171	752.31			-7.338E-02	2.345E-01	3.656E-01	3.559E-02	-0.201
	810.29			-7.331E-02	5.728E-02	7.876E-02	7.740E-03	-0.931
	51.35			-2.184E+00	1.748E+01	2.782E+01	2.151E+00	-0.079
	52.39			-3.655E+00	9.198E+00	1.441E+01	1.097E+00	-0.254
	59.40			1.980E+01	1.785E+01	2.779E+01	1.977E+00	0.712
	66.72	*		-7.800E+00	2.143E+01	3.048E+01	2.287E+00	-0.256
LU-176	88.36	+		6.596E-01	2.119E-01	2.628E-01	2.484E-02	2.510
	201.83			-1.178E-02	2.318E-02	3.725E-02	4.239E-03	-0.316
	306.84	*		9.239E-03	1.961E-02	3.241E-02	4.764E-03	0.285
LU-177	401.10			-4.808E-01	5.411E+00	9.095E+00	9.729E-01	-0.053
	112.95			-3.369E-01	1.356E+00	2.268E+00	1.926E-01	-0.149
	208.36	+	*	2.679E+00	1.586E+00	1.905E+00	2.230E-01	1.406
LU-177M	52.97			-3.415E-02	9.493E-01	1.516E+00	1.145E-01	-0.023
	54.07			3.267E-01	4.985E-01	8.229E-01	6.131E-02	0.397
	61.30			1.243E-01	1.054E+00	1.554E+00	1.119E-01	0.080
	121.62			-2.058E-01	2.682E-01	4.391E-01	3.710E-02	-0.469
	147.16			-1.348E-01	5.061E-01	8.413E-01	7.629E-02	-0.160
	171.86			-2.687E-01	3.812E-01	6.128E-01	6.113E-02	-0.438
	218.09			-2.636E-02	6.791E-01	1.113E+00	1.357E-01	-0.024
	268.79	+		2.064E+00	9.587E-01	1.142E+00	1.702E-01	1.807
	319.02			-1.886E-01	2.264E-01	3.388E-01	4.835E-02	-0.557
	367.43			-6.532E-03	7.727E-01	1.222E+00	1.474E-01	-0.005
	413.65	*		-2.117E-01	1.509E-01	2.284E-01	2.452E-02	-0.927
	56.28			2.040E-01	5.580E-01	9.071E-01	6.603E-02	0.225
HF-181	57.53			-3.593E-01	3.164E-01	4.728E-01	3.405E-02	-0.760
	65.20			-3.828E-01	6.976E-01	9.815E-01	7.275E-02	-0.390
	133.02			3.925E-03	4.818E-02	7.821E-02	6.781E-03	0.050
	136.25			-4.437E-01	3.354E-01	5.280E-01	4.621E-02	-0.840
	345.85			8.749E-02	1.557E-01	2.573E-01	3.381E-02	0.340
	482.03	*		2.691E-02	3.792E-02	6.610E-02	7.119E-03	0.407
W-181	56.28			7.877E-02	2.160E-01	3.511E-01	2.556E-02	0.224
	57.53			-1.391E-01	1.226E-01	1.832E-01	1.319E-02	-0.759
	65.20	*		-1.471E-01	2.681E-01	3.772E-01	2.796E-02	-0.390
TA-182	67.75			-1.431E-02	7.629E-02	1.196E-01	9.056E-03	-0.120
	100.10			7.699E-02	1.282E-01	2.246E-01	1.971E-02	0.343
	152.43			5.546E-02	2.674E-01	4.525E-01	4.181E-02	0.123
	222.10			-1.446E-02	2.746E-01	4.491E-01	5.570E-02	-0.032
	1001.68			-5.626E-02	1.755E+00	2.881E+00	2.704E-01	-0.020
	1121.28	+		5.246E-01	1.681E-01	3.136E-01	2.672E-02	1.673
RE-183	1189.05			-8.432E-02	2.347E-01	3.684E-01	2.971E-02	-0.229
	1221.42	*		-1.207E-01	1.555E-01	2.322E-01	1.886E-02	-0.520
	1230.97			1.596E-01	3.901E-01	6.610E-01	5.381E-02	0.241
	57.98			-1.696E-01	1.250E-01	1.843E-01	1.323E-02	-0.920

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		7.771E-02	7.387E-02	1.147E-01	8.166E-03	0.677
		67.20		-1.915E-02	1.379E-01	2.151E-01	1.621E-02	-0.089
		162.32	*	1.018E-01	8.726E-02	1.523E-01	1.460E-02	0.668
	+	208.81		2.184E+00	1.293E+00	1.577E+00	1.849E-01	1.385
		291.72		-4.686E-02	8.802E-01	1.257E+00	1.905E-01	-0.037
		57.98		-6.212E-01	4.578E-01	6.750E-01	4.845E-02	-0.920
		59.32		2.844E-01	2.703E-01	4.199E-01	2.988E-02	0.677
		67.20		-7.013E-02	5.049E-01	7.874E-01	5.933E-02	-0.089
		161.27		-1.444E-01	2.797E-01	4.566E-01	4.359E-02	-0.316
		216.55		6.064E-02	2.149E-01	3.579E-01	4.337E-02	0.169
		252.85	*	6.053E-02	1.875E-01	3.103E-01	4.354E-02	0.195
		318.01		-6.968E-02	3.859E-01	6.048E-01	8.654E-02	-0.115
		792.07		-5.459E-01	8.436E-01	1.050E+00	1.029E-01	-0.520
		903.28		6.990E-01	7.922E-01	1.377E+00	1.353E-01	0.508
OS-185		920.93		-6.555E-02	3.474E-01	5.696E-01	5.562E-02	-0.115
		59.72		3.372E-01	1.941E-01	3.115E-01	2.218E-02	1.083
		61.14		1.587E-02	1.165E-01	1.719E-01	1.236E-02	0.092
		69.30		-1.975E-02	2.121E-01	3.337E-01	2.561E-02	-0.059
		592.07		-1.710E+00	1.990E+00	2.993E+00	3.053E-01	-0.571
		646.12	*	-6.179E-03	3.331E-02	5.330E-02	5.145E-03	-0.116
		717.42		7.905E-01	6.986E-01	1.247E+00	1.203E-01	0.634
		874.81		-4.227E-02	4.804E-01	8.004E-01	7.888E-02	-0.053
		880.27		-3.978E-02	6.467E-01	1.080E+00	1.064E-01	-0.037
		155.03	*	9.174E-02	1.332E-01	2.294E-01	2.140E-02	0.400
RE-188		477.96		-1.990E+00	2.612E+00	4.101E+00	4.419E-01	-0.485
		633.10		-1.008E+00	2.431E+00	3.822E+00	3.746E-01	-0.264
	+	63.58		7.591E+01	5.539E+01	6.259E+01	4.582E+00	1.213
W-188		227.08		-5.601E+00	1.075E+01	1.710E+01	2.165E+00	-0.327
		290.67	*	-3.689E-01	6.940E+00	9.910E+00	1.505E+00	-0.037
IR-192	+	295.96		1.167E+00	2.518E-01	2.750E-01	4.146E-02	4.243
		308.46		-1.944E-03	8.008E-02	1.282E-01	1.881E-02	-0.015
		316.51	*	4.508E-03	2.975E-02	4.772E-02	6.860E-03	0.094
		468.07		-3.046E-02	5.759E-02	7.962E-02	8.989E-03	-0.383
		604.41		1.791E-01	4.032E-01	6.082E-01	8.537E-02	0.294
		612.46		1.352E-01	6.998E-01	1.024E+00	1.141E-01	0.132
AU-195		65.12		-7.740E-02	1.245E-01	1.745E-01	1.292E-02	-0.444
		66.83		-2.643E-02	7.105E-02	1.010E-01	7.586E-03	-0.262
	+	75.70		1.089E+00	2.033E-01	3.173E-01	2.596E-02	3.432
		98.88	*	2.924E-01	1.767E-01	2.936E-01	2.590E-02	0.996
TL-200	+	129.76		5.933E+00	3.182E+00	3.927E+00	3.375E-01	1.511
		367.94	*	3.130E-04	3.182E+00	Half-Life	too short	
		579.30		1.246E-03	3.182E+00	Half-Life	too short	
		828.27		-4.985E-03	3.182E+00	Half-Life	too short	
TL-201		1205.75		9.172E-04	3.182E+00	Half-Life	too short	
		68.90		2.590E-01	4.188E+00	6.634E+00	5.074E-01	0.039
		70.82		1.731E-01	2.672E+00	3.894E+00	3.032E-01	0.044
		80.30		3.867E+00	4.763E+00	7.159E+00	6.171E-01	0.540
		135.34		-2.513E+01	2.249E+01	3.582E+01	3.127E+00	-0.701
		167.43	*	-4.720E+00	7.019E+00	1.133E+01	1.109E+00	-0.416

---- 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		1.947E-02	3.149E-01	4.988E-01	3.815E-02	0.039
		70.82		1.298E-02	2.004E-01	2.920E-01	2.273E-02	0.044
		80.30		2.900E-01	3.572E-01	5.370E-01	4.629E-02	0.540
		439.56	*	4.180E-02	6.582E-02	1.146E-01	1.236E-02	0.365
HG-203		70.83		5.438E-02	8.311E-01	1.211E+00	1.586E-01	0.045
		72.87		2.433E-01	4.846E-01	7.172E-01	9.160E-02	0.339
		82.60		-1.162E+00	8.662E-01	1.242E+00	1.726E-01	-0.935
		279.20	*	1.031E-02	3.898E-02	5.723E-02	8.940E-03	0.180
BI-207		72.80		6.492E-02	1.397E-01	2.067E-01	1.640E-02	0.314
	+	74.97		6.017E-01	1.123E-01	1.695E-01	1.376E-02	3.550
		84.90		2.092E-01	1.482E-01	2.269E-01	2.069E-02	0.922
		569.67		-3.098E-02	2.705E-02	4.002E-02	4.153E-03	-0.774
		1063.62	*	-1.338E-02	4.511E-02	7.231E-02	6.496E-03	-0.185
		1770.23		2.509E-01	3.362E-01	5.946E-01	4.894E-02	0.422
TL-207		81.07		1.819E-01	1.602E-01	2.443E-01	2.125E-02	0.744
		83.78		-8.807E-03	1.035E-01	1.479E-01	1.330E-02	-0.060
		94.90		1.542E-01	1.812E-01	2.711E-01	2.442E-02	0.569
		122.32		-4.011E-01	1.265E+00	2.118E+00	1.926E-01	-0.189
		144.24		1.701E-01	5.451E-01	9.075E-01	9.042E-02	0.187
		154.21		1.243E-02	3.125E-01	5.250E-01	5.303E-02	0.024
	+	269.46		4.810E-01	2.236E-01	2.913E-01	4.383E-02	1.651
		323.87	*	-1.899E-01	6.401E-01	8.837E-01	1.848E-01	-0.215
	+	338.28		8.007E+00	2.012E+00	2.337E+00	3.762E-01	3.426
		445.03		-2.080E+00	1.843E+00	2.796E+00	3.836E-01	-0.744
PO-209		260.50		-7.699E-01	8.099E+00	1.307E+01	1.888E+00	-0.059
		262.80		-5.040E+00	2.216E+01	3.543E+01	5.163E+00	-0.142
		896.60	*	-4.457E+00	5.638E+00	8.627E+00	8.494E-01	-0.517
PB-211		404.84	*	-4.547E-01	8.010E-01	1.214E+00	7.645E-01	-0.375
		427.08		1.492E+00	1.963E+00	3.067E+00	1.916E+00	0.487
		831.96		-1.683E-01	1.034E+00	1.613E+00	1.014E+00	-0.104
BI-212		727.18	*	1.101E+00	4.922E-01	6.271E-01	6.853E-02	1.755
		785.46		1.257E+00	1.571E+00	2.692E+00	2.637E-01	0.467
		1620.62		2.009E+00	1.175E+00	2.265E+00	1.902E-01	0.887
PO-215		81.07		1.819E-01	1.602E-01	2.443E-01	2.125E-02	0.744
		83.78		-8.807E-03	1.035E-01	1.479E-01	1.330E-02	-0.060
		94.90		1.542E-01	1.812E-01	2.711E-01	2.442E-02	0.569
		122.32		-4.011E-01	1.265E+00	2.118E+00	1.926E-01	-0.189
		144.24		1.701E-01	5.451E-01	9.075E-01	9.042E-02	0.187
		154.21		1.243E-02	3.125E-01	5.250E-01	5.303E-02	0.024
	+	269.46		4.810E-01	2.236E-01	2.913E-01	4.383E-02	1.651
		323.87	*	-1.899E-01	6.401E-01	8.837E-01	1.848E-01	-0.215
	+	338.28		8.007E+00	2.012E+00	2.337E+00	3.762E-01	3.426
		445.03		-2.080E+00	1.843E+00	2.796E+00	3.836E-01	-0.744
RN-219		271.23		6.171E-01	2.888E-01	3.657E-01	5.876E-02	1.688
	+	401.81	*	-5.350E-03	3.268E-01	5.517E-01	8.997E-02	-0.010
RN-220		549.76	*	-8.686E+00	2.027E+01	3.218E+01	3.382E+00	-0.270
RA-223		81.07		1.819E-01	1.602E-01	2.443E-01	2.125E-02	0.744
		83.78		-8.807E-03	1.035E-01	1.479E-01	1.330E-02	-0.060
		94.90		1.542E-01	1.812E-01	2.711E-01	2.442E-02	0.569

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		-4.011E-01	1.265E+00	2.118E+00	1.926E-01	-0.189
		144.24		1.701E-01	5.451E-01	9.075E-01	9.042E-02	0.187
		154.21		1.243E-02	3.125E-01	5.250E-01	5.303E-02	0.024
	+	269.46		4.810E-01	2.236E-01	2.913E-01	4.383E-02	1.651
		323.87	*	-1.899E-01	6.401E-01	8.837E-01	1.848E-01	-0.215
	+	338.28		8.007E+00	2.012E+00	2.337E+00	3.762E-01	3.426
		445.03		-2.080E+00	1.843E+00	2.796E+00	3.836E-01	-0.744
		79.80		-4.126E-01	1.256E+00	1.773E+00	3.810E-01	-0.233
		236.00		-7.780E-03	2.018E-01	2.938E-01	4.626E-02	-0.026
		256.20	*	9.099E-02	3.163E-01	5.216E-01	9.940E-02	0.174
		286.10		-1.159E+00	1.240E+00	1.843E+00	3.370E-01	-0.629
	+	299.80		3.299E+00	1.572E+00	2.287E+00	4.875E-01	1.442
TH-227		304.40		-1.912E-01	1.493E+00	2.256E+00	4.962E-01	-0.085
		334.20		-7.874E-01	2.195E+00	2.999E+00	6.633E-01	-0.263
		79.80		-4.126E-01	1.256E+00	1.773E+00	3.859E-01	-0.233
	+	94.00		7.508E+00	2.679E+00	2.755E+00	6.048E-01	2.726
		236.00		-7.780E-03	2.018E-01	2.938E-01	4.364E-02	-0.026
		256.20	*	9.099E-02	3.164E-01	5.216E-01	1.111E-01	0.174
		286.10		-1.159E+00	1.693E+00	1.843E+00	1.864E+00	-0.629
	+	299.80		3.299E+00	1.572E+00	2.287E+00	4.875E-01	1.442
		304.40		-1.912E-01	1.493E+00	2.256E+00	4.962E-01	-0.085
		334.20		-7.874E-01	2.195E+00	2.999E+00	6.633E-01	-0.263
		85.43		1.409E-01	1.494E-01	2.244E-01	2.060E-02	0.628
	+	88.47		3.797E-01	1.220E-01	1.497E-01	1.414E-02	2.536
PA-231		100.00		1.053E-01	1.325E-01	2.335E-01	2.050E-02	0.451
		193.63	*	1.886E-01	4.003E-01	6.764E-01	7.427E-02	0.279
		210.97		7.136E-01	6.835E-01	1.064E+00	1.260E-01	0.670
		283.67	*	2.767E-02	1.248E+00	2.016E+00	3.994E-01	0.014
TH-231	+	301.29		1.319E+00	6.069E-01	8.682E-01	1.496E-01	1.520
		81.07		1.819E-01	1.602E-01	2.443E-01	2.125E-02	0.744
		83.78		-8.807E-03	1.035E-01	1.479E-01	1.330E-02	-0.060
		94.90		1.542E-01	1.812E-01	2.711E-01	2.442E-02	0.569
U-231		122.32		-4.011E-01	1.265E+00	2.118E+00	1.926E-01	-0.189
		144.24		1.701E-01	5.451E-01	9.075E-01	9.042E-02	0.187
		154.21		1.243E-02	3.125E-01	5.250E-01	5.303E-02	0.024
	+	269.46		4.810E-01	2.236E-01	2.913E-01	4.383E-02	1.651
		323.87	*	-1.899E-01	6.401E-01	8.837E-01	1.848E-01	-0.215
	+	338.28		8.007E+00	2.012E+00	2.337E+00	3.762E-01	3.426
		445.03		-2.080E+00	1.843E+00	2.796E+00	3.836E-01	-0.744
		84.21		5.439E+00	5.078E+00	7.671E+00	6.934E-01	0.709
	+	92.29		8.814E+00	2.604E+00	3.663E+00	3.356E-01	2.406
		95.87	*	2.988E-02	9.747E-01	1.393E+00	1.247E-01	0.021
		108.00		-1.769E+00	1.767E+00	2.887E+00	2.472E-01	-0.613
	+	75.28		1.756E+01	3.963E+00	4.988E+00	7.526E-01	3.520
PA-233	+	86.59		5.444E+00	2.230E+00	2.361E+00	6.388E-01	2.305
	+	300.12		9.196E-01	4.301E-01	6.295E-01	1.210E-01	1.461
		311.98	*	-3.491E-04	5.113E-02	8.188E-02	1.201E-02	-0.004
		340.50		1.323E+00	6.300E-01	9.108E-01	2.363E-01	1.453
		398.62		6.129E-01	1.713E+00	2.948E+00	8.068E-01	0.208



---- 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		2.610E-01	1.317E+00	2.247E+00	5.053E-01	0.116
		63.00		2.179E+00	1.614E+00	1.844E+00	2.729E-01	1.182
		94.67		1.938E-01	1.344E-01	2.046E-01	2.596E-02	0.947
		98.44		7.406E-02	8.203E-02	1.156E-01	6.454E-02	0.641
		99.86		2.836E-01	3.362E-01	5.934E-01	5.213E-02	0.478
		111.00		-1.455E-01	1.333E-01	2.130E-01	2.559E-02	-0.683
		131.20		2.234E-02	8.298E-02	1.283E-01	1.107E-02	0.174
		152.70		1.166E-01	2.558E-01	4.361E-01	7.575E-02	0.267
		186.00		3.675E+00	1.934E+00	2.228E+00	7.090E-01	1.650
		226.40		-1.583E-01	3.330E-01	5.304E-01	8.543E-02	-0.298
		227.20		-6.886E-02	3.537E-01	5.732E-01	7.260E-02	-0.120
		248.90		-1.029E+00	6.905E-01	9.378E-01	2.333E-01	-1.097
		293.70		7.273E+00	1.910E+00	1.463E+00	3.114E-01	4.973
		369.80		1.625E-02	7.575E-01	1.200E+00	2.795E-01	0.014
		568.70		-9.489E-01	8.673E-01	1.289E+00	1.338E-01	-0.736
		569.50		-2.624E-01	2.408E-01	3.585E-01	3.721E-02	-0.732
		574.00		1.057E+00	1.217E+00	2.133E+00	2.207E-01	0.495
		699.00		2.635E-02	5.984E-01	9.728E-01	1.901E-01	0.027
		706.10		3.299E-01	8.699E-01	1.436E+00	6.431E-01	0.230
		733.00		-2.036E-01	3.512E-01	4.488E-01	1.016E-01	-0.454
		742.81		4.408E-01	1.201E+00	1.943E+00	1.309E+00	0.227
		796.30		8.709E-01	7.929E-01	1.309E+00	3.595E-01	0.665
		805.60		5.520E-01	9.625E-01	1.594E+00	4.944E-01	0.346
		819.60		-5.611E-01	9.671E-01	1.395E+00	5.347E-01	-0.402
		826.30		2.874E-02	6.836E-01	1.096E+00	4.931E-01	0.026
		831.60		-1.753E-01	5.269E-01	8.064E-01	2.437E-01	-0.217
		876.40		1.863E-01	7.136E-01	1.184E+00	1.218E+00	0.157
		880.51		-3.688E-02	2.298E-01	3.799E-01	3.743E-02	-0.097
		883.24		8.061E-02	2.405E-01	4.058E-01	2.735E-01	0.199
		899.00		-4.535E-01	6.466E-01	9.481E-01	4.169E-01	-0.478
		925.00		6.169E-01	9.420E-01	1.672E+00	1.630E-01	0.369
		926.50		-3.690E-02	1.450E-01	2.359E-01	6.060E-02	-0.156
		946.00	*	-2.410E-01	2.474E-01	3.638E-01	7.009E-02	-0.662
		949.00		-2.128E-01	3.670E-01	5.762E-01	5.561E-02	-0.369
		980.50		1.764E-01	5.849E-01	1.003E+00	9.528E-02	0.176
		1394.10		-2.428E-01	9.243E-01	1.403E+00	9.128E-01	-0.173
PA-234M		766.42		1.793E+01	1.397E+01	1.784E+01	9.087E+00	1.005
		1001.03	*	1.188E-02	3.828E+00	6.302E+00	6.704E-01	0.002
U-235	+	89.95		2.708E+00	1.104E+00	1.436E+00	4.459E-01	1.886
		93.35		2.336E+00	9.297E-01	9.846E-01	2.774E-01	2.372
		105.00		9.344E-01	8.190E-01	1.378E+00	4.114E-01	0.678
		143.76	*	6.073E-03	1.677E-01	2.763E-01	4.884E-02	0.022
		163.35		2.766E-01	3.806E-01	6.495E-01	1.270E-01	0.426
NP-236	+	185.71		1.361E-01	5.886E-02	8.247E-02	8.746E-03	1.650
		205.31		-1.948E-01	4.644E-01	6.639E-01	1.366E-01	-0.293
		94.67		1.484E-01	1.011E-01	1.554E-01	1.402E-02	0.955
		98.44		5.593E-02	5.378E-02	8.740E-02	7.726E-03	0.640
		111.00		-1.100E-01	1.004E-01	1.611E-01	1.372E-02	-0.683
		160.31	*	-3.858E-02	6.130E-02	9.946E-02	9.461E-03	-0.388

----- 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		1.072E-01	1.128E-01	1.997E-01	1.756E-02	0.537
		117.00	*	-6.065E-02	1.383E-01	2.309E-01	1.954E-02	-0.263
	+	209.75		1.705E+00	1.009E+00	1.230E+00	1.449E-01	1.386
		228.18		4.110E-02	1.813E-01	3.003E-01	3.819E-02	0.137
	+	277.60		4.577E-01	2.255E-01	2.884E-01	4.439E-02	1.587
AM-241		334.30		-4.000E-01	1.244E+00	1.709E+00	2.334E-01	-0.234
		59.54	*	1.489E-01	1.025E-01	1.621E-01	1.274E-02	0.918
CM-243		99.55		1.103E-01	1.161E-01	2.055E-01	1.807E-02	0.537
		103.76	*	-6.178E-02	6.926E-02	1.140E-01	9.873E-03	-0.542
		117.00		-6.240E-02	1.423E-01	2.376E-01	2.010E-02	-0.263
	+	209.75		1.681E+00	9.951E-01	1.213E+00	1.428E-01	1.386
		228.18		4.153E-02	1.832E-01	3.035E-01	3.859E-02	0.137
AM-246	+	277.60		4.615E-01	2.273E-01	2.907E-01	4.475E-02	1.587
		798.80		-2.473E-02	1.384E-01	1.883E-01	1.848E-02	-0.131
		1036.00		1.364E-01	2.329E-01	4.092E-01	3.754E-02	0.333
		1062.04		8.600E-02	1.962E-01	3.379E-01	3.039E-02	0.255
		1078.86	*	-3.905E-02	1.184E-01	1.908E-01	1.692E-02	-0.205
CM-247	+	278.00		1.898E+00	9.351E-01	1.210E+00	1.864E-01	1.569
		287.40		-2.833E-01	9.894E-01	1.563E+00	2.388E-01	-0.181
		402.60	*	1.880E-03	2.897E-02	4.915E-02	5.261E-03	0.038
CF-249		252.85		2.262E-01	7.004E-01	1.159E+00	1.627E-01	0.195
		333.44		-4.366E-02	1.619E-01	2.236E-01	3.062E-02	-0.195
		387.95	*	1.059E-02	3.232E-02	5.582E-02	6.079E-03	0.190
CF-251		176.60	*	2.026E-03	9.669E-02	1.610E-01	1.640E-02	0.013
		227.00		-1.689E-01	3.192E-01	5.074E-01	6.422E-02	-0.333
		285.00		-2.670E-01	1.381E+00	2.197E+00	3.370E-01	-0.122

## 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]G244148010
* Acquisition date   : 20-JAN-2010 15:56:55 Detector SN#      :
* Detector ID        : GAM11                               Sensitivity      : 5.000
* Geometry           : CAN                               Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.72                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G244148010 Analyst initials: MXR1
* Batch Number       : 940268 Sample Quantity : 1.3800E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope                   :
* LCS DPM             : 0.000 LCS Isotope                   :
* LCSD DPM            : 0.000 LCSD Isotope                  :
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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.030E+01	2.194E+00	4.768E-01	0.000E+00
CD-109	2.834E+00	8.922E-01	9.474E-01	0.000E+00
SN-126	2.781E-01	8.756E-02	9.328E-02	0.000E+00
TL-208	4.600E-01	8.713E-02	4.615E-02	0.000E+00
BI-210	8.275E-01	2.876E+00	3.402E+00	0.000E+00
PB-210	8.275E-01	2.876E+00	3.402E+00	0.000E+00
PO-210	8.275E-01	2.876E+00	3.402E+00	0.000E+00
BI-211	4.271E+00	6.856E-01	2.576E-01	0.000E+00
PB-212	1.687E+00	2.522E-01	7.167E-02	0.000E+00
PO-212	1.687E+00	2.522E-01	7.167E-02	0.000E+00
BI-214	1.214E+00	1.897E-01	9.148E-02	0.000E+00
PB-214	1.486E+00	2.503E-01	8.980E-02	0.000E+00
PO-214	1.486E+00	2.503E-01	8.980E-02	0.000E+00
PO-216	1.687E+00	2.522E-01	7.167E-02	0.000E+00
PO-218	1.486E+00	2.503E-01	8.980E-02	0.000E+00
RA-224	4.963E+00	1.331E+00	8.158E-01	0.000E+00
RA-226	1.214E+00	1.897E-01	9.148E-02	0.000E+00
AC-228	1.567E+00	3.022E-01	1.647E-01	0.000E+00
RA-228	1.567E+00	3.022E-01	1.647E-01	0.000E+00
TH-228	1.714E+00	2.563E-01	7.283E-02	0.000E+00
TH-230	1.214E+00	1.897E-01	9.148E-02	0.000E+00
TH-232	1.567E+00	3.022E-01	1.647E-01	0.000E+00
TH-234	1.869E+00	1.368E+00	1.397E+00	0.000E+00
U-234	1.214E+00	1.897E-01	9.148E-02	0.000E+00
NP-237	8.166E-01	3.056E-01	3.105E-01	0.000E+00
U-238	1.869E+00	1.368E+00	1.397E+00	0.000E+00
AM-243	3.352E-01	6.131E-02	6.882E-02	0.000E+00
ANH-511	8.953E-02	6.715E-02	4.123E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	-3.796E-01	2.716E-01	4.200E-01	0.000E+00	NOT IDENT.
NA-22	-1.617E-02	3.419E-02	5.374E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.835E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.057E-02	2.559E-02	3.939E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.557E-02	5.565E-02	0.000E+00	FAIL ABUN
SC-46	-7.715E-03	3.335E-02	5.665E-02	0.000E+00	FAIL ABUN
V-48	3.890E-02	5.790E-02	1.058E-01	0.000E+00	NOT IDENT.
CR-51	3.827E-02	3.122E-01	5.308E-01	0.000E+00	NOT IDENT.
MN-52	1.145E-01	2.110E-01	3.764E-01	0.000E+00	FAIL ABUN
MN-54	5.323E-04	3.151E-02	5.508E-02	0.000E+00	NOT IDENT.
CO-56	-1.836E-02	3.373E-02	5.600E-02	0.000E+00	NOT IDENT.
CO-57	-7.644E-03	1.795E-02	3.214E-02	0.000E+00	NOT IDENT.
CO-58	-1.145E-02	3.493E-02	5.561E-02	0.000E+00	NOT IDENT.
FE-59	-1.262E-02	7.925E-02	1.324E-01	0.000E+00	NOT IDENT.
CO-60	8.076E-03	3.492E-02	5.959E-02	0.000E+00	NOT IDENT.
ZN-65	-3.154E-02	7.678E-02	1.053E-01	0.000E+00	NOT IDENT.
GE-68	-1.029E-01	9.969E-01	1.677E+00	0.000E+00	NOT IDENT.
AS-73	1.143E-01	4.856E-01	8.568E-01	0.000E+00	NOT IDENT.
AS-74	2.730E-02	7.576E-02	1.333E-01	0.000E+00	NOT IDENT.
SE-75	6.407E-03	3.702E-02	6.118E-02	0.000E+00	NOT IDENT.
BR-77	2.877E+00	1.140E+01	2.012E+01	0.000E+00	FAIL ABUN
SR-82	-4.517E-01	3.400E-01	4.853E-01	0.000E+00	NOT IDENT.
RB-83	2.640E-02	5.560E-02	9.970E-02	0.000E+00	NOT IDENT.
RB-84	-3.507E-02	5.698E-02	9.294E-02	0.000E+00	NOT IDENT.
KR-85	8.173E+00	6.408E+00	1.086E+01	0.000E+00	NOT IDENT.
SR-85	4.237E-02	3.322E-02	5.627E-02	0.000E+00	NOT IDENT.
RB-86	-1.839E-01	6.507E-01	1.073E+00	0.000E+00	NOT IDENT.
Y-88	-4.187E-03	3.243E-02	5.315E-02	0.000E+00	NOT IDENT.
ZR-88	-6.128E-03	2.459E-02	4.305E-02	0.000E+00	NOT IDENT.
Y-91	-9.738E+00	1.613E+01	2.548E+01	0.000E+00	NOT IDENT.
NB-94	-2.094E-02	2.768E-02	4.321E-02	0.000E+00	NOT IDENT.
NB-95	3.483E-02	3.769E-02	6.112E-02	0.000E+00	NOT IDENT.
NB-95M	-3.234E-02	1.080E-01	1.637E-01	0.000E+00	NOT IDENT.
ZR-95	-1.262E-02	6.135E-02	1.004E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.107E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	4.604E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	2.523E+00	1.289E+01	2.193E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.265E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.163E-03	2.606E-02	4.508E-02	0.000E+00	FAIL ABUN
RH-102	2.567E-04	2.312E-02	4.045E-02	0.000E+00	NOT IDENT.
RU-103	-1.170E-02	3.024E-02	5.086E-02	0.000E+00	FAIL ABUN
RH-106	-5.333E-02	2.644E-01	4.424E-01	0.000E+00	FAIL ABUN
RU-106	-5.333E-02	2.644E-01	4.424E-01	0.000E+00	FAIL ABUN
AG-108M	-5.381E-03	2.462E-02	4.270E-02	0.000E+00	NOT IDENT.
AG-110M	-2.607E-03	2.761E-02	4.634E-02	0.000E+00	NOT IDENT.
IN-111	3.425E-01	1.086E+00	1.717E+00	0.000E+00	NOT IDENT.
IN-113M	-1.003E-02	3.535E-02	6.174E-02	0.000E+00	NOT IDENT.
SN-113	-1.003E-02	3.535E-02	6.174E-02	0.000E+00	NOT IDENT.
IN-114M	-9.348E-02	1.526E-01	2.481E-01	0.000E+00	NOT IDENT.
CD-115	-1.142E+01	1.187E+01	1.880E+01	0.000E+00	NOT IDENT.
SN-117M	5.544E-03	4.284E-02	7.711E-02	0.000E+00	NOT IDENT.
SB-122	1.296E+00	2.299E+00	4.110E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.634E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.064E-02	2.153E-02	3.765E-02	0.000E+00	NOT IDENT.
I-124	-1.381E-01	6.302E-01	1.057E+00	0.000E+00	NOT IDENT.
SB-124	1.710E-02	5.563E-02	9.981E-02	0.000E+00	FAIL ABUN
SB-125	3.328E-02	7.407E-02	1.344E-01	0.000E+00	FAIL ABUN
TE-125M	6.208E+00	6.423E+00	1.221E+01	0.000E+00	NOT IDENT.
I-126	2.435E-01	1.677E-01	3.128E-01	0.000E+00	NOT IDENT.
SB-126	-1.494E-01	1.300E-01	1.830E-01	0.000E+00	FAIL ABUN
SB-127	4.339E-01	1.330E+00	2.308E+00	0.000E+00	NOT IDENT.
XE-127	-6.772E-03	3.759E-02	6.542E-02	0.000E+00	NOT IDENT.
I-131	-7.089E-02	1.022E-01	1.602E-01	0.000E+00	NOT IDENT.
TE-132	-4.114E-02	6.892E-01	1.194E+00	0.000E+00	NOT IDENT.
BA-133	1.499E-02	3.681E-02	5.678E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.054E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.486E-02	3.840E-02	6.601E-02	0.000E+00	FAIL ABUN
CS-135	5.294E-02	1.332E-01	2.098E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.972E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.291E-02	8.874E-02	1.352E-01	0.000E+00	FAIL ABUN
BA-137M	-1.539E-02	2.912E-02	4.690E-02	0.000E+00	NOT IDENT.
CS-137	-1.627E-02	3.078E-02	4.958E-02	0.000E+00	NOT IDENT.
CE-139	2.129E-03	2.334E-02	4.181E-02	0.000E+00	NOT IDENT.
BA-140	6.845E-02	2.094E-01	3.693E-01	0.000E+00	NOT IDENT.
LA-140	-1.565E-02	8.444E-02	1.370E-01	0.000E+00	FAIL ABUN
CE-141	2.212E-02	4.992E-02	8.933E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.738E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	-6.002E-02	1.444E-01	2.565E-01	0.000E+00	NOT IDENT.
PM-144	-1.952E-02	3.202E-02	4.774E-02	0.000E+00	NOT IDENT.
PR-144	-1.324E+00	2.171E+00	3.237E+00	0.000E+00	NOT IDENT.
PM-146	2.063E-03	3.211E-02	5.664E-02	0.000E+00	NOT IDENT.
ND-147	1.220E-02	4.681E-01	8.113E-01	0.000E+00	FAIL ABUN
PM-149	-9.811E+01	1.013E+02	1.585E+02	0.000E+00	NOT IDENT.
EU-152	1.927E-02	8.326E-02	1.268E-01	0.000E+00	FAIL ABUN
GD-153	-7.592E-02	6.731E-02	9.563E-02	0.000E+00	NOT IDENT.
EU-154	-4.313E-02	9.571E-02	1.509E-01	0.000E+00	NOT IDENT.
EU-155	1.116E-01	7.734E-02	1.491E-01	0.000E+00	FAIL ABUN
TB-160	3.820E-02	1.133E-01	2.027E-01	0.000E+00	FAIL ABUN
HO-166M	3.713E-02	4.835E-02	8.667E-02	0.000E+00	NOT IDENT.
TM-171	-7.800E+00	2.100E+01	3.244E+01	0.000E+00	NOT IDENT.
LU-176	9.239E-03	1.922E-02	3.353E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.554E+00	1.986E+00	0.000E+00	FAIL ABUN
LU-177M	-2.117E-01	1.478E-01	2.349E-01	0.000E+00	FAIL ABUN
HF-181	2.691E-02	3.716E-02	6.779E-02	0.000E+00	NOT IDENT.
W-181	-1.471E-01	2.627E-01	4.017E-01	0.000E+00	NOT IDENT.
TA-182	-1.207E-01	1.524E-01	2.337E-01	0.000E+00	FAIL ABUN
RE-183	1.018E-01	8.552E-02	1.595E-01	0.000E+00	FAIL ABUN
RE-184	6.053E-02	1.837E-01	3.222E-01	0.000E+00	NOT IDENT.
OS-185	-6.179E-03	3.264E-02	5.435E-02	0.000E+00	NOT IDENT.
RE-188	9.174E-02	1.305E-01	2.404E-01	0.000E+00	NOT IDENT.
W-188	-3.689E-01	6.801E+00	1.026E+01	0.000E+00	FAIL ABUN
IR-192	4.508E-03	2.916E-02	4.934E-02	0.000E+00	FAIL ABUN
AU-195	2.924E-01	1.731E-01	3.102E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	7.368E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-4.720E+00	6.878E+00	1.186E+01	0.000E+00	NOT IDENT.
TL-202	4.180E-02	6.450E-02	1.177E-01	0.000E+00	NOT IDENT.
HG-203	1.031E-02	3.820E-02	5.932E-02	0.000E+00	NOT IDENT.
BI-207	-1.338E-02	4.421E-02	7.301E-02	0.000E+00	FAIL ABUN
TL-207	-1.899E-01	6.273E-01	9.133E-01	0.000E+00	FAIL ABUN
PO-209	-4.457E+00	5.525E+00	8.740E+00	0.000E+00	NOT IDENT.
PB-211	-4.547E-01	7.849E-01	1.249E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.823E-01	6.379E-01	0.000E+00	FAIL ABUN
PO-215	-1.899E-01	6.273E-01	9.133E-01	0.000E+00	FAIL ABUN
RN-219	-5.350E-03	3.202E-01	5.678E-01	0.000E+00	FAIL ABUN
RN-220	-8.686E+00	1.986E+01	3.292E+01	0.000E+00	NOT IDENT.
RA-223	-1.899E-01	6.273E-01	9.133E-01	0.000E+00	FAIL ABUN
AC-227	9.099E-02	3.100E-01	5.415E-01	0.000E+00	FAIL ABUN
TH-227	9.099E-02	3.101E-01	5.415E-01	0.000E+00	FAIL ABUN
TH-229	1.886E-01	3.923E-01	7.059E-01	0.000E+00	FAIL ABUN
PA-231	2.767E-02	1.223E+00	2.089E+00	0.000E+00	FAIL ABUN
TH-231	-1.899E-01	6.273E-01	9.133E-01	0.000E+00	FAIL ABUN
U-231	2.988E-02	9.552E-01	1.473E+00	0.000E+00	FAIL ABUN
PA-233	-3.491E-04	5.011E-02	8.468E-02	0.000E+00	FAIL ABUN
PA-234	-2.410E-01	2.425E-01	3.682E-01	0.000E+00	FAIL ABUN
PA-234M	1.188E-02	3.751E+00	6.371E+00	0.000E+00	NOT IDENT.
U-235	6.073E-03	1.644E-01	2.899E-01	0.000E+00	FAIL ABUN
NP-236	-3.858E-02	6.007E-02	1.042E-01	0.000E+00	NOT IDENT.
NP-239	-6.065E-02	1.355E-01	2.433E-01	0.000E+00	FAIL ABUN
AM-241	1.489E-01	1.004E-01	1.729E-01	0.000E+00	NOT IDENT.
CM-243	-6.178E-02	6.788E-02	1.204E-01	0.000E+00	FAIL ABUN
AM-246	-3.905E-02	1.160E-01	1.925E-01	0.000E+00	NOT IDENT.
CM-247	1.880E-03	2.839E-02	5.059E-02	0.000E+00	FAIL ABUN
CF-249	1.059E-02	3.167E-02	5.749E-02	0.000E+00	NOT IDENT.
CF-251	2.026E-03	9.476E-02	1.684E-01	0.000E+00	NOT IDENT.

## VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:58:34.69

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148010.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:56:55
Sample ID          : G244148010      Sample quantity   : 1.38000E+02 GRAM
Detector name      : GAM11           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.72  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 940268          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	976	10.67*	1.225E+00	2.030E+01	2.030E+01	11.03
CD-109	88.03	257	3.72*	6.790E+00	2.766E+00	2.834E+00	32.13
SN-126	64.28	110	9.60	4.226E+00	7.399E-01	7.399E-01	74.03
	86.94	257	8.90	6.790E+00	1.156E+00	1.156E+00	51.66
	87.57	257	37.00*	6.790E+00	2.781E-01	2.781E-01	32.13
TL-208	277.35	111	6.80	4.672E+00	9.491E-01	9.491E-01	50.05
	510.84	97	21.60	2.953E+00	4.145E-01	4.145E-01	76.98
	583.14	379	84.20*	2.661E+00	4.600E-01	4.600E-01	19.33
	860.37	60	12.46	1.925E+00	6.764E-01	6.764E-01	63.42
BI-210	46.50	18	4.05*	1.483E+00	8.264E-01	8.275E-01	354.68
PB-210	46.50	18	4.05*	1.483E+00	8.264E-01	8.275E-01	354.68
PO-210	46.50	18	4.05*	1.483E+00	8.264E-01	8.275E-01	354.66
BI-211	72.87	-----	1.27	5.576E+00	-----	Line Not Found	-----
	351.07	797	12.94*	3.920E+00	4.271E+00	4.271E+00	16.38
PB-212	74.81	471	10.70	5.792E+00	2.067E+00	2.067E+00	20.87
	77.11	742	18.00	6.023E+00	1.861E+00	1.861E+00	13.54
	87.30	257	8.00	6.790E+00	1.286E+00	1.286E+00	33.65
	238.63	1441	44.60*	5.210E+00	1.687E+00	1.687E+00	15.25
	300.09	98	3.41	4.412E+00	1.780E+00	1.780E+00	45.55
PO-212	74.81	471	10.70	5.792E+00	2.067E+00	2.067E+00	20.87
	77.11	742	18.00	6.023E+00	1.861E+00	1.861E+00	13.54
	87.30	257	8.00	6.790E+00	1.286E+00	1.286E+00	33.65
	115.19	-----	0.60	7.407E+00	-----	Line Not Found	-----
	238.63	1441	44.60*	5.210E+00	1.687E+00	1.687E+00	15.25
	300.09	98	3.41	4.412E+00	1.780E+00	1.780E+00	45.55
BI-214	609.31	531	46.30*	2.569E+00	1.214E+00	1.214E+00	15.95
	1120.29	94	15.10	1.531E+00	1.102E+00	1.103E+00	32.73
	1764.49	110	15.80	1.071E+00	1.773E+00	1.773E+00	22.46
PB-214	74.81	471	6.21	5.792E+00	3.562E+00	3.562E+00	20.08
	77.11	742	10.50	6.023E+00	3.191E+00	3.191E+00	15.53
	87.30	257	4.67	6.790E+00	2.203E+00	2.203E+00	33.04
	241.98	372	7.49	5.164E+00	2.617E+00	2.617E+00	27.94

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	478	19.20	4.468E+00	1.515E+00	1.515E+00	22.44
	351.92	797	37.20*	3.920E+00	1.486E+00	1.486E+00	17.19
	74.81	471	6.21	5.792E+00	3.562E+00	3.562E+00	20.08
	77.11	742	10.50	6.023E+00	3.191E+00	3.191E+00	15.53
	87.30	257	4.67	6.790E+00	2.203E+00	2.203E+00	33.04
PO-216	241.98	372	7.49	5.164E+00	2.617E+00	2.617E+00	27.94
	295.21	478	19.20	4.468E+00	1.515E+00	1.515E+00	22.44
	351.92	797	37.20*	3.920E+00	1.486E+00	1.486E+00	17.19
	74.81	471	10.70	5.792E+00	2.067E+00	2.067E+00	20.87
	77.11	742	18.00	6.023E+00	1.861E+00	1.861E+00	13.54
PO-218	87.30	257	8.00	6.790E+00	1.286E+00	1.286E+00	33.65
	238.63	1441	44.60*	5.210E+00	1.687E+00	1.687E+00	15.25
	300.09	98	3.41	4.412E+00	1.780E+00	1.780E+00	45.55
	74.81	471	6.21	5.792E+00	3.562E+00	3.562E+00	20.08
	77.11	742	10.50	6.023E+00	3.191E+00	3.191E+00	15.53
RA-224	87.30	257	4.67	6.790E+00	2.203E+00	2.203E+00	33.04
	241.98	372	7.49	5.164E+00	2.617E+00	2.617E+00	27.94
	295.21	478	19.20	4.468E+00	1.515E+00	1.515E+00	22.44
	351.92	797	37.20*	3.920E+00	1.486E+00	1.486E+00	17.19
	240.98	372	3.95*	5.164E+00	4.963E+00	4.963E+00	27.37
RA-226	609.31	531	46.30*	2.569E+00	1.214E+00	1.214E+00	15.95
	1120.29	94	15.10	1.531E+00	1.102E+00	1.103E+00	32.73
	1764.49	110	15.80	1.071E+00	1.773E+00	1.773E+00	22.46
	338.32	324	11.40	4.036E+00	1.917E+00	1.917E+00	46.72
	911.07	293	27.70*	1.833E+00	1.567E+00	1.567E+00	19.68
RA-228	969.11	158	16.60	1.737E+00	1.493E+00	1.493E+00	33.10
	338.32	324	11.40	4.036E+00	1.917E+00	1.917E+00	46.72
	911.07	293	27.70*	1.833E+00	1.567E+00	1.567E+00	19.68
	969.11	158	16.60	1.737E+00	1.493E+00	1.493E+00	33.10
	74.81	471	10.70	5.792E+00	2.067E+00	2.101E+00	18.70
TH-228	77.11	742	18.00	6.023E+00	1.861E+00	1.892E+00	13.54
	87.30	257	8.00	6.790E+00	1.286E+00	1.307E+00	32.13
	238.63	1441	44.60*	5.210E+00	1.687E+00	1.714E+00	15.25
	300.09	98	3.41	4.412E+00	1.780E+00	1.809E+00	74.03
	609.31	531	46.30*	2.569E+00	1.214E+00	1.214E+00	15.95
TH-230	1120.29	94	15.10	1.531E+00	1.102E+00	1.102E+00	32.73
	1764.49	110	15.80	1.071E+00	1.773E+00	1.773E+00	22.46
	338.32	324	11.40	4.036E+00	1.917E+00	1.917E+00	23.55
	911.07	293	27.70*	1.833E+00	1.567E+00	1.567E+00	19.68
	969.11	158	16.60	1.737E+00	1.493E+00	1.493E+00	33.10
TH-234	63.29	110	3.80*	4.226E+00	1.869E+00	1.869E+00	74.66
	92.38	273	5.41	7.061E+00	1.943E+00	1.943E+00	33.55
	609.31	531	46.30*	2.569E+00	1.214E+00	1.214E+00	15.95
	1120.29	94	15.10	1.531E+00	1.102E+00	1.102E+00	32.73
	1764.49	110	15.80	1.071E+00	1.773E+00	1.773E+00	22.46
NP-237	86.50	257	12.60*	6.790E+00	8.166E-01	8.166E-01	38.18
	95.87	---	2.60	7.169E+00	---	Line Not Found	---
	63.29	110	3.80*	4.226E+00	1.869E+00	1.869E+00	74.66
	92.38	273	5.41	7.061E+00	1.943E+00	1.943E+00	29.55

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	471	66.00*	5.792E+00	3.352E-01	3.352E-01	18.67
	86.72	257	0.34	6.790E+00	3.062E+01	3.062E+01	32.13
	117.66	-----	0.55	7.397E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.065E+00	-----	Line Not Found	-----
ANH-511	511.00	97	100.00*	2.953E+00	8.953E-02	8.953E-02	76.53

Flag: "\*" = Keyline



Total number of lines in spectrum 38  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 34 89.47%

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	2.030E+01	2.030E+01	0.224E+01	11.03	
CD-109	464.00D	1.02	2.766E+00	2.834E+00	0.910E+00	32.13	
SN-126	1.00E+05Y	1.00	2.781E-01	2.781E-01	0.893E-01	32.13	
TL-208	1.41E+10Y	1.00	4.600E-01	4.600E-01	0.889E-01	19.33	
BI-210	22.26Y	1.00	8.264E-01	8.275E-01	29.35E-01	354.68	
PB-210	22.26Y	1.00	8.264E-01	8.275E-01	29.35E-01	354.68	
PO-210	22.26Y	1.00	8.264E-01	8.275E-01	29.35E-01	354.66	
BI-211	7.04E+08Y	1.00	4.271E+00	4.271E+00	0.700E+00	16.38	
PB-212	1.41E+10Y	1.00	1.687E+00	1.687E+00	0.257E+00	15.25	
PO-212	1.41E+10Y	1.00	1.687E+00	1.687E+00	0.257E+00	15.25	
BI-214	1600.00Y	1.00	1.214E+00	1.214E+00	0.194E+00	15.95	
PB-214	1600.00Y	1.00	1.486E+00	1.486E+00	0.255E+00	17.19	
PO-214	1600.00Y	1.00	1.486E+00	1.486E+00	0.255E+00	17.19	
PO-216	1.41E+10Y	1.00	1.687E+00	1.687E+00	0.257E+00	15.25	
PO-218	1600.00Y	1.00	1.486E+00	1.486E+00	0.255E+00	17.19	
RA-224	1.41E+10Y	1.00	4.963E+00	4.963E+00	1.358E+00	27.37	
RA-226	1600.00Y	1.00	1.214E+00	1.214E+00	0.194E+00	15.95	
AC-228	1.41E+10Y	1.00	1.567E+00	1.567E+00	0.308E+00	19.68	
RA-228	1.41E+10Y	1.00	1.567E+00	1.567E+00	0.308E+00	19.68	
TH-228	1.91Y	1.02	1.687E+00	1.714E+00	0.262E+00	15.25	
TH-230	4.47E+09Y	1.00	1.214E+00	1.214E+00	0.194E+00	15.95	
TH-232	1.41E+10Y	1.00	1.567E+00	1.567E+00	0.308E+00	19.68	
TH-234	4.47E+09Y	1.00	1.869E+00	1.869E+00	1.395E+00	74.66	
U-234	4.47E+09Y	1.00	1.214E+00	1.214E+00	0.194E+00	15.95	
NP-237	2.14E+06Y	1.00	8.166E-01	8.166E-01	3.118E-01	38.18	
U-238	4.47E+09Y	1.00	1.869E+00	1.869E+00	1.395E+00	74.66	
AM-243	7380.00Y	1.00	3.352E-01	3.352E-01	0.626E-01	18.67	
ANH-511	1.00E+09Y	1.00	8.953E-02	8.953E-02	6.852E-02	76.53	

Total Activity : 6.126E+01 6.136E+01

Grand Total Activity : 6.126E+01 6.136E+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	89.95	186	239	1.00	178.82	177	16	2.59E-02	26.4	6.93E+00	T
0	128.49	121	304	1.35	255.95	252	8	1.68E-02	52.9	7.29E+00	T
0	185.96	166	313	1.43	370.99	367	8	2.31E-02	41.9	6.15E+00	T
0	209.36	116	309	1.08	417.83	414	9	1.61E-02	58.0	5.70E+00	T
0	269.97	115	153	1.16	539.12	535	9	1.59E-02	44.0	4.77E+00	T
0	328.16	70	131	1.01	655.59	651	8	9.66E-03	62.3	4.13E+00	T
0	463.76	53	105	1.12	926.96	922	10	7.40E-03	77.6	3.18E+00	T
0	728.04	106	95	1.67	1455.82	1449	13	1.47E-02	43.4	2.22E+00	T
0	768.81	73	72	1.11	1537.40	1532	12	1.01E-02	52.1	2.12E+00	
0	795.61	26	31	1.28	1591.03	1587	8	3.57E-03	86.8	2.06E+00	T
0	934.70	34	33	1.16	1869.33	1865	10	4.75E-03	71.2	1.79E+00	T
1	965.09	52	42	1.73	1930.15	1926	19	7.26E-03	50.4	1.74E+00	T
0	1409.05	20	26	1.69	2818.37	2814	11	2.71E-03	****	1.26E+00	T
0	1588.46	36	11	1.76	3177.25	3172	11	5.00E-03	48.8	1.15E+00	
0	1622.98	25	19	1.49	3246.31	3239	15	3.48E-03	85.4	1.13E+00	
0	1730.19	31	7	1.55	3460.77	3454	13	4.24E-03	50.0	1.08E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148010.CNF;1
* Acquisition date   : 20-JAN-2010 15:56:55   Detector SN#      :
* Detector ID        : GAM11                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:01.72          Half life ratio     : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.   Nuclide Library   : SOLID
* Sample ID          : G244148010             Analyst initials  : MXR1
* Batch Number       : 940268                 Sample Quantity   : 1.38000E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22.2MS Isotope       :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.030E+01	2.238E+00	4.753E-01	4.110E-02	42.711
CD-109	2.834E+00	9.104E-01	8.945E-01	8.482E-02	3.168
SN-126	2.781E-01	8.935E-02	8.807E-02	8.307E-03	3.158
TL-208	4.600E-01	8.891E-02	4.517E-02	4.878E-03	10.183
BI-210	8.275E-01	2.935E+00	3.175E+00	2.956E-01	0.261
PB-210	8.275E-01	2.935E+00	3.175E+00	2.956E-01	0.261
PO-210	8.275E-01	2.935E+00	3.175E+00	2.676E-01	0.261
BI-211	4.271E+00	6.996E-01	2.496E-01	3.294E-02	17.109
PB-212	1.687E+00	2.573E-01	6.894E-02	9.655E-03	24.468
PO-212	1.687E+00	2.573E-01	6.894E-02	9.655E-03	24.468
BI-214	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
PB-214	1.486E+00	2.554E-01	8.703E-02	1.231E-02	17.072
PO-214	1.486E+00	2.554E-01	8.703E-02	1.231E-02	17.072
PO-216	1.687E+00	2.573E-01	6.894E-02	9.655E-03	24.468
PO-218	1.486E+00	2.554E-01	8.703E-02	1.231E-02	17.072
RA-224	4.963E+00	1.358E+00	7.849E-01	1.051E-01	6.323
RA-226	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
AC-228	1.567E+00	3.084E-01	1.627E-01	1.980E-02	9.632

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.567E+00	3.084E-01	1.627E-01	1.980E-02	9.632
TH-228	1.714E+00	2.615E-01	7.006E-02	9.812E-03	24.468
TH-230	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
TH-232	1.567E+00	3.084E-01	1.627E-01	1.980E-02	9.632
TH-234	1.869E+00	1.395E+00	1.311E+00	2.281E-01	1.426
U-234	1.214E+00	1.936E-01	8.961E-02	1.013E-02	13.549
NP-237	8.166E-01	3.118E-01	2.931E-01	6.635E-02	2.786
U-238	1.869E+00	1.395E+00	1.311E+00	2.281E-01	1.426
AM-243	3.352E-01	6.256E-02	6.479E-02	5.243E-03	5.173
ANH-511	8.953E-02	6.852E-02	4.025E-02	4.304E-03	2.224

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.796E-01		2.771E-01	4.095E-01	4.635E-02	-0.927
NA-22	-1.617E-02		3.489E-02	5.343E-02	4.387E-03	-0.303
NA-24	-6.732E-01		9.362E-01	Half-Life	too short	
AL-26	-1.057E-02		2.611E-02	3.944E-02	3.219E-03	-0.268
TI-44	3.435E-01	+	4.650E-02	5.243E-02	4.420E-03	6.552
SC-46	-7.715E-03		3.403E-02	5.591E-02	5.507E-03	-0.138
V-48	3.890E-02		5.908E-02	1.046E-01	9.921E-03	0.372
CR-51	3.827E-02		3.186E-01	5.135E-01	7.452E-02	0.075
MN-52	1.145E-01		2.153E-01	3.751E-01	3.143E-02	0.305
MN-54	5.323E-04		3.215E-02	5.429E-02	5.346E-03	0.010
CO-56	-1.836E-02		3.441E-02	5.521E-02	5.440E-03	-0.333
CO-57	-7.644E-03		1.832E-02	3.053E-02	2.583E-03	-0.250
CO-58	-1.145E-02		3.564E-02	5.478E-02	5.394E-03	-0.209
FE-59	-1.262E-02		8.087E-02	1.312E-01	1.233E-02	-0.096
CO-60	8.076E-03		3.564E-02	5.929E-02	4.900E-03	0.136
ZN-65	-3.154E-02		7.834E-02	1.044E-01	8.961E-03	-0.302
GE-68	-1.029E-01		1.017E+00	1.661E+00	1.475E-01	-0.062
AS-73	1.143E-01		4.955E-01	8.017E-01	6.020E-02	0.143
AS-74	2.730E-02		7.730E-02	1.305E-01	1.327E-02	0.209
SE-75	6.407E-03		3.777E-02	5.897E-02	8.668E-03	0.109
BR-77	2.877E+00		1.163E+01	1.965E+01	2.093E+00	0.146
SR-82	-4.517E-01		3.469E-01	4.777E-01	4.672E-02	-0.946
RB-83	2.640E-02		5.673E-02	9.736E-02	1.037E-02	0.271
RB-84	-3.507E-02		5.814E-02	9.171E-02	9.036E-03	-0.382
KR-85	8.173E+00		6.539E+00	1.060E+01	1.132E+00	0.771
SR-85	4.237E-02		3.390E-02	5.494E-02	5.868E-03	0.771
RB-86	-1.839E-01		6.640E-01	1.063E+00	9.448E-02	-0.173
Y-88	-4.187E-03		3.309E-02	5.323E-02	4.321E-03	-0.079
ZR-88	-6.128E-03		2.509E-02	4.180E-02	4.459E-03	-0.147
Y-91	-9.738E+00		1.646E+01	2.530E+01	2.048E+00	-0.385
NB-94	-2.094E-02		2.824E-02	4.245E-02	4.077E-03	-0.493
NB-95	3.483E-02		3.846E-02	6.014E-02	5.870E-03	0.579
NB-95M	-3.234E-02		1.102E-01	1.574E-01	2.198E-02	-0.205

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	-1.262E-02		6.260E-02	9.874E-02	1.039E-02	-0.128
NB-97	3.077E-02		1.075E-01	Half-Life too short		
ZR-97	1.784E+00		2.349E+00	Half-Life too short		
MO-99	2.523E+00		1.315E+01	2.156E+01	3.413E+00	0.117
TC-99M	-1.041E+10		2.686E+11	Half-Life too short		
RH-101	1.163E-03		2.659E-02	4.321E-02	4.836E-03	0.027
RH-102	2.567E-04		2.359E-02	3.943E-02	4.250E-03	0.007
RU-103	-1.170E-02		3.086E-02	4.962E-02	7.712E-03	-0.236
RH-106	-5.333E-02		2.698E-01	4.335E-01	6.169E-02	-0.123
RU-106	-5.333E-02		2.698E-01	4.335E-01	4.301E-02	-0.123
AG-108M	-5.381E-03		2.512E-02	4.155E-02	4.594E-03	-0.129
AG-110M	-2.607E-03		2.817E-02	4.546E-02	4.430E-03	-0.057
IN-111	3.425E-01		1.109E+00	1.653E+00	2.252E-01	0.207
IN-113M	-1.003E-02		3.607E-02	5.996E-02	6.522E-03	-0.167
SN-113	-1.003E-02		3.607E-02	5.996E-02	6.522E-03	-0.167
IN-114M	-9.348E-02		1.558E-01	2.377E-01	2.572E-02	-0.393
CD-115	-1.142E+01		1.211E+01	1.837E+01	1.951E+00	-0.622
SN-117M	5.544E-03		4.371E-02	7.361E-02	6.957E-03	0.075
SB-122	1.296E+00		2.346E+00	4.020E+00	4.188E-01	0.322
I-123	-8.074E+00		8.335E+00	Half-Life too short		
TE-123M	-1.064E-02		2.197E-02	3.594E-02	3.419E-03	-0.296
I-124	-1.381E-01		6.431E-01	1.035E+00	1.046E-01	-0.133
SB-124	1.710E-02		5.676E-02	9.979E-02	8.672E-03	0.171
SB-125	3.328E-02		7.558E-02	1.307E-01	1.425E-02	0.255
TE-125M	6.208E+00		6.554E+00	1.157E+01	1.188E+00	0.537
I-126	2.435E-01		1.712E-01	3.069E-01	2.910E-02	0.793
SB-126	-1.494E-01		1.327E-01	1.798E-01	1.737E-02	-0.831
SB-127	4.339E-01		1.358E+00	2.266E+00	2.808E-01	0.191
XE-127	-6.772E-03		3.836E-02	6.273E-02	7.170E-03	-0.108
I-131	-7.089E-02		1.042E-01	1.553E-01	1.951E-02	-0.456
TE-132	-4.114E-02		7.033E-01	1.148E+00	2.119E-01	-0.036
BA-133	1.499E-02		3.756E-02	5.503E-02	8.876E-03	0.272
I-133	5.931E-03		5.377E-03	Half-Life too short		
CS-134	4.486E-02	+	3.919E-02	6.500E-02	6.412E-03	0.690
CS-135	5.294E-02		1.359E-01	2.022E-01	3.173E-02	0.262
I-135	2.028E+10		3.047E+10	Half-Life too short		
CS-136	-8.291E-02		9.055E-02	1.338E-01	1.264E-02	-0.620
BA-137M	-1.539E-02		2.971E-02	4.602E-02	4.354E-03	-0.334
CS-137	-1.627E-02		3.141E-02	4.864E-02	4.610E-03	-0.334
CE-139	2.129E-03		2.382E-02	3.994E-02	3.881E-03	0.053
BA-140	6.845E-02		2.137E-01	3.608E-01	1.216E-01	0.190
LA-140	-1.565E-02		8.616E-02	1.368E-01	1.151E-02	-0.114
CE-141	2.212E-02		5.094E-02	8.513E-02	7.802E-03	0.260
CE-143	5.735E-04		1.397E-04	Half-Life too short		
CE-144	-6.002E-02		1.473E-01	2.441E-01	3.808E-02	-0.246
PM-144	-1.952E-02		3.267E-02	4.689E-02	4.495E-03	-0.416
PR-144	-1.324E+00		2.215E+00	3.179E+00	3.047E-01	-0.416
PM-146	2.063E-03		3.277E-02	5.517E-02	6.917E-03	0.037

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	1.220E-02		4.777E-01	7.926E-01	1.282E-01	0.015
PM-149	-9.811E+01		1.034E+02	1.530E+02	3.067E+01	-0.641
EU-152	1.927E-02		8.496E-02	1.228E-01	1.665E-02	0.157
GD-153	-7.592E-02		6.868E-02	9.047E-02	8.037E-03	-0.839
EU-154	-4.313E-02		9.767E-02	1.500E-01	1.649E-02	-0.288
EU-155	1.116E-01		7.892E-02	1.412E-01	1.232E-02	0.790
TB-160	3.820E-02		1.156E-01	2.000E-01	1.971E-02	0.191
HO-166M	3.713E-02		4.934E-02	8.516E-02	8.202E-03	0.436
TM-171	-7.800E+00		2.143E+01	3.048E+01	2.287E+00	-0.256
LU-176	9.239E-03		1.961E-02	3.241E-02	4.764E-03	0.285
LU-177	2.679E+00	+	1.586E+00	1.905E+00	2.230E-01	1.406
LU-177M	-2.117E-01		1.509E-01	2.284E-01	2.452E-02	-0.927
HF-181	2.691E-02		3.792E-02	6.610E-02	7.119E-03	0.407
W-181	-1.471E-01		2.681E-01	3.772E-01	2.796E-02	-0.390
TA-182	-1.207E-01		1.555E-01	2.322E-01	1.886E-02	-0.520
RE-183	1.018E-01		8.726E-02	1.523E-01	1.460E-02	0.668
RE-184	6.053E-02		1.875E-01	3.103E-01	4.354E-02	0.195
OS-185	-6.179E-03		3.331E-02	5.330E-02	5.145E-03	-0.116
RE-188	9.174E-02		1.332E-01	2.294E-01	2.140E-02	0.400
W-188	-3.689E-01		6.940E+00	9.910E+00	1.505E+00	-0.037
IR-192	4.508E-03		2.975E-02	4.772E-02	6.860E-03	0.094
AU-195	2.924E-01		1.767E-01	2.936E-01	2.590E-02	0.996
TL-200	3.130E-04		3.759E-04	Half-Life	too short	
TL-201	-4.720E+00		7.019E+00	1.133E+01	1.109E+00	-0.416
TL-202	4.180E-02		6.582E-02	1.146E-01	1.236E-02	0.365
HG-203	1.031E-02		3.898E-02	5.723E-02	8.940E-03	0.180
BI-207	-1.338E-02		4.511E-02	7.231E-02	6.496E-03	-0.185
TL-207	-1.899E-01		6.401E-01	8.837E-01	1.848E-01	-0.215
PO-209	-4.457E+00		5.638E+00	8.627E+00	8.494E-01	-0.517
PB-211	-4.547E-01		8.010E-01	1.214E+00	7.645E-01	-0.375
BI-212	1.101E+00	+	4.922E-01	6.271E-01	6.853E-02	1.755
PO-215	-1.899E-01		6.401E-01	8.837E-01	1.848E-01	-0.215
RN-219	-5.350E-03		3.268E-01	5.517E-01	8.997E-02	-0.010
RN-220	-8.686E+00		2.027E+01	3.218E+01	3.382E+00	-0.270
RA-223	-1.899E-01		6.401E-01	8.837E-01	1.848E-01	-0.215
AC-227	9.099E-02		3.163E-01	5.216E-01	9.940E-02	0.174
TH-227	9.099E-02		3.164E-01	5.216E-01	1.111E-01	0.174
TH-229	1.886E-01		4.003E-01	6.764E-01	7.427E-02	0.279
PA-231	2.767E-02		1.248E+00	2.016E+00	3.994E-01	0.014
TH-231	-1.899E-01		6.401E-01	8.837E-01	1.848E-01	-0.215
U-231	2.988E-02		9.747E-01	1.393E+00	1.247E-01	0.021
PA-233	-3.491E-04		5.113E-02	8.188E-02	1.201E-02	-0.004
PA-234	-2.410E-01		2.474E-01	3.638E-01	7.009E-02	-0.662
PA-234M	1.188E-02		3.828E+00	6.302E+00	6.704E-01	0.002
U-235	6.073E-03		1.677E-01	2.763E-01	4.884E-02	0.022
NP-236	-3.858E-02		6.130E-02	9.946E-02	9.461E-03	-0.388
NP-239	-6.065E-02		1.383E-01	2.309E-01	1.954E-02	-0.263
AM-241	1.489E-01		1.025E-01	1.621E-01	1.274E-02	0.918

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-6.178E-02		6.926E-02	1.140E-01	9.873E-03	-0.542
AM-246	-3.905E-02		1.184E-01	1.908E-01	1.692E-02	-0.205
CM-247	1.880E-03		2.897E-02	4.915E-02	5.261E-03	0.038
CF-249	1.059E-02		3.232E-02	5.582E-02	6.079E-03	0.190
CF-251	2.026E-03		9.669E-02	1.610E-01	1.640E-02	0.013

## 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]G244148010          *
* Acquisition date   : 20-JAN-2010 15:56:55 Detector SN# :                *
* Detector ID        : GAM11                      Sensitivity      : 5.000    *
* Geometry           : CAN                        Energy tolerance: 1.500    *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000    *
* Elapsed real time  : 0 02:00:01.72              Half life ratio : 8.000    *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148010              Analyst initials: MXR1        *
* Batch Number       : 940268                  Sample Quantity : 1.3800E+02 GRAM *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000      *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22 MS Isotope      :                *
* MSD DPM             : 0.000                      MSD Isotope :                *
* LCS DPM             : 0.000                      LCS Isotope  :                *
* LCSD DPM            : 0.000                      LCSD Isotope :                *
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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.030E+01	2.194E+00	2.386E-01	1.119E+00
CD-109	2.834E+00	8.922E-01	4.740E-01	4.552E-01
SN-126	2.781E-01	8.756E-02	4.667E-02	4.467E-02
TL-208	4.600E-01	8.713E-02	2.309E-02	4.445E-02
BI-210	8.275E-01	2.876E+00	1.702E+00	1.468E+00
PB-210	8.275E-01	2.876E+00	1.702E+00	1.468E+00
PO-210	8.275E-01	2.876E+00	1.702E+00	1.467E+00
BI-211	4.271E+00	6.856E-01	1.289E-01	3.498E-01
PB-212	1.687E+00	2.522E-01	3.586E-02	1.287E-01
PO-212	1.687E+00	2.522E-01	3.586E-02	1.287E-01
BI-214	1.214E+00	1.897E-01	4.577E-02	9.681E-02
PB-214	1.486E+00	2.503E-01	4.493E-02	1.277E-01
PO-214	1.486E+00	2.503E-01	4.493E-02	1.277E-01
PO-216	1.687E+00	2.522E-01	3.586E-02	1.287E-01
PO-218	1.486E+00	2.503E-01	4.493E-02	1.277E-01
RA-224	4.963E+00	1.331E+00	4.081E-01	6.791E-01
RA-226	1.214E+00	1.897E-01	4.577E-02	9.681E-02
AC-228	1.567E+00	3.022E-01	8.242E-02	1.542E-01
RA-228	1.567E+00	3.022E-01	8.242E-02	1.542E-01
TH-228	1.714E+00	2.563E-01	3.644E-02	1.308E-01
TH-230	1.214E+00	1.897E-01	4.577E-02	9.680E-02
TH-232	1.567E+00	3.022E-01	8.242E-02	1.542E-01
TH-234	1.869E+00	1.368E+00	6.988E-01	6.977E-01
U-234	1.214E+00	1.897E-01	4.577E-02	9.680E-02
NP-237	8.166E-01	3.056E-01	1.554E-01	1.559E-01
U-238	1.869E+00	1.368E+00	6.988E-01	6.977E-01
AM-243	3.352E-01	6.131E-02	3.443E-02	3.128E-02
ANH-511	8.953E-02	6.715E-02	2.063E-02	3.426E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-3.796E-01	2.716E-01	2.101E-01	1.386E-01	NOT IDENT.
NA-22	-1.617E-02	3.419E-02	2.689E-02	1.744E-02	NOT IDENT.
NA-24	-6.732E+05	1.835E+06	0.000E+00	9.362E+05	SHORT HLIF
AL-26	-1.057E-02	2.559E-02	1.971E-02	1.305E-02	NOT IDENT.
TI-44	3.435E-01	4.557E-02	2.784E-02	2.325E-02	FAIL ABUN
SC-46	-7.715E-03	3.335E-02	2.834E-02	1.702E-02	FAIL ABUN
V-48	3.890E-02	5.790E-02	5.292E-02	2.954E-02	NOT IDENT.
CR-51	3.827E-02	3.122E-01	2.656E-01	1.593E-01	NOT IDENT.
MN-52	1.145E-01	2.110E-01	1.883E-01	1.077E-01	FAIL ABUN
MN-54	5.323E-04	3.151E-02	2.756E-02	1.608E-02	NOT IDENT.
CO-56	-1.836E-02	3.373E-02	2.802E-02	1.721E-02	NOT IDENT.
CO-57	-7.644E-03	1.795E-02	1.608E-02	9.160E-03	NOT IDENT.
CO-58	-1.145E-02	3.493E-02	2.782E-02	1.782E-02	NOT IDENT.
FE-59	-1.262E-02	7.925E-02	6.623E-02	4.043E-02	NOT IDENT.
CO-60	8.076E-03	3.492E-02	2.981E-02	1.782E-02	NOT IDENT.
ZN-65	-3.154E-02	7.678E-02	5.270E-02	3.917E-02	NOT IDENT.
GE-68	-1.029E-01	9.969E-01	8.389E-01	5.086E-01	NOT IDENT.
AS-73	1.143E-01	4.856E-01	4.286E-01	2.477E-01	NOT IDENT.
AS-74	2.730E-02	7.576E-02	6.669E-02	3.865E-02	NOT IDENT.
SE-75	6.407E-03	3.702E-02	3.061E-02	1.889E-02	NOT IDENT.
BR-77	2.877E+00	1.140E+01	1.007E+01	5.814E+00	FAIL ABUN
SR-82	-4.517E-01	3.400E-01	2.428E-01	1.734E-01	NOT IDENT.
RB-83	2.640E-02	5.560E-02	4.988E-02	2.836E-02	NOT IDENT.
RB-84	-3.507E-02	5.698E-02	4.650E-02	2.907E-02	NOT IDENT.
KR-85	8.173E+00	6.408E+00	5.431E+00	3.269E+00	NOT IDENT.
SR-85	4.237E-02	3.322E-02	2.815E-02	1.695E-02	NOT IDENT.
RB-86	-1.839E-01	6.507E-01	5.369E-01	3.320E-01	NOT IDENT.
Y-88	-4.187E-03	3.243E-02	2.659E-02	1.654E-02	NOT IDENT.
ZR-88	-6.128E-03	2.459E-02	2.154E-02	1.255E-02	NOT IDENT.
Y-91	-9.738E+00	1.613E+01	1.275E+01	8.228E+00	NOT IDENT.
NB-94	-2.094E-02	2.768E-02	2.162E-02	1.412E-02	NOT IDENT.
NB-95	3.483E-02	3.769E-02	3.058E-02	1.923E-02	NOT IDENT.
NB-95M	-3.234E-02	1.080E-01	8.190E-02	5.510E-02	NOT IDENT.
ZR-95	-1.262E-02	6.135E-02	5.021E-02	3.130E-02	NOT IDENT.
NB-97	3.077E+04	2.107E+05	0.000E+00	1.075E+05	SHORT HLIF
ZR-97	1.784E+06	4.604E+06	0.000E+00	2.349E+06	SHORT HLIF
MO-99	2.523E+00	1.289E+01	1.097E+01	6.575E+00	NOT IDENT.
TC-99M	-1.041E+16	5.265E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.163E-03	2.606E-02	2.255E-02	1.329E-02	FAIL ABUN
RH-102	2.567E-04	2.312E-02	2.023E-02	1.180E-02	NOT IDENT.
RU-103	-1.170E-02	3.024E-02	2.545E-02	1.543E-02	FAIL ABUN
RH-106	-5.333E-02	2.644E-01	2.213E-01	1.349E-01	FAIL ABUN
RU-106	-5.333E-02	2.644E-01	2.213E-01	1.349E-01	FAIL ABUN
AG-108M	-5.381E-03	2.462E-02	2.136E-02	1.256E-02	NOT IDENT.
AG-110M	-2.607E-03	2.761E-02	2.318E-02	1.409E-02	NOT IDENT.
IN-111	3.425E-01	1.086E+00	8.591E-01	5.543E-01	NOT IDENT.
IN-113M	-1.003E-02	3.535E-02	3.089E-02	1.803E-02	NOT IDENT.
SN-113	-1.003E-02	3.535E-02	3.089E-02	1.803E-02	NOT IDENT.
IN-114M	-9.348E-02	1.526E-01	1.241E-01	7.788E-02	NOT IDENT.
CD-115	-1.142E+01	1.187E+01	9.408E+00	6.056E+00	NOT IDENT.
SN-117M	5.544E-03	4.284E-02	3.858E-02	2.186E-02	NOT IDENT.
SB-122	1.296E+00	2.299E+00	2.056E+00	1.173E+00	NOT IDENT.
I-123	-8.074E+06	1.634E+07	0.000E+00	8.335E+06	SHORT HLIF
TE-123M	-1.064E-02	2.153E-02	1.884E-02	1.099E-02	NOT IDENT.
I-124	-1.381E-01	6.302E-01	5.289E-01	3.216E-01	NOT IDENT.
SB-124	1.710E-02	5.563E-02	4.993E-02	2.838E-02	FAIL ABUN
SB-125	3.328E-02	7.407E-02	6.723E-02	3.779E-02	FAIL ABUN
TE-125M	6.208E+00	6.423E+00	6.107E+00	3.277E+00	NOT IDENT.
I-126	2.435E-01	1.677E-01	1.565E-01	8.558E-02	NOT IDENT.
SB-126	-1.494E-01	1.300E-01	9.155E-02	6.635E-02	FAIL ABUN
SB-127	4.339E-01	1.330E+00	1.155E+00	6.788E-01	NOT IDENT.
XE-127	-6.772E-03	3.759E-02	3.273E-02	1.918E-02	NOT IDENT.
I-131	-7.089E-02	1.022E-01	8.013E-02	5.212E-02	NOT IDENT.
TE-132	-4.114E-02	6.892E-01	5.976E-01	3.517E-01	NOT IDENT.
BA-133	1.499E-02	3.681E-02	2.840E-02	1.878E-02	FAIL ABUN
I-133	5.931E+03	1.054E+04	0.000E+00	5.377E+03	SHORT HLIF
CS-134	4.486E-02	3.840E-02	3.303E-02	1.959E-02	FAIL ABUN
CS-135	5.294E-02	1.332E-01	1.049E-01	6.797E-02	NOT IDENT.
I-135	2.028E+16	5.972E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.291E-02	8.874E-02	6.762E-02	4.527E-02	FAIL ABUN
BA-137M	-1.539E-02	2.912E-02	2.347E-02	1.486E-02	NOT IDENT.
CS-137	-1.627E-02	3.078E-02	2.480E-02	1.571E-02	NOT IDENT.
CE-139	2.129E-03	2.334E-02	2.091E-02	1.191E-02	NOT IDENT.
BA-140	6.845E-02	2.094E-01	1.848E-01	1.068E-01	NOT IDENT.
LA-140	-1.565E-02	8.444E-02	6.855E-02	4.308E-02	FAIL ABUN
CE-141	2.212E-02	4.992E-02	4.469E-02	2.547E-02	NOT IDENT.
CE-143	5.735E+02	2.738E+02	0.000E+00	1.397E+02	SHORT HLIF

CE-144	-6.002E-02	1.444E-01	1.283E-01	7.367E-02	NOT IDENT.
PM-144	-1.952E-02	3.202E-02	2.389E-02	1.633E-02	NOT IDENT.
PR-144	-1.324E+00	2.171E+00	1.619E+00	1.108E+00	NOT IDENT.
PM-146	2.063E-03	3.211E-02	2.834E-02	1.639E-02	NOT IDENT.
ND-147	1.220E-02	4.681E-01	4.059E-01	2.388E-01	FAIL ABUN
PM-149	-9.811E+01	1.013E+02	7.928E+01	5.170E+01	NOT IDENT.
EU-152	1.927E-02	8.326E-02	6.343E-02	4.248E-02	FAIL ABUN
GD-153	-7.592E-02	6.731E-02	4.785E-02	3.434E-02	NOT IDENT.
EU-154	-4.313E-02	9.571E-02	7.548E-02	4.883E-02	NOT IDENT.
EU-155	1.116E-01	7.734E-02	7.459E-02	3.946E-02	FAIL ABUN
TB-160	3.820E-02	1.133E-01	1.014E-01	5.782E-02	FAIL ABUN
HO-166M	3.713E-02	4.835E-02	4.336E-02	2.467E-02	NOT IDENT.
TM-171	-7.800E+00	2.100E+01	1.623E+01	1.071E+01	NOT IDENT.
LU-176	9.239E-03	1.922E-02	1.677E-02	9.806E-03	FAIL ABUN
LU-177	2.679E+00	1.554E+00	9.936E-01	7.930E-01	FAIL ABUN
LU-177M	-2.117E-01	1.478E-01	1.175E-01	7.543E-02	FAIL ABUN
HF-181	2.691E-02	3.716E-02	3.392E-02	1.896E-02	NOT IDENT.
W-181	-1.471E-01	2.627E-01	2.010E-01	1.341E-01	NOT IDENT.
TA-182	-1.207E-01	1.524E-01	1.169E-01	7.776E-02	FAIL ABUN
RE-183	1.018E-01	8.552E-02	7.981E-02	4.363E-02	FAIL ABUN
RE-184	6.053E-02	1.837E-01	1.612E-01	9.373E-02	NOT IDENT.
OS-185	-6.179E-03	3.264E-02	2.719E-02	1.665E-02	NOT IDENT.
RE-188	9.174E-02	1.305E-01	1.203E-01	6.659E-02	NOT IDENT.
W-188	-3.689E-01	6.801E+00	5.135E+00	3.470E+00	FAIL ABUN
IR-192	4.508E-03	2.916E-02	2.469E-02	1.488E-02	FAIL ABUN
AU-195	2.924E-01	1.731E-01	1.552E-01	8.834E-02	FAIL ABUN
TL-200	3.130E+02	7.368E+02	0.000E+00	3.759E+02	SHORT HLIF
TL-201	-4.720E+00	6.878E+00	5.933E+00	3.509E+00	NOT IDENT.
TL-202	4.180E-02	6.450E-02	5.890E-02	3.291E-02	NOT IDENT.
HG-203	1.031E-02	3.820E-02	2.968E-02	1.949E-02	NOT IDENT.
BI-207	-1.338E-02	4.421E-02	3.652E-02	2.255E-02	FAIL ABUN
TL-207	-1.899E-01	6.273E-01	4.569E-01	3.201E-01	FAIL ABUN
PO-209	-4.457E+00	5.525E+00	4.373E+00	2.819E+00	NOT IDENT.
PB-211	-4.547E-01	7.849E-01	6.249E-01	4.005E-01	NOT IDENT.
BI-212	1.101E+00	4.823E-01	3.192E-01	2.461E-01	FAIL ABUN
PO-215	-1.899E-01	6.273E-01	4.569E-01	3.201E-01	FAIL ABUN
RN-219	-5.350E-03	3.202E-01	2.841E-01	1.634E-01	FAIL ABUN
RN-220	-8.686E+00	1.986E+01	1.647E+01	1.013E+01	NOT IDENT.
RA-223	-1.899E-01	6.273E-01	4.569E-01	3.201E-01	FAIL ABUN
AC-227	9.099E-02	3.100E-01	2.709E-01	1.581E-01	FAIL ABUN
TH-227	9.099E-02	3.101E-01	2.709E-01	1.582E-01	FAIL ABUN
TH-229	1.886E-01	3.923E-01	3.532E-01	2.002E-01	FAIL ABUN
PA-231	2.767E-02	1.223E+00	1.045E+00	6.240E-01	FAIL ABUN
TH-231	-1.899E-01	6.273E-01	4.569E-01	3.201E-01	FAIL ABUN
U-231	2.988E-02	9.552E-01	7.367E-01	4.873E-01	FAIL ABUN
PA-233	-3.491E-04	5.011E-02	4.237E-02	2.557E-02	FAIL ABUN
PA-234	-2.410E-01	2.425E-01	1.842E-01	1.237E-01	FAIL ABUN
PA-234M	1.188E-02	3.751E+00	3.187E+00	1.914E+00	NOT IDENT.
U-235	6.073E-03	1.644E-01	1.451E-01	8.386E-02	FAIL ABUN
NP-236	-3.858E-02	6.007E-02	5.212E-02	3.065E-02	NOT IDENT.
NP-239	-6.065E-02	1.355E-01	1.217E-01	6.914E-02	FAIL ABUN
AM-241	1.489E-01	1.004E-01	8.651E-02	5.124E-02	NOT IDENT.
CM-243	-6.178E-02	6.788E-02	6.023E-02	3.463E-02	FAIL ABUN
AM-246	-3.905E-02	1.160E-01	9.632E-02	5.918E-02	NOT IDENT.
CM-247	1.880E-03	2.839E-02	2.531E-02	1.448E-02	FAIL ABUN
CF-249	1.059E-02	3.167E-02	2.876E-02	1.616E-02	NOT IDENT.
CF-251	2.026E-03	9.476E-02	8.424E-02	4.835E-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	234.8962
46.50	234.8962
46.50	234.8962
48.70	227.9451
49.72	225.8100
51.35	212.3079
52.39	224.1346
52.97	215.6672
53.15	215.7938
53.44	215.9966
54.07	198.5857
56.28	204.4744
56.28	204.4765
57.37	0.0000
57.53	258.2810
57.53	258.2828
57.60	258.3369
57.98	273.3218
57.98	273.3218
59.32	228.3202
59.32	228.3202
59.40	228.3755
59.54	214.8540
59.72	204.3732
60.01	207.5818
61.10	291.8633
61.14	291.8975
61.30	292.0352
63.00	284.3196
63.29	284.5580
63.29	284.5580
63.58	284.7964
64.28	326.7938
65.12	319.8859
65.20	315.3436
65.20	315.3436
66.05	282.1771
66.72	333.6833
66.83	333.7888
66.91	333.8613
67.20	314.4085
67.20	314.4085
67.75	329.9914
67.85	330.0824
68.90	329.8680
68.90	329.8680
69.30	352.3971
69.67	343.4097
70.82	359.3118
70.82	359.3118
70.83	359.3212
72.80	342.3569
72.87	342.4190
72.87	342.4190
74.67	381.1098
74.81	381.2474
74.81	381.2474
74.81	381.2474
74.81	381.2474
74.81	381.2474
74.81	381.2474
74.81	381.2474
74.97	381.4046
75.28	381.7093
75.70	382.1195
77.11	383.4879
77.11	383.4879

77.11	383.4879
77.11	383.4879
77.11	383.4879
77.11	383.4879
77.11	383.4879
78.38	384.7113
79.62	327.5717
79.80	327.7177
79.80	327.7177
80.11	287.9718
80.18	288.0212
80.30	288.1055
80.30	288.1055
80.57	288.2959
81.00	272.5665
81.07	272.6132
81.07	272.6132
81.07	272.6132
81.07	272.6132
82.60	373.0127
83.37	375.7144
83.78	345.4164
83.78	345.4164
83.78	345.4164
83.78	345.4164
84.21	289.2180
84.90	273.5075
85.43	325.7008
86.29	388.0565
86.50	388.2461
86.54	337.9196
86.59	337.9598
86.72	338.0614
86.79	338.1143
86.94	338.2328
87.30	338.5163
87.30	338.5163
87.30	338.5163
87.30	338.5163
87.30	338.5163
87.30	338.5163
87.57	307.7845
87.88	308.0056
88.03	308.1113
88.36	308.3459
88.47	308.4228
89.95	309.4648
91.11	246.2494
92.29	246.8994
92.38	246.9482
92.38	246.9482
93.35	247.4792
94.00	247.8333
94.67	248.1949
94.67	248.1979
94.90	248.3215
94.90	248.3215
94.90	248.3215
94.90	248.3215
95.87	230.5977
95.87	230.5977
96.73	279.2275
97.43	297.9546
98.44	232.7043
98.44	232.7058
98.88	217.8956
99.55	242.4484
99.55	242.4484
99.86	242.6077
100.00	242.6785
100.10	246.9167
103.18	269.5573
103.76	269.8795
105.00	230.8228
105.31	224.2003
108.00	275.5997
109.28	209.7822

111.00	254.9858
111.00	254.9858
111.76	251.0786
112.95	256.8102
115.19	255.3235
116.30	233.3867
117.00	243.2152
117.00	243.2152
117.66	248.7164
121.11	224.1443
121.62	228.7183
121.78	228.7849
122.06	229.7759
122.32	228.1360
122.32	228.1360
122.32	228.1360
122.32	228.1360
123.07	217.0681
127.23	228.8298
129.76	231.1767
131.20	213.1079
133.02	200.9502
133.54	225.5572
135.34	225.3527
136.00	235.4517
136.25	240.9244
136.48	248.1853
140.51	236.3235
140.51	0.0000
142.18	279.4780
142.65	252.5401
143.76	248.4602
144.24	242.3001
144.24	242.3001
144.24	242.3001
144.24	242.3001
145.22	229.9581
145.44	230.9471
147.16	253.4646
152.43	245.4562
152.70	238.2018
153.22	240.2350
154.21	247.9734
154.21	247.9734
154.21	247.9734
154.21	247.9734
155.03	218.7508
156.02	244.9654
158.56	214.3583
159.00	0.0000
159.00	233.9993
160.31	237.2493
161.27	243.1794
162.32	205.2989
162.64	230.6027
163.35	224.3018
163.89	234.7686
165.85	232.6287
167.43	242.5626
171.28	228.7804
171.86	232.7521
172.10	232.8322
176.55	203.8120
176.60	203.8273
181.06	216.1977
184.41	196.3861
185.71	245.9132
186.00	246.0066
190.27	235.1776
192.34	200.4049
193.63	197.8168
197.04	222.1785
198.01	204.8138
198.60	203.0055
200.40	216.2492
201.83	226.4858
202.84	215.9279
205.31	222.5281

208.36	204.0074
208.81	216.5364
209.75	216.7847
209.75	216.7847
210.97	194.2026
215.65	204.3134
216.55	189.4941
218.09	187.8332
222.10	181.6571
223.80	186.0627
226.40	203.8646
227.00	207.0505
227.08	207.0692
227.20	194.9160
228.16	189.0330
228.18	177.8572
228.18	177.8572
231.56	0.0000
235.69	201.4113
236.00	198.4052
236.00	198.4052
238.63	160.4227
238.63	160.4227
238.63	160.4227
238.63	160.4227
239.00	160.4878
240.98	160.8385
241.98	161.0162
241.98	161.0162
241.98	161.0162
244.69	147.5170
245.39	128.9808
247.94	143.3611
248.90	173.6661
249.79	153.0128
252.40	138.8258
252.85	145.1579
252.85	145.1579
254.15	0.0000
256.20	155.1031
256.20	155.1031
260.50	163.1675
260.90	154.8088
262.80	158.2794
264.65	144.6236
268.24	135.2846
268.79	152.8770
269.46	126.4230
269.46	126.4230
269.46	126.4230
269.46	126.4230
271.23	129.3088
273.65	131.2205
276.40	128.3716
277.35	165.9678
277.60	166.0088
277.60	166.0088
278.00	166.0750
278.60	149.5555
279.20	152.8616
279.53	152.9109
280.46	151.4390
281.68	112.9083
283.67	136.8289
284.30	135.8335
285.00	130.5319
285.90	145.7611
286.10	144.7087
286.10	144.7087
287.40	136.2411
288.45	0.0000
290.67	146.4285
290.80	149.7021
291.72	148.2027
293.26	0.0000
293.70	146.1961
295.21	146.4039
295.21	146.4039

295.21	146.4039
295.96	163.5132
296.50	150.5079
297.23	163.7085
298.57	163.9130
299.80	131.2793
299.80	131.2793
300.09	127.3764
300.09	127.3764
300.09	127.3764
300.09	127.3764
300.12	127.3788
301.29	101.8815
302.84	130.0023
303.76	90.5852
303.91	107.0691
304.40	114.6994
304.40	114.6994
304.84	120.9011
306.84	109.0084
308.46	125.7103
311.98	115.0492
316.51	117.7382
318.01	123.4545
319.02	145.8292
319.41	138.0847
320.08	121.4519
323.87	139.1861
323.87	139.1861
323.87	139.1861
323.87	139.1861
325.23	127.5983
328.77	126.3062
333.44	135.2686
334.20	137.0484
334.20	137.0484
334.30	137.0608
338.28	127.9021
338.28	127.9021
338.28	127.9021
338.28	127.9021
338.32	127.9067
338.32	127.9067
338.32	127.9067
340.50	81.6475
340.57	81.6533
344.27	97.2643
345.85	96.8217
350.59	0.0000
351.07	100.6722
351.92	100.7420
351.92	100.7420
351.92	100.7420
355.39	0.0000
356.01	89.5924
364.48	108.7066
366.43	100.7672
367.43	105.4835
367.94	0.0000
369.80	114.9723
374.96	115.4376
383.85	106.5471
387.95	103.3462
388.63	107.8185
391.69	109.8396
391.69	109.8396
392.90	109.9380
398.62	101.5052
400.65	106.1151
401.10	107.0435
401.81	101.7452
402.60	98.2323
404.84	113.5997
410.95	104.2223
411.60	103.3730
413.65	133.2330
414.70	100.9019
415.30	96.4381

415.76	93.7660
417.63	0.0000
418.52	102.0821
423.70	101.5513
427.08	89.9771
427.89	90.9378
432.53	82.1091
433.93	85.8416
439.47	101.7556
439.56	101.7607
439.89	101.7844
443.98	80.9196
444.90	103.0535
445.03	103.0620
445.03	103.0620
445.03	103.0620
453.90	75.9091
463.38	89.4287
468.07	82.2288
473.00	67.4934
475.06	83.5407
475.35	85.4333
476.78	99.6079
477.59	109.0615
477.96	99.6839
482.03	85.7999
484.57	101.9932
487.03	73.7760
490.36	0.0000
492.35	66.4314
497.08	71.3871
507.63	0.0000
510.53	0.0000
510.84	88.3115
511.00	88.3199
511.85	88.3662
511.85	88.3662
513.99	75.4003
513.99	75.4003
520.41	70.4781
520.65	74.3517
527.90	84.3715
528.96	0.0000
529.64	60.1874
529.87	0.0000
531.02	70.9237
537.32	63.3853
543.00	70.4443
546.56	0.0000
549.76	70.7190
552.65	79.6899
555.20	66.0124
563.23	75.2184
563.90	77.2264
568.70	84.3852
569.32	86.4000
569.50	87.4011
569.67	87.4092
573.80	70.6858
574.00	61.7313
574.64	65.7382
578.91	81.4680
579.30	0.0000
583.14	64.0449
585.48	73.7438
591.81	75.4051
592.07	72.3999
593.00	68.4109
595.88	65.4939
600.56	66.6687
602.52	0.0000
602.71	77.8694
602.71	77.8694
603.60	70.1479
604.41	64.7813
604.70	66.4108
609.31	71.0382



609.31	71.0382
609.31	71.0382
609.31	71.0382
610.33	71.0745
612.46	84.5736
614.37	91.1695
618.01	61.1664
621.84	72.5254
621.84	72.5254
631.29	70.8257
633.02	74.9983
633.10	75.0005
634.78	59.6408
635.90	61.7322
636.97	72.0593
645.85	64.1116
646.12	57.9141
656.30	62.3676
657.75	63.4517
657.90	0.0000
661.65	73.9966
661.65	73.9966
664.57	0.0000
666.33	59.5414
666.33	59.5414
675.00	56.6466
677.61	66.1704
685.20	57.9793
692.80	60.3051
695.00	65.6631
696.49	78.4263
696.49	78.4263
697.00	66.7856
697.49	66.8010
698.33	63.6456
698.50	63.6493
699.00	67.9082
702.63	76.5286
706.10	59.6179
706.58	0.0000
706.67	71.3470
709.31	61.8392
711.68	51.2344
713.82	76.9263
717.42	40.6684
720.50	74.7139
721.93	0.0000
722.20	60.0640
722.78	51.4966
722.78	51.4966
722.89	51.4995
722.95	51.5010
723.30	48.0744
724.18	51.5288
727.18	59.1240
733.00	62.0824
735.90	52.8835
739.58	60.5374
742.81	56.2958
744.21	60.6638
747.13	53.1496
751.79	66.3018
752.31	64.1441
753.82	44.6035
755.35	52.2539
756.15	65.3412
756.87	61.0039
763.93	57.6968
765.79	48.9945
766.42	47.2579
766.84	47.2658
776.49	76.9086
778.00	57.1702
778.57	57.1844
778.89	59.3921
783.80	58.4152
785.46	57.3527
792.07	51.3207

795.84	53.1753
796.30	56.7313
798.80	62.1147
801.93	68.8607
805.60	62.2925
810.29	79.1318
810.76	59.0815
815.85	43.5667
817.79	44.7192
818.51	53.6792
819.60	46.9911
826.30	49.3644
828.27	0.0000
831.60	57.3408
831.96	57.3501
834.83	66.6488
836.80	0.0000
846.75	66.0636
848.13	58.8571
856.28	0.0000
856.80	43.9165
860.37	33.3634
867.32	44.0994
867.82	54.7544
871.10	51.1697
873.19	42.9816
874.81	50.3285
875.33	0.0000
876.40	47.6138
879.36	46.7517
880.27	51.3529
880.51	51.3577
881.50	55.0474
883.24	45.9033
884.67	47.7661
889.25	57.0518
896.60	49.8313
898.02	48.0111
899.00	47.1053
903.28	34.6930
911.07	42.6825
911.07	42.6825
911.07	42.6825
919.63	48.6115
920.93	43.7710
925.00	39.1740
925.24	42.9094
926.50	51.3289
935.52	34.3329
937.48	56.2222
944.10	44.1474
946.00	56.3979
949.00	54.5775
962.29	55.1560
964.01	59.9208
966.15	53.9691
968.20	54.0094
969.11	54.0275
969.11	54.0275
969.11	54.0275
977.42	51.3356
980.50	40.9224
983.50	37.1557
989.30	39.1402
996.32	41.1513
1001.03	41.2185
1001.68	45.0631
1004.76	45.1113
1021.30	0.0000
1024.50	0.0000
1034.80	36.8496
1036.00	34.9242
1037.82	41.7402
1038.57	40.7798
1038.76	0.0000
1045.16	37.9526
1046.59	35.0490
1048.07	50.6518

1050.47	38.0193
1050.47	38.0193
1062.04	45.0162
1063.62	52.8715
1076.63	46.2151
1077.35	45.2431
1078.86	45.2655
1085.78	50.2978
1099.22	53.4885
1112.02	33.8157
1112.84	38.6895
1115.52	46.4661
1120.29	44.8748
1120.29	44.8748
1120.29	44.8748
1120.29	44.8748
1120.51	44.8770
1121.28	56.5256
1124.00	0.0000
1129.67	47.0069
1131.51	0.0000
1147.95	0.0000
1167.94	55.6633
1173.22	47.6426
1175.09	56.7984
1177.93	46.6963
1189.05	45.8350
1204.90	63.4501
1205.75	0.0000
1213.00	63.6015
1221.42	56.5603
1230.97	50.5313
1235.34	79.5078
1236.41	0.0000
1238.25	60.9734
1246.25	42.4694
1260.41	0.0000
1271.85	28.1733
1274.45	40.7253
1274.54	40.7253
1291.56	36.7244
1298.22	0.0000
1312.09	39.0451
1325.50	30.7162
1325.50	30.7162
1332.49	33.9578
1333.61	27.5996
1360.21	26.7285
1362.66	0.0000
1365.15	22.4817
1368.21	26.7859
1368.53	0.0000
1376.25	34.3594
1384.27	36.5832
1394.10	22.6540
1395.20	19.4238
1407.95	27.0667
1434.06	17.4398
1436.60	25.0855
1457.56	0.0000
1460.81	24.1431
1489.15	20.2616
1509.49	20.3636
1596.49	26.8044
1620.62	8.1456
1678.03	0.0000
1691.02	9.6549
1691.02	9.6549
1706.46	0.0000
1750.46	0.0000
1764.49	11.7725
1764.49	11.7725
1764.49	11.7725
1764.49	11.7725
1770.23	5.0516
1771.40	8.4215
1791.20	0.0000
1808.65	14.8535

1836.01

16.9294

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148010

Total Uranium Activity	5.5634E+00	ug/g
Total Uranium Counting Unc.	4.0690E+00	ug/g
Total Uranium Tpu	2.0760E-06	ug/g
Total Uranium Mda	2.0801E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148010
*  ANALYST       : MXR1                             DETECTOR    : GAM11
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 15:56:55.27          SAMPLE ALQT: 138.000 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.481E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.332E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.326E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.606E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 17:59:29.87

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148011.CNF;1
Sample date   : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:57:21
Sample ID    : G244148011. Sample quantity : 1.38810E+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 : 940268. 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	46.39*	59	534	1.08	92.55	89	9	8.20E-03	75.3	
2	0	63.26*	57	794	1.18	126.29	122	9	7.92E-03	97.6	
3	3	74.77	661	670	1.15	149.31	145	14	9.18E-02	7.6	9.76E-01
4	3	77.00*	996	536	1.06	153.77	145	14	1.38E-01	5.0	
5	4	84.03*	78	607	1.38	167.85	164	28	1.08E-02	58.3	1.89E+00
6	4	87.15	311	567	1.39	174.08	164	28	4.32E-02	14.2	
7	4	89.90	202	399	1.06	179.57	164	28	2.81E-02	17.3	
8	4	92.57*	264	480	1.32	184.91	164	28	3.66E-02	18.9	
9	0	129.44	49	434	1.23	258.68	253	8	6.83E-03	74.8	
10	0	185.63*	198	434	1.54	371.09	366	11	2.75E-02	23.6	
11	0	209.46	139	342	0.96	418.76	414	10	1.93E-02	26.4	
12	4	238.44*	1172	231	1.28	476.73	471	20	1.63E-01	3.8	1.23E+00
13	4	241.46	328	278	1.83	482.77	471	20	4.55E-02	14.3	
14	1	294.95*	383	192	1.35	589.79	585	19	5.32E-02	8.3	5.35E-01
15	1	299.92	98	181	1.43	599.73	585	19	1.36E-02	27.8	
16	0	327.61	84	135	1.58	655.11	650	10	1.17E-02	28.1	
17	0	338.14*	279	295	1.51	676.19	669	15	3.87E-02	14.9	
18	0	351.67*	652	230	1.42	703.26	698	12	9.06E-02	6.2	
19	0	462.07	147	112	1.63	924.12	917	14	2.04E-02	17.4	
20	0	510.58*	174	163	2.13	1021.17	1015	15	2.41E-02	20.3	
21	0	582.91*	368	140	1.65	1165.87	1160	15	5.11E-02	9.2	
22	0	608.96*	460	171	1.71	1217.99	1211	14	6.39E-02	7.8	
23	0	727.19	152	95	1.76	1454.53	1447	16	2.11E-02	16.8	
24	0	860.58	76	69	1.23	1721.42	1716	13	1.05E-02	25.7	
25	0	910.90*	274	97	1.59	1822.09	1814	16	3.81E-02	10.5	
26	1	964.13	58	51	2.06	1928.60	1924	20	8.05E-03	23.8	6.28E-01
27	1	968.51*	117	70	2.08	1937.36	1924	20	1.62E-02	17.7	
28	0	1119.38*	81	71	1.59	2239.23	2233	16	1.12E-02	26.0	
29	0	1459.86*	766	77	2.12	2920.50	2911	22	1.06E-01	4.7	
30	0	1763.46	89	12	2.36	3528.03	3520	16	1.24E-02	13.7	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 17:59:34

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148011.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:57:21
Sample ID        : G244148011           Sample quantity  : 138.81 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

```

## 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	*	1.864E+01	2.085E+00	7.278E-01	4.450E-02	25.612
CD-109	+	88.03	*	3.197E+00	9.421E-01	9.499E-01	7.495E-02	3.365
SN-126	+	64.28		2.174E-01	4.258E-01	3.955E-01	6.159E-02	0.550
	+	86.94		1.304E+00	6.527E-01	3.863E-01	1.592E-01	3.376
	+	87.57	*	3.137E-01	9.245E-02	9.309E-02	7.364E-03	3.370
TL-208		277.35		4.339E-01	4.260E-01	7.016E-01	8.217E-02	0.619
	+	510.84		8.568E-01	3.601E-01	2.559E-01	2.781E-02	3.348
	+	583.14	*	5.240E-01	1.058E-01	6.946E-02	5.750E-03	7.543
	+	860.37		1.023E+00	5.323E-01	5.226E-01	4.406E-02	1.957
BI-210	+	46.50	*	5.413E-01	8.161E-01	6.960E-01	5.674E-02	0.778
PB-210	+	46.50	*	5.413E-01	8.161E-01	6.960E-01	5.674E-02	0.778
PO-210	+	46.50	*	5.413E-01	8.158E-01	6.960E-01	4.962E-02	0.778
BI-211		72.87		3.143E+00	2.144E+00	3.385E+00	2.960E-01	0.928
	+	351.07	*	3.895E+00	5.599E-01	3.406E-01	2.483E-02	11.437
PB-212	+	74.81		2.270E+00	4.503E-01	3.618E-01	4.602E-02	6.275
	+	77.11		2.038E+00	2.679E-01	2.163E-01	1.837E-02	9.421
	+	87.30		1.451E+00	4.515E-01	4.302E-01	5.489E-02	3.372
	+	238.63	*	1.507E+00	1.789E-01	8.941E-02	8.122E-03	16.854
	+	300.09		1.951E+00	1.099E+00	1.238E+00	1.178E-01	1.576
PO-212	+	74.81		2.270E+00	4.503E-01	3.618E-01	4.602E-02	6.275
	+	77.11		2.038E+00	2.679E-01	2.163E-01	1.837E-02	9.421
	+	87.30		1.451E+00	4.515E-01	4.302E-01	5.489E-02	3.372
		115.19		-2.555E+00	3.394E+00	5.366E+00	6.222E-01	-0.476
	+	238.63	*	1.507E+00	1.789E-01	8.941E-02	8.122E-03	16.854
	+	300.09		1.951E+00	1.099E+00	1.238E+00	1.178E-01	1.576
BI-214	+	609.31	*	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
	+	1120.29		1.126E+00	5.932E-01	4.712E-01	4.215E-02	2.389
	+	1764.49		1.694E+00	4.746E-01	3.641E-01	2.068E-02	4.653
PB-214	+	74.81		3.912E+00	7.432E-01	6.234E-01	7.090E-02	6.275
	+	77.11		3.493E+00	5.309E-01	3.708E-01	4.231E-02	9.421
	+	87.30		2.485E+00	7.572E-01	7.370E-01	8.148E-02	3.372
	+	241.98		2.532E+00	7.641E-01	5.387E-01	5.215E-02	4.701
	+	295.21		1.339E+00	2.572E-01	2.286E-01	2.239E-02	5.860
	+	351.92	*	1.355E+00	2.072E-01	1.188E-01	1.063E-02	11.409



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		3.912E+00	7.432E-01	6.234E-01	7.090E-02	6.275
	+	77.11		3.493E+00	5.309E-01	3.708E-01	4.231E-02	9.421
	+	87.30		2.485E+00	7.572E-01	7.370E-01	8.148E-02	3.372
	+	241.98		2.532E+00	7.641E-01	5.387E-01	5.215E-02	4.701
	+	295.21		1.339E+00	2.572E-01	2.286E-01	2.239E-02	5.860
PO-216	+	351.92	*	1.355E+00	2.072E-01	1.188E-01	1.063E-02	11.409
	+	74.81		2.270E+00	4.503E-01	3.618E-01	4.602E-02	6.275
	+	77.11		2.038E+00	2.679E-01	2.163E-01	1.837E-02	9.421
	+	87.30		1.451E+00	4.515E-01	4.302E-01	5.489E-02	3.372
	+	238.63	*	1.507E+00	1.789E-01	8.941E-02	8.122E-03	16.854
PO-218	+	300.09		1.951E+00	1.099E+00	1.238E+00	1.178E-01	1.576
	+	74.81		3.912E+00	7.432E-01	6.234E-01	7.090E-02	6.275
	+	77.11		3.493E+00	5.309E-01	3.708E-01	4.231E-02	9.421
	+	87.30		2.485E+00	7.572E-01	7.370E-01	8.148E-02	3.372
	+	241.98		2.532E+00	7.641E-01	5.387E-01	5.215E-02	4.701
RA-224	+	295.21		1.339E+00	2.572E-01	2.286E-01	2.239E-02	5.860
	+	351.92	*	1.355E+00	2.072E-01	1.188E-01	1.063E-02	11.409
	+	240.98	*	4.802E+00	1.424E+00	1.018E+00	8.036E-02	4.717
	+	609.31	*	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
	+	1120.29		1.126E+00	5.932E-01	4.712E-01	4.215E-02	2.389
AC-228	+	1764.49		1.694E+00	4.746E-01	3.641E-01	2.068E-02	4.653
	+	338.32		1.829E+00	9.269E-01	3.956E-01	1.620E-01	4.624
	+	911.07	*	1.752E+00	4.109E-01	2.727E-01	2.831E-02	6.425
	+	969.11		1.312E+00	5.530E-01	4.593E-01	1.049E-01	2.856
	+	338.32		1.829E+00	9.269E-01	3.956E-01	1.620E-01	4.624
RA-228	+	911.07	*	1.752E+00	4.109E-01	2.727E-01	2.831E-02	6.425
	+	969.11		1.312E+00	5.530E-01	4.593E-01	1.049E-01	2.856
	+	74.81		2.307E+00	4.045E-01	3.677E-01	3.200E-02	6.275
	+	77.11		2.071E+00	2.723E-01	2.198E-01	1.867E-02	9.421
	+	87.30		1.474E+00	4.345E-01	4.372E-01	3.465E-02	3.372
TH-228	+	238.63	*	1.531E+00	1.818E-01	9.086E-02	8.254E-03	16.854
	+	300.09		1.983E+00	1.609E+00	1.258E+00	7.438E-01	1.576
	+	609.31	*	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
	+	1120.29		1.126E+00	5.932E-01	4.711E-01	4.215E-02	2.389
	+	1764.49		1.694E+00	4.746E-01	3.641E-01	2.068E-02	4.653
TH-230	+	338.32		1.829E+00	5.607E-01	3.956E-01	2.754E-02	4.624
	+	911.07	*	1.752E+00	4.109E-01	2.727E-01	2.831E-02	6.425
	+	969.11		1.312E+00	5.530E-01	4.593E-01	1.049E-01	2.856
	+	63.29	*	5.491E-01	1.077E+00	9.693E-01	1.779E-01	0.567
	+	92.38		1.836E+00	7.679E-01	6.461E-01	1.163E-01	2.841
U-234	+	609.31	*	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
	+	1120.29		1.126E+00	5.932E-01	4.711E-01	4.215E-02	2.389
	+	1764.49		1.694E+00	4.746E-01	3.641E-01	2.068E-02	4.653
	+	86.50	*	9.212E-01	3.314E-01	2.725E-01	6.028E-02	3.380
	+	95.87		-1.358E-01	8.825E-01	1.298E+00	3.211E-01	-0.105
U-238	+	63.29	*	5.491E-01	1.077E+00	9.693E-01	1.779E-01	0.567
	+	92.38		1.836E+00	7.102E-01	6.461E-01	5.454E-02	2.841
	+	74.67	*	3.680E-01	6.440E-02	5.864E-02	5.065E-03	6.277
	+	86.72		3.454E+01	1.018E+01	1.023E+01	8.136E-01	3.378
	+							

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-6.385E-01	3.478E+00	5.640E+00	6.750E-01	-0.113
		142.18		-1.122E+01	1.947E+01	3.003E+01	3.182E+00	-0.374
ANH-511	+	511.00	*	1.851E-01	7.623E-02	5.529E-02	3.858E-03	3.347

---- 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	*	-9.797E-02	3.683E-01	6.055E-01	4.553E-02	-0.162
NA-22		1274.54	*	-2.003E-02	5.571E-02	8.987E-02	5.073E-03	-0.223
NA-24		1368.53	*	-2.138E+00	5.571E-02	Half-Life	too short	
AL-26		1129.67		-9.073E-01	1.943E+00	2.833E+00	1.679E-01	-0.320
		1808.65	*	-1.036E-02	3.397E-02	5.333E-02	3.010E-03	-0.194
TI-44		67.85		-1.277E-02	2.531E-02	4.009E-02	3.630E-03	-0.319
	+	78.38	*	3.760E-01	4.945E-02	5.509E-02	4.639E-03	6.826
SC-46		889.25	*	-1.730E-02	4.829E-02	7.761E-02	5.877E-03	-0.223
	+	1120.51		1.944E-01	1.016E-01	1.323E-01	7.956E-03	1.469
V-48		944.10		1.031E+00	1.080E+00	1.916E+00	1.399E-01	0.538
		983.50	*	3.941E-02	9.720E-02	1.644E-01	1.163E-02	0.240
		1312.09		-9.102E-03	1.074E-01	1.767E-01	1.002E-02	-0.052
CR-51		320.08	*	3.469E-01	4.052E-01	6.915E-01	5.381E-02	0.502
MN-52		744.21		1.013E-01	3.505E-01	5.756E-01	4.672E-02	0.176
		848.13		-2.769E+00	9.196E+00	1.493E+01	1.162E+00	-0.186
		935.52		4.681E-01	3.789E-01	6.772E-01	4.974E-02	0.691
		1246.25		-2.797E+00	9.172E+00	1.488E+01	8.331E-01	-0.188
		1333.61		-8.825E-02	7.136E+00	1.130E+01	6.428E-01	-0.008
		1434.06	*	-2.101E-01	3.441E-01	5.255E-01	3.020E-02	-0.400
MN-54		834.83	*	-1.657E-02	4.718E-02	7.663E-02	6.013E-03	-0.216
CO-56		846.75	*	-2.239E-02	4.766E-02	7.629E-02	5.946E-03	-0.293
		977.42		-1.006E+00	3.931E+00	6.170E+00	4.388E-01	-0.163
		1037.82		-1.233E-02	3.997E-01	6.506E-01	4.739E-02	-0.019
		1175.09		-4.751E-01	2.610E+00	4.137E+00	2.275E-01	-0.115
		1238.25		1.795E-01	1.058E-01	1.954E-01	1.165E-02	0.919
		1360.21		6.217E-01	1.176E+00	2.053E+00	1.172E-01	0.303
		1771.40		-1.046E+00	3.961E-01	4.209E-01	2.388E-02	-2.484
CO-57		122.06	*	-2.661E-03	2.443E-02	3.965E-02	5.016E-03	-0.067
		136.48		1.137E-01	2.093E-01	3.457E-01	4.046E-02	0.329
CO-58		810.76	*	-1.645E-02	4.731E-02	7.687E-02	6.123E-03	-0.214
FE-59		142.65		-1.018E+00	3.051E+00	4.759E+00	5.018E-01	-0.214
		192.34		-4.996E-01	9.444E-01	1.566E+00	2.032E-01	-0.319
		1099.22	*	-4.564E-02	1.204E-01	1.890E-01	1.351E-02	-0.241
		1291.56		4.491E-02	1.485E-01	2.531E-01	1.849E-02	0.177
CO-60		1173.22		-4.896E-02	5.431E-02	8.027E-02	4.412E-03	-0.610
		1332.49	*	-2.865E-03	4.899E-02	7.724E-02	4.393E-03	-0.037
ZN-65		1115.52	*	1.109E-02	1.113E-01	1.564E-01	9.497E-03	0.071
GE-68		1077.35	*	5.920E-01	1.554E+00	2.608E+00	1.667E-01	0.227
AS-73		53.44	*	9.190E-02	2.285E-01	3.771E-01	3.186E-02	0.244
AS-74		595.88	*	-8.652E-02	1.183E-01	1.842E-01	1.415E-02	-0.470
		634.78		1.894E-01	4.284E-01	7.215E-01	5.749E-02	0.263

---- 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		5.609E-01	2.619E+00	4.017E+00	4.376E-01	0.140
		96.73		-6.481E-01	7.677E-01	1.063E+00	1.476E-01	-0.609
		121.11		7.896E-03	1.285E-01	2.103E-01	3.031E-02	0.038
		136.00		1.324E-02	3.970E-02	6.512E-02	7.356E-03	0.203
		198.60		1.098E+00	1.973E+00	3.313E+00	2.960E-01	0.332
		264.65	*	-2.139E-03	4.442E-02	7.350E-02	5.758E-03	-0.029
		279.53		-4.717E-02	1.149E-01	1.859E-01	1.496E-02	-0.254
		303.91		-3.168E-01	2.489E+00	3.547E+00	3.768E-01	-0.089
		400.65		-1.419E-01	3.116E-01	4.712E-01	4.331E-02	-0.301
BR-77	+	87.88		9.361E+02	2.759E+02	3.666E+02	2.894E+01	2.553
		200.40		5.174E+01	2.304E+02	3.931E+02	3.114E+01	0.132
	+	239.00		3.285E+02	3.610E+01	5.066E+01	4.002E+00	6.484
		249.79		3.540E+01	9.044E+01	1.533E+02	1.206E+01	0.231
		281.68		-1.686E+02	1.286E+02	1.972E+02	1.512E+01	-0.855
		297.23		2.072E+02	8.413E+01	1.503E+02	1.130E+01	1.379
		303.76		1.755E+00	2.827E+02	4.070E+02	3.032E+01	0.004
		439.47		-7.308E+01	2.121E+02	3.497E+02	2.209E+01	-0.209
		484.57		-8.616E+00	3.557E+02	5.930E+02	3.998E+01	-0.015
		520.65	*	-1.855E+00	1.654E+01	2.725E+01	1.925E+00	-0.068
		574.64		-6.967E+01	3.378E+02	5.483E+02	4.119E+01	-0.127
		578.91		-9.444E+01	1.705E+02	2.304E+02	1.739E+01	-0.410
		585.48		9.816E+02	3.720E+02	6.194E+02	4.707E+01	1.585
		755.35		1.632E+01	2.926E+02	4.716E+02	3.819E+01	0.035
		817.79		2.533E+01	2.229E+02	3.749E+02	2.968E+01	0.068
SR-82		698.33		-2.588E+01	4.518E+01	7.001E+01	5.716E+00	-0.370
		776.49	*	-3.232E-01	4.873E-01	7.778E-01	6.260E-02	-0.416
		1395.20		-3.072E+00	1.384E+01	2.224E+01	1.274E+00	-0.138
RB-83		520.41	*	-9.829E-05	8.146E-02	1.352E-01	9.547E-03	-0.001
		529.64		-5.759E-03	1.329E-01	2.196E-01	1.568E-02	-0.026
		552.65		-9.461E-02	2.427E-01	3.905E-01	2.864E-02	-0.242
RB-84		881.50	*	-1.124E-02	9.120E-02	1.497E-01	1.140E-02	-0.075
KR-85		513.99	*	7.965E+00	9.083E+00	1.405E+01	9.840E-01	0.567
SR-85		513.99	*	4.129E-02	4.709E-02	7.282E-02	5.101E-03	0.567
RB-86		1076.63	*	4.303E-01	1.025E+00	1.726E+00	1.104E-01	0.249
Y-88		898.02		-4.359E-02	5.334E-02	8.239E-02	6.236E-03	-0.529
		1836.01	*	-1.589E-03	3.796E-02	6.248E-02	3.519E-03	-0.025
ZR-88		392.90	*	-1.336E-02	3.651E-02	5.735E-02	3.359E-03	-0.233
Y-91		1204.90	*	5.861E+00	2.174E+01	3.709E+01	2.056E+00	0.158
NB-94		702.63	*	2.402E-02	4.161E-02	6.993E-02	5.708E-03	0.343
		871.10		8.317E-03	4.677E-02	7.854E-02	6.026E-03	0.106
NB-95		765.79	*	8.005E-02	5.815E-02	1.045E-01	8.435E-03	0.766
NB-95M		235.69	*	1.837E-01	1.446E-01	2.252E-01	2.083E-02	0.816
ZR-95		724.18		1.354E-01	1.512E-01	2.264E-01	2.022E-02	0.598
		756.15	*	-4.112E-02	9.542E-02	1.480E-01	1.335E-02	-0.278
NB-97		657.90	*	6.103E-02	9.542E-02	Half-Life	too short	
		1024.50		2.103E+00	9.542E-02	Half-Life	too short	
ZR-97		254.15		-1.529E+01	9.542E-02	Half-Life	too short	
		355.39		-9.193E+00	9.542E-02	Half-Life	too short	
		507.63	*	1.611E+01	9.542E-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			-1.095E+01	9.542E-02	Half-Life	too short	
	1021.30			1.733E+01	9.542E-02	Half-Life	too short	
	1147.95			-5.659E+00	9.542E-02	Half-Life	too short	
	1362.66			-1.178E+01	9.542E-02	Half-Life	too short	
	1750.46			-1.101E+01	9.542E-02	Half-Life	too short	
MO-99	140.51			-3.711E+01	3.687E+01	5.459E+01	1.552E+01	-0.680
	181.06			-1.029E+01	2.677E+01	3.675E+01	6.597E+00	-0.280
	366.43			-7.882E+01	1.193E+02	1.846E+02	1.188E+01	-0.427
	739.58	*		-1.233E+01	1.972E+01	3.003E+01	4.478E+00	-0.411
	778.00			-5.434E+01	5.642E+01	8.795E+01	7.076E+00	-0.618
TC-99M	140.51	*		-7.496E+11	5.642E+01	Half-Life	too short	
RH-101	127.23			1.460E-02	3.644E-02	5.392E-02	6.547E-03	0.271
	198.01	*		2.521E-02	3.554E-02	5.998E-02	4.750E-03	0.420
	325.23			-1.762E-02	2.475E-01	3.516E-01	2.520E-02	-0.050
RH-102	418.52			-2.536E-01	3.379E-01	5.129E-01	3.135E-02	-0.494
	475.06	*		1.549E-02	3.362E-02	5.593E-02	3.722E-03	0.277
	631.29			-5.187E-02	6.798E-02	1.046E-01	8.309E-03	-0.496
	697.49			-3.077E-02	9.755E-02	1.541E-01	1.259E-02	-0.200
	766.84			2.308E-01	1.472E-01	2.662E-01	2.149E-02	0.867
	1046.59			-6.147E-02	1.454E-01	2.284E-01	1.516E-02	-0.269
	1112.84			-1.510E-01	2.944E-01	3.781E-01	2.300E-02	-0.399
RU-103	497.08	*		9.131E-03	4.878E-02	8.217E-02	1.082E-02	0.111
	610.33	+		1.361E+01	3.060E+00	3.299E+00	5.369E-01	4.125
RH-106	511.85	+		9.262E-01	3.815E-01	5.009E-01	3.499E-02	1.849
	621.84	*		-1.135E-01	3.786E-01	6.047E-01	7.794E-02	-0.188
	1050.47			1.781E-01	3.038E+00	4.975E+00	3.287E-01	0.036
RU-106	511.85	+		9.262E-01	3.815E-01	5.009E-01	3.499E-02	1.849
	621.84	*		-1.135E-01	3.784E-01	6.047E-01	4.762E-02	-0.188
	1050.47			1.781E-01	3.038E+00	4.975E+00	3.287E-01	0.036
AG-108M	433.93	*		-1.021E-02	3.544E-02	5.869E-02	3.948E-03	-0.174
	614.37			2.411E-02	5.146E-02	7.613E-02	6.236E-03	0.317
	722.95			-5.297E-02	6.364E-02	8.047E-02	6.843E-03	-0.658
AG-110M	657.75	*		1.120E-02	4.222E-02	6.995E-02	5.876E-03	0.160
	677.61			-1.233E-01	4.063E-01	6.446E-01	5.428E-02	-0.191
	706.67			1.275E-02	2.650E-01	4.294E-01	3.612E-02	0.030
	763.93			-1.163E-01	2.251E-01	3.659E-01	3.051E-02	-0.318
	884.67			4.895E-03	5.912E-02	9.859E-02	7.800E-03	0.050
	937.48			-5.210E-03	1.446E-01	2.333E-01	1.796E-02	-0.022
	1384.27			-6.584E-02	1.969E-01	3.128E-01	1.903E-02	-0.210
IN-111	171.28			-2.387E-01	1.292E+00	2.038E+00	1.600E-01	-0.117
	245.39	*		-3.232E-01	1.536E+00	2.223E+00	1.752E-01	-0.145
IN-113M	391.69	*		-1.043E-02	5.215E-02	8.279E-02	5.159E-03	-0.126
SN-113	391.69	*		-1.043E-02	5.215E-02	8.279E-02	5.159E-03	-0.126
IN-114M	190.27	*		1.007E-01	2.127E-01	3.070E-01	2.426E-02	0.328
CD-115	260.90			1.266E+01	1.870E+02	3.115E+02	2.433E+01	0.041
	492.35			-3.952E+00	5.985E+01	9.941E+01	6.772E+00	-0.040
	527.90	*		3.688E+00	1.847E+01	3.099E+01	2.209E+00	0.119
SN-117M	156.02			-1.101E+00	2.637E+00	4.153E+00	3.752E-01	-0.265
	158.56	*		4.668E-03	6.149E-02	9.880E-02	8.627E-03	0.047

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122	563.90	*		2.197E+00	3.378E+00	5.782E+00	4.294E-01	0.380
	692.80			4.626E+01	7.204E+01	1.216E+02	9.933E+00	0.380
I-123	159.00	*		-8.289E+00	7.204E+01	Half-Life	too short	
	528.96			-6.252E+02	7.204E+01	Half-Life	too short	
TE-123M	159.00	*		-1.092E-02	3.010E-02	4.740E-02	4.139E-03	-0.230
I-124	602.71	*		-6.613E-01	1.130E+00	1.511E+00	1.169E-01	-0.437
	722.78			-4.180E+00	7.657E+00	1.001E+01	8.154E-01	-0.418
	1325.50			7.828E+00	4.819E+01	8.113E+01	4.609E+00	0.096
	1376.25			6.876E+01	4.705E+01	8.745E+01	5.000E+00	0.786
	1509.49			1.907E+01	2.350E+01	4.189E+01	2.415E+00	0.455
	1691.02			-1.913E+00	5.483E+00	8.337E+00	4.774E-01	-0.230
SB-124	602.71			-3.269E-02	5.585E-02	7.473E-02	5.779E-03	-0.437
	645.85			1.045E-01	6.375E-01	1.050E+00	9.030E-02	0.099
	709.31			-1.689E+00	3.641E+00	5.677E+00	4.632E-01	-0.298
	713.82			2.115E+00	2.226E+00	3.802E+00	4.453E-01	0.556
	722.78			-2.996E-01	5.488E-01	7.173E-01	5.985E-02	-0.418
	968.20	+		1.367E+01	4.941E+00	7.531E+00	5.397E-01	1.815
	1045.16			-4.623E-01	3.463E+00	5.164E+00	3.433E-01	-0.090
	1325.50			5.993E-01	3.689E+00	6.210E+00	3.528E-01	0.096
	1368.21			-1.546E+00	2.000E+00	2.976E+00	3.521E-01	-0.520
	1436.60			-2.755E-01	4.883E+00	7.975E+00	4.584E-01	-0.035
	1691.02	*		-3.235E-02	9.270E-02	1.409E-01	8.778E-03	-0.230
SB-125	427.89	*		-1.755E-02	1.063E-01	1.777E-01	1.144E-02	-0.099
	463.38	+		1.400E+00	4.975E-01	6.169E-01	4.572E-02	2.269
	600.56			-1.413E-01	2.253E-01	3.428E-01	2.886E-02	-0.412
	635.90			1.014E-01	3.199E-01	5.337E-01	4.656E-02	0.190
TE-125M	109.28	*		4.533E+00	8.771E+00	1.466E+01	1.781E+00	0.309
I-126	388.63			2.016E-01	2.408E-01	4.065E-01	2.407E-02	0.496
	666.33	*		-2.671E-03	2.436E-01	3.954E-01	3.226E-02	-0.007
	753.82			2.084E+00	2.005E+00	3.456E+00	2.800E-01	0.603
SB-126	223.80			3.813E-01	4.347E+00	7.326E+00	5.807E-01	0.052
	278.60			2.490E+00	2.770E+00	4.755E+00	3.658E-01	0.524
	296.50			1.074E+01	2.101E+00	3.804E+00	2.864E-01	2.823
	414.70			4.080E-02	9.293E-02	1.526E-01	9.274E-03	0.267
	415.30			2.492E+00	7.611E+00	1.242E+01	7.554E-01	0.201
	555.20			1.970E+00	5.188E+00	8.765E+00	6.447E-01	0.225
	573.80			6.214E-01	1.292E+00	2.193E+00	1.646E-01	0.283
	593.00			-2.228E-01	1.215E+00	1.968E+00	1.507E-01	-0.113
	656.30			6.804E-01	4.373E+00	7.190E+00	5.838E-01	0.095
	666.33			-1.119E-03	1.021E-01	1.656E-01	1.351E-02	-0.007
	675.00			1.313E-01	2.734E+00	4.449E+00	3.632E-01	0.030
	695.00			5.138E-02	1.031E-01	1.725E-01	1.409E-02	0.298
	697.00			-5.667E-02	3.657E-01	5.850E-01	4.776E-02	-0.097
	720.50	*		6.111E-02	2.248E-01	3.212E-01	2.618E-02	0.190
	856.80			2.740E-01	6.935E-01	1.034E+00	8.011E-02	0.265
	989.30			-1.837E+00	1.697E+00	2.513E+00	1.768E-01	-0.731
	1034.80			2.834E+00	1.167E+01	1.944E+01	1.308E+00	0.146
	1213.00			2.173E+00	5.971E+00	1.023E+01	5.684E-01	0.212
SB-127	61.10			2.520E+01	3.065E+01	4.817E+01	5.853E+00	0.523

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	252.40			-2.368E+00	5.318E+00	8.506E+00	3.570E+00	-0.278
	290.80			1.363E+01	3.038E+01	4.521E+01	4.848E+00	0.302
	411.60			-1.316E+01	1.786E+01	2.713E+01	3.994E+00	-0.485
	444.90			-6.701E-01	1.293E+01	2.167E+01	2.476E+00	-0.031
	473.00			-3.318E-01	2.268E+00	3.760E+00	4.487E-01	-0.088
	543.00			-1.263E+00	2.461E+01	4.057E+01	5.632E+00	-0.031
	603.60			-9.538E+00	2.003E+01	2.710E+01	3.310E+00	-0.352
	685.20	*		-2.305E+00	2.115E+00	3.117E+00	3.543E-01	-0.739
	698.50			-1.191E+01	2.332E+01	3.620E+01	5.720E+00	-0.329
	722.20			-3.314E+00	5.123E+01	7.068E+01	7.865E+00	-0.047
	783.80			7.623E+00	5.562E+00	9.989E+00	1.230E+00	0.763
XE-127	57.60			-2.048E+00	2.010E+00	3.290E+00	3.041E-01	-0.622
	145.22			5.267E-01	7.550E-01	1.247E+00	1.280E-01	0.422
	172.10			-1.456E-01	1.254E-01	1.876E-01	1.474E-02	-0.776
	202.84	*		-8.006E-03	4.986E-02	8.380E-02	6.641E-03	-0.096
	374.96			1.125E-01	2.259E-01	3.751E-01	2.342E-02	0.300
I-131	80.18			-1.090E+00	4.859E+00	5.714E+00	4.791E-01	-0.191
	284.30			4.942E-01	1.673E+00	2.800E+00	2.284E-01	0.176
	364.48	*		-3.467E-02	1.385E-01	2.204E-01	1.563E-02	-0.157
	636.97			-1.632E-01	2.038E+00	3.304E+00	2.812E-01	-0.049
	722.89			-9.881E+00	1.172E+01	1.481E+01	1.216E+00	-0.667
TE-132	49.72			-2.022E+00	4.743E+00	7.182E+00	7.522E-01	-0.281
	111.76			7.671E+00	3.691E+01	5.905E+01	7.762E+00	0.130
	116.30			-2.678E+00	3.170E+01	5.167E+01	7.086E+00	-0.052
	228.16	*		-2.286E-02	8.811E-01	1.476E+00	2.294E-01	-0.015
BA-133	53.15			4.252E-01	9.602E-01	1.587E+00	1.332E-01	0.268
	79.62			2.132E-01	1.204E+00	1.454E+00	2.192E-01	0.147
	81.00			2.962E-02	9.215E-02	1.122E-01	1.760E-02	0.264
	276.40			5.897E-01	4.200E-01	6.951E-01	9.678E-02	0.848
	302.84			7.707E-02	1.653E-01	2.456E-01	3.087E-02	0.314
	356.01	*		-6.721E-02	5.800E-02	7.425E-02	8.913E-03	-0.905
	383.85			4.514E-03	3.306E-01	5.326E-01	5.859E-02	0.008
I-133	510.53	+		4.353E+00	3.306E-01	Half-Life	too short	
	529.87	*		2.838E-03	3.306E-01	Half-Life	too short	
	706.58			8.732E-02	3.306E-01	Half-Life	too short	
	856.28			1.965E-01	3.306E-01	Half-Life	too short	
	875.33			2.293E-01	3.306E-01	Half-Life	too short	
	1236.41			3.186E+00	3.306E-01	Half-Life	too short	
	1298.22			-1.939E-01	3.306E-01	Half-Life	too short	
CS-134	475.35			6.077E-01	2.219E+00	3.654E+00	2.433E-01	0.166
	563.23			1.837E-01	4.550E-01	7.681E-01	5.773E-02	0.239
	569.32			-1.459E-01	2.517E-01	3.836E-01	2.918E-02	-0.380
	604.70			6.924E-03	4.664E-02	6.702E-02	5.208E-03	0.103
	795.84	*		8.662E-02	6.110E-02	1.104E-01	8.897E-03	0.785
	801.93			1.239E-02	5.323E-01	8.340E-01	6.693E-02	0.015
	1038.57			1.352E-01	4.963E+00	8.116E+00	5.436E-01	0.017
	1167.94			1.999E-01	3.041E+00	4.933E+00	2.738E-01	0.041
	1365.15			-1.270E+00	1.380E+00	2.014E+00	1.267E-01	-0.631
CS-135	268.24	*		1.398E-02	1.703E-01	2.833E-01	2.616E-02	0.049

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135	288.45			-2.142E+11	1.703E-01	Half-Life	too short	
	417.63			1.795E+10	1.703E-01	Half-Life	too short	
	546.56			-4.803E+10	1.703E-01	Half-Life	too short	
	836.80			1.472E+11	1.703E-01	Half-Life	too short	
	1038.76			1.551E+10	1.703E-01	Half-Life	too short	
	1124.00			2.121E+11	1.703E-01	Half-Life	too short	
	1131.51			-1.056E+11	1.703E-01	Half-Life	too short	
	1260.41	*		3.018E+09	1.703E-01	Half-Life	too short	
	1457.56			1.131E+13	1.703E-01	Half-Life	too short	
	1678.03			1.879E+11	1.703E-01	Half-Life	too short	
	1706.46			-3.050E+10	1.703E-01	Half-Life	too short	
	1791.20			6.569E+10	1.703E-01	Half-Life	too short	
CS-136	66.91			2.180E-01	4.589E-01	7.087E-01	1.114E-01	0.308
	86.29	+		4.326E+00	1.340E+00	1.683E+00	2.092E-01	2.571
	153.22			2.946E-01	7.324E-01	1.194E+00	1.231E-01	0.247
	163.89			2.242E-01	1.270E+00	1.980E+00	1.818E-01	0.113
	176.55			2.372E-01	4.072E-01	6.634E-01	5.580E-02	0.358
	273.65			-1.160E+00	5.529E-01	8.159E-01	6.820E-02	-1.422
	340.57			2.224E-01	1.713E-01	2.643E-01	1.912E-02	0.842
	818.51			-7.655E-03	9.752E-02	1.617E-01	1.281E-02	-0.047
	1048.07	*		-1.763E-02	1.450E-01	2.339E-01	1.660E-02	-0.075
	1235.34			1.051E+00	7.566E-01	1.364E+00	1.346E-01	0.771
	661.65	*		-1.342E-02	4.492E-02	7.143E-02	5.826E-03	-0.188
	661.65	*		-1.418E-02	4.748E-02	7.551E-02	6.172E-03	-0.188
	165.85	*		3.906E-02	3.211E-02	5.367E-02	4.207E-03	0.728
	162.64			-5.335E-01	8.778E-01	1.318E+00	1.155E-01	-0.405
LA-140	304.84			7.163E-01	1.505E+00	2.336E+00	6.467E-01	0.307
	423.70			4.553E-01	2.434E+00	3.924E+00	1.250E+00	0.116
	537.32	*		-1.536E-01	3.317E-01	5.263E-01	1.726E-01	-0.292
	328.77	+		7.193E-01	4.078E-01	5.516E-01	4.244E-02	1.304
	432.53			-1.498E+00	2.429E+00	3.946E+00	2.690E-01	-0.380
	487.03			1.378E-02	1.706E-01	2.862E-01	2.126E-02	0.048
	751.79			6.883E-01	2.381E+00	3.905E+00	3.545E-01	0.176
	815.85			7.440E-02	4.144E-01	7.007E-01	6.301E-02	0.106
	867.82			1.613E-01	2.199E+00	3.166E+00	2.595E-01	0.051
	919.63			-2.337E-01	4.012E+00	6.284E+00	6.098E-01	-0.037
	925.24			-1.603E-01	1.576E+00	2.580E+00	2.069E-01	-0.062
	1596.49	*		-4.681E-02	1.228E-01	1.904E-01	1.097E-02	-0.246
	145.44	*		3.419E-02	6.832E-02	1.121E-01	1.163E-02	0.305
	57.37			-2.729E-04	6.832E-02	Half-Life	too short	
CE-143	231.56			-4.666E-04	6.832E-02	Half-Life	too short	
	293.26	*		1.468E-03	6.832E-02	Half-Life	too short	
	350.59	+		5.237E-02	6.832E-02	Half-Life	too short	
	490.36			-2.081E-03	6.832E-02	Half-Life	too short	
	664.57			-5.046E-04	6.832E-02	Half-Life	too short	
	721.93			7.295E-06	6.832E-02	Half-Life	too short	
	80.11			-4.519E-01	2.047E+00	2.407E+00	2.004E-01	-0.188
CE-144	133.54	*		-1.705E-01	2.115E-01	3.281E-01	5.687E-02	-0.520
PM-144	476.78			-2.935E-03	7.823E-02	1.263E-01	9.707E-03	-0.023

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		2.147E-02	3.890E-02	6.593E-02	5.345E-03	0.326
		696.49	*	1.033E-02	4.385E-02	7.209E-02	5.888E-03	0.143
		778.57		-1.276E+00	2.879E+00	4.673E+00	3.760E-01	-0.273
PR-144		696.49	*	7.006E-01	2.973E+00	4.888E+00	3.991E-01	0.143
		1489.15		5.260E+00	1.499E+01	2.559E+01	1.475E+00	0.206
PM-146		453.90	*	2.892E-04	5.048E-02	8.260E-02	7.497E-03	0.004
		633.02		-7.410E-01	1.693E+00	2.635E+00	9.809E-01	-0.281
		735.90		1.359E-02	1.988E-01	3.126E-01	8.896E-02	0.043
		747.13		6.399E-03	1.197E-01	1.931E-01	2.652E-02	0.033
ND-147	+	91.11		7.537E-01	2.695E-01	5.064E-01	4.567E-02	1.488
		319.41		2.259E+00	3.806E+00	6.413E+00	4.652E-01	0.352
		439.89		-3.992E+00	6.794E+00	1.103E+01	6.975E-01	-0.362
		531.02	*	1.987E-01	7.340E-01	1.236E+00	1.749E-01	0.161
PM-149		285.90	*	-2.826E+00	1.317E+02	2.169E+02	3.258E+01	-0.013
EU-152		121.78		2.284E-02	6.927E-02	1.144E-01	1.548E-02	0.200
		244.69		-2.213E-02	3.636E-01	5.317E-01	4.191E-02	-0.042
		344.27	*	1.031E-01	1.131E-01	1.724E-01	1.293E-02	0.598
		443.98		5.350E-01	1.044E+00	1.807E+00	1.149E-01	0.296
		778.89		-1.399E-01	3.385E-01	5.510E-01	4.431E-02	-0.254
		867.32		-7.018E-01	1.270E+00	1.702E+00	1.309E-01	-0.412
	+	964.01		7.486E-01	3.600E-01	6.662E-01	4.790E-02	1.124
		1085.78		-4.102E-01	4.730E-01	7.040E-01	4.450E-02	-0.583
		1112.02		-1.810E-01	4.189E-01	5.517E-01	3.360E-02	-0.328
		1407.95		2.008E-01	2.417E-01	4.296E-01	2.464E-02	0.467
GD-153		69.67		-3.791E-01	9.595E-01	1.524E+00	1.363E-01	-0.249
	+	83.37		1.374E+01	1.606E+01	1.929E+01	1.571E+00	0.712
		97.43	*	1.066E-02	7.842E-02	1.148E-01	1.045E-02	0.093
		103.18		-6.064E-02	9.543E-02	1.532E-01	1.513E-02	-0.396
EU-154		123.07		4.583E-03	5.144E-02	8.414E-02	1.226E-02	0.054
		247.94		1.422E-01	4.051E-01	6.076E-01	6.637E-02	0.234
		591.81		3.734E-01	7.863E-01	1.297E+00	1.423E-01	0.288
		723.30		-1.381E-01	2.704E-01	3.558E-01	3.239E-02	-0.388
		756.87		-6.671E-01	1.025E+00	1.558E+00	1.808E-01	-0.428
		873.19		3.195E-01	4.124E-01	7.172E-01	8.312E-02	0.445
		996.32		3.795E-02	4.810E-01	7.927E-01	1.350E-01	0.048
		1004.76		-2.008E-01	2.834E-01	4.364E-01	4.562E-02	-0.460
		1274.45	*	-5.709E-02	1.555E-01	2.506E-01	2.315E-02	-0.228
EU-155		48.70		1.378E-02	4.151E-01	6.441E-01	4.861E-02	0.021
		60.01		3.126E-01	2.062E+00	3.174E+00	3.038E-01	0.098
	+	86.54		3.780E-01	1.115E-01	1.490E-01	1.201E-02	2.537
		105.31	*	3.609E-02	1.019E-01	1.663E-01	1.707E-02	0.217
TB-160	+	86.79		1.019E+00	3.004E-01	4.010E-01	3.189E-02	2.542
		197.04		5.969E-01	6.066E-01	1.032E+00	8.172E-02	0.578
		215.65		1.631E-01	7.409E-01	1.258E+00	9.982E-02	0.130
	+	298.57		2.868E-01	1.607E-01	2.156E-01	1.618E-02	1.330
		879.36	*	-6.964E-02	1.840E-01	2.962E-01	2.260E-02	-0.235
		962.29		9.589E-01	7.490E-01	1.174E+00	8.456E-02	0.817
		966.15		1.290E+00	3.133E-01	6.059E-01	4.350E-02	2.130
		1177.93		1.433E-02	4.240E-01	6.854E-01	3.772E-02	0.021



----- 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		3.176E-01	8.779E-01	1.504E+00	8.461E-02	0.211
		80.57		3.406E-02	2.562E-01	3.085E-01	2.559E-02	0.110
	+	184.41		1.343E-01	6.438E-02	7.703E-02	6.077E-03	1.743
		280.46		-1.127E-01	9.051E-02	1.396E-01	1.072E-02	-0.807
		410.95		1.023E-01	2.858E-01	4.672E-01	2.821E-02	0.219
	*	711.68		3.593E-03	8.107E-02	1.313E-01	1.071E-02	0.027
TM-171		752.31		2.737E-01	3.605E-01	6.100E-01	4.943E-02	0.449
		810.29		-1.170E-02	7.025E-02	1.158E-01	9.200E-03	-0.101
		51.35		-3.303E+00	6.739E+00	1.082E+01	8.712E-01	-0.305
		52.39		-8.637E-01	3.926E+00	6.341E+00	5.230E-01	-0.136
		59.40		6.070E+00	1.032E+01	1.618E+01	1.551E+00	0.375
	*	66.72		7.821E+00	1.569E+01	2.429E+01	2.217E+00	0.322
LU-176	+	88.36		7.440E-01	2.193E-01	2.882E-01	2.286E-02	2.582
		201.83		-3.600E-02	3.075E-02	4.955E-02	3.926E-03	-0.727
	*	306.84		-2.506E-02	2.744E-02	4.118E-02	3.053E-03	-0.608
		401.10		-2.047E+00	8.070E+00	1.237E+01	7.349E-01	-0.165
LU-177		112.95		1.119E+00	1.787E+00	2.894E+00	3.261E-01	0.387
	+	208.36		3.538E+00	1.886E+00	2.264E+00	1.796E-01	1.563
LU-177M		52.97		1.627E-01	4.284E-01	7.065E-01	5.905E-02	0.230
		54.07		1.012E-01	2.432E-01	4.014E-01	3.438E-02	0.252
		61.30		1.024E+00	6.800E-01	1.090E+00	1.034E-01	0.940
		121.62		1.198E-01	3.567E-01	5.895E-01	7.412E-02	0.203
		147.16		-4.501E-01	6.963E-01	1.089E+00	1.094E-01	-0.413
		171.86		-5.376E-01	4.949E-01	7.436E-01	5.839E-02	-0.723
		218.09		-5.153E-01	8.445E-01	1.382E+00	1.096E-01	-0.373
		268.79		7.139E-01	8.720E-01	1.493E+00	1.159E-01	0.478
		319.02		1.781E-01	2.780E-01	4.696E-01	3.408E-02	0.379
		367.43		6.270E-01	9.696E-01	1.628E+00	1.044E-01	0.385
	*	413.65		6.677E-02	2.043E-01	3.334E-01	2.022E-02	0.200
		56.28		-1.076E-01	2.902E-01	4.883E-01	4.389E-02	-0.220
		57.53		-9.573E-02	1.653E-01	2.755E-01	2.543E-02	-0.347
		65.20		1.809E-01	5.093E-01	7.858E-01	7.247E-02	0.230
		133.02		-5.941E-02	7.218E-02	1.066E-01	1.233E-02	-0.557
		136.25		1.609E-01	4.687E-01	7.689E-01	8.631E-02	0.209
		345.85		-4.923E-02	2.614E-01	3.392E-01	2.317E-02	-0.145
	*	482.03		-1.227E-02	4.877E-02	8.020E-02	5.388E-03	-0.153
W-181		56.28		-4.161E-02	1.124E-01	1.891E-01	1.700E-02	-0.220
		57.53		-3.701E-02	6.403E-02	1.067E-01	9.851E-03	-0.347
	*	65.20		6.951E-02	1.957E-01	3.020E-01	2.785E-02	0.230
TA-182		67.75		-3.252E-02	6.054E-02	9.579E-02	8.679E-03	-0.339
		100.10		6.633E-02	1.601E-01	2.682E-01	2.536E-02	0.247
		152.43		-3.446E-02	3.531E-01	5.648E-01	5.339E-02	-0.061
		222.10		2.923E-01	3.526E-01	6.111E-01	4.845E-02	0.478
		1001.68		3.431E-01	2.896E+00	4.577E+00	3.184E-01	0.075
		1121.28		5.185E-01	2.161E-01	3.655E-01	2.195E-02	1.418
RE-183		1189.05		4.862E-02	3.482E-01	5.891E-01	3.252E-02	0.083
	*	1221.42		8.074E-02	2.387E-01	4.080E-01	2.270E-02	0.198
		1230.97		-7.096E-01	6.021E-01	9.179E-01	5.120E-02	-0.773
		57.98		-5.926E-02	6.739E-02	1.110E-01	1.034E-02	-0.534

## ---- 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		2.127E-02	4.251E-02	6.645E-02	6.361E-03	0.320
		67.20		1.491E-02	1.141E-01	1.742E-01	1.584E-02	0.086
		162.32	*	-1.152E-01	1.235E-01	1.825E-01	1.511E-02	-0.631
	+	208.81		2.884E+00	1.538E+00	1.857E+00	1.473E-01	1.553
		291.72		5.678E-02	1.134E+00	1.644E+00	1.246E-01	0.035
		57.98		-2.170E-01	2.468E-01	4.065E-01	3.786E-02	-0.534
		59.32		7.784E-02	1.556E-01	2.432E-01	2.328E-02	0.320
		67.20		5.457E-02	4.176E-01	6.377E-01	5.800E-02	0.086
		161.27		-3.230E-01	3.785E-01	5.811E-01	4.884E-02	-0.556
		216.55		2.081E-01	2.622E-01	4.548E-01	3.607E-02	0.458
		252.85	*	-6.139E-02	2.328E-01	3.824E-01	3.002E-02	-0.161
		318.01		-1.823E-01	4.908E-01	7.861E-01	5.716E-02	-0.232
		792.07		8.972E-01	1.271E+00	2.219E+00	1.776E-01	0.404
		903.28		2.127E-03	1.441E+00	2.049E+00	1.536E-01	0.001
OS-185		920.93		-1.997E-01	5.875E-01	9.436E-01	6.999E-02	-0.212
		59.72		-3.081E-03	1.213E-01	1.855E-01	1.779E-02	-0.017
		61.14		6.984E-02	7.313E-02	1.156E-01	1.097E-02	0.604
		69.30		-9.873E-02	1.635E-01	2.704E-01	2.423E-02	-0.365
		592.07		1.427E+00	3.225E+00	5.310E+00	4.062E-01	0.269
		646.12	*	8.760E-03	5.294E-02	8.723E-02	7.021E-03	0.100
		717.42		3.938E-01	1.217E+00	2.006E+00	1.635E-01	0.196
		874.81		3.915E-01	8.245E-01	1.410E+00	1.079E-01	0.278
		880.27		-5.445E-02	1.021E+00	1.685E+00	1.284E-01	-0.032
		155.03	*	1.223E-01	1.861E-01	3.060E-01	2.800E-02	0.400
RE-188		477.96		-4.033E-01	3.418E+00	5.672E+00	3.789E-01	-0.071
		633.10		-1.590E+00	3.406E+00	5.362E+00	4.266E-01	-0.296
	+	63.58		2.230E+01	4.360E+01	5.366E+01	5.006E+00	0.416
W-188		227.08		2.430E+00	1.323E+01	2.236E+01	1.772E+00	0.109
		290.67	*	3.483E+00	8.846E+00	1.312E+01	9.959E-01	0.265
	+	295.96		1.031E+00	1.876E-01	2.975E-01	2.262E-02	3.467
IR-192		308.46		3.107E-02	1.052E-01	1.692E-01	1.260E-02	0.184
		316.51	*	7.498E-03	3.705E-02	6.127E-02	4.482E-03	0.122
		468.07		5.917E-02	8.129E-02	1.259E-01	9.291E-03	0.470
AU-195		604.41		7.286E-02	6.350E-01	9.097E-01	1.133E-01	0.080
		612.46		5.971E-01	1.025E+00	1.523E+00	1.401E-01	0.392
		65.12		5.704E-02	9.109E-02	1.418E-01	1.309E-02	0.402
		66.83		2.532E-02	5.217E-02	8.075E-02	7.363E-03	0.314
	+	75.70		1.196E+00	2.092E-01	3.390E-01	2.908E-02	3.527
		98.88	*	2.295E-01	2.083E-01	3.468E-01	3.223E-02	0.662
TL-200	+	129.76		2.658E+00	3.989E+00	5.106E+00	6.071E-01	0.521
		367.94	*	2.965E-05	3.989E+00	Half-Life	too short	
		579.30		3.844E-03	3.989E+00	Half-Life	too short	
TL-201		828.27		1.681E-03	3.989E+00	Half-Life	too short	
		1205.75		-1.587E-03	3.989E+00	Half-Life	too short	
		68.90		-1.979E+00	3.278E+00	5.423E+00	4.875E-01	-0.365
		70.82		1.172E+00	2.156E+00	3.331E+00	2.954E-01	0.352
		80.30		-1.457E+00	6.152E+00	7.226E+00	6.007E-01	-0.202
		135.34		5.480E+00	3.284E+01	5.353E+01	6.059E+00	0.102
		167.43	*	-3.788E+00	9.481E+00	1.485E+01	1.164E+00	-0.255

---- 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		-1.488E-01	2.465E-01	4.077E-01	3.665E-02	-0.365
		70.82		8.785E-02	1.617E-01	2.497E-01	2.215E-02	0.352
		80.30		-1.093E-01	4.614E-01	5.420E-01	4.505E-02	-0.202
HG-203		439.56	*	-3.869E-02	8.071E-02	1.320E-01	8.338E-03	-0.293
		70.83		3.674E-01	6.719E-01	1.036E+00	1.427E-01	0.355
		72.87		6.349E-01	4.377E-01	6.839E-01	9.085E-02	0.928
BI-207	+	82.60		1.034E+00	1.214E+00	1.366E+00	1.841E-01	0.757
		279.20	*	4.796E-03	4.342E-02	7.211E-02	5.741E-03	0.067
		72.80		1.536E-01	1.239E-01	1.946E-01	1.703E-02	0.789
	+	74.97		6.607E-01	1.156E-01	1.640E-01	1.414E-02	4.028
	+	84.90		1.772E-01	2.071E-01	2.536E-01	2.043E-02	0.699
		569.67		-2.779E-02	3.893E-02	5.866E-02	4.384E-03	-0.474
TL-207		1063.62	*	1.286E-02	6.888E-02	1.138E-01	7.402E-03	0.113
		1770.23		1.974E-01	5.649E-01	8.711E-01	4.944E-02	0.227
		81.07		5.882E-02	2.032E-01	2.470E-01	2.043E-02	0.238
	+	83.78		1.168E-01	1.366E-01	1.651E-01	1.341E-02	0.707
		94.90		3.130E-01	2.060E-01	3.246E-01	2.846E-02	0.964
		122.32		-4.774E-01	1.712E+00	2.758E+00	3.604E-01	-0.173
		144.24		1.969E-01	7.571E-01	1.208E+00	1.357E-01	0.163
		154.21		2.810E-01	4.202E-01	6.913E-01	6.949E-02	0.407
		269.46		4.544E-01	2.075E-01	3.700E-01	2.944E-02	1.228
		323.87	*	-7.361E-01	7.747E-01	1.005E+00	1.714E-01	-0.732
	+	338.28		7.638E+00	2.436E+00	2.641E+00	2.962E-01	2.892
		445.03		-5.832E-01	2.510E+00	4.162E+00	4.412E-01	-0.140
PO-209		260.50		-4.535E+00	9.910E+00	1.609E+01	1.257E+00	-0.282
		262.80		9.132E+00	2.723E+01	4.591E+01	3.581E+00	0.199
		896.60	*	2.164E+00	9.503E+00	1.599E+01	1.204E+00	0.135
PB-211		404.84	*	-3.009E-01	1.128E+00	1.754E+00	1.094E+00	-0.172
		427.08		-5.441E-01	2.501E+00	3.898E+00	2.411E+00	-0.140
		831.96		-7.709E-02	1.506E+00	2.498E+00	1.563E+00	-0.031
BI-212	+	727.18	*	1.871E+00	6.529E-01	8.285E-01	7.954E-02	2.258
		785.46		2.627E-01	2.207E+00	3.724E+00	2.988E-01	0.071
		1620.62		1.516E+00	1.876E+00	3.314E+00	1.907E-01	0.457
PO-215		81.07		5.882E-02	2.032E-01	2.470E-01	2.043E-02	0.238
	+	83.78		1.168E-01	1.366E-01	1.651E-01	1.341E-02	0.707
		94.90		3.130E-01	2.060E-01	3.246E-01	2.846E-02	0.964
		122.32		-4.774E-01	1.712E+00	2.758E+00	3.604E-01	-0.173
		144.24		1.969E-01	7.571E-01	1.208E+00	1.357E-01	0.163
		154.21		2.810E-01	4.202E-01	6.913E-01	6.949E-02	0.407
		269.46		4.544E-01	2.075E-01	3.700E-01	2.944E-02	1.228
		323.87	*	-7.361E-01	7.747E-01	1.005E+00	1.714E-01	-0.732
	+	338.28		7.638E+00	2.436E+00	2.641E+00	2.962E-01	2.892
		445.03		-5.832E-01	2.510E+00	4.162E+00	4.412E-01	-0.140
		271.23		3.961E-01	2.677E-01	4.664E-01	4.475E-02	0.849
		401.81	*	9.053E-02	4.911E-01	7.731E-01	1.057E-01	0.117
RN-220		549.76	*	-1.255E+01	3.143E+01	5.054E+01	3.695E+00	-0.248
RA-223		81.07		5.882E-02	2.032E-01	2.470E-01	2.043E-02	0.238
	+	83.78		1.168E-01	1.366E-01	1.651E-01	1.341E-02	0.707
		94.90		3.130E-01	2.060E-01	3.246E-01	2.846E-02	0.964

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		-4.774E-01	1.712E+00	2.758E+00	3.604E-01	-0.173
		144.24		1.969E-01	7.571E-01	1.208E+00	1.357E-01	0.163
		154.21		2.810E-01	4.202E-01	6.913E-01	6.949E-02	0.407
		269.46		4.544E-01	2.075E-01	3.700E-01	2.944E-02	1.228
		323.87	*	-7.361E-01	7.747E-01	1.005E+00	1.714E-01	-0.732
	+	338.28		7.638E+00	2.436E+00	2.641E+00	2.962E-01	2.892
		445.03		-5.832E-01	2.510E+00	4.162E+00	4.412E-01	-0.140
		79.80		2.333E-01	1.531E+00	1.846E+00	3.948E-01	0.126
		236.00		8.626E-01	2.950E-01	4.711E-01	5.536E-02	1.831
		256.20	*	3.483E-01	3.869E-01	6.646E-01	9.916E-02	0.524
		286.10		6.417E-02	1.594E+00	2.634E+00	3.314E-01	0.024
	+	299.80		3.616E+00	2.100E+00	2.750E+00	4.664E-01	1.315
TH-227		304.40		1.297E+00	2.145E+00	3.209E+00	5.748E-01	0.404
		334.20		1.909E+00	2.796E+00	4.157E+00	7.798E-01	0.459
		79.80		2.333E-01	1.531E+00	1.846E+00	3.999E-01	0.126
	+	94.00		7.094E+00	3.090E+00	3.473E+00	7.568E-01	2.043
		236.00		8.626E-01	2.916E-01	4.711E-01	4.961E-02	1.831
		256.20	*	3.483E-01	3.883E-01	6.646E-01	1.176E-01	0.524
		286.10		6.417E-02	1.596E+00	2.634E+00	2.642E+00	0.024
	+	299.80		3.616E+00	2.100E+00	2.750E+00	4.664E-01	1.315
		304.40		1.297E+00	2.145E+00	3.209E+00	5.748E-01	0.404
		334.20		1.909E+00	2.796E+00	4.157E+00	7.798E-01	0.459
	+	85.43		1.749E-01	2.044E-01	2.551E-01	2.048E-02	0.685
	+	88.47		4.283E-01	1.262E-01	1.649E-01	1.310E-02	2.598
PA-231		100.00		9.146E-02	1.659E-01	2.792E-01	2.636E-02	0.328
		193.63	*	-3.115E-01	4.936E-01	8.154E-01	6.450E-02	-0.382
		210.97		1.253E+00	8.432E-01	1.346E+00	1.067E-01	0.931
		283.67	*	8.732E-01	1.545E+00	2.615E+00	3.832E-01	0.334
TH-231	+	301.29		1.447E+00	8.203E-01	1.076E+00	1.233E-01	1.345
		81.07		5.882E-02	2.032E-01	2.470E-01	2.043E-02	0.238
	+	83.78		1.168E-01	1.366E-01	1.651E-01	1.341E-02	0.707
		94.90		3.130E-01	2.060E-01	3.246E-01	2.846E-02	0.964
U-231		122.32		-4.774E-01	1.712E+00	2.758E+00	3.604E-01	-0.173
		144.24		1.969E-01	7.571E-01	1.208E+00	1.357E-01	0.163
		154.21		2.810E-01	4.202E-01	6.913E-01	6.949E-02	0.407
		269.46		4.544E-01	2.075E-01	3.700E-01	2.944E-02	1.228
		323.87	*	-7.361E-01	7.747E-01	1.005E+00	1.714E-01	-0.732
	+	338.28		7.638E+00	2.436E+00	2.641E+00	2.962E-01	2.892
		445.03		-5.832E-01	2.510E+00	4.162E+00	4.412E-01	-0.140
	+	84.21		5.979E+00	6.990E+00	8.540E+00	6.913E-01	0.700
	+	92.29		8.328E+00	3.222E+00	4.786E+00	4.035E-01	1.740
		95.87	*	-1.830E-01	1.188E+00	1.749E+00	1.555E-01	-0.105
		108.00		3.186E-01	2.279E+00	3.765E+00	3.973E-01	0.085
	+	75.28		1.928E+01	4.168E+00	5.102E+00	7.825E-01	3.778
PA-233	+	86.59		6.141E+00	2.389E+00	2.419E+00	6.440E-01	2.538
	+	300.12		1.008E+00	5.780E-01	7.600E-01	1.083E-01	1.327
		311.98	*	-3.661E-02	6.686E-02	1.060E-01	8.098E-03	-0.345
		340.50		1.175E+00	8.352E-01	1.235E+00	2.876E-01	0.951
		398.62		1.222E-01	2.368E+00	3.812E+00	9.866E-01	0.032

---- 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		2.366E-02	1.911E+00	3.058E+00	6.321E-01	0.008
		63.00		6.401E-01	1.254E+00	1.553E+00	2.473E-01	0.412
		94.67		3.683E-01	1.571E-01	2.472E-01	3.086E-02	1.490
		98.44		1.074E-01	1.051E-01	1.398E-01	7.811E-02	0.769
		99.86		3.810E-01	4.206E-01	7.148E-01	6.737E-02	0.533
		111.00		-1.069E-01	1.765E-01	2.819E-01	3.910E-02	-0.379
		131.20		2.959E-02	1.184E-01	1.736E-01	2.039E-02	0.170
		152.70		1.578E-01	3.373E-01	5.504E-01	9.613E-02	0.287
		186.00		4.835E+00	2.734E+00	2.920E+00	9.058E-01	1.656
		226.40		4.670E-02	4.081E-01	6.878E-01	8.776E-02	0.068
		227.20		1.276E-01	4.406E-01	7.476E-01	5.924E-02	0.171
		248.90		2.674E-01	8.582E-01	1.402E+00	3.102E-01	0.191
		293.70		6.429E+00	1.514E+00	1.833E+00	3.080E-01	3.506
		369.80		1.476E-01	9.466E-01	1.542E+00	3.237E-01	0.096
		568.70		-1.385E-01	1.248E+00	1.962E+00	1.465E-01	-0.071
		569.50		-2.248E-01	3.467E-01	5.253E-01	3.925E-02	-0.428
		574.00		7.234E-01	1.742E+00	2.944E+00	2.211E-01	0.246
		699.00		-7.023E-01	9.225E-01	1.394E+00	2.632E-01	-0.504
		706.10		6.244E-01	1.300E+00	2.125E+00	9.459E-01	0.294
		733.00		-2.104E-01	5.467E-01	7.225E-01	1.590E-01	-0.291
		742.81		1.080E+00	1.875E+00	2.911E+00	1.955E+00	0.371
		796.30		1.930E+00	1.285E+00	2.164E+00	5.812E-01	0.892
		805.60		7.028E-01	1.211E+00	2.076E+00	6.324E-01	0.339
		819.60		2.896E-01	1.512E+00	2.551E+00	9.660E-01	0.114
		826.30		-9.777E-01	1.077E+00	1.512E+00	6.742E-01	-0.647
		831.60		4.445E-02	7.733E-01	1.293E+00	3.832E-01	0.034
		876.40		1.673E-01	1.164E+00	1.928E+00	1.981E+00	0.087
		880.51		-8.019E-02	3.615E-01	5.890E-01	4.489E-02	-0.136
		883.24		-1.608E-01	3.669E-01	5.594E-01	3.753E-01	-0.287
		899.00		-7.550E-01	1.113E+00	1.661E+00	7.227E-01	-0.455
		925.00		1.718E-01	1.527E+00	2.541E+00	1.880E-01	0.068
		926.50		-6.025E-02	2.358E-01	3.807E-01	9.474E-02	-0.158
		946.00	*	2.732E-01	3.596E-01	6.234E-01	1.134E-01	0.438
		949.00		3.201E-01	5.304E-01	9.154E-01	6.660E-02	0.350
		980.50		1.605E-01	9.525E-01	1.583E+00	1.123E-01	0.101
		1394.10		-3.491E-01	1.483E+00	2.352E+00	1.524E+00	-0.148
PA-234M	+	766.42		2.465E+01	1.980E+01	2.805E+01	1.420E+01	0.879
		1001.03	*	2.910E-01	6.363E+00	9.977E+00	8.551E-01	0.029
U-235	+	89.95		2.810E+00	1.301E+00	1.570E+00	4.823E-01	1.790
		93.35		2.207E+00	1.037E+00	1.243E+00	3.483E-01	1.775
	*	105.00		3.302E-01	1.001E+00	1.625E+00	4.926E-01	0.203
		143.76		6.289E-02	2.372E-01	3.786E-01	6.990E-02	0.166
		163.35		2.408E-02	5.232E-01	8.108E-01	1.530E-01	0.030
		185.71		1.791E-01	8.583E-02	1.088E-01	8.588E-03	1.646
NP-236	+	205.31		-1.478E-02	6.205E-01	9.130E-01	1.714E-01	-0.016
		94.67		2.825E-01	1.167E-01	1.878E-01	1.641E-02	1.504
		98.44		8.122E-02	6.562E-02	1.057E-01	9.756E-03	0.769
		111.00		-8.086E-02	1.334E-01	2.132E-01	2.342E-02	-0.379
		160.31	*	-6.645E-02	8.377E-02	1.290E-01	1.100E-02	-0.515

---- 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		1.554E-01	1.452E-01	2.415E-01	2.266E-02	0.644
		117.00	*	-4.645E-02	1.768E-01	2.858E-01	3.392E-02	-0.163
	+	209.75		2.252E+00	1.201E+00	1.489E+00	1.181E-01	1.512
		228.18		-4.088E-02	2.320E-01	3.861E-01	3.059E-02	-0.106
		277.60		1.935E-01	2.044E-01	3.370E-01	2.595E-02	0.574
AM-241		334.30		1.070E+00	1.573E+00	2.354E+00	1.654E-01	0.455
		59.54	*	4.492E-02	6.066E-02	9.558E-02	9.720E-03	0.470
CM-243		99.55		1.599E-01	1.494E-01	2.485E-01	2.332E-02	0.644
		103.76	*	-2.508E-02	8.700E-02	1.417E-01	1.411E-02	-0.177
		117.00		-4.779E-02	1.819E-01	2.941E-01	3.490E-02	-0.163
	+	209.75		2.220E+00	1.184E+00	1.468E+00	1.164E-01	1.512
		228.18		-4.131E-02	2.344E-01	3.902E-01	3.091E-02	-0.106
AM-246		277.60		1.951E-01	2.061E-01	3.397E-01	2.616E-02	0.574
		798.80		-3.104E-01	1.908E-01	2.818E-01	2.249E-02	-1.102
		1036.00		1.833E-01	3.663E-01	6.230E-01	4.184E-02	0.294
		1062.04		2.823E-02	2.928E-01	4.805E-01	3.131E-02	0.059
		1078.86	*	9.397E-02	1.755E-01	2.982E-01	1.902E-02	0.315
CM-247		278.00		8.191E-01	8.082E-01	1.392E+00	1.072E-01	0.588
		287.40		-1.636E-01	1.280E+00	2.096E+00	1.597E-01	-0.078
		402.60	*	5.900E-03	4.302E-02	6.955E-02	4.142E-03	0.085
CF-249		252.85		-2.294E-01	8.697E-01	1.429E+00	1.122E-01	-0.161
		333.44		1.373E-01	2.125E-01	2.980E-01	2.099E-02	0.461
		387.95	*	8.224E-03	4.539E-02	7.380E-02	4.383E-03	0.111
CF-251		176.60	*	4.775E-02	1.340E-01	2.162E-01	1.701E-02	0.221
		227.00		7.362E-02	3.930E-01	6.642E-01	5.263E-02	0.111
		285.00		4.691E-01	1.817E+00	3.036E+00	2.319E-01	0.155

# 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]G244148011
* Acquisition date   : 20-JAN-2010 15:57:21 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        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G244148011 Analyst initials: MXR1
* Batch Number       : 940268 Sample Quantity : 1.3881E+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	1.864E+01	2.044E+00	7.303E-01	0.000E+00
CD-109	3.197E+00	9.233E-01	1.007E+00	0.000E+00
SN-126	3.137E-01	9.060E-02	9.872E-02	0.000E+00
TL-208	5.240E-01	1.036E-01	7.102E-02	0.000E+00
BI-210	5.413E-01	7.998E-01	7.467E-01	0.000E+00
PB-210	5.413E-01	7.998E-01	7.467E-01	0.000E+00
PO-210	5.413E-01	7.995E-01	7.467E-01	0.000E+00
BI-211	3.895E+00	5.487E-01	3.517E-01	0.000E+00
PB-212	1.507E+00	1.753E-01	9.303E-02	0.000E+00
PO-212	1.507E+00	1.753E-01	9.303E-02	0.000E+00
BI-214	1.237E+00	2.197E-01	1.376E-01	0.000E+00
PB-214	1.355E+00	2.031E-01	1.226E-01	0.000E+00
PO-214	1.355E+00	2.031E-01	1.226E-01	0.000E+00
PO-216	1.507E+00	1.753E-01	9.303E-02	0.000E+00
PO-218	1.355E+00	2.031E-01	1.226E-01	0.000E+00
RA-224	4.802E+00	1.395E+00	1.059E+00	0.000E+00
RA-226	1.237E+00	2.197E-01	1.376E-01	0.000E+00
AC-228	1.752E+00	4.027E-01	2.763E-01	0.000E+00
RA-228	1.752E+00	4.027E-01	2.763E-01	0.000E+00
TH-228	1.531E+00	1.781E-01	9.454E-02	0.000E+00
TH-230	1.237E+00	2.197E-01	1.376E-01	0.000E+00
TH-232	1.752E+00	4.027E-01	2.763E-01	0.000E+00
TH-234	5.491E-01	1.055E+00	1.034E+00	0.000E+00
U-234	1.237E+00	2.197E-01	1.376E-01	0.000E+00
NF-237	9.212E-01	3.248E-01	2.890E-01	0.000E+00
U-238	5.491E-01	1.055E+00	1.034E+00	0.000E+00
AM-243	3.680E-01	6.311E-02	6.236E-02	0.000E+00
ANH-511	1.851E-01	7.470E-02	5.667E-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	-9.797E-02	3.609E-01	6.215E-01	0.000E+00	NOT IDENT.
NA-22	-2.003E-02	5.460E-02	9.043E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.706E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.036E-02	3.329E-02	5.328E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.846E-02	5.854E-02	0.000E+00	FAIL ABUN
SC-46	-1.730E-02	4.733E-02	7.867E-02	0.000E+00	FAIL ABUN
V-48	3.941E-02	9.526E-02	1.663E-01	0.000E+00	NOT IDENT.
CR-51	3.469E-01	3.971E-01	7.154E-01	0.000E+00	NOT IDENT.
MN-52	-2.101E-01	3.372E-01	5.275E-01	0.000E+00	NOT IDENT.
MN-54	-1.657E-02	4.624E-02	7.777E-02	0.000E+00	NOT IDENT.
CO-56	-2.239E-02	4.671E-02	7.742E-02	0.000E+00	NOT IDENT.
CO-57	-2.661E-03	2.394E-02	4.179E-02	0.000E+00	NOT IDENT.
CO-58	-1.645E-02	4.637E-02	7.807E-02	0.000E+00	NOT IDENT.
FE-59	-4.564E-02	1.180E-01	1.908E-01	0.000E+00	NOT IDENT.
CO-60	-2.865E-03	4.801E-02	7.765E-02	0.000E+00	NOT IDENT.
ZN-65	1.109E-02	1.091E-01	1.578E-01	0.000E+00	NOT IDENT.
GE-68	5.920E-01	1.523E+00	2.633E+00	0.000E+00	NOT IDENT.
AS-73	9.190E-02	2.239E-01	4.036E-01	0.000E+00	NOT IDENT.
AS-74	-8.652E-02	1.160E-01	1.883E-01	0.000E+00	NOT IDENT.
SE-75	-2.139E-03	4.353E-02	7.632E-02	0.000E+00	NOT IDENT.
BR-77	-1.855E+00	1.621E+01	2.792E+01	0.000E+00	FAIL ABUN
SR-82	-3.232E-01	4.775E-01	7.906E-01	0.000E+00	NOT IDENT.
RB-83	-9.829E-05	7.984E-02	1.385E-01	0.000E+00	NOT IDENT.
RB-84	-1.124E-02	8.937E-02	1.518E-01	0.000E+00	NOT IDENT.
KR-85	7.965E+00	8.901E+00	1.440E+01	0.000E+00	NOT IDENT.
SR-85	4.129E-02	4.614E-02	7.464E-02	0.000E+00	NOT IDENT.
RB-86	4.303E-01	1.005E+00	1.743E+00	0.000E+00	NOT IDENT.
Y-88	-1.589E-03	3.720E-02	6.240E-02	0.000E+00	NOT IDENT.
ZR-88	-1.336E-02	3.578E-02	5.910E-02	0.000E+00	NOT IDENT.
Y-91	5.861E+00	2.131E+01	3.737E+01	0.000E+00	NOT IDENT.
NB-94	2.402E-02	4.077E-02	7.122E-02	0.000E+00	NOT IDENT.
NB-95	8.005E-02	5.699E-02	1.062E-01	0.000E+00	NOT IDENT.
NB-95M	1.837E-01	1.418E-01	2.344E-01	0.000E+00	NOT IDENT.
ZR-95	-4.112E-02	9.352E-02	1.505E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.259E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.999E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.233E+01	1.933E+01	3.056E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.370E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.521E-02	3.483E-02	6.263E-02	0.000E+00	NOT IDENT.
RH-102	1.549E-02	3.294E-02	5.742E-02	0.000E+00	NOT IDENT.
RU-103	9.131E-03	4.781E-02	8.427E-02	0.000E+00	FAIL ABUN
RH-106	-1.135E-01	3.710E-01	6.174E-01	0.000E+00	FAIL ABUN
RU-106	-1.135E-01	3.709E-01	6.174E-01	0.000E+00	FAIL ABUN
AG-108M	-1.021E-02	3.473E-02	6.036E-02	0.000E+00	NOT IDENT.
AG-110M	1.120E-02	4.138E-02	7.134E-02	0.000E+00	NOT IDENT.
IN-111	-3.232E-01	1.505E+00	2.312E+00	0.000E+00	NOT IDENT.
IN-113M	-1.043E-02	5.111E-02	8.532E-02	0.000E+00	NOT IDENT.
SN-113	-1.043E-02	5.111E-02	8.532E-02	0.000E+00	NOT IDENT.
IN-114M	1.007E-01	2.084E-01	3.208E-01	0.000E+00	NOT IDENT.
CD-115	3.688E+00	1.810E+01	3.175E+01	0.000E+00	NOT IDENT.
SN-117M	4.668E-03	6.026E-02	1.036E-01	0.000E+00	NOT IDENT.
SB-122	2.197E+00	3.311E+00	5.916E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.239E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.092E-02	2.950E-02	4.971E-02	0.000E+00	NOT IDENT.
I-124	-6.613E-01	1.107E+00	1.544E+00	0.000E+00	NOT IDENT.
SB-124	-3.235E-02	9.085E-02	1.410E-01	0.000E+00	FAIL ABUN
SB-125	-1.755E-02	1.042E-01	1.828E-01	0.000E+00	FAIL ABUN
TE-125M	4.533E+00	8.596E+00	1.548E+01	0.000E+00	NOT IDENT.
I-126	-2.671E-03	2.388E-01	4.031E-01	0.000E+00	NOT IDENT.
SB-126	6.111E-02	2.203E-01	3.270E-01	0.000E+00	NOT IDENT.
SB-127	-2.305E+00	2.073E+00	3.177E+00	0.000E+00	NOT IDENT.
XE-127	-8.006E-03	4.886E-02	8.746E-02	0.000E+00	NOT IDENT.
I-131	-3.467E-02	1.357E-01	2.274E-01	0.000E+00	NOT IDENT.
TE-132	-2.286E-02	8.635E-01	1.537E+00	0.000E+00	NOT IDENT.
BA-133	-6.721E-02	5.684E-02	7.665E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.694E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.662E-02	5.988E-02	1.122E-01	0.000E+00	NOT IDENT.
CS-135	1.398E-02	1.669E-01	2.941E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.801E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.763E-02	1.421E-01	2.363E-01	0.000E+00	FAIL ABUN
BA-137M	-1.342E-02	4.402E-02	7.285E-02	0.000E+00	NOT IDENT.
CS-137	-1.418E-02	4.653E-02	7.701E-02	0.000E+00	NOT IDENT.
CE-139	3.906E-02	3.147E-02	5.623E-02	0.000E+00	NOT IDENT.
BA-140	-1.536E-01	3.251E-01	5.389E-01	0.000E+00	NOT IDENT.
LA-140	-4.681E-02	1.204E-01	1.907E-01	0.000E+00	FAIL ABUN
CE-141	3.419E-02	6.696E-02	1.178E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.562E+02	0.000E+00	0.000E+00	SHORT HLIF



CE-144	-1.705E-01	2.073E-01	3.452E-01	0.000E+00	NOT IDENT.
PM-144	1.033E-02	4.298E-02	7.344E-02	0.000E+00	NOT IDENT.
PR-144	7.006E-01	2.914E+00	4.979E+00	0.000E+00	NOT IDENT.
PM-146	2.892E-04	4.947E-02	8.487E-02	0.000E+00	NOT IDENT.
ND-147	1.987E-01	7.194E-01	1.266E+00	0.000E+00	FAIL ABUN
PM-149	-2.826E+00	1.290E+02	2.249E+02	0.000E+00	NOT IDENT.
EU-152	1.031E-01	1.109E-01	1.781E-01	0.000E+00	FAIL ABUN
GD-153	1.066E-02	7.685E-02	1.215E-01	0.000E+00	FAIL ABUN
EU-154	-5.709E-02	1.524E-01	2.521E-01	0.000E+00	NOT IDENT.
EU-155	3.609E-02	9.988E-02	1.758E-01	0.000E+00	FAIL ABUN
TB-160	-6.964E-02	1.804E-01	3.004E-01	0.000E+00	FAIL ABUN
HO-166M	3.593E-03	7.944E-02	1.337E-01	0.000E+00	FAIL ABUN
TM-171	7.821E+00	1.537E+01	2.589E+01	0.000E+00	NOT IDENT.
LU-176	-2.506E-02	2.689E-02	4.264E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.849E+00	2.362E+00	0.000E+00	FAIL ABUN
LU-177M	6.677E-02	2.002E-01	3.432E-01	0.000E+00	NOT IDENT.
HF-181	-1.227E-02	4.780E-02	8.230E-02	0.000E+00	NOT IDENT.
W-181	6.951E-02	1.918E-01	3.220E-01	0.000E+00	NOT IDENT.
TA-182	8.074E-02	2.339E-01	4.109E-01	0.000E+00	NOT IDENT.
RE-183	-1.152E-01	1.210E-01	1.913E-01	0.000E+00	FAIL ABUN
RE-184	-6.139E-02	2.281E-01	3.975E-01	0.000E+00	NOT IDENT.
OS-185	8.760E-03	5.188E-02	8.900E-02	0.000E+00	NOT IDENT.
RE-188	1.223E-01	1.824E-01	3.211E-01	0.000E+00	NOT IDENT.
W-188	3.483E+00	8.669E+00	1.360E+01	0.000E+00	FAIL ABUN
IR-192	7.498E-03	3.631E-02	6.340E-02	0.000E+00	FAIL ABUN
AU-195	2.295E-01	2.041E-01	3.669E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.529E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.788E+00	9.291E+00	1.555E+01	0.000E+00	NOT IDENT.
TL-202	-3.869E-02	7.909E-02	1.357E-01	0.000E+00	NOT IDENT.
HG-203	4.796E-03	4.255E-02	7.480E-02	0.000E+00	FAIL ABUN
BI-207	1.286E-02	6.750E-02	1.149E-01	0.000E+00	FAIL ABUN
TL-207	-7.361E-01	7.592E-01	1.040E+00	0.000E+00	FAIL ABUN
PO-209	2.164E+00	9.313E+00	1.621E+01	0.000E+00	NOT IDENT.
PB-211	-3.009E-01	1.106E+00	1.806E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.399E-01	8.433E-01	0.000E+00	FAIL ABUN
PO-215	-7.361E-01	7.592E-01	1.040E+00	0.000E+00	FAIL ABUN
RN-219	9.053E-02	4.813E-01	7.963E-01	0.000E+00	NOT IDENT.
RN-220	-1.255E+01	3.080E+01	5.173E+01	0.000E+00	NOT IDENT.
RA-223	-7.361E-01	7.592E-01	1.040E+00	0.000E+00	FAIL ABUN
AC-227	3.483E-01	3.792E-01	6.905E-01	0.000E+00	FAIL ABUN
TH-227	3.483E-01	3.806E-01	6.905E-01	0.000E+00	FAIL ABUN
TH-229	-3.115E-01	4.837E-01	8.518E-01	0.000E+00	FAIL ABUN
PA-231	8.732E-01	1.514E+00	2.712E+00	0.000E+00	FAIL ABUN
TH-231	-7.361E-01	7.592E-01	1.040E+00	0.000E+00	FAIL ABUN
U-231	-1.830E-01	1.164E+00	1.851E+00	0.000E+00	FAIL ABUN
PA-233	-3.661E-02	6.552E-02	1.098E-01	0.000E+00	FAIL ABUN
PA-234	2.732E-01	3.524E-01	6.311E-01	0.000E+00	FAIL ABUN
PA-234M	2.910E-01	6.236E+00	1.009E+01	0.000E+00	NOT IDENT.
U-235	6.289E-02	2.325E-01	3.978E-01	0.000E+00	FAIL ABUN
NP-236	-6.645E-02	8.210E-02	1.353E-01	0.000E+00	NOT IDENT.
NP-239	-4.645E-02	1.733E-01	3.015E-01	0.000E+00	FAIL ABUN
AM-241	4.492E-02	5.944E-02	1.021E-01	0.000E+00	NOT IDENT.
CM-243	-2.508E-02	8.526E-02	1.498E-01	0.000E+00	FAIL ABUN
AM-246	9.397E-02	1.720E-01	3.011E-01	0.000E+00	NOT IDENT.
CM-247	5.900E-03	4.216E-02	7.163E-02	0.000E+00	NOT IDENT.
CF-249	8.224E-03	4.448E-02	7.606E-02	0.000E+00	NOT IDENT.
CF-251	4.775E-02	1.313E-01	2.263E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148011.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:57:21
Sample ID          : G244148011      Sample quantity   : 1.38810E+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           : 940268          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	766	10.67*	1.041E+00	1.864E+01	1.864E+01	11.19
CD-109	88.03	311	3.72*	7.248E+00	3.120E+00	3.197E+00	29.47
SN-126	64.28	57	9.60	7.391E+00	2.174E-01	2.174E-01	195.88
	86.94	311	8.90	7.248E+00	1.304E+00	1.304E+00	50.05
	87.57	311	37.00*	7.248E+00	3.137E-01	3.137E-01	29.47
TL-208	277.35	-----	6.80	4.225E+00	-----	Line Not Found	-----
	510.84	174	21.60	2.538E+00	8.568E-01	8.568E-01	42.02
	583.14	368	84.20*	2.257E+00	5.240E-01	5.240E-01	20.18
	860.37	76	12.46	1.605E+00	1.023E+00	1.023E+00	52.06
BI-210	46.50	59	4.05*	7.296E+00	5.406E-01	5.413E-01	150.76
PB-210	46.50	59	4.05*	7.296E+00	5.406E-01	5.413E-01	150.76
PO-210	46.50	59	4.05*	7.296E+00	5.406E-01	5.413E-01	150.71
BI-211	72.87	-----	1.27	7.369E+00	-----	Line Not Found	-----
	351.07	652	12.94*	3.499E+00	3.895E+00	3.895E+00	14.37
PB-212	74.81	661	10.70	7.358E+00	2.270E+00	2.270E+00	19.84
	77.11	996	18.00	7.344E+00	2.038E+00	2.038E+00	13.15
	87.30	311	8.00	7.248E+00	1.451E+00	1.451E+00	31.12
	238.63	1172	44.60*	4.716E+00	1.507E+00	1.507E+00	11.87
	300.09	98	3.41	3.978E+00	1.951E+00	1.951E+00	56.35
PO-212	74.81	661	10.70	7.358E+00	2.270E+00	2.270E+00	19.84
	77.11	996	18.00	7.344E+00	2.038E+00	2.038E+00	13.15
	87.30	311	8.00	7.248E+00	1.451E+00	1.451E+00	31.12
	115.19	-----	0.60	6.822E+00	-----	Line Not Found	-----
	238.63	1172	44.60*	4.716E+00	1.507E+00	1.507E+00	11.87
	300.09	98	3.41	3.978E+00	1.951E+00	1.951E+00	56.35
BI-214	609.31	460	46.30*	2.171E+00	1.237E+00	1.237E+00	18.12
	1120.29	81	15.10	1.288E+00	1.126E+00	1.126E+00	52.70
	1764.49	89	15.80	8.991E-01	1.694E+00	1.694E+00	28.02
PB-214	74.81	661	6.21	7.358E+00	3.911E+00	3.912E+00	19.00
	77.11	996	10.50	7.344E+00	3.493E+00	3.493E+00	15.20
	87.30	311	4.67	7.248E+00	2.485E+00	2.485E+00	30.46
	241.98	328	7.49	4.675E+00	2.532E+00	2.532E+00	30.17

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	383	19.20	4.030E+00	1.339E+00	1.339E+00	19.20
	351.92	652	37.20*	3.499E+00	1.355E+00	1.355E+00	15.29
	74.81	661	6.21	7.358E+00	3.911E+00	3.912E+00	19.00
	77.11	996	10.50	7.344E+00	3.493E+00	3.493E+00	15.20
	87.30	311	4.67	7.248E+00	2.485E+00	2.485E+00	30.46
PO-216	241.98	328	7.49	4.675E+00	2.532E+00	2.532E+00	30.17
	295.21	383	19.20	4.030E+00	1.339E+00	1.339E+00	19.20
	351.92	652	37.20*	3.499E+00	1.355E+00	1.355E+00	15.29
	74.81	661	10.70	7.358E+00	2.270E+00	2.270E+00	19.84
	77.11	996	18.00	7.344E+00	2.038E+00	2.038E+00	13.15
PO-218	87.30	311	8.00	7.248E+00	1.451E+00	1.451E+00	31.12
	238.63	1172	44.60*	4.716E+00	1.507E+00	1.507E+00	11.87
	300.09	98	3.41	3.978E+00	1.951E+00	1.951E+00	56.35
	74.81	661	6.21	7.358E+00	3.911E+00	3.912E+00	19.00
	77.11	996	10.50	7.344E+00	3.493E+00	3.493E+00	15.20
RA-224	87.30	311	4.67	7.248E+00	2.485E+00	2.485E+00	30.46
	241.98	328	7.49	4.675E+00	2.532E+00	2.532E+00	30.17
	295.21	383	19.20	4.030E+00	1.339E+00	1.339E+00	19.20
	351.92	652	37.20*	3.499E+00	1.355E+00	1.355E+00	15.29
	240.98	328	3.95*	4.675E+00	4.802E+00	4.802E+00	29.65
AC-228	609.31	460	46.30*	2.171E+00	1.237E+00	1.237E+00	18.12
	1120.29	81	15.10	1.288E+00	1.126E+00	1.126E+00	52.70
	1764.49	89	15.80	8.991E-01	1.694E+00	1.694E+00	28.02
	338.32	279	11.40	3.613E+00	1.829E+00	1.829E+00	50.68
	911.07	274	27.70*	1.529E+00	1.752E+00	1.752E+00	23.46
RA-228	969.11	117	16.60	1.452E+00	1.312E+00	1.312E+00	42.15
	338.32	279	11.40	3.613E+00	1.829E+00	1.829E+00	50.68
	911.07	274	27.70*	1.529E+00	1.752E+00	1.752E+00	23.46
	969.11	117	16.60	1.452E+00	1.312E+00	1.312E+00	42.15
	74.81	661	10.70	7.358E+00	2.270E+00	2.270E+00	17.53
TH-228	77.11	996	18.00	7.344E+00	2.038E+00	2.071E+00	13.15
	87.30	311	8.00	7.248E+00	1.451E+00	1.474E+00	29.47
	238.63	1172	44.60*	4.716E+00	1.507E+00	1.531E+00	11.87
	300.09	98	3.41	3.978E+00	1.951E+00	1.983E+00	81.12
	609.31	460	46.30*	2.171E+00	1.237E+00	1.237E+00	18.12
TH-230	1120.29	81	15.10	1.288E+00	1.126E+00	1.126E+00	52.70
	1764.49	89	15.80	8.991E-01	1.694E+00	1.694E+00	28.02
	338.32	279	11.40	3.613E+00	1.829E+00	1.829E+00	30.66
	911.07	274	27.70*	1.529E+00	1.752E+00	1.752E+00	23.46
	969.11	117	16.60	1.452E+00	1.312E+00	1.312E+00	42.15
TH-234	63.29	57	3.80*	7.391E+00	5.491E-01	5.491E-01	196.12
	92.38	264	5.41	7.180E+00	1.836E+00	1.836E+00	41.83
	609.31	460	46.30*	2.171E+00	1.237E+00	1.237E+00	18.12
	1120.29	81	15.10	1.288E+00	1.126E+00	1.126E+00	52.70
	1764.49	89	15.80	8.991E-01	1.694E+00	1.694E+00	28.02
NP-237	86.50	311	12.60*	7.248E+00	9.212E-01	9.212E-01	35.98
	95.87	---	2.60	7.135E+00	---	Line Not Found	---
	63.29	57	3.80*	7.391E+00	5.491E-01	5.491E-01	196.12
	92.38	264	5.41	7.180E+00	1.836E+00	1.836E+00	38.69

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	661	66.00*	7.358E+00	3.680E-01	3.680E-01	17.50
	86.72	311	0.34	7.248E+00	3.454E+01	3.454E+01	29.47
	117.66	-----	0.55	6.778E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.323E+00	-----	Line Not Found	-----
ANH-511	511.00	174	100.00*	2.538E+00	1.851E-01	1.851E-01	41.19

Flag: "\*" = Keyline

Total number of lines in spectrum 30  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 30 100.00%

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	1.864E+01	1.864E+01	0.209E+01	11.19	
CD-109	464.00D	1.02	3.120E+00	3.197E+00	0.942E+00	29.47	
SN-126	1.00E+05Y	1.00	3.137E-01	3.137E-01	0.925E-01	29.47	
TL-208	1.41E+10Y	1.00	5.240E-01	5.240E-01	1.058E-01	20.18	
BI-210	22.26Y	1.00	5.406E-01	5.413E-01	8.161E-01	150.76	
PB-210	22.26Y	1.00	5.406E-01	5.413E-01	8.161E-01	150.76	
PO-210	22.26Y	1.00	5.406E-01	5.413E-01	8.158E-01	150.71	
BI-211	7.04E+08Y	1.00	3.895E+00	3.895E+00	0.560E+00	14.37	
PB-212	1.41E+10Y	1.00	1.507E+00	1.507E+00	0.179E+00	11.87	
PO-212	1.41E+10Y	1.00	1.507E+00	1.507E+00	0.179E+00	11.87	
BI-214	1600.00Y	1.00	1.237E+00	1.237E+00	0.224E+00	18.12	
PB-214	1600.00Y	1.00	1.355E+00	1.355E+00	0.207E+00	15.29	
PO-214	1600.00Y	1.00	1.355E+00	1.355E+00	0.207E+00	15.29	
PO-216	1.41E+10Y	1.00	1.507E+00	1.507E+00	0.179E+00	11.87	
PO-218	1600.00Y	1.00	1.355E+00	1.355E+00	0.207E+00	15.29	
RA-224	1.41E+10Y	1.00	4.802E+00	4.802E+00	1.424E+00	29.65	
RA-226	1600.00Y	1.00	1.237E+00	1.237E+00	0.224E+00	18.12	
AC-228	1.41E+10Y	1.00	1.752E+00	1.752E+00	0.411E+00	23.46	
RA-228	1.41E+10Y	1.00	1.752E+00	1.752E+00	0.411E+00	23.46	
TH-228	1.91Y	1.02	1.507E+00	1.531E+00	0.182E+00	11.87	
TH-230	4.47E+09Y	1.00	1.237E+00	1.237E+00	0.224E+00	18.12	
TH-232	1.41E+10Y	1.00	1.752E+00	1.752E+00	0.411E+00	23.46	
TH-234	4.47E+09Y	1.00	5.491E-01	5.491E-01	10.77E-01	196.12	
U-234	4.47E+09Y	1.00	1.237E+00	1.237E+00	0.224E+00	18.12	
NP-237	2.14E+06Y	1.00	9.212E-01	9.212E-01	3.314E-01	35.98	
U-238	4.47E+09Y	1.00	5.491E-01	5.491E-01	10.77E-01	196.12	
AM-243	7380.00Y	1.00	3.680E-01	3.680E-01	0.644E-01	17.50	
ANH-511	1.00E+09Y	1.00	1.851E-01	1.851E-01	0.762E-01	41.19	

Total Activity : 5.579E+01 5.589E+01

Grand Total Activity : 5.579E+01 5.589E+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	84.03	78	607	1.38	167.85	164	28	1.08E-02	****	7.28E+00	T
4	89.90	202	399	1.06	179.57	164	28	2.81E-02	34.6	7.21E+00	T
0	129.44	49	434	1.23	258.68	253	8	6.83E-03	****	6.56E+00	T
0	185.63	198	434	1.54	371.09	366	11	2.75E-02	47.3	5.53E+00	T
0	209.46	139	342	0.96	418.76	414	10	1.93E-02	52.7	5.14E+00	T
0	327.61	84	135	1.58	655.11	650	10	1.17E-02	56.2	3.71E+00	T
0	462.07	147	112	1.63	924.12	917	14	2.04E-02	34.8	2.77E+00	T
0	727.19	152	95	1.76	1454.53	1447	16	2.11E-02	33.6	1.86E+00	T
1	964.13	58	51	2.06	1928.60	1924	20	8.05E-03	47.5	1.46E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148011.CNF;1
* Acquisition date   : 20-JAN-2010 15:57:21  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        : 4-JAN-2010 12:00:00.  Nuclide Library  : SOLID
* Sample ID          : G244148011           Analyst initials: MXR1
* Batch Number       : 940268               Sample Quantity  : 1.38810E+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	1.864E+01	2.085E+00	7.278E-01	4.450E-02	25.612
CD-109	3.197E+00	9.421E-01	9.499E-01	7.495E-02	3.365
SN-126	3.137E-01	9.245E-02	9.309E-02	7.364E-03	3.370
TL-208	5.240E-01	1.058E-01	6.946E-02	5.750E-03	7.543
BI-210	5.413E-01	8.161E-01	6.960E-01	5.674E-02	0.778
PB-210	5.413E-01	8.161E-01	6.960E-01	5.674E-02	0.778
PO-210	5.413E-01	8.158E-01	6.960E-01	4.962E-02	0.778
BI-211	3.895E+00	5.599E-01	3.406E-01	2.483E-02	11.437
PB-212	1.507E+00	1.789E-01	8.941E-02	8.122E-03	16.854
PO-212	1.507E+00	1.789E-01	8.941E-02	8.122E-03	16.854
BI-214	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
PB-214	1.355E+00	2.072E-01	1.188E-01	1.063E-02	11.409
PO-214	1.355E+00	2.072E-01	1.188E-01	1.063E-02	11.409
PO-216	1.507E+00	1.789E-01	8.941E-02	8.122E-03	16.854
PO-218	1.355E+00	2.072E-01	1.188E-01	1.063E-02	11.409
RA-224	4.802E+00	1.424E+00	1.018E+00	8.036E-02	4.717
RA-226	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
AC-228	1.752E+00	4.109E-01	2.727E-01	2.831E-02	6.425

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.752E+00	4.109E-01	2.727E-01	2.831E-02	6.425
TH-228	1.531E+00	1.818E-01	9.086E-02	8.254E-03	16.854
TH-230	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
TH-232	1.752E+00	4.109E-01	2.727E-01	2.831E-02	6.425
TH-234	5.491E-01	1.077E+00	9.693E-01	1.779E-01	0.567
U-234	1.237E+00	2.242E-01	1.347E-01	1.260E-02	9.184
NP-237	9.212E-01	3.314E-01	2.725E-01	6.028E-02	3.380
U-238	5.491E-01	1.077E+00	9.693E-01	1.779E-01	0.567
AM-243	3.680E-01	6.440E-02	5.864E-02	5.065E-03	6.277
ANH-511	1.851E-01	7.623E-02	5.529E-02	3.858E-03	3.347

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-9.797E-02		3.683E-01	6.055E-01	4.553E-02	-0.162
NA-22	-2.003E-02		5.571E-02	8.987E-02	5.073E-03	-0.223
NA-24	-2.138E+00		1.381E+00	Half-Life too short		
AL-26	-1.036E-02		3.397E-02	5.333E-02	3.010E-03	-0.194
TI-44	3.760E-01	+	4.945E-02	5.509E-02	4.639E-03	6.826
SC-46	-1.730E-02		4.829E-02	7.761E-02	5.877E-03	-0.223
V-48	3.941E-02		9.720E-02	1.644E-01	1.163E-02	0.240
CR-51	3.469E-01		4.052E-01	6.915E-01	5.381E-02	0.502
MN-52	-2.101E-01		3.441E-01	5.255E-01	3.020E-02	-0.400
MN-54	-1.657E-02		4.718E-02	7.663E-02	6.013E-03	-0.216
CO-56	-2.239E-02		4.766E-02	7.629E-02	5.946E-03	-0.293
CO-57	-2.661E-03		2.443E-02	3.965E-02	5.016E-03	-0.067
CO-58	-1.645E-02		4.731E-02	7.687E-02	6.123E-03	-0.214
FE-59	-4.564E-02		1.204E-01	1.890E-01	1.351E-02	-0.241
CO-60	-2.865E-03		4.899E-02	7.724E-02	4.393E-03	-0.037
ZN-65	1.109E-02		1.113E-01	1.564E-01	9.497E-03	0.071
GE-68	5.920E-01		1.554E+00	2.608E+00	1.667E-01	0.227
AS-73	9.190E-02		2.285E-01	3.771E-01	3.186E-02	0.244
AS-74	-8.652E-02		1.183E-01	1.842E-01	1.415E-02	-0.470
SE-75	-2.139E-03		4.442E-02	7.350E-02	5.758E-03	-0.029
BR-77	-1.855E+00		1.654E+01	2.725E+01	1.925E+00	-0.068
SR-82	-3.232E-01		4.873E-01	7.778E-01	6.260E-02	-0.416
RB-83	-9.829E-05		8.146E-02	1.352E-01	9.547E-03	-0.001
RB-84	-1.124E-02		9.120E-02	1.497E-01	1.140E-02	-0.075
KR-85	7.965E+00		9.083E+00	1.405E+01	9.840E-01	0.567
SR-85	4.129E-02		4.709E-02	7.282E-02	5.101E-03	0.567
RB-86	4.303E-01		1.025E+00	1.726E+00	1.104E-01	0.249
Y-88	-1.589E-03		3.796E-02	6.248E-02	3.519E-03	-0.025
ZR-88	-1.336E-02		3.651E-02	5.735E-02	3.359E-03	-0.233
Y-91	5.861E+00		2.174E+01	3.709E+01	2.056E+00	0.158
NB-94	2.402E-02		4.161E-02	6.993E-02	5.708E-03	0.343
NB-95	8.005E-02		5.815E-02	1.045E-01	8.435E-03	0.766
NB-95M	1.837E-01		1.446E-01	2.252E-01	2.083E-02	0.816



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	-4.112E-02		9.542E-02	1.480E-01	1.335E-02	-0.278
NB-97	6.103E-02		1.663E-01	Half-Life too short		
ZR-97	1.611E+01		3.571E+00	Half-Life too short		
MO-99	-1.233E+01		1.972E+01	3.003E+01	4.478E+00	-0.411
TC-99M	-7.496E+11		3.760E+11	Half-Life too short		
RH-101	2.521E-02		3.554E-02	5.998E-02	4.750E-03	0.420
RH-102	1.549E-02		3.362E-02	5.593E-02	3.722E-03	0.277
RU-103	9.131E-03		4.878E-02	8.217E-02	1.082E-02	0.111
RH-106	-1.135E-01		3.786E-01	6.047E-01	7.794E-02	-0.188
RU-106	-1.135E-01		3.784E-01	6.047E-01	4.762E-02	-0.188
AG-108M	-1.021E-02		3.544E-02	5.869E-02	3.948E-03	-0.174
AG-110M	1.120E-02		4.222E-02	6.995E-02	5.876E-03	0.160
IN-111	-3.232E-01		1.536E+00	2.223E+00	1.752E-01	-0.145
IN-113M	-1.043E-02		5.215E-02	8.279E-02	5.159E-03	-0.126
SN-113	-1.043E-02		5.215E-02	8.279E-02	5.159E-03	-0.126
IN-114M	1.007E-01		2.127E-01	3.070E-01	2.426E-02	0.328
CD-115	3.688E+00		1.847E+01	3.099E+01	2.209E+00	0.119
SN-117M	4.668E-03		6.149E-02	9.880E-02	8.627E-03	0.047
SB-122	2.197E+00		3.378E+00	5.782E+00	4.294E-01	0.380
I-123	-8.289E+00		1.142E+01	Half-Life too short		
TE-123M	-1.092E-02		3.010E-02	4.740E-02	4.139E-03	-0.230
I-124	-6.613E-01		1.130E+00	1.511E+00	1.169E-01	-0.437
SB-124	-3.235E-02		9.270E-02	1.409E-01	8.778E-03	-0.230
SB-125	-1.755E-02		1.063E-01	1.777E-01	1.144E-02	-0.099
TE-125M	4.533E+00		8.771E+00	1.466E+01	1.781E+00	0.309
I-126	-2.671E-03		2.436E-01	3.954E-01	3.226E-02	-0.007
SB-126	6.111E-02		2.248E-01	3.212E-01	2.618E-02	0.190
SB-127	-2.305E+00		2.115E+00	3.117E+00	3.543E-01	-0.739
XE-127	-8.006E-03		4.986E-02	8.380E-02	6.641E-03	-0.096
I-131	-3.467E-02		1.385E-01	2.204E-01	1.563E-02	-0.157
TE-132	-2.286E-02		8.811E-01	1.476E+00	2.294E-01	-0.015
BA-133	-6.721E-02		5.800E-02	7.425E-02	8.913E-03	-0.905
I-133	2.838E-03		8.642E-03	Half-Life too short		
CS-134	8.662E-02		6.110E-02	1.104E-01	8.897E-03	0.785
CS-135	1.398E-02		1.703E-01	2.833E-01	2.616E-02	0.049
I-135	3.018E+09		4.490E+10	Half-Life too short		
CS-136	-1.763E-02		1.450E-01	2.339E-01	1.660E-02	-0.075
BA-137M	-1.342E-02		4.492E-02	7.143E-02	5.826E-03	-0.188
CS-137	-1.418E-02		4.748E-02	7.551E-02	6.172E-03	-0.188
CE-139	3.906E-02		3.211E-02	5.367E-02	4.207E-03	0.728
BA-140	-1.536E-01		3.317E-01	5.263E-01	1.726E-01	-0.292
LA-140	-4.681E-02		1.228E-01	1.904E-01	1.097E-02	-0.246
CE-141	3.419E-02		6.832E-02	1.121E-01	1.163E-02	0.305
CE-143	1.468E-03		2.328E-04	Half-Life too short		
CE-144	-1.705E-01		2.115E-01	3.281E-01	5.687E-02	-0.520
PM-144	1.033E-02		4.385E-02	7.209E-02	5.888E-03	0.143
PR-144	7.006E-01		2.973E+00	4.888E+00	3.991E-01	0.143
PM-146	2.892E-04		5.048E-02	8.260E-02	7.497E-03	0.004

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	1.987E-01		7.340E-01	1.236E+00	1.749E-01	0.161
PM-149	-2.826E+00		1.317E+02	2.169E+02	3.258E+01	-0.013
EU-152	1.031E-01		1.131E-01	1.724E-01	1.293E-02	0.598
GD-153	1.066E-02		7.842E-02	1.148E-01	1.045E-02	0.093
EU-154	-5.709E-02		1.555E-01	2.506E-01	2.315E-02	-0.228
EU-155	3.609E-02		1.019E-01	1.663E-01	1.707E-02	0.217
TB-160	-6.964E-02		1.840E-01	2.962E-01	2.260E-02	-0.235
HO-166M	3.593E-03		8.107E-02	1.313E-01	1.071E-02	0.027
TM-171	7.821E+00		1.569E+01	2.429E+01	2.217E+00	0.322
LU-176	-2.506E-02		2.744E-02	4.118E-02	3.053E-03	-0.608
LU-177	3.538E+00	+	1.886E+00	2.264E+00	1.796E-01	1.563
LU-177M	6.677E-02		2.043E-01	3.334E-01	2.022E-02	0.200
HF-181	-1.227E-02		4.877E-02	8.020E-02	5.388E-03	-0.153
W-181	6.951E-02		1.957E-01	3.020E-01	2.785E-02	0.230
TA-182	8.074E-02		2.387E-01	4.080E-01	2.270E-02	0.198
RE-183	-1.152E-01		1.235E-01	1.825E-01	1.511E-02	-0.631
RE-184	-6.139E-02		2.328E-01	3.824E-01	3.002E-02	-0.161
OS-185	8.760E-03		5.294E-02	8.723E-02	7.021E-03	0.100
RE-188	1.223E-01		1.861E-01	3.060E-01	2.800E-02	0.400
W-188	3.483E+00		8.846E+00	1.312E+01	9.959E-01	0.265
IR-192	7.498E-03		3.705E-02	6.127E-02	4.482E-03	0.122
AU-195	2.295E-01		2.083E-01	3.468E-01	3.223E-02	0.662
TL-200	2.965E-05		4.862E-04	Half-Life too short		
TL-201	-3.788E+00		9.481E+00	1.485E+01	1.164E+00	-0.255
TL-202	-3.869E-02		8.071E-02	1.320E-01	8.338E-03	-0.293
HG-203	4.796E-03		4.342E-02	7.211E-02	5.741E-03	0.067
BI-207	1.286E-02		6.888E-02	1.138E-01	7.402E-03	0.113
TL-207	-7.361E-01		7.747E-01	1.005E+00	1.714E-01	-0.732
PO-209	2.164E+00		9.503E+00	1.599E+01	1.204E+00	0.135
PB-211	-3.009E-01		1.128E+00	1.754E+00	1.094E+00	-0.172
BI-212	1.871E+00	+	6.529E-01	8.285E-01	7.954E-02	2.258
PO-215	-7.361E-01		7.747E-01	1.005E+00	1.714E-01	-0.732
RN-219	9.053E-02		4.911E-01	7.731E-01	1.057E-01	0.117
RN-220	-1.255E+01		3.143E+01	5.054E+01	3.695E+00	-0.248
RA-223	-7.361E-01		7.747E-01	1.005E+00	1.714E-01	-0.732
AC-227	3.483E-01		3.869E-01	6.646E-01	9.916E-02	0.524
TH-227	3.483E-01		3.883E-01	6.646E-01	1.176E-01	0.524
TH-229	-3.115E-01		4.936E-01	8.154E-01	6.450E-02	-0.382
PA-231	8.732E-01		1.545E+00	2.615E+00	3.832E-01	0.334
TH-231	-7.361E-01		7.747E-01	1.005E+00	1.714E-01	-0.732
U-231	-1.830E-01		1.188E+00	1.749E+00	1.555E-01	-0.105
PA-233	-3.661E-02		6.686E-02	1.060E-01	8.098E-03	-0.345
PA-234	2.732E-01		3.596E-01	6.234E-01	1.134E-01	0.438
PA-234M	2.910E-01		6.363E+00	9.977E+00	8.551E-01	0.029
U-235	6.289E-02		2.372E-01	3.786E-01	6.990E-02	0.166
NP-236	-6.645E-02		8.377E-02	1.290E-01	1.100E-02	-0.515
NP-239	-4.645E-02		1.768E-01	2.858E-01	3.392E-02	-0.163
AM-241	4.492E-02		6.066E-02	9.558E-02	9.720E-03	0.470

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.508E-02		8.700E-02	1.417E-01	1.411E-02	-0.177
AM-246	9.397E-02		1.755E-01	2.982E-01	1.902E-02	0.315
CM-247	5.900E-03		4.302E-02	6.955E-02	4.142E-03	0.085
CF-249	8.224E-03		4.539E-02	7.380E-02	4.383E-03	0.111
CF-251	4.775E-02		1.340E-01	2.162E-01	1.701E-02	0.221

# VAX/VMS Nuclide Identification Report Generated

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*                               *                                         *
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G244148011      *
* Acquisition date   : 20-JAN-2010 15:57:21 Detector SN#              *
* Detector ID        : GAM13                                           *
* Geometry           : CAN                                             *
* 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        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID           : G244148011 Analyst initials: MXR1             *
* Batch Number        : 940268 Sample Quantity : 1.3881E+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	1.864E+01	2.044E+00	3.654E-01	1.043E+00
CD-109	3.197E+00	9.233E-01	5.039E-01	4.710E-01
SN-126	3.137E-01	9.060E-02	4.939E-02	4.623E-02
TL-208	5.240E-01	1.036E-01	3.553E-02	5.288E-02
BI-210	5.413E-01	7.998E-01	3.736E-01	4.081E-01
PB-210	5.413E-01	7.998E-01	3.736E-01	4.081E-01
PO-210	5.413E-01	7.995E-01	3.736E-01	4.079E-01
BI-211	3.895E+00	5.487E-01	1.760E-01	2.800E-01
PB-212	1.507E+00	1.753E-01	4.654E-02	8.943E-02
PO-212	1.507E+00	1.753E-01	4.654E-02	8.943E-02
BI-214	1.237E+00	2.197E-01	6.885E-02	1.121E-01
PB-214	1.355E+00	2.031E-01	6.136E-02	1.036E-01
PO-214	1.355E+00	2.031E-01	6.136E-02	1.036E-01
PO-216	1.507E+00	1.753E-01	4.654E-02	8.943E-02
PO-218	1.355E+00	2.031E-01	6.136E-02	1.036E-01
RA-224	4.802E+00	1.395E+00	5.298E-01	7.118E-01
RA-226	1.237E+00	2.197E-01	6.885E-02	1.121E-01
AC-228	1.752E+00	4.027E-01	1.382E-01	2.055E-01
RA-228	1.752E+00	4.027E-01	1.382E-01	2.055E-01
TH-228	1.531E+00	1.781E-01	4.730E-02	9.088E-02
TH-230	1.237E+00	2.197E-01	6.885E-02	1.121E-01
TH-232	1.752E+00	4.027E-01	1.382E-01	2.055E-01
TH-234	5.491E-01	1.055E+00	5.173E-01	5.385E-01
U-234	1.237E+00	2.197E-01	6.885E-02	1.121E-01
NP-237	9.212E-01	3.248E-01	1.446E-01	1.657E-01
U-238	5.491E-01	1.055E+00	5.173E-01	5.385E-01
AM-243	3.680E-01	6.311E-02	3.120E-02	3.220E-02
ANH-511	1.851E-01	7.470E-02	2.835E-02	3.811E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-9.797E-02	3.609E-01	3.110E-01	1.841E-01	NOT IDENT.
NA-22	-2.003E-02	5.460E-02	4.524E-02	2.786E-02	NOT IDENT.
NA-24	-2.138E+06	2.706E+06	0.000E+00	1.381E+06	SHORT HLIF
AL-26	-1.036E-02	3.329E-02	2.665E-02	1.699E-02	NOT IDENT.
TI-44	3.760E-01	4.846E-02	2.929E-02	2.472E-02	FAIL ABUN
SC-46	-1.730E-02	4.733E-02	3.936E-02	2.415E-02	FAIL ABUN
V-48	3.941E-02	9.526E-02	8.320E-02	4.860E-02	NOT IDENT.
CR-51	3.469E-01	3.971E-01	3.579E-01	2.026E-01	NOT IDENT.
MN-52	-2.101E-01	3.372E-01	2.639E-01	1.720E-01	NOT IDENT.
MN-54	-1.657E-02	4.624E-02	3.891E-02	2.359E-02	NOT IDENT.
CO-56	-2.239E-02	4.671E-02	3.873E-02	2.383E-02	NOT IDENT.
CO-57	-2.661E-03	2.394E-02	2.091E-02	1.221E-02	NOT IDENT.
CO-58	-1.645E-02	4.637E-02	3.906E-02	2.366E-02	NOT IDENT.
FE-59	-4.564E-02	1.180E-01	9.546E-02	6.018E-02	NOT IDENT.
CO-60	-2.865E-03	4.801E-02	3.885E-02	2.450E-02	NOT IDENT.
ZN-65	1.109E-02	1.091E-01	7.897E-02	5.567E-02	NOT IDENT.
GE-68	5.920E-01	1.523E+00	1.317E+00	7.771E-01	NOT IDENT.
AS-73	9.190E-02	2.239E-01	2.019E-01	1.143E-01	NOT IDENT.
AS-74	-8.652E-02	1.160E-01	9.420E-02	5.916E-02	NOT IDENT.
SE-75	-2.139E-03	4.353E-02	3.818E-02	2.221E-02	NOT IDENT.
BR-77	-1.855E+00	1.621E+01	1.397E+01	8.268E+00	FAIL ABUN
SR-82	-3.232E-01	4.775E-01	3.955E-01	2.436E-01	NOT IDENT.
RB-83	-9.829E-05	7.984E-02	6.931E-02	4.073E-02	NOT IDENT.
RB-84	-1.124E-02	8.937E-02	7.593E-02	4.560E-02	NOT IDENT.
KR-85	7.965E+00	8.901E+00	7.203E+00	4.542E+00	NOT IDENT.
SR-85	4.129E-02	4.614E-02	3.734E-02	2.354E-02	NOT IDENT.
RB-86	4.303E-01	1.005E+00	8.718E-01	5.126E-01	NOT IDENT.
Y-88	-1.589E-03	3.720E-02	3.122E-02	1.898E-02	NOT IDENT.
ZR-88	-1.336E-02	3.578E-02	2.957E-02	1.826E-02	NOT IDENT.
Y-91	5.861E+00	2.131E+01	1.869E+01	1.087E+01	NOT IDENT.
NB-94	2.402E-02	4.077E-02	3.563E-02	2.080E-02	NOT IDENT.
NB-95	8.005E-02	5.699E-02	5.314E-02	2.908E-02	NOT IDENT.
NB-95M	1.837E-01	1.418E-01	1.173E-01	7.232E-02	NOT IDENT.
ZR-95	-4.112E-02	9.352E-02	7.531E-02	4.771E-02	NOT IDENT.
NB-97	6.103E+04	3.259E+05	0.000E+00	1.663E+05	SHORT HLIF
ZR-97	1.611E+07	6.999E+06	0.000E+00	3.571E+06	SHORT HLIF
MO-99	-1.233E+01	1.933E+01	1.529E+01	9.860E+00	NOT IDENT.
TC-99M	-7.496E+17	7.370E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.521E-02	3.483E-02	3.134E-02	1.777E-02	NOT IDENT.
RH-102	1.549E-02	3.294E-02	2.873E-02	1.681E-02	NOT IDENT.
RU-103	9.131E-03	4.781E-02	4.216E-02	2.439E-02	FAIL ABUN
RH-106	-1.135E-01	3.710E-01	3.089E-01	1.893E-01	FAIL ABUN
RU-106	-1.135E-01	3.709E-01	3.089E-01	1.892E-01	FAIL ABUN
AG-108M	-1.021E-02	3.473E-02	3.020E-02	1.772E-02	NOT IDENT.
AG-110M	1.120E-02	4.138E-02	3.569E-02	2.111E-02	NOT IDENT.
IN-111	-3.232E-01	1.505E+00	1.157E+00	7.678E-01	NOT IDENT.
IN-113M	-1.043E-02	5.111E-02	4.268E-02	2.608E-02	NOT IDENT.
SN-113	-1.043E-02	5.111E-02	4.268E-02	2.608E-02	NOT IDENT.
IN-114M	1.007E-01	2.084E-01	1.605E-01	1.063E-01	NOT IDENT.
CD-115	3.688E+00	1.810E+01	1.588E+01	9.237E+00	NOT IDENT.
SN-117M	4.668E-03	6.026E-02	5.183E-02	3.075E-02	NOT IDENT.
SB-122	2.197E+00	3.311E+00	2.960E+00	1.689E+00	NOT IDENT.
I-123	-8.289E+06	2.239E+07	0.000E+00	1.142E+07	SHORT HLIF
TE-123M	-1.092E-02	2.950E-02	2.487E-02	1.505E-02	NOT IDENT.
I-124	-6.613E-01	1.107E+00	7.726E-01	5.648E-01	NOT IDENT.
SB-124	-3.235E-02	9.085E-02	7.054E-02	4.635E-02	FAIL ABUN
SB-125	-1.755E-02	1.042E-01	9.147E-02	5.316E-02	FAIL ABUN
TE-125M	4.533E+00	8.596E+00	7.746E+00	4.385E+00	NOT IDENT.
I-126	-2.671E-03	2.388E-01	2.017E-01	1.218E-01	NOT IDENT.
SB-126	6.111E-02	2.203E-01	1.636E-01	1.124E-01	NOT IDENT.
SB-127	-2.305E+00	2.073E+00	1.589E+00	1.057E+00	NOT IDENT.
XE-127	-8.006E-03	4.886E-02	4.376E-02	2.493E-02	NOT IDENT.
I-131	-3.467E-02	1.357E-01	1.138E-01	6.923E-02	NOT IDENT.
TE-132	-2.286E-02	8.635E-01	7.689E-01	4.405E-01	NOT IDENT.
BA-133	-6.721E-02	5.684E-02	3.835E-02	2.900E-02	NOT IDENT.
I-133	2.838E+03	1.694E+04	0.000E+00	8.642E+03	SHORT HLIF
CS-134	8.662E-02	5.988E-02	5.611E-02	3.055E-02	NOT IDENT.
CS-135	1.398E-02	1.669E-01	1.471E-01	8.516E-02	NOT IDENT.
I-135	3.018E+15	8.801E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.763E-02	1.421E-01	1.182E-01	7.248E-02	FAIL ABUN
BA-137M	-1.342E-02	4.402E-02	3.645E-02	2.246E-02	NOT IDENT.
CS-137	-1.418E-02	4.653E-02	3.853E-02	2.374E-02	NOT IDENT.
CE-139	3.906E-02	3.147E-02	2.813E-02	1.605E-02	NOT IDENT.
BA-140	-1.536E-01	3.251E-01	2.696E-01	1.659E-01	NOT IDENT.
LA-140	-4.681E-02	1.204E-01	9.541E-02	6.142E-02	FAIL ABUN
CE-141	3.419E-02	6.696E-02	5.892E-02	3.416E-02	NOT IDENT.
CE-143	1.468E+03	4.562E+02	0.000E+00	2.328E+02	SHORT HLIF

CE-144	-1.705E-01	2.073E-01	1.727E-01	1.058E-01	NOT IDENT.
PM-144	1.033E-02	4.298E-02	3.674E-02	2.193E-02	NOT IDENT.
PR-144	7.006E-01	2.914E+00	2.491E+00	1.487E+00	NOT IDENT.
PM-146	2.892E-04	4.947E-02	4.246E-02	2.524E-02	NOT IDENT.
ND-147	1.987E-01	7.194E-01	6.331E-01	3.670E-01	FAIL ABUN
PM-149	-2.826E+00	1.290E+02	1.125E+02	6.584E+01	NOT IDENT.
EU-152	1.031E-01	1.109E-01	8.912E-02	5.656E-02	FAIL ABUN
GD-153	1.066E-02	7.685E-02	6.081E-02	3.921E-02	FAIL ABUN
EU-154	-5.709E-02	1.524E-01	1.261E-01	7.774E-02	NOT IDENT.
EU-155	3.609E-02	9.988E-02	8.795E-02	5.096E-02	FAIL ABUN
TB-160	-6.964E-02	1.804E-01	1.503E-01	9.202E-02	FAIL ABUN
HO-166M	3.593E-03	7.944E-02	6.687E-02	4.053E-02	FAIL ABUN
TM-171	7.821E+00	1.537E+01	1.295E+01	7.843E+00	NOT IDENT.
LU-176	-2.506E-02	2.689E-02	2.133E-02	1.372E-02	FAIL ABUN
LU-177	3.538E+00	1.849E+00	1.182E+00	9.432E-01	FAIL ABUN
LU-177M	6.677E-02	2.002E-01	1.717E-01	1.021E-01	NOT IDENT.
HF-181	-1.227E-02	4.780E-02	4.118E-02	2.439E-02	NOT IDENT.
W-181	6.951E-02	1.918E-01	1.611E-01	9.787E-02	NOT IDENT.
TA-182	8.074E-02	2.339E-01	2.056E-01	1.193E-01	NOT IDENT.
RE-183	-1.152E-01	1.210E-01	9.572E-02	6.176E-02	FAIL ABUN
RE-184	-6.139E-02	2.281E-01	1.988E-01	1.164E-01	NOT IDENT.
OS-185	8.760E-03	5.188E-02	4.452E-02	2.647E-02	NOT IDENT.
RE-188	1.223E-01	1.824E-01	1.606E-01	9.307E-02	NOT IDENT.
W-188	3.483E+00	8.669E+00	6.806E+00	4.423E+00	FAIL ABUN
IR-192	7.498E-03	3.631E-02	3.172E-02	1.852E-02	FAIL ABUN
AU-195	2.295E-01	2.041E-01	1.836E-01	1.041E-01	FAIL ABUN
TL-200	2.965E+01	9.529E+02	0.000E+00	4.862E+02	SHORT HLIF
TL-201	-3.788E+00	9.291E+00	7.782E+00	4.740E+00	NOT IDENT.
TL-202	-3.869E-02	7.909E-02	6.787E-02	4.035E-02	NOT IDENT.
HG-203	4.796E-03	4.255E-02	3.742E-02	2.171E-02	FAIL ABUN
BI-207	1.286E-02	6.750E-02	5.751E-02	3.444E-02	FAIL ABUN
TL-207	-7.361E-01	7.592E-01	5.202E-01	3.874E-01	FAIL ABUN
PO-209	2.164E+00	9.313E+00	8.108E+00	4.752E+00	NOT IDENT.
PB-211	-3.009E-01	1.106E+00	9.036E-01	5.641E-01	NOT IDENT.
BI-212	1.871E+00	6.399E-01	4.219E-01	3.265E-01	FAIL ABUN
PO-215	-7.361E-01	7.592E-01	5.202E-01	3.874E-01	FAIL ABUN
RN-219	9.053E-02	4.813E-01	3.984E-01	2.455E-01	NOT IDENT.
RN-220	-1.255E+01	3.080E+01	2.588E+01	1.571E+01	NOT IDENT.
RA-223	-7.361E-01	7.592E-01	5.202E-01	3.874E-01	FAIL ABUN
AC-227	3.483E-01	3.792E-01	3.455E-01	1.934E-01	FAIL ABUN
TH-227	3.483E-01	3.806E-01	3.455E-01	1.942E-01	FAIL ABUN
TH-229	-3.115E-01	4.837E-01	4.261E-01	2.468E-01	FAIL ABUN
PA-231	8.732E-01	1.514E+00	1.357E+00	7.727E-01	FAIL ABUN
TH-231	-7.361E-01	7.592E-01	5.202E-01	3.874E-01	FAIL ABUN
U-231	-1.830E-01	1.164E+00	9.262E-01	5.940E-01	FAIL ABUN
PA-233	-3.661E-02	6.552E-02	5.491E-02	3.343E-02	FAIL ABUN
PA-234	2.732E-01	3.524E-01	3.157E-01	1.798E-01	FAIL ABUN
PA-234M	2.910E-01	6.236E+00	5.047E+00	3.182E+00	NOT IDENT.
U-235	6.289E-02	2.325E-01	1.990E-01	1.186E-01	FAIL ABUN
NP-236	-6.645E-02	8.210E-02	6.768E-02	4.189E-02	NOT IDENT.
NP-239	-4.645E-02	1.733E-01	1.508E-01	8.841E-02	FAIL ABUN
AM-241	4.492E-02	5.944E-02	5.107E-02	3.033E-02	NOT IDENT.
CM-243	-2.508E-02	8.526E-02	7.494E-02	4.350E-02	FAIL ABUN
AM-246	9.397E-02	1.720E-01	1.506E-01	8.775E-02	NOT IDENT.
CM-247	5.900E-03	4.216E-02	3.584E-02	2.151E-02	NOT IDENT.
CF-249	8.224E-03	4.448E-02	3.805E-02	2.269E-02	NOT IDENT.
CF-251	4.775E-02	1.313E-01	1.132E-01	6.698E-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	266.8620
46.50	266.8620
46.50	266.8620
48.70	291.9095
49.72	327.1116
51.35	350.5594
52.39	343.3667
52.97	336.5037
53.15	339.2925
53.44	339.6770
54.07	337.0955
56.28	376.0903
56.28	376.0948
57.37	0.0000
57.53	376.1225
57.53	376.1258
57.60	398.7066
57.98	407.0606
57.98	407.0606
59.32	361.6235
59.32	361.6235
59.40	361.7281
59.54	361.9109
59.72	413.1347
60.01	413.5663
61.10	419.1183
61.14	419.1779
61.30	415.4709
63.00	468.2123
63.29	468.6823
63.29	468.6823
63.58	469.1522
64.28	498.1785
65.12	474.2900
65.20	474.4184
65.20	474.4184
66.05	466.4232
66.72	459.4277
66.83	459.6004
66.91	459.7208
67.20	477.6036
67.20	477.6036
67.75	499.9743
67.85	500.1418
68.90	511.7550
68.90	511.7550
69.30	513.3184
69.67	507.4455
70.82	477.8232
70.82	477.8232
70.83	477.8394
72.80	525.8943
72.87	526.0089
72.87	526.0089
74.67	512.9175
74.81	513.1368
74.81	513.1368
74.81	513.1368
74.81	513.1368
74.81	513.1368
74.81	513.1368
74.81	513.1368
74.97	513.3903
75.28	513.8745
75.70	514.5325
77.11	516.7257
77.11	516.7257

77.11	516.7257
77.11	516.7257
77.11	516.7257
77.11	516.7257
77.11	516.7257
78.38	470.9822
79.62	448.9998
79.80	449.2356
79.80	449.2356
80.11	483.1546
80.18	483.2549
80.30	483.4212
80.30	483.4212
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81.07	434.0915
81.07	434.0915
81.07	434.0915
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83.78	389.4811
83.78	389.4811
83.78	389.4811
83.78	389.4811
84.21	389.9528
84.90	390.7066
85.43	391.2836
86.29	392.2164
86.50	392.4438
86.54	392.4859
86.59	392.5407
86.72	392.6797
86.79	392.7534
86.94	392.9176
87.30	393.3051
87.30	393.3051
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87.57	393.5956
87.88	393.9283
88.03	394.0884
88.36	394.4421
88.47	394.5601
89.95	396.1330
91.11	397.3586
92.29	398.5967
92.38	398.6915
92.38	398.6915
93.35	399.7022
94.00	400.3760
94.67	334.2205
94.67	334.2258
94.90	334.4223
94.90	334.4223
94.90	334.4223
94.90	334.4223
95.87	376.0676
95.87	376.0676
96.73	388.5810
97.43	354.1432
98.44	315.7236
98.44	315.7236
98.88	326.0591
99.55	325.6220
99.55	325.6220
99.86	339.6135
100.00	349.5502
100.10	349.6390
103.18	362.1707
103.76	344.8405
105.00	333.9407
105.31	334.1868
108.00	345.3194
109.28	327.2734



111.00	364.8539
111.00	364.8539
111.76	331.1581
112.95	305.7310
115.19	345.9316
116.30	301.9047
117.00	306.4560
117.00	306.4560
117.66	292.5780
121.11	288.5862
121.62	282.7102
121.78	282.8064
122.06	305.6956
122.32	319.2975
122.32	319.2975
122.32	319.2975
122.32	319.2975
123.07	320.8401
127.23	339.8199
129.76	328.9894
131.20	323.6345
133.02	356.1895
133.54	351.0580
135.34	321.5368
136.00	306.0146
136.25	306.1641
136.48	295.6663
140.51	367.6476
140.51	0.0000
142.18	347.3111
142.65	343.3151
143.76	338.6430
144.24	325.9931
144.24	325.9931
144.24	325.9931
144.24	325.9931
145.22	336.3219
145.44	338.6248
147.16	362.4959
152.43	325.4450
152.70	308.0612
153.22	319.3203
154.21	314.3865
154.21	314.3865
154.21	314.3865
154.21	314.3865
155.03	321.4513
156.02	365.0212
158.56	315.6964
159.00	0.0000
159.00	319.2627
160.31	327.7638
161.27	333.8715
162.32	327.7832
162.64	314.5764
163.35	301.5527
163.89	306.3017
165.85	282.6412
167.43	318.2512
171.28	263.6964
171.86	295.6667
172.10	300.3139
176.55	271.6624
176.60	281.9580
181.06	315.5728
184.41	308.5558
185.71	308.0171
186.00	308.1551
190.27	258.8600
192.34	290.3700
193.63	286.5359
197.04	272.0825
198.01	284.8528
198.60	296.6086
200.40	302.7119
201.83	356.7123
202.84	313.5779
205.31	301.8134

208.36	344.7773
208.81	296.4793
209.75	296.8696
209.75	296.8696
210.97	242.2260
215.65	247.6020
216.55	232.4688
218.09	263.8966
222.10	237.8764
223.80	255.8366
226.40	252.1171
227.00	255.0783
227.08	255.1058
227.20	250.5383
228.16	256.3873
228.18	262.8496
228.18	262.8496
231.56	0.0000
235.69	244.3624
236.00	244.4585
236.00	244.4585
238.63	223.4006
238.63	223.4006
238.63	223.4006
238.63	223.4006
239.00	223.5045
240.98	224.0616
241.98	224.3415
241.98	224.3415
241.98	224.3415
244.69	216.9984
245.39	220.2012
247.94	196.6853
248.90	205.5710
249.79	199.9713
252.40	211.0619
252.85	207.3721
252.85	207.3721
254.15	0.0000
256.20	186.2380
256.20	186.2380
260.50	218.8676
260.90	209.3646
262.80	195.3925
264.65	195.8137
268.24	240.2122
268.79	228.7366
269.46	199.8108
269.46	199.8108
269.46	199.8108
269.46	199.8108
271.23	218.6829
273.65	321.6161
276.40	193.5648
277.35	208.4498
277.60	209.4872
277.60	209.4872
278.00	208.6026
278.60	200.9023
279.20	209.8628
279.53	219.7480
280.46	237.6538
281.68	229.1212
283.67	169.5093
284.30	179.4867
285.00	185.5473
285.90	189.6797
286.10	189.7207
286.10	189.7207
287.40	192.9588
288.45	0.0000
290.67	190.6611
290.80	187.5108
291.72	203.6031
293.26	0.0000
293.70	215.1925
295.21	197.5770
295.21	197.5770

295.21	197.5770
295.96	197.7341
296.50	197.8459
297.23	198.0000
298.57	198.2810
299.80	198.5348
299.80	198.5348
300.09	178.1339
300.09	178.1339
300.09	178.1339
300.09	178.1339
300.12	178.1393
301.29	179.9656
302.84	167.3801
303.76	177.2058
303.91	183.6775
304.40	157.9795
304.40	157.9795
304.84	166.6527
306.84	193.9336
308.46	160.8681
311.98	177.6917
316.51	167.2857
318.01	185.9240
319.02	160.5479
319.41	162.6562
320.08	153.5500
323.87	174.2686
323.87	174.2686
323.87	174.2686
323.87	174.2686
325.23	151.4541
328.77	176.7564
333.44	151.4202
334.20	162.7408
334.20	162.7408
334.30	162.7575
338.28	167.7509
338.28	167.7509
338.28	167.7509
338.28	167.7509
338.32	167.7583
338.32	167.7583
338.32	167.7583
340.50	182.0960
340.57	182.1093
344.27	130.7700
345.85	167.9028
350.59	0.0000
351.07	150.7898
351.92	150.9076
351.92	150.9076
351.92	150.9076
355.39	0.0000
356.01	174.5669
364.48	151.5684
366.43	153.9712
367.43	127.3527
367.94	0.0000
369.80	146.9234
374.96	142.2037
383.85	142.2158
387.95	149.2501
388.63	131.8951
391.69	160.6512
391.69	160.6512
392.90	166.2848
398.62	145.0961
400.65	160.7524
401.10	156.4078
401.81	144.3766
402.60	152.1904
404.84	167.9385
410.95	149.8995
411.60	177.7515
413.65	141.3228
414.70	139.2155
415.30	135.9395

415.76	142.6777
417.63	0.0000
418.52	157.5148
423.70	146.9452
427.08	150.7112
427.89	153.0560
432.53	146.3814
433.93	132.9711
439.47	134.4484
439.56	138.0914
439.89	138.1267
443.98	117.5912
444.90	127.7073
445.03	132.2806
445.03	132.2806
445.03	132.2806
445.03	132.2806
453.90	132.6537
463.38	126.3916
468.07	103.6256
473.00	124.7940
475.06	109.1234
475.35	114.7419
476.78	118.5959
477.59	128.0077
477.96	118.6951
482.03	124.6631
484.57	123.9482
487.03	126.9844
490.36	0.0000
492.35	131.2321
497.08	123.1382
507.63	0.0000
510.53	0.0000
510.84	124.2982
511.00	124.3117
511.85	124.3839
511.85	124.3839
513.99	116.5777
513.99	116.5777
520.41	117.3982
520.65	118.3785
527.90	123.7813
528.96	0.0000
529.64	131.6670
529.87	0.0000
531.02	120.1583
537.32	125.5167
543.00	124.0203
546.56	0.0000
549.76	122.5952
552.65	123.8005
555.20	114.1592
563.23	124.6250
563.90	117.7478
568.70	106.1902
569.32	119.1357
569.50	119.1504
569.67	119.1621
573.80	102.5398
574.00	102.5524
574.64	116.5373
578.91	139.8086
579.30	0.0000
583.14	110.1316
585.48	123.6525
591.81	107.3490
592.07	107.3646
593.00	116.8241
595.88	129.1313
600.56	131.5107
602.52	0.0000
602.71	133.3639
602.71	133.3639
603.60	135.1237
604.41	119.9772
604.70	119.9974
609.31	115.9148

609.31	115.9148
609.31	115.9148
609.31	115.9148
610.33	117.0018
612.46	122.2383
614.37	98.5783
618.01	99.1242
621.84	103.4387
621.84	103.4387
631.29	116.3492
633.02	105.1252
633.10	105.1302
634.78	84.5965
635.90	89.8122
636.97	99.1617
645.85	102.7657
646.12	98.6274
656.30	101.2674
657.75	96.1238
657.90	0.0000
661.65	115.1750
661.65	115.1750
664.57	0.0000
666.33	113.3657
666.33	113.3657
675.00	108.6202
677.61	116.1606
685.20	119.8087
692.80	97.9319
695.00	99.1077
696.49	106.6504
696.49	106.6504
697.00	115.2141
697.49	115.2431
698.33	122.7659
698.50	118.5039
699.00	123.8759
702.63	96.2908
706.10	92.1750
706.58	0.0000
706.67	106.1374
709.31	115.9418
711.68	112.8596
713.82	97.9161
717.42	107.7979
720.50	98.9669
721.93	0.0000
722.20	100.8529
722.78	115.2943
722.78	115.2943
722.89	126.1088
722.95	126.1145
723.30	126.1344
724.18	117.1777
727.18	92.0764
733.00	99.5868
735.90	97.9167
739.58	106.8119
742.81	85.1487
744.21	92.8546
747.13	98.4551
751.79	96.4863
752.31	89.9297
753.82	82.3132
755.35	97.7501
756.15	108.7767
756.87	111.0112
763.93	137.8571
765.79	108.5436
766.42	108.5772
766.84	108.5988
776.49	105.3976
778.00	112.8733
778.57	102.7233
778.89	106.4414
783.80	81.6388
785.46	99.3416
792.07	94.9921

795.84	88.6276
796.30	84.9126
798.80	139.1934
801.93	85.1329
805.60	75.9045
810.29	82.6414
810.76	85.4773
815.85	79.0833
817.79	81.9802
818.51	85.7772
819.60	79.2166
826.30	91.7525
828.27	0.0000
831.60	89.1233
831.96	91.9834
834.83	103.4937
836.80	0.0000
846.75	84.9476
848.13	81.1799
856.28	0.0000
856.80	77.2405
860.37	69.1289
867.32	97.3998
867.82	85.8638
871.10	93.5622
873.19	85.9218
874.81	92.7441
875.33	0.0000
876.40	94.7401
879.36	91.9559
880.27	87.1490
880.51	87.1582
881.50	84.2866
883.24	81.4399
884.67	70.8183
889.25	79.7028
896.60	79.9480
898.02	93.6523
899.00	91.7376
903.28	80.4475
911.07	84.3501
911.07	84.3501
911.07	84.3501
919.63	83.8566
920.93	86.6590
925.00	80.8839
925.24	85.8247
926.50	91.7891
935.52	71.3218
937.48	80.2996
944.10	53.6748
946.00	59.6826
949.00	62.7424
962.29	68.6482
964.01	60.1074
966.15	67.1758
968.20	67.2290
969.11	77.4348
969.11	77.4348
969.11	77.4348
977.42	82.3925
980.50	77.6313
983.50	75.7034
989.30	88.0107
996.32	82.1602
1001.03	72.1440
1001.68	76.2283
1004.76	94.6329
1021.30	0.0000
1024.50	0.0000
1034.80	67.9121
1036.00	62.7946
1037.82	75.1981
1038.57	75.2189
1038.76	0.0000
1045.16	75.4001
1046.59	79.5723
1048.07	76.5142

1050.47	79.6851
1050.47	79.6851
1062.04	74.8213
1063.62	77.9816
1076.63	66.8542
1077.35	66.8698
1078.86	63.7700
1085.78	74.4061
1099.22	84.2318
1112.02	59.8286
1112.84	67.0986
1115.52	58.0848
1120.29	53.0294
1120.29	53.0294
1120.29	53.0294
1120.29	53.0294
1120.51	53.0334
1121.28	58.2009
1124.00	0.0000
1129.67	62.5611
1131.51	0.0000
1147.95	0.0000
1167.94	73.2821
1173.22	84.2048
1175.09	69.1328
1177.93	68.1167
1189.05	68.8278
1204.90	71.9861
1205.75	0.0000
1213.00	80.6070
1221.42	82.7026
1230.97	115.0047
1235.34	78.3480
1236.41	0.0000
1238.25	68.9722
1246.25	69.1428
1260.41	0.0000
1271.85	61.0982
1274.45	75.4787
1274.54	75.4815
1291.56	53.7832
1298.22	0.0000
1312.09	60.8774
1325.50	44.6267
1325.50	44.6267
1332.49	45.6919
1333.61	44.7342
1360.21	35.2806
1362.66	0.0000
1365.15	43.1821
1368.21	42.2366
1368.53	0.0000
1376.25	39.3806
1384.27	45.3920
1394.10	43.5381
1395.20	42.5621
1407.95	40.7283
1434.06	46.0257
1436.60	41.0515
1457.56	0.0000
1460.81	41.3232
1489.15	30.4667
1509.49	30.6309
1596.49	40.7152
1620.62	33.6071
1678.03	0.0000
1691.02	22.4326
1691.02	22.4326
1706.46	0.0000
1750.46	0.0000
1764.49	16.9032
1764.49	16.9032
1764.49	16.9032
1764.49	16.9032
1770.23	13.5399
1771.40	62.8519
1791.20	0.0000
1808.65	17.2853

1836.01

15.4580



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148011

Total Uranium Activity	1.6627E+00	ug/g
Total Uranium Counting Unc.	3.1415E+00	ug/g
Total Uranium Tpu	1.6028E-06	ug/g
Total Uranium Mda	1.5418E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 940268                SAMPLE ID   : G244148011                *
*  ANALYST       : MXR1                  DETECTOR    : GAM13                  *
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 20-JAN-2010 15:57:21.87  SAMPLE ALQT: 138.810 GRAM          *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.050E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.412E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.792E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.356E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 18:00:27.85

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148012.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:57:46
Sample ID          : G244148012          Sample quantity  : 1.35800E+02 GRAM
Detector name      : GAM15              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.23  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	74.20	304	400	1.58	148.88	143	17	4.22E-02	13.7	2.58E+00
2	2	76.49*	480	424	1.46	153.46	143	17	6.67E-02	9.4	
3	0	86.58*	132	367	1.06	173.64	171	7	1.84E-02	25.8	
4	0	92.34*	238	462	1.69	185.15	181	10	3.30E-02	19.7	
5	0	185.12*	223	308	1.38	370.63	366	10	3.09E-02	17.0	
6	0	208.77	145	304	1.46	417.90	413	11	2.01E-02	24.8	
7	3	237.98*	985	191	1.30	476.31	468	21	1.37E-01	4.3	6.04E-01
8	3	241.01	314	271	1.99	482.37	468	21	4.36E-02	15.2	
9	0	269.99	76	240	1.48	540.29	535	11	1.06E-02	41.2	
10	0	277.42	27	232	0.97	555.14	547	11	3.80E-03	109.8	
11	0	294.52*	376	160	1.46	589.33	582	12	5.22E-02	8.7	
12	0	299.35	77	184	1.30	599.00	595	10	1.07E-02	35.0	
13	0	327.68	43	171	1.34	655.64	650	10	5.99E-03	59.7	
14	0	337.95	190	205	1.18	676.16	669	14	2.64E-02	17.6	
15	0	351.29*	639	184	1.55	702.83	695	15	8.88E-02	6.2	
16	0	462.71	65	88	1.44	925.60	919	10	9.05E-03	29.6	
17	0	510.33*	65	117	2.49	1020.80	1015	15	9.03E-03	45.8	
18	0	582.68*	285	128	1.57	1165.45	1158	16	3.96E-02	11.0	
19	0	608.51*	427	87	1.58	1217.09	1208	16	5.93E-02	7.1	
20	0	662.06	33	123	1.34	1324.16	1316	14	4.60E-03	73.0	
21	0	726.76*	80	106	1.94	1453.53	1446	18	1.11E-02	32.2	
22	0	859.99*	51	41	1.72	1719.91	1713	12	7.08E-03	29.6	
23	0	910.88*	227	90	1.84	1821.65	1813	19	3.16E-02	12.3	
24	0	964.21	46	61	0.99	1928.30	1917	15	6.41E-03	39.5	
25	0	968.25*	123	32	1.80	1936.37	1932	11	1.71E-02	13.0	
26	0	1119.78*	101	39	1.52	2239.38	2234	14	1.40E-02	16.9	
27	0	1460.13*	790	24	2.03	2919.98	2909	19	1.10E-01	3.9	
28	0	1588.00	20	10	1.55	3175.70	3171	9	2.72E-03	38.0	
29	0	1729.11	26	10	1.51	3457.92	3451	13	3.67E-03	31.2	
30	0	1763.77*	59	4	2.60	3527.24	3519	16	8.23E-03	16.4	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 18:00:30

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148012.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:57:46
Sample ID        : G244148012             Sample quantity  : 135.80 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA15                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.23   0.0%
Peak Width (FWHM): 3.00                    Confidence level  : 5.00 %
Energy tolerance : 1.50 keV                Half life ratio   : 8.00
Errors propagated: Yes                      Systematic Error  : 0.00 %
Efficiency type  : Empirical                Efficiencies at   : Peak Energy
Abundance limit  : 75.00                   WTM error limit   : 3.00

```

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.048E+01	2.235E+00	5.367E-01	4.103E-02	38.149
CD-109	+	88.03	*	2.288E+00	1.210E+00	1.845E+00	2.133E-01	1.240
SN-126		64.28		8.358E-01	8.571E-01	1.435E+00	2.460E-01	0.582
	+	86.94		9.335E-01	6.214E-01	7.615E-01	3.202E-01	1.226
	+	87.57	*	2.245E-01	1.187E-01	1.688E-01	1.948E-02	1.330
BA-137M	+	661.65	*	5.050E-02	7.376E-02	6.669E-02	3.355E-03	0.757
CS-137	+	661.65	*	5.338E-02	7.798E-02	7.049E-02	3.567E-03	0.757
TL-208	+	277.35		2.934E-01	6.454E-01	6.632E-01	7.431E-02	0.442
	+	510.84		3.378E-01	3.113E-01	2.414E-01	2.430E-02	1.400
	+	583.14	*	4.200E-01	9.628E-02	6.480E-02	4.126E-03	6.482
	+	860.37		7.006E-01	4.190E-01	4.508E-01	3.875E-02	1.554
BI-211	+	72.87		2.102E+01	6.223E+00	6.915E+00	7.711E-01	3.040
	+	351.07	*	4.257E+00	6.064E-01	3.591E-01	2.467E-02	11.856
PB-212	+	74.81		2.495E+00	7.746E-01	7.295E-01	1.059E-01	3.420
	+	77.11		2.160E+00	4.715E-01	4.018E-01	4.462E-02	5.377
	+	87.30		1.038E+00	5.587E-01	8.137E-01	1.241E-01	1.276
	+	238.63	*	1.447E+00	1.718E-01	1.039E-01	8.598E-03	13.929
	+	300.09		1.742E+00	1.230E+00	1.344E+00	1.206E-01	1.295
PO-212	+	74.81		2.495E+00	7.746E-01	7.295E-01	1.059E-01	3.420
	+	77.11		2.160E+00	4.715E-01	4.018E-01	4.462E-02	5.377
	+	87.30		1.038E+00	5.587E-01	8.137E-01	1.241E-01	1.276
	+	115.19		4.771E-01	4.100E+00	6.725E+00	5.146E-01	0.071
	+	238.63	*	1.447E+00	1.718E-01	1.039E-01	8.598E-03	13.929
	+	300.09		1.742E+00	1.230E+00	1.344E+00	1.206E-01	1.295
BI-214	+	609.31	*	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
	+	1120.29		1.463E+00	5.130E-01	5.205E-01	4.802E-02	2.811
	+	1764.49		1.175E+00	3.924E-01	2.978E-01	1.853E-02	3.946
PB-214	+	74.81		4.299E+00	1.312E+00	1.257E+00	1.679E-01	3.420
	+	77.11		3.704E+00	8.562E-01	6.888E-01	9.276E-02	5.377
	+	87.30		1.779E+00	9.504E-01	1.394E+00	1.932E-01	1.276
	+	241.98		2.766E+00	8.775E-01	6.036E-01	5.395E-02	4.583
	+	295.21		1.491E+00	2.928E-01	2.334E-01	2.159E-02	6.389
	+	351.92	*	1.481E+00	2.246E-01	1.251E-01	1.079E-02	11.833
PO-214	+	74.81		4.299E+00	1.312E+00	1.257E+00	1.679E-01	3.420

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		3.704E+00	8.562E-01	6.888E-01	9.276E-02	5.377
	+	87.30		1.779E+00	9.504E-01	1.394E+00	1.932E-01	1.276
	+	241.98		2.766E+00	8.775E-01	6.036E-01	5.395E-02	4.583
	+	295.21		1.491E+00	2.928E-01	2.334E-01	2.159E-02	6.389
	+	351.92	*	1.481E+00	2.246E-01	1.251E-01	1.079E-02	11.833
	+	74.81		2.495E+00	7.746E-01	7.295E-01	1.059E-01	3.420
	+	77.11		2.160E+00	4.715E-01	4.018E-01	4.462E-02	5.377
	+	87.30		1.038E+00	5.587E-01	8.137E-01	1.241E-01	1.276
	+	238.63	*	1.447E+00	1.718E-01	1.039E-01	8.598E-03	13.929
	+	300.09		1.742E+00	1.230E+00	1.344E+00	1.206E-01	1.295
PO-218	+	74.81		4.299E+00	1.312E+00	1.257E+00	1.679E-01	3.420
	+	77.11		3.704E+00	8.562E-01	6.888E-01	9.276E-02	5.377
	+	87.30		1.779E+00	9.504E-01	1.394E+00	1.932E-01	1.276
	+	241.98		2.766E+00	8.775E-01	6.036E-01	5.395E-02	4.583
	+	295.21		1.491E+00	2.928E-01	2.334E-01	2.159E-02	6.389
RA-224	+	351.92	*	1.481E+00	2.246E-01	1.251E-01	1.079E-02	11.833
RA-226	+	240.98	*	5.245E+00	1.638E+00	1.182E+00	8.225E-02	4.438
	+	609.31	*	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
	+	1120.29		1.463E+00	5.130E-01	5.205E-01	4.802E-02	2.811
AC-228	+	1764.49		1.175E+00	3.924E-01	2.978E-01	1.853E-02	3.946
	+	338.32		1.401E+00	7.548E-01	4.085E-01	1.669E-01	3.429
	+	911.07	*	1.482E+00	4.001E-01	2.264E-01	2.516E-02	6.547
RA-228	+	969.11		1.418E+00	4.937E-01	3.951E-01	9.136E-02	3.588
	+	338.32		1.401E+00	7.548E-01	4.085E-01	1.669E-01	3.429
	+	911.07	*	1.482E+00	4.001E-01	2.264E-01	2.516E-02	6.547
TH-228	+	969.11		1.418E+00	4.937E-01	3.951E-01	9.136E-02	3.588
	+	74.81		2.535E+00	7.512E-01	7.413E-01	8.279E-02	3.420
	+	77.11		2.196E+00	4.792E-01	4.083E-01	4.534E-02	5.377
	+	87.30		1.055E+00	5.579E-01	8.269E-01	9.525E-02	1.276
TH-230	+	238.63	*	1.470E+00	1.746E-01	1.056E-01	8.738E-03	13.929
	+	300.09		1.770E+00	1.622E+00	1.366E+00	8.066E-01	1.295
	+	609.31	*	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
	+	1120.29		1.463E+00	5.130E-01	5.205E-01	4.802E-02	2.811
TH-232	+	1764.49		1.175E+00	3.924E-01	2.978E-01	1.853E-02	3.946
	+	338.32		1.401E+00	5.003E-01	4.085E-01	2.629E-02	3.429
	+	911.07	*	1.482E+00	4.001E-01	2.264E-01	2.516E-02	6.547
U-234	+	969.11		1.418E+00	4.937E-01	3.951E-01	9.136E-02	3.588
	+	609.31	*	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
	+	1120.29		1.463E+00	5.130E-01	5.205E-01	4.802E-02	2.811
	+	1764.49		1.175E+00	3.924E-01	2.978E-01	1.853E-02	3.946
NP-237	+	86.50	*	6.594E-01	3.742E-01	5.322E-01	1.256E-01	1.239
		95.87		-9.979E-01	1.263E+00	1.700E+00	4.267E-01	-0.587
AM-243	+	74.67	*	4.045E-01	1.198E-01	1.189E-01	1.321E-02	3.403
	+	86.72		2.473E+01	1.307E+01	2.025E+01	2.325E+00	1.221
		117.66		-4.536E-01	4.403E+00	7.153E+00	5.343E-01	-0.063
ANH-511		142.18		7.619E+00	2.166E+01	3.508E+01	2.390E+00	0.217
	+	511.00	*	7.297E-02	6.696E-02	5.215E-02	2.945E-03	1.399

---- 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	*	2.405E-01	3.745E-01	6.382E-01	4.252E-02	0.377

## ---- 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	*		3.609E-03	4.709E-02	7.690E-02	5.277E-03	0.047
NA-24	1368.53	*		1.474E+00	4.709E-02	Half-Life too short		
AL-26	1129.67			6.366E-01	1.747E+00	2.899E+00	1.826E-01	0.220
	1808.65	*		3.158E-03	2.769E-02	4.671E-02	2.795E-03	0.068
TI-44	67.85			1.788E-02	7.619E-02	1.180E-01	1.347E-02	0.151
	78.38	*		1.876E-01	5.930E-02	9.086E-02	1.010E-02	2.065
SC-46	889.25	*		9.038E-03	3.892E-02	6.589E-02	5.527E-03	0.137
+	1120.51			2.526E-01	8.699E-02	1.382E-01	8.874E-03	1.828
V-48	944.10			-1.662E-01	9.740E-01	1.579E+00	1.298E-01	-0.105
	983.50	*		-1.006E-02	7.629E-02	1.238E-01	9.781E-03	-0.081
	1312.09			8.481E-02	9.157E-02	1.636E-01	1.194E-02	0.518
CR-51	320.08	*		1.047E-01	4.527E-01	7.432E-01	5.360E-02	0.141
MN-52	744.21			7.744E-02	2.824E-01	4.826E-01	2.960E-02	0.160
	848.13			-3.367E-01	7.857E+00	1.299E+01	1.001E+00	-0.026
	935.52			2.309E-01	3.349E-01	5.836E-01	4.834E-02	0.396
	1246.25			3.430E+00	8.336E+00	1.410E+01	9.195E-01	0.243
	1333.61			-2.888E+00	5.919E+00	8.886E+00	6.706E-01	-0.325
	1434.06	*		1.128E-02	2.648E-01	4.449E-01	3.299E-02	0.025
MN-54	834.83	*		1.732E-02	4.064E-02	6.977E-02	5.229E-03	0.248
CO-56	846.75	*		-1.676E-02	4.098E-02	6.538E-02	5.025E-03	-0.256
	977.42			-1.015E+00	3.047E+00	4.840E+00	3.849E-01	-0.210
	1037.82			-1.992E-01	3.064E-01	4.643E-01	3.674E-02	-0.429
	1175.09			-1.004E+00	2.331E+00	3.587E+00	2.051E-01	-0.280
	1238.25			9.764E-02	9.590E-02	1.690E-01	1.142E-02	0.578
	1360.21			-2.882E-02	1.047E+00	1.682E+00	1.265E-01	-0.017
	1771.40			-6.030E-01	3.032E-01	3.062E-01	1.894E-02	-1.969
CO-57	122.06	*		7.959E-03	3.030E-02	4.989E-02	3.587E-03	0.160
	136.48			-7.004E-03	2.437E-01	3.952E-01	3.033E-02	-0.018
CO-58	810.76	*		-8.872E-03	3.862E-02	6.282E-02	4.488E-03	-0.141
FE-59	142.65			2.504E+00	3.426E+00	5.623E+00	3.829E-01	0.445
	192.34			1.845E-01	1.178E+00	1.874E+00	2.310E-01	0.098
	1099.22	*		6.489E-03	9.724E-02	1.600E-01	1.211E-02	0.041
	1291.56			-1.419E-03	1.302E-01	2.103E-01	1.774E-02	-0.007
CO-60	1173.22			-1.971E-02	4.630E-02	7.130E-02	4.061E-03	-0.276
	1332.49	*		-2.087E-02	4.244E-02	6.392E-02	4.824E-03	-0.327
ZN-65	1115.52	*		9.478E-02	1.076E-01	1.687E-01	1.096E-02	0.562
GE-68	1077.35	*		1.007E-01	1.307E+00	2.156E+00	1.498E-01	0.047
AS-73	53.44	*		1.434E+00	1.972E+00	3.361E+00	4.594E-01	0.427
AS-74	595.88	*		-2.341E-02	1.107E-01	1.716E-01	9.227E-03	-0.136
	634.78			-1.628E-01	4.175E-01	6.498E-01	3.370E-02	-0.250
SE-75	66.05			-1.476E+01	8.340E+00	1.249E+01	1.620E+00	-1.182
	96.73			-3.218E-01	1.019E+00	1.438E+00	2.062E-01	-0.224
	121.11			1.051E-01	1.618E-01	2.701E-01	2.755E-02	0.389
	136.00			-4.313E-04	4.619E-02	7.499E-02	5.222E-03	-0.006
	198.60			-1.234E+00	2.286E+00	3.514E+00	2.805E-01	-0.351
	264.65	*		-5.557E-02	6.095E-02	8.328E-02	5.825E-03	-0.667
	279.53			-6.637E-03	1.408E-01	2.043E-01	1.491E-02	-0.032
	303.91			1.928E+00	2.499E+00	3.833E+00	3.891E-01	0.503
	400.65			-3.574E-02	2.951E-01	4.651E-01	4.200E-02	-0.077

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	87.88		6.701E+02	3.542E+02	5.685E+02	6.573E+01	1.179
		200.40		1.131E+02	2.711E+02	4.422E+02	3.022E+01	0.256
	+	239.00		3.154E+02	3.469E+01	5.733E+01	3.989E+00	5.502
		249.79		-6.359E+00	1.025E+02	1.717E+02	1.196E+01	-0.037
		281.68		-3.202E+01	1.599E+02	2.293E+02	1.580E+01	-0.140
		297.23		3.474E+02	1.387E+02	1.749E+02	1.190E+01	1.987
		303.76		2.194E+02	2.866E+02	4.402E+02	2.975E+01	0.499
		439.47		1.038E+02	2.199E+02	3.719E+02	2.126E+01	0.279
		484.57		3.818E+02	3.331E+02	5.880E+02	3.346E+01	0.649
		520.65	*	-2.422E-01	1.505E+01	2.447E+01	1.376E+00	-0.010
		574.64		-2.309E+02	3.720E+02	5.117E+02	2.795E+01	-0.451
		578.91		9.054E+01	1.561E+02	2.310E+02	1.258E+01	0.392
		585.48		1.121E+03	3.413E+02	5.986E+02	3.244E+01	1.872
		755.35		1.875E+02	2.250E+02	4.014E+02	2.526E+01	0.467
		817.79		8.496E+01	1.885E+02	3.258E+02	2.354E+01	0.261
SR-82		698.33		6.051E+00	3.783E+01	6.418E+01	3.533E+00	0.094
		776.49	*	-4.391E-01	3.944E-01	5.886E-01	3.886E-02	-0.746
RB-83		1395.20		-7.084E-01	1.132E+01	1.878E+01	1.404E+00	-0.038
		520.41	*	-1.461E-02	7.382E-02	1.182E-01	6.652E-03	-0.124
		529.64		8.008E-03	1.097E-01	1.795E-01	1.006E-02	0.045
		552.65		2.974E-02	2.117E-01	3.474E-01	1.924E-02	0.086
RB-84		881.50	*	2.673E-02	6.363E-02	1.101E-01	9.092E-03	0.243
KR-85		513.99	*	9.745E+00	8.422E+00	1.321E+01	7.454E-01	0.737
SR-85		513.99	*	5.052E-02	4.366E-02	6.850E-02	3.864E-03	0.737
RB-86		1076.63	*	5.099E-01	8.315E-01	1.446E+00	1.006E-01	0.353
Y-88		898.02		-4.115E-02	4.644E-02	7.026E-02	6.028E-03	-0.586
		1836.01	*	-2.226E-02	3.491E-02	4.924E-02	2.877E-03	-0.452
ZR-88		392.90	*	-1.268E-02	3.393E-02	5.460E-02	3.097E-03	-0.232
Y-91		1204.90	*	-5.371E+00	2.023E+01	3.200E+01	1.935E+00	-0.168
NB-94		702.63	*	9.634E-03	3.693E-02	6.306E-02	3.508E-03	0.153
		871.10		2.881E-02	3.417E-02	6.101E-02	4.931E-03	0.472
NB-95		765.79	*	7.213E-02	4.795E-02	8.797E-02	5.669E-03	0.820
NB-95M		235.69	*	1.608E+00	2.475E-01	3.963E-01	3.349E-02	4.056
ZR-95		724.18		2.075E-01	1.193E-01	2.009E-01	1.387E-02	1.033
		756.15	*	4.151E-02	7.173E-02	1.255E-01	9.358E-03	0.331
NB-97		657.90	*	2.502E-01	7.173E-02	Half-Life	too short	
		1024.50		2.426E+00	7.173E-02	Half-Life	too short	
ZR-97		254.15		-8.365E+00	7.173E-02	Half-Life	too short	
		355.39		-1.060E+00	7.173E-02	Half-Life	too short	
		507.63	*	2.237E+01	7.173E-02	Half-Life	too short	
		602.52		1.393E+01	7.173E-02	Half-Life	too short	
		1021.30		1.512E+01	7.173E-02	Half-Life	too short	
		1147.95		-8.887E+00	7.173E-02	Half-Life	too short	
		1362.66		-1.720E+01	7.173E-02	Half-Life	too short	
		1750.46		-9.564E+00	7.173E-02	Half-Life	too short	
MO-99		140.51		-2.631E+01	4.181E+01	6.514E+01	1.771E+01	-0.404
		181.06		7.756E+00	2.911E+01	4.149E+01	7.252E+00	0.187
		366.43		5.830E+00	1.212E+02	2.010E+02	1.221E+01	0.029
		739.58	*	-3.582E+00	1.655E+01	2.719E+01	3.778E+00	-0.132

## ---- 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			-7.038E+01	4.420E+01	6.198E+01	4.106E+00	-1.136
RH-101	140.51	*		-5.318E+11	4.420E+01	Half-Life too short		
	127.23			2.084E-02	3.835E-02	6.368E-02	4.487E-03	0.327
	198.01	*		-1.458E-02	4.128E-02	6.401E-02	4.367E-03	-0.228
	325.23			1.546E-01	3.101E-01	4.634E-01	3.047E-02	0.334
RH-102	418.52			2.284E-01	3.390E-01	5.798E-01	3.308E-02	0.394
	475.06	*		1.981E-03	3.451E-02	5.663E-02	3.228E-03	0.035
	631.29			5.142E-02	6.056E-02	1.043E-01	5.428E-03	0.493
	697.49			2.331E-02	8.203E-02	1.404E-01	7.714E-03	0.166
	766.84			1.027E-01	1.223E-01	2.155E-01	1.392E-02	0.476
	1046.59			-1.749E-03	1.127E-01	1.844E-01	1.344E-02	-0.009
	1112.84			1.092E-01	2.745E-01	4.060E-01	2.646E-02	0.269
RU-103	497.08	*		2.932E-02	4.794E-02	8.130E-02	1.023E-02	0.361
	610.33			1.198E+01	2.366E+00	3.075E+00	4.687E-01	3.895
RH-106	511.85			1.048E+00	2.299E-01	4.426E-01	2.499E-02	2.367
	621.84	*		1.542E-01	3.634E-01	6.052E-01	6.946E-02	0.255
	1050.47			4.904E-02	2.383E+00	3.913E+00	2.837E-01	0.013
RU-106	511.85			1.048E+00	2.299E-01	4.426E-01	2.498E-02	2.367
	621.84	*		1.542E-01	3.631E-01	6.052E-01	3.180E-02	0.255
	1050.47			4.904E-02	2.383E+00	3.913E+00	2.837E-01	0.013
AG-108M	433.93	*		6.169E-04	3.521E-02	5.788E-02	3.599E-03	0.011
	614.37			4.687E-03	4.659E-02	6.558E-02	3.821E-03	0.071
	722.95			4.720E-02	4.470E-02	7.261E-02	4.593E-03	0.650
AG-110M	657.75	*		2.528E-02	4.658E-02	6.846E-02	3.752E-03	0.369
	677.61			-1.755E-01	3.363E-01	5.135E-01	2.888E-02	-0.342
	706.67			-1.053E-02	2.247E-01	3.752E-01	2.242E-02	-0.028
	763.93			3.960E-02	1.795E-01	3.045E-01	2.052E-02	0.130
	884.67			-3.481E-02	4.323E-02	6.449E-02	5.544E-03	-0.540
	937.48			-1.478E-01	1.262E-01	1.841E-01	1.582E-02	-0.803
	1384.27			-2.132E-01	1.644E-01	2.227E-01	1.731E-02	-0.957
IN-111	171.28			8.172E-01	1.582E+00	2.604E+00	1.738E-01	0.314
	245.39	*		-5.320E-01	1.716E+00	2.461E+00	1.713E-01	-0.216
IN-113M	391.69	*		1.152E-02	4.922E-02	8.238E-02	4.997E-03	0.140
SN-113	391.69	*		1.152E-02	4.922E-02	8.238E-02	4.997E-03	0.140
IN-114M	190.27	*		-7.946E-02	2.562E-01	3.518E-01	2.386E-02	-0.226
CD-115	260.90			3.064E+02	2.112E+02	3.754E+02	2.610E+01	0.816
	492.35			-3.379E+00	5.537E+01	8.995E+01	5.108E+00	-0.038
	527.90	*		-1.883E+00	1.557E+01	2.506E+01	1.406E+00	-0.075
SN-117M	156.02			1.512E+00	2.851E+00	4.707E+00	3.154E-01	0.321
	158.56	*		-5.252E-02	6.994E-02	1.093E-01	7.308E-03	-0.480
SB-122	563.90	*		1.618E+00	3.156E+00	5.302E+00	2.917E-01	0.305
	692.80			-3.080E+01	5.969E+01	9.608E+01	5.219E+00	-0.321
I-123	159.00	*		-1.921E+01	5.969E+01	Half-Life too short		
	528.96			1.219E+02	5.969E+01	Half-Life too short		
TE-123M	159.00	*		-2.530E-02	3.468E-02	5.426E-02	3.663E-03	-0.466
I-124	602.71	*		5.940E-01	9.364E-01	1.400E+00	7.483E-02	0.424
	722.78			5.108E+00	5.489E+00	8.819E+00	5.146E-01	0.579
	1325.50			3.252E+01	4.626E+01	8.088E+01	6.035E+00	0.402
	1376.25			7.670E+01	4.419E+01	8.392E+01	6.297E+00	0.914



----- 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		2.226E+00	2.271E+01	3.679E+01	2.665E+00	0.061
		1691.02		1.020E+00	4.225E+00	7.653E+00	5.038E-01	0.133
		602.71		2.937E-02	4.630E-02	6.920E-02	3.701E-03	0.424
		645.85		3.189E-01	5.640E-01	9.500E-01	5.656E-02	0.336
		709.31		-1.271E+00	2.849E+00	4.599E+00	2.600E-01	-0.276
		713.82		4.623E-01	1.547E+00	2.658E+00	2.701E-01	0.174
		722.78		3.661E-01	3.935E-01	6.321E-01	3.860E-02	0.579
	+	968.20		1.477E+01	4.025E+00	7.168E+00	5.756E-01	2.061
		1045.16		-1.592E-02	2.386E+00	3.852E+00	2.814E-01	-0.004
		1325.50		2.489E+00	3.541E+00	6.191E+00	4.620E-01	0.402
		1368.21		8.644E-01	1.778E+00	3.065E+00	3.923E-01	0.282
		1436.60		6.848E-01	3.596E+00	6.174E+00	4.574E-01	0.111
SB-125		1691.02	*	1.725E-02	7.143E-02	1.294E-01	9.086E-03	0.133
		427.89	*	-3.599E-02	1.004E-01	1.609E-01	9.587E-03	-0.224
	+	463.38		6.660E-01	3.967E-01	5.973E-01	3.993E-02	1.115
		600.56		4.396E-02	2.256E-01	3.212E-01	2.032E-02	0.137
TE-125M I-126		635.90		-1.219E-01	2.993E-01	4.646E-01	2.913E-02	-0.262
		109.28	*	-3.494E-01	1.094E+01	1.787E+01	1.776E+00	-0.020
		388.63		-2.415E-02	2.411E-01	3.954E-01	2.262E-02	-0.061
		666.33	*	-2.480E-01	2.707E-01	3.341E-01	1.700E-02	-0.742
SB-126		753.82		1.543E+00	1.564E+00	2.820E+00	1.768E-01	0.547
		223.80		3.905E-02	4.955E+00	7.908E+00	5.478E-01	0.005
	+	278.60		2.057E+00	4.521E+00	5.234E+00	3.612E-01	0.393
		296.50		1.254E+01	3.047E+00	4.186E+00	2.850E-01	2.996
		414.70		6.156E-02	9.357E-02	1.599E-01	9.118E-03	0.385
		415.30		-1.962E-01	7.968E+00	1.309E+01	7.463E-01	-0.015
		555.20		-6.615E-01	4.439E+00	7.110E+00	3.932E-01	-0.093
		573.80		-1.103E+00	1.359E+00	1.997E+00	1.091E-01	-0.552
		593.00		-1.046E-01	1.102E+00	1.767E+00	9.522E-02	-0.059
		656.30		3.145E+00	4.239E+00	6.414E+00	3.248E-01	0.490
		666.33		-1.039E-01	1.134E-01	1.399E-01	7.122E-03	-0.742
		675.00		-1.723E+00	2.315E+00	3.459E+00	1.799E-01	-0.498
SB-127		695.00		3.293E-03	8.611E-02	1.449E-01	7.911E-03	0.023
		697.00		1.211E-01	3.056E-01	5.271E-01	2.892E-02	0.230
		720.50	*	7.729E-02	1.595E-01	2.449E-01	1.421E-02	0.316
		856.80		3.217E-01	6.046E-01	9.204E-01	7.223E-02	0.350
		989.30		1.064E+00	1.383E+00	2.443E+00	1.917E-01	0.435
		1034.80		8.617E+00	9.125E+00	1.643E+01	1.218E+00	0.524
		1213.00		1.826E-01	5.223E+00	8.427E+00	5.173E-01	0.022
		61.10		8.252E+01	1.265E+02	2.139E+02	3.053E+01	0.386
		252.40		1.363E+00	5.944E+00	1.004E+01	4.199E+00	0.136
		290.80		-4.113E+01	3.311E+01	4.314E+01	4.405E+00	-0.954
		411.60		-1.423E+01	1.771E+01	2.753E+01	4.015E+00	-0.517
		444.90		-5.405E+00	1.374E+01	2.192E+01	2.427E+00	-0.247
		473.00		-2.022E-01	2.422E+00	3.939E+00	4.506E-01	-0.051
		543.00		-4.595E+00	2.235E+01	3.569E+01	4.668E+00	-0.129
		603.60		8.040E+00	1.680E+01	2.465E+01	2.676E+00	0.326
		685.20	*	-5.524E-01	1.687E+00	2.756E+00	2.628E-01	-0.200
		698.50		1.954E+00	1.989E+01	3.359E+01	4.907E+00	0.058

## ---- 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			3.088E+01	3.688E+01	5.879E+01	5.620E+00	0.525
	783.80			6.088E+00	4.770E+00	8.635E+00	9.923E-01	0.705
	57.60			-6.085E+00	1.235E+01	2.009E+01	2.559E+00	-0.303
	145.22			7.673E-01	8.565E-01	1.433E+00	9.723E-02	0.535
	172.10			1.306E-01	1.471E-01	2.455E-01	1.640E-02	0.532
I-131	202.84	*		-4.608E-03	6.583E-02	9.487E-02	6.495E-03	-0.049
	374.96			1.149E-01	2.262E-01	3.851E-01	2.289E-02	0.298
	80.18			-1.125E+01	7.615E+00	1.007E+01	1.129E+00	-1.117
	284.30			3.376E-01	1.885E+00	3.180E+00	2.366E-01	0.106
	364.48	*		-1.118E-01	1.425E-01	2.241E-01	1.514E-02	-0.499
TE-132	636.97			6.170E-01	1.832E+00	3.035E+00	1.807E-01	0.203
	722.89			8.304E+00	8.204E+00	1.328E+01	7.874E-01	0.625
	49.72			-8.926E+01	7.076E+01	1.096E+02	1.666E+01	-0.814
	111.76			-3.011E+01	4.343E+01	6.821E+01	7.238E+00	-0.441
	116.30			8.822E+00	3.944E+01	6.495E+01	6.719E+00	0.136
BA-133	228.16	*		-1.606E-01	9.553E-01	1.598E+00	2.409E-01	-0.100
	53.15			5.237E+00	8.642E+00	1.468E+01	2.013E+00	0.357
	79.62			-2.063E+00	1.963E+00	2.651E+00	4.449E-01	-0.778
	81.00			-1.844E-01	1.475E-01	1.952E-01	3.397E-02	-0.945
	276.40	+		2.900E-01	6.383E-01	7.138E-01	9.634E-02	0.406
I-133	302.84			1.025E-01	1.718E-01	2.600E-01	3.164E-02	0.394
	356.01	*		-2.912E-03	5.434E-02	7.775E-02	9.155E-03	-0.037
	383.85			-2.746E-01	3.401E-01	5.308E-01	5.771E-02	-0.517
	510.53	+		1.717E+00	3.401E-01	Half-Life	too short	
	529.87	*		-1.551E-04	3.401E-01	Half-Life	too short	
CS-134	706.58			-2.563E-02	3.401E-01	Half-Life	too short	
	856.28			3.849E-01	3.401E-01	Half-Life	too short	
	875.33			-2.674E-01	3.401E-01	Half-Life	too short	
	1236.41			1.303E+00	3.401E-01	Half-Life	too short	
	1298.22			-7.068E-01	3.401E-01	Half-Life	too short	
CS-135	475.35			5.421E-01	2.223E+00	3.693E+00	2.105E-01	0.147
	563.23			3.443E-01	4.096E-01	7.041E-01	3.965E-02	0.489
	569.32			8.662E-02	2.320E-01	3.859E-01	2.186E-02	0.224
	604.70			1.750E-02	4.341E-02	6.303E-02	3.386E-03	0.278
	795.84	*		5.551E-02	5.192E-02	9.310E-02	6.488E-03	0.596
I-135	801.93			-2.903E-01	4.017E-01	6.244E-01	4.397E-02	-0.465
	1038.57			-4.268E+00	3.916E+00	5.602E+00	4.131E-01	-0.762
	1167.94			1.302E+00	2.689E+00	4.582E+00	2.644E-01	0.284
	1365.15			-1.273E+00	1.302E+00	1.769E+00	1.409E-01	-0.720
	268.24	*		4.172E-01	2.130E-01	3.438E-01	2.939E-02	1.214
I-135	288.45			-2.078E+11	2.130E-01	Half-Life	too short	
	417.63			3.411E+11	2.130E-01	Half-Life	too short	
	546.56			8.587E+10	2.130E-01	Half-Life	too short	
	836.80			1.787E+11	2.130E-01	Half-Life	too short	
	1038.76			-2.700E+11	2.130E-01	Half-Life	too short	
I-135	1124.00			3.241E+11	2.130E-01	Half-Life	too short	
	1131.51			1.888E+10	2.130E-01	Half-Life	too short	
	1260.41	*		-3.525E+10	2.130E-01	Half-Life	too short	
	1457.56			1.052E+13	2.130E-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		3.641E+10	2.130E-01	Half-Life	too short	
		1706.46		1.529E+11	2.130E-01	Half-Life	too short	
		1791.20		-6.263E+10	2.130E-01	Half-Life	too short	
		66.91		-1.083E+00	1.339E+00	2.115E+00	3.638E-01	-0.512
	+	86.29		3.097E+00	1.663E+00	2.579E+00	3.842E-01	1.201
		153.22		4.204E-01	8.370E-01	1.380E+00	1.102E-01	0.305
		163.89		-2.280E-01	1.320E+00	2.114E+00	1.682E-01	-0.108
		176.55		-2.389E-01	4.652E-01	7.314E-01	5.364E-02	-0.327
		273.65		1.593E-01	8.504E-01	8.550E-01	6.512E-02	0.186
		340.57		1.707E-01	1.622E-01	2.523E-01	1.702E-02	0.677
CE-139		818.51		3.305E-02	8.216E-02	1.414E-01	1.025E-02	0.234
		1048.07	*	-3.559E-02	1.124E-01	1.776E-01	1.369E-02	-0.200
		1235.34		4.623E-01	6.497E-01	1.119E+00	1.157E-01	0.413
		165.85	*	-2.554E-02	3.557E-02	5.554E-02	3.693E-03	-0.460
	BA-140	162.64		7.280E-01	9.257E-01	1.542E+00	1.126E-01	0.472
		304.84		6.020E-01	1.633E+00	2.424E+00	6.668E-01	0.248
		423.70		-1.467E+00	2.321E+00	3.577E+00	1.136E+00	-0.410
		537.32	*	2.132E-01	3.160E-01	5.267E-01	1.711E-01	0.405
	LA-140	328.77	+	4.158E-01	4.976E-01	6.291E-01	4.508E-02	0.661
		432.53		1.847E-01	2.354E+00	3.886E+00	2.459E-01	0.048
CE-141		487.03		2.897E-02	1.585E-01	2.623E-01	1.696E-02	0.110
		751.79		9.520E-01	1.801E+00	3.141E+00	2.344E-01	0.303
		815.85		6.946E-02	3.490E-01	5.908E-01	4.939E-02	0.118
		867.82		1.128E+00	1.542E+00	2.675E+00	2.278E-01	0.422
		919.63		-3.790E+00	3.647E+00	4.322E+00	4.523E-01	-0.877
		925.24		8.865E-01	1.269E+00	2.228E+00	1.987E-01	0.398
		1596.49	*	-1.172E-01	8.325E-02	9.259E-02	6.453E-03	-1.265
	CE-143	145.44	*	4.883E-02	7.788E-02	1.292E-01	9.015E-03	0.378
		57.37		-2.504E-03	7.788E-02	Half-Life	too short	
		231.56		-1.596E-03	7.788E-02	Half-Life	too short	
CE-144	+	293.26	*	2.409E-03	7.788E-02	Half-Life	too short	
	+	350.59		5.724E-02	7.788E-02	Half-Life	too short	
		490.36		-2.797E-03	7.788E-02	Half-Life	too short	
		664.57		-5.755E-04	7.788E-02	Half-Life	too short	
		721.93		1.796E-03	7.788E-02	Half-Life	too short	
		80.11		-4.720E+00	3.213E+00	4.254E+00	4.745E-01	-1.110
		133.54	*	-5.509E-02	2.430E-01	3.910E-01	5.747E-02	-0.141
	PM-144	476.78		4.192E-02	7.737E-02	1.310E-01	8.987E-03	0.320
		618.01		-3.369E-03	3.492E-02	5.587E-02	3.159E-03	-0.060
		696.49	*	1.320E-02	3.698E-02	6.362E-02	3.490E-03	0.207
PR-144		778.57		-3.620E+00	2.218E+00	3.072E+00	2.039E-01	-1.178
		696.49	*	8.947E-01	2.507E+00	4.314E+00	2.364E-01	0.207
		1489.15		-2.293E+00	1.205E+01	1.948E+01	1.421E+00	-0.118
	PM-146	453.90	*	4.828E-04	5.292E-02	8.674E-02	7.429E-03	0.006
		633.02		-9.251E-01	1.591E+00	2.374E+00	8.720E-01	-0.390
		735.90		7.488E-02	1.770E-01	2.758E-01	7.703E-02	0.271
		747.13		-4.722E-02	9.163E-02	1.458E-01	1.850E-02	-0.324
	ND-147	91.11	+	1.351E+00	5.523E-01	7.554E-01	8.591E-02	1.789
		319.41		1.772E-01	4.125E+00	6.880E+00	4.564E-01	0.026

## ---- 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	439.89			2.731E+00	7.040E+00	1.184E+01	6.772E-01	0.231
	531.02	*		9.859E-04	6.382E-01	1.038E+00	1.394E-01	0.001
	285.90	*		1.654E+02	1.495E+02	2.545E+02	3.728E+01	0.650
	121.78			3.033E-03	8.778E-02	1.433E-01	1.249E-02	0.021
	244.69			2.638E-01	4.031E-01	6.154E-01	4.285E-02	0.429
	344.27	*		6.817E-02	1.695E-01	1.749E-01	1.232E-02	0.390
	443.98			-7.808E-01	1.105E+00	1.724E+00	9.852E-02	-0.453
	778.89			-3.899E-01	2.623E-01	3.726E-01	2.472E-02	-1.047
	867.32			8.787E-01	8.811E-01	1.534E+00	1.231E-01	0.573
	964.01			6.110E-01	4.849E-01	6.357E-01	5.126E-02	0.961
	1085.78			-6.518E-02	4.217E-01	6.787E-01	4.649E-02	-0.096
	1112.02			3.730E-02	3.573E-01	5.468E-01	3.570E-02	0.068
GD-153	1407.95			4.489E-02	2.006E-01	3.443E-01	2.568E-02	0.130
	69.67			2.742E+00	2.702E+00	4.097E+00	4.625E-01	0.669
	83.37			1.025E+01	2.246E+01	3.083E+01	3.479E+00	0.332
	97.43	*		4.717E-02	1.040E-01	1.532E-01	1.470E-02	0.308
	103.18			-3.822E-02	1.255E-01	2.029E-01	1.785E-02	-0.188
EU-154	123.07			1.449E-02	6.154E-02	1.012E-01	1.042E-02	0.143
	247.94			5.823E-03	4.254E-01	6.764E-01	6.960E-02	0.009
	591.81			-3.104E-01	7.204E-01	1.089E+00	1.038E-01	-0.285
	723.30			2.140E-01	2.004E-01	3.234E-01	2.301E-02	0.662
	756.87			-1.844E-01	7.789E-01	1.274E+00	1.330E-01	-0.145
	873.19			-3.372E-01	2.939E-01	4.223E-01	5.024E-02	-0.799
	996.32			-2.862E-01	4.127E-01	6.282E-01	1.091E-01	-0.456
	1004.76			-1.422E-01	2.565E-01	4.000E-01	4.393E-02	-0.356
	1274.45	*		7.570E-03	1.312E-01	2.138E-01	2.144E-02	0.035
	48.70			-7.829E+00	7.402E+00	1.169E+01	1.504E+00	-0.670
EU-155	60.01			-1.248E+01	9.538E+00	1.487E+01	1.817E+00	-0.839
	86.54			2.705E-01	1.431E-01	2.241E-01	2.585E-02	1.207
	105.31	*		8.297E-02	1.271E-01	2.131E-01	1.845E-02	0.389
	86.79			7.297E-01	3.857E-01	6.047E-01	6.944E-02	1.207
TB-160	197.04			-8.232E-02	7.043E-01	1.104E+00	7.525E-02	-0.075
	215.65			1.055E-01	9.472E-01	1.468E+00	1.013E-01	0.072
	298.57			2.560E-01	1.802E-01	2.411E-01	1.638E-02	1.062
	879.36	*		9.039E-02	1.249E-01	2.226E-01	1.830E-02	0.406
	962.29			1.127E+00	6.653E-01	1.117E+00	9.023E-02	1.009
	966.15			1.362E+00	4.002E-01	5.891E-01	4.740E-02	2.311
	1177.93			-1.776E-01	3.779E-01	5.843E-01	3.358E-02	-0.304
	1271.85			-5.644E-01	7.758E-01	1.147E+00	7.824E-02	-0.492
	80.57			-5.489E-01	4.036E-01	5.381E-01	6.011E-02	-1.020
	184.41			1.713E-01	5.954E-02	8.468E-02	5.714E-03	2.023
HO-166M	280.46			-7.086E-02	1.102E-01	1.528E-01	1.053E-02	-0.464
	410.95			3.172E-02	2.924E-01	4.843E-01	2.759E-02	0.065
	711.68	*		-3.177E-03	5.802E-02	9.674E-02	5.499E-03	-0.033
	752.31			2.113E-01	2.680E-01	4.773E-01	2.983E-02	0.443
	810.29			-3.757E-02	5.833E-02	9.091E-02	6.464E-03	-0.413
	51.35			-2.112E+01	7.847E+01	1.292E+02	1.784E+01	-0.164
	52.39			1.682E+01	3.915E+01	6.621E+01	9.133E+00	0.254
TM-171	59.40			-4.294E+01	5.111E+01	8.175E+01	1.006E+01	-0.525

## ---- 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	*	-3.993E+01	4.602E+01	7.289E+01	8.382E+00	-0.548	
	88.36		1.654E-01	4.140E-01	4.431E-01	5.084E-02	0.373	
	201.83		-9.258E-04	3.542E-02	5.666E-02	3.876E-03	-0.016	
	306.84	*	-2.089E-02	2.799E-02	4.334E-02	2.920E-03	-0.482	
LU-177	401.10		-3.802E+00	7.721E+00	1.187E+01	6.745E-01	-0.320	
	112.95		6.347E-01	2.102E+00	3.447E+00	2.698E-01	0.184	
LU-177M	208.36	+	4.197E+00	2.103E+00	2.674E+00	1.837E-01	1.569	
	52.97		3.037E+00	3.940E+00	6.725E+00	9.237E-01	0.452	
	54.07		7.084E-01	1.957E+00	3.300E+00	4.473E-01	0.215	
	61.30		7.847E-01	2.775E+00	4.611E+00	5.567E-01	0.170	
	121.62		-1.524E-02	4.510E-01	7.341E-01	5.289E-02	-0.021	
	147.16		-9.472E-01	7.948E-01	1.221E+00	8.262E-02	-0.776	
	171.86		2.966E-01	5.919E-01	9.733E-01	6.499E-02	0.305	
	218.09		3.425E-01	1.031E+00	1.672E+00	1.156E-01	0.205	
	268.79	+	1.726E+00	1.426E+00	1.748E+00	1.212E-01	0.987	
	319.02		-6.079E-03	2.978E-01	4.951E-01	3.285E-02	-0.012	
	367.43		4.618E-01	1.013E+00	1.721E+00	1.043E-01	0.268	
	413.65	*	-1.453E-01	2.123E-01	3.345E-01	1.907E-02	-0.434	
HF-181	56.28		-1.371E+00	2.023E+00	3.259E+00	4.257E-01	-0.421	
	57.53		-6.464E-01	1.045E+00	1.689E+00	2.154E-01	-0.383	
	65.20		-1.422E+00	1.613E+00	2.554E+00	2.973E-01	-0.557	
	133.02		1.521E-03	7.835E-02	1.274E-01	8.838E-03	0.012	
	136.25		-1.596E-01	5.486E-01	8.802E-01	6.061E-02	-0.181	
	345.85		9.616E-02	2.546E-01	3.584E-01	2.275E-02	0.268	
W-181	482.03	*	-6.305E-02	4.929E-02	7.265E-02	4.136E-03	-0.868	
	56.28		-5.312E-01	7.830E-01	1.262E+00	1.647E-01	-0.421	
	57.53		-2.505E-01	4.048E-01	6.544E-01	8.346E-02	-0.383	
	65.20	*	-5.464E-01	6.199E-01	9.816E-01	1.142E-01	-0.557	
TA-182	67.75		2.884E-02	1.829E-01	2.826E-01	3.226E-02	0.102	
	100.10		2.623E-02	2.128E-01	3.505E-01	3.224E-02	0.075	
	152.43		1.784E-01	4.062E-01	6.685E-01	4.496E-02	0.267	
	222.10		-5.346E-02	4.038E-01	6.400E-01	4.431E-02	-0.084	
	1001.68		1.079E+00	2.412E+00	4.141E+00	3.204E-01	0.260	
	1121.28	+	6.961E-01	2.397E-01	3.735E-01	2.394E-02	1.863	
	1189.05		-6.200E-02	3.690E-01	5.911E-01	3.470E-02	-0.105	
	1221.42	*	-2.597E-01	2.078E-01	2.923E-01	1.822E-02	-0.888	
RE-183	1230.97		-5.841E-01	5.104E-01	7.210E-01	4.574E-02	-0.810	
	57.98		-1.175E-02	3.904E-01	6.480E-01	8.193E-02	-0.018	
	59.32		-1.853E-01	2.127E-01	3.396E-01	4.185E-02	-0.546	
	67.20		-1.511E-01	3.280E-01	5.151E-01	5.903E-02	-0.293	
	162.32	*	1.377E-01	1.291E-01	2.173E-01	1.448E-02	0.634	
	208.81	+	3.421E+00	1.715E+00	2.196E+00	1.509E-01	1.558	
RE-184	291.72		1.165E+00	1.248E+00	1.924E+00	1.315E-01	0.606	
	57.98		-4.302E-02	1.430E+00	2.373E+00	3.001E-01	-0.018	
	59.32		-6.782E-01	7.783E-01	1.243E+00	1.532E-01	-0.546	
	67.20		-5.531E-01	1.201E+00	1.886E+00	2.161E-01	-0.293	
	161.27		8.754E-02	4.213E-01	6.863E-01	4.578E-02	0.128	
	216.55		1.632E-01	3.177E-01	5.195E-01	3.587E-02	0.314	
	252.85	*	3.128E-02	2.661E-01	4.494E-01	3.128E-02	0.070	

## ----- 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		1.580E-01	5.063E-01	8.569E-01	5.693E-02	0.184
		792.07		1.371E+00	1.145E+00	2.065E+00	1.411E-01	0.664
		903.28		-2.244E-01	1.273E+00	1.767E+00	1.502E-01	-0.127
		920.93		-3.354E-01	4.788E-01	6.893E-01	5.781E-02	-0.487
		59.72		-7.209E-01	5.761E-01	9.009E-01	1.104E-01	-0.800
		61.14		2.044E-01	2.999E-01	5.080E-01	6.143E-02	0.402
		69.30		5.022E-01	4.899E-01	7.432E-01	8.406E-02	0.676
		592.07		-5.173E-01	2.830E+00	4.506E+00	2.430E-01	-0.115
		646.12	*	1.516E-02	4.818E-02	7.956E-02	4.076E-03	0.191
		717.42		-3.305E-01	8.791E-01	1.389E+00	8.005E-02	-0.238
RE-188		874.81		-6.067E-01	5.608E-01	8.141E-01	6.631E-02	-0.745
		880.27		5.791E-01	6.687E-01	1.211E+00	9.973E-02	0.478
		155.03	*	2.389E-01	2.079E-01	3.506E-01	2.352E-02	0.681
		477.96		2.222E+00	3.503E+00	5.972E+00	3.402E-01	0.372
W-188		633.10		-1.869E+00	3.176E+00	4.852E+00	2.521E-01	-0.385
		63.58		8.266E+01	9.235E+01	1.557E+02	1.839E+01	0.531
		227.08		-4.952E+00	1.423E+01	2.363E+01	1.639E+00	-0.210
IR-192		290.67	*	-1.244E+01	9.531E+00	1.240E+01	8.485E-01	-1.003
	+	295.96		1.148E+00	2.141E-01	3.232E-01	2.227E-02	3.553
		308.46		-4.611E-02	1.036E-01	1.681E-01	1.140E-02	-0.274
		316.51	*	1.211E-02	3.947E-02	6.678E-02	4.463E-03	0.181
AU-195		468.07		-7.894E-02	8.728E-02	1.188E-01	7.848E-03	-0.664
		604.41		5.278E-02	5.806E-01	8.165E-01	9.080E-02	0.065
		612.46		4.296E-01	8.536E-01	1.255E+00	9.034E-02	0.342
		65.12		-2.476E-01	2.874E-01	4.555E-01	5.305E-02	-0.544
		66.83		-1.273E-01	1.523E-01	2.415E-01	2.775E-02	-0.527
	+	75.70		1.914E+00	4.178E-01	6.106E-01	6.780E-02	3.135
		98.88	*	3.578E-01	2.725E-01	4.527E-01	4.243E-02	0.790
TL-200		129.76		1.830E+00	3.395E+00	5.634E+00	3.940E-01	0.325
		367.94	*	6.937E-04	3.395E+00	Half-Life	too short	
		579.30		1.544E-02	3.395E+00	Half-Life	too short	
		828.27		-7.683E-03	3.395E+00	Half-Life	too short	
TL-201		1205.75		-2.739E-03	3.395E+00	Half-Life	too short	
		68.90		6.366E+00	1.026E+01	1.533E+01	1.737E+00	0.415
		70.82		3.774E+00	5.513E+00	8.252E+00	9.265E-01	0.457
		80.30		-1.433E+01	9.607E+00	1.269E+01	1.417E+00	-1.129
TL-202		135.34		-3.059E+00	3.754E+01	6.077E+01	4.192E+00	-0.050
		167.43	*	-1.402E+00	1.032E+01	1.655E+01	1.101E+00	-0.085
		68.90		4.786E-01	7.712E-01	1.152E+00	1.306E-01	0.415
		70.82		2.829E-01	4.133E-01	6.186E-01	6.946E-02	0.457
HG-203		80.30		-1.075E+00	7.205E-01	9.519E-01	1.062E-01	-1.129
		439.56	*	3.878E-02	8.318E-02	1.406E-01	8.037E-03	0.276
		70.83		1.173E+00	1.719E+00	2.565E+00	3.948E-01	0.457
	+	72.87		4.247E+00	1.327E+00	1.713E+00	2.566E-01	2.479
BI-207		82.60		1.632E+00	1.846E+00	2.364E+00	3.670E-01	0.690
		279.20	*	3.645E-02	5.281E-02	8.045E-02	5.794E-03	0.453
	+	72.80		1.226E+00	3.629E-01	4.918E-01	5.485E-02	2.492
	+	74.97		7.261E-01	2.150E-01	3.404E-01	3.782E-02	2.133
		84.90		6.303E-01	2.774E-01	4.281E-01	4.865E-02	1.472

---- 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		1.888E-02	3.558E-02	5.984E-02	3.280E-03	0.316
		1063.62	*	-3.468E-02	5.465E-02	8.332E-02	5.920E-03	-0.416
		1770.23		-4.533E-03	4.473E-01	6.263E-01	3.878E-02	-0.007
		81.07		-2.786E-01	3.379E-01	4.317E-01	4.829E-02	-0.645
		83.78		1.567E-01	1.776E-01	2.642E-01	2.986E-02	0.593
		94.90		4.663E-02	2.983E-01	4.329E-01	4.341E-02	0.108
		122.32		7.532E-01	2.087E+00	3.449E+00	2.731E-01	0.218
		144.24		3.891E-01	8.509E-01	1.383E+00	1.113E-01	0.281
		154.21		5.259E-01	4.820E-01	8.101E-01	6.307E-02	0.649
	+	269.46		4.021E-01	3.323E-01	4.081E-01	2.919E-02	0.985
		323.87	*	2.384E-01	8.727E-01	1.285E+00	2.161E-01	0.185
	+	338.28		5.849E+00	2.151E+00	2.598E+00	2.830E-01	2.252
PO-209		445.03		-9.522E-01	2.655E+00	4.248E+00	4.342E-01	-0.224
		260.50		1.332E+01	1.120E+01	1.973E+01	1.372E+00	0.675
		262.80		3.835E+00	3.362E+01	5.360E+01	3.724E+00	0.072
		896.60	*	-1.261E+00	8.227E+00	1.342E+01	1.142E+00	-0.094
BI-210		46.50	*	2.514E+00	1.279E+01	2.094E+01	2.175E+00	0.120
PB-210		46.50	*	2.514E+00	1.279E+01	2.094E+01	2.175E+00	0.120
PO-210		46.50	*	2.514E+00	1.279E+01	2.094E+01	2.011E+00	0.120
PB-211		404.84	*	-5.253E-01	1.140E+00	1.746E+00	1.089E+00	-0.301
		427.08		-8.251E-01	2.312E+00	3.613E+00	2.233E+00	-0.228
BI-212		831.96		1.615E-01	1.295E+00	2.168E+00	1.355E+00	0.075
	+	727.18	*	1.003E+00	6.513E-01	7.126E-01	5.549E-02	1.407
		785.46		4.988E-01	1.941E+00	3.299E+00	2.221E-01	0.151
PO-215		1620.62		5.157E-01	1.325E+00	2.326E+00	1.600E-01	0.222
		81.07		-2.786E-01	3.379E-01	4.317E-01	4.829E-02	-0.645
		83.78		1.567E-01	1.776E-01	2.642E-01	2.986E-02	0.593
		94.90		4.663E-02	2.983E-01	4.329E-01	4.341E-02	0.108
		122.32		7.532E-01	2.087E+00	3.449E+00	2.731E-01	0.218
		144.24		3.891E-01	8.509E-01	1.383E+00	1.113E-01	0.281
		154.21		5.259E-01	4.820E-01	8.101E-01	6.307E-02	0.649
	+	269.46		4.021E-01	3.323E-01	4.081E-01	2.919E-02	0.985
		323.87	*	2.384E-01	8.727E-01	1.285E+00	2.161E-01	0.185
	+	338.28		5.849E+00	2.151E+00	2.598E+00	2.830E-01	2.252
		445.03		-9.522E-01	2.655E+00	4.248E+00	4.342E-01	-0.224
	+	271.23		5.160E-01	4.273E-01	5.121E-01	4.580E-02	1.008
RN-219		401.81	*	-1.506E-01	4.577E-01	7.375E-01	9.999E-02	-0.204
RN-220		549.76	*	-1.782E+00	2.840E+01	4.585E+01	2.544E+00	-0.039
RA-223		81.07		-2.786E-01	3.379E-01	4.317E-01	4.829E-02	-0.645
		83.78		1.567E-01	1.776E-01	2.642E-01	2.986E-02	0.593
		94.90		4.663E-02	2.983E-01	4.329E-01	4.341E-02	0.108
		122.32		7.532E-01	2.087E+00	3.449E+00	2.731E-01	0.218
		144.24		3.891E-01	8.509E-01	1.383E+00	1.113E-01	0.281
		154.21		5.259E-01	4.820E-01	8.101E-01	6.307E-02	0.649
	+	269.46		4.021E-01	3.323E-01	4.081E-01	2.919E-02	0.985
		323.87	*	2.384E-01	8.727E-01	1.285E+00	2.161E-01	0.185
	+	338.28		5.849E+00	2.151E+00	2.598E+00	2.830E-01	2.252
		445.03		-9.522E-01	2.655E+00	4.248E+00	4.342E-01	-0.224
		79.80		-2.820E+00	2.520E+00	3.329E+00	7.536E-01	-0.847
AC-227								

## ---- 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		4.203E+00	6.086E-01	8.209E-01	9.140E-02	5.119
		256.20	*	-2.218E-01	4.375E-01	7.151E-01	1.035E-01	-0.310
		286.10		1.766E+00	1.796E+00	3.057E+00	3.708E-01	0.578
	+	299.80		3.228E+00	2.325E+00	3.052E+00	5.086E-01	1.057
		304.40		1.462E+00	2.235E+00	3.386E+00	5.973E-01	0.432
		334.20		-8.387E-01	3.234E+00	4.297E+00	7.975E-01	-0.195
		79.80		-2.820E+00	2.522E+00	3.329E+00	7.623E-01	-0.847
		94.00		8.864E+00	3.250E+00	4.291E+00	9.634E-01	2.065
		236.00		4.203E+00	5.677E-01	8.209E-01	8.075E-02	5.119
		256.20	*	-2.218E-01	4.380E-01	7.151E-01	1.239E-01	-0.310
TH-229		286.10		1.766E+00	2.513E+00	3.057E+00	3.064E+00	0.578
	+	299.80		3.228E+00	2.325E+00	3.052E+00	5.086E-01	1.057
		304.40		1.462E+00	2.235E+00	3.386E+00	5.973E-01	0.432
		334.20		-8.387E-01	3.234E+00	4.297E+00	7.975E-01	-0.195
	+	85.43		5.035E-01	2.662E-01	4.298E-01	4.898E-02	1.172
		88.47		8.468E-02	2.376E-01	2.536E-01	2.903E-02	0.334
		100.00		1.155E-01	2.176E-01	3.637E-01	3.350E-02	0.318
		193.63	*	4.014E-01	6.237E-01	1.012E+00	6.881E-02	0.397
		210.97		1.137E+00	1.041E+00	1.544E+00	1.063E-01	0.736
		283.67	*	1.109E-02	1.770E+00	2.960E+00	4.224E-01	0.004
PA-231		301.29		1.338E+00	7.420E-01	1.187E+00	1.309E-01	1.127
TH-231		81.07		-2.786E-01	3.379E-01	4.317E-01	4.829E-02	-0.645
		83.78		1.567E-01	1.776E-01	2.642E-01	2.986E-02	0.593
		94.90		4.663E-02	2.983E-01	4.329E-01	4.341E-02	0.108
		122.32		7.532E-01	2.087E+00	3.449E+00	2.731E-01	0.218
		144.24		3.891E-01	8.509E-01	1.383E+00	1.113E-01	0.281
		154.21		5.259E-01	4.820E-01	8.101E-01	6.307E-02	0.649
	+	269.46		4.021E-01	3.323E-01	4.081E-01	2.919E-02	0.985
		323.87	*	2.384E-01	8.727E-01	1.285E+00	2.161E-01	0.185
	+	338.28		5.849E+00	2.151E+00	2.598E+00	2.830E-01	2.252
		445.03		-9.522E-01	2.655E+00	4.248E+00	4.342E-01	-0.224
U-231		84.21		1.260E+01	9.133E+00	1.379E+01	1.561E+00	0.914
	+	92.29		1.140E+01	4.644E+00	6.083E+00	6.411E-01	1.875
		95.87	*	-1.344E+00	1.673E+00	2.291E+00	2.257E-01	-0.587
		108.00		-6.363E-01	2.884E+00	4.676E+00	3.868E-01	-0.136
PA-233	+	75.28		2.119E+01	6.825E+00	1.001E+01	1.689E+00	2.116
	+	86.59		4.396E+00	2.578E+00	3.642E+00	1.015E+00	1.207
	+	300.12		8.998E-01	6.428E-01	8.417E-01	1.169E-01	1.069
		311.98	*	8.029E-03	6.887E-02	1.155E-01	8.094E-03	0.070
PA-234		340.50		8.919E-01	7.761E-01	1.177E+00	2.722E-01	0.758
		398.62		1.698E+00	2.411E+00	3.940E+00	1.018E+00	0.431
		415.76		2.070E-01	1.962E+00	3.248E+00	6.678E-01	0.064
		63.00		2.944E+00	2.758E+00	4.623E+00	8.099E-01	0.637
		94.67		1.617E-01	2.186E-01	3.251E-01	4.373E-02	0.497
		98.44		1.290E-01	1.351E-01	1.828E-01	1.022E-01	0.706
		99.86		4.890E-01	5.490E-01	9.282E-01	8.569E-02	0.527
		111.00		-1.131E-01	2.143E-01	3.421E-01	3.986E-02	-0.331
		131.20		-5.793E-02	1.263E-01	2.015E-01	1.403E-02	-0.288
		152.70		1.910E-01	3.899E-01	6.412E-01	1.037E-01	0.298



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	186.00		6.166E+00	2.831E+00	3.078E+00	9.464E-01	2.004
		226.40		-1.092E-01	4.440E-01	7.406E-01	9.013E-02	-0.147
		227.20		-1.869E-01	4.747E-01	7.865E-01	5.456E-02	-0.238
		248.90		-3.553E-01	9.181E-01	1.509E+00	3.295E-01	-0.235
	+	293.70		7.158E+00	1.711E+00	2.024E+00	3.336E-01	3.536
		369.80		4.636E-02	9.609E-01	1.594E+00	3.329E-01	0.029
		568.70		4.179E-01	1.167E+00	1.939E+00	1.063E-01	0.215
		569.50		1.531E-01	3.180E-01	5.330E-01	2.921E-02	0.287
		574.00		-1.397E+00	1.836E+00	2.710E+00	1.481E-01	-0.515
		699.00		1.626E-01	7.790E-01	1.325E+00	2.371E-01	0.123
		706.10		4.610E-01	1.120E+00	1.904E+00	8.399E-01	0.242
		733.00		-8.608E-02	4.672E-01	6.588E-01	1.404E-01	-0.131
		742.81		1.783E+00	1.855E+00	2.608E+00	1.746E+00	0.684
		796.30		8.300E-01	1.016E+00	1.757E+00	4.664E-01	0.473
		805.60		4.846E-02	9.659E-01	1.615E+00	4.884E-01	0.030
		819.60		4.309E-01	1.327E+00	2.252E+00	8.497E-01	0.191
		826.30		-4.265E-02	8.366E-01	1.383E+00	6.159E-01	-0.031
		831.60		-1.540E-01	6.735E-01	1.095E+00	3.232E-01	-0.141
		876.40		-2.793E-01	8.101E-01	1.203E+00	1.237E+00	-0.232
		880.51		1.625E-01	2.408E-01	4.281E-01	3.528E-02	0.380
		883.24		-9.731E-02	2.565E-01	3.918E-01	2.632E-01	-0.248
		899.00		-3.094E-01	9.098E-01	1.440E+00	6.294E-01	-0.215
		925.00		7.531E-01	1.234E+00	2.152E+00	1.799E-01	0.350
		926.50		4.819E-04	2.011E-01	3.322E-01	8.366E-02	0.001
		946.00	*	-1.413E-01	3.228E-01	5.079E-01	9.435E-02	-0.278
		949.00		3.097E-01	4.554E-01	7.991E-01	6.538E-02	0.388
		980.50		4.777E-01	7.416E-01	1.298E+00	1.029E-01	0.368
		1394.10		8.254E-01	1.236E+00	2.052E+00	1.333E+00	0.402
PA-234M		766.42		1.555E+01	1.488E+01	2.290E+01	1.155E+01	0.679
		1001.03	*	3.771E+00	5.358E+00	9.381E+00	8.646E-01	0.402
		63.29	*	2.479E+00	2.334E+00	3.893E+00	7.684E-01	0.637
TH-234		92.38		2.514E+00	1.099E+00	1.336E+00	2.547E-01	1.881
	+	89.95		1.671E+00	2.405E+00	2.566E+00	8.117E-01	0.651
	+	93.35		3.022E+00	1.471E+00	1.495E+00	4.276E-01	2.021
		105.00		7.792E-01	1.267E+00	2.089E+00	6.233E-01	0.373
		143.76	*	2.603E-01	2.645E-01	4.328E-01	7.222E-02	0.601
		163.35		1.887E-01	5.519E-01	9.021E-01	1.649E-01	0.209
	+	185.71		2.284E-01	7.939E-02	1.135E-01	7.670E-03	2.011
		205.31		-4.265E-01	7.629E-01	1.006E+00	1.845E-01	-0.424
		94.67		1.248E-01	1.655E-01	2.468E-01	2.486E-02	0.505
		98.44		9.751E-02	8.685E-02	1.382E-01	1.305E-02	0.705
		111.00		-8.554E-02	1.620E-01	2.588E-01	2.069E-02	-0.331
		160.31	*	-2.721E-02	9.472E-02	1.511E-01	1.009E-02	-0.180
		63.29	*	2.479E+00	2.334E+00	3.893E+00	7.684E-01	0.637
U-238		92.38		2.514E+00	1.024E+00	1.336E+00	1.406E-01	1.881
	+	99.55		2.035E-01	1.853E-01	3.152E-01	2.923E-02	0.646
		117.00	*	-2.295E-02	2.144E-01	3.482E-01	2.617E-02	-0.066
	+	209.75		2.671E+00	1.339E+00	1.677E+00	1.154E-01	1.592
		228.18		-3.894E-02	2.501E-01	4.188E-01	2.906E-02	-0.093

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	277.60		1.415E-01	3.110E-01	3.479E-01	2.402E-02	0.407
		334.30		-2.896E-01	1.839E+00	2.468E+00	1.600E-01	-0.117
AM-241		59.54	*	-2.809E-01	2.980E-01	4.739E-01	6.030E-02	-0.593
CM-243		99.55		2.094E-01	1.907E-01	3.243E-01	3.008E-02	0.646
		103.76	*	-1.242E-02	1.163E-01	1.897E-01	1.656E-02	-0.065
		117.00		-2.361E-02	2.205E-01	3.582E-01	2.693E-02	-0.066
	+	209.75		2.633E+00	1.320E+00	1.653E+00	1.137E-01	1.592
		228.18		-3.934E-02	2.527E-01	4.232E-01	2.937E-02	-0.093
	+	277.60		1.427E-01	3.136E-01	3.508E-01	2.422E-02	0.407
AM-246		798.80		-1.465E-01	1.526E-01	2.330E-01	1.616E-02	-0.629
		1036.00		1.294E-01	2.991E-01	5.129E-01	3.796E-02	0.252
		1062.04		-8.936E-02	2.347E-01	3.686E-01	2.625E-02	-0.242
		1078.86	*	-3.753E-02	1.472E-01	2.343E-01	1.624E-02	-0.160
CM-247	+	278.00		5.869E-01	1.290E+00	1.459E+00	1.007E-01	0.402
		287.40		-2.841E-02	1.629E+00	2.365E+00	1.622E-01	-0.012
		402.60	*	-3.286E-02	4.178E-02	6.532E-02	3.714E-03	-0.503
CF-249		252.85		1.169E-01	9.943E-01	1.679E+00	1.169E-01	0.070
		333.44		1.793E-02	2.784E-01	3.185E-01	2.067E-02	0.056
		387.95	*	3.084E-02	4.351E-02	7.490E-02	4.294E-03	0.412
CF-251		176.60	*	-8.251E-02	1.516E-01	2.380E-01	1.596E-02	-0.347
		227.00		-1.338E-01	4.231E-01	7.036E-01	4.881E-02	-0.190
		285.00		1.676E+00	2.005E+00	3.483E+00	2.394E-01	0.481

# 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]G244148012
* Acquisition date   : 20-JAN-2010 15:57:46 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 02:00:01.23                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G244148012                      Analyst initials: MXR1
* Batch Number       : 940268                          Sample Quantity : 1.3580E+02 GRAM
* Recovery           : 1.00000                          Carrier Weight  : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 16-FEB-2009 10:54:12 MS Isotope      :
* MSD DPM             : 0.000                          MSD Isotope      :
* LCS DPM             : 0.000                          LCS Isotope      :
* LCSD DPM            : 0.000                          LCSD Isotope      :
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.048E+01	2.191E+00	5.381E-01	0.000E+00
CD-109	2.288E+00	1.185E+00	1.948E+00	0.000E+00
SN-126	2.245E-01	1.163E-01	1.783E-01	0.000E+00
BA-137M	5.050E-02	7.229E-02	6.787E-02	0.000E+00
CS-137	5.338E-02	7.642E-02	7.175E-02	0.000E+00
TL-208	4.200E-01	9.435E-02	6.610E-02	0.000E+00
BI-211	4.257E+00	5.942E-01	3.698E-01	0.000E+00
PB-212	1.447E+00	1.684E-01	1.077E-01	0.000E+00
PO-212	1.447E+00	1.684E-01	1.077E-01	0.000E+00
BI-214	1.181E+00	1.861E-01	1.192E-01	0.000E+00
PB-214	1.481E+00	2.201E-01	1.289E-01	0.000E+00
PO-214	1.481E+00	2.201E-01	1.289E-01	0.000E+00
PO-216	1.447E+00	1.684E-01	1.077E-01	0.000E+00
PO-218	1.481E+00	2.201E-01	1.289E-01	0.000E+00
RA-224	5.245E+00	1.605E+00	1.225E+00	0.000E+00
RA-226	1.181E+00	1.861E-01	1.192E-01	0.000E+00
AC-228	1.482E+00	3.921E-01	2.290E-01	0.000E+00
RA-228	1.482E+00	3.921E-01	2.290E-01	0.000E+00
TH-228	1.470E+00	1.711E-01	1.095E-01	0.000E+00
TH-230	1.181E+00	1.861E-01	1.192E-01	0.000E+00
TH-232	1.482E+00	3.921E-01	2.290E-01	0.000E+00
U-234	1.181E+00	1.861E-01	1.192E-01	0.000E+00
NP-237	6.594E-01	3.667E-01	5.620E-01	0.000E+00
AM-243	4.045E-01	1.174E-01	1.258E-01	0.000E+00
ANH-511	7.297E-02	6.562E-02	5.334E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	2.405E-01	3.670E-01	6.535E-01	0.000E+00 NOT IDENT.
NA-22	3.609E-03	4.615E-02	7.729E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.367E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	3.158E-03	2.713E-02	4.663E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.812E-02	9.611E-02	0.000E+00	NOT IDENT.
SC-46	9.038E-03	3.814E-02	6.669E-02	0.000E+00	FAIL ABUN
V-48	-1.006E-02	7.476E-02	1.251E-01	0.000E+00	NOT IDENT.
CR-51	1.047E-01	4.436E-01	7.667E-01	0.000E+00	NOT IDENT.
MN-52	1.128E-02	2.595E-01	4.462E-01	0.000E+00	NOT IDENT.
MN-54	1.732E-02	3.982E-02	7.070E-02	0.000E+00	NOT IDENT.
CO-56	-1.676E-02	4.016E-02	6.623E-02	0.000E+00	NOT IDENT.
CO-57	7.959E-03	2.970E-02	5.237E-02	0.000E+00	NOT IDENT.
CO-58	-8.872E-03	3.784E-02	6.369E-02	0.000E+00	NOT IDENT.
FE-59	6.489E-03	9.530E-02	1.613E-01	0.000E+00	NOT IDENT.
CO-60	-2.087E-02	4.159E-02	6.419E-02	0.000E+00	NOT IDENT.
ZN-65	9.478E-02	1.054E-01	1.700E-01	0.000E+00	NOT IDENT.
GE-68	1.007E-01	1.281E+00	2.174E+00	0.000E+00	NOT IDENT.
AS-73	1.434E+00	1.932E+00	3.579E+00	0.000E+00	NOT IDENT.
AS-74	-2.341E-02	1.084E-01	1.750E-01	0.000E+00	NOT IDENT.
SE-75	-5.557E-02	5.973E-02	8.621E-02	0.000E+00	NOT IDENT.
BR-77	-2.422E-01	1.475E+01	2.501E+01	0.000E+00	FAIL ABUN
SR-82	-4.391E-01	3.865E-01	5.973E-01	0.000E+00	NOT IDENT.
RB-83	-1.461E-02	7.235E-02	1.209E-01	0.000E+00	NOT IDENT.
RB-84	2.673E-02	6.236E-02	1.115E-01	0.000E+00	NOT IDENT.
KR-85	9.745E+00	8.253E+00	1.351E+01	0.000E+00	NOT IDENT.
SR-85	5.052E-02	4.279E-02	7.005E-02	0.000E+00	NOT IDENT.
RB-86	5.099E-01	8.149E-01	1.459E+00	0.000E+00	NOT IDENT.
Y-88	-2.226E-02	3.421E-02	4.915E-02	0.000E+00	NOT IDENT.
ZR-88	-1.268E-02	3.325E-02	5.612E-02	0.000E+00	NOT IDENT.
Y-91	-5.371E+00	1.983E+01	3.220E+01	0.000E+00	NOT IDENT.
NB-94	9.634E-03	3.619E-02	6.411E-02	0.000E+00	NOT IDENT.
NB-95	7.213E-02	4.699E-02	8.929E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.426E-01	4.111E-01	0.000E+00	NOT IDENT.
ZR-95	4.151E-02	7.030E-02	1.274E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.595E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.186E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.582E+00	1.622E+01	2.761E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.314E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.458E-02	4.045E-02	6.661E-02	0.000E+00	NOT IDENT.
RH-102	1.981E-03	3.382E-02	5.799E-02	0.000E+00	NOT IDENT.
RU-103	2.932E-02	4.698E-02	8.318E-02	0.000E+00	NOT IDENT.
RH-106	1.542E-01	3.561E-01	6.166E-01	0.000E+00	NOT IDENT.
RU-106	1.542E-01	3.558E-01	6.166E-01	0.000E+00	NOT IDENT.
AG-108M	6.169E-04	3.451E-02	5.938E-02	0.000E+00	NOT IDENT.
AG-110M	2.528E-02	4.565E-02	6.968E-02	0.000E+00	NOT IDENT.
IN-111	-5.320E-01	1.682E+00	2.551E+00	0.000E+00	NOT IDENT.
IN-113M	1.152E-02	4.824E-02	8.467E-02	0.000E+00	NOT IDENT.
SN-113	1.152E-02	4.824E-02	8.467E-02	0.000E+00	NOT IDENT.
IN-114M	-7.946E-02	2.510E-01	3.664E-01	0.000E+00	NOT IDENT.
CD-115	-1.883E+00	1.526E+01	2.562E+01	0.000E+00	NOT IDENT.
SN-117M	-5.252E-02	6.854E-02	1.142E-01	0.000E+00	NOT IDENT.
SB-122	1.618E+00	3.093E+00	5.412E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.581E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.530E-02	3.399E-02	5.669E-02	0.000E+00	NOT IDENT.
I-124	5.940E-01	9.177E-01	1.427E+00	0.000E+00	NOT IDENT.
SB-124	1.725E-02	7.000E-02	1.293E-01	0.000E+00	FAIL ABUN
SB-125	-3.599E-02	9.841E-02	1.650E-01	0.000E+00	FAIL ABUN
TE-125M	-3.494E-01	1.072E+01	1.879E+01	0.000E+00	NOT IDENT.
I-126	-2.480E-01	2.653E-01	3.400E-01	0.000E+00	NOT IDENT.
SB-126	7.729E-02	1.563E-01	2.488E-01	0.000E+00	FAIL ABUN
SB-127	-5.524E-01	1.654E+00	2.804E+00	0.000E+00	NOT IDENT.
XE-127	-4.608E-03	6.451E-02	9.868E-02	0.000E+00	NOT IDENT.
I-131	-1.118E-01	1.397E-01	2.307E-01	0.000E+00	NOT IDENT.
TE-132	-1.606E-01	9.362E-01	1.659E+00	0.000E+00	NOT IDENT.
BA-133	-2.912E-03	5.326E-02	8.005E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.431E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.551E-02	5.088E-02	9.443E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	2.088E-01	3.558E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.116E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.559E-02	1.101E-01	1.792E-01	0.000E+00	FAIL ABUN
CE-139	-2.554E-02	3.486E-02	5.798E-02	0.000E+00	NOT IDENT.
BA-140	2.132E-01	3.097E-01	5.381E-01	0.000E+00	NOT IDENT.
LA-140	-1.172E-01	8.158E-02	9.265E-02	0.000E+00	FAIL ABUN
CE-141	4.883E-02	7.632E-02	1.351E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.707E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.509E-02	2.381E-01	4.098E-01	0.000E+00	NOT IDENT.
PM-144	1.320E-02	3.624E-02	6.469E-02	0.000E+00	NOT IDENT.
PR-144	8.947E-01	2.457E+00	4.386E+00	0.000E+00	NOT IDENT.
PM-146	4.828E-04	5.186E-02	8.891E-02	0.000E+00	NOT IDENT.
ND-147	9.859E-04	6.254E-01	1.060E+00	0.000E+00	FAIL ABUN

PM-149	1.654E+02	1.465E+02	2.630E+02	0.000E+00	NOT IDENT.
EU-152	6.817E-02	1.661E-01	1.802E-01	0.000E+00	FAIL ABUN
GD-153	4.717E-02	1.019E-01	1.614E-01	0.000E+00	NOT IDENT.
EU-154	7.570E-03	1.286E-01	2.149E-01	0.000E+00	NOT IDENT.
EU-155	8.297E-02	1.246E-01	2.242E-01	0.000E+00	FAIL ABUN
TB-160	9.039E-02	1.224E-01	2.253E-01	0.000E+00	FAIL ABUN
HO-166M	-3.177E-03	5.686E-02	9.832E-02	0.000E+00	FAIL ABUN
TM-171	-3.993E+01	4.510E+01	7.732E+01	0.000E+00	NOT IDENT.
LU-176	-2.089E-02	2.743E-02	4.474E-02	0.000E+00	NOT IDENT.
LU-177	0.000E+00	2.061E+00	2.780E+00	0.000E+00	FAIL ABUN
LU-177M	-1.453E-01	2.080E-01	3.434E-01	0.000E+00	FAIL ABUN
HF-181	-6.305E-02	4.831E-02	7.438E-02	0.000E+00	NOT IDENT.
W-181	-5.464E-01	6.075E-01	1.042E+00	0.000E+00	NOT IDENT.
TA-182	-2.597E-01	2.037E-01	2.940E-01	0.000E+00	FAIL ABUN
RE-183	1.377E-01	1.265E-01	2.269E-01	0.000E+00	FAIL ABUN
RE-184	3.128E-02	2.608E-01	4.656E-01	0.000E+00	NOT IDENT.
OS-185	1.516E-02	4.722E-02	8.101E-02	0.000E+00	NOT IDENT.
RE-188	2.389E-01	2.037E-01	3.664E-01	0.000E+00	NOT IDENT.
W-188	-1.244E+01	9.341E+00	1.281E+01	0.000E+00	NOT IDENT.
IR-192	1.211E-02	3.868E-02	6.890E-02	0.000E+00	FAIL ABUN
AU-195	3.578E-01	2.670E-01	4.769E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.720E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.402E+00	1.012E+01	1.727E+01	0.000E+00	NOT IDENT.
TL-202	3.878E-02	8.152E-02	1.442E-01	0.000E+00	NOT IDENT.
HG-203	3.645E-02	5.175E-02	8.320E-02	0.000E+00	FAIL ABUN
BI-207	-3.468E-02	5.356E-02	8.404E-02	0.000E+00	FAIL ABUN
TL-207	2.384E-01	8.552E-01	1.326E+00	0.000E+00	FAIL ABUN
PO-209	-1.261E+00	8.063E+00	1.358E+01	0.000E+00	NOT IDENT.
BI-210	2.514E+00	1.253E+01	2.235E+01	0.000E+00	NOT IDENT.
PB-210	2.514E+00	1.253E+01	2.235E+01	0.000E+00	NOT IDENT.
PO-210	2.514E+00	1.253E+01	2.235E+01	0.000E+00	NOT IDENT.
PB-211	-5.253E-01	1.117E+00	1.794E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.382E-01	7.240E-01	0.000E+00	FAIL ABUN
PO-215	2.384E-01	8.552E-01	1.326E+00	0.000E+00	FAIL ABUN
RN-219	-1.506E-01	4.485E-01	7.576E-01	0.000E+00	FAIL ABUN
RN-220	-1.782E+00	2.783E+01	4.683E+01	0.000E+00	NOT IDENT.
RA-223	2.384E-01	8.552E-01	1.326E+00	0.000E+00	FAIL ABUN
AC-227	-2.218E-01	4.288E-01	7.407E-01	0.000E+00	FAIL ABUN
TH-227	-2.218E-01	4.293E-01	7.407E-01	0.000E+00	FAIL ABUN
TH-229	4.014E-01	6.113E-01	1.054E+00	0.000E+00	FAIL ABUN
PA-231	1.109E-02	1.734E+00	3.060E+00	0.000E+00	NOT IDENT.
TH-231	2.384E-01	8.552E-01	1.326E+00	0.000E+00	FAIL ABUN
U-231	-1.344E+00	1.639E+00	2.415E+00	0.000E+00	FAIL ABUN
PA-233	8.029E-03	6.749E-02	1.192E-01	0.000E+00	FAIL ABUN
PA-234	-1.413E-01	3.164E-01	5.134E-01	0.000E+00	FAIL ABUN
PA-234M	3.771E+00	5.251E+00	9.473E+00	0.000E+00	NOT IDENT.
TH-234	2.479E+00	2.287E+00	4.134E+00	0.000E+00	FAIL ABUN
U-235	2.603E-01	2.592E-01	4.530E-01	0.000E+00	FAIL ABUN
NP-236	-2.721E-02	9.282E-02	1.578E-01	0.000E+00	NOT IDENT.
U-238	2.479E+00	2.287E+00	4.134E+00	0.000E+00	FAIL ABUN
NP-239	-2.295E-02	2.101E-01	3.657E-01	0.000E+00	FAIL ABUN
AM-241	-2.809E-01	2.920E-01	5.037E-01	0.000E+00	NOT IDENT.
CM-243	-1.242E-02	1.140E-01	1.997E-01	0.000E+00	FAIL ABUN
AM-246	-3.753E-02	1.443E-01	2.363E-01	0.000E+00	NOT IDENT.
CM-247	-3.286E-02	4.094E-02	6.710E-02	0.000E+00	FAIL ABUN
CF-249	3.084E-02	4.263E-02	7.699E-02	0.000E+00	NOT IDENT.
CF-251	-8.251E-02	1.486E-01	2.482E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148012.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:57:46
Sample ID          : G244148012          Sample quantity  : 1.35800E+02 GRAM
Detector name      : GAM15              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.23  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	790	10.67*	9.991E-01	2.048E+01	2.048E+01	10.92
CD-109	88.03	132	3.72*	4.402E+00	2.233E+00	2.288E+00	52.86
SN-126	64.28	-----	9.60	1.930E+00	-----	Line Not Found	-----
	86.94	132	8.90	4.402E+00	9.335E-01	9.335E-01	66.56
	87.57	132	37.00*	4.402E+00	2.245E-01	2.245E-01	52.86
BA-137M	661.65	33	89.98*	2.017E+00	5.045E-02	5.050E-02	146.07
CS-137	661.65	33	85.12*	2.017E+00	5.333E-02	5.338E-02	146.08
TL-208	277.35	27	6.80	3.788E+00	2.934E-01	2.934E-01	219.95
	510.84	65	21.60	2.462E+00	3.378E-01	3.378E-01	92.13
	583.14	285	84.20*	2.230E+00	4.200E-01	4.200E-01	22.92
	860.37	51	12.46	1.614E+00	7.006E-01	7.006E-01	59.81
BI-211	72.87	304	1.27	3.150E+00	2.102E+01	2.102E+01	29.61
	351.07	639	12.94*	3.207E+00	4.257E+00	4.257E+00	14.24
PB-212	74.81	304	10.70	3.150E+00	2.495E+00	2.495E+00	31.05
	77.11	480	18.00	3.412E+00	2.160E+00	2.160E+00	21.83
	87.30	132	8.00	4.402E+00	1.038E+00	1.038E+00	53.80
	238.63	985	44.60*	4.221E+00	1.447E+00	1.447E+00	11.88
	300.09	77	3.41	3.589E+00	1.742E+00	1.742E+00	70.64
PO-212	74.81	304	10.70	3.150E+00	2.495E+00	2.495E+00	31.05
	77.11	480	18.00	3.412E+00	2.160E+00	2.160E+00	21.83
	87.30	132	8.00	4.402E+00	1.038E+00	1.038E+00	53.80
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	985	44.60*	4.221E+00	1.447E+00	1.447E+00	11.88
	300.09	77	3.41	3.589E+00	1.742E+00	1.742E+00	70.64
BI-214	609.31	427	46.30*	2.157E+00	1.181E+00	1.181E+00	16.08
	1120.29	101	15.10	1.264E+00	1.463E+00	1.463E+00	35.07
	1764.49	59	15.80	8.817E-01	1.175E+00	1.175E+00	33.40
PB-214	74.81	304	6.21	3.150E+00	4.299E+00	4.299E+00	30.52
	77.11	480	10.50	3.412E+00	3.704E+00	3.704E+00	23.12
	87.30	132	4.67	4.402E+00	1.779E+00	1.779E+00	53.42
	241.98	314	7.49	4.184E+00	2.766E+00	2.766E+00	31.72
	295.21	376	19.20	3.630E+00	1.491E+00	1.491E+00	19.63

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	639	37.20*	3.207E+00	1.481E+00	1.481E+00	15.17
	74.81	304	6.21	3.150E+00	4.299E+00	4.299E+00	30.52
	77.11	480	10.50	3.412E+00	3.704E+00	3.704E+00	23.12
	87.30	132	4.67	4.402E+00	1.779E+00	1.779E+00	53.42
	241.98	314	7.49	4.184E+00	2.766E+00	2.766E+00	31.72
PO-216	295.21	376	19.20	3.630E+00	1.491E+00	1.491E+00	19.63
	351.92	639	37.20*	3.207E+00	1.481E+00	1.481E+00	15.17
	74.81	304	10.70	3.150E+00	2.495E+00	2.495E+00	31.05
	77.11	480	18.00	3.412E+00	2.160E+00	2.160E+00	21.83
	87.30	132	8.00	4.402E+00	1.038E+00	1.038E+00	53.80
PO-218	238.63	985	44.60*	4.221E+00	1.447E+00	1.447E+00	11.88
	300.09	77	3.41	3.589E+00	1.742E+00	1.742E+00	70.64
	74.81	304	6.21	3.150E+00	4.299E+00	4.299E+00	30.52
	77.11	480	10.50	3.412E+00	3.704E+00	3.704E+00	23.12
	87.30	132	4.67	4.402E+00	1.779E+00	1.779E+00	53.42
RA-224	241.98	314	7.49	4.184E+00	2.766E+00	2.766E+00	31.72
	295.21	376	19.20	3.630E+00	1.491E+00	1.491E+00	19.63
	351.92	639	37.20*	3.207E+00	1.481E+00	1.481E+00	15.17
	240.98	314	3.95*	4.184E+00	5.245E+00	5.245E+00	31.22
	609.31	427	46.30*	2.157E+00	1.181E+00	1.181E+00	16.08
RA-226	1120.29	101	15.10	1.264E+00	1.463E+00	1.463E+00	35.07
	1764.49	59	15.80	8.817E-01	1.175E+00	1.175E+00	33.40
	338.32	190	11.40	3.295E+00	1.401E+00	1.401E+00	53.89
	911.07	227	27.70*	1.532E+00	1.482E+00	1.482E+00	27.00
	969.11	123	16.60	1.448E+00	1.418E+00	1.418E+00	34.83
TH-228	338.32	190	11.40	3.295E+00	1.401E+00	1.401E+00	53.89
	911.07	227	27.70*	1.532E+00	1.482E+00	1.482E+00	27.00
	969.11	123	16.60	1.448E+00	1.418E+00	1.418E+00	34.83
	74.81	304	10.70	3.150E+00	2.495E+00	2.535E+00	29.63
	77.11	480	18.00	3.412E+00	2.160E+00	2.196E+00	21.83
TH-230	87.30	132	8.00	4.402E+00	1.038E+00	1.055E+00	52.86
	238.63	985	44.60*	4.221E+00	1.447E+00	1.470E+00	11.88
	300.09	77	3.41	3.589E+00	1.742E+00	1.770E+00	91.63
	609.31	427	46.30*	2.157E+00	1.181E+00	1.181E+00	16.08
	1120.29	101	15.10	1.264E+00	1.463E+00	1.463E+00	35.07
TH-232	1764.49	59	15.80	8.817E-01	1.175E+00	1.175E+00	33.40
	338.32	190	11.40	3.295E+00	1.401E+00	1.401E+00	35.72
	911.07	227	27.70*	1.532E+00	1.482E+00	1.482E+00	27.00
	969.11	123	16.60	1.448E+00	1.418E+00	1.418E+00	34.83
	609.31	427	46.30*	2.157E+00	1.181E+00	1.181E+00	16.08
U-234	1120.29	101	15.10	1.264E+00	1.463E+00	1.463E+00	35.07
	1764.49	59	15.80	8.817E-01	1.175E+00	1.175E+00	33.40
	86.50	132	12.60*	4.402E+00	6.594E-01	6.594E-01	56.75
	95.87	-----	2.60	5.041E+00	-----	Line Not Found	-----
	74.67	304	66.00*	3.150E+00	4.045E-01	4.045E-01	29.61
AM-243	86.72	132	0.34	4.402E+00	2.473E+01	2.473E+01	52.86
	117.66	-----	0.55	5.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.637E+00	-----	Line Not Found	-----
	511.00	65	100.00*	2.462E+00	7.297E-02	7.297E-02	91.76

Flag: "\*" = Keyline



Total number of lines in spectrum 30  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 28 93.33%

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	2.048E+01	2.048E+01	0.224E+01	10.92	
CD-109	464.00D	1.02	2.233E+00	2.288E+00	1.210E+00	52.86	
SN-126	1.00E+05Y	1.00	2.245E-01	2.245E-01	1.187E-01	52.86	
BA-137M	30.17Y	1.00	5.045E-02	5.050E-02	7.376E-02	146.07	
CS-137	30.17Y	1.00	5.333E-02	5.338E-02	7.798E-02	146.08	
TL-208	1.41E+10Y	1.00	4.200E-01	4.200E-01	0.963E-01	22.92	
BI-211	7.04E+08Y	1.00	4.257E+00	4.257E+00	0.606E+00	14.24	
PB-212	1.41E+10Y	1.00	1.447E+00	1.447E+00	0.172E+00	11.88	
PO-212	1.41E+10Y	1.00	1.447E+00	1.447E+00	0.172E+00	11.88	
BI-214	1600.00Y	1.00	1.181E+00	1.181E+00	0.190E+00	16.08	
PB-214	1600.00Y	1.00	1.481E+00	1.481E+00	0.225E+00	15.17	
PO-214	1600.00Y	1.00	1.481E+00	1.481E+00	0.225E+00	15.17	
PO-216	1.41E+10Y	1.00	1.447E+00	1.447E+00	0.172E+00	11.88	
PO-218	1600.00Y	1.00	1.481E+00	1.481E+00	0.225E+00	15.17	
RA-224	1.41E+10Y	1.00	5.245E+00	5.245E+00	1.638E+00	31.22	
RA-226	1600.00Y	1.00	1.181E+00	1.181E+00	0.190E+00	16.08	
AC-228	1.41E+10Y	1.00	1.482E+00	1.482E+00	0.400E+00	27.00	
RA-228	1.41E+10Y	1.00	1.482E+00	1.482E+00	0.400E+00	27.00	
TH-228	1.91Y	1.02	1.447E+00	1.470E+00	0.175E+00	11.88	
TH-230	4.47E+09Y	1.00	1.181E+00	1.181E+00	0.190E+00	16.08	
TH-232	1.41E+10Y	1.00	1.482E+00	1.482E+00	0.400E+00	27.00	
U-234	4.47E+09Y	1.00	1.181E+00	1.181E+00	0.190E+00	16.08	
NP-237	2.14E+06Y	1.00	6.594E-01	6.594E-01	3.742E-01	56.75	
AM-243	7380.00Y	1.00	4.045E-01	4.045E-01	1.198E-01	29.61	
ANH-511	1.00E+09Y	1.00	7.297E-02	7.297E-02	6.696E-02	91.76	

Total Activity : 5.350E+01 5.357E+01

Grand Total Activity : 5.350E+01 5.357E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244148012

Page : 5  
Acquisition date : 20-JAN-2010 15:57:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.34	238	462	1.69	185.15	181	10	3.30E-02	39.3	4.83E+00	T
0	185.12	223	308	1.38	370.63	366	10	3.09E-02	34.1	4.99E+00	T
0	208.77	145	304	1.46	417.90	413	11	2.01E-02	49.6	4.62E+00	T
0	269.99	76	240	1.48	540.29	535	11	1.06E-02	82.3	3.86E+00	T
0	327.68	43	171	1.34	655.64	650	10	5.99E-03	****	3.37E+00	T
0	462.71	65	88	1.44	925.60	919	10	9.05E-03	59.2	2.64E+00	T
0	726.76	80	106	1.94	1453.53	1446	18	1.11E-02	64.5	1.87E+00	T
0	964.21	46	61	0.99	1928.30	1917	15	6.41E-03	79.0	1.45E+00	T
0	1588.00	20	10	1.55	3175.70	3171	9	2.72E-03	76.1	9.39E-01	
0	1729.11	26	10	1.51	3457.92	3451	13	3.67E-03	62.4	8.91E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148012.CNF;1
* Acquisition date   : 20-JAN-2010 15:57:46  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 02:00:01.23          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244148012           Analyst initials: MXR1
* Batch Number       : 940268               Sample Quantity : 1.35800E+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      :
*****

```

## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.048E+01	2.235E+00	5.367E-01	4.103E-02	38.149
CD-109	2.288E+00	1.210E+00	1.845E+00	2.133E-01	1.240
SN-126	2.245E-01	1.187E-01	1.688E-01	1.948E-02	1.330
BA-137M	5.050E-02	7.376E-02	6.669E-02	3.355E-03	0.757
CS-137	5.338E-02	7.798E-02	7.049E-02	3.567E-03	0.757
TL-208	4.200E-01	9.628E-02	6.480E-02	4.126E-03	6.482
BI-211	4.257E+00	6.064E-01	3.591E-01	2.467E-02	11.856
PB-212	1.447E+00	1.718E-01	1.039E-01	8.598E-03	13.929
PO-212	1.447E+00	1.718E-01	1.039E-01	8.598E-03	13.929
BI-214	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
PB-214	1.481E+00	2.246E-01	1.251E-01	1.079E-02	11.833
PO-214	1.481E+00	2.246E-01	1.251E-01	1.079E-02	11.833
PO-216	1.447E+00	1.718E-01	1.039E-01	8.598E-03	13.929
PO-218	1.481E+00	2.246E-01	1.251E-01	1.079E-02	11.833
RA-224	5.245E+00	1.638E+00	1.182E+00	8.225E-02	4.438
RA-226	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
AC-228	1.482E+00	4.001E-01	2.264E-01	2.516E-02	6.547
RA-228	1.482E+00	4.001E-01	2.264E-01	2.516E-02	6.547

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.470E+00	1.746E-01	1.056E-01	8.738E-03	13.929
TH-230	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
TH-232	1.482E+00	4.001E-01	2.264E-01	2.516E-02	6.547
U-234	1.181E+00	1.899E-01	1.170E-01	8.685E-03	10.096
NP-237	6.594E-01	3.742E-01	5.322E-01	1.256E-01	1.239
AM-243	4.045E-01	1.198E-01	1.189E-01	1.321E-02	3.403
ANH-511	7.297E-02	6.696E-02	5.215E-02	2.945E-03	1.399

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.405E-01		3.745E-01	6.382E-01	4.252E-02	0.377
NA-22	3.609E-03		4.709E-02	7.690E-02	5.277E-03	0.047
NA-24	1.474E+00		1.208E+00	Half-Life too short		
AL-26	3.158E-03		2.769E-02	4.671E-02	2.795E-03	0.068
TI-44	1.876E-01		5.930E-02	9.086E-02	1.010E-02	2.065
SC-46	9.038E-03		3.892E-02	6.589E-02	5.527E-03	0.137
V-48	-1.006E-02		7.629E-02	1.238E-01	9.781E-03	-0.081
CR-51	1.047E-01		4.527E-01	7.432E-01	5.360E-02	0.141
MN-52	1.128E-02		2.648E-01	4.449E-01	3.299E-02	0.025
MN-54	1.732E-02		4.064E-02	6.977E-02	5.229E-03	0.248
CO-56	-1.676E-02		4.098E-02	6.538E-02	5.025E-03	-0.256
CO-57	7.959E-03		3.030E-02	4.989E-02	3.587E-03	0.160
CO-58	-8.872E-03		3.862E-02	6.282E-02	4.488E-03	-0.141
FE-59	6.489E-03		9.724E-02	1.600E-01	1.211E-02	0.041
CO-60	-2.087E-02		4.244E-02	6.392E-02	4.824E-03	-0.327
ZN-65	9.478E-02		1.076E-01	1.687E-01	1.096E-02	0.562
GE-68	1.007E-01		1.307E+00	2.156E+00	1.498E-01	0.047
AS-73	1.434E+00		1.972E+00	3.361E+00	4.594E-01	0.427
AS-74	-2.341E-02		1.107E-01	1.716E-01	9.227E-03	-0.136
SE-75	-5.557E-02		6.095E-02	8.328E-02	5.825E-03	-0.667
BR-77	-2.422E-01		1.505E+01	2.447E+01	1.376E+00	-0.010
SR-82	-4.391E-01		3.944E-01	5.886E-01	3.886E-02	-0.746
RB-83	-1.461E-02		7.382E-02	1.182E-01	6.652E-03	-0.124
RB-84	2.673E-02		6.363E-02	1.101E-01	9.092E-03	0.243
KR-85	9.745E+00		8.422E+00	1.321E+01	7.454E-01	0.737
SR-85	5.052E-02		4.366E-02	6.850E-02	3.864E-03	0.737
RB-86	5.099E-01		8.315E-01	1.446E+00	1.006E-01	0.353
Y-88	-2.226E-02		3.491E-02	4.924E-02	2.877E-03	-0.452
ZR-88	-1.268E-02		3.393E-02	5.460E-02	3.097E-03	-0.232
Y-91	-5.371E+00		2.023E+01	3.200E+01	1.935E+00	-0.168
NB-94	9.634E-03		3.693E-02	6.306E-02	3.508E-03	0.153
NB-95	7.213E-02		4.795E-02	8.797E-02	5.669E-03	0.820
NB-95M	1.608E+00		2.475E-01	3.963E-01	3.349E-02	4.056
ZR-95	4.151E-02		7.173E-02	1.255E-01	9.358E-03	0.331
NB-97	2.502E-01		1.834E-01	Half-Life too short		
ZR-97	2.237E+01		3.666E+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	-3.582E+00		1.655E+01	2.719E+01	3.778E+00	-0.132
TC-99M	-5.318E+11		4.242E+11	Half-Life too short		
RH-101	-1.458E-02		4.128E-02	6.401E-02	4.367E-03	-0.228
RH-102	1.981E-03		3.451E-02	5.663E-02	3.228E-03	0.035
RU-103	2.932E-02		4.794E-02	8.130E-02	1.023E-02	0.361
RH-106	1.542E-01		3.634E-01	6.052E-01	6.946E-02	0.255
RU-106	1.542E-01		3.631E-01	6.052E-01	3.180E-02	0.255
AG-108M	6.169E-04		3.521E-02	5.788E-02	3.599E-03	0.011
AG-110M	2.528E-02		4.658E-02	6.846E-02	3.752E-03	0.369
IN-111	-5.320E-01		1.716E+00	2.461E+00	1.713E-01	-0.216
IN-113M	1.152E-02		4.922E-02	8.238E-02	4.997E-03	0.140
SN-113	1.152E-02		4.922E-02	8.238E-02	4.997E-03	0.140
IN-114M	-7.946E-02		2.562E-01	3.518E-01	2.386E-02	-0.226
CD-115	-1.883E+00		1.557E+01	2.506E+01	1.406E+00	-0.075
SN-117M	-5.252E-02		6.994E-02	1.093E-01	7.308E-03	-0.480
SB-122	1.618E+00		3.156E+00	5.302E+00	2.917E-01	0.305
I-123	-1.921E+01		1.317E+01	Half-Life too short		
TE-123M	-2.530E-02		3.468E-02	5.426E-02	3.663E-03	-0.466
I-124	5.940E-01		9.364E-01	1.400E+00	7.483E-02	0.424
SB-124	1.725E-02		7.143E-02	1.294E-01	9.086E-03	0.133
SB-125	-3.599E-02		1.004E-01	1.609E-01	9.587E-03	-0.224
TE-125M	-3.494E-01		1.094E+01	1.787E+01	1.776E+00	-0.020
I-126	-2.480E-01		2.707E-01	3.341E-01	1.700E-02	-0.742
SB-126	7.729E-02		1.595E-01	2.449E-01	1.421E-02	0.316
SB-127	-5.524E-01		1.687E+00	2.756E+00	2.628E-01	-0.200
XE-127	-4.608E-03		6.583E-02	9.487E-02	6.495E-03	-0.049
I-131	-1.118E-01		1.425E-01	2.241E-01	1.514E-02	-0.499
TE-132	-1.606E-01		9.553E-01	1.598E+00	2.409E-01	-0.100
BA-133	-2.912E-03		5.434E-02	7.775E-02	9.155E-03	-0.037
I-133	-1.551E-04		7.299E-03	Half-Life too short		
CS-134	5.551E-02		5.192E-02	9.310E-02	6.488E-03	0.596
CS-135	4.172E-01		2.130E-01	3.438E-01	2.939E-02	1.214
I-135	-3.525E+10		4.141E+10	Half-Life too short		
CS-136	-3.559E-02		1.124E-01	1.776E-01	1.369E-02	-0.200
CE-139	-2.554E-02		3.557E-02	5.554E-02	3.693E-03	-0.460
BA-140	2.132E-01		3.160E-01	5.267E-01	1.711E-01	0.405
LA-140	-1.172E-01		8.325E-02	9.259E-02	6.453E-03	-1.265
CE-141	4.883E-02		7.788E-02	1.292E-01	9.015E-03	0.378
CE-143	2.409E-03	+	3.422E-04	Half-Life too short		
CE-144	-5.509E-02		2.430E-01	3.910E-01	5.747E-02	-0.141
PM-144	1.320E-02		3.698E-02	6.362E-02	3.490E-03	0.207
PR-144	8.947E-01		2.507E+00	4.314E+00	2.364E-01	0.207
PM-146	4.828E-04		5.292E-02	8.674E-02	7.429E-03	0.006
ND-147	9.859E-04		6.382E-01	1.038E+00	1.394E-01	0.001
PM-149	1.654E+02		1.495E+02	2.545E+02	3.728E+01	0.650
EU-152	6.817E-02		1.695E-01	1.749E-01	1.232E-02	0.390
GD-153	4.717E-02		1.040E-01	1.532E-01	1.470E-02	0.308
EU-154	7.570E-03		1.312E-01	2.138E-01	2.144E-02	0.035

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	8.297E-02		1.271E-01	2.131E-01	1.845E-02	0.389
TB-160	9.039E-02		1.249E-01	2.226E-01	1.830E-02	0.406
HO-166M	-3.177E-03		5.802E-02	9.674E-02	5.499E-03	-0.033
TM-171	-3.993E+01		4.602E+01	7.289E+01	8.382E+00	-0.548
LU-176	-2.089E-02		2.799E-02	4.334E-02	2.920E-03	-0.482
LU-177	4.197E+00	+	2.103E+00	2.674E+00	1.837E-01	1.569
LU-177M	-1.453E-01		2.123E-01	3.345E-01	1.907E-02	-0.434
HF-181	-6.305E-02		4.929E-02	7.265E-02	4.136E-03	-0.868
W-181	-5.464E-01		6.199E-01	9.816E-01	1.142E-01	-0.557
TA-182	-2.597E-01		2.078E-01	2.923E-01	1.822E-02	-0.888
RE-183	1.377E-01		1.291E-01	2.173E-01	1.448E-02	0.634
RE-184	3.128E-02		2.661E-01	4.494E-01	3.128E-02	0.070
OS-185	1.516E-02		4.818E-02	7.956E-02	4.076E-03	0.191
RE-188	2.389E-01		2.079E-01	3.506E-01	2.352E-02	0.681
W-188	-1.244E+01		9.531E+00	1.240E+01	8.485E-01	-1.003
IR-192	1.211E-02		3.947E-02	6.678E-02	4.463E-03	0.181
AU-195	3.578E-01		2.725E-01	4.527E-01	4.243E-02	0.790
TL-200	6.937E-04		4.959E-04	Half-Life too short		
TL-201	-1.402E+00		1.032E+01	1.655E+01	1.101E+00	-0.085
TL-202	3.878E-02		8.318E-02	1.406E-01	8.037E-03	0.276
HG-203	3.645E-02		5.281E-02	8.045E-02	5.794E-03	0.453
BI-207	-3.468E-02		5.465E-02	8.332E-02	5.920E-03	-0.416
TL-207	2.384E-01		8.727E-01	1.285E+00	2.161E-01	0.185
PO-209	-1.261E+00		8.227E+00	1.342E+01	1.142E+00	-0.094
BI-210	2.514E+00		1.279E+01	2.094E+01	2.175E+00	0.120
PB-210	2.514E+00		1.279E+01	2.094E+01	2.175E+00	0.120
PO-210	2.514E+00		1.279E+01	2.094E+01	2.011E+00	0.120
PB-211	-5.253E-01		1.140E+00	1.746E+00	1.089E+00	-0.301
BI-212	1.003E+00	+	6.513E+01	7.126E-01	5.549E-02	1.407
PO-215	2.384E-01		8.727E-01	1.285E+00	2.161E-01	0.185
RN-219	-1.506E-01		4.577E-01	7.375E-01	9.999E-02	-0.204
RN-220	-1.782E+00		2.840E+01	4.585E+01	2.544E+00	-0.039
RA-223	2.384E-01		8.727E-01	1.285E+00	2.161E-01	0.185
AC-227	-2.218E-01		4.375E-01	7.151E-01	1.035E-01	-0.310
TH-227	-2.218E-01		4.380E-01	7.151E-01	1.239E-01	-0.310
TH-229	4.014E-01		6.237E-01	1.012E+00	6.881E-02	0.397
PA-231	1.109E-02		1.770E+00	2.960E+00	4.224E-01	0.004
TH-231	2.384E-01		8.727E-01	1.285E+00	2.161E-01	0.185
U-231	-1.344E+00		1.673E+00	2.291E+00	2.257E-01	-0.587
PA-233	8.029E-03		6.887E-02	1.155E-01	8.094E-03	0.070
PA-234	-1.413E-01		3.228E-01	5.079E-01	9.435E-02	-0.278
PA-234M	3.771E+00		5.358E+00	9.381E+00	8.646E-01	0.402
TH-234	2.479E+00		2.334E+00	3.893E+00	7.684E-01	0.637
U-235	2.603E-01		2.645E-01	4.328E-01	7.222E-02	0.601
NP-236	-2.721E-02		9.472E-02	1.511E-01	1.009E-02	-0.180
U-238	2.479E+00		2.334E+00	3.893E+00	7.684E-01	0.637
NP-239	-2.295E-02		2.144E-01	3.482E-01	2.617E-02	-0.066
AM-241	-2.809E-01		2.980E-01	4.739E-01	6.030E-02	-0.593

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.242E-02		1.163E-01	1.897E-01	1.656E-02	-0.065
AM-246	-3.753E-02		1.472E-01	2.343E-01	1.624E-02	-0.160
CM-247	-3.286E-02		4.178E-02	6.532E-02	3.714E-03	-0.503
CF-249	3.084E-02		4.351E-02	7.490E-02	4.294E-03	0.412
CF-251	-8.251E-02		1.516E-01	2.380E-01	1.596E-02	-0.347

# 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]G244148012                *
* Acquisition date   : 20-JAN-2010 15:57:46 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 02:00:01.23                Half life ratio : 8.000       *
*****
*                                     SAMPLE DATA                                *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID                *
* Sample ID          : G244148012                 Analyst initials: MXR1          *
* Batch Number       : 940268                      Sample Quantity : 1.3580E+02 GRAM *
* Recovery           : 1.00000                     Carrier Weight  : 0.00000       *
*****
*                                     QC DATA                                    *
*
* CALIB. DATE/TIME   : 16-FEB-2009 10:54:12 MS Isotope      :                  *
* MSD DPM             : 0.000                      MSD Isotope :                  *
* LCS DPM             : 0.000                      LCS Isotope :                  *
* LCSD DPM            : 0.000                      LCSD Isotope:                  *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.048E+01	2.191E+00	2.692E-01	1.118E+00
CD-109	2.288E+00	1.185E+00	9.744E-01	6.048E-01
SN-126	2.245E-01	1.163E-01	8.918E-02	5.935E-02
BA-137M	5.050E-02	7.229E-02	3.396E-02	3.688E-02
CS-137	5.338E-02	7.642E-02	3.589E-02	3.899E-02
TL-208	4.200E-01	9.435E-02	3.307E-02	4.814E-02
BI-211	4.257E+00	5.942E-01	1.850E-01	3.032E-01
PB-212	1.447E+00	1.684E-01	5.389E-02	8.592E-02
PO-212	1.447E+00	1.684E-01	5.389E-02	8.592E-02
BI-214	1.181E+00	1.861E-01	5.966E-02	9.497E-02
PB-214	1.481E+00	2.201E-01	6.447E-02	1.123E-01
PO-214	1.481E+00	2.201E-01	6.447E-02	1.123E-01
PO-216	1.447E+00	1.684E-01	5.389E-02	8.592E-02
PO-218	1.481E+00	2.201E-01	6.447E-02	1.123E-01
RA-224	5.245E+00	1.605E+00	6.131E-01	8.189E-01
RA-226	1.181E+00	1.861E-01	5.966E-02	9.497E-02
AC-228	1.482E+00	3.921E-01	1.146E-01	2.000E-01
RA-228	1.482E+00	3.921E-01	1.146E-01	2.000E-01
TH-228	1.470E+00	1.711E-01	5.477E-02	8.731E-02
TH-230	1.181E+00	1.861E-01	5.966E-02	9.497E-02
TH-232	1.482E+00	3.921E-01	1.146E-01	2.000E-01
U-234	1.181E+00	1.861E-01	5.966E-02	9.497E-02
NP-237	6.594E-01	3.667E-01	2.812E-01	1.871E-01
AM-243	4.045E-01	1.174E-01	6.295E-02	5.988E-02
ANH-511	7.297E-02	6.562E-02	2.668E-02	3.348E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	2.405E-01	3.670E-01	3.269E-01	1.872E-01 NOT IDENT.
NA-22	3.609E-03	4.615E-02	3.867E-02	2.354E-02 NOT IDENT.



NA-24	1.474E+06	2.367E+06	0.000E+00	1.208E+06	SHORT HLIF
AL-26	3.158E-03	2.713E-02	2.333E-02	1.384E-02	NOT IDENT.
TI-44	1.876E-01	5.812E-02	4.808E-02	2.965E-02	NOT IDENT.
SC-46	9.038E-03	3.814E-02	3.336E-02	1.946E-02	FAIL ABUN
V-48	-1.006E-02	7.476E-02	6.257E-02	3.814E-02	NOT IDENT.
CR-51	1.047E-01	4.436E-01	3.836E-01	2.263E-01	NOT IDENT.
MN-52	1.128E-02	2.595E-01	2.232E-01	1.324E-01	NOT IDENT.
MN-54	1.732E-02	3.982E-02	3.537E-02	2.032E-02	NOT IDENT.
CO-56	-1.676E-02	4.016E-02	3.314E-02	2.049E-02	NOT IDENT.
CO-57	7.959E-03	2.970E-02	2.620E-02	1.515E-02	NOT IDENT.
CO-58	-8.872E-03	3.784E-02	3.187E-02	1.931E-02	NOT IDENT.
FE-59	6.489E-03	9.530E-02	8.070E-02	4.862E-02	NOT IDENT.
CO-60	-2.087E-02	4.159E-02	3.211E-02	2.122E-02	NOT IDENT.
ZN-65	9.478E-02	1.054E-01	8.506E-02	5.380E-02	NOT IDENT.
GE-68	1.007E-01	1.281E+00	1.088E+00	6.537E-01	NOT IDENT.
AS-73	1.434E+00	1.932E+00	1.791E+00	9.858E-01	NOT IDENT.
AS-74	-2.341E-02	1.084E-01	8.756E-02	5.533E-02	NOT IDENT.
SE-75	-5.557E-02	5.973E-02	4.313E-02	3.048E-02	NOT IDENT.
BR-77	-2.422E-01	1.475E+01	1.251E+01	7.527E+00	FAIL ABUN
SR-82	-4.391E-01	3.865E-01	2.988E-01	1.972E-01	NOT IDENT.
RB-83	-1.461E-02	7.235E-02	6.047E-02	3.691E-02	NOT IDENT.
RB-84	2.673E-02	6.236E-02	5.577E-02	3.182E-02	NOT IDENT.
KR-85	9.745E+00	8.253E+00	6.760E+00	4.211E+00	NOT IDENT.
SR-85	5.052E-02	4.279E-02	3.505E-02	2.183E-02	NOT IDENT.
RB-86	5.099E-01	8.149E-01	7.297E-01	4.158E-01	NOT IDENT.
Y-88	-2.226E-02	3.421E-02	2.459E-02	1.746E-02	NOT IDENT.
ZR-88	-1.268E-02	3.325E-02	2.807E-02	1.697E-02	NOT IDENT.
Y-91	-5.371E+00	1.983E+01	1.611E+01	1.011E+01	NOT IDENT.
NB-94	9.634E-03	3.619E-02	3.207E-02	1.847E-02	NOT IDENT.
NB-95	7.213E-02	4.699E-02	4.467E-02	2.397E-02	NOT IDENT.
NB-95M	1.608E+00	2.426E-01	2.057E-01	1.238E-01	NOT IDENT.
ZR-95	4.151E-02	7.030E-02	6.375E-02	3.587E-02	NOT IDENT.
NB-97	2.502E+05	3.595E+05	0.000E+00	1.834E+05	SHORT HLIF
ZR-97	2.237E+07	7.186E+06	0.000E+00	3.666E+06	SHORT HLIF
MO-99	-3.582E+00	1.622E+01	1.381E+01	8.277E+00	NOT IDENT.
TC-99M	-5.318E+17	8.314E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.458E-02	4.045E-02	3.332E-02	2.064E-02	NOT IDENT.
RH-102	1.981E-03	3.382E-02	2.901E-02	1.725E-02	NOT IDENT.
RU-103	2.932E-02	4.698E-02	4.162E-02	2.397E-02	NOT IDENT.
RH-106	1.542E-01	3.561E-01	3.085E-01	1.817E-01	NOT IDENT.
RU-106	1.542E-01	3.558E-01	3.085E-01	1.815E-01	NOT IDENT.
AG-108M	6.169E-04	3.451E-02	2.971E-02	1.761E-02	NOT IDENT.
AG-110M	2.528E-02	4.565E-02	3.486E-02	2.329E-02	NOT IDENT.
IN-111	-5.320E-01	1.682E+00	1.276E+00	8.582E-01	NOT IDENT.
IN-113M	1.152E-02	4.824E-02	4.236E-02	2.461E-02	NOT IDENT.
SN-113	1.152E-02	4.824E-02	4.236E-02	2.461E-02	NOT IDENT.
IN-114M	-7.946E-02	2.510E-01	1.833E-01	1.281E-01	NOT IDENT.
CD-115	-1.883E+00	1.526E+01	1.282E+01	7.784E+00	NOT IDENT.
SN-117M	-5.252E-02	6.854E-02	5.713E-02	3.497E-02	NOT IDENT.
SB-122	1.618E+00	3.093E+00	2.708E+00	1.578E+00	NOT IDENT.
I-123	-1.921E+07	2.581E+07	0.000E+00	1.317E+07	SHORT HLIF
TE-123M	-2.530E-02	3.399E-02	2.836E-02	1.734E-02	NOT IDENT.
I-124	5.940E-01	9.177E-01	7.140E-01	4.682E-01	NOT IDENT.
SB-124	1.725E-02	7.000E-02	6.470E-02	3.571E-02	FAIL ABUN
SB-125	-3.599E-02	9.841E-02	8.257E-02	5.021E-02	FAIL ABUN
TE-125M	-3.494E-01	1.072E+01	9.401E+00	5.471E+00	NOT IDENT.
I-126	-2.480E-01	2.653E-01	1.701E-01	1.354E-01	NOT IDENT.
SB-126	7.729E-02	1.563E-01	1.245E-01	7.976E-02	FAIL ABUN
SB-127	-5.524E-01	1.654E+00	1.403E+00	8.437E-01	NOT IDENT.
XE-127	-4.608E-03	6.451E-02	4.937E-02	3.291E-02	NOT IDENT.
I-131	-1.118E-01	1.397E-01	1.154E-01	7.127E-02	NOT IDENT.
TE-132	-1.606E-01	9.362E-01	8.301E-01	4.777E-01	NOT IDENT.
BA-133	-2.912E-03	5.326E-02	4.005E-02	2.717E-02	FAIL ABUN
I-133	-1.551E+02	1.431E+04	0.000E+00	7.299E+03	SHORT HLIF
CS-134	5.551E-02	5.088E-02	4.724E-02	2.596E-02	NOT IDENT.
CS-135	4.172E-01	2.088E-01	1.780E-01	1.065E-01	NOT IDENT.
I-135	-3.525E+16	8.116E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.559E-02	1.101E-01	8.965E-02	5.618E-02	FAIL ABUN
CE-139	-2.554E-02	3.486E-02	2.900E-02	1.779E-02	NOT IDENT.
BA-140	2.132E-01	3.097E-01	2.692E-01	1.580E-01	NOT IDENT.
LA-140	-1.172E-01	8.158E-02	4.635E-02	4.162E-02	FAIL ABUN
CE-141	4.883E-02	7.632E-02	6.761E-02	3.894E-02	NOT IDENT.
CE-143	2.409E+03	6.707E+02	0.000E+00	3.422E+02	SHORT HLIF
CE-144	-5.509E-02	2.381E-01	2.050E-01	1.215E-01	NOT IDENT.
PM-144	1.320E-02	3.624E-02	3.236E-02	1.849E-02	NOT IDENT.
PR-144	8.947E-01	2.457E+00	2.194E+00	1.254E+00	NOT IDENT.
PM-146	4.828E-04	5.186E-02	4.448E-02	2.646E-02	NOT IDENT.
ND-147	9.859E-04	6.254E-01	5.305E-01	3.191E-01	FAIL ABUN

PM-149	1.654E+02	1.465E+02	1.316E+02	7.475E+01	NOT IDENT.
EU-152	6.817E-02	1.661E-01	9.014E-02	8.476E-02	FAIL ABUN
GD-153	4.717E-02	1.019E-01	8.074E-02	5.199E-02	NOT IDENT.
EU-154	7.570E-03	1.286E-01	1.075E-01	6.560E-02	NOT IDENT.
EU-155	8.297E-02	1.246E-01	1.122E-01	6.356E-02	FAIL ABUN
TB-160	9.039E-02	1.224E-01	1.127E-01	6.246E-02	FAIL ABUN
HO-166M	-3.177E-03	5.686E-02	4.919E-02	2.901E-02	FAIL ABUN
TM-171	-3.993E+01	4.510E+01	3.868E+01	2.301E+01	NOT IDENT.
LU-176	-2.089E-02	2.743E-02	2.239E-02	1.399E-02	NOT IDENT.
LU-177	4.197E+00	2.061E+00	1.391E+00	1.052E+00	FAIL ABUN
LU-177M	-1.453E-01	2.080E-01	1.718E-01	1.061E-01	FAIL ABUN
HF-181	-6.305E-02	4.831E-02	3.721E-02	2.465E-02	NOT IDENT.
W-181	-5.464E-01	6.075E-01	5.211E-01	3.100E-01	NOT IDENT.
TA-182	-2.597E-01	2.037E-01	1.471E-01	1.039E-01	FAIL ABUN
RE-183	1.377E-01	1.265E-01	1.135E-01	6.454E-02	FAIL ABUN
RE-184	3.128E-02	2.608E-01	2.329E-01	1.331E-01	NOT IDENT.
OS-185	1.516E-02	4.722E-02	4.053E-02	2.409E-02	NOT IDENT.
RE-188	2.389E-01	2.037E-01	1.833E-01	1.039E-01	NOT IDENT.
W-188	-1.244E+01	9.341E+00	6.410E+00	4.766E+00	NOT IDENT.
IR-192	1.211E-02	3.868E-02	3.447E-02	1.973E-02	FAIL ABUN
AU-195	3.578E-01	2.670E-01	2.386E-01	1.362E-01	FAIL ABUN
TL-200	6.937E+02	9.720E+02	0.000E+00	4.959E+02	SHORT HLIF
TL-201	-1.402E+00	1.012E+01	8.641E+00	5.161E+00	NOT IDENT.
TL-202	3.878E-02	8.152E-02	7.215E-02	4.159E-02	NOT IDENT.
HG-203	3.645E-02	5.175E-02	4.162E-02	2.640E-02	FAIL ABUN
BI-207	-3.468E-02	5.356E-02	4.204E-02	2.733E-02	FAIL ABUN
TL-207	2.384E-01	8.552E-01	6.633E-01	4.363E-01	FAIL ABUN
PO-209	-1.261E+00	8.063E+00	6.794E+00	4.114E+00	NOT IDENT.
BI-210	2.514E+00	1.253E+01	1.118E+01	6.395E+00	NOT IDENT.
PB-210	2.514E+00	1.253E+01	1.118E+01	6.395E+00	NOT IDENT.
PO-210	2.514E+00	1.253E+01	1.118E+01	6.395E+00	NOT IDENT.
PB-211	-5.253E-01	1.117E+00	8.975E-01	5.701E-01	NOT IDENT.
BI-212	1.003E+00	6.382E-01	3.622E-01	3.256E-01	FAIL ABUN
PO-215	2.384E-01	8.552E-01	6.633E-01	4.363E-01	FAIL ABUN
RN-219	-1.506E-01	4.485E-01	3.790E-01	2.288E-01	FAIL ABUN
RN-220	-1.782E+00	2.783E+01	2.343E+01	1.420E+01	NOT IDENT.
RA-223	2.384E-01	8.552E-01	6.633E-01	4.363E-01	FAIL ABUN
AC-227	-2.218E-01	4.288E-01	3.706E-01	2.188E-01	FAIL ABUN
TH-227	-2.218E-01	4.293E-01	3.706E-01	2.190E-01	FAIL ABUN
TH-229	4.014E-01	6.113E-01	5.271E-01	3.119E-01	FAIL ABUN
PA-231	1.109E-02	1.734E+00	1.531E+00	8.849E-01	NOT IDENT.
TH-231	2.384E-01	8.552E-01	6.633E-01	4.363E-01	FAIL ABUN
U-231	-1.344E+00	1.639E+00	1.208E+00	8.364E-01	FAIL ABUN
PA-233	8.029E-03	6.749E-02	5.962E-02	3.444E-02	FAIL ABUN
PA-234	-1.413E-01	3.164E-01	2.569E-01	1.614E-01	FAIL ABUN
PA-234M	3.771E+00	5.251E+00	4.739E+00	2.679E+00	NOT IDENT.
TH-234	2.479E+00	2.287E+00	2.068E+00	1.167E+00	FAIL ABUN
U-235	2.603E-01	2.592E-01	2.266E-01	1.322E-01	FAIL ABUN
NP-236	-2.721E-02	9.282E-02	7.897E-02	4.736E-02	NOT IDENT.
U-238	2.479E+00	2.287E+00	2.068E+00	1.167E+00	FAIL ABUN
NP-239	-2.295E-02	2.101E-01	1.830E-01	1.072E-01	FAIL ABUN
AM-241	-2.809E-01	2.920E-01	2.520E-01	1.490E-01	NOT IDENT.
CM-243	-1.242E-02	1.140E-01	9.991E-02	5.817E-02	FAIL ABUN
AM-246	-3.753E-02	1.443E-01	1.182E-01	7.361E-02	NOT IDENT.
CM-247	-3.286E-02	4.094E-02	3.357E-02	2.089E-02	FAIL ABUN
CF-249	3.084E-02	4.263E-02	3.852E-02	2.175E-02	NOT IDENT.
CF-251	-8.251E-02	1.486E-01	1.242E-01	7.581E-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	273.4558
46.50	273.4558
46.50	273.4558
48.70	299.9756
49.72	311.8380
51.35	273.8441
52.39	270.5192
52.97	263.1761
53.15	271.8071
53.44	263.3779
54.07	275.0689
56.28	317.1119
56.28	317.1132
57.37	0.0000
57.53	327.3060
57.53	327.3073
57.60	321.5990
57.98	305.5078
57.98	305.5078
59.32	365.6397
59.32	365.6397
59.40	365.6848
59.54	374.4026
59.72	392.7512
60.01	396.7672
61.10	353.1569
61.14	353.1779
61.30	353.2626
63.00	342.5781
63.29	343.6895
63.29	343.6895
63.58	357.3581
64.28	363.5257
65.12	427.8583
65.20	427.9076
65.20	427.9076
66.05	474.9585
66.72	429.8120
66.83	429.8812
66.91	429.9302
67.20	419.4278
67.20	419.4278
67.75	387.3657
67.85	387.4204
68.90	378.3912
68.90	378.3912
69.30	349.0006
69.67	350.7399
70.82	374.7173
70.82	374.7173
70.83	374.7231
72.80	418.0023
72.87	418.0414
72.87	418.0414
74.67	382.5643
74.81	382.6357
74.81	382.6357
74.81	382.6357
74.81	382.6357
74.81	382.6357
74.81	382.6357
74.81	382.6357
74.97	382.7176
75.28	382.8752
75.70	383.0880
77.11	383.7991
77.11	383.7991

77.11	383.7991
77.11	383.7991
77.11	383.7991
77.11	383.7991
77.11	383.7991
78.38	373.7885
79.62	458.1111
79.80	458.2173
79.80	458.2173
80.11	474.2065
80.18	474.2487
80.30	474.3219
80.30	474.3219
80.57	463.4135
81.00	463.6675
81.07	439.1780
81.07	439.1780
81.07	439.1780
81.07	439.1780
82.60	348.8499
83.37	382.9137
83.78	371.5978
83.78	371.5978
83.78	371.5978
83.78	371.5978
84.21	363.8520
84.90	375.2953
85.43	385.0878
86.29	525.6736
86.50	525.8086
86.54	545.7527
86.59	545.7862
86.72	545.8719
86.79	545.9179
86.94	546.0182
87.30	510.3730
87.30	510.3730
87.30	510.3730
87.30	510.3730
87.30	510.3730
87.30	510.3730
87.30	510.3730
87.57	474.6418
87.88	474.8197
88.03	554.7232
88.36	554.9438
88.47	555.0180
89.95	556.0021
91.11	556.7699
92.29	417.1553
92.38	417.1997
92.38	417.1997
93.35	282.7322
94.00	310.2772
94.67	344.3031
94.67	344.3044
94.90	344.3958
94.90	344.3958
94.90	344.3958
94.90	344.3958
95.87	348.0034
95.87	348.0034
96.73	330.6069
97.43	306.6591
98.44	288.1590
98.44	288.1590
98.88	282.9128
99.55	298.2939
99.55	298.2939
99.86	298.3974
100.00	311.5953
100.10	328.8322
103.18	339.0913
103.76	340.3225
105.00	312.2993
105.31	311.3859
108.00	340.8636
109.28	325.9983

111.00	335.8039
111.00	335.8039
111.76	334.0224
112.95	303.6590
115.19	312.5873
116.30	302.6480
117.00	297.7132
117.00	297.7132
117.66	313.3748
121.11	301.0129
121.62	324.9696
121.78	325.0211
122.06	318.8986
122.32	315.8727
122.32	315.8727
122.32	315.8727
122.32	315.8727
123.07	319.2159
127.23	337.1618
129.76	336.9374
131.20	359.3324
133.02	327.5119
133.54	337.0938
135.34	321.9294
136.00	321.0768
136.25	332.6962
136.48	318.0700
140.51	370.8713
140.51	0.0000
142.18	331.3324
142.65	329.3612
143.76	320.1783
144.24	338.2861
144.24	338.2861
144.24	338.2861
144.24	338.2861
145.22	330.1170
145.44	337.5892
147.16	380.4980
152.43	323.6842
152.70	322.6957
153.22	324.9700
154.21	313.5145
154.21	313.5145
154.21	313.5145
154.21	313.5145
155.03	301.9959
156.02	312.9309
158.56	342.5024
159.00	0.0000
159.00	343.6977
160.31	320.4934
161.27	303.5851
162.32	272.7120
162.64	280.3034
163.35	293.3617
163.89	305.3186
165.85	324.1137
167.43	294.3417
171.28	297.4180
171.86	298.6385
172.10	280.2975
176.55	309.5226
176.60	309.5335
181.06	275.5164
184.41	279.7207
185.71	299.2479
186.00	283.5593
190.27	307.3010
192.34	282.4937
193.63	270.6606
197.04	290.0902
198.01	300.2310
198.60	310.2958
200.40	285.2720
201.83	302.1679
202.84	296.8484
205.31	319.5659

208.36	280.2239
208.81	280.3123
209.75	254.6751
209.75	254.6751
210.97	262.0214
215.65	263.1310
216.55	243.8013
218.09	250.7764
222.10	236.8679
223.80	231.5205
226.40	238.6795
227.00	239.6760
227.08	239.6890
227.20	239.7068
228.16	236.2542
228.18	236.2574
228.18	236.2574
231.56	0.0000
235.69	237.1242
236.00	230.2232
236.00	230.2232
238.63	230.6154
238.63	230.6154
238.63	230.6154
238.63	230.6154
239.00	230.6696
240.98	230.9642
241.98	215.3401
241.98	215.3401
241.98	215.3401
244.69	189.8880
245.39	211.2488
247.94	200.9340
248.90	209.2798
249.79	209.3972
252.40	196.9158
252.85	203.3839
252.85	203.3839
254.15	0.0000
256.20	217.5760
256.20	217.5760
260.50	183.1725
260.90	177.6933
262.80	213.1554
264.65	233.7705
268.24	181.8710
268.79	180.3893
269.46	183.5479
269.46	183.5479
269.46	183.5479
269.46	183.5479
271.23	176.0190
273.65	176.2719
276.40	179.6546
277.35	176.6545
277.60	176.6801
277.60	176.6801
278.00	176.7218
278.60	181.4366
279.20	175.2958
279.53	190.8437
280.46	200.2607
281.68	192.6349
283.67	188.5021
284.30	182.9700
285.00	167.1679
285.90	157.8056
286.10	160.9391
286.10	160.9391
287.40	185.4775
288.45	0.0000
290.67	199.8750
290.80	199.8906
291.72	176.5579
293.26	0.0000
293.70	134.5220
295.21	159.6842
295.21	159.6842

295.21	159.6842
295.96	159.7506
296.50	159.8004
297.23	159.8647
298.57	159.9851
299.80	166.3712
299.80	166.3712
300.09	163.2596
300.09	163.2596
300.09	163.2596
300.09	163.2596
300.12	163.2617
301.29	150.8008
302.84	139.9244
303.76	132.1301
303.91	132.1421
304.40	133.7498
304.40	133.7498
304.84	141.6522
306.84	168.0686
308.46	152.3407
311.98	142.2034
316.51	152.0547
318.01	149.3225
319.02	161.7739
319.41	165.6143
320.08	159.7494
323.87	162.1910
323.87	162.1910
323.87	162.1910
323.87	162.1910
325.23	181.4022
328.77	157.8256
333.44	159.8063
334.20	174.5774
334.20	174.5774
334.30	174.5863
338.28	142.2621
338.28	142.2621
338.28	142.2621
338.28	142.2621
338.32	142.2657
338.32	142.2657
338.32	142.2657
340.50	134.7244
340.57	134.7295
344.27	115.6992
345.85	127.3707
350.59	0.0000
351.07	134.4781
351.92	134.5341
351.92	134.5341
351.92	134.5341
355.39	0.0000
356.01	134.1607
364.48	145.1077
366.43	124.7750
367.43	120.9348
367.94	0.0000
369.80	130.8365
374.96	121.3723
383.85	142.5273
387.95	110.3006
388.63	129.0539
391.69	118.3857
391.69	118.3857
392.90	126.3484
398.62	98.9697
400.65	115.9017
401.10	123.8525
401.81	128.8479
402.60	140.7935
404.84	146.8907
410.95	143.3162
411.60	157.2941
413.65	152.4565
414.70	121.6232
415.30	138.6080

415.76	132.6526
417.63	0.0000
418.52	119.8330
423.70	128.1141
427.08	115.2737
427.89	113.3090
432.53	102.4856
433.93	102.5466
439.47	105.8152
439.56	105.8190
439.89	106.8424
443.98	126.2131
444.90	123.2316
445.03	123.2391
445.03	123.2391
445.03	123.2391
445.03	123.2391
453.90	126.7426
463.38	108.5807
468.07	131.1312
473.00	118.5488
475.06	113.5338
475.35	107.4097
476.78	99.2841
477.59	98.2922
477.96	94.2113
482.03	122.0592
484.57	75.9801
487.03	91.4716
490.36	0.0000
492.35	95.7848
497.08	94.9323
507.63	0.0000
510.53	0.0000
510.84	99.5918
511.00	99.5982
511.85	99.6311
511.85	99.6311
513.99	81.3626
513.99	81.3626
520.41	86.4225
520.65	84.3480
527.90	80.4026
528.96	0.0000
529.64	77.3206
529.87	0.0000
531.02	82.5874
537.32	82.7822
543.00	92.4086
546.56	0.0000
549.76	85.2695
552.65	77.9836
555.20	80.1655
563.23	83.5730
563.90	93.1154
568.70	95.3965
569.32	96.4787
569.50	93.3023
569.67	91.1881
573.80	114.4481
574.00	113.2760
574.64	109.2556
578.91	92.1976
579.30	0.0000
583.14	89.4940
585.48	81.7485
591.81	92.6165
592.07	86.5668
593.00	86.5964
595.88	87.7516
600.56	85.7500
602.52	0.0000
602.71	71.5120
602.71	71.5120
603.60	76.8982
604.41	91.2308
604.70	91.2401
609.31	82.4241



609.31	82.4241
609.31	82.4241
609.31	82.4241
610.33	77.0767
612.46	77.1309
614.37	77.1816
618.01	80.8704
621.84	78.8154
621.84	78.8154
631.29	67.1510
633.02	86.6973
633.10	86.6992
634.78	84.5793
635.90	81.3556
636.97	69.4484
645.85	69.6516
646.12	74.0114
656.30	60.0609
657.75	78.2979
657.90	0.0000
661.65	88.6056
661.65	88.6056
664.57	0.0000
666.33	107.7273
666.33	107.7273
675.00	82.3920
677.61	78.0636
685.20	73.4733
692.80	82.8552
695.00	76.4633
696.49	76.4987
696.49	76.4987
697.00	76.5106
697.49	77.4443
698.33	81.1519
698.50	83.0017
699.00	82.0921
702.63	82.1845
706.10	72.1030
706.58	0.0000
706.67	80.4368
709.31	74.9504
711.68	61.1150
713.82	53.7413
717.42	62.7389
720.50	49.3414
721.93	0.0000
722.20	46.1813
722.78	49.3749
722.78	49.3749
722.89	49.3771
722.95	49.3781
723.30	57.3486
724.18	63.7374
727.18	63.2630
733.00	75.0898
735.90	64.3604
739.58	75.6376
742.81	51.4081
744.21	62.6503
747.13	66.4469
751.79	54.3549
752.31	49.6767
753.82	50.6371
755.35	51.5972
756.15	54.4246
756.87	64.7605
763.93	76.1797
765.79	65.8700
766.42	71.5283
766.84	79.0679
776.49	72.6810
778.00	75.5452
778.57	71.7788
778.89	73.6757
783.80	56.7529
785.46	71.9211
792.07	66.3670

795.84	63.5895
796.30	64.5469
798.80	82.6404
801.93	57.9942
805.60	52.3435
810.29	60.0353
810.76	54.3258
815.85	53.4479
817.79	52.5215
818.51	53.4867
819.60	56.3688
826.30	55.5161
828.27	0.0000
831.60	68.0576
831.96	63.2715
834.83	65.2400
836.80	0.0000
846.75	60.6378
848.13	54.8836
856.28	0.0000
856.80	54.5976
860.37	49.6812
867.32	41.8087
867.82	45.4050
871.10	40.6884
873.19	58.1580
874.81	54.3035
875.33	0.0000
876.40	43.6551
879.36	32.0386
880.27	28.1622
880.51	30.1063
881.50	34.9709
883.24	39.8464
884.67	43.7503
889.25	44.7759
896.60	61.4401
898.02	70.2422
899.00	60.5027
903.28	61.9639
911.07	55.7951
911.07	55.7951
911.07	55.7951
919.63	62.2233
920.93	54.1690
925.00	45.1877
925.24	45.1905
926.50	61.9105
935.52	58.1117
937.48	74.8914
944.10	52.3131
946.00	58.2630
949.00	42.4943
962.29	49.2915
964.01	172.5911
966.15	41.6821
968.20	54.4688
969.11	54.4810
969.11	54.4810
969.11	54.4810
977.42	50.7531
980.50	39.8356
983.50	48.8345
989.30	39.9202
996.32	64.9802
1001.03	50.0407
1001.68	55.0537
1004.76	73.1248
1021.30	0.0000
1024.50	0.0000
1034.80	32.2813
1036.00	39.3539
1037.82	47.4475
1038.57	54.5229
1038.76	0.0000
1045.16	37.4155
1046.59	42.4854
1048.07	45.5347

1050.47	46.5728
1050.47	46.5728
1062.04	49.7417
1063.62	53.8217
1076.63	38.7035
1077.35	46.8591
1078.86	48.9121
1085.78	50.0089
1099.22	48.1130
1112.02	49.2754
1112.84	47.5250
1115.52	44.0290
1120.29	59.6497
1120.29	59.6497
1120.29	59.6497
1120.29	59.6497
1120.51	59.6520
1121.28	44.0848
1124.00	0.0000
1129.67	42.7213
1131.51	0.0000
1147.95	0.0000
1167.94	48.8359
1173.22	49.9316
1175.09	49.9512
1177.93	55.1868
1189.05	69.9280
1204.90	58.6409
1205.75	0.0000
1213.00	51.3966
1221.42	69.3489
1230.97	69.4832
1235.34	54.7930
1236.41	0.0000
1238.25	49.5550
1246.25	42.2428
1260.41	0.0000
1271.85	49.8916
1274.45	42.4821
1274.54	42.4821
1291.56	37.2986
1298.22	0.0000
1312.09	28.8885
1325.50	30.0360
1325.50	30.0360
1332.49	36.5221
1333.61	33.3071
1360.21	26.9969
1362.66	0.0000
1365.15	33.5076
1368.21	20.5485
1368.53	0.0000
1376.25	24.9120
1384.27	36.2619
1394.10	16.7670
1395.20	25.1562
1407.95	28.9511
1434.06	21.5826
1436.60	18.7765
1457.56	0.0000
1460.81	19.8010
1489.15	20.8491
1509.49	25.6798
1596.49	22.8718
1620.62	16.4771
1678.03	0.0000
1691.02	6.8630
1691.02	6.8630
1706.46	0.0000
1750.46	0.0000
1764.49	10.4147
1764.49	10.4147
1764.49	10.4147
1764.49	10.4147
1770.23	8.6865
1771.40	33.7593
1791.20	0.0000
1808.65	8.9874

1836.01

15.0413

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148012

Total Uranium Activity	7.4943E+00	ug/g
Total Uranium Counting Unc.	6.8045E+00	ug/g
Total Uranium Tpu	3.4717E-06	ug/g
Total Uranium Mda	6.1535E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940268          SAMPLE ID   : G244148012
*  ANALYST       : MXR1            DETECTOR    : GAM15
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 15:57:46.69 SAMPLE ALQT: 135.800 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.861E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.409E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.431E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.662E+00

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## VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 18:01:25.12

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148013.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:58:12
Sample ID        : G244148013      Sample quantity   : 1.27270E+02 GRAM
Detector name    : GAM17           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:09.40 0.1%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000        Sensitivity     : 5.00000
Batch ID        : 940268           Detector SN#    :
Matrix Spike ID  :                  LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.52*	105	378	0.89	92.67	88	9	1.46E-02	36.4	
2	0	63.28*	130	512	1.04	126.19	122	9	1.80E-02	33.7	
3	2	74.84*	610	412	0.96	149.33	145	16	8.47E-02	6.6	1.66E+00
4	2	77.14*	919	289	0.88	153.94	145	16	1.28E-01	4.5	
5	2	84.32*	104	315	1.05	168.30	165	13	1.45E-02	29.3	1.23E+00
6	2	87.22	357	352	1.11	174.09	165	13	4.95E-02	10.3	
7	5	90.15	170	187	1.03	179.97	178	14	2.36E-02	13.3	1.70E+00
8	5	93.00*	316	367	1.50	185.66	178	14	4.38E-02	13.2	
9	0	104.67	57	325	1.44	209.01	206	9	7.90E-03	58.5	
10	0	128.70	111	314	0.91	257.09	254	9	1.54E-02	30.2	
11	0	186.14*	161	329	1.19	372.01	367	12	2.24E-02	24.8	
12	0	209.44	137	225	0.88	418.63	414	10	1.90E-02	22.3	
13	4	238.54*	1080	139	0.99	476.84	471	18	1.50E-01	3.6	1.26E+00
14	4	241.63	272	172	1.66	483.03	471	18	3.77E-02	12.9	
15	0	270.33	90	192	1.26	540.45	538	10	1.25E-02	30.9	
16	0	295.10*	289	216	1.17	590.02	584	12	4.02E-02	11.9	
17	0	299.91	61	155	0.75	599.65	596	9	8.48E-03	38.9	
18	0	327.79	38	98	1.05	655.42	652	8	5.32E-03	48.5	
19	0	338.04*	175	124	0.95	675.94	672	9	2.44E-02	14.0	
20	0	351.71*	553	141	1.15	703.28	697	12	7.68E-02	6.1	
21	0	462.79	67	70	1.08	925.55	920	10	9.28E-03	26.4	
22	0	510.72*	105	120	1.64	1021.46	1015	15	1.45E-02	28.4	
23	0	582.81*	312	90	1.39	1165.72	1160	12	4.33E-02	8.5	
24	0	608.95	380	99	1.50	1218.04	1212	15	5.28E-02	7.6	
25	0	727.59	51	77	0.80	1455.45	1446	14	7.06E-03	39.2	
26	0	767.96	37	31	0.89	1536.23	1532	8	5.11E-03	31.2	
27	0	859.82	38	40	1.00	1720.08	1715	10	5.28E-03	35.1	
28	0	910.44*	164	69	1.64	1821.38	1815	16	2.27E-02	13.7	
29	1	963.61	63	10	1.83	1927.80	1921	26	8.73E-03	18.4	1.21E+00
30	1	968.04*	139	20	1.83	1936.67	1921	26	1.93E-02	10.5	
31	0	1119.19	95	28	1.84	2239.18	2232	14	1.32E-02	15.6	
32	0	1209.36	13	18	0.66	2419.65	2414	8	1.81E-03	62.7	
33	0	1459.44*	537	30	2.10	2920.24	2912	19	7.46E-02	5.0	
34	0	1763.33*	38	18	2.42	3528.59	3520	14	5.34E-03	29.4	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148013.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 15:58:12
Sample ID        : G244148013             Sample quantity  : 127.27 GRAM
Sample type      : SOLID                   Sample geometry  :
Detector name    : GAMMA17                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:09.40   0.1%
Peak Width (FWHM): 3.00                    Confidence level : 5.00 %
Energy tolerance : 1.50 keV                Half life ratio  : 8.00
Errors propagated: Yes                     Systematic Error : 0.00 %
Efficiency type  : Empirical                Efficiencies at  : Peak Energy
Abundance limit  : 75.00                   WTM error limit  : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.907E+01	2.537E+00	6.660E-01	5.913E-02	28.640
CD-109	+	88.03	*	4.340E+00	9.863E-01	9.322E-01	9.101E-02	4.656
SN-126	+	64.28		5.875E-01	4.069E-01	3.702E-01	5.910E-02	1.587
	+	86.94		1.771E+00	8.216E-01	4.088E-01	1.701E-01	4.331
	+	87.57	*	4.260E-01	9.679E-02	9.136E-02	8.915E-03	4.663
EU-155		48.70		-1.999E-01	4.341E-01	6.529E-01	6.559E-02	-0.306
		60.01		2.411E+00	2.070E+00	3.335E+00	3.355E-01	0.723
	+	86.54		5.132E-01	1.168E-01	1.183E-01	1.163E-02	4.336
	+	105.31	*	1.277E-01	1.500E-01	1.590E-01	1.708E-02	0.803
TL-208		277.35		3.698E-01	3.989E-01	6.871E-01	8.748E-02	0.538
	+	510.84		6.940E-01	4.025E-01	2.803E-01	3.424E-02	2.476
	+	583.14	*	6.032E-01	1.174E-01	7.025E-02	6.644E-03	8.586
	+	860.37		7.211E-01	5.109E-01	5.813E-01	5.469E-02	1.241
BI-210	+	46.50	*	1.215E+00	8.938E-01	7.850E-01	8.515E-02	1.547
PB-210	+	46.50	*	1.215E+00	8.938E-01	7.850E-01	8.515E-02	1.547
PO-210	+	46.50	*	1.215E+00	8.925E-01	7.850E-01	7.930E-02	1.547
BI-211		72.87		2.551E+00	2.125E+00	3.374E+00	3.299E-01	0.756
	+	351.07	*	4.335E+00	6.664E-01	3.682E-01	3.436E-02	11.775
PB-212	+	74.81		2.473E+00	4.671E-01	3.605E-01	4.871E-02	6.861
	+	77.11		2.222E+00	2.938E-01	2.152E-01	2.098E-02	10.321
	+	87.30		1.970E+00	4.891E-01	4.553E-01	6.362E-02	4.327
	+	238.63	*	1.775E+00	2.194E-01	9.403E-02	9.479E-03	18.875
	+	300.09		1.580E+00	1.243E+00	1.297E+00	1.412E-01	1.219
PO-212	+	74.81		2.473E+00	4.671E-01	3.605E-01	4.871E-02	6.861
	+	77.11		2.222E+00	2.938E-01	2.152E-01	2.098E-02	10.321
	+	87.30		1.970E+00	4.891E-01	4.553E-01	6.362E-02	4.327
	+	115.19		1.316E-01	3.100E+00	5.150E+00	5.799E-01	0.026
	+	238.63	*	1.775E+00	2.194E-01	9.403E-02	9.479E-03	18.875
	+	300.09		1.580E+00	1.243E+00	1.297E+00	1.412E-01	1.219
BI-214	+	609.31	*	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568
	+	1120.29		1.904E+00	6.279E-01	4.076E-01	4.358E-02	4.671
	+	1764.49		1.068E+00	6.350E-01	3.420E-01	2.892E-02	3.124
PB-214	+	74.81		4.261E+00	7.674E-01	6.211E-01	7.611E-02	6.861
	+	77.11		3.809E+00	5.813E-01	3.690E-01	4.565E-02	10.321



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	87.30		3.375E+00	8.098E-01	7.800E-01	9.700E-02	4.327
	+	241.98		2.685E+00	7.504E-01	5.669E-01	6.035E-02	4.737
	+	295.21		1.311E+00	3.443E-01	2.389E-01	2.654E-02	5.488
	+	351.92	*	1.508E+00	2.448E-01	1.284E-01	1.372E-02	11.746
	+	74.81		4.261E+00	7.674E-01	6.211E-01	7.611E-02	6.861
	+	77.11		3.809E+00	5.813E-01	3.690E-01	4.565E-02	10.321
	+	87.30		3.375E+00	8.098E-01	7.800E-01	9.700E-02	4.327
	+	241.98		2.685E+00	7.504E-01	5.669E-01	6.035E-02	4.737
PO-216	+	295.21		1.311E+00	3.443E-01	2.389E-01	2.654E-02	5.488
	+	351.92	*	1.508E+00	2.448E-01	1.284E-01	1.372E-02	11.746
	+	74.81		2.473E+00	4.671E-01	3.605E-01	4.871E-02	6.861
	+	77.11		2.222E+00	2.938E-01	2.152E-01	2.098E-02	10.321
	+	87.30		1.970E+00	4.891E-01	4.553E-01	6.362E-02	4.327
	+	238.63	*	1.775E+00	2.194E-01	9.403E-02	9.479E-03	18.875
PO-218	+	300.09		1.580E+00	1.243E+00	1.297E+00	1.412E-01	1.219
	+	74.81		4.261E+00	7.674E-01	6.211E-01	7.611E-02	6.861
	+	77.11		3.809E+00	5.813E-01	3.690E-01	4.565E-02	10.321
	+	87.30		3.375E+00	8.098E-01	7.800E-01	9.700E-02	4.327
	+	241.98		2.685E+00	7.504E-01	5.669E-01	6.035E-02	4.737
	+	295.21		1.311E+00	3.443E-01	2.389E-01	2.654E-02	5.488
	+	351.92	*	1.508E+00	2.448E-01	1.284E-01	1.372E-02	11.746
	+	240.98	*	5.091E+00	1.394E+00	1.071E+00	9.685E-02	4.754
RA-224	+	609.31	*	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568
AC-228	+	1120.29		1.904E+00	6.279E-01	4.076E-01	4.358E-02	4.671
	+	1764.49		1.068E+00	6.350E-01	3.420E-01	2.892E-02	3.124
	+	338.32		1.507E+00	7.526E-01	4.061E-01	1.679E-01	3.710
	+	911.07	*	1.473E+00	4.382E-01	2.815E-01	3.193E-02	5.233
RA-228	+	969.11		2.215E+00	6.952E-01	4.192E-01	9.800E-02	5.283
	+	338.32		1.507E+00	7.526E-01	4.061E-01	1.679E-01	3.710
	+	911.07	*	1.473E+00	4.382E-01	2.815E-01	3.193E-02	5.233
	+	969.11		2.215E+00	6.952E-01	4.192E-01	9.800E-02	5.283
TH-228	+	74.81		2.513E+00	4.135E-01	3.663E-01	3.599E-02	6.861
	+	77.11		2.258E+00	2.986E-01	2.187E-01	2.132E-02	10.321
	+	87.30		2.002E+00	4.549E-01	4.627E-01	4.515E-02	4.327
	+	238.63	*	1.804E+00	2.230E-01	9.555E-02	9.633E-03	18.875
TH-230	+	300.09		1.606E+00	1.573E+00	1.318E+00	7.822E-01	1.219
	+	609.31	*	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568
	+	1120.29		1.904E+00	6.279E-01	4.076E-01	4.358E-02	4.671
	+	1764.49		1.068E+00	6.350E-01	3.420E-01	2.891E-02	3.124
TH-232	+	338.32		1.507E+00	4.436E-01	4.061E-01	3.659E-02	3.710
	+	911.07	*	1.473E+00	4.382E-01	2.815E-01	3.193E-02	5.233
	+	969.11		2.215E+00	6.952E-01	4.192E-01	9.800E-02	5.283
TH-234	+	63.29	*	1.484E+00	1.038E+00	9.524E-01	1.778E-01	1.558
	+	92.38		2.611E+00	8.465E-01	5.751E-01	1.079E-01	4.540
U-234	+	609.31	*	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568
	+	1120.29		1.904E+00	6.279E-01	4.076E-01	4.358E-02	4.671
	+	1764.49		1.068E+00	6.350E-01	3.420E-01	2.891E-02	3.124
U-235	+	89.95		2.793E+00	1.145E+00	1.261E+00	3.938E-01	2.215
	+	93.35		3.139E+00	1.220E+00	6.936E-01	1.976E-01	4.526

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	105.00		1.251E+00	1.512E+00	1.556E+00	4.743E-01	0.804
		143.76	*	-1.444E-02	2.270E-01	3.675E-01	6.737E-02	-0.039
		163.35		1.040E-01	4.741E-01	7.806E-01	1.487E-01	0.133
	+	185.71		1.833E-01	9.209E-02	6.896E-02	5.905E-03	2.658
		205.31		1.721E-01	6.331E-01	9.231E-01	1.767E-01	0.186
NP-237	+	86.50	*	1.251E+00	3.839E-01	2.884E-01	6.583E-02	4.337
		95.87		5.189E-02	8.070E-01	1.215E+00	3.063E-01	0.043
U-238	+	63.29	*	1.484E+00	1.038E+00	9.524E-01	1.778E-01	1.558
	+	92.38		2.611E+00	7.377E-01	5.751E-01	5.731E-02	4.540
AM-243	+	74.67	*	4.010E-01	6.581E-02	5.842E-02	5.704E-03	6.863
	+	86.72		4.691E+01	1.066E+01	1.082E+01	1.056E+00	4.334
		117.66		-1.920E+00	3.452E+00	5.548E+00	6.334E-01	-0.346
		142.18		2.671E+00	1.838E+01	3.036E+01	3.130E+00	0.088
ANH-511	+	511.00	*	1.499E-01	8.605E-02	6.057E-02	5.410E-03	2.475

## ---- 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	*	1.744E-01	3.974E-01	6.738E-01	6.411E-02	0.259
NA-22		1274.54	*	1.079E-02	5.715E-02	9.405E-02	7.923E-03	0.115
NA-24		1368.53	*	-3.199E+00	5.715E-02	Half-Life too short		
AL-26		1129.67		2.031E+00	1.923E+00	3.523E+00	2.944E-01	0.576
		1808.65	*	6.453E-04	3.446E-02	5.652E-02	4.737E-03	0.011
TI-44		67.85		1.696E-02	2.540E-02	4.215E-02	4.151E-03	0.402
	+	78.38	*	4.100E-01	5.423E-02	6.231E-02	6.071E-03	6.580
SC-46		889.25	*	-5.881E-02	4.340E-02	5.776E-02	5.057E-03	-1.018
	+	1120.51		3.287E-01	1.062E-01	1.609E-01	1.350E-02	2.043
V-48		944.10		-5.647E-01	1.162E+00	1.803E+00	1.577E-01	-0.313
		983.50	*	-3.246E-02	9.108E-02	1.430E-01	1.247E-02	-0.227
		1312.09		-7.644E-02	1.083E-01	1.649E-01	1.400E-02	-0.464
CR-51		320.08	*	-1.683E-01	3.797E-01	6.187E-01	5.909E-02	-0.272
MN-52		744.21		2.057E-01	3.367E-01	5.954E-01	5.175E-02	0.346
		848.13		1.087E+01	9.691E+00	1.780E+01	1.565E+00	0.610
		935.52		-1.716E-01	4.116E-01	6.499E-01	5.688E-02	-0.264
		1246.25		2.150E+00	1.056E+01	1.741E+01	1.454E+00	0.123
		1333.61		-1.269E+00	6.273E+00	1.018E+01	8.676E-01	-0.125
		1434.06	*	-3.639E-02	2.865E-01	4.658E-01	4.016E-02	-0.078
MN-54		834.83	*	1.967E-02	4.806E-02	8.293E-02	7.291E-03	0.237
CO-56		846.75	*	4.822E-03	4.940E-02	8.289E-02	7.287E-03	0.058
		977.42		9.549E-03	4.054E+00	6.281E+00	5.482E-01	0.002
		1037.82		1.329E-01	3.757E-01	6.407E-01	5.826E-02	0.207
		1175.09		-4.354E-01	2.535E+00	4.006E+00	3.274E-01	-0.109
		1238.25		1.849E-01	1.186E-01	2.182E-01	1.875E-02	0.847
		1360.21		2.997E-01	1.175E+00	2.039E+00	1.745E-01	0.147
		1771.40		2.311E-02	2.720E-01	4.539E-01	3.833E-02	0.051
CO-57		122.06	*	-2.075E-03	2.496E-02	4.111E-02	4.817E-03	-0.050
		136.48		-2.762E-02	2.061E-01	3.367E-01	3.790E-02	-0.082
CO-58		810.76	*	-3.630E-02	4.450E-02	6.684E-02	5.886E-03	-0.543

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59		142.65		2.113E-01	2.961E+00	4.826E+00	4.960E-01	0.044
		192.34		9.608E-01	1.004E+00	1.626E+00	2.184E-01	0.591
		1099.22	*	-5.324E-02	1.205E-01	1.855E-01	1.702E-02	-0.287
		1291.56		1.563E-01	1.414E-01	2.626E-01	2.530E-02	0.595
CO-60		1173.22		-1.404E-02	5.263E-02	8.192E-02	6.691E-03	-0.171
		1332.49	*	3.256E-02	4.451E-02	8.207E-02	6.995E-03	0.397
		1115.52	*	1.928E-02	1.376E-01	1.972E-01	1.661E-02	0.098
GE-68		1077.35	*	1.843E+00	1.532E+00	2.835E+00	2.420E-01	0.650
AS-73		53.44	*	2.333E-01	2.235E-01	3.912E-01	3.914E-02	0.596
AS-74		595.88	*	3.290E-02	1.157E-01	1.917E-01	1.689E-02	0.172
		634.78		-3.931E-01	4.914E-01	6.970E-01	6.003E-02	-0.564
SE-75		66.05		-2.880E+00	2.700E+00	3.837E+00	4.413E-01	-0.751
		96.73		-7.929E-01	7.104E-01	9.792E-01	1.437E-01	-0.810
		121.11		1.264E-01	1.311E-01	2.248E-01	3.076E-02	0.562
		136.00		1.564E-02	3.846E-02	6.445E-02	6.970E-03	0.243
		198.60		1.672E+00	1.783E+00	3.017E+00	2.907E-01	0.554
		264.65	*	-8.069E-03	4.681E-02	7.317E-02	6.722E-03	-0.110
		279.53		8.441E-03	1.128E-01	1.921E-01	1.822E-02	0.044
		303.91		-8.790E-01	2.434E+00	3.505E+00	4.169E-01	-0.251
		400.65		7.099E-02	2.972E-01	5.012E-01	5.517E-02	0.142
		87.88		1.271E+03	2.889E+02	4.123E+02	4.024E+01	3.083
BR-77	+	200.40		-2.150E+02	2.286E+02	3.464E+02	3.020E+01	-0.621
	+	239.00		3.870E+02	4.458E+01	6.017E+01	5.435E+00	6.431
		249.79		-8.628E+01	9.460E+01	1.399E+02	1.272E+01	-0.617
		281.68		-4.381E+01	1.265E+02	2.101E+02	1.929E+01	-0.209
		297.23		1.589E+02	1.210E+02	1.531E+02	1.405E+01	1.038
		303.76		-9.591E+01	2.800E+02	4.042E+02	3.706E+01	-0.237
		439.47		4.047E+01	2.071E+02	3.471E+02	3.025E+01	0.117
		484.57		9.566E+01	3.688E+02	6.170E+02	5.482E+01	0.155
		520.65	*	-6.917E+00	1.610E+01	2.511E+01	2.245E+00	-0.275
		574.64		1.113E+02	3.484E+02	5.799E+02	5.149E+01	0.192
		578.91		1.270E+02	1.629E+02	2.517E+02	2.232E+01	0.504
		585.48		5.559E+02	3.331E+02	5.526E+02	4.889E+01	1.006
		755.35		3.230E+02	2.955E+02	5.389E+02	4.697E+01	0.599
		817.79		5.388E+01	2.088E+02	3.576E+02	3.143E+01	0.151
SR-82		698.33		1.367E+01	4.410E+01	7.618E+01	6.524E+00	0.179
		776.49	*	-4.818E-01	5.339E-01	8.166E-01	7.147E-02	-0.590
		1395.20		4.016E-01	1.293E+01	2.169E+01	1.864E+00	0.019
RB-83		520.41	*	-3.916E-02	7.857E-02	1.216E-01	1.087E-02	-0.322
		529.64		9.988E-02	1.258E-01	2.187E-01	1.955E-02	0.457
		552.65		-7.645E-02	2.428E-01	3.714E-01	3.314E-02	-0.206
RB-84		881.50	*	-1.487E-02	7.896E-02	1.273E-01	1.115E-02	-0.117
KR-85		513.99	*	9.628E+00	9.357E+00	1.484E+01	1.326E+00	0.649
SR-85		513.99	*	4.991E-02	4.851E-02	7.693E-02	6.873E-03	0.649
RB-86		1076.63	*	7.528E-01	1.010E+00	1.790E+00	1.528E-01	0.421
Y-88		898.02		-4.570E-02	5.094E-02	7.499E-02	6.587E-03	-0.609
		1836.01	*	1.755E-04	4.870E-02	7.944E-02	6.624E-03	0.002
ZR-88		392.90	*	-3.743E-02	3.477E-02	5.279E-02	4.448E-03	-0.709
Y-91		1204.90	*	-8.367E+00	2.231E+01	2.850E+01	2.353E+00	-0.294

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94	702.63	*		1.206E-02	4.302E-02	7.409E-02	6.356E-03	0.163
	871.10			1.250E-02	4.216E-02	7.210E-02	6.327E-03	0.173
NB-95	765.79	*		6.550E-02	6.183E-02	1.011E-01	8.828E-03	0.648
NB-95M	235.69	*		-2.587E-03	1.474E-01	2.088E-01	2.131E-02	-0.012
ZR-95	724.18			7.826E-02	1.319E-01	2.068E-01	1.941E-02	0.378
	756.15	*		6.777E-02	9.379E-02	1.666E-01	1.596E-02	0.407
NB-97	657.90	*		-2.639E-01	9.379E-02	Half-Life	too short	
	1024.50			-6.281E+01	9.379E-02	Half-Life	too short	
ZR-97	254.15			-1.919E+01	9.379E-02	Half-Life	too short	
	355.39			7.944E+00	9.379E-02	Half-Life	too short	
	507.63	*		1.046E+01	9.379E-02	Half-Life	too short	
	602.52			-2.035E+01	9.379E-02	Half-Life	too short	
	1021.30			7.828E-02	9.379E-02	Half-Life	too short	
	1147.95			-1.745E+01	9.379E-02	Half-Life	too short	
	1362.66			-7.244E+00	9.379E-02	Half-Life	too short	
	1750.46			-5.961E+00	9.379E-02	Half-Life	too short	
MO-99	140.51			-4.206E+00	3.612E+01	5.795E+01	1.640E+01	-0.073
	181.06			-3.135E+00	2.511E+01	3.594E+01	6.554E+00	-0.087
	366.43			3.047E+01	1.212E+02	2.058E+02	1.801E+01	0.148
	739.58	*		-2.835E-01	1.816E+01	3.044E+01	4.633E+00	-0.009
	778.00			-4.028E+01	5.618E+01	8.716E+01	7.630E+00	-0.462
TC-99M	140.51	*		-8.510E+10	5.618E+01	Half-Life	too short	
RH-101	127.23	+		8.228E-02	5.050E-02	5.314E-02	6.044E-03	1.548
	198.01	*		2.172E-02	3.257E-02	5.442E-02	4.732E-03	0.399
	325.23			5.331E-02	2.673E-01	4.031E-01	3.664E-02	0.132
RH-102	418.52			-1.355E-01	3.184E-01	5.085E-01	4.373E-02	-0.266
	475.06	*		-3.053E-02	3.487E-02	5.271E-02	4.669E-03	-0.579
	631.29			-5.139E-02	7.141E-02	1.061E-01	9.162E-03	-0.484
	697.49			2.300E-02	9.824E-02	1.687E-01	1.444E-02	0.136
	766.84	+		2.324E-01	1.464E-01	2.650E-01	2.315E-02	0.877
	1046.59			-2.729E-02	1.488E-01	2.379E-01	2.050E-02	-0.115
	1112.84			-8.956E-02	3.410E-01	4.575E-01	3.852E-02	-0.196
RU-103	497.08	*		-3.241E-03	4.546E-02	7.381E-02	1.059E-02	-0.044
	610.33	+		1.533E+01	3.478E+00	3.697E+00	6.192E-01	4.148
RH-106	511.85	+		7.502E-01	4.306E-01	5.300E-01	4.734E-02	1.415
	621.84	*		2.153E-01	3.792E-01	6.434E-01	8.623E-02	0.335
	1050.47			1.855E+00	3.033E+00	5.284E+00	4.547E-01	0.351
RU-106	511.85	+		7.502E-01	4.306E-01	5.300E-01	4.734E-02	1.415
	621.84	*		2.153E-01	3.786E-01	6.434E-01	5.590E-02	0.335
	1050.47			1.855E+00	3.033E+00	5.284E+00	4.547E-01	0.351
AG-108M	433.93	*		2.012E-02	3.724E-02	6.397E-02	5.774E-03	0.315
	614.37			-2.059E-02	4.908E-02	6.448E-02	5.843E-03	-0.319
	722.95			-2.871E-02	5.325E-02	7.178E-02	6.443E-03	-0.400
AG-110M	657.75	*		-2.894E-02	4.298E-02	6.364E-02	5.547E-03	-0.455
	677.61			9.666E-03	3.775E-01	6.047E-01	5.282E-02	0.016
	706.67			-3.502E-02	2.692E-01	4.483E-01	3.958E-02	-0.078
	763.93			5.253E-02	2.170E-01	3.266E-01	2.931E-02	0.161
	884.67			2.665E-02	4.749E-02	8.463E-02	7.645E-03	0.315
	937.48			-1.885E-01	1.399E-01	1.910E-01	1.730E-02	-0.987

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IN-111	1384.27			-9.781E-02	1.914E-01	2.932E-01	2.588E-02	-0.334
	171.28			-4.942E-01	1.300E+00	2.066E+00	1.735E-01	-0.239
	245.39	*		5.773E-01	1.495E+00	2.190E+00	1.986E-01	0.264
IN-113M	391.69	*		-3.475E-02	5.032E-02	7.917E-02	6.879E-03	-0.439
SN-113	391.69	*		-3.475E-02	5.032E-02	7.917E-02	6.879E-03	-0.439
IN-114M	190.27	*		1.462E-02	2.031E-01	2.940E-01	2.532E-02	0.050
CD-115	260.90			4.908E+01	1.868E+02	3.016E+02	2.755E+01	0.163
	492.35			2.399E+01	5.692E+01	9.654E+01	8.594E+00	0.249
	527.90	*		1.297E+01	1.749E+01	3.032E+01	2.711E+00	0.428
SN-117M	156.02			-1.756E+00	2.541E+00	4.000E+00	3.683E-01	-0.439
	158.56	*		5.034E-02	5.842E-02	9.922E-02	8.918E-03	0.507
	563.90	*		-8.614E-01	3.203E+00	5.053E+00	4.499E-01	-0.170
SB-122	692.80			2.981E+01	7.469E+01	1.298E+02	1.109E+01	0.230
	159.00	*		1.057E+01	7.469E+01	Half-Life	too short	
	528.96			1.844E+03	7.469E+01	Half-Life	too short	
TE-123M	159.00	*		1.392E-02	2.900E-02	4.842E-02	4.358E-03	0.287
I-124	602.71	*		-4.858E-01	1.039E+00	1.362E+00	1.196E-01	-0.357
	722.78			-2.141E+00	6.421E+00	8.936E+00	7.719E-01	-0.240
	1325.50			-3.896E+01	4.607E+01	6.669E+01	5.676E+00	-0.584
	1376.25			3.768E+01	4.787E+01	8.751E+01	7.504E+00	0.431
	1509.49			4.114E+01	2.625E+01	5.214E+01	4.509E+00	0.789
	1691.02			-2.107E+00	6.252E+00	9.998E+00	8.552E-01	-0.211
SB-124	602.71			-2.402E-02	5.135E-02	6.733E-02	5.913E-03	-0.357
	645.85			5.150E-01	5.580E-01	9.844E-01	8.920E-02	0.523
	709.31			1.047E-01	3.541E+00	5.985E+00	5.146E-01	0.017
	713.82			9.178E-01	1.931E+00	3.386E+00	4.075E-01	0.271
	722.78			-1.535E-01	4.602E-01	6.404E-01	5.651E-02	-0.240
	+	968.20		2.308E+01	5.236E+00	9.556E+00	8.348E-01	2.415
	1045.16			5.337E-02	3.001E+00	4.914E+00	4.235E-01	0.011
	1325.50			-2.982E+00	3.526E+00	5.105E+00	4.344E-01	-0.584
	1368.21			-1.317E+00	2.314E+00	3.537E+00	4.754E-01	-0.372
	1436.60			-2.786E+00	4.202E+00	6.099E+00	5.259E-01	-0.457
	1691.02	*		-3.562E-02	1.057E-01	1.690E-01	1.504E-02	-0.211
	427.89	*		-1.951E-02	1.054E-01	1.715E-01	1.512E-02	-0.114
SB-125	463.38			8.526E-01	4.578E-01	6.612E-01	6.268E-02	1.289
	600.56			-1.203E-01	2.182E-01	3.325E-01	3.131E-02	-0.362
	635.90			-5.272E-02	3.443E-01	5.251E-01	4.885E-02	-0.100
TE-125M	109.28	*		3.353E+00	8.989E+00	1.369E+01	1.683E+00	0.245
I-126	388.63			3.383E-01	2.477E-01	4.470E-01	3.783E-02	0.757
	666.33	*		8.850E-02	2.346E-01	3.895E-01	3.289E-02	0.227
	753.82			2.513E+00	2.051E+00	3.772E+00	3.286E-01	0.666
SB-126	223.80			3.043E+00	4.651E+00	7.714E+00	6.885E-01	0.394
	278.60			2.585E+00	2.669E+00	4.751E+00	4.361E-01	0.544
	+	296.50		1.384E+01	3.530E+00	4.195E+00	3.851E-01	3.299
	414.70			6.279E-02	8.600E-02	1.501E-01	1.287E-02	0.418
	415.30			2.212E+00	7.416E+00	1.255E+01	1.076E+00	0.176
	555.20			-4.871E-01	5.014E+00	8.054E+00	7.184E-01	-0.060
	573.80			1.800E-01	1.410E+00	2.306E+00	2.048E-01	0.078
	593.00			-2.560E-01	1.106E+00	1.740E+00	1.534E-01	-0.147

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	656.30			-2.289E+00	4.429E+00	6.695E+00	5.667E-01	-0.342
	666.33			3.707E-02	9.827E-02	1.632E-01	1.378E-02	0.227
	675.00			-2.058E+00	2.449E+00	3.505E+00	2.971E-01	-0.587
	695.00			4.477E-04	1.073E-01	1.809E-01	1.547E-02	0.002
	697.00			-1.332E-01	3.706E-01	6.059E-01	5.186E-02	-0.220
	720.50	*		5.108E-02	1.951E-01	2.962E-01	2.557E-02	0.172
	856.80			2.551E-01	6.751E-01	1.029E+00	9.036E-02	0.248
	989.30			5.188E-01	1.466E+00	2.518E+00	2.194E-01	0.206
	1034.80			-1.381E+01	1.194E+01	1.652E+01	1.427E+00	-0.836
	1213.00			5.493E+00	7.101E+00	1.108E+01	9.167E-01	0.496
	61.10			1.241E+01	3.099E+01	4.835E+01	6.075E+00	0.257
	252.40			2.150E+00	5.451E+00	8.777E+00	3.705E+00	0.245
	290.80			-1.456E+01	3.100E+01	4.447E+01	5.296E+00	-0.327
	411.60			-7.638E+00	1.630E+01	2.595E+01	4.131E+00	-0.294
	444.90			-4.836E+00	1.361E+01	2.175E+01	2.805E+00	-0.222
	473.00			4.280E-01	2.284E+00	3.807E+00	5.061E-01	0.112
	543.00			4.473E+00	2.187E+01	3.624E+01	5.374E+00	0.123
	603.60			-4.427E+00	1.795E+01	2.435E+01	3.141E+00	-0.182
	685.20	*		-1.502E+00	2.236E+00	3.311E+00	3.847E-01	-0.454
	698.50			2.344E+00	2.326E+01	3.952E+01	6.329E+00	0.059
XE-127	722.20			-1.041E+01	4.519E+01	6.394E+01	7.348E+00	-0.163
	783.80			5.100E+00	5.640E+00	1.011E+01	1.294E+00	0.505
	57.60			-1.065E+00	2.042E+00	3.406E+00	3.421E-01	-0.313
	145.22			1.844E-01	7.470E-01	1.225E+00	1.235E-01	0.151
	172.10			-1.248E-03	1.204E-01	1.955E-01	1.644E-02	-0.006
I-131	202.84	*		2.438E-02	5.060E-02	8.352E-02	7.302E-03	0.292
	374.96			6.734E-02	2.355E-01	3.997E-01	3.458E-02	0.168
	80.18			1.765E+00	4.466E+00	5.553E+00	5.440E-01	0.318
	284.30			-7.721E-01	1.709E+00	2.815E+00	2.706E-01	-0.274
TE-132	364.48	*		-4.072E-02	1.297E-01	2.112E-01	1.952E-02	-0.193
	636.97			6.202E-01	2.029E+00	3.360E+00	3.054E-01	0.185
	722.89			-3.328E+00	9.511E+00	1.320E+01	1.148E+00	-0.252
	49.72			-3.160E-01	4.707E+00	7.250E+00	8.889E-01	-0.044
BA-133	111.76			-3.349E+00	3.266E+01	5.396E+01	7.071E+00	-0.062
	116.30			-1.534E+01	3.089E+01	4.982E+01	6.649E+00	-0.308
	228.16	*		1.759E-01	8.946E-01	1.447E+00	2.329E-01	0.122
	53.15			1.160E+00	9.386E-01	1.651E+00	1.652E-01	0.703
	79.62			3.143E-02	1.012E+00	1.407E+00	2.235E-01	0.022
I-133	81.00			-5.644E-03	8.970E-02	1.076E-01	1.776E-02	-0.052
	276.40			2.325E-01	4.205E-01	6.560E-01	9.700E-02	0.354
	302.84			9.673E-03	1.640E-01	2.456E-01	3.353E-02	0.039
	356.01	*		3.849E-02	5.068E-02	7.976E-02	1.066E-02	0.483
	383.85			4.919E-02	3.240E-01	5.450E-01	6.836E-02	0.090
I-133 +	510.53			3.527E+00	3.240E-01	Half-Life	too short	
	529.87	*		6.466E-03	3.240E-01	Half-Life	too short	
	706.58			-2.302E-01	3.240E-01	Half-Life	too short	
	856.28			1.850E-01	3.240E-01	Half-Life	too short	
	875.33			2.202E-01	3.240E-01	Half-Life	too short	
	1236.41			1.027E+00	3.240E-01	Half-Life	too short	

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1298.22			-4.707E-01	3.240E-01	Half-Life	too short	
	475.35			-2.033E+00	2.308E+00	3.491E+00	3.092E-01	-0.582
	563.23			-1.690E-02	4.203E-01	6.782E-01	6.094E-02	-0.025
	569.32			6.347E-02	2.377E-01	3.942E-01	3.550E-02	0.161
	604.70			-2.917E-03	4.291E-02	5.978E-02	5.257E-03	-0.049
	795.84	*		5.261E-02	6.332E-02	1.127E-01	9.961E-03	0.467
	801.93			-4.004E-01	5.097E-01	7.819E-01	6.902E-02	-0.512
	1038.57			1.181E+00	4.657E+00	7.851E+00	6.778E-01	0.150
	1167.94			-1.001E+00	3.026E+00	4.691E+00	3.844E-01	-0.213
	1365.15			7.083E-02	1.485E+00	2.501E+00	2.241E-01	0.028
CS-135	268.24	*		2.941E-01	1.955E-01	3.063E-01	3.196E-02	0.960
I-135	288.45			-9.644E+10	1.955E-01	Half-Life	too short	
	417.63			5.138E+10	1.955E-01	Half-Life	too short	
	546.56			4.698E+10	1.955E-01	Half-Life	too short	
	836.80			5.345E+11	1.955E-01	Half-Life	too short	
	1038.76			6.214E+10	1.955E-01	Half-Life	too short	
	1124.00			-1.052E+12	1.955E-01	Half-Life	too short	
	1131.51			-1.154E+11	1.955E-01	Half-Life	too short	
	1260.41	*		4.096E+10	1.955E-01	Half-Life	too short	
	1457.56			1.065E+13	1.955E-01	Half-Life	too short	
	1678.03			2.615E+11	1.955E-01	Half-Life	too short	
CS-136	1706.46			1.219E+11	1.955E-01	Half-Life	too short	
	1791.20			-3.232E+11	1.955E-01	Half-Life	too short	
	66.91			6.691E-02	4.637E-01	7.042E-01	1.138E-01	0.095
	86.29	+		5.874E+00	1.448E+00	1.829E+00	2.494E-01	3.212
	153.22			1.219E+00	7.228E-01	1.258E+00	1.305E-01	0.969
	163.89			2.698E-01	1.113E+00	1.836E+00	1.756E-01	0.147
	176.55			-1.137E-01	3.875E-01	6.179E-01	5.540E-02	-0.184
	273.65			-1.532E-01	5.719E-01	7.815E-01	7.588E-02	-0.196
	340.57			-5.139E-02	1.645E-01	2.362E-01	2.182E-02	-0.218
	818.51			8.644E-03	9.124E-02	1.536E-01	1.351E-02	0.056
BA-137M	1048.07	*		2.918E-02	1.444E-01	2.415E-01	2.169E-02	0.121
	1235.34			4.738E-01	8.214E-01	1.397E+00	1.626E-01	0.339
	661.65	*		1.459E-02	4.675E-02	7.641E-02	6.437E-03	0.191
	661.65	*		1.542E-02	4.942E-02	8.077E-02	6.818E-03	0.191
	165.85	*		-2.484E-02	3.095E-02	4.812E-02	4.013E-03	-0.516
	162.64			1.918E-01	7.829E-01	1.292E+00	1.180E-01	0.148
	304.84			-2.005E+00	1.746E+00	2.198E+00	6.197E-01	-0.912
	423.70			1.707E+00	2.460E+00	4.165E+00	1.350E+00	0.410
	537.32	*		-1.833E-02	3.240E-01	5.238E-01	1.740E-01	-0.035
	328.77	+		4.282E-01	4.170E-01	5.761E-01	5.491E-02	0.743
LA-140	432.53			1.721E+00	2.493E+00	4.327E+00	3.935E-01	0.398
	487.03			-8.214E-02	1.656E-01	2.585E-01	2.432E-02	-0.318
	751.79			-3.884E-01	2.332E+00	3.850E+00	3.704E-01	-0.101
	815.85			1.200E-01	4.000E-01	6.877E-01	6.715E-02	0.175
	867.82			-6.329E-01	1.681E+00	2.659E+00	2.454E-01	-0.238
	919.63			-7.249E-01	3.710E+00	5.911E+00	6.357E-01	-0.123
	925.24			5.235E-01	1.505E+00	2.578E+00	2.394E-01	0.203
	1596.49	*		-5.849E-02	1.187E-01	1.785E-01	1.541E-02	-0.328

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-141	145.44	*	-1.344E-02	6.874E-02	1.105E-01	1.127E-02	-0.122	
CE-143	57.37		-3.982E-04	6.874E-02	Half-Life too short			
	231.56		4.149E-04	6.874E-02	Half-Life too short			
	293.26	*	1.073E-03	6.874E-02	Half-Life too short			
	350.59		5.830E-02	6.874E-02	Half-Life too short			
	490.36		9.108E-05	6.874E-02	Half-Life too short			
	664.57		1.086E-03	6.874E-02	Half-Life too short			
	721.93		-7.569E-04	6.874E-02	Half-Life too short			
CE-144	80.11		7.433E-01	1.881E+00	2.339E+00	2.278E-01	0.318	
	133.54	*	-2.237E-02	2.210E-01	3.232E-01	5.483E-02	-0.069	
PM-144	476.78		1.385E-02	8.203E-02	1.363E-01	1.315E-02	0.102	
	618.01		-2.354E-02	3.702E-02	5.529E-02	4.945E-03	-0.426	
	696.49	*	-2.856E-02	4.485E-02	7.148E-02	6.120E-03	-0.400	
	778.57		-2.038E+00	2.916E+00	4.534E+00	3.970E-01	-0.449	
PR-144	696.49	*	-1.936E+00	3.041E+00	4.847E+00	4.147E-01	-0.400	
	1489.15		-2.186E+01	1.624E+01	2.018E+01	1.744E+00	-1.083	
PM-146	453.90	*	2.719E-02	4.746E-02	8.171E-02	8.869E-03	0.333	
	633.02		3.727E-01	1.681E+00	2.752E+00	1.029E+00	0.135	
	735.90		8.585E-03	1.704E-01	2.875E-01	8.228E-02	0.030	
	747.13		-5.475E-03	1.100E-01	1.836E-01	2.587E-02	-0.030	
ND-147	91.11	+	7.493E-01	2.141E-01	4.445E-01	4.681E-02	1.686	
	319.41		-2.852E+00	3.537E+00	5.599E+00	5.106E-01	-0.509	
	439.89		3.017E+00	6.645E+00	1.137E+01	9.910E-01	0.265	
	531.02	*	-2.511E-01	7.285E-01	1.146E+00	1.735E-01	-0.219	
PM-149	285.90	*	5.730E+00	1.297E+02	2.203E+02	3.495E+01	0.026	
EU-152	121.78		1.438E-02	7.206E-02	1.202E-01	1.525E-02	0.120	
	244.69		-6.758E-02	3.606E-01	5.008E-01	4.539E-02	-0.135	
	344.27	*	1.765E-02	1.058E-01	1.791E-01	1.694E-02	0.099	
	443.98		-1.501E-01	1.063E+00	1.730E+00	1.511E-01	-0.087	
	778.89		-1.414E-01	3.295E-01	5.274E-01	4.617E-02	-0.268	
	867.32		-1.980E-01	9.389E-01	1.517E+00	1.332E-01	-0.130	
	964.01	+	1.152E+00	4.348E-01	7.771E-01	6.791E-02	1.482	
	1085.78		2.676E-01	5.089E-01	8.788E-01	7.478E-02	0.304	
	1112.02		-4.304E-04	4.740E-01	6.653E-01	5.604E-02	-0.001	
	1407.95		-4.877E-03	2.094E-01	3.480E-01	2.994E-02	-0.014	
GD-153	69.67		-5.114E-01	9.800E-01	1.553E+00	1.524E-01	-0.329	
	83.37	+	2.180E+01	1.293E+01	1.903E+01	1.854E+00	1.145	
	97.43	*	-6.775E-02	7.460E-02	1.046E-01	1.069E-02	-0.648	
	103.18	+	1.239E-01	1.456E-01	1.439E-01	1.516E-02	0.861	
EU-154	123.07		-2.310E-02	5.062E-02	8.168E-02	1.128E-02	-0.283	
	247.94		5.564E-02	3.709E-01	5.958E-01	7.046E-02	0.093	
	591.81		-1.298E-01	6.825E-01	1.078E+00	1.275E-01	-0.120	
	723.30		-1.058E-01	2.240E-01	3.054E-01	2.916E-02	-0.346	
	756.87		2.591E-01	1.004E+00	1.720E+00	2.072E-01	0.151	
	873.19		2.543E-01	3.685E-01	6.534E-01	8.071E-02	0.389	
	996.32		2.343E-01	4.369E-01	7.591E-01	1.352E-01	0.309	
	1004.76		-6.737E-02	2.657E-01	4.222E-01	4.938E-02	-0.160	
	1274.45	*	5.104E-02	1.569E-01	2.626E-01	2.929E-02	0.194	
TB-160	86.79	+	1.384E+00	3.145E-01	4.497E-01	4.386E-02	3.078	



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		197.04		2.340E-01	5.585E-01	9.217E-01	8.004E-02	0.254
		215.65		-5.338E-02	7.599E-01	1.213E+00	1.075E-01	-0.044
	+	298.57		2.323E-01	1.821E-01	2.349E-01	2.156E-02	0.989
		879.36	*	-4.258E-02	1.636E-01	2.626E-01	2.302E-02	-0.162
	+	962.29		2.147E+00	8.108E-01	1.408E+00	1.231E-01	1.525
		966.15		1.534E+00	3.709E-01	7.310E-01	6.388E-02	2.099
		1177.93		3.755E-02	3.775E-01	6.194E-01	5.067E-02	0.061
		1271.85		-3.593E-01	9.219E-01	1.401E+00	1.178E-01	-0.256
		80.57		2.371E-02	2.474E-01	3.005E-01	2.927E-02	0.079
		184.41		3.790E-02	4.422E-02	6.900E-02	5.898E-03	0.549
		280.46		-1.844E-02	8.896E-02	1.491E-01	1.369E-02	-0.124
		410.95		1.052E-01	2.697E-01	4.593E-01	3.928E-02	0.229
		711.68	*	-4.998E-02	7.460E-02	1.176E-01	1.012E-02	-0.425
		752.31		1.514E-01	3.341E-01	5.832E-01	5.080E-02	0.260
		810.29		-7.453E-02	6.909E-02	1.003E-01	8.815E-03	-0.743
TM-171		51.35		-7.290E+00	6.686E+00	1.086E+01	1.088E+00	-0.671
		52.39		2.625E+00	3.781E+00	6.558E+00	6.561E-01	0.400
		59.40		1.614E+01	1.077E+01	1.755E+01	1.769E+00	0.920
LU-176		66.72	*	1.898E+00	1.573E+01	2.387E+01	2.356E+00	0.080
	+	88.36		1.010E+00	2.296E-01	3.111E-01	3.042E-02	3.248
		201.83		-2.495E-02	3.054E-02	4.675E-02	4.082E-03	-0.534
LU-177		306.84	*	1.206E-02	2.631E-02	4.558E-02	4.176E-03	0.264
		401.10		-1.369E+00	7.762E+00	1.271E+01	1.079E+00	-0.108
		112.95		3.820E-01	1.583E+00	2.656E+00	2.953E-01	0.144
LU-177M	+	208.36	*	4.426E+00	2.008E+00	2.448E+00	2.153E-01	1.808
		52.97		4.462E-01	4.172E-01	7.311E-01	7.314E-02	0.610
		54.07		1.971E-01	2.365E-01	4.114E-01	4.117E-02	0.479
HF-181		61.30		1.291E-01	6.804E-01	1.052E+00	1.054E-01	0.123
		121.62		9.679E-02	3.721E-01	6.225E-01	7.270E-02	0.156
		147.16		-2.835E-01	6.727E-01	1.078E+00	1.071E-01	-0.263
		171.86		-1.817E-01	4.818E-01	7.657E-01	6.435E-02	-0.237
		218.09		1.619E-02	8.825E-01	1.416E+00	1.257E-01	0.011
		268.79		1.953E+00	1.028E+00	1.644E+00	1.506E-01	1.188
		319.02		-2.058E-01	2.556E-01	4.044E-01	3.688E-02	-0.509
		367.43		2.825E-01	9.846E-01	1.676E+00	1.465E-01	0.169
		413.65	*	3.019E-02	1.917E-01	3.212E-01	2.752E-02	0.094
		56.28		-4.357E-01	2.970E-01	4.715E-01	4.727E-02	-0.924
		57.53		-9.688E-02	1.704E-01	2.837E-01	2.849E-02	-0.342
		65.20		-3.345E-01	5.107E-01	7.455E-01	7.384E-02	-0.449
		133.02		8.264E-03	7.038E-02	1.045E-01	1.147E-02	0.079
		136.25		1.397E-01	4.515E-01	7.534E-01	8.098E-02	0.185
		345.85		7.161E-02	2.318E-01	3.520E-01	3.151E-02	0.203
W-181		482.03	*	1.827E-02	5.469E-02	9.191E-02	8.159E-03	0.199
		56.28		-1.686E-01	1.150E-01	1.826E-01	1.830E-02	-0.923
		57.53		-3.762E-02	6.600E-02	1.099E-01	1.103E-02	-0.342
TA-182		65.20	*	-1.286E-01	1.963E-01	2.865E-01	2.838E-02	-0.449
		67.75		3.302E-02	6.482E-02	1.011E-01	9.958E-03	0.327
		100.10		1.701E-01	1.594E-01	2.634E-01	2.730E-02	0.646
		152.43		1.278E-01	3.517E-01	5.849E-01	5.560E-02	0.219

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	222.10			-1.609E-01	3.797E-01	5.919E-01	5.275E-02	-0.272
	1001.68			4.286E-01	2.374E+00	3.977E+00	3.460E-01	0.108
	1121.28			6.454E-01	2.160E-01	4.130E-01	3.464E-02	1.563
	1189.05			3.076E-01	4.280E-01	7.422E-01	6.095E-02	0.415
	1221.42	*		-2.411E-02	2.487E-01	3.966E-01	3.289E-02	-0.061
	1230.97			-3.032E-01	6.391E-01	9.756E-01	8.115E-02	-0.311
RE-183	57.98			-1.044E-02	6.853E-02	1.162E-01	1.167E-02	-0.090
	59.32			6.621E-02	4.451E-02	7.254E-02	7.309E-03	0.913
	67.20			2.161E-02	1.160E-01	1.766E-01	1.741E-02	0.122
	162.32	*		3.841E-03	1.101E-01	1.798E-01	1.557E-02	0.021
	208.81		+	3.608E+00	1.637E+00	2.032E+00	1.788E-01	1.776
	291.72			-1.275E-01	1.136E+00	1.681E+00	1.544E-01	-0.076
RE-184	57.98			-3.825E-02	2.510E-01	4.254E-01	4.276E-02	-0.090
	59.32			2.423E-01	1.629E-01	2.655E-01	2.675E-02	0.913
	67.20			7.911E-02	4.249E-01	6.466E-01	6.376E-02	0.122
	161.27			-2.915E-01	3.606E-01	5.609E-01	4.909E-02	-0.520
	216.55			1.503E-02	2.706E-01	4.353E-01	3.860E-02	0.035
	252.85	*		8.450E-02	2.399E-01	3.903E-01	3.554E-02	0.217
	318.01			-9.903E-02	4.461E-01	7.392E-01	6.744E-02	-0.134
	792.07			1.429E+00	1.361E+00	2.460E+00	2.157E-01	0.581
	903.28			8.461E-01	1.311E+00	2.146E+00	1.876E-01	0.394
	920.93			-2.937E-02	5.411E-01	8.873E-01	7.765E-02	-0.033
OS-185	59.72			1.876E-01	1.215E-01	1.982E-01	1.997E-02	0.946
	61.14			2.998E-02	7.366E-02	1.150E-01	1.152E-02	0.261
	69.30			-5.380E-02	1.670E-01	2.796E-01	2.747E-02	-0.192
	592.07			-7.615E-01	2.910E+00	4.565E+00	4.028E-01	-0.167
	646.12	*		3.120E-02	4.897E-02	8.390E-02	7.163E-03	0.372
	717.42			4.572E-01	1.044E+00	1.827E+00	1.576E-01	0.250
	874.81			4.822E-01	7.347E-01	1.300E+00	1.140E-01	0.371
	880.27			-1.860E-01	8.876E-01	1.428E+00	1.252E-01	-0.130
RE-188	155.03	*		5.511E-02	1.834E-01	3.038E-01	2.822E-02	0.181
	477.96			1.215E+00	3.858E+00	6.479E+00	5.745E-01	0.187
	633.10			8.924E-01	3.434E+00	5.661E+00	4.881E-01	0.158
W-188	63.58		+	6.028E+01	4.106E+01	4.678E+01	4.652E+00	1.289
	227.08			-3.397E+00	1.373E+01	2.161E+01	1.935E+00	-0.157
	290.67	*		-3.886E+00	8.992E+00	1.295E+01	1.190E+00	-0.300
IR-192	295.96		+	1.010E+00	2.577E-01	3.339E-01	3.085E-02	3.024
	308.46			1.512E-01	1.046E-01	1.899E-01	1.747E-02	0.796
	316.51	*		2.227E-02	3.402E-02	5.972E-02	5.464E-03	0.373
	468.07			5.390E-02	8.127E-02	1.316E-01	1.243E-02	0.410
	604.41			-8.985E-02	5.812E-01	7.994E-01	1.049E-01	-0.112
	612.46			1.225E+00	8.195E-01	1.386E+00	1.387E-01	0.883
AU-195	65.12			-4.505E-02	9.093E-02	1.340E-01	1.327E-02	-0.336
	66.83			4.948E-03	5.270E-02	7.987E-02	7.881E-03	0.062
	75.70		+	1.303E+00	2.138E-01	3.529E-01	3.443E-02	3.691
	98.88	*		1.587E-01	1.942E-01	3.305E-01	3.404E-02	0.480
	129.76		+	7.277E+00	4.466E+00	5.395E+00	6.044E-01	1.349
TL-200	367.94	*		5.256E-05	4.466E+00	Half-Life too short		
	579.30			9.727E-03	4.466E+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
	828.27			8.752E-04	4.466E+00	Half-Life too short		
	1205.75			-2.096E-03	4.466E+00	Half-Life too short		
TL-201	68.90			1.789E+00	3.305E+00	5.693E+00	5.596E-01	0.314
	70.82			1.977E-01	2.203E+00	3.368E+00	3.301E-01	0.059
	80.30			2.234E+00	5.655E+00	7.032E+00	6.849E-01	0.318
	135.34			2.244E-01	3.136E+01	5.160E+01	5.580E+00	0.004
	167.43	*		8.614E+00	8.645E+00	1.477E+01	1.234E+00	0.583
TL-202	68.90			1.345E-01	2.484E-01	4.280E-01	4.207E-02	0.314
	70.82			1.482E-02	1.651E-01	2.525E-01	2.475E-02	0.059
	80.30			1.675E-01	4.241E-01	5.273E-01	5.136E-02	0.318
	439.56	*		1.777E-02	7.857E-02	1.320E-01	1.150E-02	0.135
HG-203	70.83			6.405E-02	6.852E-01	1.048E+00	1.507E-01	0.061
	72.87			5.153E-01	4.324E-01	6.816E-01	9.533E-02	0.756
	82.60			6.927E-01	1.058E+00	1.334E+00	1.930E-01	0.519
	279.20	*		1.664E-02	4.344E-02	7.518E-02	7.075E-03	0.221
BI-207	72.80			1.303E-01	1.231E-01	1.947E-01	1.904E-02	0.669
	74.97			7.198E-01	1.181E-01	1.729E-01	1.687E-02	4.164
	84.90			2.811E-01	1.667E-01	2.493E-01	2.430E-02	1.127
	569.67			-9.655E-03	3.814E-02	6.028E-02	5.360E-03	-0.160
	1063.62	*		-3.376E-03	6.645E-02	1.078E-01	9.238E-03	-0.031
	1770.23			-6.668E-01	6.697E-01	8.494E-01	7.175E-02	-0.785
TL-207	81.07			4.000E-02	1.935E-01	2.371E-01	2.309E-02	0.169
	83.78			1.853E-01	1.099E-01	1.651E-01	1.609E-02	1.122
	94.90			4.096E-01	2.008E-01	3.282E-01	3.312E-02	1.248
	122.32			-3.350E-01	1.714E+00	2.807E+00	3.416E-01	-0.119
	144.24			2.315E-02	7.389E-01	1.201E+00	1.326E-01	0.019
	154.21			3.691E-01	4.192E-01	7.107E-01	7.218E-02	0.519
	269.46			5.372E-01	3.353E-01	3.967E-01	3.701E-02	1.354
	323.87	*		4.315E-01	7.628E-01	1.183E+00	2.123E-01	0.365
	338.28			6.292E+00	1.933E+00	2.841E+00	3.576E-01	2.215
	445.03			-5.975E-01	2.651E+00	4.287E+00	5.219E-01	-0.139
PO-209	260.50			-3.175E-01	9.979E+00	1.578E+01	1.441E+00	-0.020
	262.80			-2.961E+00	2.797E+01	4.396E+01	4.019E+00	-0.067
	896.60	*		-6.615E+00	9.032E+00	1.361E+01	1.190E+00	-0.486
PB-211	404.84	*		5.850E-01	1.138E+00	1.855E+00	1.162E+00	0.315
	427.08			-1.671E+00	2.683E+00	3.877E+00	2.409E+00	-0.431
	831.96			-2.118E+00	2.006E+00	2.119E+00	1.328E+00	-1.000
BI-212	727.18	*		8.690E-01	6.868E-01	8.268E-01	8.296E-02	1.051
	785.46			1.278E+00	2.326E+00	4.068E+00	3.564E-01	0.314
	1620.62			1.351E+00	1.816E+00	3.332E+00	2.870E-01	0.405
PO-215	81.07			4.000E-02	1.935E-01	2.371E-01	2.309E-02	0.169
	83.78			1.853E-01	1.099E-01	1.651E-01	1.609E-02	1.122
	94.90			4.096E-01	2.008E-01	3.282E-01	3.312E-02	1.248
	122.32			-3.350E-01	1.714E+00	2.807E+00	3.416E-01	-0.119
	144.24			2.315E-02	7.389E-01	1.201E+00	1.326E-01	0.019
	154.21			3.691E-01	4.192E-01	7.107E-01	7.218E-02	0.519
	269.46			5.372E-01	3.353E-01	3.967E-01	3.701E-02	1.354
	323.87	*		4.315E-01	7.628E-01	1.183E+00	2.123E-01	0.365
	338.28			6.292E+00	1.933E+00	2.841E+00	3.576E-01	2.215

---- 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		-5.975E-01	2.651E+00	4.287E+00	5.219E-01	-0.139
		271.23		6.893E-01	4.318E-01	5.054E-01	5.444E-02	1.364
		401.81	*	-2.024E-01	4.782E-01	7.673E-01	1.147E-01	-0.264
		549.76	*	5.618E-01	3.026E+01	4.920E+01	4.393E+00	0.011
RN-220		81.07		4.000E-02	1.935E-01	2.371E-01	2.309E-02	0.169
RA-223	+	83.78		1.853E-01	1.099E-01	1.651E-01	1.609E-02	1.122
		94.90		4.096E-01	2.008E-01	3.282E-01	3.312E-02	1.248
		122.32		-3.350E-01	1.714E+00	2.807E+00	3.416E-01	-0.119
		144.24		2.315E-02	7.389E-01	1.201E+00	1.326E-01	0.019
	+	154.21		3.691E-01	4.192E-01	7.107E-01	7.218E-02	0.519
		269.46		5.372E-01	3.353E-01	3.967E-01	3.701E-02	1.354
		323.87	*	4.315E-01	7.628E-01	1.183E+00	2.123E-01	0.365
		338.28		6.292E+00	1.933E+00	2.841E+00	3.576E-01	2.215
AC-227	+	445.03		-5.975E-01	2.651E+00	4.287E+00	5.219E-01	-0.139
		79.80		9.668E-02	1.290E+00	1.797E+00	3.950E-01	0.054
		236.00		1.878E-01	2.791E-01	4.143E-01	5.189E-02	0.453
		256.20	*	5.091E-01	3.997E-01	6.772E-01	1.059E-01	0.752
	+	286.10		4.155E-01	1.548E+00	2.662E+00	3.614E-01	0.156
		299.80		2.929E+00	2.339E+00	3.055E+00	5.429E-01	0.958
		304.40		-1.079E+00	2.188E+00	3.101E+00	5.799E-01	-0.348
		334.20		3.240E-01	2.728E+00	4.078E+00	7.992E-01	0.079
TH-227	+	79.80		9.668E-02	1.290E+00	1.797E+00	3.998E-01	0.054
		94.00		1.009E+01	3.493E+00	3.413E+00	7.638E-01	2.957
		236.00		1.878E-01	2.789E-01	4.143E-01	4.717E-02	0.453
		256.20	*	5.091E-01	4.027E-01	6.772E-01	1.240E-01	0.752
	+	286.10		4.155E-01	1.602E+00	2.662E+00	2.673E+00	0.156
		299.80		2.929E+00	2.339E+00	3.055E+00	5.429E-01	0.958
		304.40		-1.079E+00	2.188E+00	3.101E+00	5.799E-01	-0.348
		334.20		3.240E-01	2.728E+00	4.078E+00	7.992E-01	0.079
TH-229	+	85.43		2.774E-01	1.646E-01	2.571E-01	2.506E-02	1.079
		88.47		5.816E-01	1.322E-01	1.756E-01	1.718E-02	3.311
		100.00		1.601E-01	1.592E-01	2.724E-01	2.822E-02	0.588
		193.63	*	1.812E-02	5.138E-01	8.307E-01	7.185E-02	0.022
PA-231	+	210.97		1.118E+00	8.719E-01	1.357E+00	1.197E-01	0.823
		283.67	*	-6.611E-01	1.535E+00	2.527E+00	3.919E-01	-0.262
		301.29		1.171E+00	9.243E-01	1.197E+00	1.513E-01	0.979
		81.07		4.000E-02	1.935E-01	2.371E-01	2.309E-02	0.169
TH-231	+	83.78		1.853E-01	1.099E-01	1.651E-01	1.609E-02	1.122
		94.90		4.096E-01	2.008E-01	3.282E-01	3.312E-02	1.248
		122.32		-3.350E-01	1.714E+00	2.807E+00	3.416E-01	-0.119
		144.24		2.315E-02	7.389E-01	1.201E+00	1.326E-01	0.019
	+	154.21		3.691E-01	4.192E-01	7.107E-01	7.218E-02	0.519
		269.46		5.372E-01	3.353E-01	3.967E-01	3.701E-02	1.354
		323.87	*	4.315E-01	7.628E-01	1.183E+00	2.123E-01	0.365
		338.28		6.292E+00	1.933E+00	2.841E+00	3.576E-01	2.215
U-231	+	445.03		-5.975E-01	2.651E+00	4.287E+00	5.219E-01	-0.139
		84.21		9.488E+00	5.628E+00	8.465E+00	8.249E-01	1.121
		92.29		1.185E+01	3.347E+00	4.233E+00	4.217E-01	2.799
		95.87	*	6.991E-02	1.087E+00	1.637E+00	1.660E-01	0.043

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233	+	108.00		3.070E-01	2.423E+00	3.640E+00	3.937E-01	0.084
	+	75.28		2.100E+01	4.359E+00	5.254E+00	8.415E-01	3.997
	+	86.59		8.339E+00	2.842E+00	2.690E+00	7.319E-01	3.099
	+	300.12		8.164E-01	6.479E-01	8.491E-01	1.291E-01	0.962
	*	311.98		-1.074E-01	6.743E-02	1.001E-01	9.388E-03	-1.073
PA-234		340.50		-6.119E-02	7.647E-01	1.121E+00	2.689E-01	-0.055
		398.62		7.413E-01	2.496E+00	4.213E+00	1.120E+00	0.176
		415.76		3.160E-01	1.823E+00	3.055E+00	6.581E-01	0.103
	+	63.00		1.730E+00	1.199E+00	1.350E+00	2.198E-01	1.282
		94.67		4.349E-01	1.571E-01	2.522E-01	3.394E-02	1.725
		98.44		4.582E-02	8.489E-02	1.313E-01	7.364E-02	0.349
		99.86		4.415E-01	4.046E-01	6.943E-01	7.187E-02	0.636
		111.00		-1.336E-01	1.643E-01	2.605E-01	3.617E-02	-0.513
		131.20		8.051E-02	1.132E-01	1.739E-01	1.931E-02	0.463
		152.70		3.246E-01	3.414E-01	5.757E-01	1.007E-01	0.564
	+	186.00		4.949E+00	2.896E+00	2.825E+00	8.813E-01	1.752
		226.40		8.928E-02	4.242E-01	6.867E-01	9.214E-02	0.130
		227.20		-1.109E-01	4.593E-01	7.231E-01	6.473E-02	-0.153
		248.90		-9.329E-01	8.791E-01	1.249E+00	2.822E-01	-0.747
	+	293.70		6.293E+00	1.862E+00	1.928E+00	3.391E-01	3.263
		369.80		-1.085E-01	9.548E-01	1.579E+00	3.445E-01	-0.069
		568.70		5.768E-01	1.206E+00	2.036E+00	1.811E-01	0.283
		569.50		5.693E-03	3.325E-01	5.391E-01	4.793E-02	0.011
		574.00		5.856E-01	1.864E+00	3.100E+00	2.753E-01	0.189
		699.00		-1.994E-01	9.141E-01	1.511E+00	2.880E-01	-0.132
		706.10		1.659E-01	1.315E+00	2.234E+00	9.961E-01	0.074
		733.00		2.614E-01	4.698E-01	7.633E-01	1.696E-01	0.342
		742.81		7.358E-01	1.788E+00	2.993E+00	2.013E+00	0.246
		796.30		1.834E-01	1.236E+00	2.087E+00	5.657E-01	0.088
		805.60		5.834E-01	1.212E+00	2.097E+00	6.438E-01	0.278
		819.60		3.013E-01	1.406E+00	2.391E+00	9.101E-01	0.126
		826.30		-1.245E-01	9.440E-01	1.545E+00	6.918E-01	-0.081
		831.60		-9.657E-01	8.278E-01	1.118E+00	3.341E-01	-0.864
		876.40		2.042E-01	1.032E+00	1.712E+00	1.760E+00	0.119
		880.51		-9.112E-02	3.202E-01	5.102E-01	4.472E-02	-0.179
		883.24		6.715E-02	3.032E-01	5.108E-01	3.435E-01	0.131
		899.00		-3.598E-01	9.891E-01	1.543E+00	6.751E-01	-0.233
		925.00		3.348E-01	1.495E+00	2.526E+00	2.211E-01	0.133
		926.50		1.610E-01	2.275E-01	3.975E-01	1.007E-01	0.405
	*	946.00		5.212E-01	4.014E-01	7.294E-01	1.373E-01	0.715
		949.00		4.747E-01	5.986E-01	1.063E+00	9.297E-02	0.447
		980.50		3.864E-01	9.183E-01	1.580E+00	1.378E-01	0.245
PA-234M		1394.10		-7.119E-02	1.374E+00	2.274E+00	1.480E+00	-0.031
		766.42		1.945E+01	1.943E+01	2.763E+01	1.402E+01	0.704
NP-236	*	1001.03		1.890E+00	5.143E+00	8.814E+00	8.844E-01	0.214
		94.67		3.326E-01	1.156E-01	1.916E-01	1.931E-02	1.736
		98.44		3.459E-02	6.127E-02	9.929E-02	1.020E-02	0.348
		111.00		-1.011E-01	1.240E-01	1.970E-01	2.167E-02	-0.513
	*	160.31		-5.976E-02	8.184E-02	1.281E-01	1.132E-02	-0.467

---- 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		1.566E-01	1.353E-01	2.326E-01	2.404E-02	0.673
		117.00	*	-1.203E-01	1.707E-01	2.719E-01	3.093E-02	-0.443
	+	209.75		2.817E+00	1.278E+00	1.620E+00	1.426E-01	1.739
		228.18		4.446E-02	2.340E-01	3.783E-01	3.389E-02	0.118
		277.60		1.412E-01	1.915E-01	3.279E-01	3.009E-02	0.431
		334.30		1.072E-01	1.541E+00	2.294E+00	2.073E-01	0.047
AM-241		59.54	*	9.560E-02	6.302E-02	1.027E-01	1.090E-02	0.931
CM-243		99.55		1.612E-01	1.392E-01	2.393E-01	2.474E-02	0.673
	+	103.76	*	1.143E-01	1.343E-01	1.405E-01	1.486E-02	0.813
		117.00		-1.238E-01	1.756E-01	2.798E-01	3.182E-02	-0.443
	+	209.75		2.777E+00	1.260E+00	1.597E+00	1.406E-01	1.739
		228.18		4.493E-02	2.364E-01	3.823E-01	3.425E-02	0.118
		277.60		1.424E-01	1.931E-01	3.306E-01	3.034E-02	0.431
AM-246		798.80		-2.052E-01	1.891E-01	2.821E-01	2.476E-02	-0.728
		1036.00		-4.650E-04	3.545E-01	5.795E-01	5.006E-02	-0.001
		1062.04		-1.637E-01	2.938E-01	4.461E-01	3.826E-02	-0.367
		1078.86	*	5.510E-02	1.817E-01	3.065E-01	2.615E-02	0.180
CM-247		278.00		7.232E-01	7.842E-01	1.391E+00	1.277E-01	0.520
		287.40		7.238E-01	1.276E+00	2.229E+00	2.047E-01	0.325
		402.60	*	-3.210E-02	4.407E-02	6.917E-02	5.876E-03	-0.464
CF-249		252.85		3.157E-01	8.965E-01	1.458E+00	1.328E-01	0.217
		333.44		1.419E-01	2.086E-01	3.082E-01	2.787E-02	0.461
		387.95	*	5.276E-02	4.562E-02	8.145E-02	6.900E-03	0.648
CF-251		176.60	*	-3.643E-02	1.265E-01	2.018E-01	1.707E-02	-0.181
		227.00		-1.471E-01	4.112E-01	6.425E-01	5.751E-02	-0.229
		285.00		-9.348E-01	1.824E+00	2.992E+00	2.748E-01	-0.312

## 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]G244148013      *
* Acquisition date   : 20-JAN-2010 15:58:12 Detector SN# :                  *
* Detector ID        : GAM17 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 02:00:09.40 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148013 Analyst initials: MXR1                 *
* Batch Number       : 940268 Sample Quantity : 1.2727E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36 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	1.907E+01	2.486E+00	6.658E-01	0.000E+00
CD-109	4.340E+00	9.666E-01	9.717E-01	0.000E+00
SN-126	4.260E-01	9.486E-02	9.523E-02	0.000E+00
EU-155	1.277E-01	1.470E-01	1.653E-01	0.000E+00
TL-208	6.032E-01	1.150E-01	7.123E-02	0.000E+00
BI-210	1.215E+00	8.759E-01	8.256E-01	0.000E+00
PB-210	1.215E+00	8.759E-01	8.256E-01	0.000E+00
PO-210	1.215E+00	8.746E-01	8.256E-01	0.000E+00
BI-211	4.335E+00	6.530E-01	3.761E-01	0.000E+00
PB-212	1.775E+00	2.150E-01	9.661E-02	0.000E+00
PO-212	1.775E+00	2.150E-01	9.661E-02	0.000E+00
BI-214	1.394E+00	2.509E-01	1.221E-01	0.000E+00
PB-214	1.508E+00	2.399E-01	1.312E-01	0.000E+00
PO-214	1.508E+00	2.399E-01	1.312E-01	0.000E+00
PO-216	1.775E+00	2.150E-01	9.661E-02	0.000E+00
PO-218	1.508E+00	2.399E-01	1.312E-01	0.000E+00
RA-224	5.091E+00	1.366E+00	1.100E+00	0.000E+00
RA-226	1.394E+00	2.509E-01	1.221E-01	0.000E+00
AC-228	1.473E+00	4.294E-01	2.835E-01	0.000E+00
RA-228	1.473E+00	4.294E-01	2.835E-01	0.000E+00
TH-228	1.804E+00	2.185E-01	9.818E-02	0.000E+00
TH-230	1.394E+00	2.509E-01	1.221E-01	0.000E+00
TH-232	1.473E+00	4.294E-01	2.835E-01	0.000E+00
TH-234	1.484E+00	1.017E+00	9.974E-01	0.000E+00
U-234	1.394E+00	2.509E-01	1.221E-01	0.000E+00
U-235	-1.444E-02	2.225E-01	3.804E-01	0.000E+00
NP-237	1.251E+00	3.763E-01	3.007E-01	0.000E+00
U-238	1.484E+00	1.017E+00	9.974E-01	0.000E+00
AM-243	4.010E-01	6.450E-02	6.104E-02	0.000E+00
ANH-511	1.499E-01	8.432E-02	6.154E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)
BE-7	1.744E-01	3.895E-01	6.852E-01	0.000E+00 NOT IDENT.
NA-22	1.079E-02	5.601E-02	9.423E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.131E+06	0.000E+00	0.000E+00 SHORT HLIF
AL-26	6.453E-04	3.377E-02	5.632E-02	0.000E+00 NOT IDENT.
TI-44	0.000E+00	5.314E-02	6.505E-02	0.000E+00 FAIL ABUN
SC-46	-5.881E-02	4.253E-02	5.819E-02	0.000E+00 FAIL ABUN
V-48	-3.246E-02	8.926E-02	1.438E-01	0.000E+00 NOT IDENT.
CR-51	-1.683E-01	3.721E-01	6.330E-01	0.000E+00 NOT IDENT.
MN-52	-3.639E-02	2.808E-01	4.659E-01	0.000E+00 NOT IDENT.
MN-54	1.967E-02	4.710E-02	8.363E-02	0.000E+00 NOT IDENT.
CO-56	4.822E-03	4.841E-02	8.358E-02	0.000E+00 NOT IDENT.
CO-57	-2.075E-03	2.446E-02	4.265E-02	0.000E+00 NOT IDENT.
CO-58	-3.630E-02	4.361E-02	6.743E-02	0.000E+00 NOT IDENT.
FE-59	-5.324E-02	1.181E-01	1.862E-01	0.000E+00 NOT IDENT.
CO-60	3.256E-02	4.362E-02	8.218E-02	0.000E+00 NOT IDENT.
ZN-65	1.928E-02	1.348E-01	1.980E-01	0.000E+00 NOT IDENT.
GE-68	1.843E+00	1.502E+00	2.848E+00	0.000E+00 NOT IDENT.
AS-73	2.333E-01	2.190E-01	4.107E-01	0.000E+00 NOT IDENT.
AS-74	3.290E-02	1.134E-01	1.943E-01	0.000E+00 NOT IDENT.
SE-75	-8.069E-03	4.587E-02	7.506E-02	0.000E+00 NOT IDENT.
BR-77	-6.917E+00	1.577E+01	2.551E+01	0.000E+00 FAIL ABUN
SR-82	-4.818E-01	5.232E-01	8.244E-01	0.000E+00 NOT IDENT.
RB-83	-3.916E-02	7.699E-02	1.235E-01	0.000E+00 NOT IDENT.
RB-84	-1.487E-02	7.738E-02	1.282E-01	0.000E+00 NOT IDENT.
KR-85	9.628E+00	9.170E+00	1.507E+01	0.000E+00 NOT IDENT.
SR-85	4.991E-02	4.754E-02	7.815E-02	0.000E+00 NOT IDENT.
RB-86	7.528E-01	9.903E-01	1.798E+00	0.000E+00 NOT IDENT.
Y-88	1.755E-04	4.773E-02	7.914E-02	0.000E+00 NOT IDENT.
ZR-88	-3.743E-02	3.408E-02	5.384E-02	0.000E+00 NOT IDENT.
Y-91	-8.367E+00	2.186E+01	2.858E+01	0.000E+00 NOT IDENT.
NB-94	1.206E-02	4.216E-02	7.492E-02	0.000E+00 NOT IDENT.
NB-95	6.550E-02	6.059E-02	1.021E-01	0.000E+00 NOT IDENT.
NB-95M	-2.587E-03	1.445E-01	2.145E-01	0.000E+00 NOT IDENT.
ZR-95	6.777E-02	9.192E-02	1.683E-01	0.000E+00 NOT IDENT.
NB-97	0.000E+00	3.288E+05	0.000E+00	0.000E+00 SHORT HLIF
ZR-97	0.000E+00	7.074E+06	0.000E+00	0.000E+00 SHORT HLIF
MO-99	-2.835E-01	1.780E+01	3.075E+01	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	7.162E+17	0.000E+00	0.000E+00 SHORT HLIF
RH-101	2.172E-02	3.192E-02	5.607E-02	0.000E+00 FAIL ABUN
RH-102	-3.053E-02	3.417E-02	5.361E-02	0.000E+00 FAIL ABUN
RU-103	-3.241E-03	4.455E-02	7.502E-02	0.000E+00 FAIL ABUN
RH-106	2.153E-01	3.716E-01	6.517E-01	0.000E+00 FAIL ABUN
RU-106	2.153E-01	3.710E-01	6.517E-01	0.000E+00 FAIL ABUN
AG-108M	2.012E-02	3.649E-02	6.515E-02	0.000E+00 NOT IDENT.
AG-110M	-2.894E-02	4.212E-02	6.441E-02	0.000E+00 NOT IDENT.
IN-111	5.773E-01	1.465E+00	2.249E+00	0.000E+00 NOT IDENT.
IN-113M	-3.475E-02	4.932E-02	8.075E-02	0.000E+00 NOT IDENT.
SN-113	-3.475E-02	4.932E-02	8.075E-02	0.000E+00 NOT IDENT.
IN-114M	1.462E-02	1.990E-01	3.031E-01	0.000E+00 NOT IDENT.
CD-115	1.297E+01	1.714E+01	3.079E+01	0.000E+00 NOT IDENT.
SN-117M	5.034E-02	5.725E-02	1.026E-01	0.000E+00 NOT IDENT.
SB-122	-8.614E-01	3.139E+00	5.126E+00	0.000E+00 NOT IDENT.
I-123	0.000E+00	2.158E+07	0.000E+00	0.000E+00 SHORT HLIF
TE-123M	1.392E-02	2.842E-02	5.005E-02	0.000E+00 NOT IDENT.
I-124	-4.858E-01	1.018E+00	1.380E+00	0.000E+00 NOT IDENT.
SB-124	-3.562E-02	1.036E-01	1.686E-01	0.000E+00 FAIL ABUN
SB-125	-1.951E-02	1.032E-01	1.747E-01	0.000E+00 FAIL ABUN
TE-125M	3.353E+00	8.809E+00	1.423E+01	0.000E+00 NOT IDENT.
I-126	8.850E-02	2.299E-01	3.941E-01	0.000E+00 NOT IDENT.
SB-126	5.108E-02	1.912E-01	2.994E-01	0.000E+00 FAIL ABUN
SB-127	-1.502E+00	2.191E+00	3.349E+00	0.000E+00 NOT IDENT.
XE-127	2.438E-02	4.959E-02	8.602E-02	0.000E+00 NOT IDENT.
I-131	-4.072E-02	1.271E-01	2.156E-01	0.000E+00 NOT IDENT.
TE-132	1.759E-01	8.767E-01	1.487E+00	0.000E+00 NOT IDENT.
BA-133	3.849E-02	4.967E-02	8.147E-02	0.000E+00 NOT IDENT.
I-133	0.000E+00	1.667E+04	0.000E+00	0.000E+00 SHORT HLIF
CS-134	5.261E-02	6.205E-02	1.138E-01	0.000E+00 NOT IDENT.
CS-135	2.941E-01	1.916E-01	3.142E-01	0.000E+00 NOT IDENT.
I-135	0.000E+00	1.015E+17	0.000E+00	0.000E+00 SHORT HLIF
CS-136	2.918E-02	1.415E-01	2.427E-01	0.000E+00 FAIL ABUN
BA-137M	1.459E-02	4.581E-02	7.733E-02	0.000E+00 NOT IDENT.
CS-137	1.542E-02	4.843E-02	8.174E-02	0.000E+00 NOT IDENT.
CE-139	-2.484E-02	3.033E-02	4.971E-02	0.000E+00 NOT IDENT.
BA-140	-1.833E-02	3.175E-01	5.317E-01	0.000E+00 NOT IDENT.
LA-140	-5.849E-02	1.163E-01	1.783E-01	0.000E+00 FAIL ABUN



CE-141	-1.344E-02	6.737E-02	1.143E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.927E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.237E-02	2.166E-01	3.349E-01	0.000E+00	NOT IDENT.
PM-144	-2.856E-02	4.395E-02	7.229E-02	0.000E+00	NOT IDENT.
PR-144	-1.936E+00	2.980E+00	4.901E+00	0.000E+00	NOT IDENT.
PM-146	2.719E-02	4.651E-02	8.316E-02	0.000E+00	NOT IDENT.
ND-147	-2.511E-01	7.140E-01	1.164E+00	0.000E+00	FAIL ABUN
PM-149	5.730E+00	1.271E+02	2.257E+02	0.000E+00	NOT IDENT.
EU-152	1.765E-02	1.036E-01	1.830E-01	0.000E+00	FAIL ABUN
GD-153	-6.775E-02	7.311E-02	1.089E-01	0.000E+00	FAIL ABUN
EU-154	5.104E-02	1.537E-01	2.631E-01	0.000E+00	NOT IDENT.
TB-160	-4.258E-02	1.604E-01	2.646E-01	0.000E+00	FAIL ABUN
HO-166M	-4.998E-02	7.311E-02	1.189E-01	0.000E+00	NOT IDENT.
TM-171	1.898E+00	1.542E+01	2.498E+01	0.000E+00	NOT IDENT.
LU-176	1.206E-02	2.579E-02	4.666E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.968E+00	2.521E+00	0.000E+00	FAIL ABUN
LU-177M	3.019E-02	1.879E-01	3.274E-01	0.000E+00	NOT IDENT.
HF-181	1.827E-02	5.360E-02	9.345E-02	0.000E+00	NOT IDENT.
W-181	-1.286E-01	1.924E-01	2.999E-01	0.000E+00	NOT IDENT.
TA-182	-2.411E-02	2.437E-01	3.976E-01	0.000E+00	NOT IDENT.
RE-183	3.841E-03	1.079E-01	1.858E-01	0.000E+00	FAIL ABUN
RE-184	8.450E-02	2.351E-01	4.007E-01	0.000E+00	NOT IDENT.
OS-185	3.120E-02	4.799E-02	8.493E-02	0.000E+00	NOT IDENT.
RE-188	5.511E-02	1.797E-01	3.141E-01	0.000E+00	NOT IDENT.
W-188	-3.886E+00	8.812E+00	1.327E+01	0.000E+00	FAIL ABUN
IR-192	2.227E-02	3.334E-02	6.111E-02	0.000E+00	FAIL ABUN
AU-195	1.587E-01	1.903E-01	3.439E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.465E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	8.614E+00	8.472E+00	1.526E+01	0.000E+00	NOT IDENT.
TL-202	1.777E-02	7.700E-02	1.344E-01	0.000E+00	NOT IDENT.
HG-203	1.664E-02	4.257E-02	7.707E-02	0.000E+00	NOT IDENT.
BI-207	-3.376E-03	6.512E-02	1.083E-01	0.000E+00	FAIL ABUN
TL-207	4.315E-01	7.476E-01	1.210E+00	0.000E+00	FAIL ABUN
PO-209	-6.615E+00	8.852E+00	1.371E+01	0.000E+00	NOT IDENT.
PB-211	5.850E-01	1.116E+00	1.891E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.730E-01	8.355E-01	0.000E+00	FAIL ABUN
PO-215	4.315E-01	7.476E-01	1.210E+00	0.000E+00	FAIL ABUN
RN-219	-2.024E-01	4.686E-01	7.824E-01	0.000E+00	FAIL ABUN
RN-220	5.618E-01	2.966E+01	4.993E+01	0.000E+00	NOT IDENT.
RA-223	4.315E-01	7.476E-01	1.210E+00	0.000E+00	FAIL ABUN
AC-227	5.091E-01	3.917E-01	6.951E-01	0.000E+00	FAIL ABUN
TH-227	5.091E-01	3.946E-01	6.951E-01	0.000E+00	FAIL ABUN
TH-229	1.812E-02	5.035E-01	8.562E-01	0.000E+00	FAIL ABUN
PA-231	-6.611E-01	1.504E+00	2.589E+00	0.000E+00	FAIL ABUN
TH-231	4.315E-01	7.476E-01	1.210E+00	0.000E+00	FAIL ABUN
U-231	6.991E-02	1.065E+00	1.705E+00	0.000E+00	FAIL ABUN
PA-233	-1.074E-01	6.609E-02	1.024E-01	0.000E+00	FAIL ABUN
PA-234	5.212E-01	3.934E-01	7.341E-01	0.000E+00	FAIL ABUN
PA-234M	1.890E+00	5.040E+00	8.863E+00	0.000E+00	NOT IDENT.
NP-236	-5.976E-02	8.020E-02	1.324E-01	0.000E+00	NOT IDENT.
NP-239	-1.203E-01	1.673E-01	2.823E-01	0.000E+00	FAIL ABUN
AM-241	9.560E-02	6.176E-02	1.076E-01	0.000E+00	NOT IDENT.
CM-243	1.143E-01	1.316E-01	1.462E-01	0.000E+00	FAIL ABUN
AM-246	5.510E-02	1.780E-01	3.079E-01	0.000E+00	NOT IDENT.
CM-247	-3.210E-02	4.319E-02	7.052E-02	0.000E+00	NOT IDENT.
CF-249	5.276E-02	4.471E-02	8.309E-02	0.000E+00	NOT IDENT.
CF-251	-3.643E-02	1.239E-01	2.082E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148013.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:58:12
Sample ID          : G244148013          Sample quantity  : 1.27270E+02 GRAM
Detector name      : GAM17              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:09.40  0.1%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940268             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	537	10.67*	7.784E-01	1.907E+01	1.907E+01	13.30
CD-109	88.03	357	3.72*	6.676E+00	4.237E+00	4.340E+00	22.72
SN-126	64.28	130	9.60	6.776E+00	5.875E-01	5.875E-01	69.26
	86.94	357	8.90	6.676E+00	1.771E+00	1.771E+00	46.40
	87.57	357	37.00*	6.676E+00	4.260E-01	4.260E-01	22.72
EU-155	48.70	-----	4.60	6.416E+00	-----	Line Not Found	-----
	60.01	-----	1.11	6.736E+00	-----	Line Not Found	-----
	86.54	357	30.90	6.676E+00	5.100E-01	5.132E-01	22.76
	105.31	57	20.70*	6.384E+00	1.269E-01	1.277E-01	117.49
TL-208	277.35	-----	6.80	3.568E+00	-----	Line Not Found	-----
	510.84	105	21.60	2.057E+00	6.940E-01	6.940E-01	58.01
	583.14	312	84.20*	1.812E+00	6.032E-01	6.032E-01	19.46
	860.37	38	12.46	1.247E+00	7.211E-01	7.211E-01	70.85
BI-210	46.50	105	4.05*	6.313E+00	1.213E+00	1.215E+00	73.58
PB-210	46.50	105	4.05*	6.313E+00	1.213E+00	1.215E+00	73.58
PO-210	46.50	105	4.05*	6.313E+00	1.213E+00	1.215E+00	73.47
BI-211	72.87	-----	1.27	6.803E+00	-----	Line Not Found	-----
	351.07	553	12.94*	2.909E+00	4.335E+00	4.335E+00	15.37
PB-212	74.81	610	10.70	6.795E+00	2.473E+00	2.473E+00	18.89
	77.11	919	18.00	6.782E+00	2.222E+00	2.222E+00	13.23
	87.30	357	8.00	6.676E+00	1.970E+00	1.970E+00	24.83
	238.63	1080	44.60*	4.023E+00	1.775E+00	1.775E+00	12.36
	300.09	61	3.41	3.342E+00	1.580E+00	1.580E+00	78.64
PO-212	74.81	610	10.70	6.795E+00	2.473E+00	2.473E+00	18.89
	77.11	919	18.00	6.782E+00	2.222E+00	2.222E+00	13.23
	87.30	357	8.00	6.676E+00	1.970E+00	1.970E+00	24.83
	115.19	-----	0.60	6.177E+00	-----	Line Not Found	-----
	238.63	1080	44.60*	4.023E+00	1.775E+00	1.775E+00	12.36
	300.09	61	3.41	3.342E+00	1.580E+00	1.580E+00	78.64
BI-214	609.31	380	46.30*	1.737E+00	1.394E+00	1.394E+00	18.37
	1120.29	95	15.10	9.778E-01	1.904E+00	1.904E+00	32.98
	1764.49	38	15.80	6.717E-01	1.068E+00	1.068E+00	59.45

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-214	74.81	610	6.21	6.795E+00	4.261E+00	4.261E+00	18.01
	77.11	919	10.50	6.782E+00	3.809E+00	3.809E+00	15.26
	87.30	357	4.67	6.676E+00	3.375E+00	3.375E+00	24.00
	241.98	272	7.49	3.983E+00	2.685E+00	2.685E+00	27.95
	295.21	289	19.20	3.388E+00	1.311E+00	1.311E+00	26.26
	351.92	553	37.20*	2.909E+00	1.508E+00	1.508E+00	16.23
PO-214	74.81	610	6.21	6.795E+00	4.261E+00	4.261E+00	18.01
	77.11	919	10.50	6.782E+00	3.809E+00	3.809E+00	15.26
	87.30	357	4.67	6.676E+00	3.375E+00	3.375E+00	24.00
	241.98	272	7.49	3.983E+00	2.685E+00	2.685E+00	27.95
	295.21	289	19.20	3.388E+00	1.311E+00	1.311E+00	26.26
	351.92	553	37.20*	2.909E+00	1.508E+00	1.508E+00	16.23
PO-216	74.81	610	10.70	6.795E+00	2.473E+00	2.473E+00	18.89
	77.11	919	18.00	6.782E+00	2.222E+00	2.222E+00	13.23
	87.30	357	8.00	6.676E+00	1.970E+00	1.970E+00	24.83
	238.63	1080	44.60*	4.023E+00	1.775E+00	1.775E+00	12.36
	300.09	61	3.41	3.342E+00	1.580E+00	1.580E+00	78.64
	74.81	610	6.21	6.795E+00	4.261E+00	4.261E+00	18.01
PO-218	77.11	919	10.50	6.782E+00	3.809E+00	3.809E+00	15.26
	87.30	357	4.67	6.676E+00	3.375E+00	3.375E+00	24.00
	241.98	272	7.49	3.983E+00	2.685E+00	2.685E+00	27.95
	295.21	289	19.20	3.388E+00	1.311E+00	1.311E+00	26.26
	351.92	553	37.20*	2.909E+00	1.508E+00	1.508E+00	16.23
	240.98	272	3.95*	3.983E+00	5.091E+00	5.091E+00	27.38
RA-224	609.31	380	46.30*	1.737E+00	1.394E+00	1.394E+00	18.37
AC-228	1120.29	95	15.10	9.778E-01	1.904E+00	1.904E+00	32.98
	1764.49	38	15.80	6.717E-01	1.068E+00	1.068E+00	59.45
	338.32	175	11.40	3.013E+00	1.507E+00	1.507E+00	49.95
	911.07	164	27.70*	1.182E+00	1.473E+00	1.473E+00	29.74
	969.11	139	16.60	1.116E+00	2.215E+00	2.215E+00	31.39
	338.32	175	11.40	3.013E+00	1.507E+00	1.507E+00	49.95
RA-228	911.07	164	27.70*	1.182E+00	1.473E+00	1.473E+00	29.74
	969.11	139	16.60	1.116E+00	2.215E+00	2.215E+00	31.39
	74.81	610	10.70	6.795E+00	2.473E+00	2.513E+00	16.45
	77.11	919	18.00	6.782E+00	2.222E+00	2.258E+00	13.23
	87.30	357	8.00	6.676E+00	1.970E+00	2.002E+00	22.72
	238.63	1080	44.60*	4.023E+00	1.775E+00	1.804E+00	12.36
TH-228	300.09	61	3.41	3.342E+00	1.580E+00	1.606E+00	97.93
	609.31	380	46.30*	1.737E+00	1.394E+00	1.394E+00	18.37
	1120.29	95	15.10	9.778E-01	1.904E+00	1.904E+00	32.98
	1764.49	38	15.80	6.717E-01	1.068E+00	1.068E+00	59.45
	338.32	175	11.40	3.013E+00	1.507E+00	1.507E+00	29.44
	911.07	164	27.70*	1.182E+00	1.473E+00	1.473E+00	29.74
TH-232	969.11	139	16.60	1.116E+00	2.215E+00	2.215E+00	31.39
	63.29	130	3.80*	6.776E+00	1.484E+00	1.484E+00	69.92
	92.38	316	5.41	6.590E+00	2.611E+00	2.611E+00	32.42
	609.31	380	46.30*	1.737E+00	1.394E+00	1.394E+00	18.37
	1120.29	95	15.10	9.778E-01	1.904E+00	1.904E+00	32.98
	1764.49	38	15.80	6.717E-01	1.068E+00	1.068E+00	59.45

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-235	89.95	170	2.70	6.634E+00	2.793E+00	2.793E+00	41.00
	93.35	316	4.50	6.590E+00	3.139E+00	3.139E+00	38.85
	105.00	57	2.10	6.384E+00	1.251E+00	1.251E+00	120.91
	143.76	-----	10.50*	5.592E+00	-----	Line Not Found	-----
	163.35	-----	4.70	5.210E+00	-----	Line Not Found	-----
	185.71	161	54.00	4.803E+00	1.833E-01	1.833E-01	50.25
	205.31	-----	4.70	4.493E+00	-----	Line Not Found	-----
NP-237	86.50	357	12.60*	6.676E+00	1.251E+00	1.251E+00	30.69
	95.87	-----	2.60	6.543E+00	-----	Line Not Found	-----
U-238	63.29	130	3.80*	6.776E+00	1.484E+00	1.484E+00	69.92
	92.38	316	5.41	6.590E+00	2.611E+00	2.611E+00	28.25
AM-243	74.67	610	66.00*	6.795E+00	4.010E-01	4.010E-01	16.41
	86.72	357	0.34	6.676E+00	4.691E+01	4.691E+01	22.72
	117.66	-----	0.55	6.127E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.624E+00	-----	Line Not Found	-----
ANH-511	511.00	105	100.00*	2.057E+00	1.499E-01	1.499E-01	57.40

Flag: "\*" = Keyline

Total number of lines in spectrum 34  
Number of unidentified lines 1  
Number of lines tentatively identified by NID 33 97.06%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.907E+01	1.907E+01	0.254E+01	13.30	
CD-109	464.00D	1.02	4.237E+00	4.340E+00	0.986E+00	22.72	
SN-126	1.00E+05Y	1.00	4.260E-01	4.260E-01	0.968E-01	22.72	
EU-155	4.96Y	1.01	1.269E-01	1.277E-01	1.500E-01	117.49	
TL-208	1.41E+10Y	1.00	6.032E-01	6.032E-01	1.174E-01	19.46	
BI-210	22.26Y	1.00	1.213E+00	1.215E+00	0.894E+00	73.58	
PB-210	22.26Y	1.00	1.213E+00	1.215E+00	0.894E+00	73.58	
PO-210	22.26Y	1.00	1.213E+00	1.215E+00	0.892E+00	73.47	
BI-211	7.04E+08Y	1.00	4.335E+00	4.335E+00	0.666E+00	15.37	
PB-212	1.41E+10Y	1.00	1.775E+00	1.775E+00	0.219E+00	12.36	
PO-212	1.41E+10Y	1.00	1.775E+00	1.775E+00	0.219E+00	12.36	
BI-214	1600.00Y	1.00	1.394E+00	1.394E+00	0.256E+00	18.37	
PB-214	1600.00Y	1.00	1.508E+00	1.508E+00	0.245E+00	16.23	
PO-214	1600.00Y	1.00	1.508E+00	1.508E+00	0.245E+00	16.23	
PO-216	1.41E+10Y	1.00	1.775E+00	1.775E+00	0.219E+00	12.36	
PO-218	1600.00Y	1.00	1.508E+00	1.508E+00	0.245E+00	16.23	
RA-224	1.41E+10Y	1.00	5.091E+00	5.091E+00	1.394E+00	27.38	
RA-226	1600.00Y	1.00	1.394E+00	1.394E+00	0.256E+00	18.37	
AC-228	1.41E+10Y	1.00	1.473E+00	1.473E+00	0.438E+00	29.74	
RA-228	1.41E+10Y	1.00	1.473E+00	1.473E+00	0.438E+00	29.74	
TH-228	1.91Y	1.02	1.775E+00	1.804E+00	0.223E+00	12.36	
TH-230	4.47E+09Y	1.00	1.394E+00	1.394E+00	0.256E+00	18.37	
TH-232	1.41E+10Y	1.00	1.473E+00	1.473E+00	0.438E+00	29.74	
TH-234	4.47E+09Y	1.00	1.484E+00	1.484E+00	1.038E+00	69.92	
U-234	4.47E+09Y	1.00	1.394E+00	1.394E+00	0.256E+00	18.37	
U-235	7.04E+08Y	1.00	1.833E-01	1.833E-01	0.921E-01	50.25	K
NP-237	2.14E+06Y	1.00	1.251E+00	1.251E+00	0.384E+00	30.69	
U-238	4.47E+09Y	1.00	1.484E+00	1.484E+00	1.038E+00	69.92	
AM-243	7380.00Y	1.00	4.010E-01	4.010E-01	0.658E-01	16.41	
ANH-511	1.00E+09Y	1.00	1.499E-01	1.499E-01	0.860E-01	57.40	

Total Activity : 6.410E+01 6.424E+01

Grand Total Activity : 6.410E+01 6.424E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244148013

Page : 5  
Acquisition date : 20-JAN-2010 15:58:12

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	84.32	104	315	1.05	168.30	165	13	1.45E-02	58.5	6.71E+00	T
0	128.70	111	314	0.91	257.09	254	9	1.54E-02	60.3	5.90E+00	T
0	209.44	137	225	0.88	418.63	414	10	1.90E-02	44.5	4.43E+00	T
0	270.33	90	192	1.26	540.45	538	10	1.25E-02	61.7	3.64E+00	T
0	327.79	38	98	1.05	655.42	652	8	5.32E-03	96.9	3.10E+00	T
0	462.79	67	70	1.08	925.55	920	10	9.28E-03	52.8	2.26E+00	T
0	727.59	51	77	0.80	1455.45	1446	14	7.06E-03	78.4	1.46E+00	T
0	767.96	37	31	0.89	1536.23	1532	8	5.11E-03	62.4	1.39E+00	T
1	963.61	63	10	1.83	1927.80	1921	26	8.73E-03	36.7	1.12E+00	T
0	1209.36	13	18	0.66	2419.65	2414	8	1.81E-03	****	9.13E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148013.CNF;1 *
* Acquisition date   : 20-JAN-2010 15:58:12  Detector SN#      :             *
* Detector ID        : GAM17                  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 02:00:09.40          Half life ratio   : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library   : SOLID        *
* Sample ID          : G244148013            Analyst initials: MXR1          *
* Batch Number       : 940268                Sample Quantity  : 1.27270E+02 GRAM *
*****
*                                     QC DATA                                *
*                                     *                                       *
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36.18MS 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	1.907E+01	2.537E+00	6.660E-01	5.913E-02	28.640
CD-109	4.340E+00	9.863E-01	9.322E-01	9.101E-02	4.656
SN-126	4.260E-01	9.679E-02	9.136E-02	8.915E-03	4.663
EU-155	1.277E-01	1.500E-01	1.590E-01	1.708E-02	0.803
TL-208	6.032E-01	1.174E-01	7.025E-02	6.644E-03	8.586
BI-210	1.215E+00	8.938E-01	7.850E-01	8.515E-02	1.547
PB-210	1.215E+00	8.938E-01	7.850E-01	8.515E-02	1.547
PO-210	1.215E+00	8.925E-01	7.850E-01	7.930E-02	1.547
BI-211	4.335E+00	6.664E-01	3.682E-01	3.436E-02	11.775
PB-212	1.775E+00	2.194E-01	9.403E-02	9.479E-03	18.875
PO-212	1.775E+00	2.194E-01	9.403E-02	9.479E-03	18.875
BI-214	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568
PB-214	1.508E+00	2.448E-01	1.284E-01	1.372E-02	11.746
PO-214	1.508E+00	2.448E-01	1.284E-01	1.372E-02	11.746
PO-216	1.775E+00	2.194E-01	9.403E-02	9.479E-03	18.875
PO-218	1.508E+00	2.448E-01	1.284E-01	1.372E-02	11.746
RA-224	5.091E+00	1.394E+00	1.071E+00	9.685E-02	4.754
RA-226	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.473E+00	4.382E-01	2.815E-01	3.193E-02	5.233
RA-228	1.473E+00	4.382E-01	2.815E-01	3.193E-02	5.233
TH-228	1.804E+00	2.230E-01	9.555E-02	9.633E-03	18.875
TH-230	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568
TH-232	1.473E+00	4.382E-01	2.815E-01	3.193E-02	5.233
TH-234	1.484E+00	1.038E+00	9.524E-01	1.778E-01	1.558
U-234	1.394E+00	2.560E-01	1.205E-01	1.226E-02	11.568
U-235	1.833E-01	9.209E-02	3.675E-01	6.737E-02	0.499
NP-237	1.251E+00	3.839E-01	2.884E-01	6.583E-02	4.337
U-238	1.484E+00	1.038E+00	9.524E-01	1.778E-01	1.558
AM-243	4.010E-01	6.581E-02	5.842E-02	5.704E-03	6.863
ANH-511	1.499E-01	8.605E-02	6.057E-02	5.410E-03	2.475

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.744E-01		3.974E-01	6.738E-01	6.411E-02	0.259
NA-22	1.079E-02		5.715E-02	9.405E-02	7.923E-03	0.115
NA-24	-3.199E+00		1.598E+00	Half-Life too short		
AL-26	6.453E-04		3.446E-02	5.652E-02	4.737E-03	0.011
TI-44	4.100E-01	+	5.423E-02	6.231E-02	6.071E-03	6.580
SC-46	-5.881E-02		4.340E-02	5.776E-02	5.057E-03	-1.018
V-48	-3.246E-02		9.108E-02	1.430E-01	1.247E-02	-0.227
CR-51	-1.683E-01		3.797E-01	6.187E-01	5.909E-02	-0.272
MN-52	-3.639E-02		2.865E-01	4.658E-01	4.016E-02	-0.078
MN-54	1.967E-02		4.806E-02	8.293E-02	7.291E-03	0.237
CO-56	4.822E-03		4.940E-02	8.289E-02	7.287E-03	0.058
CO-57	-2.075E-03		2.496E-02	4.111E-02	4.817E-03	-0.050
CO-58	-3.630E-02		4.450E-02	6.684E-02	5.886E-03	-0.543
FE-59	-5.324E-02		1.205E-01	1.855E-01	1.702E-02	-0.287
CO-60	3.256E-02		4.451E-02	8.207E-02	6.995E-03	0.397
ZN-65	1.928E-02		1.376E-01	1.972E-01	1.661E-02	0.098
GE-68	1.843E+00		1.532E+00	2.835E+00	2.420E-01	0.650
AS-73	2.333E-01		2.235E-01	3.912E-01	3.914E-02	0.596
AS-74	3.290E-02		1.157E-01	1.917E-01	1.689E-02	0.172
SE-75	-8.069E-03		4.681E-02	7.317E-02	6.722E-03	-0.110
BR-77	-6.917E+00		1.610E+01	2.511E+01	2.245E+00	-0.275
SR-82	-4.818E-01		5.339E-01	8.166E-01	7.147E-02	-0.590
RB-83	-3.916E-02		7.857E-02	1.216E-01	1.087E-02	-0.322
RB-84	-1.487E-02		7.896E-02	1.273E-01	1.115E-02	-0.117
KR-85	9.628E+00		9.357E+00	1.484E+01	1.326E+00	0.649
SR-85	4.991E-02		4.851E-02	7.693E-02	6.873E-03	0.649
RB-86	7.528E-01		1.010E+00	1.790E+00	1.528E-01	0.421
Y-88	1.755E-04		4.870E-02	7.944E-02	6.624E-03	0.002
ZR-88	-3.743E-02		3.477E-02	5.279E-02	4.448E-03	-0.709
Y-91	-8.367E+00		2.231E+01	2.850E+01	2.353E+00	-0.294
NB-94	1.206E-02		4.302E-02	7.409E-02	6.356E-03	0.163



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	6.550E-02		6.183E-02	1.011E-01	8.828E-03	0.648
NB-95M	-2.587E-03		1.474E-01	2.088E-01	2.131E-02	-0.012
ZR-95	6.777E-02		9.379E-02	1.666E-01	1.596E-02	0.407
NB-97	-2.639E-01		1.677E-01	Half-Life too short		
ZR-97	1.046E+01		3.609E+00	Half-Life too short		
MO-99	-2.835E-01		1.816E+01	3.044E+01	4.633E+00	-0.009
TC-99M	-8.510E+10		3.654E+11	Half-Life too short		
RH-101	2.172E-02		3.257E-02	5.442E-02	4.732E-03	0.399
RH-102	-3.053E-02		3.487E-02	5.271E-02	4.669E-03	-0.579
RU-103	-3.241E-03		4.546E-02	7.381E-02	1.059E-02	-0.044
RH-106	2.153E-01		3.792E-01	6.434E-01	8.623E-02	0.335
RU-106	2.153E-01		3.786E-01	6.434E-01	5.590E-02	0.335
AG-108M	2.012E-02		3.724E-02	6.397E-02	5.774E-03	0.315
AG-110M	-2.894E-02		4.298E-02	6.364E-02	5.547E-03	-0.455
IN-111	5.773E-01		1.495E+00	2.190E+00	1.986E-01	0.264
IN-113M	-3.475E-02		5.032E-02	7.917E-02	6.879E-03	-0.439
SN-113	-3.475E-02		5.032E-02	7.917E-02	6.879E-03	-0.439
IN-114M	1.462E-02		2.031E-01	2.940E-01	2.532E-02	0.050
CD-115	1.297E+01		1.749E+01	3.032E+01	2.711E+00	0.428
SN-117M	5.034E-02		5.842E-02	9.922E-02	8.918E-03	0.507
SB-122	-8.614E-01		3.203E+00	5.053E+00	4.499E-01	-0.170
I-123	1.057E+01		1.101E+01	Half-Life too short		
TE-123M	1.392E-02		2.900E-02	4.842E-02	4.358E-03	0.287
I-124	-4.858E-01		1.039E+00	1.362E+00	1.196E-01	-0.357
SB-124	-3.562E-02		1.057E-01	1.690E-01	1.504E-02	-0.211
SB-125	-1.951E-02		1.054E-01	1.715E-01	1.512E-02	-0.114
TE-125M	3.353E+00		8.989E+00	1.369E+01	1.683E+00	0.245
I-126	8.850E-02		2.346E-01	3.895E-01	3.289E-02	0.227
SB-126	5.108E-02		1.951E-01	2.962E-01	2.557E-02	0.172
SB-127	-1.502E+00		2.236E+00	3.311E+00	3.847E-01	-0.454
XE-127	2.438E-02		5.060E-02	8.352E-02	7.302E-03	0.292
I-131	-4.072E-02		1.297E-01	2.112E-01	1.952E-02	-0.193
TE-132	1.759E-01		8.946E-01	1.447E+00	2.329E-01	0.122
BA-133	3.849E-02		5.068E-02	7.976E-02	1.066E-02	0.483
I-133	6.466E-03		8.507E-03	Half-Life too short		
CS-134	5.261E-02		6.332E-02	1.127E-01	9.961E-03	0.467
CS-135	2.941E-01		1.955E-01	3.063E-01	3.196E-02	0.960
I-135	4.096E+10		5.179E+10	Half-Life too short		
CS-136	2.918E-02		1.444E-01	2.415E-01	2.169E-02	0.121
BA-137M	1.459E-02		4.675E-02	7.641E-02	6.437E-03	0.191
CS-137	1.542E-02		4.942E-02	8.077E-02	6.818E-03	0.191
CE-139	-2.484E-02		3.095E-02	4.812E-02	4.013E-03	-0.516
BA-140	-1.833E-02		3.240E-01	5.238E-01	1.740E-01	-0.035
LA-140	-5.849E-02		1.187E-01	1.785E-01	1.541E-02	-0.328
CE-141	-1.344E-02		6.874E-02	1.105E-01	1.127E-02	-0.122
CE-143	1.073E-03		2.004E-04	Half-Life too short		
CE-144	-2.237E-02		2.210E-01	3.232E-01	5.483E-02	-0.069
PM-144	-2.856E-02		4.485E-02	7.148E-02	6.120E-03	-0.400

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144	-1.936E+00		3.041E+00	4.847E+00	4.147E-01	-0.400
PM-146	2.719E-02		4.746E-02	8.171E-02	8.869E-03	0.333
ND-147	-2.511E-01		7.285E-01	1.146E+00	1.735E-01	-0.219
PM-149	5.730E+00		1.297E+02	2.203E+02	3.495E+01	0.026
EU-152	1.765E-02		1.058E-01	1.791E-01	1.694E-02	0.099
GD-153	-6.775E-02		7.460E-02	1.046E-01	1.069E-02	-0.648
EU-154	5.104E-02		1.569E-01	2.626E-01	2.929E-02	0.194
TB-160	-4.258E-02		1.636E-01	2.626E-01	2.302E-02	-0.162
HO-166M	-4.998E-02		7.460E-02	1.176E-01	1.012E-02	-0.425
TM-171	1.898E+00		1.573E+01	2.387E+01	2.356E+00	0.080
LU-176	1.206E-02		2.631E-02	4.558E-02	4.176E-03	0.264
LU-177	4.426E+00	+	2.008E+00	2.448E+00	2.153E-01	1.808
LU-177M	3.019E-02		1.917E-01	3.212E-01	2.752E-02	0.094
HF-181	1.827E-02		5.469E-02	9.191E-02	8.159E-03	0.199
W-181	-1.286E-01		1.963E-01	2.865E-01	2.838E-02	-0.449
TA-182	-2.411E-02		2.487E-01	3.966E-01	3.289E-02	-0.061
RE-183	3.841E-03		1.101E-01	1.798E-01	1.557E-02	0.021
RE-184	8.450E-02		2.399E-01	3.903E-01	3.554E-02	0.217
OS-185	3.120E-02		4.897E-02	8.390E-02	7.163E-03	0.372
RE-188	5.511E-02		1.834E-01	3.038E-01	2.822E-02	0.181
W-188	-3.886E+00		8.992E+00	1.295E+01	1.190E+00	-0.300
IR-192	2.227E-02		3.402E-02	5.972E-02	5.464E-03	0.373
AU-195	1.587E-01		1.942E-01	3.305E-01	3.404E-02	0.480
TL-200	5.256E-05		4.829E-04	Half-Life too short		
TL-201	8.614E+00		8.645E+00	1.477E+01	1.234E+00	0.583
TL-202	1.777E-02		7.857E-02	1.320E-01	1.150E-02	0.135
HG-203	1.664E-02		4.344E-02	7.518E-02	7.075E-03	0.221
BI-207	-3.376E-03		6.645E-02	1.078E-01	9.238E-03	-0.031
TL-207	4.315E-01		7.628E-01	1.183E+00	2.123E-01	0.365
PO-209	-6.615E+00		9.032E+00	1.361E+01	1.190E+00	-0.486
PB-211	5.850E-01		1.138E+00	1.855E+00	1.162E+00	0.315
BI-212	8.690E-01	+	6.868E-01	8.268E-01	8.296E-02	1.051
PO-215	4.315E-01		7.628E-01	1.183E+00	2.123E-01	0.365
RN-219	-2.024E-01		4.782E-01	7.673E-01	1.147E-01	-0.264
RN-220	5.618E-01		3.026E+01	4.920E+01	4.393E+00	0.011
RA-223	4.315E-01		7.628E-01	1.183E+00	2.123E-01	0.365
AC-227	5.091E-01		3.997E-01	6.772E-01	1.059E-01	0.752
TH-227	5.091E-01		4.027E-01	6.772E-01	1.240E-01	0.752
TH-229	1.812E-02		5.138E-01	8.307E-01	7.185E-02	0.022
PA-231	-6.611E-01		1.535E+00	2.527E+00	3.919E-01	-0.262
TH-231	4.315E-01		7.628E-01	1.183E+00	2.123E-01	0.365
U-231	6.991E-02		1.087E+00	1.637E+00	1.660E-01	0.043
PA-233	-1.074E-01		6.743E-02	1.001E-01	9.388E-03	-1.073
PA-234	5.212E-01		4.014E-01	7.294E-01	1.373E-01	0.715
PA-234M	1.890E+00		5.143E+00	8.814E+00	8.844E-01	0.214
NP-236	-5.976E-02		8.184E-02	1.281E-01	1.132E-02	-0.467
NP-239	-1.203E-01		1.707E-01	2.719E-01	3.093E-02	-0.443
AM-241	9.560E-02		6.302E-02	1.027E-01	1.090E-02	0.931

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.143E-01	+	1.343E-01	1.405E-01	1.486E-02	0.813
AM-246	5.510E-02		1.817E-01	3.065E-01	2.615E-02	0.180
CM-247	-3.210E-02		4.407E-02	6.917E-02	5.876E-03	-0.464
CF-249	5.276E-02		4.562E-02	8.145E-02	6.900E-03	0.648
CF-251	-3.643E-02		1.265E-01	2.018E-01	1.707E-02	-0.181

# 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]G244148013          *
* Acquisition date   : 20-JAN-2010 15:58:12 Detector SN#                  *
* Detector ID        : GAM17 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 02:00:09.40 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148013 Analyst initials: MXR1                 *
* Batch Number       : 940268 Sample Quantity : 1.2727E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 6-JAN-2010 11:41:36 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	1.907E+01	2.486E+00	3.331E-01	1.268E+00
CD-109	4.340E+00	9.666E-01	4.861E-01	4.932E-01
SN-126	4.260E-01	9.486E-02	4.764E-02	4.840E-02
EU-155	1.277E-01	1.470E-01	8.271E-02	7.500E-02
TL-208	6.032E-01	1.150E-01	3.563E-02	5.868E-02
BI-210	1.215E+00	8.759E-01	4.130E-01	4.469E-01
PB-210	1.215E+00	8.759E-01	4.130E-01	4.469E-01
PO-210	1.215E+00	8.746E-01	4.130E-01	4.462E-01
BI-211	4.335E+00	6.530E-01	1.882E-01	3.332E-01
PB-212	1.775E+00	2.150E-01	4.833E-02	1.097E-01
PO-212	1.775E+00	2.150E-01	4.833E-02	1.097E-01
BI-214	1.394E+00	2.509E-01	6.108E-02	1.280E-01
PB-214	1.508E+00	2.399E-01	6.562E-02	1.224E-01
PO-214	1.508E+00	2.399E-01	6.562E-02	1.224E-01
PO-216	1.775E+00	2.150E-01	4.833E-02	1.097E-01
PO-218	1.508E+00	2.399E-01	6.562E-02	1.224E-01
RA-224	5.091E+00	1.366E+00	5.504E-01	6.969E-01
RA-226	1.394E+00	2.509E-01	6.108E-02	1.280E-01
AC-228	1.473E+00	4.294E-01	1.419E-01	2.191E-01
RA-228	1.473E+00	4.294E-01	1.419E-01	2.191E-01
TH-228	1.804E+00	2.185E-01	4.912E-02	1.115E-01
TH-230	1.394E+00	2.509E-01	6.108E-02	1.280E-01
TH-232	1.473E+00	4.294E-01	1.419E-01	2.191E-01
TH-234	1.484E+00	1.017E+00	4.990E-01	5.189E-01
U-234	1.394E+00	2.509E-01	6.108E-02	1.280E-01
U-235	-1.444E-02	2.225E-01	1.903E-01	1.135E-01
NP-237	1.251E+00	3.763E-01	1.504E-01	1.920E-01
U-238	1.484E+00	1.017E+00	4.990E-01	5.189E-01
AM-243	4.010E-01	6.450E-02	3.054E-02	3.291E-02
ANH-511	1.499E-01	8.432E-02	3.079E-02	4.302E-02

### ---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	1.744E-01	3.895E-01	3.428E-01	1.987E-01 NOT IDENT.
NA-22	1.079E-02	5.601E-02	4.714E-02	2.857E-02 NOT IDENT.
NA-24	-3.199E+06	3.131E+06	0.000E+00	1.598E+06 SHORT HLIF
AL-26	6.453E-04	3.377E-02	2.818E-02	1.723E-02 NOT IDENT.
TI-44	4.100E-01	5.314E-02	3.255E-02	2.711E-02 FAIL ABUN
SC-46	-5.881E-02	4.253E-02	2.911E-02	2.170E-02 FAIL ABUN
V-48	-3.246E-02	8.926E-02	7.195E-02	4.554E-02 NOT IDENT.
CR-51	-1.683E-01	3.721E-01	3.167E-01	1.899E-01 NOT IDENT.
MN-52	-3.639E-02	2.808E-01	2.331E-01	1.433E-01 NOT IDENT.
MN-54	1.967E-02	4.710E-02	4.184E-02	2.403E-02 NOT IDENT.
CO-56	4.822E-03	4.841E-02	4.181E-02	2.470E-02 NOT IDENT.
CO-57	-2.075E-03	2.446E-02	2.134E-02	1.248E-02 NOT IDENT.
CO-58	-3.630E-02	4.361E-02	3.374E-02	2.225E-02 NOT IDENT.
FE-59	-5.324E-02	1.181E-01	9.317E-02	6.024E-02 NOT IDENT.
CO-60	3.256E-02	4.362E-02	4.111E-02	2.226E-02 NOT IDENT.
ZN-65	1.928E-02	1.348E-01	9.908E-02	6.878E-02 NOT IDENT.
GE-68	1.843E+00	1.502E+00	1.425E+00	7.662E-01 NOT IDENT.
AS-73	2.333E-01	2.190E-01	2.055E-01	1.118E-01 NOT IDENT.
AS-74	3.290E-02	1.134E-01	9.723E-02	5.787E-02 NOT IDENT.
SE-75	-8.069E-03	4.587E-02	3.755E-02	2.340E-02 NOT IDENT.
BR-77	-6.917E+00	1.577E+01	1.276E+01	8.048E+00 FAIL ABUN
SR-82	-4.818E-01	5.232E-01	4.125E-01	2.669E-01 NOT IDENT.
RB-83	-3.916E-02	7.699E-02	6.181E-02	3.928E-02 NOT IDENT.
RB-84	-1.487E-02	7.738E-02	6.416E-02	3.948E-02 NOT IDENT.
KR-85	9.628E+00	9.170E+00	7.542E+00	4.679E+00 NOT IDENT.
SR-85	4.991E-02	4.754E-02	3.910E-02	2.425E-02 NOT IDENT.
RB-86	7.528E-01	9.903E-01	8.994E-01	5.052E-01 NOT IDENT.
Y-88	1.755E-04	4.773E-02	3.960E-02	2.435E-02 NOT IDENT.
ZR-88	-3.743E-02	3.408E-02	2.694E-02	1.739E-02 NOT IDENT.
Y-91	-8.367E+00	2.186E+01	1.430E+01	1.116E+01 NOT IDENT.
NB-94	1.206E-02	4.216E-02	3.748E-02	2.151E-02 NOT IDENT.
NB-95	6.550E-02	6.059E-02	5.106E-02	3.091E-02 NOT IDENT.
NB-95M	-2.587E-03	1.445E-01	1.073E-01	7.370E-02 NOT IDENT.
ZR-95	6.777E-02	9.192E-02	8.418E-02	4.690E-02 NOT IDENT.
NB-97	-2.639E+05	3.288E+05	0.000E+00	1.677E+05 SHORT HLIF
ZR-97	1.046E+07	7.074E+06	0.000E+00	3.609E+06 SHORT HLIF
MO-99	-2.835E-01	1.780E+01	1.539E+01	9.082E+00 NOT IDENT.
TC-99M	-8.510E+16	7.162E+17	0.000E+00	0.000E+00 SHORT HLIF
RH-101	2.172E-02	3.192E-02	2.805E-02	1.628E-02 FAIL ABUN
RH-102	-3.053E-02	3.417E-02	2.682E-02	1.743E-02 FAIL ABUN
RU-103	-3.241E-03	4.455E-02	3.753E-02	2.273E-02 FAIL ABUN
RU-106	2.153E-01	3.716E-01	3.261E-01	1.896E-01 FAIL ABUN
RU-106	2.153E-01	3.710E-01	3.261E-01	1.893E-01 FAIL ABUN
AG-108M	2.012E-02	3.649E-02	3.259E-02	1.862E-02 NOT IDENT.
AG-110M	-2.894E-02	4.212E-02	3.223E-02	2.149E-02 NOT IDENT.
IN-111	5.773E-01	1.465E+00	1.125E+00	7.476E-01 NOT IDENT.
IN-113M	-3.475E-02	4.932E-02	4.040E-02	2.516E-02 NOT IDENT.
SN-113	-3.475E-02	4.932E-02	4.040E-02	2.516E-02 NOT IDENT.
IN-114M	1.462E-02	1.990E-01	1.516E-01	1.015E-01 NOT IDENT.
CD-115	1.297E+01	1.714E+01	1.541E+01	8.745E+00 NOT IDENT.
SN-117M	5.034E-02	5.725E-02	5.131E-02	2.921E-02 NOT IDENT.
SB-122	-8.614E-01	3.139E+00	2.564E+00	1.601E+00 NOT IDENT.
I-123	1.057E+07	2.158E+07	0.000E+00	1.101E+07 SHORT HLIF
TE-123M	1.392E-02	2.842E-02	2.504E-02	1.450E-02 NOT IDENT.
I-124	-4.858E-01	1.018E+00	6.905E-01	5.194E-01 NOT IDENT.
SB-124	-3.562E-02	1.036E-01	8.435E-02	5.284E-02 FAIL ABUN
SB-125	-1.951E-02	1.032E-01	8.738E-02	5.268E-02 FAIL ABUN
TE-125M	3.353E+00	8.809E+00	7.119E+00	4.494E+00 NOT IDENT.
I-126	8.850E-02	2.299E-01	1.972E-01	1.173E-01 NOT IDENT.
SB-126	5.108E-02	1.912E-01	1.498E-01	9.757E-02 FAIL ABUN
SB-127	-1.502E+00	2.191E+00	1.675E+00	1.118E+00 NOT IDENT.
XE-127	2.438E-02	4.959E-02	4.304E-02	2.530E-02 NOT IDENT.
I-131	-4.072E-02	1.271E-01	1.079E-01	6.485E-02 NOT IDENT.
TE-132	1.759E-01	8.767E-01	7.441E-01	4.473E-01 NOT IDENT.
BA-133	3.849E-02	4.967E-02	4.076E-02	2.534E-02 NOT IDENT.
I-133	6.466E+03	1.667E+04	0.000E+00	8.507E+03 SHORT HLIF
CS-134	5.261E-02	6.205E-02	5.692E-02	3.166E-02 NOT IDENT.
CS-135	2.941E-01	1.916E-01	1.572E-01	9.773E-02 NOT IDENT.
I-135	4.096E+16	1.015E+17	0.000E+00	0.000E+00 SHORT HLIF
CS-136	2.918E-02	1.415E-01	1.214E-01	7.221E-02 FAIL ABUN
BA-137M	1.459E-02	4.581E-02	3.869E-02	2.337E-02 NOT IDENT.
CS-137	1.542E-02	4.843E-02	4.090E-02	2.471E-02 NOT IDENT.
CE-139	-2.484E-02	3.033E-02	2.487E-02	1.548E-02 NOT IDENT.
BA-140	-1.833E-02	3.175E-01	2.660E-01	1.620E-01 NOT IDENT.
LA-140	-5.849E-02	1.163E-01	8.918E-02	5.936E-02 FAIL ABUN

CE-141	-1.344E-02	6.737E-02	5.720E-02	3.437E-02	NOT IDENT.
CE-143	1.073E+03	3.927E+02	0.000E+00	2.004E+02	SHORT HLIF
CE-144	-2.237E-02	2.166E-01	1.675E-01	1.105E-01	NOT IDENT.
PM-144	-2.856E-02	4.395E-02	3.616E-02	2.242E-02	NOT IDENT.
PR-144	-1.936E+00	2.980E+00	2.452E+00	1.520E+00	NOT IDENT.
PM-146	2.719E-02	4.651E-02	4.161E-02	2.373E-02	NOT IDENT.
ND-147	-2.511E-01	7.140E-01	5.822E-01	3.643E-01	FAIL ABUN
PM-149	5.730E+00	1.271E+02	1.129E+02	6.485E+01	NOT IDENT.
EU-152	1.765E-02	1.036E-01	9.155E-02	5.288E-02	FAIL ABUN
GD-153	-6.775E-02	7.311E-02	5.447E-02	3.730E-02	FAIL ABUN
EU-154	5.104E-02	1.537E-01	1.316E-01	7.843E-02	NOT IDENT.
TB-160	-4.258E-02	1.604E-01	1.324E-01	8.182E-02	FAIL ABUN
HO-166M	-4.998E-02	7.311E-02	5.948E-02	3.730E-02	NOT IDENT.
TM-171	1.898E+00	1.542E+01	1.250E+01	7.867E+00	NOT IDENT.
LU-176	1.206E-02	2.579E-02	2.334E-02	1.316E-02	FAIL ABUN
LU-177	4.426E+00	1.968E+00	1.261E+00	1.004E+00	FAIL ABUN
LU-177M	3.019E-02	1.879E-01	1.638E-01	9.585E-02	NOT IDENT.
HF-181	1.827E-02	5.360E-02	4.675E-02	2.735E-02	NOT IDENT.
W-181	-1.286E-01	1.924E-01	1.501E-01	9.815E-02	NOT IDENT.
TA-182	-2.411E-02	2.437E-01	1.989E-01	1.244E-01	NOT IDENT.
RE-183	3.841E-03	1.079E-01	9.294E-02	5.506E-02	FAIL ABUN
RE-184	8.450E-02	2.351E-01	2.005E-01	1.200E-01	NOT IDENT.
OS-185	3.120E-02	4.799E-02	4.249E-02	2.448E-02	NOT IDENT.
RE-188	5.511E-02	1.797E-01	1.571E-01	9.170E-02	NOT IDENT.
W-188	-3.886E+00	8.812E+00	6.640E+00	4.496E+00	FAIL ABUN
IR-192	2.227E-02	3.334E-02	3.057E-02	1.701E-02	FAIL ABUN
AU-195	1.587E-01	1.903E-01	1.721E-01	9.711E-02	FAIL ABUN
TL-200	5.256E+01	9.465E+02	0.000E+00	4.829E+02	SHORT HLIF
TL-201	8.614E+00	8.472E+00	7.634E+00	4.322E+00	NOT IDENT.
TL-202	1.777E-02	7.700E-02	6.725E-02	3.929E-02	NOT IDENT.
HG-203	1.664E-02	4.257E-02	3.856E-02	2.172E-02	NOT IDENT.
BI-207	-3.376E-03	6.512E-02	5.417E-02	3.323E-02	FAIL ABUN
TL-207	4.315E-01	7.476E-01	6.056E-01	3.814E-01	FAIL ABUN
PO-209	-6.615E+00	8.852E+00	6.860E+00	4.516E+00	NOT IDENT.
PB-211	5.850E-01	1.116E+00	9.459E-01	5.692E-01	NOT IDENT.
BI-212	8.690E-01	6.730E-01	4.180E-01	3.434E-01	FAIL ABUN
PO-215	4.315E-01	7.476E-01	6.056E-01	3.814E-01	FAIL ABUN
RN-219	-2.024E-01	4.686E-01	3.914E-01	2.391E-01	FAIL ABUN
RN-220	5.618E-01	2.966E+01	2.498E+01	1.513E+01	NOT IDENT.
RA-223	4.315E-01	7.476E-01	6.056E-01	3.814E-01	FAIL ABUN
AC-227	5.091E-01	3.917E-01	3.478E-01	1.999E-01	FAIL ABUN
TH-227	5.091E-01	3.946E-01	3.478E-01	2.013E-01	FAIL ABUN
TH-229	1.812E-02	5.035E-01	4.283E-01	2.569E-01	FAIL ABUN
PA-231	-6.611E-01	1.504E+00	1.295E+00	7.675E-01	FAIL ABUN
TH-231	4.315E-01	7.476E-01	6.056E-01	3.814E-01	FAIL ABUN
U-231	6.991E-02	1.065E+00	8.528E-01	5.435E-01	FAIL ABUN
PA-233	-1.074E-01	6.609E-02	5.125E-02	3.372E-02	FAIL ABUN
PA-234	5.212E-01	3.934E-01	3.673E-01	2.007E-01	FAIL ABUN
PA-234M	1.890E+00	5.040E+00	4.434E+00	2.571E+00	NOT IDENT.
NP-236	-5.976E-02	8.020E-02	6.622E-02	4.092E-02	NOT IDENT.
NP-239	-1.203E-01	1.673E-01	1.412E-01	8.536E-02	FAIL ABUN
AM-241	9.560E-02	6.176E-02	5.383E-02	3.151E-02	NOT IDENT.
CM-243	1.143E-01	1.316E-01	7.312E-02	6.715E-02	FAIL ABUN
AM-246	5.510E-02	1.780E-01	1.540E-01	9.083E-02	NOT IDENT.
CM-247	-3.210E-02	4.319E-02	3.528E-02	2.204E-02	NOT IDENT.
CF-249	5.276E-02	4.471E-02	4.157E-02	2.281E-02	NOT IDENT.
CF-251	-3.643E-02	1.239E-01	1.042E-01	6.323E-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	213.4721
46.50	213.4721
46.50	213.4721
48.70	214.8765
49.72	205.4338
51.35	263.3770
52.39	215.8923
52.97	218.7865
53.15	218.8954
53.44	225.0157
54.07	227.9584
56.28	293.5026
56.28	293.5043
57.37	0.0000
57.53	279.0266
57.53	279.0283
57.60	279.0779
57.98	280.2168
57.98	280.2168
59.32	248.4185
59.32	248.4185
59.40	248.4697
59.54	248.5598
59.72	248.6748
60.01	265.7100
61.10	311.9412
61.14	311.9724
61.30	326.4032
63.00	319.5267
63.29	319.7563
63.29	319.7563
63.58	319.9859
64.28	309.1828
65.12	353.1400
65.20	353.2082
65.20	353.2082
66.05	371.0394
66.72	329.4640
66.83	334.8245
66.91	334.8885
67.20	343.0373
67.20	343.0373
67.75	340.8414
67.85	332.9956
68.90	345.2990
68.90	345.2990
69.30	380.9810
69.67	386.4434
70.82	371.2365
70.82	371.2365
70.83	371.2451
72.80	376.9259
72.87	376.9839
72.87	376.9839
74.67	365.0850
74.81	365.1970
74.81	365.1970
74.81	365.1970
74.81	365.1970
74.81	365.1970
74.81	365.1970
74.81	365.1970
74.97	365.3278
75.28	365.5768
75.70	365.9171
77.11	367.0460
77.11	367.0460

77.11	367.0460
77.11	367.0460
77.11	367.0460
77.11	367.0460
77.11	367.0460
78.38	368.0546
79.62	309.3356
79.80	309.4539
79.80	309.4539
80.11	287.9271
80.18	287.9708
80.30	288.0435
80.30	288.0435
80.57	307.2394
81.00	307.5188
81.07	288.5110
81.07	288.5110
81.07	288.5110
81.07	288.5110
82.60	289.4345
83.37	322.7121
83.78	322.9875
83.78	322.9875
83.78	322.9875
83.78	322.9875
84.21	312.3137
84.90	312.7538
85.43	313.0912
86.29	313.6374
86.50	313.7696
86.54	313.7940
86.59	313.8270
86.72	313.9088
86.79	313.9505
86.94	314.0462
87.30	314.2741
87.30	314.2741
87.30	314.2741
87.30	314.2741
87.30	314.2741
87.30	314.2741
87.30	314.2741
87.57	270.3105
87.88	270.4780
88.03	270.5587
88.36	270.7352
88.47	270.7950
89.95	271.5860
91.11	223.5934
92.29	224.1044
92.38	224.1437
92.38	224.1437
93.35	224.5613
94.00	224.8389
94.67	206.9450
94.67	206.9473
94.90	207.0376
94.90	207.0376
94.90	207.0376
94.90	207.0376
95.87	224.2334
95.87	224.2334
96.73	263.9002
97.43	257.2153
98.44	216.2953
98.44	216.2953
98.88	213.2766
99.55	202.2503
99.55	202.2503
99.86	202.3652
100.00	202.4165
100.10	196.6166
103.18	213.0501
103.76	210.4262
105.00	230.8381
105.31	230.9642
108.00	223.4561
109.28	198.1097



111.00	230.3674
111.00	230.3674
111.76	213.3643
112.95	199.3468
115.19	193.3258
116.30	210.1426
117.00	210.3843
117.00	210.3843
117.66	210.6117
121.11	188.3637
121.62	216.8443
121.78	216.8996
122.06	223.8378
122.32	223.9298
122.32	223.9298
122.32	223.9298
122.32	223.9298
123.07	228.1126
127.23	198.0669
129.76	212.6861
131.20	196.2980
133.02	195.3446
133.54	205.9429
135.34	205.4971
136.00	195.7129
136.25	195.7847
136.48	210.8390
140.51	228.1615
140.51	0.0000
142.18	235.7639
142.65	230.8799
143.76	234.2751
144.24	233.4227
144.24	233.4227
144.24	233.4227
144.24	233.4227
145.22	212.4973
145.44	227.7443
147.16	230.3229
152.43	210.5389
152.70	198.3475
153.22	177.0019
154.21	204.9011
154.21	204.9011
154.21	204.9011
154.21	204.9011
155.03	217.4346
156.02	237.2365
158.56	176.2115
159.00	0.0000
159.00	185.5939
160.31	213.8015
161.27	207.8640
162.32	185.3676
162.64	178.1921
163.35	185.6153
163.89	177.4431
165.85	212.2219
167.43	153.2327
171.28	183.3099
171.86	180.2970
172.10	170.9142
176.55	178.1837
176.60	178.1958
181.06	184.4626
184.41	210.7496
185.71	170.5648
186.00	170.6234
190.27	162.3681
192.34	144.3873
193.63	167.8416
197.04	154.4526
198.01	150.2977
198.60	143.9047
200.40	188.6487
201.83	198.7228
202.84	171.7678
205.31	189.6779

208.36	195.2326
208.81	161.9533
209.75	162.1189
209.75	162.1189
210.97	148.0737
215.65	151.0200
216.55	150.0615
218.09	153.6206
222.10	175.3536
223.80	153.4250
226.40	150.4921
227.00	165.0848
227.08	160.6362
227.20	160.6567
228.16	144.0621
228.18	144.0647
228.18	144.0647
231.56	0.0000
235.69	168.7866
236.00	168.8400
236.00	168.8400
238.63	151.2230
238.63	151.2230
238.63	151.2230
238.63	151.2230
239.00	151.2775
240.98	151.5720
241.98	151.7192
241.98	151.7192
241.98	151.7192
244.69	122.6041
245.39	110.7587
247.94	119.5712
248.90	141.3378
249.79	139.1761
252.40	112.0743
252.85	113.2663
252.85	113.2663
254.15	0.0000
256.20	98.7026
256.20	98.7026
260.50	117.5349
260.90	111.8148
262.80	118.9387
264.65	121.4532
268.24	113.1470
268.79	116.6857
269.46	130.6961
269.46	130.6961
269.46	130.6961
269.46	130.6961
271.23	105.8871
273.65	132.9374
276.40	119.2345
277.35	117.3285
277.60	120.3641
277.60	120.3641
278.00	121.1585
278.60	112.4375
279.20	127.4392
279.53	127.4746
280.46	133.7375
281.68	130.3582
283.67	119.1117
284.30	128.8884
285.00	128.9664
285.90	114.9223
286.10	108.7530
286.10	108.7530
287.40	109.7601
288.45	0.0000
290.67	136.3406
290.80	136.3547
291.72	132.1980
293.26	0.0000
293.70	128.1489
295.21	128.3115
295.21	128.3115

295.21	128.3115
295.96	128.3928
296.50	124.8819
297.23	124.9588
298.57	125.0998
299.80	115.9233
299.80	115.9233
300.09	115.9530
300.09	115.9530
300.09	115.9530
300.09	115.9530
300.12	115.9550
301.29	98.8725
302.84	109.0422
303.76	114.8691
303.91	114.8828
304.40	117.8029
304.40	117.8029
304.84	139.4020
306.84	105.2636
308.46	90.0864
311.98	128.2888
316.51	80.6997
318.01	95.3213
319.02	101.7581
319.41	104.5153
320.08	99.1139
323.87	91.9329
323.87	91.9329
323.87	91.9329
323.87	91.9329
325.23	108.1003
328.77	105.4688
333.44	90.0447
334.20	104.4390
334.20	104.4390
334.30	104.4477
338.28	103.2893
338.28	103.2893
338.28	103.2893
338.28	103.2893
338.32	103.2927
338.32	103.2927
338.32	103.2927
340.50	124.1563
340.57	124.1625
344.27	100.0519
345.85	90.5245
350.59	0.0000
351.07	102.4217
351.92	102.4855
351.92	102.4855
351.92	102.4855
355.39	0.0000
356.01	77.7486
364.48	83.6806
366.43	87.5636
367.43	83.8571
367.94	0.0000
369.80	95.3240
374.96	96.6195
383.85	81.9688
387.95	77.4207
388.63	74.5877
391.69	98.7000
391.69	98.7000
392.90	102.6179
398.62	94.3483
400.65	89.6567
401.10	96.4340
401.81	99.3742
402.60	109.0791
404.84	86.0395
410.95	79.5914
411.60	90.3066
413.65	76.8157
414.70	67.1375
415.30	77.8711

415.76	76.9206
417.63	0.0000
418.52	83.8860
423.70	79.2721
427.08	98.0774
427.89	82.4273
432.53	68.8913
433.93	69.9372
439.47	64.2492
439.56	64.2522
439.89	61.2999
443.98	72.3584
444.90	80.3338
445.03	80.3400
445.03	80.3400
445.03	80.3400
445.03	80.3400
453.90	59.8343
463.38	80.2344
468.07	61.6852
473.00	64.5547
475.06	84.8293
475.35	86.8648
476.78	74.8062
477.59	71.8071
477.96	75.8686
482.03	77.0623
484.57	68.0367
487.03	70.1666
490.36	0.0000
492.35	58.1402
497.08	59.3187
507.63	0.0000
510.53	0.0000
510.84	82.4506
511.00	82.4579
511.85	82.4969
511.85	82.4969
513.99	62.7710
513.99	62.7710
520.41	63.2004
520.65	63.2078
527.90	52.0142
528.96	0.0000
529.64	53.1042
529.87	0.0000
531.02	68.7735
537.32	61.6864
543.00	49.2878
546.56	0.0000
549.76	56.8295
552.65	59.0232
555.20	60.1572
563.23	59.3462
563.90	63.6072
568.70	57.3865
569.32	59.5308
569.50	63.7885
569.67	69.1101
573.80	67.1240
574.00	61.8020
574.64	59.6914
578.91	56.4013
579.30	0.0000
583.14	61.0165
585.48	54.8719
591.81	49.4534
592.07	53.7598
593.00	51.6328
595.88	56.0149
600.56	69.0996
602.52	0.0000
602.71	60.5254
602.71	60.5254
603.60	57.0910
604.41	55.3828
604.70	55.3906
609.31	49.8759

609.31	49.8759
609.31	49.8759
609.31	49.8759
610.33	49.8998
612.46	31.2741
614.37	53.9094
618.01	56.6163
621.84	45.8119
621.84	45.8119
631.29	67.9279
633.02	49.3423
633.10	49.3451
634.78	62.5525
635.90	50.5076
636.97	47.2373
645.85	33.0917
646.12	38.6113
656.30	59.8486
657.75	59.8881
657.90	0.0000
661.65	53.3276
661.65	53.3276
664.57	0.0000
666.33	50.1004
666.33	50.1004
675.00	52.5293
677.61	49.2328
685.20	67.3608
692.80	61.2764
695.00	65.8461
696.49	73.1076
696.49	73.1076
697.00	70.4171
697.49	61.4009
698.33	58.7142
698.50	62.3325
699.00	66.8620
702.63	60.6321
706.10	58.9110
706.58	0.0000
706.67	64.3645
709.31	49.0074
711.68	61.7761
713.82	43.6465
717.42	42.8026
720.50	42.5537
721.93	0.0000
722.20	47.1471
722.78	47.1584
722.78	47.1584
722.89	47.1610
722.95	51.7249
723.30	51.7332
724.18	51.7526
727.18	48.4647
733.00	39.2850
735.90	43.1342
739.58	47.7953
742.81	47.8588
744.21	44.2031
747.13	47.9438
751.79	56.3490
752.31	44.3496
753.82	43.4520
755.35	44.4035
756.15	48.1203
756.87	52.7626
763.93	44.8676
765.79	47.9973
766.42	51.1073
766.84	58.5503
776.49	69.0390
778.00	57.8783
778.57	57.8904
778.89	53.2288
783.80	44.9109
785.46	51.4940
792.07	49.7496

795.84	51.7035
796.30	60.1750
798.80	69.6442
801.93	53.7103
805.60	38.6877
810.29	49.1563
810.76	43.4922
815.85	35.9979
817.79	35.0768
818.51	36.9833
819.60	34.1525
826.30	38.0430
828.27	0.0000
831.60	58.1317
831.96	60.0453
834.83	47.7063
836.80	0.0000
846.75	42.1674
848.13	32.6005
856.28	0.0000
856.80	36.8734
860.37	43.3422
867.32	35.7272
867.82	37.6651
871.10	36.7429
873.19	32.9001
874.81	33.8875
875.33	0.0000
876.40	35.8447
879.36	36.8524
880.27	32.0139
880.51	32.9865
881.50	30.0865
883.24	26.2208
884.67	19.4326
889.25	40.8751
896.60	43.9091
898.02	45.8835
899.00	38.0869
903.28	32.1360
911.07	45.1128
911.07	45.1128
911.07	45.1128
919.63	33.8802
920.93	35.4261
925.00	37.4471
925.24	35.4788
926.50	33.5227
935.52	56.3738
937.48	51.4630
944.10	41.6596
946.00	28.7833
949.00	36.7606
962.29	43.2445
964.01	31.9531
966.15	31.9758
968.20	31.9969
969.11	32.0070
969.11	32.0070
969.11	32.0070
977.42	38.8645
980.50	33.1313
983.50	38.1883
989.30	25.1715
996.32	29.2655
1001.03	28.2994
1001.68	32.3492
1004.76	39.4646
1021.30	0.0000
1024.50	0.0000
1034.80	45.9712
1036.00	31.6812
1037.82	29.6542
1038.57	30.6841
1038.76	0.0000
1045.16	32.7969
1046.59	39.9883
1048.07	34.8782

1050.47	33.8782
1050.47	33.8782
1062.04	42.2412
1063.62	37.1074
1076.63	27.9413
1077.35	23.8075
1078.86	34.1730
1085.78	32.1701
1099.22	42.7177
1112.02	40.0928
1112.84	43.5893
1115.52	43.6239
1120.29	19.2214
1120.29	19.2214
1120.29	19.2214
1120.29	19.2214
1120.51	19.2222
1121.28	19.2267
1124.00	0.0000
1129.67	22.0777
1131.51	0.0000
1147.95	0.0000
1167.94	38.2658
1173.22	31.9365
1175.09	31.9526
1177.93	25.5832
1189.05	40.6329
1204.90	28.6393
1205.75	0.0000
1213.00	34.0865
1221.42	43.1543
1230.97	54.0845
1235.34	46.5672
1236.41	0.0000
1238.25	35.7667
1246.25	36.9302
1260.41	0.0000
1271.85	34.9953
1274.45	29.5471
1274.54	31.7372
1291.56	15.3897
1298.22	0.0000
1312.09	34.9957
1325.50	25.8752
1325.50	25.8752
1332.49	15.7376
1333.61	20.3726
1360.21	17.7128
1362.66	0.0000
1365.15	19.6012
1368.21	27.0884
1368.53	0.0000
1376.25	21.5269
1384.27	22.5078
1394.10	17.8612
1395.20	16.9263
1407.95	17.9215
1434.06	14.2383
1436.60	18.0460
1457.56	0.0000
1460.81	16.2391
1489.15	26.9245
1509.49	11.5928
1596.49	19.7005
1620.62	13.8627
1678.03	0.0000
1691.02	12.0605
1691.02	12.0605
1706.46	0.0000
1750.46	0.0000
1764.49	6.9958
1764.49	6.9958
1764.49	6.9958
1764.49	6.9958
1770.23	18.3853
1771.40	8.1732
1791.20	0.0000
1808.65	7.2042

1836.01

11.3818



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148013

Total Uranium Activity	4.4086E+00	ug/g
Total Uranium Counting Unc.	3.0274E+00	ug/g
Total Uranium Tpu	1.5446E-06	ug/g
Total Uranium Mda	1.4871E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148013
*  ANALYST       : MXR1                             DETECTOR    : GAM17
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 15:58:12.24          SAMPLE ALQT: 127.270 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.738E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.385E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.845E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.859E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 18:02:21.79

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148014.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:58:41
Sample ID          : G244148014      Sample quantity   : 1.17330E+02 GRAM
Detector name      : GAM20           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:32.93 0.5%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 940268          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	46.74*	33	349	0.91	93.51	90	8	4.58E-03	103.1	
2	0	63.39*	63	512	0.75	126.77	123	8	8.79E-03	64.9	
3	3	74.90*	475	408	1.00	149.74	145	15	6.59E-02	8.2	5.87E-01
4	3	77.15*	718	381	0.97	154.25	145	15	9.98E-02	5.9	
5	6	84.47*	199	352	1.83	168.85	165	13	2.76E-02	17.8	9.92E-01
6	6	87.24	272	331	1.03	174.38	165	13	3.78E-02	12.2	
7	4	89.97	125	228	0.97	179.85	178	13	1.74E-02	19.1	9.45E-01
8	4	92.89*	292	423	1.34	185.66	178	13	4.05E-02	14.4	
9	0	128.87	44	392	1.21	257.53	253	9	6.11E-03	82.3	
10	0	185.91*	248	388	1.34	371.44	366	12	3.44E-02	17.7	
11	0	209.79	137	339	1.14	419.14	413	12	1.91E-02	28.3	
12	5	238.54*	1322	186	1.12	476.57	472	16	1.84E-01	3.3	1.89E+00
13	5	241.49	333	243	1.67	482.47	472	16	4.62E-02	13.2	
14	0	270.20	139	260	1.76	539.81	535	13	1.93E-02	25.3	
15	0	277.91	49	227	1.46	555.22	549	11	6.77E-03	61.7	
16	0	295.19*	447	228	1.11	589.74	583	13	6.20E-02	8.5	
17	0	299.96	97	123	1.24	599.26	596	7	1.34E-02	21.6	
18	0	327.82	69	141	1.03	654.92	652	8	9.59E-03	31.9	
19	0	338.26*	279	144	1.43	675.78	671	12	3.88E-02	10.6	
20	0	351.80	792	141	1.17	702.83	698	12	1.10E-01	4.6	
21	0	463.04	90	90	1.22	925.11	920	10	1.25E-02	22.4	
22	0	510.71*	39	150	1.32	1020.38	1015	12	5.36E-03	76.5	
23	0	583.13*	386	93	1.40	1165.12	1160	12	5.36E-02	7.3	
24	0	609.25*	495	103	1.26	1217.33	1212	12	6.87E-02	6.2	
25	0	660.84	96	102	1.26	1320.46	1315	13	1.33E-02	23.9	
26	0	727.36*	89	103	1.42	1453.45	1448	14	1.23E-02	26.6	
27	1	768.31	41	57	1.73	1535.31	1527	28	5.75E-03	38.5	1.59E+00
28	1	772.31	38	36	1.74	1543.31	1527	28	5.30E-03	37.4	
29	0	794.72*	40	73	1.49	1588.14	1581	14	5.57E-03	48.4	
30	0	861.37	61	81	1.85	1721.41	1712	18	8.41E-03	37.9	
31	0	911.22	286	50	1.98	1821.11	1815	16	3.97E-02	8.4	
32	1	964.57	62	50	1.84	1927.82	1922	19	8.59E-03	23.9	1.59E+00
33	1	968.76	161	33	1.70	1936.20	1922	19	2.24E-02	10.4	
34	0	1120.46	131	44	1.40	2239.69	2234	14	1.82E-02	13.7	
35	0	1175.34	18	32	0.88	2349.49	2342	10	2.56E-03	62.1	
36	0	1238.61	48	40	1.29	2476.11	2471	11	6.68E-03	29.5	
37	0	1425.26	27	4	0.51	2849.71	2842	16	3.81E-03	25.0	
38	0	1460.47	939	11	1.61	2920.20	2914	14	1.30E-01	3.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1588.07	33	3	1.26	3175.72	3171	10	4.63E-03	19.5	
40	0	1729.15	30	3	1.48	3458.27	3453	11	4.20E-03	21.1	
41	0	1763.96	109	7	1.71	3528.01	3521	14	1.51E-02	10.9	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 18:02:24

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148014.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 4-JAN-2010 12:00:00 Acquisition date : 20-JAN-2010 15:58:41  
 Sample ID : G244148014 Sample quantity : 117.33 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA20 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:32.93 0.5%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.247E+01	2.469E+00	4.309E-01	3.758E-02	52.139
CD-109	+	88.03	*	3.458E+00	9.045E-01	1.126E+00	1.064E-01	3.072
SN-126	+	64.28		4.537E-01	5.924E-01	6.752E-01	9.776E-02	0.672
	+	86.94		1.411E+00	6.796E-01	4.544E-01	1.886E-01	3.105
	+	87.57	*	3.394E-01	8.876E-02	1.108E-01	1.042E-02	3.064
BA-137M	+	661.65	*	1.402E-01	6.841E-02	6.183E-02	6.205E-03	2.268
CS-137	+	661.65	*	1.482E-01	7.232E-02	6.536E-02	6.569E-03	2.268
HG-203		70.83		-5.170E-01	1.028E+00	1.466E+00	1.915E-01	-0.353
		72.87		9.597E-01	6.013E-01	9.215E-01	1.174E-01	1.041
		82.60		7.944E-01	1.152E+00	1.585E+00	2.199E-01	0.501
	+	279.20	*	5.442E-02	6.739E-02	6.558E-02	6.670E-03	0.830
TL-208	+	277.35		4.861E-01	6.034E-01	5.600E-01	7.446E-02	0.868
	+	510.84		1.908E-01	2.930E-01	2.368E-01	2.960E-02	0.806
	+	583.14	*	5.439E-01	9.671E-02	5.674E-02	5.833E-03	9.585
	+	860.37		7.960E-01	6.096E-01	4.547E-01	4.819E-02	1.751
BI-210	+	46.50	*	1.387E+00	2.863E+00	3.243E+00	3.007E-01	0.428
PB-210	+	46.50	*	1.387E+00	2.863E+00	3.243E+00	3.007E-01	0.428
PO-210	+	46.50	*	1.387E+00	2.863E+00	3.243E+00	2.720E-01	0.428
BI-211		72.87		4.750E+00	2.938E+00	4.561E+00	3.602E-01	1.041
	+	351.07	*	4.932E+00	6.570E-01	3.187E-01	3.053E-02	15.475
PB-212	+	74.81		2.347E+00	4.830E-01	4.678E-01	5.774E-02	5.016
	+	77.11		2.041E+00	2.950E-01	2.692E-01	2.226E-02	7.581
	+	87.30		1.570E+00	4.395E-01	5.132E-01	7.034E-02	3.058
	+	238.63	*	1.807E+00	2.261E-01	8.915E-02	9.481E-03	20.264
	+	300.09		2.029E+00	9.056E-01	1.147E+00	1.312E-01	1.768
PO-212	+	74.81		2.347E+00	4.830E-01	4.678E-01	5.774E-02	5.016
	+	77.11		2.041E+00	2.950E-01	2.692E-01	2.226E-02	7.581
	+	87.30		1.570E+00	4.395E-01	5.132E-01	7.034E-02	3.058
		115.19		4.796E-01	3.476E+00	5.631E+00	4.729E-01	0.085
	+	238.63	*	1.807E+00	2.261E-01	8.915E-02	9.481E-03	20.264
	+	300.09		2.029E+00	9.056E-01	1.147E+00	1.312E-01	1.768
BI-214	+	609.31	*	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
	+	1120.29		1.785E+00	5.251E-01	3.983E-01	4.309E-02	4.482
	+	1764.49		2.007E+00	4.664E-01	2.496E-01	2.050E-02	8.043

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-214	+	74.81		4.044E+00	7.997E-01	8.061E-01	8.825E-02	5.016
	+	77.11		3.499E+00	5.716E-01	4.615E-01	5.190E-02	7.581
	+	87.30		2.689E+00	7.332E-01	8.792E-01	1.067E-01	3.058
	+	241.98		2.731E+00	7.831E-01	5.367E-01	6.002E-02	5.088
	+	295.21		1.648E+00	3.403E-01	1.919E-01	2.239E-02	8.589
PO-214	+	351.92	*	1.716E+00	2.454E-01	1.083E-01	1.180E-02	15.847
	+	74.81		4.044E+00	7.997E-01	8.061E-01	8.825E-02	5.016
	+	77.11		3.499E+00	5.716E-01	4.615E-01	5.190E-02	7.581
	+	87.30		2.689E+00	7.332E-01	8.792E-01	1.067E-01	3.058
	+	241.98		2.731E+00	7.831E-01	5.367E-01	6.002E-02	5.088
PO-216	+	295.21		1.648E+00	3.403E-01	1.919E-01	2.239E-02	8.589
	+	351.92	*	1.716E+00	2.454E-01	1.083E-01	1.180E-02	15.847
	+	74.81		2.347E+00	4.830E-01	4.678E-01	5.774E-02	5.016
	+	77.11		2.041E+00	2.950E-01	2.692E-01	2.226E-02	7.581
	+	87.30		1.570E+00	4.395E-01	5.132E-01	7.034E-02	3.058
PO-218	+	238.63	*	1.807E+00	2.261E-01	8.915E-02	9.481E-03	20.264
	+	300.09		2.029E+00	9.056E-01	1.147E+00	1.312E-01	1.768
	+	74.81		4.044E+00	7.997E-01	8.061E-01	8.825E-02	5.016
	+	77.11		3.499E+00	5.716E-01	4.615E-01	5.190E-02	7.581
	+	87.30		2.689E+00	7.332E-01	8.792E-01	1.067E-01	3.058
RA-224	+	241.98		2.731E+00	7.831E-01	5.367E-01	6.002E-02	5.088
	+	295.21		1.648E+00	3.403E-01	1.919E-01	2.239E-02	8.589
	+	351.92	*	1.716E+00	2.454E-01	1.083E-01	1.180E-02	15.847
	+	240.98	*	5.178E+00	1.456E+00	1.014E+00	9.805E-02	5.105
	+	609.31	*	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
RA-226	+	1120.29		1.785E+00	5.251E-01	3.983E-01	4.309E-02	4.482
	+	1764.49		2.007E+00	4.664E-01	2.496E-01	2.050E-02	8.043
	+	338.32		1.916E+00	8.916E-01	3.504E-01	1.451E-01	5.469
	+	911.07	*	1.773E+00	3.687E-01	2.027E-01	2.483E-02	8.746
	+	969.11		1.762E+00	5.561E-01	2.786E-01	6.611E-02	6.325
RA-228	+	338.32		1.916E+00	8.916E-01	3.504E-01	1.451E-01	5.469
	+	911.07	*	1.773E+00	3.687E-01	2.027E-01	2.483E-02	8.746
	+	969.11		1.762E+00	5.561E-01	2.786E-01	6.611E-02	6.325
	+	74.81		2.385E+00	4.382E-01	4.754E-01	3.869E-02	5.016
	+	77.11		2.074E+00	2.998E-01	2.736E-01	2.263E-02	7.581
TH-228	+	87.30		1.595E+00	4.172E-01	5.216E-01	4.889E-02	3.058
	+	238.63	*	1.836E+00	2.298E-01	9.060E-02	9.635E-03	20.264
	+	300.09		2.062E+00	1.515E+00	1.166E+00	6.933E-01	1.768
	+	609.31	*	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
	+	1120.29		1.785E+00	5.251E-01	3.983E-01	4.309E-02	4.482
TH-230	+	1764.49		2.007E+00	4.664E-01	2.496E-01	2.050E-02	8.043
	+	338.32		1.916E+00	4.440E-01	3.504E-01	3.283E-02	5.469
	+	911.07	*	1.773E+00	3.687E-01	2.027E-01	2.483E-02	8.746
	+	969.11		1.762E+00	5.561E-01	2.786E-01	6.611E-02	6.325
	+	63.29	*	1.146E+00	1.501E+00	1.644E+00	2.857E-01	0.697
TH-232	+	92.38		2.408E+00	8.221E-01	6.427E-01	1.178E-01	3.746
	+	609.31	*	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
	+	1120.29		1.785E+00	5.251E-01	3.983E-01	4.309E-02	4.482
	+	1764.49		2.007E+00	4.664E-01	2.496E-01	2.050E-02	8.043
	+	63.29	*	1.146E+00	1.501E+00	1.644E+00	2.857E-01	0.697
U-234	+	92.38		2.408E+00	8.221E-01	6.427E-01	1.178E-01	3.746
	+	609.31	*	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
	+	1120.29		1.785E+00	5.251E-01	3.983E-01	4.309E-02	4.482
	+	1764.49		2.007E+00	4.664E-01	2.496E-01	2.050E-02	8.043
	+	63.29	*	1.146E+00	1.501E+00	1.644E+00	2.857E-01	0.697

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	+	86.50	*	9.967E-01	3.320E-01	3.219E-01	7.284E-02	3.096
		95.87		-9.889E-01	1.024E+00	1.359E+00	3.362E-01	-0.728
U-238	+	63.29	*	1.146E+00	1.501E+00	1.644E+00	2.857E-01	0.697
	+	92.38		2.408E+00	7.275E-01	6.427E-01	5.875E-02	3.746
AM-243	+	74.67	*	3.805E-01	6.977E-02	7.601E-02	6.118E-03	5.006
	+	86.72		3.737E+01	9.775E+00	1.206E+01	1.121E+00	3.100
		117.66		-1.379E+00	3.625E+00	5.725E+00	4.793E-01	-0.241
		142.18		-2.379E+00	1.796E+01	2.851E+01	2.407E+00	-0.083
ANH-511	+	511.00	*	4.121E-02	6.320E-02	5.116E-02	4.767E-03	0.806

---- 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	*	2.666E-01	3.312E-01	5.679E-01	5.520E-02	0.469
NA-22		1274.54	*	-1.925E-02	3.958E-02	5.967E-02	4.943E-03	-0.323
NA-24		1368.53	*	5.835E-01	3.958E-02	Half-Life too short		
AL-26		1129.67		8.259E-01	1.507E+00	2.596E+00	2.199E-01	0.318
		1808.65	*	-1.957E-04	2.504E-02	4.109E-02	3.338E-03	-0.005
TI-44		67.85		2.847E-02	4.064E-02	6.509E-02	4.897E-03	0.437
	+	78.38	*	3.766E-01	5.444E-02	7.434E-02	6.239E-03	5.066
SC-46		889.25	*	2.113E-02	3.632E-02	6.344E-02	6.324E-03	0.333
	+	1120.51		3.082E-01	8.835E-02	1.381E-01	1.181E-02	2.232
V-48		944.10		1.497E-01	9.354E-01	1.563E+00	1.525E-01	0.096
		983.50	*	5.912E-02	6.769E-02	1.210E-01	1.156E-02	0.489
		1312.09		2.257E-02	8.934E-02	1.479E-01	1.234E-02	0.153
CR-51		320.08	*	8.333E-02	3.772E-01	6.331E-01	6.347E-02	0.132
MN-52		744.21		4.348E-02	2.685E-01	4.545E-01	4.617E-02	0.096
		848.13		9.777E-01	7.122E+00	1.196E+01	1.205E+00	0.082
		935.52		2.777E-01	2.751E-01	4.948E-01	4.847E-02	0.561
		1246.25		-6.212E+00	8.374E+00	1.196E+01	9.825E-01	-0.519
		1333.61		1.563E+00	5.799E+00	9.637E+00	8.074E-01	0.162
		1434.06	*	2.807E-02	2.135E-01	3.496E-01	2.959E-02	0.080
MN-54		834.83	*	-2.271E-02	3.810E-02	5.984E-02	6.045E-03	-0.380
CO-56		846.75	*	1.202E-03	3.791E-02	6.302E-02	6.351E-03	0.019
		977.42		2.069E+00	2.635E+00	4.685E+00	4.493E-01	0.442
		1037.82		-1.221E-01	3.059E-01	4.784E-01	4.616E-02	-0.255
	+	1175.09		1.997E+00	2.485E+00	3.569E+00	2.871E-01	0.560
	+	1238.25		1.850E-01	1.104E-01	1.694E-01	1.433E-02	1.092
		1360.21		1.110E+00	9.279E-01	1.774E+00	1.492E-01	0.626
		1771.40		-2.553E-01	2.038E-01	2.277E-01	1.867E-02	-1.121
CO-57		122.06	*	5.731E-03	2.436E-02	3.957E-02	3.303E-03	0.145
		136.48		-2.575E-02	2.150E-01	3.420E-01	3.096E-02	-0.075
CO-58		810.76	*	-4.599E-02	3.603E-02	5.132E-02	5.211E-03	-0.896
FE-59		142.65		1.617E+00	2.874E+00	4.645E+00	3.923E-01	0.348
		192.34		1.016E-01	9.172E-01	1.513E+00	2.077E-01	0.067
		1099.22	*	2.472E-03	8.383E-02	1.370E-01	1.292E-02	0.018
		1291.56		2.045E-02	1.104E-01	1.821E-01	1.732E-02	0.112
CO-60		1173.22		2.065E-02	4.412E-02	7.485E-02	6.017E-03	0.276

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49		*	1.264E-02	3.919E-02	6.558E-02	5.494E-03	0.193
ZN-65	1115.52		*	4.122E-02	8.652E-02	1.310E-01	1.127E-02	0.315
GE-68	1077.35		*	4.234E-01	1.168E+00	1.979E+00	1.766E-01	0.214
AS-73	53.44		*	3.135E-02	5.437E-01	8.991E-01	6.674E-02	0.035
AS-74	595.88		*	9.884E-03	8.915E-02	1.442E-01	1.412E-02	0.069
	634.78			1.213E-01	3.736E-01	6.449E-01	6.415E-02	0.188
SE-75	66.05			-5.463E+00	4.598E+00	6.336E+00	5.994E-01	-0.862
	96.73			-1.142E+00	8.395E-01	1.098E+00	1.516E-01	-1.040
	121.11			9.148E-02	1.299E-01	2.151E-01	2.368E-02	0.425
	136.00			-5.491E-03	4.055E-02	6.448E-02	5.448E-03	-0.085
	198.60			5.240E-01	1.765E+00	2.988E+00	3.007E-01	0.175
	264.65		*	-1.972E-02	4.557E-02	6.862E-02	6.794E-03	-0.287
	279.53			5.029E-02	1.210E-01	1.828E-01	1.872E-02	0.275
	303.91			4.157E-01	2.094E+00	3.111E+00	3.849E-01	0.134
	400.65			2.590E-01	2.635E-01	4.564E-01	5.009E-02	0.567
BR-77	+ 87.88			1.013E+03	2.650E+02	4.346E+02	4.105E+01	2.331
	+ 200.40			-9.841E+01	2.118E+02	3.510E+02	3.228E+01	-0.280
	+ 239.00			3.939E+02	4.604E+01	5.564E+01	5.367E+00	7.081
	249.79			-1.926E+01	8.346E+01	1.382E+02	1.347E+01	-0.139
	281.68			1.843E+01	1.299E+02	1.927E+02	1.917E+01	0.096
	297.23			3.565E+02	1.166E+02	1.603E+02	1.577E+01	2.224
	303.76			6.855E+01	2.420E+02	3.620E+02	3.542E+01	0.189
	439.47			4.222E+01	1.832E+02	3.039E+02	2.670E+01	0.139
	484.57			2.677E+01	3.000E+02	4.898E+02	4.475E+01	0.055
	520.65		*	3.850E+00	1.349E+01	2.230E+01	2.092E+00	0.173
	574.64			-2.809E+02	2.942E+02	4.307E+02	4.172E+01	-0.652
	578.91			1.454E+01	1.297E+02	1.839E+02	1.785E+01	0.079
	585.48			1.337E+03	3.465E+02	5.997E+02	5.840E+01	2.230
	755.35			1.569E+02	2.057E+02	3.654E+02	3.713E+01	0.429
	817.79			6.941E+01	1.769E+02	3.040E+02	3.079E+01	0.228
SR-82	698.33			-2.055E+01	3.893E+01	6.239E+01	6.308E+00	-0.329
	776.49		*	-4.305E-01	4.291E-01	5.319E-01	5.405E-02	-0.809
	1395.20			2.831E+00	1.090E+01	1.887E+01	1.592E+00	0.150
RB-83	520.41		*	2.794E-02	6.551E-02	1.096E-01	1.028E-02	0.255
	529.64			2.630E-02	1.027E-01	1.693E-01	1.597E-02	0.155
	552.65			4.204E-02	1.926E-01	3.158E-01	3.022E-02	0.133
RB-84	881.50		*	-1.509E-03	5.779E-02	9.525E-02	9.518E-03	-0.016
KR-85	513.99		*	6.689E+00	8.369E+00	1.271E+01	1.186E+00	0.526
SR-85	513.99		*	3.468E-02	4.339E-02	6.587E-02	6.150E-03	0.526
RB-86	1076.63		*	3.157E-01	7.812E-01	1.329E+00	1.186E-01	0.238
Y-88	898.02			1.331E-02	3.802E-02	6.499E-02	6.485E-03	0.205
	1836.01		*	-7.253E-03	3.258E-02	5.101E-02	4.116E-03	-0.142
ZR-88	392.90		*	-5.862E-03	3.048E-02	4.933E-02	4.126E-03	-0.119
Y-91	1204.90		*	1.751E+00	1.718E+01	2.848E+01	2.313E+00	0.061
NB-94	702.63		*	-2.422E-02	3.539E-02	5.618E-02	5.684E-03	-0.431
	871.10			-3.044E-02	3.076E-02	4.502E-02	4.512E-03	-0.676
NB-95	765.79		*	7.415E-02	5.159E-02	8.491E-02	8.630E-03	0.873
NB-95M	235.69		*	2.945E-02	1.338E-01	2.010E-01	2.159E-02	0.147
ZR-95	724.18			6.764E-02	9.906E-02	1.553E-01	1.675E-02	0.435



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	756.15	*		2.403E-02	6.520E-02	1.123E-01	1.226E-02	0.214
	657.90	*		2.822E-01	6.520E-02	Half-Life	too short	
ZR-97	1024.50			9.700E+00	6.520E-02	Half-Life	too short	
	254.15			1.116E+00	6.520E-02	Half-Life	too short	
	355.39			1.813E-02	6.520E-02	Half-Life	too short	
	507.63	*		2.424E+00	6.520E-02	Half-Life	too short	
	602.52			-1.969E+00	6.520E-02	Half-Life	too short	
	1021.30			4.274E+00	6.520E-02	Half-Life	too short	
	1147.95			-5.407E+00	6.520E-02	Half-Life	too short	
MO-99	1362.66			4.467E+00	6.520E-02	Half-Life	too short	
	1750.46			2.103E+01	6.520E-02	Half-Life	too short	
	140.51			-1.245E+01	3.541E+01	5.450E+01	1.506E+01	-0.228
	181.06			-2.203E+01	2.603E+01	3.397E+01	6.264E+00	-0.649
	366.43			-8.617E+01	1.032E+02	1.592E+02	1.416E+01	-0.541
	739.58	*		4.155E+00	1.521E+01	2.596E+01	4.181E+00	0.160
	778.00			-2.765E+00	4.778E+01	6.865E+01	6.976E+00	-0.040
TC-99M	140.51	*		-2.522E+11	4.778E+01	Half-Life	too short	
RH-101	127.23			2.018E-02	3.494E-02	5.157E-02	4.302E-03	0.391
	198.01	*		2.760E-03	3.206E-02	5.382E-02	4.933E-03	0.051
RH-102	325.23			4.002E-02	2.312E-01	3.414E-01	3.260E-02	0.117
	418.52			1.505E-01	2.717E-01	4.615E-01	3.970E-02	0.326
	475.06	*		-4.882E-03	3.029E-02	4.856E-02	4.403E-03	-0.101
	631.29			4.988E-02	5.582E-02	9.576E-02	9.512E-03	0.521
	697.49			5.979E-03	8.334E-02	1.396E-01	1.411E-02	0.043
	766.84	+		1.831E-01	1.421E-01	2.286E-01	2.323E-02	0.801
	1046.59			4.450E-02	1.097E-01	1.869E-01	1.711E-02	0.238
RU-103	1112.84			5.051E-03	2.198E-01	3.378E-01	2.913E-02	0.015
	497.08	*		-4.183E-03	4.060E-02	6.516E-02	9.472E-03	-0.064
RH-106	610.33	+		1.444E+01	3.080E+00	3.222E+00	5.592E-01	4.481
	511.85	+		2.062E-01	3.163E-01	4.318E-01	4.026E-02	0.478
RU-106	621.84	*		-7.228E-03	3.157E-01	5.030E-01	7.151E-02	-0.014
	1050.47			-6.570E-01	2.343E+00	3.717E+00	3.393E-01	-0.177
	511.85	+		2.062E-01	3.163E-01	4.318E-01	4.026E-02	0.478
AG-108M	621.84	*		-7.228E-03	3.157E-01	5.030E-01	4.979E-02	-0.014
	1050.47			-6.570E-01	2.343E+00	3.717E+00	3.393E-01	-0.177
	433.93	*		-3.716E-03	3.059E-02	4.943E-02	4.486E-03	-0.075
AG-110M	614.37			3.970E-02	3.906E-02	6.131E-02	6.232E-03	0.647
	722.95			1.093E-02	4.310E-02	6.468E-02	6.747E-03	0.169
	657.75	*		3.527E-02	3.566E-02	5.807E-02	5.949E-03	0.607
IN-111	677.61			2.195E-02	3.067E-01	5.181E-01	5.327E-02	0.042
	706.67			-4.429E-02	2.166E-01	3.574E-01	3.691E-02	-0.124
	763.93			1.889E-01	1.793E-01	2.901E-01	3.008E-02	0.651
	884.67			-3.360E-02	3.982E-02	5.858E-02	5.989E-03	-0.573
	937.48			-1.669E-01	1.152E-01	1.597E-01	1.607E-02	-1.045
	1384.27			-1.112E-01	1.493E-01	2.241E-01	1.945E-02	-0.496
	171.28			-8.666E-01	1.256E+00	1.912E+00	1.683E-01	-0.453
IN-113M	245.39	*		6.757E-01	1.359E+00	2.082E+00	2.022E-01	0.325
SN-113	391.69	*		-1.541E-02	4.448E-02	7.121E-02	6.143E-03	-0.216
SN-113	391.69	*		-1.541E-02	4.448E-02	7.121E-02	6.143E-03	-0.216

---- 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	*		1.025E-02	1.887E-01	2.837E-01	2.570E-02	0.036
CD-115	260.90			1.102E+02	1.727E+02	2.980E+02	2.932E+01	0.370
	492.35			-7.751E+00	4.855E+01	7.758E+01	7.131E+00	-0.100
	527.90	*		3.906E+00	1.366E+01	2.259E+01	2.130E+00	0.173
SN-117M	156.02			6.368E-01	2.352E+00	3.791E+00	3.259E-01	0.168
	158.56	*		-7.682E-03	5.711E-02	9.018E-02	7.783E-03	-0.085
SB-122	563.90	*		4.284E-01	2.635E+00	4.292E+00	4.134E-01	0.100
	692.80			-9.197E+00	5.889E+01	9.766E+01	9.865E+00	-0.094
I-123	159.00	*		-3.923E+00	5.889E+01	Half-Life	too short	
	528.96			1.212E+03	5.889E+01	Half-Life	too short	
TE-123M	159.00	*		-5.161E-03	2.820E-02	4.441E-02	3.859E-03	-0.116
I-124	602.71	*		1.218E-01	8.401E-01	1.259E+00	1.236E-01	0.097
	722.78			1.505E+00	5.369E+00	8.082E+00	8.197E-01	0.186
	1325.50			-1.513E+01	4.071E+01	6.206E+01	5.191E+00	-0.244
	1376.25			6.645E+01	3.985E+01	7.683E+01	6.472E+00	0.865
	1509.49			2.483E+01	1.917E+01	3.678E+01	3.118E+00	0.675
	1691.02			1.958E+00	4.513E+00	8.012E+00	6.681E-01	0.244
SB-124	602.71			6.020E-03	4.153E-02	6.223E-02	6.111E-03	0.097
	645.85			-8.160E-02	4.853E-01	8.066E-01	8.417E-02	-0.101
	709.31			9.984E-01	2.816E+00	4.844E+00	4.906E-01	0.206
	713.82			-1.074E+00	1.584E+00	2.489E+00	3.276E-01	-0.432
	722.78			1.078E-01	3.848E-01	5.792E-01	5.966E-02	0.186
	+ 968.20			1.836E+01	4.210E+00	7.269E+00	7.007E-01	2.526
	1045.16			1.167E+00	2.327E+00	4.005E+00	3.671E-01	0.291
	1325.50			-1.158E+00	3.116E+00	4.750E+00	3.973E-01	-0.244
	1368.21			2.941E-01	1.561E+00	2.686E+00	3.585E-01	0.109
	1436.60			9.118E-01	2.943E+00	5.171E+00	4.377E-01	0.176
	1691.02	*		3.310E-02	7.629E-02	1.354E-01	1.177E-02	0.244
SB-125	427.89	*		-3.525E-02	9.484E-02	1.496E-01	1.324E-02	-0.236
	+ 463.38			8.686E-01	3.985E-01	5.814E-01	5.598E-02	1.494
	600.56			1.384E-02	1.715E-01	2.764E-01	2.867E-02	0.050
	635.90			-1.136E-01	2.631E-01	4.281E-01	4.521E-02	-0.265
TE-125M	109.28	*		6.154E-01	8.975E+00	1.452E+01	1.485E+00	0.042
I-126	388.63			3.893E-02	2.118E-01	3.518E-01	2.963E-02	0.111
	666.33	*		1.067E-02	2.131E-01	3.140E-01	3.155E-02	0.034
	753.82			1.792E+00	1.482E+00	2.704E+00	2.748E-01	0.663
SB-126	223.80			2.131E+00	4.158E+00	7.156E+00	6.788E-01	0.298
	+ 278.60			3.408E+00	4.220E+00	4.699E+00	4.677E-01	0.725
	+ 296.50			1.740E+01	3.424E+00	4.232E+00	4.166E-01	4.112
	414.70			6.211E-03	7.704E-02	1.267E-01	1.086E-02	0.049
	415.30			-3.765E+00	6.493E+00	1.016E+01	8.708E-01	-0.371
	555.20			-2.939E-01	4.164E+00	6.359E+00	6.094E-01	-0.046
	573.80			-1.632E-01	1.118E+00	1.771E+00	1.715E-01	-0.092
	593.00			-2.100E-01	9.290E-01	1.455E+00	1.423E-01	-0.144
	656.30			4.909E-01	3.676E+00	5.479E+00	5.489E-01	0.090
	666.33			4.470E-03	8.928E-02	1.315E-01	1.322E-02	0.034
	675.00			-1.137E+00	2.018E+00	3.227E+00	3.249E-01	-0.352
	695.00			5.187E-02	8.714E-02	1.521E-01	1.537E-02	0.341
	697.00			1.289E-01	3.052E-01	5.231E-01	5.288E-02	0.246

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	720.50	*		-9.019E-02	1.559E-01	2.320E-01	2.352E-02	-0.389
	856.80			4.452E-01	5.066E-01	8.138E-01	8.185E-02	0.547
	989.30			-2.467E-01	1.212E+00	1.942E+00	1.850E-01	-0.127
	1034.80			-1.072E+00	9.240E+00	1.493E+01	1.379E+00	-0.072
	1213.00			-3.987E+00	4.519E+00	6.599E+00	5.372E-01	-0.604
	61.10			-1.245E+01	5.825E+01	8.469E+01	8.821E+00	-0.147
	252.40			2.503E+00	5.089E+00	8.556E+00	3.625E+00	0.293
	290.80			-2.251E+01	2.701E+01	3.660E+01	4.559E+00	-0.615
	411.60			-2.030E+00	1.485E+01	2.406E+01	3.828E+00	-0.084
	444.90			-8.452E-01	1.126E+01	1.823E+01	2.362E+00	-0.046
	473.00			-1.893E-01	2.016E+00	3.249E+00	4.363E-01	-0.058
	543.00			-2.426E+00	1.930E+01	3.072E+01	4.665E+00	-0.079
	603.60			3.638E+00	1.592E+01	2.278E+01	3.105E+00	0.160
	685.20	*		-6.526E-01	1.641E+00	2.664E+00	3.414E-01	-0.245
	698.50			-1.241E+01	2.077E+01	3.254E+01	5.496E+00	-0.382
XE-127	722.20			1.395E+01	3.820E+01	5.799E+01	7.342E+00	0.240
	783.80			3.352E+00	4.754E+00	8.296E+00	1.144E+00	0.404
	57.60			4.398E-03	4.459E+00	7.341E+00	5.245E-01	0.001
	145.22			-2.220E-02	7.341E-01	1.156E+00	9.793E-02	-0.019
	172.10			-5.917E-02	1.189E-01	1.832E-01	1.614E-02	-0.323
I-131	202.84	*		2.560E-02	4.707E-02	7.892E-02	7.284E-03	0.324
	374.96			-7.402E-02	2.005E-01	3.147E-01	2.744E-02	-0.235
	80.18			2.881E+00	5.638E+00	6.737E+00	5.818E-01	0.428
	284.30			5.578E-01	1.601E+00	2.717E+00	2.806E-01	0.205
	364.48	*		-2.455E-02	1.177E-01	1.910E-01	1.793E-02	-0.129
TE-132	636.97			-1.367E+00	1.654E+00	2.595E+00	2.694E-01	-0.527
	722.89			2.092E+00	7.952E+00	1.195E+01	1.218E+00	0.175
	49.72			4.346E-01	1.651E+01	2.447E+01	2.582E+00	0.018
	111.76			-9.979E+00	3.594E+01	5.720E+01	6.296E+00	-0.174
	116.30			1.384E+01	3.306E+01	5.417E+01	5.936E+00	0.256
BA-133	228.16	*		-2.556E-02	8.507E-01	1.430E+00	2.349E-01	-0.018
	53.15			-1.122E+00	2.360E+00	3.813E+00	2.841E-01	-0.294
	79.62			1.434E+00	1.285E+00	1.798E+00	2.727E-01	0.797
	81.00			2.692E-02	1.093E-01	1.279E-01	2.033E-02	0.210
	276.40			3.383E-01	5.661E-01	6.461E-01	9.867E-02	0.524
I-133	302.84			1.293E-01	1.437E-01	2.242E-01	3.156E-02	0.577
	356.01	*		7.909E-03	4.677E-02	6.869E-02	9.279E-03	0.115
	383.85			8.422E-03	2.888E-01	4.753E-01	5.961E-02	0.018
	510.53			9.701E-01	2.888E-01	Half-Life	too short	
	529.87	*		2.206E-03	2.888E-01	Half-Life	too short	
	706.58			-1.805E-01	2.888E-01	Half-Life	too short	
	856.28			1.015E+00	2.888E-01	Half-Life	too short	
	875.33			2.428E-01	2.888E-01	Half-Life	too short	
	1236.41			2.796E+00	2.888E-01	Half-Life	too short	
	1298.22			-5.638E-01	2.888E-01	Half-Life	too short	
CS-134	475.35			1.064E-01	1.978E+00	3.223E+00	2.923E-01	0.033
	563.23			3.800E-02	3.494E-01	5.667E-01	5.498E-02	0.067
	569.32			3.841E-02	2.054E-01	3.347E-01	3.268E-02	0.115
	604.70			-7.292E-03	3.990E-02	5.447E-02	5.363E-03	-0.134

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135	+	795.84 *	8.107E-02	7.888E-02	8.843E-02	9.023E-03	0.917
		801.93	-6.629E-02	3.873E-01	5.964E-01	6.075E-02	-0.111
		1038.57	-6.191E-01	3.703E+00	5.944E+00	5.476E-01	-0.104
		1167.94	1.592E+00	2.579E+00	3.954E+00	3.200E-01	0.403
		1365.15	-8.639E-01	1.158E+00	1.743E+00	1.536E-01	-0.496
		268.24 *	2.347E-01	1.772E-01	2.812E-01	3.116E-02	0.834
		288.45	2.818E+11	1.772E-01	Half-Life	too short	
		417.63	-2.415E+10	1.772E-01	Half-Life	too short	
		546.56	9.171E+10	1.772E-01	Half-Life	too short	
		836.80	-1.533E+11	1.772E-01	Half-Life	too short	
		1038.76	-2.560E+10	1.772E-01	Half-Life	too short	
		1124.00	-1.768E+11	1.772E-01	Half-Life	too short	
		1131.51	-3.321E+10	1.772E-01	Half-Life	too short	
		1260.41 *	3.423E+10	1.772E-01	Half-Life	too short	
		1457.56	6.230E+12	1.772E-01	Half-Life	too short	
		1678.03	1.218E+11	1.772E-01	Half-Life	too short	
		1706.46	1.355E+10	1.772E-01	Half-Life	too short	
		1791.20	-5.819E+10	1.772E-01	Half-Life	too short	
	+	66.91	-5.174E-01	7.790E-01	1.103E+00	1.635E-01	-0.469
		86.29	4.681E+00	1.303E+00	2.086E+00	2.770E-01	2.244
		153.22	4.675E-02	6.936E-01	1.108E+00	1.062E-01	0.042
CS-136		163.89	-4.174E-01	1.168E+00	1.777E+00	1.729E-01	-0.235
		176.55	-5.611E-02	4.004E-01	6.291E-01	5.887E-02	-0.089
		273.65	-2.112E-01	7.220E-01	7.397E-01	7.710E-02	-0.286
		340.57	2.573E-01	1.485E-01	2.410E-01	2.306E-02	1.068
		818.51	3.919E-03	7.687E-02	1.283E-01	1.300E-02	0.031
		1048.07 *	-3.892E-02	1.115E-01	1.753E-01	1.664E-02	-0.222
		1235.34	5.856E-01	6.895E-01	1.063E+00	1.227E-01	0.551
		165.85 *	3.032E-03	2.968E-02	4.734E-02	4.133E-03	0.064
		162.64	5.233E-01	7.902E-01	1.263E+00	1.160E-01	0.414
		304.84	-6.919E-01	1.298E+00	1.892E+00	5.374E-01	-0.366
CE-139 BA-140		423.70	1.142E+00	2.100E+00	3.503E+00	1.136E+00	0.326
		537.32 *	-4.484E-02	2.676E-01	4.243E-01	1.416E-01	-0.106
	+	328.77	6.201E-01	4.008E-01	6.018E-01	5.984E-02	1.030
		432.53	-9.536E-01	2.069E+00	3.251E+00	2.972E-01	-0.293
		487.03	2.473E-02	1.421E-01	2.335E-01	2.255E-02	0.106
		751.79	-6.232E-01	1.749E+00	2.827E+00	3.096E-01	-0.220
		815.85	7.549E-01	3.363E-01	6.491E-01	7.131E-02	1.163
		867.82	6.361E-01	1.401E+00	2.153E+00	2.244E-01	0.295
		919.63	-1.745E+00	3.101E+00	4.272E+00	4.988E-01	-0.409
		925.24	2.733E-01	1.193E+00	1.949E+00	2.011E-01	0.140
LA-140		1596.49 *	-5.110E-02	7.338E-02	1.052E-01	8.878E-03	-0.486
		145.44 *	1.070E-02	6.451E-02	1.037E-01	8.955E-03	0.103
		57.37	-2.723E-04	6.451E-02	Half-Life	too short	
		231.56	-1.375E-04	6.451E-02	Half-Life	too short	
		293.26 *	1.431E-03	6.451E-02	Half-Life	too short	
	+	350.59	6.634E-02	6.451E-02	Half-Life	too short	
		490.36	1.779E-03	6.451E-02	Half-Life	too short	
		664.57	2.136E-03	6.451E-02	Half-Life	too short	
CE-141 CE-143							

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	721.93			9.867E-04	6.451E-02	Half-Life	too short	
CE-144	80.11			1.264E+00	2.378E+00	2.846E+00	2.438E-01	0.444
	133.54	*		-2.340E-01	2.270E-01	3.227E-01	4.980E-02	-0.725
PM-144	476.78			4.450E-02	7.193E-02	1.217E-01	1.198E-02	0.366
	618.01			-1.433E-02	3.214E-02	4.917E-02	4.962E-03	-0.291
	696.49	*		1.396E-02	3.730E-02	6.374E-02	6.445E-03	0.219
	778.57			-5.024E-01	2.446E+00	3.442E+00	3.499E-01	-0.146
PR-144	696.49	*		9.468E-01	2.529E+00	4.322E+00	4.369E-01	0.219
	1489.15			5.655E+00	7.870E+00	1.500E+01	1.272E+00	0.377
PM-146	453.90	*		-3.603E-03	4.328E-02	6.998E-02	7.665E-03	-0.051
	633.02			7.770E-01	1.501E+00	2.456E+00	9.259E-01	0.316
	735.90			-2.233E-02	1.495E-01	2.400E-01	6.984E-02	-0.093
	747.13			7.862E-03	8.865E-02	1.492E-01	2.243E-02	0.053
ND-147	91.11	+		5.627E-01	2.225E-01	5.121E-01	5.066E-02	1.099
	319.41			2.531E+00	3.405E+00	5.879E+00	5.656E-01	0.431
	439.89			3.582E-01	5.866E+00	9.607E+00	8.444E-01	0.037
	531.02	*		-3.582E-01	5.939E-01	9.028E-01	1.394E-01	-0.397
PM-149	285.90	*		-3.976E+01	1.250E+02	2.044E+02	3.332E+01	-0.195
EU-152	121.78			3.778E-02	7.012E-02	1.154E-01	1.118E-02	0.327
	244.69			2.375E-01	3.265E-01	5.073E-01	4.921E-02	0.468
	344.27	*		4.330E-02	1.110E-01	1.660E-01	1.620E-02	0.261
	443.98			1.673E-03	9.119E-01	1.476E+00	1.302E-01	0.001
	778.89			-7.747E-03	2.859E-01	4.125E-01	4.191E-02	-0.019
	867.32			2.854E-01	7.811E-01	1.186E+00	1.190E-01	0.241
	964.01	+		7.773E-01	3.791E-01	5.885E-01	5.686E-02	1.321
	1085.78			-2.310E-01	3.270E-01	4.819E-01	4.267E-02	-0.479
	1112.02			2.326E-03	2.977E-01	4.849E-01	4.184E-02	0.005
	1407.95			1.333E-01	1.855E-01	3.358E-01	2.837E-02	0.397
GD-153	69.67			-4.749E-01	1.490E+00	2.296E+00	1.756E-01	-0.207
	83.37	+		4.457E+01	1.633E+01	2.284E+01	2.036E+00	1.952
	97.43	*		-5.322E-02	8.501E-02	1.179E-01	1.045E-02	-0.451
	103.18			-7.873E-02	1.017E-01	1.585E-01	1.371E-02	-0.497
EU-154	123.07			1.128E-02	4.995E-02	8.105E-02	9.038E-03	0.139
	247.94			-4.070E-01	3.320E-01	5.127E-01	6.322E-02	-0.794
	591.81			-1.813E-01	5.947E-01	9.246E-01	1.160E-01	-0.196
	723.30			4.857E-02	1.805E-01	2.713E-01	2.964E-02	0.179
	756.87			6.530E-02	6.945E-01	1.169E+00	1.535E-01	0.056
	873.19			1.193E-01	2.677E-01	4.625E-01	6.135E-02	0.258
	996.32			-1.665E-02	3.702E-01	6.044E-01	1.100E-01	-0.028
	1004.76			-2.150E-01	1.957E-01	2.765E-01	3.389E-02	-0.777
	1274.45	*		-4.584E-02	1.097E-01	1.670E-01	1.845E-02	-0.275
EU-155	48.70			5.924E-01	1.621E+00	2.449E+00	1.960E-01	0.242
	60.01			1.336E+00	4.121E+00	6.159E+00	4.370E-01	0.217
	86.54	+		4.089E-01	1.071E-01	1.804E-01	1.689E-02	2.267
	105.31	*		3.377E-02	1.052E-01	1.722E-01	1.497E-02	0.196
TB-160	86.79	+		1.103E+00	2.885E-01	4.811E-01	4.480E-02	2.292
	197.04			1.418E-01	5.443E-01	9.201E-01	8.422E-02	0.154
	215.65			4.604E-01	7.812E-01	1.262E+00	1.185E-01	0.365
	298.57	+		2.982E-01	1.320E-01	2.141E-01	2.104E-02	1.393

## ---- 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	*		8.451E-03	1.226E-01	2.043E-01	2.043E-02	0.041
	962.29			8.316E-01	6.139E-01	9.999E-01	9.669E-02	0.832
	966.15			1.003E+00	2.659E-01	5.102E-01	4.924E-02	1.966
	1177.93			-2.509E-02	3.891E-01	5.388E-01	4.338E-02	-0.047
	1271.85			8.073E-02	6.856E-01	1.120E+00	9.263E-02	0.072
	80.57			1.594E-01	2.998E-01	3.589E-01	3.092E-02	0.444
	184.41	+		1.784E-01	6.504E-02	7.103E-02	6.379E-03	2.511
	280.46			-5.417E-02	9.243E-02	1.292E-01	1.286E-02	-0.419
	410.95			7.928E-02	2.452E-01	4.097E-01	3.496E-02	0.194
	711.68	*		2.218E-02	6.041E-02	1.040E-01	1.054E-02	0.213
TM-171	752.31			7.270E-02	2.594E-01	4.434E-01	4.506E-02	0.164
	810.29			-7.914E-02	5.430E-02	7.538E-02	7.640E-03	-1.050
	51.35			-9.328E-01	2.026E+01	3.184E+01	2.432E+00	-0.029
	52.39			-4.725E+00	1.027E+01	1.661E+01	1.250E+00	-0.284
	59.40			1.802E+01	2.147E+01	3.291E+01	2.329E+00	0.547
LU-176	66.72	*		-2.944E+01	2.723E+01	3.786E+01	2.821E+00	-0.777
	88.36	+		8.050E-01	2.105E-01	3.441E-01	3.244E-02	2.339
	201.83			-2.049E-02	2.789E-02	4.561E-02	4.204E-03	-0.449
LU-177	306.84	*		-1.897E-02	2.227E-02	3.481E-02	3.395E-03	-0.545
	401.10			5.122E+00	6.948E+00	1.189E+01	1.004E+00	0.431
	112.95			3.869E-01	1.790E+00	2.856E+00	2.408E-01	0.135
LU-177M	208.36	*		3.725E+00	2.136E+00	2.261E+00	2.103E-01	1.647
	52.97	+		-5.003E-01	1.070E+00	1.730E+00	1.292E-01	-0.289
	54.07			2.493E-01	5.621E-01	9.438E-01	6.955E-02	0.264
	61.30			-2.720E-01	1.256E+00	1.825E+00	1.306E-01	-0.149
	121.62			2.599E-01	3.602E-01	5.974E-01	4.982E-02	0.435
	147.16			-2.100E-01	6.576E-01	1.033E+00	8.770E-02	-0.203
	171.86			-2.659E-01	4.705E-01	7.217E-01	6.358E-02	-0.368
	218.09			-7.544E-01	8.247E-01	1.327E+00	1.250E-01	-0.568
	268.79	+		2.915E+00	1.502E+00	1.535E+00	1.518E-01	1.900
	319.02			1.552E-01	2.484E-01	4.264E-01	4.104E-02	0.364
HF-181	367.43			-4.706E-01	8.566E-01	1.354E+00	1.201E-01	-0.348
	413.65	*		4.042E-02	1.728E-01	2.872E-01	2.458E-02	0.141
	56.28			-3.497E-01	6.785E-01	1.093E+00	7.889E-02	-0.320
	57.53			-2.292E-02	3.730E-01	6.125E-01	4.378E-02	-0.037
	65.20			-1.953E-01	8.871E-01	1.290E+00	9.493E-02	-0.151
	133.02			-5.406E-02	7.780E-02	1.060E-01	8.872E-03	-0.510
	136.25			-9.311E-02	4.763E-01	7.552E-01	6.336E-02	-0.123
	345.85			9.444E-02	2.144E-01	3.382E-01	3.129E-02	0.279
	482.03	*		-2.162E-02	4.238E-02	6.579E-02	5.998E-03	-0.329
	56.28			-1.350E-01	2.627E-01	4.234E-01	3.054E-02	-0.319
W-181	57.53			-9.146E-03	1.445E-01	2.373E-01	1.696E-02	-0.039
	65.20	*		-7.504E-02	3.409E-01	4.958E-01	3.648E-02	-0.151
TA-182	67.75			3.950E-02	1.046E-01	1.561E-01	1.173E-02	0.253
	100.10			2.023E-01	1.727E-01	2.915E-01	2.553E-02	0.694
	152.43			-8.182E-02	3.350E-01	5.270E-01	4.508E-02	-0.155
	222.10			1.900E-01	3.371E-01	5.815E-01	5.505E-02	0.327
	1001.68			1.487E+00	2.061E+00	3.589E+00	3.393E-01	0.414
	1121.28	+		8.493E-01	2.434E-01	3.807E-01	3.254E-02	2.231

## ---- 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			2.529E-01	2.772E-01	4.916E-01	3.973E-02	0.514
	1221.42	*		1.049E-01	1.898E-01	3.233E-01	2.638E-02	0.324
	1230.97			-4.522E-02	4.781E-01	7.436E-01	6.084E-02	-0.061
	57.98			2.424E-02	1.472E-01	2.439E-01	1.739E-02	0.099
	59.32			7.324E-02	8.902E-02	1.363E-01	9.652E-03	0.537
	67.20			-1.252E-01	1.905E-01	2.707E-01	2.025E-02	-0.462
	162.32	*		5.024E-02	1.109E-01	1.757E-01	1.525E-02	0.286
	208.81	+		3.036E+00	1.741E+00	1.853E+00	1.725E-01	1.638
	291.72			-8.856E-01	1.018E+00	1.381E+00	1.364E-01	-0.641
	57.98			8.878E-02	5.393E-01	8.933E-01	6.367E-02	0.099
RE-184	59.32			2.680E-01	3.258E-01	4.990E-01	3.532E-02	0.537
	67.20			-4.584E-01	6.973E-01	9.912E-01	7.415E-02	-0.462
	161.27			-2.378E-01	3.524E-01	5.395E-01	4.675E-02	-0.441
	216.55			2.449E-01	2.554E-01	4.473E-01	4.205E-02	0.547
	252.85	*		1.260E-01	2.184E-01	3.763E-01	3.678E-02	0.335
	318.01			1.487E-01	4.341E-01	7.340E-01	7.073E-02	0.203
	792.07			6.115E-01	1.102E+00	1.697E+00	1.723E-01	0.360
	903.28			5.704E-03	1.012E+00	1.627E+00	1.615E-01	0.004
	920.93			-1.739E-01	4.257E-01	6.708E-01	6.612E-02	-0.259
	59.72			2.165E-01	2.394E-01	3.678E-01	2.605E-02	0.589
OS-185	61.14			-3.085E-02	1.382E-01	2.009E-01	1.435E-02	-0.154
	69.30			-9.170E-02	2.678E-01	4.122E-01	3.142E-02	-0.222
	592.07			-2.991E-01	2.442E+00	3.867E+00	3.778E-01	-0.077
	646.12	*		1.252E-02	3.980E-02	6.874E-02	6.865E-03	0.182
	717.42			1.254E-01	8.228E-01	1.396E+00	1.415E-01	0.090
	874.81			3.757E-01	5.335E-01	9.433E-01	9.444E-02	0.398
	880.27			-8.561E-02	6.590E-01	1.073E+00	1.073E-01	-0.080
	155.03	*		1.179E-02	1.739E-01	2.776E-01	2.384E-02	0.042
	477.96			1.772E+00	3.192E+00	5.386E+00	4.895E-01	0.329
	633.10			1.968E+00	2.976E+00	5.010E+00	4.980E-01	0.393
W-188	63.58	+		4.655E+01	6.051E+01	7.746E+01	5.630E+00	0.601
	227.08			-3.206E+00	1.257E+01	2.091E+01	1.991E+00	-0.153
IR-192	290.67	*		-5.982E+00	7.835E+00	1.072E+01	1.060E+00	-0.558
	295.96	+		1.269E+00	2.501E-01	3.188E-01	3.158E-02	3.981
AU-195	308.46			1.891E-02	8.756E-02	1.473E-01	1.440E-02	0.128
	316.51	*		-2.876E-02	3.372E-02	5.277E-02	5.104E-03	-0.545
	468.07			-1.386E-02	7.372E-02	1.025E-01	9.851E-03	-0.135
	604.41			4.055E-03	5.343E-01	7.458E-01	1.033E-01	0.005
	612.46			2.602E-01	8.223E-01	1.187E+00	1.305E-01	0.219
	65.12			4.124E-02	1.567E-01	2.326E-01	1.711E-02	0.177
	66.83			-5.926E-02	8.856E-02	1.258E-01	9.384E-03	-0.471
	75.70	+		1.236E+00	2.267E-01	4.341E-01	3.534E-02	2.847
	98.88	*		2.176E-01	2.189E-01	3.644E-01	3.209E-02	0.597
	129.76	+		2.535E+00	4.177E+00	5.073E+00	4.237E-01	0.500
TL-200	367.94	*		1.587E-04	4.177E+00	Half-Life	too short	
	579.30			1.907E-03	4.177E+00	Half-Life	too short	
	828.27			-8.542E-04	4.177E+00	Half-Life	too short	
TL-201	1205.75			2.916E-04	4.177E+00	Half-Life	too short	
	68.90			1.130E+00	5.130E+00	8.464E+00	6.429E-01	0.133

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		70.82		-1.660E+00	3.303E+00	4.715E+00	3.647E-01	-0.352
		80.30		4.271E+00	7.049E+00	8.486E+00	7.285E-01	0.503
		135.34		2.458E+01	3.221E+01	5.324E+01	4.464E+00	0.462
		167.43	*	3.513E+00	8.570E+00	1.388E+01	1.214E+00	0.253
		68.90		8.493E-02	3.856E-01	6.362E-01	4.832E-02	0.133
		70.82		-1.244E-01	2.476E-01	3.534E-01	2.734E-02	-0.352
BI-207		80.30		3.203E-01	5.285E-01	6.363E-01	5.463E-02	0.503
		439.56	*	1.457E-02	6.920E-02	1.146E-01	1.007E-02	0.127
		72.80		2.131E-01	1.699E-01	2.609E-01	2.058E-02	0.817
	+	74.97		6.830E-01	1.252E-01	2.072E-01	1.673E-02	3.296
	+	84.90		5.748E-01	2.106E-01	3.119E-01	2.835E-02	1.843
		569.67		1.230E-02	3.166E-02	5.241E-02	5.063E-03	0.235
TL-207		1063.62	*	-4.775E-03	5.038E-02	8.140E-02	7.350E-03	-0.059
		1770.23		-2.081E+00	6.822E-01	4.770E-01	3.913E-02	-4.364
		81.07		5.162E-02	2.408E-01	2.812E-01	2.437E-02	0.184
	+	83.78		3.790E-01	1.388E-01	2.007E-01	1.798E-02	1.888
		94.90		3.805E-01	2.339E-01	3.632E-01	3.266E-02	1.048
		122.32		6.308E-01	1.680E+00	2.746E+00	2.468E-01	0.230
PO-209		144.24		2.024E-01	7.097E-01	1.134E+00	1.077E-01	0.179
		154.21		2.958E-02	3.904E-01	6.237E-01	5.887E-02	0.047
	+	269.46		6.794E-01	3.502E-01	3.752E-01	3.772E-02	1.811
	+	323.87	*	-7.006E-01	7.528E-01	9.928E-01	1.805E-01	-0.706
	+	338.28		8.001E+00	1.983E+00	2.521E+00	3.239E-01	3.174
		445.03		-2.271E-01	2.166E+00	3.500E+00	4.283E-01	-0.065
PB-211		260.50		1.033E+01	9.122E+00	1.606E+01	1.580E+00	0.643
		262.80		-2.481E+01	2.577E+01	4.067E+01	4.006E+00	-0.610
		896.60	*	-2.782E-01	6.877E+00	1.131E+01	1.125E+00	-0.025
BI-212		404.84	*	-1.736E+00	1.462E+00	1.407E+00	8.814E-01	-1.234
		427.08		9.826E-01	2.196E+00	3.532E+00	2.195E+00	0.278
		831.96		3.543E-01	1.194E+00	1.998E+00	1.257E+00	0.177
PO-215	+	727.18	*	1.067E+00	5.811E-01	7.087E-01	8.044E-02	1.506
		785.46		2.542E+00	1.852E+00	3.375E+00	3.428E-01	0.753
		1620.62		-1.463E-02	1.030E+00	1.703E+00	1.434E-01	-0.009
RN-219		81.07		5.162E-02	2.408E-01	2.812E-01	2.437E-02	0.184
	+	83.78		3.790E-01	1.388E-01	2.007E-01	1.798E-02	1.888
		94.90		3.805E-01	2.339E-01	3.632E-01	3.266E-02	1.048
		122.32		6.308E-01	1.680E+00	2.746E+00	2.468E-01	0.230
		144.24		2.024E-01	7.097E-01	1.134E+00	1.077E-01	0.179
		154.21		2.958E-02	3.904E-01	6.237E-01	5.887E-02	0.047
RN-220	+	269.46		6.794E-01	3.502E-01	3.752E-01	3.772E-02	1.811
	+	323.87	*	-7.006E-01	7.528E-01	9.928E-01	1.805E-01	-0.706
	+	338.28		8.001E+00	1.983E+00	2.521E+00	3.239E-01	3.174
		445.03		-2.271E-01	2.166E+00	3.500E+00	4.283E-01	-0.065
	+	271.23		8.717E-01	4.518E-01	4.812E-01	5.491E-02	1.812
		401.81	*	5.794E-01	4.226E-01	7.386E-01	1.103E-01	0.784
RA-223		549.76	*	-5.932E+00	2.530E+01	3.984E+01	3.806E+00	-0.149
RA-223		81.07		5.162E-02	2.408E-01	2.812E-01	2.437E-02	0.184
	+	83.78		3.790E-01	1.388E-01	2.007E-01	1.798E-02	1.888
		94.90		3.805E-01	2.339E-01	3.632E-01	3.266E-02	1.048



## ---- 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		6.308E-01	1.680E+00	2.746E+00	2.468E-01	0.230
		144.24		2.024E-01	7.097E-01	1.134E+00	1.077E-01	0.179
		154.21		2.958E-02	3.904E-01	6.237E-01	5.887E-02	0.047
	+	269.46		6.794E-01	3.502E-01	3.752E-01	3.772E-02	1.811
		323.87	*	-7.006E-01	7.528E-01	9.928E-01	1.805E-01	-0.706
	+	338.28		8.001E+00	1.983E+00	2.521E+00	3.239E-01	3.174
		445.03		-2.271E-01	2.166E+00	3.500E+00	4.283E-01	-0.065
		79.80		1.225E+00	1.858E+00	2.226E+00	4.779E-01	0.550
		236.00		5.083E-01	2.727E-01	4.337E-01	5.623E-02	1.172
		256.20	*	-2.241E-01	3.671E-01	5.922E-01	9.500E-02	-0.378
		286.10		-5.450E-01	1.527E+00	2.492E+00	3.510E-01	-0.219
	+	299.80		3.760E+00	1.759E+00	2.747E+00	4.974E-01	1.369
TH-227		304.40		-6.091E-01	1.885E+00	2.670E+00	5.073E-01	-0.228
		334.20		-1.000E+00	2.320E+00	3.222E+00	6.374E-01	-0.311
		79.80		1.225E+00	1.858E+00	2.226E+00	4.841E-01	0.550
	+	94.00		9.303E+00	3.371E+00	3.762E+00	8.257E-01	2.473
		236.00		5.083E-01	2.714E-01	4.337E-01	5.148E-02	1.172
		256.20	*	-2.241E-01	3.678E-01	5.922E-01	1.105E-01	-0.378
		286.10		-5.450E-01	1.620E+00	2.492E+00	2.504E+00	-0.219
	+	299.80		3.760E+00	1.759E+00	2.747E+00	4.974E-01	1.369
		304.40		-6.091E-01	1.885E+00	2.670E+00	5.073E-01	-0.228
		334.20		-1.000E+00	2.320E+00	3.222E+00	6.374E-01	-0.311
	+	85.43		5.673E-01	2.078E-01	3.167E-01	2.898E-02	1.791
	+	88.47		4.634E-01	1.212E-01	1.965E-01	1.851E-02	2.358
PA-231		100.00		1.883E-01	1.816E-01	3.027E-01	2.652E-02	0.622
		193.63	*	2.764E-01	4.688E-01	8.136E-01	7.409E-02	0.340
	+	210.97		2.353E+00	1.349E+00	1.337E+00	1.247E-01	1.760
		283.67	*	-3.488E-01	1.530E+00	2.430E+00	3.880E-01	-0.144
	+	301.29		1.504E+00	6.782E-01	1.095E+00	1.435E-01	1.374
	TH-231	81.07		5.162E-02	2.408E-01	2.812E-01	2.437E-02	0.184
	+	83.78		3.790E-01	1.388E-01	2.007E-01	1.798E-02	1.888
		94.90		3.805E-01	2.339E-01	3.632E-01	3.266E-02	1.048
		122.32		6.308E-01	1.680E+00	2.746E+00	2.468E-01	0.230
		144.24		2.024E-01	7.097E-01	1.134E+00	1.077E-01	0.179
		154.21		2.958E-02	3.904E-01	6.237E-01	5.887E-02	0.047
	+	269.46		6.794E-01	3.502E-01	3.752E-01	3.772E-02	1.811
U-231		323.87	*	-7.006E-01	7.528E-01	9.928E-01	1.805E-01	-0.706
	+	338.28		8.001E+00	1.983E+00	2.521E+00	3.239E-01	3.174
		445.03		-2.271E-01	2.166E+00	3.500E+00	4.283E-01	-0.065
	+	84.21		1.940E+01	7.108E+00	1.038E+01	9.352E-01	1.869
	+	92.29		1.092E+01	3.301E+00	4.746E+00	4.340E-01	2.302
		95.87	*	-1.332E+00	1.346E+00	1.830E+00	1.637E-01	-0.728
		108.00		6.538E-01	2.384E+00	3.892E+00	3.317E-01	0.168
	PA-233	75.28		1.993E+01	4.445E+00	6.281E+00	9.461E-01	3.173
	+	86.59		6.644E+00	2.422E+00	2.926E+00	7.913E-01	2.271
	+	300.12		1.048E+00	4.809E-01	7.696E-01	1.200E-01	1.362
		311.98	*	5.606E-02	5.868E-02	1.026E-01	1.018E-02	0.546
		340.50		1.371E+00	7.578E-01	1.138E+00	2.743E-01	1.205
		398.62		-1.986E+00	2.224E+00	3.321E+00	8.822E-01	-0.598

----- 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		-1.243E+00	1.645E+00	2.505E+00	5.394E-01	-0.496
		63.00		1.336E+00	1.745E+00	2.277E+00	3.365E-01	0.587
		94.67		4.965E-01	1.816E-01	2.816E-01	3.569E-02	1.763
		98.44		8.879E-02	1.013E-01	1.478E-01	8.250E-02	0.601
		99.86		5.673E-01	4.595E-01	7.704E-01	6.753E-02	0.736
		111.00		-1.830E-01	1.793E-01	2.736E-01	3.276E-02	-0.669
		131.20		-3.875E-02	1.218E-01	1.703E-01	1.423E-02	-0.228
		152.70		-1.041E-01	3.262E-01	5.108E-01	8.691E-02	-0.204
		186.00		6.421E+00	3.032E+00	2.791E+00	8.741E-01	2.301
		226.40		-2.010E-01	3.953E-01	6.485E-01	8.952E-02	-0.310
		227.20		-7.850E-02	4.188E-01	6.989E-01	6.656E-02	-0.112
		248.90		-2.228E-01	7.313E-01	1.203E+00	2.750E-01	-0.185
		293.70		7.911E+00	1.958E+00	1.846E+00	3.315E-01	4.285
		369.80		4.439E-01	8.041E-01	1.363E+00	2.980E-01	0.326
		568.70		5.908E-01	1.010E+00	1.698E+00	1.639E-01	0.348
		569.50		5.690E-02	2.842E-01	4.636E-01	4.478E-02	0.123
		574.00		-2.444E-01	1.512E+00	2.392E+00	2.317E-01	-0.102
		699.00		-4.120E-01	8.002E-01	1.260E+00	2.495E-01	-0.327
		706.10		-4.112E-02	1.074E+00	1.795E+00	8.062E-01	-0.023
		733.00		-1.643E-01	4.285E-01	5.920E-01	1.352E-01	-0.278
		742.81		3.456E-01	1.369E+00	2.301E+00	1.552E+00	0.150
		796.30		1.547E+00	1.060E+00	1.678E+00	4.628E-01	0.922
		805.60		1.213E-01	9.471E-01	1.570E+00	4.884E-01	0.077
		819.60		-7.533E-01	1.198E+00	1.807E+00	6.939E-01	-0.417
		826.30		-4.303E-01	7.889E-01	1.198E+00	5.398E-01	-0.359
		831.60		2.890E-01	6.031E-01	1.033E+00	3.131E-01	0.280
		876.40		3.253E-01	8.507E-01	1.347E+00	1.386E+00	0.242
		880.51		-3.921E-02	2.324E-01	3.766E-01	3.765E-02	-0.104
		883.24		-1.923E-01	2.662E-01	3.450E-01	2.326E-01	-0.557
		899.00		6.626E-02	7.822E-01	1.302E+00	5.726E-01	0.051
		925.00		3.517E-01	1.180E+00	1.941E+00	1.910E-01	0.181
		926.50		-1.378E-01	1.819E-01	2.619E-01	6.736E-02	-0.526
		946.00	*	-2.877E-01	3.124E-01	4.582E-01	8.847E-02	-0.628
		949.00		8.789E-02	4.401E-01	7.380E-01	7.185E-02	0.119
		980.50		-1.000E+00	6.928E-01	9.335E-01	8.938E-02	-1.071
		1394.10		8.973E-02	1.116E+00	1.887E+00	1.228E+00	0.048
PA-234M		766.42		2.354E+01	1.732E+01	2.340E+01	1.194E+01	1.006
		1001.03	*	5.954E+00	4.575E+00	8.339E+00	8.920E-01	0.714
U-235	+	89.95		2.097E+00	1.034E+00	1.694E+00	5.262E-01	1.238
		93.35		2.894E+00	1.167E+00	1.254E+00	3.533E-01	2.308
		105.00		5.088E-01	1.032E+00	1.684E+00	5.025E-01	0.302
		143.76	*	1.385E-01	2.159E-01	3.484E-01	6.072E-02	0.397
		163.35		9.117E-02	4.788E-01	7.487E-01	1.431E-01	0.122
		185.71		2.378E-01	8.672E-02	1.035E-01	9.317E-03	2.297
NP-236	+	205.31		-3.436E-01	5.823E-01	8.312E-01	1.611E-01	-0.413
		94.67		3.797E-01	1.338E-01	2.139E-01	1.927E-02	1.775
		98.44		6.713E-02	6.709E-02	1.117E-01	9.859E-03	0.601
		111.00		-1.384E-01	1.351E-01	2.069E-01	1.751E-02	-0.669
		160.31	*	-4.898E-02	7.907E-02	1.215E-01	1.052E-02	-0.403

---- 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		1.709E-01	1.531E-01	2.558E-01	2.246E-02	0.668
		117.00	*	-2.520E-02	1.825E-01	2.918E-01	2.445E-02	-0.086
	+	209.75		2.370E+00	1.359E+00	1.466E+00	1.366E-01	1.617
		228.18		1.465E-02	2.218E-01	3.744E-01	3.569E-02	0.039
	+	277.60		2.344E-01	2.903E-01	3.237E-01	3.220E-02	0.724
AM-241		334.30		-6.049E-01	1.309E+00	1.817E+00	1.713E-01	-0.333
		59.54	*	1.083E-01	1.249E-01	1.916E-01	1.499E-02	0.566
CM-243		99.55		1.759E-01	1.576E-01	2.633E-01	2.311E-02	0.668
		103.76	*	2.381E-02	9.227E-02	1.508E-01	1.301E-02	0.158
		117.00		-2.593E-02	1.878E-01	3.002E-01	2.515E-02	-0.086
	+	209.75		2.337E+00	1.340E+00	1.445E+00	1.347E-01	1.617
		228.18		1.481E-02	2.241E-01	3.783E-01	3.607E-02	0.039
AM-246	+	277.60		2.363E-01	2.927E-01	3.264E-01	3.247E-02	0.724
		798.80		-1.436E-01	1.514E-01	1.914E-01	1.942E-02	-0.750
		1036.00		-4.187E-02	2.936E-01	4.729E-01	4.365E-02	-0.089
		1062.04		1.524E-01	2.110E-01	3.706E-01	3.350E-02	0.411
		1078.86	*	1.987E-03	1.345E-01	2.198E-01	1.958E-02	0.009
CM-247	+	278.00		9.722E-01	1.204E+00	1.331E+00	1.324E-01	0.730
		287.40		1.104E+00	1.215E+00	2.114E+00	2.095E-01	0.522
		402.60	*	4.134E-02	3.722E-02	6.510E-02	5.505E-03	0.635
CF-249		252.85		4.709E-01	8.159E-01	1.406E+00	1.374E-01	0.335
		333.44		5.342E-02	1.987E-01	2.518E-01	2.377E-02	0.212
		387.95	*	1.038E-02	3.986E-02	6.652E-02	5.613E-03	0.156
CF-251		176.60	*	-1.519E-02	1.308E-01	2.057E-01	1.826E-02	-0.074
		227.00		-9.369E-02	3.733E-01	6.211E-01	5.914E-02	-0.151
		285.00		6.983E-01	1.731E+00	2.944E+00	2.922E-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]G244148014      *
* Acquisition date   : 20-JAN-2010 15:58:41 Detector SN#                   *
* Detector ID        : GAM20                                           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 02:00:32.93                               Half life ratio   : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148014                               Analyst initials: MXR1         *
* Batch Number       : 940268                                   Sample Quantity : 1.1733E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight   : 0.00000      *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                       *
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 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	2.247E+01	2.420E+00	4.295E-01	0.000E+00
CD-109	3.458E+00	8.864E-01	1.156E+00	0.000E+00
SN-126	3.394E-01	8.699E-02	1.137E-01	0.000E+00
BA-137M	1.402E-01	6.704E-02	6.215E-02	0.000E+00
CS-137	1.482E-01	7.087E-02	6.570E-02	0.000E+00
HG-203	5.442E-02	6.605E-02	6.653E-02	0.000E+00
TL-208	5.439E-01	9.478E-02	5.711E-02	0.000E+00
BI-210	1.387E+00	2.806E+00	3.351E+00	0.000E+00
PB-210	1.387E+00	2.806E+00	3.351E+00	0.000E+00
PO-210	1.387E+00	2.806E+00	3.351E+00	0.000E+00
BI-211	4.932E+00	6.438E-01	3.225E-01	0.000E+00
PB-212	1.807E+00	2.216E-01	9.059E-02	0.000E+00
PO-212	1.807E+00	2.216E-01	9.059E-02	0.000E+00
BI-214	1.313E+00	2.144E-01	1.089E-01	0.000E+00
PB-214	1.716E+00	2.405E-01	1.096E-01	0.000E+00
PO-214	1.716E+00	2.405E-01	1.096E-01	0.000E+00
PO-216	1.807E+00	2.216E-01	9.059E-02	0.000E+00
PO-218	1.716E+00	2.405E-01	1.096E-01	0.000E+00
RA-224	5.178E+00	1.427E+00	1.031E+00	0.000E+00
RA-226	1.313E+00	2.144E-01	1.089E-01	0.000E+00
AC-228	1.773E+00	3.614E-01	2.031E-01	0.000E+00
RA-228	1.773E+00	3.614E-01	2.031E-01	0.000E+00
TH-228	1.836E+00	2.252E-01	9.206E-02	0.000E+00
TH-230	1.313E+00	2.144E-01	1.089E-01	0.000E+00
TH-232	1.773E+00	3.614E-01	2.031E-01	0.000E+00
TH-234	1.146E+00	1.471E+00	1.694E+00	0.000E+00
U-234	1.313E+00	2.144E-01	1.089E-01	0.000E+00
NP-237	9.967E-01	3.254E-01	3.306E-01	0.000E+00
U-238	1.146E+00	1.471E+00	1.694E+00	0.000E+00
AM-243	3.805E-01	6.837E-02	7.816E-02	0.000E+00
ANH-511	4.121E-02	6.194E-02	5.157E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	2.666E-01	3.245E-01	5.728E-01	0.000E+00	NOT IDENT.
NA-22	-1.925E-02	3.879E-02	5.956E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.069E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.957E-04	2.454E-02	4.087E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.335E-02	7.641E-02	0.000E+00	FAIL ABUN
SC-46	2.113E-02	3.559E-02	6.357E-02	0.000E+00	FAIL ABUN
V-48	5.912E-02	6.634E-02	1.211E-01	0.000E+00	NOT IDENT.
CR-51	8.333E-02	3.696E-01	6.413E-01	0.000E+00	NOT IDENT.
MN-52	2.807E-02	2.092E-01	3.486E-01	0.000E+00	NOT IDENT.
MN-54	-2.271E-02	3.733E-02	6.001E-02	0.000E+00	NOT IDENT.
CO-56	1.202E-03	3.715E-02	6.318E-02	0.000E+00	FAIL ABUN
CO-57	5.731E-03	2.387E-02	4.049E-02	0.000E+00	NOT IDENT.
CO-58	-4.599E-02	3.531E-02	5.148E-02	0.000E+00	NOT IDENT.
FE-59	2.472E-03	8.215E-02	1.370E-01	0.000E+00	NOT IDENT.
CO-60	1.264E-02	3.841E-02	6.544E-02	0.000E+00	NOT IDENT.
ZN-65	4.122E-02	8.479E-02	1.309E-01	0.000E+00	NOT IDENT.
GE-68	4.234E-01	1.145E+00	1.979E+00	0.000E+00	NOT IDENT.
AS-73	3.135E-02	5.328E-01	9.277E-01	0.000E+00	NOT IDENT.
AS-74	9.884E-03	8.737E-02	1.451E-01	0.000E+00	NOT IDENT.
SE-75	-1.972E-02	4.466E-02	6.965E-02	0.000E+00	NOT IDENT.
BR-77	3.850E+00	1.322E+01	2.247E+01	0.000E+00	FAIL ABUN
SR-82	-4.305E-01	4.205E-01	5.338E-01	0.000E+00	NOT IDENT.
RB-83	2.794E-02	6.420E-02	1.104E-01	0.000E+00	NOT IDENT.
RB-84	-1.509E-03	5.663E-02	9.545E-02	0.000E+00	NOT IDENT.
KR-85	6.689E+00	8.202E+00	1.281E+01	0.000E+00	NOT IDENT.
SR-85	3.468E-02	4.252E-02	6.639E-02	0.000E+00	NOT IDENT.
RB-86	3.157E-01	7.656E-01	1.329E+00	0.000E+00	NOT IDENT.
Y-88	-7.253E-03	3.193E-02	5.071E-02	0.000E+00	NOT IDENT.
ZR-88	-5.862E-03	2.987E-02	4.986E-02	0.000E+00	NOT IDENT.
Y-91	1.751E+00	1.684E+01	2.844E+01	0.000E+00	NOT IDENT.
NB-94	-2.422E-02	3.468E-02	5.644E-02	0.000E+00	NOT IDENT.
NB-95	7.415E-02	5.056E-02	8.522E-02	0.000E+00	NOT IDENT.
NB-95M	2.945E-02	1.311E-01	2.042E-01	0.000E+00	NOT IDENT.
ZR-95	2.403E-02	6.390E-02	1.128E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.734E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.884E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	4.155E+00	1.490E+01	2.606E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.037E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.760E-03	3.142E-02	5.479E-02	0.000E+00	NOT IDENT.
RH-102	-4.882E-03	2.968E-02	4.899E-02	0.000E+00	FAIL ABUN
RU-103	-4.183E-03	3.979E-02	6.570E-02	0.000E+00	FAIL ABUN
RH-106	-7.228E-03	3.094E-01	5.060E-01	0.000E+00	FAIL ABUN
RU-106	-7.228E-03	3.094E-01	5.060E-01	0.000E+00	FAIL ABUN
AG-108M	-3.716E-03	2.998E-02	4.991E-02	0.000E+00	NOT IDENT.
AG-110M	3.527E-02	3.494E-02	5.838E-02	0.000E+00	NOT IDENT.
IN-111	6.757E-01	1.332E+00	2.115E+00	0.000E+00	NOT IDENT.
IN-113M	-1.541E-02	4.359E-02	7.198E-02	0.000E+00	NOT IDENT.
SN-113	-1.541E-02	4.359E-02	7.198E-02	0.000E+00	NOT IDENT.
IN-114M	1.025E-02	1.849E-01	2.889E-01	0.000E+00	NOT IDENT.
CD-115	3.906E+00	1.338E+01	2.277E+01	0.000E+00	NOT IDENT.
SN-117M	-7.682E-03	5.597E-02	9.202E-02	0.000E+00	NOT IDENT.
SB-122	4.284E-01	2.582E+00	4.322E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.101E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-5.161E-03	2.764E-02	4.532E-02	0.000E+00	NOT IDENT.
I-124	1.218E-01	8.233E-01	1.267E+00	0.000E+00	NOT IDENT.
SB-124	3.310E-02	7.476E-02	1.348E-01	0.000E+00	FAIL ABUN
SB-125	-3.525E-02	9.295E-02	1.511E-01	0.000E+00	FAIL ABUN
TE-125M	6.154E-01	8.795E+00	1.488E+01	0.000E+00	NOT IDENT.
I-126	1.067E-02	2.089E-01	3.156E-01	0.000E+00	NOT IDENT.
SB-126	-9.019E-02	1.528E-01	2.330E-01	0.000E+00	FAIL ABUN
SB-127	-6.526E-01	1.608E+00	2.677E+00	0.000E+00	NOT IDENT.
XE-127	2.560E-02	4.612E-02	8.033E-02	0.000E+00	NOT IDENT.
I-131	-2.455E-02	1.154E-01	1.932E-01	0.000E+00	NOT IDENT.
TE-132	-2.556E-02	8.337E-01	1.454E+00	0.000E+00	NOT IDENT.
BA-133	7.909E-03	4.583E-02	6.950E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.313E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.107E-02	7.730E-02	8.872E-02	0.000E+00	FAIL ABUN
CS-135	2.347E-01	1.736E-01	2.854E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.911E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.892E-02	1.093E-01	1.753E-01	0.000E+00	FAIL ABUN
CE-139	3.032E-03	2.909E-02	4.829E-02	0.000E+00	NOT IDENT.
BA-140	-4.484E-02	2.623E-01	4.274E-01	0.000E+00	NOT IDENT.
LA-140	-5.110E-02	7.191E-02	1.047E-01	0.000E+00	FAIL ABUN
CE-141	1.070E-02	6.322E-02	1.059E-01	0.000E+00	NOT IDENT.

CE-143	0.000E+00	4.272E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.340E-01	2.224E-01	3.299E-01	0.000E+00	NOT IDENT.
PM-144	1.396E-02	3.655E-02	6.404E-02	0.000E+00	NOT IDENT.
PR-144	9.468E-01	2.478E+00	4.342E+00	0.000E+00	NOT IDENT.
PM-146	-3.603E-03	4.242E-02	7.063E-02	0.000E+00	NOT IDENT.
ND-147	-3.582E-01	5.820E-01	9.097E-01	0.000E+00	FAIL ABUN
PM-149	-3.976E+01	1.225E+02	2.073E+02	0.000E+00	NOT IDENT.
EU-152	4.330E-02	1.088E-01	1.681E-01	0.000E+00	FAIL ABUN
GD-153	-5.322E-02	8.331E-02	1.209E-01	0.000E+00	FAIL ABUN
EU-154	-4.584E-02	1.075E-01	1.667E-01	0.000E+00	NOT IDENT.
EU-155	3.377E-02	1.031E-01	1.764E-01	0.000E+00	FAIL ABUN
TB-160	8.451E-03	1.202E-01	2.048E-01	0.000E+00	FAIL ABUN
HO-166M	2.218E-02	5.920E-02	1.045E-01	0.000E+00	FAIL ABUN
TM-171	-2.944E+01	2.669E+01	3.898E+01	0.000E+00	NOT IDENT.
LU-176	-1.897E-02	2.182E-02	3.528E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	2.093E+00	2.301E+00	0.000E+00	FAIL ABUN
LU-177M	4.042E-02	1.694E-01	2.902E-01	0.000E+00	FAIL ABUN
HF-181	-2.162E-02	4.154E-02	6.635E-02	0.000E+00	NOT IDENT.
W-181	-7.504E-02	3.341E-01	5.106E-01	0.000E+00	NOT IDENT.
TA-182	1.049E-01	1.860E-01	3.229E-01	0.000E+00	FAIL ABUN
RE-183	5.024E-02	1.087E-01	1.792E-01	0.000E+00	FAIL ABUN
RE-184	1.260E-01	2.140E-01	3.822E-01	0.000E+00	NOT IDENT.
OS-185	1.252E-02	3.901E-02	6.912E-02	0.000E+00	NOT IDENT.
RE-188	1.179E-02	1.704E-01	2.834E-01	0.000E+00	NOT IDENT.
W-188	-5.982E+00	7.678E+00	1.087E+01	0.000E+00	FAIL ABUN
IR-192	-2.876E-02	3.304E-02	5.346E-02	0.000E+00	FAIL ABUN
AU-195	2.176E-01	2.145E-01	3.737E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.111E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	3.513E+00	8.399E+00	1.415E+01	0.000E+00	NOT IDENT.
TL-202	1.457E-02	6.782E-02	1.157E-01	0.000E+00	NOT IDENT.
BI-207	-4.775E-03	4.937E-02	8.141E-02	0.000E+00	FAIL ABUN
TL-207	-7.006E-01	7.377E-01	1.006E+00	0.000E+00	FAIL ABUN
PO-209	-2.782E-01	6.739E+00	1.133E+01	0.000E+00	NOT IDENT.
PB-211	-1.736E+00	1.433E+00	1.422E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.695E-01	7.117E-01	0.000E+00	FAIL ABUN
PO-215	-7.006E-01	7.377E-01	1.006E+00	0.000E+00	FAIL ABUN
RN-219	5.794E-01	4.141E-01	7.464E-01	0.000E+00	FAIL ABUN
RN-220	-5.932E+00	2.479E+01	4.013E+01	0.000E+00	NOT IDENT.
RA-223	-7.006E-01	7.377E-01	1.006E+00	0.000E+00	FAIL ABUN
AC-227	-2.241E-01	3.598E-01	6.013E-01	0.000E+00	FAIL ABUN
TH-227	-2.241E-01	3.604E-01	6.013E-01	0.000E+00	FAIL ABUN
TH-229	2.764E-01	4.595E-01	8.285E-01	0.000E+00	FAIL ABUN
PA-231	-3.488E-01	1.500E+00	2.465E+00	0.000E+00	FAIL ABUN
TH-231	-7.006E-01	7.377E-01	1.006E+00	0.000E+00	FAIL ABUN
U-231	-1.332E+00	1.319E+00	1.877E+00	0.000E+00	FAIL ABUN
PA-233	5.606E-02	5.750E-02	1.040E-01	0.000E+00	FAIL ABUN
PA-234	-2.877E-01	3.061E-01	4.588E-01	0.000E+00	FAIL ABUN
PA-234M	5.954E+00	4.484E+00	8.346E+00	0.000E+00	NOT IDENT.
U-235	1.385E-01	2.116E-01	3.559E-01	0.000E+00	FAIL ABUN
NP-236	-4.898E-02	7.749E-02	1.240E-01	0.000E+00	NOT IDENT.
NP-239	-2.520E-02	1.789E-01	2.987E-01	0.000E+00	FAIL ABUN
AM-241	1.083E-01	1.224E-01	1.974E-01	0.000E+00	NOT IDENT.
CM-243	2.381E-02	9.043E-02	1.545E-01	0.000E+00	FAIL ABUN
AM-246	1.987E-03	1.318E-01	2.198E-01	0.000E+00	NOT IDENT.
CM-247	4.134E-02	3.648E-02	6.578E-02	0.000E+00	FAIL ABUN
CF-249	1.038E-02	3.906E-02	6.725E-02	0.000E+00	NOT IDENT.
CF-251	-1.519E-02	1.282E-01	2.097E-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]G244148014.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:58:41
Sample ID          : G244148014          Sample quantity  : 1.17330E+02 GRAM
Detector name      : GAM20              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:32.93  0.5%
Energy tolerance  : 1.50000 keV         Analyst Initials : MXR1
Abundance limit   : 75.00000            Sensitivity       : 5.00000
Batch ID          : 940268              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	939	10.67*	1.253E+00	2.247E+01	2.247E+01	10.99
CD-109	88.03	272	3.72*	6.936E+00	3.376E+00	3.458E+00	26.15
SN-126	64.28	63	9.60	4.650E+00	4.537E-01	4.537E-01	130.58
	86.94	272	8.90	6.936E+00	1.411E+00	1.411E+00	48.17
	87.57	272	37.00*	6.936E+00	3.394E-01	3.394E-01	26.15
BA-137M	661.65	96	89.98*	2.437E+00	1.401E-01	1.402E-01	48.78
CS-137	661.65	96	85.12*	2.437E+00	1.481E-01	1.482E-01	48.78
HG-203	70.83	-----	4.75	5.621E+00	-----	Line Not Found	-----
	72.87	-----	8.00	5.845E+00	-----	Line Not Found	-----
	82.60	-----	3.55	6.669E+00	-----	Line Not Found	-----
	279.20	49	77.30*	4.715E+00	4.276E-02	5.442E-02	123.85
TL-208	277.35	49	6.80	4.715E+00	4.861E-01	4.861E-01	124.14
	510.84	39	21.60	2.994E+00	1.908E-01	1.908E-01	153.59
	583.14	386	84.20*	2.697E+00	5.439E-01	5.439E-01	17.78
	860.37	61	12.46	1.952E+00	7.960E-01	7.960E-01	76.59
BI-210	46.50	33	4.05*	1.881E+00	1.385E+00	1.387E+00	206.49
PB-210	46.50	33	4.05*	1.881E+00	1.385E+00	1.387E+00	206.49
PO-210	46.50	33	4.05*	1.881E+00	1.385E+00	1.387E+00	206.45
BI-211	72.87	-----	1.27	5.845E+00	-----	Line Not Found	-----
	351.07	792	12.94*	3.970E+00	4.932E+00	4.932E+00	13.32
PB-212	74.81	475	10.70	6.049E+00	2.347E+00	2.347E+00	20.58
	77.11	718	18.00	6.256E+00	2.041E+00	2.041E+00	14.45
	87.30	272	8.00	6.936E+00	1.570E+00	1.570E+00	28.00
	238.63	1322	44.60*	5.250E+00	1.807E+00	1.807E+00	12.52
	300.09	97	3.41	4.462E+00	2.029E+00	2.029E+00	44.64
PO-212	74.81	475	10.70	6.049E+00	2.347E+00	2.347E+00	20.58
	77.11	718	18.00	6.256E+00	2.041E+00	2.041E+00	14.45
	87.30	272	8.00	6.936E+00	1.570E+00	1.570E+00	28.00
	115.19	-----	0.60	7.430E+00	-----	Line Not Found	-----
	238.63	1322	44.60*	5.250E+00	1.807E+00	1.807E+00	12.52
	300.09	97	3.41	4.462E+00	2.029E+00	2.029E+00	44.64
BI-214	609.31	495	46.30*	2.604E+00	1.313E+00	1.313E+00	16.67

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-214	1120.29	131	15.10	1.557E+00	1.785E+00	1.785E+00	29.42
	1764.49	109	15.80	1.100E+00	2.007E+00	2.007E+00	23.24
	74.81	475	6.21	6.049E+00	4.044E+00	4.044E+00	19.78
	77.11	718	10.50	6.256E+00	3.499E+00	3.499E+00	16.34
	87.30	272	4.67	6.936E+00	2.689E+00	2.689E+00	27.27
PO-214	241.98	333	7.49	5.206E+00	2.731E+00	2.731E+00	28.68
	295.21	447	19.20	4.514E+00	1.648E+00	1.648E+00	20.65
	351.92	792	37.20*	3.970E+00	1.716E+00	1.716E+00	14.31
	74.81	475	6.21	6.049E+00	4.044E+00	4.044E+00	19.78
	77.11	718	10.50	6.256E+00	3.499E+00	3.499E+00	16.34
PO-216	87.30	272	4.67	6.936E+00	2.689E+00	2.689E+00	27.27
	241.98	333	7.49	5.206E+00	2.731E+00	2.731E+00	28.68
	295.21	447	19.20	4.514E+00	1.648E+00	1.648E+00	20.65
	351.92	792	37.20*	3.970E+00	1.716E+00	1.716E+00	14.31
	74.81	475	10.70	6.049E+00	2.347E+00	2.347E+00	20.58
PO-218	77.11	718	18.00	6.256E+00	2.041E+00	2.041E+00	14.45
	87.30	272	8.00	6.936E+00	1.570E+00	1.570E+00	28.00
	238.63	1322	44.60*	5.250E+00	1.807E+00	1.807E+00	12.52
	300.09	97	3.41	4.462E+00	2.029E+00	2.029E+00	44.64
	74.81	475	6.21	6.049E+00	4.044E+00	4.044E+00	19.78
RA-224	77.11	718	10.50	6.256E+00	3.499E+00	3.499E+00	16.34
	87.30	272	4.67	6.936E+00	2.689E+00	2.689E+00	27.27
	241.98	333	7.49	5.206E+00	2.731E+00	2.731E+00	28.68
	295.21	447	19.20	4.514E+00	1.648E+00	1.648E+00	20.65
	351.92	792	37.20*	3.970E+00	1.716E+00	1.716E+00	14.31
RA-226	240.98	333	3.95*	5.206E+00	5.178E+00	5.178E+00	28.12
AC-228	609.31	495	46.30*	2.604E+00	1.313E+00	1.313E+00	16.67
	1120.29	131	15.10	1.557E+00	1.785E+00	1.785E+00	29.42
	1764.49	109	15.80	1.100E+00	2.007E+00	2.007E+00	23.24
	338.32	279	11.40	4.087E+00	1.916E+00	1.916E+00	46.53
	911.07	286	27.70*	1.860E+00	1.773E+00	1.773E+00	20.80
RA-228	969.11	161	16.60	1.765E+00	1.762E+00	1.762E+00	31.56
	338.32	279	11.40	4.087E+00	1.916E+00	1.916E+00	46.53
	911.07	286	27.70*	1.860E+00	1.773E+00	1.773E+00	20.80
	969.11	161	16.60	1.765E+00	1.762E+00	1.762E+00	31.56
	74.81	475	10.70	6.049E+00	2.347E+00	2.385E+00	18.37
TH-228	77.11	718	18.00	6.256E+00	2.041E+00	2.074E+00	14.45
	87.30	272	8.00	6.936E+00	1.570E+00	1.595E+00	26.15
	238.63	1322	44.60*	5.250E+00	1.807E+00	1.836E+00	12.52
	300.09	97	3.41	4.462E+00	2.029E+00	2.062E+00	73.47
	609.31	495	46.30*	2.604E+00	1.313E+00	1.313E+00	16.67
TH-230	1120.29	131	15.10	1.557E+00	1.785E+00	1.785E+00	29.42
	1764.49	109	15.80	1.100E+00	2.007E+00	2.007E+00	23.24
	338.32	279	11.40	4.087E+00	1.916E+00	1.916E+00	23.17
	911.07	286	27.70*	1.860E+00	1.773E+00	1.773E+00	20.80
	969.11	161	16.60	1.765E+00	1.762E+00	1.762E+00	31.56
TH-234	63.29	63	3.80*	4.650E+00	1.146E+00	1.146E+00	130.94
	92.38	292	5.41	7.171E+00	2.408E+00	2.408E+00	34.15
	609.31	495	46.30*	2.604E+00	1.313E+00	1.313E+00	16.67



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	131	15.10	1.557E+00	1.785E+00	1.785E+00	29.42
	1764.49	109	15.80	1.100E+00	2.007E+00	2.007E+00	23.24
NP-237	86.50	272	12.60*	6.936E+00	9.967E-01	9.967E-01	33.31
	95.87	-----	2.60	7.260E+00	-----	Line Not Found	-----
U-238	63.29	63	3.80*	4.650E+00	1.146E+00	1.146E+00	130.94
	92.38	292	5.41	7.171E+00	2.408E+00	2.408E+00	30.22
AM-243	74.67	475	66.00*	6.049E+00	3.805E-01	3.805E-01	18.34
	86.72	272	0.34	6.936E+00	3.737E+01	3.737E+01	26.15
	117.66	-----	0.55	7.416E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.067E+00	-----	Line Not Found	-----
ANH-511	511.00	39	100.00*	2.994E+00	4.121E-02	4.121E-02	153.36

Flag: "\*" = Keyline

Total number of lines in spectrum 41  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 37 90.24%

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	2.247E+01	2.247E+01	0.247E+01	10.99	
CD-109	464.00D	1.02	3.376E+00	3.458E+00	0.905E+00	26.15	
SN-126	1.00E+05Y	1.00	3.394E-01	3.394E-01	0.888E-01	26.15	
BA-137M	30.17Y	1.00	1.401E-01	1.402E-01	0.684E-01	48.78	
CS-137	30.17Y	1.00	1.481E-01	1.482E-01	0.723E-01	48.78	
HG-203	46.60D	1.27	4.276E-02	5.442E-02	6.739E-02	123.85	
TL-208	1.41E+10Y	1.00	5.439E-01	5.439E-01	0.967E-01	17.78	
BI-210	22.26Y	1.00	1.385E+00	1.387E+00	2.863E+00	206.49	
PB-210	22.26Y	1.00	1.385E+00	1.387E+00	2.863E+00	206.49	
PO-210	22.26Y	1.00	1.385E+00	1.387E+00	2.863E+00	206.45	
BI-211	7.04E+08Y	1.00	4.932E+00	4.932E+00	0.657E+00	13.32	
PB-212	1.41E+10Y	1.00	1.807E+00	1.807E+00	0.226E+00	12.52	
PO-212	1.41E+10Y	1.00	1.807E+00	1.807E+00	0.226E+00	12.52	
BI-214	1600.00Y	1.00	1.313E+00	1.313E+00	0.219E+00	16.67	
PB-214	1600.00Y	1.00	1.716E+00	1.716E+00	0.245E+00	14.31	
PO-214	1600.00Y	1.00	1.716E+00	1.716E+00	0.245E+00	14.31	
PO-216	1.41E+10Y	1.00	1.807E+00	1.807E+00	0.226E+00	12.52	
PO-218	1600.00Y	1.00	1.716E+00	1.716E+00	0.245E+00	14.31	
RA-224	1.41E+10Y	1.00	5.178E+00	5.178E+00	1.456E+00	28.12	
RA-226	1600.00Y	1.00	1.313E+00	1.313E+00	0.219E+00	16.67	
AC-228	1.41E+10Y	1.00	1.773E+00	1.773E+00	0.369E+00	20.80	
RA-228	1.41E+10Y	1.00	1.773E+00	1.773E+00	0.369E+00	20.80	
TH-228	1.91Y	1.02	1.807E+00	1.836E+00	0.230E+00	12.52	
TH-230	4.47E+09Y	1.00	1.313E+00	1.313E+00	0.219E+00	16.67	
TH-232	1.41E+10Y	1.00	1.773E+00	1.773E+00	0.369E+00	20.80	
TH-234	4.47E+09Y	1.00	1.146E+00	1.146E+00	1.501E+00	130.94	
U-234	4.47E+09Y	1.00	1.313E+00	1.313E+00	0.219E+00	16.67	
NP-237	2.14E+06Y	1.00	9.967E-01	9.967E-01	3.320E-01	33.31	
U-238	4.47E+09Y	1.00	1.146E+00	1.146E+00	1.501E+00	130.94	
AM-243	7380.00Y	1.00	3.805E-01	3.805E-01	0.698E-01	18.34	
ANH-511	1.00E+09Y	1.00	4.121E-02	4.121E-02	6.320E-02	153.36	

Total Activity : 6.797E+01 6.810E+01

Grand Total Activity : 6.797E+01 6.810E+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	84.47	199	352	1.83	168.85	165	13	2.76E-02	35.5	6.79E+00	T
4	89.97	125	228	0.97	179.85	178	13	1.74E-02	38.3	7.06E+00	T
0	128.87	44	392	1.21	257.53	253	9	6.11E-03	****	7.29E+00	T
0	185.91	248	388	1.34	371.44	366	12	3.44E-02	35.3	6.17E+00	T
0	209.79	137	339	1.14	419.14	413	12	1.91E-02	56.6	5.72E+00	T
0	270.20	139	260	1.76	539.81	535	13	1.93E-02	50.6	4.81E+00	T
0	327.82	69	141	1.03	654.92	652	8	9.59E-03	63.9	4.18E+00	T
0	463.04	90	90	1.22	925.11	920	10	1.25E-02	44.9	3.23E+00	T
0	727.36	89	103	1.42	1453.45	1448	14	1.23E-02	53.2	2.25E+00	T
1	768.31	41	57	1.73	1535.31	1527	28	5.75E-03	77.0	2.15E+00	T
1	772.31	38	36	1.74	1543.31	1527	28	5.30E-03	74.7	2.14E+00	
0	794.72	40	73	1.49	1588.14	1581	14	5.57E-03	96.8	2.09E+00	T
1	964.57	62	50	1.84	1927.82	1922	19	8.59E-03	47.8	1.77E+00	T
0	1175.34	18	32	0.88	2349.49	2342	10	2.56E-03	****	1.50E+00	T
0	1238.61	48	40	1.29	2476.11	2471	11	6.68E-03	59.1	1.43E+00	T
0	1425.26	27	4	0.51	2849.71	2842	16	3.81E-03	50.0	1.28E+00	
0	1588.07	33	3	1.26	3175.72	3171	10	4.63E-03	39.0	1.18E+00	
0	1729.15	30	3	1.48	3458.27	3453	11	4.20E-03	42.1	1.11E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148014.CNF;1 *
* Acquisition date   : 20-JAN-2010 15:58:41  Detector SN#      :          *
* Detector ID        : GAM20                      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 02:00:32.93           Half life ratio : 8.00000    *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID        *
* Sample ID          : G244148014           Analyst initials: MXR1         *
* Batch Number       : 940268               Sample Quantity : 1.17330E+02 GRAM *
*****
*
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11.7MS 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	2.247E+01	2.469E+00	4.309E-01	3.758E-02	52.139
CD-109	3.458E+00	9.045E-01	1.126E+00	1.064E-01	3.072
SN-126	3.394E-01	8.876E-02	1.108E-01	1.042E-02	3.064
BA-137M	1.402E-01	6.841E-02	6.183E-02	6.205E-03	2.268
CS-137	1.482E-01	7.232E-02	6.536E-02	6.569E-03	2.268
HG-203	5.442E-02	6.739E-02	6.558E-02	6.670E-03	0.830
TL-208	5.439E-01	9.671E-02	5.674E-02	5.833E-03	9.585
BI-210	1.387E+00	2.863E+00	3.243E+00	3.007E-01	0.428
PB-210	1.387E+00	2.863E+00	3.243E+00	3.007E-01	0.428
PO-210	1.387E+00	2.863E+00	3.243E+00	2.720E-01	0.428
BI-211	4.932E+00	6.570E-01	3.187E-01	3.053E-02	15.475
PB-212	1.807E+00	2.261E-01	8.915E-02	9.481E-03	20.264
PO-212	1.807E+00	2.261E-01	8.915E-02	9.481E-03	20.264
BI-214	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
PB-214	1.716E+00	2.454E-01	1.083E-01	1.180E-02	15.847
PO-214	1.716E+00	2.454E-01	1.083E-01	1.180E-02	15.847
PO-216	1.807E+00	2.261E-01	8.915E-02	9.481E-03	20.264
PO-218	1.716E+00	2.454E-01	1.083E-01	1.180E-02	15.847

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	5.178E+00	1.456E+00	1.014E+00	9.805E-02	5.105
RA-226	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
AC-228	1.773E+00	3.687E-01	2.027E-01	2.483E-02	8.746
RA-228	1.773E+00	3.687E-01	2.027E-01	2.483E-02	8.746
TH-228	1.836E+00	2.298E-01	9.060E-02	9.635E-03	20.264
TH-230	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
TH-232	1.773E+00	3.687E-01	2.027E-01	2.483E-02	8.746
TH-234	1.146E+00	1.501E+00	1.644E+00	2.857E-01	0.697
U-234	1.313E+00	2.188E-01	1.082E-01	1.204E-02	12.130
NP-237	9.967E-01	3.320E-01	3.219E-01	7.284E-02	3.096
U-238	1.146E+00	1.501E+00	1.644E+00	2.857E-01	0.697
AM-243	3.805E-01	6.977E-02	7.601E-02	6.118E-03	5.006
ANH-511	4.121E-02	6.320E-02	5.116E-02	4.767E-03	0.806

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.666E-01		3.312E-01	5.679E-01	5.520E-02	0.469
NA-22	-1.925E-02		3.958E-02	5.967E-02	4.943E-03	-0.323
NA-24	5.835E-01		1.055E+00	Half-Life	too short	
AL-26	-1.957E-04		2.504E-02	4.109E-02	3.338E-03	-0.005
TI-44	3.766E-01	+	5.444E-02	7.434E-02	6.239E-03	5.066
SC-46	2.113E-02		3.632E-02	6.344E-02	6.324E-03	0.333
V-48	5.912E-02		6.769E-02	1.210E-01	1.156E-02	0.489
CR-51	8.333E-02		3.772E-01	6.331E-01	6.347E-02	0.132
MN-52	2.807E-02		2.135E-01	3.496E-01	2.959E-02	0.080
MN-54	-2.271E-02		3.810E-02	5.984E-02	6.045E-03	-0.380
CO-56	1.202E-03		3.791E-02	6.302E-02	6.351E-03	0.019
CO-57	5.731E-03		2.436E-02	3.957E-02	3.303E-03	0.145
CO-58	-4.599E-02		3.603E-02	5.132E-02	5.211E-03	-0.896
FE-59	2.472E-03		8.383E-02	1.370E-01	1.292E-02	0.018
CO-60	1.264E-02		3.919E-02	6.558E-02	5.494E-03	0.193
ZN-65	4.122E-02		8.652E-02	1.310E-01	1.127E-02	0.315
GE-68	4.234E-01		1.168E+00	1.979E+00	1.766E-01	0.214
AS-73	3.135E-02		5.437E-01	8.991E-01	6.674E-02	0.035
AS-74	9.884E-03		8.915E-02	1.442E-01	1.412E-02	0.069
SE-75	-1.972E-02		4.557E-02	6.862E-02	6.794E-03	-0.287
BR-77	3.850E+00		1.349E+01	2.230E+01	2.092E+00	0.173
SR-82	-4.305E-01		4.291E-01	5.319E-01	5.405E-02	-0.809
RB-83	2.794E-02		6.551E-02	1.096E-01	1.028E-02	0.255
RB-84	-1.509E-03		5.779E-02	9.525E-02	9.518E-03	-0.016
KR-85	6.689E+00		8.369E+00	1.271E+01	1.186E+00	0.526
SR-85	3.468E-02		4.339E-02	6.587E-02	6.150E-03	0.526
RB-86	3.157E-01		7.812E-01	1.329E+00	1.186E-01	0.238
Y-88	-7.253E-03		3.258E-02	5.101E-02	4.116E-03	-0.142
ZR-88	-5.862E-03		3.048E-02	4.933E-02	4.126E-03	-0.119
Y-91	1.751E+00		1.718E+01	2.848E+01	2.313E+00	0.061

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94	-2.422E-02		3.539E-02	5.618E-02	5.684E-03	-0.431
NB-95	7.415E-02		5.159E-02	8.491E-02	8.630E-03	0.873
NB-95M	2.945E-02		1.338E-01	2.010E-01	2.159E-02	0.147
ZR-95	2.403E-02		6.520E-02	1.123E-01	1.226E-02	0.214
NB-97	2.822E-01		1.395E-01	Half-Life	too short	
ZR-97	2.424E+00		3.002E+00	Half-Life	too short	
MO-99	4.155E+00		1.521E+01	2.596E+01	4.181E+00	0.160
TC-99M	-2.522E+11		3.590E+11	Half-Life	too short	
RH-101	2.760E-03		3.206E-02	5.382E-02	4.933E-03	0.051
RH-102	-4.882E-03		3.029E-02	4.856E-02	4.403E-03	-0.101
RU-103	-4.183E-03		4.060E-02	6.516E-02	9.472E-03	-0.064
RH-106	-7.228E-03		3.157E-01	5.030E-01	7.151E-02	-0.014
RU-106	-7.228E-03		3.157E-01	5.030E-01	4.979E-02	-0.014
AG-108M	-3.716E-03		3.059E-02	4.943E-02	4.486E-03	-0.075
AG-110M	3.527E-02		3.566E-02	5.807E-02	5.949E-03	0.607
IN-111	6.757E-01		1.359E+00	2.082E+00	2.022E-01	0.325
IN-113M	-1.541E-02		4.448E-02	7.121E-02	6.143E-03	-0.216
SN-113	-1.541E-02		4.448E-02	7.121E-02	6.143E-03	-0.216
IN-114M	1.025E-02		1.887E-01	2.837E-01	2.570E-02	0.036
CD-115	3.906E+00		1.366E+01	2.259E+01	2.130E+00	0.173
SN-117M	-7.682E-03		5.711E-02	9.018E-02	7.783E-03	-0.085
SB-122	4.284E-01		2.635E+00	4.292E+00	4.134E-01	0.100
I-123	-3.923E+00		1.072E+01	Half-Life	too short	
TE-123M	-5.161E-03		2.820E-02	4.441E-02	3.859E-03	-0.116
I-124	1.218E-01		8.401E-01	1.259E+00	1.236E-01	0.097
SB-124	3.310E-02		7.629E-02	1.354E-01	1.177E-02	0.244
SB-125	-3.525E-02		9.484E-02	1.496E-01	1.324E-02	-0.236
TE-125M	6.154E-01		8.975E+00	1.452E+01	1.485E+00	0.042
I-126	1.067E-02		2.131E-01	3.140E-01	3.155E-02	0.034
SB-126	-9.019E-02		1.559E-01	2.320E-01	2.352E-02	-0.389
SB-127	-6.526E-01		1.641E+00	2.664E+00	3.414E-01	-0.245
XE-127	2.560E-02		4.707E-02	7.892E-02	7.284E-03	0.324
I-131	-2.455E-02		1.177E-01	1.910E-01	1.793E-02	-0.129
TE-132	-2.556E-02		8.507E-01	1.430E+00	2.349E-01	-0.018
BA-133	7.909E-03		4.677E-02	6.869E-02	9.279E-03	0.115
I-133	2.206E-03		6.698E-03	Half-Life	too short	
CS-134	8.107E-02	+	7.888E-02	8.843E-02	9.023E-03	0.917
CS-135	2.347E-01		1.772E-01	2.812E-01	3.116E-02	0.834
I-135	3.423E+10		3.526E+10	Half-Life	too short	
CS-136	-3.892E-02		1.115E-01	1.753E-01	1.664E-02	-0.222
CE-139	3.032E-03		2.968E-02	4.734E-02	4.133E-03	0.064
BA-140	-4.484E-02		2.676E-01	4.243E-01	1.416E-01	-0.106
LA-140	-5.110E-02		7.338E-02	1.052E-01	8.878E-03	-0.486
CE-141	1.070E-02		6.451E-02	1.037E-01	8.955E-03	0.103
CE-143	1.431E-03		2.180E-04	Half-Life	too short	
CE-144	-2.340E-01		2.270E-01	3.227E-01	4.980E-02	-0.725
PM-144	1.396E-02		3.730E-02	6.374E-02	6.445E-03	0.219
PR-144	9.468E-01		2.529E+00	4.322E+00	4.369E-01	0.219

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146	-3.603E-03		4.328E-02	6.998E-02	7.665E-03	-0.051
ND-147	-3.582E-01		5.939E-01	9.028E-01	1.394E-01	-0.397
PM-149	-3.976E+01		1.250E+02	2.044E+02	3.332E+01	-0.195
EU-152	4.330E-02		1.110E-01	1.660E-01	1.620E-02	0.261
GD-153	-5.322E-02		8.501E-02	1.179E-01	1.045E-02	-0.451
EU-154	-4.584E-02		1.097E-01	1.670E-01	1.845E-02	-0.275
EU-155	3.377E-02		1.052E-01	1.722E-01	1.497E-02	0.196
TB-160	8.451E-03		1.226E-01	2.043E-01	2.043E-02	0.041
HO-166M	2.218E-02		6.041E-02	1.040E-01	1.054E-02	0.213
TM-171	-2.944E+01		2.723E+01	3.786E+01	2.821E+00	-0.777
LU-176	-1.897E-02		2.227E-02	3.481E-02	3.395E-03	-0.545
LU-177	3.725E+00	+	2.136E+00	2.261E+00	2.103E-01	1.647
LU-177M	4.042E-02		1.728E-01	2.872E-01	2.458E-02	0.141
HF-181	-2.162E-02		4.238E-02	6.579E-02	5.998E-03	-0.329
W-181	-7.504E-02		3.409E-01	4.958E-01	3.648E-02	-0.151
TA-182	1.049E-01		1.898E-01	3.233E-01	2.638E-02	0.324
RE-183	5.024E-02		1.109E-01	1.757E-01	1.525E-02	0.286
RE-184	1.260E-01		2.184E-01	3.763E-01	3.678E-02	0.335
OS-185	1.252E-02		3.980E-02	6.874E-02	6.865E-03	0.182
RE-188	1.179E-02		1.739E-01	2.776E-01	2.384E-02	0.042
W-188	-5.982E+00		7.835E+00	1.072E+01	1.060E+00	-0.558
IR-192	-2.876E-02		3.372E-02	5.277E-02	5.104E-03	-0.545
AU-195	2.176E-01		2.189E-01	3.644E-01	3.209E-02	0.597
TL-200	1.587E-04		4.138E-04	Half-Life too short		
TL-201	3.513E+00		8.570E+00	1.388E+01	1.214E+00	0.253
TL-202	1.457E-02		6.920E-02	1.146E-01	1.007E-02	0.127
BI-207	-4.775E-03		5.038E-02	8.140E-02	7.350E-03	-0.059
TL-207	-7.006E-01		7.528E-01	9.928E-01	1.805E-01	-0.706
PO-209	-2.782E-01		6.877E+00	1.131E+01	1.125E+00	-0.025
PB-211	-1.736E+00		1.462E+00	1.407E+00	8.814E-01	-1.234
BI-212	1.067E+00	+	5.811E-01	7.087E-01	8.044E-02	1.506
PO-215	-7.006E-01		7.528E-01	9.928E-01	1.805E-01	-0.706
RN-219	5.794E-01		4.226E-01	7.386E-01	1.103E-01	0.784
RN-220	-5.932E+00		2.530E+01	3.984E+01	3.806E+00	-0.149
RA-223	-7.006E-01		7.528E-01	9.928E-01	1.805E-01	-0.706
AC-227	-2.241E-01		3.671E-01	5.922E-01	9.500E-02	-0.378
TH-227	-2.241E-01		3.678E-01	5.922E-01	1.105E-01	-0.378
TH-229	2.764E-01		4.688E-01	8.136E-01	7.409E-02	0.340
PA-231	-3.488E-01		1.530E+00	2.430E+00	3.880E-01	-0.144
TH-231	-7.006E-01		7.528E-01	9.928E-01	1.805E-01	-0.706
U-231	-1.332E+00		1.346E+00	1.830E+00	1.637E-01	-0.728
PA-233	5.606E-02		5.868E-02	1.026E-01	1.018E-02	0.546
PA-234	-2.877E-01		3.124E-01	4.582E-01	8.847E-02	-0.628
PA-234M	5.954E+00		4.575E+00	8.339E+00	8.920E-01	0.714
U-235	1.385E-01		2.159E-01	3.484E-01	6.072E-02	0.397
NP-236	-4.898E-02		7.907E-02	1.215E-01	1.052E-02	-0.403
NP-239	-2.520E-02		1.825E-01	2.918E-01	2.445E-02	-0.086
AM-241	1.083E-01		1.249E-01	1.916E-01	1.499E-02	0.566

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.381E-02		9.227E-02	1.508E-01	1.301E-02	0.158
AM-246	1.987E-03		1.345E-01	2.198E-01	1.958E-02	0.009
CM-247	4.134E-02		3.722E-02	6.510E-02	5.505E-03	0.635
CF-249	1.038E-02		3.986E-02	6.652E-02	5.613E-03	0.156
CF-251	-1.519E-02		1.308E-01	2.057E-01	1.826E-02	-0.074



# 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]G244148014          *
* Acquisition date   : 20-JAN-2010 15:58:41 Detector SN#      :           *
* Detector ID        : GAM20                      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 02:00:32.93             Half life ratio : 8.000     *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148014             Analyst initials: MXR1         *
* Batch Number       : 940268                 Sample Quantity : 1.1733E+02 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000      *
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 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	2.247E+01	2.420E+00	2.149E-01	1.235E+00
CD-109	3.458E+00	8.864E-01	5.781E-01	4.523E-01
SN-126	3.394E-01	8.699E-02	5.690E-02	4.438E-02
BA-137M	1.402E-01	6.704E-02	3.110E-02	3.420E-02
CS-137	1.482E-01	7.087E-02	3.287E-02	3.616E-02
HG-203	5.442E-02	6.605E-02	3.329E-02	3.370E-02
TL-208	5.439E-01	9.478E-02	2.857E-02	4.836E-02
BI-210	1.387E+00	2.806E+00	1.676E+00	1.432E+00
PB-210	1.387E+00	2.806E+00	1.676E+00	1.432E+00
PO-210	1.387E+00	2.806E+00	1.676E+00	1.431E+00
BI-211	4.932E+00	6.438E-01	1.614E-01	3.285E-01
PB-212	1.807E+00	2.216E-01	4.532E-02	1.131E-01
PO-212	1.807E+00	2.216E-01	4.532E-02	1.131E-01
BI-214	1.313E+00	2.144E-01	5.448E-02	1.094E-01
PB-214	1.716E+00	2.405E-01	5.481E-02	1.227E-01
PO-214	1.716E+00	2.405E-01	5.481E-02	1.227E-01
PO-216	1.807E+00	2.216E-01	4.532E-02	1.131E-01
PO-218	1.716E+00	2.405E-01	5.481E-02	1.227E-01
RA-224	5.178E+00	1.427E+00	5.156E-01	7.281E-01
RA-226	1.313E+00	2.144E-01	5.448E-02	1.094E-01
AC-228	1.773E+00	3.614E-01	1.016E-01	1.844E-01
RA-228	1.773E+00	3.614E-01	1.016E-01	1.844E-01
TH-228	1.836E+00	2.252E-01	4.606E-02	1.149E-01
TH-230	1.313E+00	2.144E-01	5.448E-02	1.094E-01
TH-232	1.773E+00	3.614E-01	1.016E-01	1.844E-01
TH-234	1.146E+00	1.471E+00	8.473E-01	7.503E-01
U-234	1.313E+00	2.144E-01	5.448E-02	1.094E-01
NP-237	9.967E-01	3.254E-01	1.654E-01	1.660E-01
U-238	1.146E+00	1.471E+00	8.473E-01	7.503E-01
AM-243	3.805E-01	6.837E-02	3.910E-02	3.489E-02
ANH-511	4.121E-02	6.194E-02	2.580E-02	3.160E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	2.666E-01	3.245E-01	2.866E-01	1.656E-01 NOT IDENT.
NA-22	-1.925E-02	3.879E-02	2.980E-02	1.979E-02 NOT IDENT.
NA-24	5.835E+05	2.069E+06	0.000E+00	1.055E+06 SHORT HLIF
AL-26	-1.957E-04	2.454E-02	1.252E-02	1.252E-02 NOT IDENT.
TI-44	3.766E-01	5.335E-02	3.823E-02	2.722E-02 FAIL ABUN
SC-46	2.113E-02	3.559E-02	3.180E-02	1.816E-02 FAIL ABUN
V-48	5.912E-02	6.634E-02	6.059E-02	3.385E-02 NOT IDENT.
CR-51	8.333E-02	3.696E-01	3.208E-01	1.886E-01 NOT IDENT.
MN-52	2.807E-02	2.092E-01	1.744E-01	1.067E-01 NOT IDENT.
MN-54	-2.271E-02	3.733E-02	3.002E-02	1.905E-02 NOT IDENT.
CO-56	1.202E-03	3.715E-02	3.161E-02	1.895E-02 FAIL ABUN
CO-57	5.731E-03	2.387E-02	2.026E-02	1.218E-02 NOT IDENT.
CO-58	-4.599E-02	3.531E-02	2.576E-02	1.802E-02 NOT IDENT.
FE-59	2.472E-03	8.215E-02	6.853E-02	4.191E-02 NOT IDENT.
CO-60	1.264E-02	3.841E-02	3.274E-02	1.960E-02 NOT IDENT.
ZN-65	4.122E-02	8.479E-02	6.550E-02	4.326E-02 NOT IDENT.
GE-68	4.234E-01	1.145E+00	9.902E-01	5.839E-01 NOT IDENT.
AS-73	3.135E-02	5.328E-01	4.641E-01	2.719E-01 NOT IDENT.
AS-74	9.884E-03	8.737E-02	7.261E-02	4.458E-02 NOT IDENT.
SE-75	-1.972E-02	4.466E-02	3.484E-02	2.278E-02 NOT IDENT.
BR-77	3.850E+00	1.322E+01	1.124E+01	6.743E+00 FAIL ABUN
SR-82	-4.305E-01	4.205E-01	2.671E-01	2.146E-01 NOT IDENT.
RB-83	2.794E-02	6.420E-02	5.525E-02	3.276E-02 NOT IDENT.
RB-84	-1.509E-03	5.663E-02	4.776E-02	2.890E-02 NOT IDENT.
KR-85	6.689E+00	8.202E+00	6.407E+00	4.185E+00 NOT IDENT.
SR-85	3.468E-02	4.252E-02	3.321E-02	2.169E-02 NOT IDENT.
RB-86	3.157E-01	7.656E-01	6.647E-01	3.906E-01 NOT IDENT.
Y-88	-7.253E-03	3.193E-02	2.537E-02	1.629E-02 NOT IDENT.
ZR-88	-5.862E-03	2.987E-02	2.495E-02	1.524E-02 NOT IDENT.
Y-91	1.751E+00	1.684E+01	1.423E+01	8.590E+00 NOT IDENT.
NB-94	-2.422E-02	3.468E-02	2.824E-02	1.769E-02 NOT IDENT.
NB-95	7.415E-02	5.056E-02	4.264E-02	2.579E-02 NOT IDENT.
NB-95M	2.945E-02	1.311E-01	1.022E-01	6.690E-02 NOT IDENT.
ZR-95	2.403E-02	6.390E-02	5.642E-02	3.260E-02 NOT IDENT.
NB-97	2.822E+05	2.734E+05	0.000E+00	1.395E+05 SHORT HLIF
ZR-97	2.424E+06	5.884E+06	0.000E+00	3.002E+06 SHORT HLIF
MO-99	4.155E+00	1.490E+01	1.304E+01	7.603E+00 NOT IDENT.
TC-99M	-2.522E+17	7.037E+17	0.000E+00	0.000E+00 SHORT HLIF
RH-101	2.760E-03	3.142E-02	2.741E-02	1.603E-02 NOT IDENT.
RH-102	-4.882E-03	2.968E-02	2.451E-02	1.514E-02 FAIL ABUN
RU-103	-4.183E-03	3.979E-02	3.287E-02	2.030E-02 FAIL ABUN
RH-106	-7.228E-03	3.094E-01	2.532E-01	1.578E-01 FAIL ABUN
RU-106	-7.228E-03	3.094E-01	2.532E-01	1.578E-01 FAIL ABUN
AG-108M	-3.716E-03	2.998E-02	2.497E-02	1.530E-02 NOT IDENT.
AG-110M	3.527E-02	3.494E-02	2.920E-02	1.783E-02 NOT IDENT.
IN-111	6.757E-01	1.332E+00	1.058E+00	6.797E-01 NOT IDENT.
IN-113M	-1.541E-02	4.359E-02	3.601E-02	2.224E-02 NOT IDENT.
SN-113	-1.541E-02	4.359E-02	3.601E-02	2.224E-02 NOT IDENT.
IN-114M	1.025E-02	1.849E-01	1.445E-01	9.433E-02 NOT IDENT.
CD-115	3.906E+00	1.338E+01	1.139E+01	6.828E+00 NOT IDENT.
SN-117M	-7.682E-03	5.597E-02	4.604E-02	2.855E-02 NOT IDENT.
SB-122	4.284E-01	2.582E+00	2.162E+00	1.317E+00 NOT IDENT.
I-123	-3.923E+06	2.101E+07	0.000E+00	1.072E+07 SHORT HLIF
TE-123M	-5.161E-03	2.764E-02	2.267E-02	1.410E-02 NOT IDENT.
I-124	1.218E-01	8.233E-01	6.337E-01	4.201E-01 NOT IDENT.
SB-124	3.310E-02	7.476E-02	6.742E-02	3.814E-02 FAIL ABUN
SB-125	-3.525E-02	9.295E-02	7.557E-02	4.742E-02 FAIL ABUN
TE-125M	6.154E-01	8.795E+00	7.442E+00	4.487E+00 NOT IDENT.
I-126	1.067E-02	2.089E-01	1.579E-01	1.066E-01 NOT IDENT.
SB-126	-9.019E-02	1.528E-01	1.166E-01	7.796E-02 FAIL ABUN
SB-127	-6.526E-01	1.608E+00	1.339E+00	8.203E-01 NOT IDENT.
XE-127	2.560E-02	4.612E-02	4.019E-02	2.353E-02 NOT IDENT.
I-131	-2.455E-02	1.154E-01	9.667E-02	5.887E-02 NOT IDENT.
TE-132	-2.556E-02	8.337E-01	7.273E-01	4.254E-01 NOT IDENT.
BA-133	7.909E-03	4.583E-02	3.477E-02	2.338E-02 NOT IDENT.
I-133	2.206E+03	1.313E+04	0.000E+00	6.698E+03 SHORT HLIF
CS-134	8.107E-02	7.730E-02	4.438E-02	3.944E-02 FAIL ABUN
CS-135	2.347E-01	1.736E-01	1.428E-01	8.859E-02 NOT IDENT.
I-135	3.423E+16	6.911E+16	0.000E+00	0.000E+00 SHORT HLIF
CS-136	-3.892E-02	1.093E-01	8.772E-02	5.575E-02 FAIL ABUN
CE-139	3.032E-03	2.909E-02	2.416E-02	1.484E-02 NOT IDENT.
BA-140	-4.484E-02	2.623E-01	2.139E-01	1.338E-01 NOT IDENT.
LA-140	-5.110E-02	7.191E-02	5.239E-02	3.669E-02 FAIL ABUN
CE-141	1.070E-02	6.322E-02	5.300E-02	3.226E-02 NOT IDENT.

CE-143	1.431E+03	4.272E+02	0.000E+00	2.180E+02	SHORT HLIF
CE-144	-2.340E-01	2.224E-01	1.650E-01	1.135E-01	NOT IDENT.
PM-144	1.396E-02	3.655E-02	3.204E-02	1.865E-02	NOT IDENT.
PR-144	9.468E-01	2.478E+00	2.172E+00	1.264E+00	NOT IDENT.
PM-146	-3.603E-03	4.242E-02	3.534E-02	2.164E-02	NOT IDENT.
ND-147	-3.582E-01	5.820E-01	4.551E-01	2.969E-01	FAIL ABUN
PM-149	-3.976E+01	1.225E+02	1.037E+02	6.250E+01	NOT IDENT.
EU-152	4.330E-02	1.088E-01	8.409E-02	5.549E-02	FAIL ABUN
GD-153	-5.322E-02	8.331E-02	6.048E-02	4.250E-02	FAIL ABUN
EU-154	-4.584E-02	1.075E-01	8.338E-02	5.487E-02	NOT IDENT.
EU-155	3.377E-02	1.031E-01	8.827E-02	5.259E-02	FAIL ABUN
TB-160	8.451E-03	1.202E-01	1.024E-01	6.132E-02	FAIL ABUN
HO-166M	2.218E-02	5.920E-02	5.228E-02	3.020E-02	FAIL ABUN
TM-171	-2.944E+01	2.669E+01	1.950E+01	1.362E+01	NOT IDENT.
LU-176	-1.897E-02	2.182E-02	1.765E-02	1.113E-02	FAIL ABUN
LU-177	3.725E+00	2.093E+00	1.151E+00	1.068E+00	FAIL ABUN
LU-177M	4.042E-02	1.694E-01	1.452E-01	8.642E-02	FAIL ABUN
HF-181	-2.162E-02	4.154E-02	3.320E-02	2.119E-02	NOT IDENT.
W-181	-7.504E-02	3.341E-01	2.554E-01	1.705E-01	NOT IDENT.
TA-182	1.049E-01	1.860E-01	1.615E-01	9.492E-02	FAIL ABUN
RE-183	5.024E-02	1.087E-01	8.966E-02	5.546E-02	FAIL ABUN
RE-184	1.260E-01	2.140E-01	1.912E-01	1.092E-01	NOT IDENT.
OS-185	1.252E-02	3.901E-02	3.458E-02	1.990E-02	NOT IDENT.
RE-188	1.179E-02	1.704E-01	1.418E-01	8.695E-02	NOT IDENT.
W-188	-5.982E+00	7.678E+00	5.436E+00	3.917E+00	FAIL ABUN
IR-192	-2.876E-02	3.304E-02	2.675E-02	1.686E-02	FAIL ABUN
AU-195	2.176E-01	2.145E-01	1.870E-01	1.094E-01	FAIL ABUN
TL-200	1.587E+02	8.111E+02	0.000E+00	4.138E+02	SHORT HLIF
TL-201	3.513E+00	8.399E+00	7.079E+00	4.285E+00	NOT IDENT.
TL-202	1.457E-02	6.782E-02	5.790E-02	3.460E-02	NOT IDENT.
BI-207	-4.775E-03	4.937E-02	4.073E-02	2.519E-02	FAIL ABUN
TL-207	-7.006E-01	7.377E-01	5.031E-01	3.764E-01	FAIL ABUN
PO-209	-2.782E-01	6.739E+00	5.669E+00	3.438E+00	NOT IDENT.
PB-211	-1.736E+00	1.433E+00	7.113E-01	7.311E-01	NOT IDENT.
BI-212	1.067E+00	5.695E-01	3.561E-01	2.906E-01	FAIL ABUN
PO-215	-7.006E-01	7.377E-01	5.031E-01	3.764E-01	FAIL ABUN
RN-219	5.794E-01	4.141E-01	3.734E-01	2.113E-01	FAIL ABUN
RN-220	-5.932E+00	2.479E+01	2.008E+01	1.265E+01	NOT IDENT.
RA-223	-7.006E-01	7.377E-01	5.031E-01	3.764E-01	FAIL ABUN
AC-227	-2.241E-01	3.598E-01	3.008E-01	1.836E-01	FAIL ABUN
TH-227	-2.241E-01	3.604E-01	3.008E-01	1.839E-01	FAIL ABUN
TH-229	2.764E-01	4.595E-01	4.145E-01	2.344E-01	FAIL ABUN
PA-231	-3.488E-01	1.500E+00	1.233E+00	7.651E-01	FAIL ABUN
TH-231	-7.006E-01	7.377E-01	5.031E-01	3.764E-01	FAIL ABUN
U-231	-1.332E+00	1.319E+00	9.393E-01	6.728E-01	FAIL ABUN
PA-233	5.606E-02	5.750E-02	5.202E-02	2.934E-02	FAIL ABUN
PA-234	-2.877E-01	3.061E-01	2.295E-01	1.562E-01	FAIL ABUN
PA-234M	5.954E+00	4.484E+00	4.175E+00	2.288E+00	NOT IDENT.
U-235	1.385E-01	2.116E-01	1.780E-01	1.080E-01	FAIL ABUN
NP-236	-4.898E-02	7.749E-02	6.204E-02	3.954E-02	NOT IDENT.
NP-239	-2.520E-02	1.789E-01	1.494E-01	9.125E-02	FAIL ABUN
AM-241	1.083E-01	1.224E-01	9.878E-02	6.245E-02	NOT IDENT.
CM-243	2.381E-02	9.043E-02	7.731E-02	4.614E-02	FAIL ABUN
AM-246	1.987E-03	1.318E-01	1.099E-01	6.726E-02	NOT IDENT.
CM-247	4.134E-02	3.648E-02	3.291E-02	1.861E-02	FAIL ABUN
CF-249	1.038E-02	3.906E-02	3.364E-02	1.993E-02	NOT IDENT.
CF-251	-1.519E-02	1.282E-01	1.049E-01	6.539E-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	263.5533
46.50	263.5533
46.50	263.5533
48.70	257.9548
49.72	265.8500
51.35	267.6291
52.39	286.5064
52.97	287.8266
53.15	287.9298
53.44	266.3910
54.07	258.8211
56.28	316.4916
56.28	316.4932
57.37	0.0000
57.53	315.2635
57.53	315.2643
57.60	315.3054
57.98	321.5050
57.98	321.5050
59.32	302.3596
59.32	302.3596
59.40	302.4044
59.54	302.4837
59.72	302.5854
60.01	337.2193
61.10	366.4328
61.14	366.4589
61.30	368.0692
63.00	378.7521
63.29	378.9492
63.29	378.9492
63.58	379.1462
64.28	433.4932
65.12	419.0118
65.20	419.0710
65.20	419.0710
66.05	456.0608
66.72	464.1781
66.83	436.9570
66.91	437.0186
67.20	437.2383
67.20	437.2383
67.75	402.7021
67.85	385.4441
68.90	427.3511
68.90	427.3511
69.30	451.0052
69.67	451.2898
70.82	461.3293
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70.83	461.3362
72.80	412.2736
72.87	407.7224
72.87	407.7224
74.67	413.0233
74.81	413.1176
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74.81	413.1176
74.81	413.1176
74.81	413.1176
74.97	413.2242
75.28	413.4312
75.70	413.7100
77.11	414.6447
77.11	414.6447

77.11	414.6447
77.11	414.6447
77.11	414.6447
77.11	414.6447
77.11	414.6447
78.38	352.5901
79.62	320.2205
79.80	325.4766
79.80	325.4766
80.11	325.6336
80.18	325.6689
80.30	316.4232
80.30	316.4232
80.57	316.5555
81.00	326.0822
81.07	326.1175
81.07	326.1175
81.07	326.1175
81.07	326.1175
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83.78	344.6212
83.78	344.6212
84.21	352.6457
84.90	353.0112
85.43	353.2923
86.29	353.7440
86.50	353.8544
86.54	353.8751
86.59	353.9009
86.72	353.9682
86.79	354.0044
86.94	354.0837
87.30	366.8122
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87.30	366.8122
87.30	366.8122
87.30	366.8122
87.30	366.8122
87.57	366.9568
87.88	367.1246
88.03	367.2050
88.36	367.3817
88.47	367.4406
89.95	368.2315
91.11	278.9986
92.29	279.4686
92.38	279.5050
92.38	279.5050
93.35	279.8885
94.00	280.1451
94.67	285.1584
94.67	285.1611
94.90	294.7602
94.90	294.7602
94.90	294.7602
94.90	294.7602
95.87	355.4602
95.87	355.4602
96.73	359.0616
97.43	324.4200
98.44	279.2168
98.44	279.2168
98.88	277.2594
99.55	276.4484
99.55	276.4484
99.86	273.3736
100.00	279.8094
100.10	279.8482
103.18	317.3284
103.76	284.4244
105.00	285.9595
105.31	295.7179
108.00	294.6007
109.28	283.2379

111.00	310.8391
111.00	310.8391
111.76	297.0928
112.95	268.3235
115.19	279.9199
116.30	258.5742
117.00	267.4947
117.00	267.4947
117.66	267.7099
121.11	231.6712
121.62	232.9048
121.78	238.4175
122.06	248.3436
122.32	245.1367
122.32	245.1367
122.32	245.1367
122.32	245.1367
123.07	251.9275
127.23	260.8606
129.76	269.8991
131.20	305.1711
133.02	310.7859
133.54	319.2803
135.34	253.2738
136.00	287.9209
136.25	286.8880
136.48	286.9615
140.51	287.1119
140.51	0.0000
142.18	293.2282
142.65	265.3810
143.76	250.0016
144.24	269.1992
144.24	269.1992
144.24	269.1992
144.24	269.1992
145.22	271.7256
145.44	271.7896
147.16	279.0353
152.43	261.3366
152.70	271.5930
153.22	259.2836
154.21	251.6131
154.21	251.6131
154.21	251.6131
154.21	251.6131
155.03	259.7635
156.02	242.9922
158.56	244.7532
159.00	0.0000
159.00	244.8604
160.31	256.5857
161.27	254.5477
162.32	219.3887
162.64	211.4579
163.35	232.1932
163.89	252.9167
165.85	236.2009
167.43	214.7445
171.28	230.5237
171.86	229.4966
172.10	229.5492
176.55	247.8881
176.60	247.9012
181.06	268.7010
184.41	229.6200
185.71	229.5398
186.00	229.5998
190.27	213.9393
192.34	216.5485
193.63	204.6939
197.04	208.8425
198.01	218.7614
198.60	215.3262
200.40	241.3992
201.83	255.9111
202.84	217.5098
205.31	253.8173

208.36	216.2255
208.81	216.3067
209.75	216.4766
209.75	216.4766
210.97	216.3381
215.65	203.7479
216.55	190.7049
218.09	230.5723
222.10	197.8856
223.80	199.0594
226.40	223.0445
227.00	214.0785
227.08	214.0911
227.20	211.3909
228.16	213.3650
228.18	209.7368
228.18	209.7368
231.56	0.0000
235.69	214.8009
236.00	217.7743
236.00	217.7743
238.63	196.7941
238.63	196.7941
238.63	196.7941
238.63	196.7941
239.00	196.8499
240.98	197.1468
241.98	197.2944
241.98	197.2944
241.98	197.2944
244.69	144.1815
245.39	144.2569
247.94	176.9766
248.90	153.1199
249.79	163.3744
252.40	155.3646
252.85	148.9402
252.85	148.9402
254.15	0.0000
256.20	178.9798
256.20	178.9798
260.50	137.6750
260.90	149.8123
262.80	179.8331
264.65	166.6958
268.24	157.1437
268.79	176.6658
269.46	190.2302
269.46	190.2302
269.46	190.2302
269.46	190.2302
271.23	190.4659
273.65	180.2725
276.40	165.5640
277.35	146.0920
277.60	146.1181
277.60	146.1181
278.00	146.1583
278.60	129.6362
279.20	158.3408
279.53	158.3767
280.46	166.0245
281.68	145.0148
283.67	155.5815
284.30	148.4883
285.00	150.4503
285.90	160.9573
286.10	165.7127
286.10	165.7127
287.40	139.3198
288.45	0.0000
290.67	153.4924
290.80	153.5072
291.72	164.2465
293.26	0.0000
293.70	124.8678
295.21	124.9919
295.21	124.9919

295.21	124.9919
295.96	125.0540
296.50	133.4888
297.23	133.5529
298.57	133.6703
299.80	145.2438
299.80	145.2438
300.09	137.6257
300.09	137.6257
300.09	137.6257
300.09	137.6257
300.12	137.6279
301.29	119.3689
302.84	108.7655
303.76	116.4938
303.91	116.5049
304.40	125.7427
304.40	125.7427
304.84	127.8239
306.84	131.5084
308.46	115.3088
311.98	104.0103
316.51	144.8730
318.01	124.7070
319.02	118.0144
319.41	117.0747
320.08	133.5801
323.87	155.2393
323.87	155.2393
323.87	155.2393
323.87	155.2393
325.23	121.1876
328.77	130.7947
333.44	106.7024
334.20	120.2899
334.20	120.2899
334.30	120.2975
338.28	120.3893
338.28	120.3893
338.28	120.3893
338.28	120.3893
338.32	120.3931
338.32	120.3931
338.32	120.3931
340.50	117.6086
340.57	117.6141
344.27	127.3021
345.85	129.7804
350.59	0.0000
351.07	121.5006
351.92	115.4432
351.92	115.4432
351.92	115.4432
355.39	0.0000
356.01	112.3537
364.48	105.3466
366.43	114.4174
367.43	111.4958
367.94	0.0000
369.80	94.6985
374.96	107.9687
383.85	105.4855
387.95	110.7570
388.63	107.7755
391.69	117.0355
391.69	117.0355
392.90	112.0637
398.62	133.6738
400.65	101.3763
401.10	109.5128
401.81	92.3094
402.60	96.4075
404.84	152.4033
410.95	109.0621
411.60	116.2370
413.65	101.0499
414.70	99.0633
415.30	110.3318



415.76	113.4237
417.63	0.0000
418.52	85.9559
423.70	100.5481
427.08	90.4438
427.89	102.8198
432.53	94.8160
433.93	87.6627
439.47	83.7686
439.56	83.7723
439.89	85.8546
443.98	79.8104
444.90	88.1426
445.03	88.1478
445.03	88.1478
445.03	88.1478
445.03	88.1478
453.90	94.7796
463.38	98.7717
468.07	88.9251
473.00	90.3947
475.06	98.8997
475.35	95.7558
476.78	92.6608
477.59	81.1087
477.96	86.3905
482.03	90.7779
484.57	80.3163
487.03	80.4079
490.36	0.0000
492.35	81.6656
497.08	82.9048
507.63	0.0000
510.53	0.0000
510.84	105.8794
511.00	105.8862
511.85	102.7170
511.85	102.7170
513.99	94.2466
513.99	94.2466
520.41	66.5902
520.65	69.8183
527.90	62.4976
528.96	0.0000
529.64	71.1724
529.87	0.0000
531.02	84.1628
537.32	76.8177
543.00	73.7524
546.56	0.0000
549.76	75.0518
552.65	68.6082
555.20	66.5009
563.23	73.2874
563.90	73.3078
568.70	73.4530
569.32	83.3430
569.50	83.3477
569.67	78.9675
573.80	81.2988
574.00	81.3056
574.64	94.5139
578.91	73.9819
579.30	0.0000
583.14	74.9913
585.48	70.6465
591.81	70.8262
592.07	68.6204
593.00	67.5378
595.88	64.2906
600.56	72.1848
602.52	0.0000
602.71	75.5807
602.71	75.5807
603.60	78.2740
604.41	85.4180
604.70	90.7665
609.31	76.8901

609.31	76.8901
609.31	76.8901
609.31	76.8901
610.33	65.9966
612.46	80.3320
614.37	50.0227
618.01	77.1512
621.84	68.3085
621.84	68.3085
631.29	59.5652
633.02	69.7254
633.10	66.3534
634.78	72.0234
635.90	75.6574
636.97	81.0945
645.85	69.6121
646.12	59.6739
656.30	60.5062
657.75	49.9445
657.90	0.0000
661.65	82.7531
661.65	82.7531
664.57	0.0000
666.33	72.8770
666.33	72.8770
675.00	73.1074
677.61	70.4317
685.20	76.1286
692.80	82.7732
695.00	77.3165
696.49	76.4366
696.49	76.4366
697.00	74.6066
697.49	81.9904
698.33	94.9154
698.50	94.9204
699.00	91.2511
702.63	94.1358
706.10	80.3922
706.58	0.0000
706.67	83.1797
709.31	69.3805
711.68	66.6615
713.82	72.2700
717.42	56.5888
720.50	73.1341
721.93	0.0000
722.20	60.3995
722.78	58.8632
722.78	58.8632
722.89	58.8647
722.95	58.8663
723.30	58.8740
724.18	57.3413
727.18	66.0893
733.00	71.5063
735.90	65.3516
739.58	63.5641
742.81	61.7622
744.21	62.7274
747.13	60.9153
751.79	65.7036
752.31	56.3276
753.82	46.0236
755.35	46.9873
756.15	50.7595
756.87	52.6518
763.93	53.4045
765.79	64.4395
766.42	66.9681
766.84	66.9768
776.49	67.8209
778.00	56.8081
778.57	56.8184
778.89	56.8242
783.80	70.1952
785.46	55.9967
792.07	57.0674

795.84	42.8522
796.30	41.2714
798.80	61.9563
801.93	54.8622
805.60	47.7625
810.29	64.0966
810.76	61.2359
815.85	28.7505
817.79	50.8236
818.51	54.6718
819.60	57.5684
826.30	55.7669
828.27	0.0000
831.60	51.0436
831.96	54.9015
834.83	74.2309
836.80	0.0000
846.75	52.2505
848.13	47.4317
856.28	0.0000
856.80	38.8223
860.37	55.3816
867.32	34.0780
867.82	34.0831
871.10	52.6368
873.19	39.0146
874.81	37.0815
875.33	0.0000
876.40	42.9569
879.36	40.0641
880.27	39.0967
880.51	38.1221
881.50	35.2002
883.24	42.0667
884.67	41.1059
889.25	39.2012
896.60	46.1612
898.02	41.2668
899.00	46.1933
903.28	53.5765
911.07	49.3152
911.07	49.3152
911.07	49.3152
919.63	52.2622
920.93	49.4556
925.00	41.5909
925.24	41.5939
926.50	54.4871
935.52	38.7363
937.48	71.5518
944.10	49.7827
946.00	63.7547
949.00	48.8541
962.29	45.0330
964.01	43.0514
966.15	43.0766
968.20	43.1018
969.11	30.0784
969.11	30.0784
969.11	30.0784
977.42	32.1570
980.50	57.3284
983.50	33.2175
989.30	42.3435
996.32	52.5256
1001.03	38.4323
1001.68	39.4504
1004.76	52.6449
1021.30	0.0000
1024.50	0.0000
1034.80	47.9639
1036.00	47.9788
1037.82	50.0432
1038.57	45.9690
1038.76	0.0000
1045.16	37.8618
1046.59	40.9453
1048.07	50.1795

1050.47	53.2848
1050.47	53.2848
1062.04	34.9430
1063.62	46.2678
1076.63	40.2321
1077.35	39.2079
1078.86	43.3515
1085.78	38.2574
1099.22	40.4625
1112.02	45.7961
1112.84	44.2432
1115.52	34.7249
1120.29	39.6328
1120.29	39.6328
1120.29	39.6328
1120.29	39.6328
1120.51	39.6347
1121.28	39.6421
1124.00	0.0000
1129.67	35.5423
1131.51	0.0000
1147.95	0.0000
1167.94	36.9277
1173.22	46.4836
1175.09	47.5598
1177.93	45.8301
1189.05	34.9932
1204.90	42.5742
1205.75	0.0000
1213.00	52.2515
1221.42	48.0806
1230.97	58.2992
1235.34	51.8073
1236.41	0.0000
1238.25	64.3535
1246.25	57.3073
1260.41	0.0000
1271.85	35.6651
1274.45	37.8489
1274.54	38.9303
1291.56	29.3084
1298.22	0.0000
1312.09	38.1633
1325.50	34.9953
1325.50	34.9953
1332.49	29.5708
1333.61	30.6742
1360.21	17.4445
1362.66	0.0000
1365.15	32.1674
1368.21	22.0723
1368.53	0.0000
1376.25	25.7943
1384.27	31.3742
1394.10	24.9664
1395.20	24.9719
1407.95	25.0378
1434.06	14.5444
1436.60	13.9917
1457.56	0.0000
1460.81	14.9980
1489.15	6.5987
1509.49	17.0361
1596.49	18.2833
1620.62	13.5329
1678.03	0.0000
1691.02	12.7276
1691.02	12.7276
1706.46	0.0000
1750.46	0.0000
1764.49	8.5006
1764.49	8.5006
1764.49	8.5006
1764.49	8.5006
1770.23	54.5994
1771.40	16.8796
1791.20	0.0000
1808.65	8.9934

1836.01

13.0503

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148014

Total Uranium Activity	3.4736E+00	ug/g
Total Uranium Counting Unc.	4.3762E+00	ug/g
Total Uranium Tpu	2.2328E-06	ug/g
Total Uranium Mda	2.5221E+00	ug/g

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*****
*
*           GEL Laboratories LLC
*           2040 SAVAGE ROAD
*           CHARLESTON , SC 29417
*           GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940268          SAMPLE ID : G244148014
*  ANALYST       : MXR1           DETECTOR  : GAM20
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 15:58:41.03 SAMPLE ALQT: 117.330 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.779E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.726E+00
GROSS GAMMA MDA (pCi/GRAM ) : 4.716E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.289E+00

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## VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 18:03:23.55

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148015.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:59:11
Sample ID          : G244148015      Sample quantity   : 1.20540E+02 GRAM
Detector name      : GAM25           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.83  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 940268          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	46.57*	325	395	0.95	92.70	89	8	4.52E-02	12.6	
2	0	63.27*	287	572	0.70	126.09	122	8	3.99E-02	16.1	
3	3	74.85*	756	372	0.90	149.25	144	14	1.05E-01	5.3	1.97E+00
4	3	77.11*	1219	354	0.84	153.77	144	14	1.69E-01	3.8	
5	5	84.27*	173	378	1.31	168.10	165	27	2.40E-02	19.2	2.04E+00
6	5	87.24	415	417	1.11	174.03	165	27	5.76E-02	9.4	
7	5	89.84	246	284	0.89	179.23	165	27	3.42E-02	12.0	
8	5	92.71*	475	320	1.07	184.97	165	27	6.60E-02	8.2	
9	0	105.49	74	259	0.93	210.53	208	6	1.03E-02	36.2	
10	0	128.94	85	254	0.58	257.42	254	6	1.19E-02	31.5	
11	0	185.85*	292	290	1.11	371.24	367	10	4.06E-02	12.9	
12	0	209.39	124	269	0.87	418.32	414	9	1.73E-02	25.5	
13	7	238.63*	1262	148	1.01	476.79	470	19	1.75E-01	3.3	1.57E+00
14	7	241.56	294	238	1.46	482.64	470	19	4.08E-02	12.1	
15	0	270.06	122	199	1.24	539.65	535	12	1.69E-02	24.9	
16	0	295.23	405	199	1.10	589.97	585	12	5.63E-02	8.6	
17	0	300.38	77	185	1.22	600.28	596	11	1.08E-02	35.8	
18	0	328.11	63	143	0.99	655.73	651	8	8.69E-03	33.4	
19	0	338.30*	257	117	1.19	676.12	672	9	3.56E-02	10.0	
20	0	351.90*	681	186	1.10	703.31	697	12	9.46E-02	5.6	
21	0	463.24	68	117	1.20	925.99	920	12	9.47E-03	33.9	
22	0	510.65*	134	115	1.16	1020.80	1014	14	1.86E-02	21.7	
23	0	583.21*	355	98	1.51	1165.91	1160	15	4.93E-02	8.2	
24	0	609.22*	466	103	1.29	1217.93	1212	13	6.48E-02	6.6	
25	0	661.52*	173	99	1.53	1322.53	1317	11	2.40E-02	14.1	
26	0	727.26	70	65	1.54	1454.00	1448	11	9.74E-03	25.4	
27	0	795.65	51	49	1.29	1590.79	1586	12	7.04E-03	31.4	
28	0	860.50*	66	47	1.71	1720.49	1711	17	9.21E-03	27.2	
29	0	911.05*	232	58	1.49	1821.59	1815	13	3.22E-02	9.6	
30	0	933.08	50	35	0.84	1865.65	1859	14	6.88E-03	29.1	
31	0	969.55*	117	118	1.57	1938.58	1930	18	1.62E-02	25.5	
32	0	1120.21*	89	48	2.05	2239.90	2231	14	1.24E-02	20.2	
33	0	1377.93	44	11	1.82	2755.37	2750	12	6.11E-03	21.7	
34	0	1460.64*	745	32	1.89	2920.81	2913	18	1.03E-01	4.1	
35	0	1764.55*	70	3	2.71	3528.67	3521	14	9.70E-03	14.3	

Flag: "\*" = Peak area was modified by background subtraction



## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 18:03:26

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148015.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 4-JAN-2010 12:00:00 Acquisition date : 20-JAN-2010 15:59:11  
 Sample ID : G244148015 Sample quantity : 120.54 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA25 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.83 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	*	1.962E+01	2.324E+00	5.188E-01	4.418E-02	37.816
CD-109	+	88.03	*	3.781E+00	8.187E-01	7.248E-01	7.789E-02	5.216
SN-126	+	64.28		9.528E-01	3.428E-01	2.909E-01	4.635E-02	3.275
	+	86.94		1.542E+00	7.077E-01	2.943E-01	1.231E-01	5.242
	+	87.57	*	3.710E-01	8.035E-02	7.098E-02	7.611E-03	5.227
BA-137M	+	661.65	*	2.682E-01	8.135E-02	6.904E-02	7.648E-03	3.885
CS-137	+	661.65	*	2.835E-01	8.601E-02	7.298E-02	8.094E-03	3.885
EU-155		48.70		5.483E-02	3.341E-01	5.028E-01	4.786E-02	0.109
		60.01		-9.721E-01	1.669E+00	2.362E+00	2.324E-01	-0.411
	+	86.54		4.470E-01	9.696E-02	8.513E-02	9.144E-03	5.251
	+	105.31	*	1.270E-01	9.326E-02	1.257E-01	1.486E-02	1.010
TL-208		277.35		3.742E-01	3.668E-01	6.108E-01	8.676E-02	0.613
	+	510.84		6.879E-01	3.127E-01	2.158E-01	2.858E-02	3.187
	+	583.14	*	5.254E-01	1.048E-01	5.582E-02	6.293E-03	9.412
	+	860.37		9.388E-01	5.205E-01	3.778E-01	3.949E-02	2.485
BI-210	+	46.50	*	2.725E+00	7.425E-01	5.787E-01	5.967E-02	4.709
PB-210	+	46.50	*	2.725E+00	7.425E-01	5.787E-01	5.967E-02	4.709
PO-210	+	46.50	*	2.725E+00	7.347E-01	5.787E-01	5.512E-02	4.709
BI-211		72.87		8.701E-01	1.644E+00	2.439E+00	2.462E-01	0.357
	+	351.07	*	4.219E+00	6.477E-01	3.064E-01	3.229E-02	13.770
PB-212	+	74.81		2.271E+00	3.964E-01	2.739E-01	3.781E-02	8.290
	+	77.11		2.185E+00	2.782E-01	1.641E-01	1.682E-02	13.311
	+	87.30		1.716E+00	4.093E-01	3.279E-01	4.804E-02	5.233
	+	238.63	*	1.651E+00	2.166E-01	7.585E-02	8.635E-03	21.766
	+	300.09		1.593E+00	1.158E+00	1.097E+00	1.366E-01	1.452
PO-212	+	74.81		2.271E+00	3.964E-01	2.739E-01	3.781E-02	8.290
	+	77.11		2.185E+00	2.782E-01	1.641E-01	1.682E-02	13.311
	+	87.30		1.716E+00	4.093E-01	3.279E-01	4.804E-02	5.233
		115.19		3.359E-01	2.547E+00	4.336E+00	5.378E-01	0.077
	+	238.63	*	1.651E+00	2.166E-01	7.585E-02	8.635E-03	21.766
	+	300.09		1.593E+00	1.158E+00	1.097E+00	1.366E-01	1.452
BI-214	+	609.31	*	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
	+	1120.29		1.316E+00	5.500E-01	4.289E-01	4.655E-02	3.068
	+	1764.49		1.462E+00	4.349E-01	3.120E-01	2.570E-02	4.686

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-214	+	74.81		3.912E+00	6.455E-01	4.719E-01	5.934E-02	8.290
	+	77.11		3.745E+00	5.557E-01	2.814E-01	3.593E-02	13.311
	+	87.30		2.940E+00	6.757E-01	5.617E-01	7.412E-02	5.233
	+	241.98		2.310E+00	6.250E-01	4.576E-01	5.458E-02	5.049
	+	295.21		1.460E+00	3.114E-01	1.698E-01	2.154E-02	8.599
	+	351.92	*	1.468E+00	2.380E-01	1.069E-01	1.255E-02	13.736
PO-214	+	74.81		3.912E+00	6.455E-01	4.719E-01	5.934E-02	8.290
	+	77.11		3.745E+00	5.557E-01	2.814E-01	3.593E-02	13.311
	+	87.30		2.940E+00	6.757E-01	5.617E-01	7.412E-02	5.233
	+	241.98		2.310E+00	6.250E-01	4.576E-01	5.458E-02	5.049
	+	295.21		1.460E+00	3.114E-01	1.698E-01	2.154E-02	8.599
	+	351.92	*	1.468E+00	2.380E-01	1.069E-01	1.255E-02	13.736
PO-216	+	74.81		2.271E+00	3.964E-01	2.739E-01	3.781E-02	8.290
	+	77.11		2.185E+00	2.782E-01	1.641E-01	1.682E-02	13.311
	+	87.30		1.716E+00	4.093E-01	3.279E-01	4.804E-02	5.233
	+	238.63	*	1.651E+00	2.166E-01	7.585E-02	8.635E-03	21.766
	+	300.09		1.593E+00	1.158E+00	1.097E+00	1.366E-01	1.452
	+	74.81		3.912E+00	6.455E-01	4.719E-01	5.934E-02	8.290
PO-218	+	77.11		3.745E+00	5.557E-01	2.814E-01	3.593E-02	13.311
	+	87.30		2.940E+00	6.757E-01	5.617E-01	7.412E-02	5.233
	+	241.98		2.310E+00	6.250E-01	4.576E-01	5.458E-02	5.049
	+	295.21		1.460E+00	3.114E-01	1.698E-01	2.154E-02	8.599
	+	351.92	*	1.468E+00	2.380E-01	1.069E-01	1.255E-02	13.736
	+	240.98	*	4.381E+00	1.159E+00	8.643E-01	9.083E-02	5.068
RA-224	+	609.31	*	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
RA-226	+	1120.29		1.316E+00	5.500E-01	4.289E-01	4.655E-02	3.068
	+	1764.49		1.462E+00	4.349E-01	3.120E-01	2.570E-02	4.686
	+	338.32		1.745E+00	8.062E-01	3.404E-01	1.419E-01	5.125
AC-228	+	911.07	*	1.553E+00	3.506E-01	2.237E-01	2.661E-02	6.942
	+	969.11		1.382E+00	7.767E-01	4.769E-01	1.125E-01	2.898
	+	338.32		1.745E+00	8.062E-01	3.404E-01	1.419E-01	5.125
RA-228	+	911.07	*	1.553E+00	3.506E-01	2.237E-01	2.661E-02	6.942
	+	969.11		1.382E+00	7.767E-01	4.769E-01	1.125E-01	2.898
	+	74.81		2.307E+00	3.412E-01	2.783E-01	2.845E-02	8.290
TH-228	+	77.11		2.220E+00	2.827E-01	1.668E-01	1.709E-02	13.311
	+	87.30		1.744E+00	3.776E-01	3.332E-01	3.568E-02	5.233
	+	238.63	*	1.678E+00	2.201E-01	7.708E-02	8.776E-03	21.766
TH-230	+	300.09		1.618E+00	1.509E+00	1.114E+00	6.650E-01	1.452
	+	609.31	*	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
	+	1120.29		1.316E+00	5.500E-01	4.289E-01	4.655E-02	3.068
TH-232	+	1764.49		1.462E+00	4.349E-01	3.120E-01	2.570E-02	4.686
	+	338.32		1.745E+00	3.929E-01	3.404E-01	3.548E-02	5.125
	+	911.07	*	1.553E+00	3.506E-01	2.237E-01	2.661E-02	6.942
TH-234	+	969.11		1.382E+00	7.767E-01	4.769E-01	1.125E-01	2.898
	+	63.29	*	2.407E+00	8.967E-01	7.139E-01	1.329E-01	3.372
	+	92.38		2.961E+00	7.516E-01	5.009E-01	9.675E-02	5.912
U-234	+	609.31	*	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
	+	1120.29		1.316E+00	5.500E-01	4.289E-01	4.655E-02	3.068
	+	1764.49		1.462E+00	4.349E-01	3.120E-01	2.570E-02	4.686

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	+	89.95		3.040E+00	1.205E+00	9.833E-01	3.102E-01	3.092
	+	93.35		3.560E+00	1.182E+00	6.049E-01	1.746E-01	5.885
	+	105.00		1.244E+00	9.801E-01	1.217E+00	3.758E-01	1.023
		143.76	*	-6.182E-02	1.839E-01	2.957E-01	5.583E-02	-0.209
		163.35		-1.724E-01	4.037E-01	6.411E-01	1.240E-01	-0.269
	+	185.71		2.626E-01	7.189E-02	5.917E-02	5.541E-03	4.438
		205.31		-1.067E-01	5.146E-01	7.354E-01	1.444E-01	-0.145
NP-237	+	86.50	*	1.089E+00	3.259E-01	2.074E-01	4.819E-02	5.252
		95.87		2.584E-01	6.177E-01	9.702E-01	2.487E-01	0.266
U-238	+	63.29	*	2.407E+00	8.967E-01	7.139E-01	1.329E-01	3.372
	+	92.38		2.961E+00	5.860E-01	5.009E-01	5.497E-02	5.912
AM-243	+	74.67	*	3.681E-01	5.427E-02	4.438E-02	4.507E-03	8.294
	+	86.72		4.086E+01	8.848E+00	7.787E+00	8.316E-01	5.247
		117.66		-1.599E+00	2.651E+00	4.348E+00	5.467E-01	-0.368
		142.18		-3.273E+00	1.490E+01	2.411E+01	2.723E+00	-0.136
ANH-511	+	511.00	*	1.486E-01	6.641E-02	4.663E-02	4.800E-03	3.186

## ---- 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	*	3.691E-01	3.301E-01	5.792E-01	6.132E-02	0.637
NA-22		1274.54	*	-2.302E-03	4.821E-02	7.886E-02	6.466E-03	-0.029
NA-24		1368.53	*	1.340E+00	4.821E-02	Half-Life too short		
AL-26		1129.67		3.906E-01	1.686E+00	2.869E+00	2.450E-01	0.136
		1808.65	*	-6.212E-03	2.859E-02	4.468E-02	3.661E-03	-0.139
TI-44		67.85		7.781E-03	1.953E-02	3.138E-02	3.123E-03	0.248
	+	78.38	*	4.032E-01	5.133E-02	4.588E-02	4.725E-03	8.788
SC-46		889.25	*	-1.653E-02	4.081E-02	6.342E-02	6.074E-03	-0.261
	+	1120.51		2.272E-01	9.377E-02	1.438E-01	1.237E-02	1.579
V-48		944.10		-3.193E-01	1.038E+00	1.625E+00	1.524E-01	-0.197
		983.50	*	3.608E-02	7.342E-02	1.248E-01	1.157E-02	0.289
		1312.09		3.615E-02	8.742E-02	1.503E-01	1.225E-02	0.240
CR-51		320.08	*	-2.308E-01	3.489E-01	5.631E-01	6.253E-02	-0.410
MN-52		744.21		-6.930E-02	2.625E-01	4.230E-01	4.571E-02	-0.164
		848.13		9.902E+00	8.199E+00	1.481E+01	1.484E+00	0.669
		935.52		3.488E-01	3.639E-01	5.731E-01	5.388E-02	0.609
		1246.25		1.959E+00	9.376E+00	1.574E+01	1.292E+00	0.124
		1333.61		7.732E+00	5.811E+00	1.103E+01	8.957E-01	0.701
		1434.06	*	2.338E-01	2.661E-01	4.891E-01	4.030E-02	0.478
MN-54		834.83	*	2.823E-02	3.954E-02	6.866E-02	6.967E-03	0.411
CO-56		846.75	*	1.304E-02	4.328E-02	7.270E-02	7.295E-03	0.179
		977.42		-3.950E-01	3.495E+00	4.763E+00	4.424E-01	-0.083
		1037.82		-1.318E-01	3.278E-01	5.277E-01	5.007E-02	-0.250
		1175.09		2.589E-01	2.388E+00	3.998E+00	3.290E-01	0.065
		1238.25		9.741E-02	1.065E-01	1.872E-01	1.587E-02	0.520
		1360.21		1.486E-01	1.024E+00	1.706E+00	1.392E-01	0.087
		1771.40		-9.816E-01	3.941E-01	3.834E-01	3.157E-02	-2.560
CO-57		122.06	*	-1.623E-02	1.829E-02	2.939E-02	3.790E-03	-0.552

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	136.48			2.245E-02	1.573E-01	2.651E-01	3.250E-02	0.085
CO-58	810.76	*		-3.253E-02	4.165E-02	6.282E-02	6.518E-03	-0.518
FE-59	142.65			-6.173E-01	2.340E+00	3.779E+00	4.251E-01	-0.163
	192.34			-6.785E-01	8.285E-01	1.287E+00	1.803E-01	-0.527
	1099.22	*		8.107E-03	8.945E-02	1.506E-01	1.419E-02	0.054
	1291.56			-1.481E-02	1.263E-01	2.044E-01	1.920E-02	-0.072
CO-60	1173.22			-5.618E-02	4.856E-02	7.089E-02	5.835E-03	-0.793
	1332.49	*		2.664E-02	3.960E-02	7.034E-02	5.712E-03	0.379
ZN-65	1115.52	*		-5.618E-03	9.781E-02	1.391E-01	1.201E-02	-0.040
GE-68	1077.35	*		-1.578E-03	1.294E+00	2.163E+00	1.915E-01	-0.001
AS-73	53.44	*		6.178E-02	1.776E-01	2.893E-01	2.777E-02	0.214
AS-74	595.88	*		4.667E-02	9.633E-02	1.603E-01	1.737E-02	0.291
	634.78			1.678E-01	3.651E-01	6.349E-01	6.983E-02	0.264
SE-75	66.05			-2.603E-01	2.120E+00	3.075E+00	3.544E-01	-0.085
	96.73			-3.219E-01	5.096E-01	7.553E-01	1.164E-01	-0.426
	121.11			-2.373E-02	9.368E-02	1.561E-01	2.294E-02	-0.152
	136.00			7.310E-03	2.969E-02	5.028E-02	5.965E-03	0.145
	198.60			3.290E-01	1.643E+00	2.662E+00	2.794E-01	0.124
	264.65	*		2.311E-02	4.132E-02	6.506E-02	7.130E-03	0.355
	279.53			-3.062E-02	1.043E-01	1.620E-01	1.849E-02	-0.189
	303.91			5.520E-01	2.118E+00	3.228E+00	4.297E-01	0.171
	400.65			-1.481E-01	2.641E-01	4.201E-01	4.860E-02	-0.353
BR-77	87.88	+		1.107E+03	2.398E+02	3.192E+02	3.428E+01	3.470
	200.40			-1.751E+02	2.000E+02	3.100E+02	3.003E+01	-0.565
	239.00	+		3.600E+02	4.439E+01	5.105E+01	5.345E+00	7.053
	249.79			-2.868E+01	8.122E+01	1.269E+02	1.354E+01	-0.226
	281.68			-8.851E+00	1.096E+02	1.726E+02	1.923E+01	-0.051
	297.23			2.035E+02	9.890E+01	1.325E+02	1.460E+01	1.536
	303.76			5.917E+01	2.432E+02	3.703E+02	4.054E+01	0.160
	439.47			1.196E+02	1.996E+02	3.408E+02	3.282E+01	0.351
	484.57			-4.464E+01	2.838E+02	4.553E+02	4.585E+01	-0.098
	520.65	*		-9.172E+00	1.415E+01	2.151E+01	2.230E+00	-0.426
	574.64			-3.583E+02	3.112E+02	4.440E+02	4.762E+01	-0.807
	578.91			3.565E+01	1.321E+02	1.905E+02	2.047E+01	0.187
	585.48			1.468E+03	3.643E+02	6.263E+02	6.754E+01	2.344
	755.35			2.745E+02	2.446E+02	4.384E+02	4.710E+01	0.626
	817.79			9.593E+01	1.886E+02	3.240E+02	3.337E+01	0.296
SR-82	698.33			9.553E+00	3.944E+01	6.679E+01	7.343E+00	0.143
	776.49	*		-5.954E-01	4.174E-01	5.855E-01	6.213E-02	-1.017
	1395.20			-1.660E+01	1.202E+01	1.506E+01	1.235E+00	-1.102
RB-83	520.41	*		-3.680E-02	6.957E-02	1.071E-01	1.110E-02	-0.344
	529.64			6.317E-02	1.120E-01	1.887E-01	1.969E-02	0.335
	552.65			-1.006E-01	2.026E-01	3.105E-01	3.289E-02	-0.324
RB-84	881.50	*		7.296E-03	7.059E-02	1.162E-01	1.124E-02	0.063
KR-85	513.99	*		6.444E+00	8.180E+00	1.247E+01	1.287E+00	0.517
SR-85	513.99	*		3.340E-02	4.241E-02	6.467E-02	6.672E-03	0.517
RB-86	1076.63	*		2.737E-01	8.377E-01	1.444E+00	1.279E-01	0.190
Y-88	898.02			-2.406E-02	4.372E-02	6.675E-02	6.348E-03	-0.361
	1836.01	*		-6.773E-03	3.750E-02	5.944E-02	4.858E-03	-0.114

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-88	392.90	*		1.085E-02	3.035E-02	5.144E-02	4.682E-03	0.211
Y-91	1204.90	*		1.631E+01	2.015E+01	3.566E+01	2.935E+00	0.457
NB-94	702.63	*		-8.529E-03	3.612E-02	5.787E-02	6.355E-03	-0.147
	871.10			-4.091E-03	3.581E-02	5.768E-02	5.642E-03	-0.071
NB-95	765.79	*		2.822E-02	4.627E-02	7.988E-02	8.532E-03	0.353
NB-95M	235.69	*		1.508E-03	1.145E-01	1.641E-01	1.881E-02	0.009
ZR-95	724.18			8.720E-03	1.189E-01	1.726E-01	1.984E-02	0.051
	756.15	*		8.747E-02	7.696E-02	1.381E-01	1.581E-02	0.633
NB-97	657.90	*		1.931E-01	7.696E-02	Half-Life	too short	
	1024.50			-7.515E+00	7.696E-02	Half-Life	too short	
ZR-97	254.15			2.194E+00	7.696E-02	Half-Life	too short	
	355.39			4.096E+00	7.696E-02	Half-Life	too short	
	507.63	*		4.923E+00	7.696E-02	Half-Life	too short	
	602.52			-4.061E+00	7.696E-02	Half-Life	too short	
	1021.30			-4.157E-01	7.696E-02	Half-Life	too short	
	1147.95			1.269E+01	7.696E-02	Half-Life	too short	
	1362.66			-8.183E-01	7.696E-02	Half-Life	too short	
	1750.46			6.303E+00	7.696E-02	Half-Life	too short	
MO-99	140.51			8.719E+00	2.787E+01	4.618E+01	1.325E+01	0.189
	181.06			5.752E+00	2.070E+01	3.089E+01	5.745E+00	0.186
	366.43			1.889E+01	9.988E+01	1.686E+02	1.652E+01	0.112
	739.58	*		-7.447E-01	1.434E+01	2.363E+01	3.908E+00	-0.032
	778.00			-3.593E+01	4.546E+01	6.892E+01	7.308E+00	-0.521
TC-99M	140.51	*		1.767E+11	4.546E+01	Half-Life	too short	
RH-101	127.23			1.085E-02	2.754E-02	4.251E-02	5.320E-03	0.255
	198.01	*		7.501E-03	3.060E-02	4.971E-02	4.790E-03	0.151
	325.23			2.606E-02	2.274E-01	3.406E-01	3.629E-02	0.077
RH-102	418.52			-2.488E-01	2.892E-01	4.460E-01	4.194E-02	-0.558
	475.06	*		6.814E-04	3.117E-02	5.089E-02	5.081E-03	0.013
	631.29			9.057E-03	5.626E-02	9.566E-02	1.051E-02	0.095
	697.49			2.524E-02	8.399E-02	1.429E-01	1.571E-02	0.177
	766.84			1.588E-01	1.212E-01	2.174E-01	2.321E-02	0.730
	1046.59			-7.617E-02	1.108E-01	1.715E-01	1.545E-02	-0.444
	1112.84			-6.615E-04	2.619E-01	3.758E-01	3.249E-02	-0.002
RU-103	497.08	*		-2.018E-02	3.965E-02	6.129E-02	9.293E-03	-0.329
+	610.33			1.437E+01	3.198E+00	3.303E+00	5.936E-01	4.352
RH-106	511.85	+		7.436E-01	3.324E-01	4.541E-01	4.677E-02	1.638
	621.84	*		1.166E-01	3.302E-01	5.695E-01	8.523E-02	0.205
	1050.47			7.353E-01	2.447E+00	4.214E+00	3.788E-01	0.175
RU-106	511.85	+		7.436E-01	3.324E-01	4.541E-01	4.677E-02	1.638
	621.84	*		1.166E-01	3.300E-01	5.695E-01	6.236E-02	0.205
	1050.47			7.353E-01	2.447E+00	4.214E+00	3.788E-01	0.175
AG-108M	433.93	*		-6.812E-03	3.239E-02	5.238E-02	5.176E-03	-0.130
	614.37			-2.743E-02	4.316E-02	5.763E-02	6.449E-03	-0.476
	722.95			6.351E-03	5.044E-02	7.371E-02	8.236E-03	0.086
AG-110M	657.75	*		1.822E-02	3.729E-02	5.750E-02	6.479E-03	0.317
	677.61			-1.941E-01	3.370E-01	5.353E-01	6.017E-02	-0.363
	706.67			-1.335E-01	2.178E-01	3.427E-01	3.823E-02	-0.389
	763.93			-1.217E-01	1.815E-01	2.821E-01	3.072E-02	-0.431

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		884.67		-1.288E-04	4.976E-02	8.097E-02	7.999E-03	-0.002
		937.48		-7.758E-02	1.399E-01	1.784E-01	1.727E-02	-0.435
		1384.27		-1.589E-01	2.066E-01	2.399E-01	2.026E-02	-0.662
IN-111		171.28		-3.013E-01	1.100E+00	1.789E+00	1.616E-01	-0.168
		245.39	*	-1.000E+00	1.395E+00	1.866E+00	1.976E-01	-0.536
IN-113M		391.69	*	-2.203E-02	4.367E-02	6.986E-02	6.525E-03	-0.315
SN-113		391.69	*	-2.203E-02	4.367E-02	6.986E-02	6.525E-03	-0.315
IN-114M		190.27	*	5.049E-02	1.704E-01	2.539E-01	2.404E-02	0.199
CD-115		260.90		-1.630E+02	1.643E+02	2.430E+02	2.640E+01	-0.671
		492.35		-6.821E+00	5.011E+01	8.050E+01	8.162E+00	-0.085
		527.90	*	8.828E+00	1.559E+01	2.630E+01	2.741E+00	0.336
SN-117M		156.02		-2.765E+00	2.059E+00	3.149E+00	3.140E-01	-0.878
		158.56	*	1.232E-02	4.862E-02	8.149E-02	7.912E-03	0.151
SB-122		563.90	*	1.014E+00	2.758E+00	4.562E+00	4.864E-01	0.222
		692.80		-2.811E+01	5.943E+01	9.500E+01	1.046E+01	-0.296
I-123		159.00	*	4.562E-01	5.943E+01	Half-Life	too short	
		528.96		7.033E+02	5.943E+01	Half-Life	too short	
TE-123M		159.00	*	6.001E-04	2.401E-02	3.984E-02	3.868E-03	0.015
I-124		602.71	*	-2.874E-01	8.719E-01	1.297E+00	1.410E-01	-0.222
		722.78		1.359E+00	6.243E+00	9.216E+00	1.005E+00	0.147
		1325.50		-1.942E+01	3.842E+01	5.812E+01	4.726E+00	-0.334
		1376.25		7.953E+01	4.677E+01	8.275E+01	6.769E+00	0.961
		1509.49		7.815E+00	1.815E+01	3.141E+01	2.605E+00	0.249
		1691.02		5.053E-01	4.518E+00	7.666E+00	6.355E-01	0.066
SB-124		602.71		-1.421E-02	4.310E-02	6.412E-02	6.970E-03	-0.222
		645.85		7.009E-02	5.230E-01	8.859E-01	1.014E-01	0.079
		709.31		1.268E-01	2.814E+00	4.695E+00	5.145E-01	0.027
		713.82		5.246E-01	1.733E+00	2.948E+00	4.067E-01	0.178
		722.78		9.738E-02	4.474E-01	6.604E-01	7.300E-02	0.147
	+	968.20		1.440E+01	7.467E+00	8.126E+00	7.570E-01	1.772
		1045.16		-1.238E+00	2.402E+00	3.798E+00	3.425E-01	-0.326
		1325.50		-1.487E+00	2.940E+00	4.448E+00	3.617E-01	-0.334
		1368.21		9.857E-01	1.598E+00	2.852E+00	3.762E-01	0.346
		1436.60		1.869E+00	3.539E+00	6.248E+00	5.151E-01	0.299
		1691.02	*	8.541E-03	7.637E-02	1.296E-01	1.120E-02	0.066
SB-125		427.89	*	-2.082E-02	9.132E-02	1.477E-01	1.427E-02	-0.141
	+	463.38		6.779E-01	4.656E-01	5.589E-01	5.850E-02	1.213
		600.56		-1.010E-02	1.901E-01	3.018E-01	3.431E-02	-0.033
		635.90		2.947E-02	2.663E-01	4.510E-01	5.212E-02	0.065
TE-125M		109.28	*	-5.238E-01	7.433E+00	1.133E+01	1.505E+00	-0.046
I-126		388.63		-6.079E-03	2.032E-01	3.364E-01	3.088E-02	-0.018
		666.33	*	-6.492E-02	2.514E-01	3.554E-01	3.934E-02	-0.183
		753.82		1.131E+00	1.649E+00	2.877E+00	3.094E-01	0.393
SB-126		223.80		-8.147E-01	3.701E+00	5.898E+00	6.002E-01	-0.138
		278.60		2.280E+00	2.505E+00	4.171E+00	4.651E-01	0.547
	+	296.50		1.541E+01	3.143E+00	3.729E+00	4.111E-01	4.133
		414.70		1.971E-02	7.857E-02	1.318E-01	1.234E-02	0.150
		415.30		4.803E-01	6.597E+00	1.094E+01	1.024E+00	0.044
		555.20		-1.965E+00	4.338E+00	6.678E+00	7.085E-01	-0.294

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	573.80			-1.349E+00	1.179E+00	1.679E+00	1.800E-01	-0.803
	593.00			9.059E-03	9.110E-01	1.456E+00	1.576E-01	0.006
	656.30			3.566E-01	3.966E+00	5.837E+00	6.458E-01	0.061
	666.33			-2.719E-02	1.053E-01	1.489E-01	1.648E-02	-0.183
	675.00			1.137E+00	2.321E+00	4.012E+00	4.435E-01	0.283
	695.00			-2.051E-02	8.820E-02	1.441E-01	1.586E-02	-0.142
	697.00			3.493E-02	3.106E-01	5.214E-01	5.735E-02	0.067
	720.50	*		-3.795E-02	1.829E-01	2.698E-01	2.945E-02	-0.141
	856.80			4.092E-01	5.076E-01	8.051E-01	7.996E-02	0.508
	989.30			5.386E-01	1.389E+00	2.330E+00	2.155E-01	0.231
	1034.80			4.313E+00	9.844E+00	1.718E+01	1.557E+00	0.251
	1213.00			2.488E+00	5.170E+00	8.912E+00	7.332E-01	0.279
	61.10			9.792E+00	2.282E+01	3.422E+01	4.252E+00	0.286
	252.40			3.909E+00	5.117E+00	8.113E+00	3.456E+00	0.482
	290.80			-1.248E+01	2.404E+01	3.444E+01	4.622E+00	-0.362
	411.60			-9.448E+00	1.505E+01	2.367E+01	3.869E+00	-0.399
	444.90			-5.914E+00	1.159E+01	1.821E+01	2.468E+00	-0.325
	473.00			-7.077E-01	2.209E+00	3.515E+00	4.942E-01	-0.201
	543.00			-1.568E+01	2.173E+01	3.262E+01	5.168E+00	-0.481
	603.60			-4.727E+00	1.609E+01	2.288E+01	3.297E+00	-0.207
	685.20	*		-8.413E-01	1.731E+00	2.763E+00	3.750E-01	-0.304
	698.50			4.994E+00	2.027E+01	3.433E+01	5.985E+00	0.145
	722.20			2.078E+01	4.246E+01	6.455E+01	8.573E+00	0.322
XE-127	783.80			4.138E+00	4.957E+00	8.649E+00	1.219E+00	0.478
	57.60			4.978E-01	1.690E+00	2.717E+00	2.649E-01	0.183
	145.22			6.129E-01	5.967E-01	1.031E+00	1.136E-01	0.594
	172.10			-9.565E-02	1.047E-01	1.641E-01	1.486E-02	-0.583
I-131	202.84	*		-2.806E-03	4.092E-02	6.634E-02	6.461E-03	-0.042
	374.96			2.300E-02	1.885E-01	3.161E-01	3.027E-02	0.073
	80.18			3.754E-01	3.078E+00	4.456E+00	4.646E-01	0.084
	284.30			1.566E-01	1.442E+00	2.299E+00	2.641E-01	0.068
TE-132	364.48	*		-8.798E-02	1.131E-01	1.776E-01	1.823E-02	-0.496
	636.97			-5.754E-01	1.680E+00	2.737E+00	3.118E-01	-0.210
	722.89			1.866E+00	9.248E+00	1.363E+01	1.493E+00	0.137
	49.72			7.356E-02	3.890E+00	5.796E+00	6.870E-01	0.013
BA-133	111.76			1.360E+01	2.639E+01	4.559E+01	6.412E+00	0.298
	116.30			2.920E+01	2.448E+01	4.294E+01	6.155E+00	0.680
	228.16	*		-5.360E-01	7.595E-01	1.165E+00	1.964E-01	-0.460
	53.15			2.645E-01	7.299E-01	1.190E+00	1.142E-01	0.222
I-133	79.62			-2.514E-01	7.874E-01	1.113E+00	1.810E-01	-0.226
	81.00			4.779E-02	6.738E-02	8.826E-02	1.493E-02	0.541
	276.40			3.611E-01	3.768E-01	5.985E-01	9.614E-02	0.603
	302.84			-6.054E-02	1.430E-01	2.060E-01	3.071E-02	-0.294
I-133 +	356.01	*		-1.039E-02	4.503E-02	6.482E-02	9.191E-03	-0.160
	383.85			-3.093E-01	2.887E-01	4.389E-01	5.748E-02	-0.705
	510.53			3.498E+00	2.887E-01	Half-Life	too short	
	529.87	*		9.828E-04	2.887E-01	Half-Life	too short	
I-133	706.58			-4.631E-01	2.887E-01	Half-Life	too short	
	856.28			7.626E-01	2.887E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	875.33			1.206E-01	2.887E-01	Half-Life	too short	
	1236.41			3.517E+00	2.887E-01	Half-Life	too short	
	1298.22			1.399E-02	2.887E-01	Half-Life	too short	
	475.35			-1.048E-01	2.049E+00	3.328E+00	3.324E-01	-0.032
	563.23			-1.839E-02	3.655E-01	5.839E-01	6.263E-02	-0.031
	569.32			1.960E-01	2.185E-01	3.670E-01	3.959E-02	0.534
	604.70			-1.039E-02	3.925E-02	5.606E-02	6.108E-03	-0.185
	795.84	*		1.101E-01	7.009E-02	9.762E-02	1.028E-02	1.128
	801.93			-4.443E-01	4.925E-01	6.193E-01	6.484E-02	-0.717
	1038.57			-1.725E-02	3.901E+00	6.538E+00	5.915E-01	-0.003
CS-135 I-135	1167.94			8.915E-01	2.703E+00	4.616E+00	3.817E-01	0.193
	1365.15			-9.752E-01	1.246E+00	1.782E+00	1.529E-01	-0.547
	268.24	*		9.858E-02	1.544E-01	2.297E-01	2.772E-02	0.429
	288.45			1.169E+11	1.544E-01	Half-Life	too short	
	417.63			6.367E+09	1.544E-01	Half-Life	too short	
	546.56			-1.654E+10	1.544E-01	Half-Life	too short	
	836.80			2.585E+11	1.544E-01	Half-Life	too short	
	1038.76			1.389E+10	1.544E-01	Half-Life	too short	
	1124.00			2.836E+11	1.544E-01	Half-Life	too short	
	1131.51			-1.329E+10	1.544E-01	Half-Life	too short	
CS-136	1260.41	*		-6.452E+10	1.544E-01	Half-Life	too short	
	1457.56			6.864E+12	1.544E-01	Half-Life	too short	
	1678.03			1.482E+11	1.544E-01	Half-Life	too short	
	1706.46			3.675E+11	1.544E-01	Half-Life	too short	
	1791.20			2.988E+10	1.544E-01	Half-Life	too short	
	66.91			5.861E-01	3.639E-01	5.554E-01	9.000E-02	1.055
	86.29			5.117E+00	1.211E+00	1.407E+00	2.012E-01	3.636
	153.22			5.549E-01	5.885E-01	1.012E+00	1.126E-01	0.548
	163.89			-2.673E-01	9.751E-01	1.566E+00	1.584E-01	-0.171
	176.55			-5.793E-02	3.278E-01	5.343E-01	5.144E-02	-0.108
CE-139 BA-140	273.65			-9.873E-02	4.838E-01	6.702E-01	7.723E-02	-0.147
	340.57			7.793E-02	1.435E-01	2.205E-01	2.335E-02	0.353
	818.51			5.218E-02	8.221E-02	1.427E-01	1.469E-02	0.366
	1048.07	*		-8.944E-02	1.136E-01	1.740E-01	1.628E-02	-0.514
	1235.34			4.835E-01	6.879E-01	1.195E+00	1.382E-01	0.405
	165.85	*		2.925E-03	2.495E-02	4.144E-02	3.696E-03	0.071
	162.64			-2.414E-02	6.820E-01	1.108E+00	1.080E-01	-0.022
	304.84			8.416E-01	1.348E+00	2.081E+00	5.998E-01	0.404
	423.70			8.810E-01	2.074E+00	3.479E+00	1.136E+00	0.253
	537.32	*		-1.087E-01	2.839E-01	4.385E-01	1.477E-01	-0.248
LA-140	328.77			5.549E-01	3.762E-01	5.788E-01	6.362E-02	0.959
	432.53			-6.334E-01	2.152E+00	3.459E+00	3.438E-01	-0.183
	487.03			9.529E-02	1.397E-01	2.393E-01	2.525E-02	0.398
	751.79			-2.489E+00	2.012E+00	2.925E+00	3.369E-01	-0.851
	815.85			-1.363E-01	3.678E-01	5.812E-01	6.486E-02	-0.235
	867.82			-2.365E-01	1.541E+00	2.226E+00	2.275E-01	-0.106
	919.63			1.118E+00	3.205E+00	5.377E+00	6.086E-01	0.208
	925.24			2.264E-01	1.188E+00	1.861E+00	1.847E-01	0.122
	1596.49	*		-8.731E-02	1.029E-01	1.495E-01	1.243E-02	-0.584



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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-141		145.44	*	4.401E-02	5.425E-02	9.315E-02	1.036E-02	0.472
CE-143		57.37		1.123E-05	5.425E-02	Half-Life	too short	
		231.56		3.624E-03	5.425E-02	Half-Life	too short	
		293.26	*	7.097E-04	5.425E-02	Half-Life	too short	
	+	350.59		5.676E-02	5.425E-02	Half-Life	too short	
		490.36		-4.025E-03	5.425E-02	Half-Life	too short	
		664.57		4.615E-03	5.425E-02	Half-Life	too short	
		721.93		1.376E-03	5.425E-02	Half-Life	too short	
CE-144		80.11		1.227E-01	1.295E+00	1.872E+00	1.941E-01	0.066
		133.54	*	-1.054E-01	1.590E-01	2.568E-01	4.540E-02	-0.410
PM-144		476.78		4.026E-02	7.167E-02	1.214E-01	1.299E-02	0.332
		618.01		7.882E-03	3.206E-02	5.495E-02	6.112E-03	0.143
		696.49	*	8.931E-03	3.672E-02	6.227E-02	6.852E-03	0.143
		778.57		2.950E-01	2.283E+00	3.809E+00	4.038E-01	0.077
PR-144		696.49	*	6.056E-01	2.490E+00	4.222E+00	4.644E-01	0.143
		1489.15		-2.095E+00	1.247E+01	1.960E+01	1.623E+00	-0.107
PM-146		453.90	*	4.009E-02	4.363E-02	7.577E-02	8.847E-03	0.529
		633.02		-4.735E-02	1.424E+00	2.384E+00	9.058E-01	-0.020
		735.90		1.098E-01	1.477E-01	2.553E-01	7.493E-02	0.430
		747.13		7.693E-02	9.336E-02	1.644E-01	2.542E-02	0.468
ND-147	+	91.11		8.156E-01	2.166E-01	3.557E-01	4.083E-02	2.293
		319.41		-1.490E+00	3.205E+00	5.244E+00	5.635E-01	-0.284
		439.89		6.037E+00	6.181E+00	1.081E+01	1.041E+00	0.559
		531.02	*	3.050E-01	6.437E-01	1.075E+00	1.728E-01	0.284
PM-149		285.90	*	-4.971E+01	1.181E+02	1.808E+02	3.083E+01	-0.275
EU-152		121.78		-4.780E-02	5.278E-02	8.460E-02	1.166E-02	-0.565
		244.69		-9.333E-02	3.262E-01	4.542E-01	4.804E-02	-0.206
		344.27	*	2.142E-02	9.182E-02	1.511E-01	1.623E-02	0.142
		443.98		-4.210E-01	9.250E-01	1.462E+00	1.415E-01	-0.288
		778.89		9.094E-02	2.687E-01	4.563E-01	4.835E-02	0.199
		867.32		-3.509E-01	9.313E-01	1.231E+00	1.209E-01	-0.285
		964.01		3.164E-01	4.204E-01	6.326E-01	5.901E-02	0.500
		1085.78		-1.289E-01	4.216E-01	6.827E-01	6.012E-02	-0.189
		1112.02		-5.039E-02	3.790E-01	5.335E-01	4.615E-02	-0.094
		1407.95		1.208E-02	1.818E-01	2.989E-01	2.456E-02	0.040
GD-153		69.67		-9.006E-01	7.371E-01	1.095E+00	1.094E-01	-0.823
	+	83.37		2.701E+01	1.076E+01	1.522E+01	1.600E+00	1.775
		97.43	*	-2.811E-02	5.338E-02	7.984E-02	8.991E-03	-0.352
		103.18		2.508E-02	7.445E-02	1.165E-01	1.353E-02	0.215
EU-154		123.07		2.440E-04	3.738E-02	6.305E-02	9.336E-03	0.004
		247.94		-1.965E-01	3.255E-01	4.995E-01	6.522E-02	-0.393
		591.81		-4.161E-01	5.763E-01	8.454E-01	1.131E-01	-0.492
		723.30		1.215E-02	2.099E-01	3.043E-01	3.541E-02	0.040
		756.87		8.203E-01	8.182E-01	1.454E+00	1.974E-01	0.564
		873.19		1.504E-01	3.161E-01	5.387E-01	7.042E-02	0.279
		996.32		-4.898E-01	4.143E-01	5.621E-01	1.015E-01	-0.871
		1004.76		-1.262E-01	2.336E-01	3.524E-01	4.252E-02	-0.358
		1274.45	*	5.506E-02	1.277E-01	2.195E-01	2.411E-02	0.251
TB-160	+	86.79		1.206E+00	2.611E-01	3.511E-01	3.751E-02	3.434

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		197.04		3.536E-02	5.278E-01	8.506E-01	8.178E-02	0.042
		215.65		-4.123E-02	6.538E-01	1.055E+00	1.056E-01	-0.039
		298.57		1.245E-01	1.463E-01	1.778E-01	1.956E-02	0.700
		879.36	*	-1.056E-01	1.508E-01	2.268E-01	2.198E-02	-0.466
		962.29		2.406E-01	7.234E-01	1.047E+00	9.775E-02	0.230
		966.15		9.552E-01	3.317E-01	5.680E-01	5.295E-02	1.682
		1177.93		6.486E-02	3.967E-01	6.671E-01	5.491E-02	0.097
		1271.85		1.539E-01	7.689E-01	1.291E+00	1.058E-01	0.119
		80.57		1.417E-01	1.850E-01	2.443E-01	2.538E-02	0.580
	+	184.41		1.970E-01	5.392E-02	5.995E-02	5.596E-03	3.286
		280.46		-9.538E-02	8.250E-02	1.196E-01	1.334E-02	-0.797
		410.95		2.300E-01	2.421E-01	4.226E-01	3.938E-02	0.544
		711.68	*	-3.005E-02	6.506E-02	1.038E-01	1.137E-02	-0.289
		752.31		-2.134E-01	2.987E-01	4.614E-01	4.965E-02	-0.462
TM-171		810.29		-5.648E-02	6.303E-02	9.388E-02	9.727E-03	-0.602
		51.35		-6.673E+00	5.405E+00	8.118E+00	7.753E-01	-0.822
		52.39		1.841E+00	2.944E+00	4.861E+00	4.652E-01	0.379
		59.40		-7.667E+00	8.900E+00	1.239E+01	1.219E+00	-0.619
LU-176	+	66.72	*	1.345E+01	1.241E+01	1.897E+01	1.883E+00	0.709
		88.36		8.800E-01	1.906E-01	2.387E-01	2.569E-02	3.687
		201.83		7.377E-03	2.452E-02	4.053E-02	3.938E-03	0.182
LU-177		306.84	*	1.036E-02	2.283E-02	3.838E-02	4.188E-03	0.270
		401.10		-4.572E+00	6.813E+00	1.075E+01	9.894E-01	-0.425
		112.95		-4.348E-01	1.289E+00	2.153E+00	2.637E-01	-0.202
LU-177M	+	208.36	*	3.189E+00	1.660E+00	2.136E+00	2.106E-01	1.493
		52.97		2.665E-01	3.187E-01	5.300E-01	5.080E-02	0.503
HF-181		54.07		1.521E-01	1.843E-01	3.057E-01	2.940E-02	0.498
		61.30		6.115E-02	4.995E-01	7.377E-01	7.263E-02	0.083
		121.62		-1.953E-01	2.679E-01	4.347E-01	5.589E-02	-0.449
		147.16		-8.457E-02	5.501E-01	9.104E-01	9.867E-02	-0.093
		171.86		-2.455E-01	4.064E-01	6.484E-01	5.866E-02	-0.379
		218.09		-3.493E-02	7.447E-01	1.202E+00	1.209E-01	-0.029
	+	268.79		2.466E+00	1.257E+00	1.290E+00	1.419E-01	1.911
		319.02		-3.845E-02	2.323E-01	3.876E-01	4.166E-02	-0.099
		367.43		-7.558E-02	8.564E-01	1.419E+00	1.387E-01	-0.053
		413.65	*	-5.417E-02	1.764E-01	2.848E-01	2.663E-02	-0.190
		56.28		-1.866E-01	2.439E-01	3.738E-01	3.623E-02	-0.499
		57.53		5.122E-04	1.427E-01	2.271E-01	2.214E-02	0.002
		65.20		-1.089E-01	4.028E-01	5.802E-01	5.742E-02	-0.188
		133.02		-3.275E-02	5.130E-02	8.333E-02	1.005E-02	-0.393
W-181		136.25		1.013E-01	3.474E-01	5.894E-01	6.955E-02	0.172
		345.85		-4.035E-02	2.057E-01	2.983E-01	3.064E-02	-0.135
		482.03	*	-4.137E-02	3.953E-02	5.779E-02	5.806E-03	-0.716
		56.28		-7.225E-02	9.442E-02	1.447E-01	1.403E-02	-0.499
TA-182		57.53		2.115E-04	5.529E-02	8.799E-02	8.575E-03	0.002
		65.20	*	-4.185E-02	1.548E-01	2.230E-01	2.207E-02	-0.188
		67.75		3.960E-02	4.639E-02	7.569E-02	7.530E-03	0.523
		100.10		3.952E-04	1.103E-01	1.884E-01	2.151E-02	0.002
		152.43		-1.085E-02	2.854E-01	4.736E-01	4.893E-02	-0.023

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	222.10			5.595E-02	3.049E-01	4.976E-01	5.046E-02	0.112
	1001.68			1.370E+00	2.288E+00	3.945E+00	3.630E-01	0.347
	+ 1121.28			6.260E-01	2.584E-01	3.955E-01	3.398E-02	1.583
	1189.05			2.293E-01	3.313E-01	5.820E-01	4.790E-02	0.394
	1221.42	*		1.628E-01	2.094E-01	3.689E-01	3.034E-02	0.441
	1230.97			-6.011E-01	4.789E-01	6.839E-01	5.622E-02	-0.879
RE-183	57.98			2.487E-02	5.682E-02	9.181E-02	8.966E-03	0.271
	59.32			-2.666E-02	3.654E-02	5.131E-02	5.043E-03	-0.520
	67.20			1.053E-01	8.245E-02	1.362E-01	1.354E-02	0.773
	162.32	*		-2.207E-02	9.584E-02	1.544E-01	1.437E-02	-0.143
	+ 208.81			2.600E+00	1.353E+00	1.743E+00	1.720E-01	1.491
	291.72			-4.521E-01	8.684E-01	1.244E+00	1.376E-01	-0.364
RE-184	57.98			9.110E-02	2.081E-01	3.363E-01	3.284E-02	0.271
	59.32			-9.758E-02	1.337E-01	1.878E-01	1.845E-02	-0.520
	67.20			3.854E-01	3.019E-01	4.988E-01	4.957E-02	0.773
	161.27			-7.571E-02	3.014E-01	4.929E-01	4.644E-02	-0.154
	216.55			-7.734E-02	2.331E-01	3.702E-01	3.712E-02	-0.209
	252.85	*		1.213E-01	2.153E-01	3.554E-01	3.811E-02	0.341
	318.01			1.328E-01	3.932E-01	6.761E-01	7.278E-02	0.196
	792.07			7.792E-02	1.060E+00	1.526E+00	1.603E-01	0.051
	903.28			-9.751E-02	1.097E+00	1.659E+00	1.570E-01	-0.059
	920.93			-6.470E-03	4.869E-01	7.884E-01	7.437E-02	-0.008
OS-185	59.72			-7.624E-02	9.937E-02	1.391E-01	1.369E-02	-0.548
	61.14			9.235E-03	5.488E-02	8.127E-02	8.001E-03	0.114
	69.30			-2.268E-01	1.331E-01	1.918E-01	1.916E-02	-1.182
	592.07			-1.599E+00	2.376E+00	3.515E+00	3.802E-01	-0.455
	646.12	*		-2.887E-04	4.377E-02	7.332E-02	8.090E-03	-0.004
	717.42			2.903E-03	9.796E-01	1.627E+00	1.778E-01	0.002
	874.81			2.134E-01	6.422E-01	1.080E+00	1.052E-01	0.198
	880.27			-6.214E-01	8.187E-01	1.220E+00	1.180E-01	-0.510
RE-188	155.03	*		5.169E-02	1.466E-01	2.451E-01	2.469E-02	0.211
	477.96			3.245E+00	3.109E+00	5.440E+00	5.446E-01	0.597
	633.10			-9.685E-02	2.907E+00	4.868E+00	5.351E-01	-0.020
W-188	+ 63.58			9.777E+01	3.299E+01	4.213E+01	4.159E+00	2.321
	227.08			4.879E+00	1.084E+01	1.793E+01	1.836E+00	0.272
	290.67	*		-3.007E+00	6.912E+00	9.985E+00	1.106E+00	-0.301
IR-192	+ 295.96			1.124E+00	2.295E-01	2.904E-01	3.218E-02	3.871
	308.46			-8.073E-02	8.756E-02	1.391E-01	1.520E-02	-0.580
	316.51	*		1.108E-04	3.082E-02	5.200E-02	5.617E-03	0.002
	468.07			2.181E-02	8.103E-02	1.189E-01	1.244E-02	0.183
	604.41			-1.630E-01	5.343E-01	7.593E-01	1.109E-01	-0.215
	612.46			-6.060E-03	8.125E-01	1.191E+00	1.424E-01	-0.005
AU-195	65.12			-1.873E-02	7.138E-02	1.029E-01	1.018E-02	-0.182
	66.83			6.804E-02	4.061E-02	6.339E-02	6.294E-03	1.073
	+ 75.70			1.196E+00	1.763E-01	2.708E-01	2.760E-02	4.417
	98.88	*		1.196E-01	1.387E-01	2.443E-01	2.772E-02	0.489
	+ 129.76			4.346E+00	2.788E+00	4.213E+00	5.191E-01	1.031
TL-200	367.94	*		2.244E-04	2.788E+00	Half-Life	too short	
	579.30			2.679E-03	2.788E+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
TL-201		828.27		4.248E-03	2.788E+00	Half-Life	too short	
		1205.75		2.168E-04	2.788E+00	Half-Life	too short	
		68.90		-3.107E+00	2.652E+00	3.954E+00	3.945E-01	-0.786
		70.82		1.654E+00	1.631E+00	2.481E+00	2.488E-01	0.667
		80.30		2.898E+00	4.307E+00	5.659E+00	5.873E-01	0.512
TL-202		135.34		-2.083E+00	2.396E+01	3.999E+01	4.749E+00	-0.052
		167.43	*	-3.582E+00	7.511E+00	1.210E+01	1.083E+00	-0.296
		68.90		-2.335E-01	1.993E-01	2.972E-01	2.965E-02	-0.786
		70.82		1.240E-01	1.223E-01	1.859E-01	1.865E-02	0.667
		80.30		2.173E-01	3.230E-01	4.243E-01	4.404E-02	0.512
HG-203		439.56	*	7.651E-02	7.338E-02	1.287E-01	1.240E-02	0.594
		70.83		5.131E-01	5.101E-01	7.713E-01	1.121E-01	0.665
		72.87		1.758E-01	3.326E-01	4.927E-01	7.001E-02	0.357
		82.60		3.513E-01	7.176E-01	1.054E+00	1.579E-01	0.333
		279.20	*	1.138E-02	3.789E-02	6.120E-02	6.947E-03	0.186
BI-207		72.80		3.338E-02	9.521E-02	1.402E-01	1.415E-02	0.238
	+	74.97		6.608E-01	9.743E-02	1.371E-01	1.394E-02	4.819
	+	84.90		3.484E-01	1.387E-01	2.021E-01	2.140E-02	1.724
		569.67		2.878E-02	3.390E-02	5.676E-02	6.071E-03	0.507
		1063.62	*	-3.262E-02	5.271E-02	8.238E-02	7.352E-03	-0.396
TL-207		1770.23		-8.096E-02	5.396E-01	7.254E-01	5.973E-02	-0.112
		81.07		1.001E-01	1.480E-01	1.943E-01	2.023E-02	0.515
	+	83.78		2.297E-01	9.146E-02	1.344E-01	1.416E-02	1.709
		94.90		3.670E-01	1.513E-01	2.532E-01	2.815E-02	1.449
		122.32		-5.873E-01	1.254E+00	2.065E+00	2.748E-01	-0.284
PO-209		144.24		-1.200E-01	5.998E-01	9.721E-01	1.159E-01	-0.123
		154.21		3.446E-01	3.400E-01	5.815E-01	6.335E-02	0.593
	+	269.46		5.748E-01	2.932E-01	3.236E-01	3.607E-02	1.776
	+	323.87	*	6.924E-01	6.902E-01	1.088E+00	2.045E-01	0.636
	+	338.28		7.285E+00	1.761E+00	2.498E+00	3.406E-01	2.916
PB-211		445.03		-1.536E+00	2.271E+00	3.518E+00	4.528E-01	-0.437
		260.50		-1.382E+00	8.469E+00	1.335E+01	1.450E+00	-0.103
		262.80		-1.751E+00	2.326E+01	3.687E+01	4.018E+00	-0.047
		896.60	*	-3.768E+00	7.690E+00	1.182E+01	1.122E+00	-0.319
		404.84	*	4.603E-02	9.377E-01	1.554E+00	9.754E-01	0.030
BI-212		427.08		-5.154E-01	2.044E+00	3.260E+00	2.030E+00	-0.158
		831.96		-6.296E-01	1.334E+00	1.986E+00	1.249E+00	-0.317
	+	727.18	*	9.023E-01	4.706E-01	6.715E-01	8.069E-02	1.344
		785.46		1.396E+00	2.013E+00	3.488E+00	3.680E-01	0.400
		1620.62		1.894E+00	1.437E+00	2.810E+00	2.336E-01	0.674
PO-215		81.07		1.001E-01	1.480E-01	1.943E-01	2.023E-02	0.515
	+	83.78		2.297E-01	9.146E-02	1.344E-01	1.416E-02	1.709
		94.90		3.670E-01	1.513E-01	2.532E-01	2.815E-02	1.449
		122.32		-5.873E-01	1.254E+00	2.065E+00	2.748E-01	-0.284
		144.24		-1.200E-01	5.998E-01	9.721E-01	1.159E-01	-0.123
		154.21		3.446E-01	3.400E-01	5.815E-01	6.335E-02	0.593
	+	269.46		5.748E-01	2.932E-01	3.236E-01	3.607E-02	1.776
	+	323.87	*	6.924E-01	6.902E-01	1.088E+00	2.045E-01	0.636
	+	338.28		7.285E+00	1.761E+00	2.498E+00	3.406E-01	2.916

---- 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		-1.536E+00	2.271E+00	3.518E+00	4.528E-01	-0.437
		271.23		7.374E-01	3.783E-01	4.198E-01	5.206E-02	1.757
		401.81	*	-1.524E-01	4.180E-01	6.738E-01	1.036E-01	-0.226
RN-220		549.76	*	8.844E+00	2.711E+01	4.479E+01	4.736E+00	0.197
RA-223	+	81.07		1.001E-01	1.480E-01	1.943E-01	2.023E-02	0.515
		83.78		2.297E-01	9.146E-02	1.344E-01	1.416E-02	1.709
		94.90		3.670E-01	1.513E-01	2.532E-01	2.815E-02	1.449
		122.32		-5.873E-01	1.254E+00	2.065E+00	2.748E-01	-0.284
		144.24		-1.200E-01	5.998E-01	9.721E-01	1.159E-01	-0.123
	+	154.21		3.446E-01	3.400E-01	5.815E-01	6.335E-02	0.593
		269.46		5.748E-01	2.932E-01	3.236E-01	3.607E-02	1.776
		323.87	*	6.924E-01	6.902E-01	1.088E+00	2.045E-01	0.636
		338.28		7.285E+00	1.761E+00	2.498E+00	3.406E-01	2.916
		445.03		-1.536E+00	2.271E+00	3.518E+00	4.528E-01	-0.437
AC-227	+	79.80		-2.622E-02	9.901E-01	1.423E+00	3.167E-01	-0.018
		236.00		1.506E-01	2.171E-01	3.255E-01	4.416E-02	0.463
		256.20	*	-2.303E-01	3.567E-01	5.430E-01	9.046E-02	-0.424
		286.10		-6.339E-01	1.422E+00	2.174E+00	3.250E-01	-0.292
	+	299.80		2.951E+00	2.186E+00	2.446E+00	4.592E-01	1.207
		304.40		7.888E-01	1.880E+00	2.892E+00	5.677E-01	0.273
		334.20		-9.605E-01	2.402E+00	3.425E+00	6.959E-01	-0.280
		79.80		-2.622E-02	9.901E-01	1.423E+00	3.205E-01	-0.018
TH-227	+	94.00		1.144E+01	3.219E+00	2.780E+00	6.354E-01	4.116
		236.00		1.506E-01	2.170E-01	3.255E-01	4.076E-02	0.463
		256.20	*	-2.303E-01	3.574E-01	5.430E-01	1.042E-01	-0.424
		286.10		-6.339E-01	1.555E+00	2.174E+00	2.187E+00	-0.292
	+	299.80		2.951E+00	2.186E+00	2.446E+00	4.592E-01	1.207
		304.40		7.888E-01	1.880E+00	2.892E+00	5.677E-01	0.273
		334.20		-9.605E-01	2.402E+00	3.425E+00	6.959E-01	-0.280
		85.43		3.438E-01	1.369E-01	1.946E-01	2.066E-02	1.767
TH-229	+	88.47		5.066E-01	1.097E-01	1.358E-01	1.463E-02	3.730
		100.00		7.937E-03	1.140E-01	1.953E-01	2.229E-02	0.041
	*	193.63		-8.045E-02	4.390E-01	7.100E-01	6.773E-02	-0.113
		210.97		4.060E-01	7.251E-01	1.089E+00	1.079E-01	0.373
PA-231	+	283.67	*	-1.030E+00	1.399E+00	2.080E+00	3.482E-01	-0.495
		301.29		1.181E+00	8.618E-01	1.000E+00	1.401E-01	1.180
TH-231	+	81.07		1.001E-01	1.480E-01	1.943E-01	2.023E-02	0.515
		83.78		2.297E-01	9.146E-02	1.344E-01	1.416E-02	1.709
		94.90		3.670E-01	1.513E-01	2.532E-01	2.815E-02	1.449
		122.32		-5.873E-01	1.254E+00	2.065E+00	2.748E-01	-0.284
		144.24		-1.200E-01	5.998E-01	9.721E-01	1.159E-01	-0.123
	+	154.21		3.446E-01	3.400E-01	5.815E-01	6.335E-02	0.593
		269.46		5.748E-01	2.932E-01	3.236E-01	3.607E-02	1.776
		323.87	*	6.924E-01	6.902E-01	1.088E+00	2.045E-01	0.636
		338.28		7.285E+00	1.761E+00	2.498E+00	3.406E-01	2.916
		445.03		-1.536E+00	2.271E+00	3.518E+00	4.528E-01	-0.437
U-231	+	84.21		1.176E+01	4.683E+00	6.969E+00	7.357E-01	1.687
		92.29		1.344E+01	2.659E+00	3.865E+00	4.240E-01	3.476
		95.87	*	3.482E-01	8.284E-01	1.307E+00	1.460E-01	0.266

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233		108.00		7.011E-01	1.863E+00	2.909E+00	3.466E-01	0.241
	+	75.28		1.928E+01	3.752E+00	4.000E+00	6.509E-01	4.821
	+	86.59		7.263E+00	2.424E+00	2.074E+00	5.714E-01	3.502
	+	300.12		8.228E-01	6.046E-01	6.803E-01	1.113E-01	1.209
		311.98	*	6.177E-03	5.487E-02	9.328E-02	1.030E-02	0.066
		340.50		5.537E-01	6.814E-01	1.047E+00	2.569E-01	0.529
		398.62		8.594E-01	2.112E+00	3.567E+00	9.565E-01	0.241
PA-234		415.76		9.128E-01	1.629E+00	2.770E+00	6.057E-01	0.330
	+	63.00		2.806E+00	1.013E+00	1.197E+00	1.942E-01	2.344
		94.67		1.258E-01	1.085E-01	1.906E-01	2.714E-02	0.660
		98.44		3.981E-02	6.144E-02	9.670E-02	5.441E-02	0.412
		99.86		4.572E-02	2.895E-01	4.978E-01	5.678E-02	0.092
		111.00		-2.204E-02	1.305E-01	2.200E-01	3.252E-02	-0.100
		131.20		9.308E-02	8.997E-02	1.427E-01	1.742E-02	0.652
		152.70		1.405E-01	2.695E-01	4.562E-01	8.192E-02	0.308
	+	186.00		7.091E+00	2.880E+00	2.561E+00	8.049E-01	2.769
		226.40		2.694E-01	3.420E-01	5.733E-01	8.200E-02	0.470
		227.20		9.025E-02	3.656E-01	5.980E-01	6.125E-02	0.151
		248.90		-8.733E-02	7.236E-01	1.149E+00	2.673E-01	-0.076
		293.70		4.873E+00	1.228E+00	1.612E+00	3.003E-01	3.023
		369.80		3.515E-01	8.121E-01	1.384E+00	3.078E-01	0.254
		568.70		8.683E-01	1.103E+00	1.839E+00	1.966E-01	0.472
		569.50		2.629E-01	3.014E-01	5.054E-01	5.405E-02	0.520
		574.00		-1.654E+00	1.608E+00	2.324E+00	2.492E-01	-0.712
		699.00		1.394E-02	7.804E-01	1.301E+00	2.635E-01	0.011
		706.10		-6.651E-01	1.123E+00	1.706E+00	7.695E-01	-0.390
		733.00		-3.826E-01	4.249E-01	5.552E-01	1.286E-01	-0.689
		742.81		-4.972E-01	1.368E+00	2.115E+00	1.428E+00	-0.235
	+	796.30		2.138E+00	1.467E+00	1.885E+00	5.222E-01	1.134
		805.60		4.690E-01	1.009E+00	1.714E+00	5.348E-01	0.274
		819.60		5.111E-01	1.313E+00	2.210E+00	8.494E-01	0.231
		826.30		7.882E-02	8.045E-01	1.330E+00	5.996E-01	0.059
		831.60		-2.599E-01	6.700E-01	1.049E+00	3.181E-01	-0.248
		876.40		7.424E-01	1.152E+00	1.527E+00	1.571E+00	0.486
		880.51		-1.378E-01	2.893E-01	4.462E-01	4.318E-02	-0.309
		883.24		4.886E-02	2.809E-01	4.630E-01	3.119E-01	0.106
		899.00		1.713E-01	8.780E-01	1.450E+00	6.366E-01	0.118
		925.00		-7.888E-01	1.282E+00	1.790E+00	1.687E-01	-0.441
		926.50		1.085E-01	1.740E-01	2.677E-01	6.843E-02	0.405
		946.00	*	-1.829E-01	3.405E-01	5.169E-01	9.886E-02	-0.354
		949.00		4.127E-01	4.819E-01	8.435E-01	7.904E-02	0.489
		980.50		4.098E-01	7.302E-01	1.250E+00	1.160E-01	0.328
		1394.10		-1.768E+00	1.734E+00	1.668E+00	1.085E+00	-1.059
PA-234M		766.42		1.533E+01	1.469E+01	2.240E+01	1.146E+01	0.684
		1001.03	*	2.446E+00	5.248E+00	8.937E+00	9.361E-01	0.274
NP-236		94.67		9.781E-02	8.198E-02	1.448E-01	1.608E-02	0.675
		98.44		3.008E-02	4.338E-02	7.310E-02	8.276E-03	0.411
		111.00		-1.667E-02	9.873E-02	1.664E-01	2.016E-02	-0.100
		160.31	*	5.135E-02	6.628E-02	1.134E-01	1.080E-02	0.453

---- 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		9.251E-02	9.617E-02	1.698E-01	1.934E-02	0.545
		117.00	*	-3.908E-02	1.347E-01	2.248E-01	2.816E-02	-0.174
	+	209.75		2.030E+00	1.056E+00	1.341E+00	1.326E-01	1.513
		228.18		-1.407E-01	1.978E-01	3.047E-01	3.127E-02	-0.462
		277.60		1.759E-01	1.760E-01	2.940E-01	3.274E-02	0.598
AM-241		334.30		-6.047E-01	1.355E+00	1.928E+00	2.024E-01	-0.314
		59.54	*	-4.628E-02	5.196E-02	7.218E-02	7.499E-03	-0.641
CM-243		99.55		9.520E-02	9.896E-02	1.748E-01	1.990E-02	0.545
		103.76	*	4.575E-02	6.925E-02	1.100E-01	1.281E-02	0.416
		117.00		-4.021E-02	1.386E-01	2.313E-01	2.897E-02	-0.174
	+	209.75		2.001E+00	1.041E+00	1.322E+00	1.307E-01	1.513
		228.18		-1.421E-01	1.999E-01	3.079E-01	3.160E-02	-0.462
AM-246		277.60		1.773E-01	1.775E-01	2.964E-01	3.301E-02	0.598
		798.80		7.723E-02	1.451E-01	2.224E-01	2.325E-02	0.347
		1036.00		-6.530E-02	3.135E-01	5.151E-01	4.666E-02	-0.127
		1062.04		-2.023E-01	2.241E-01	3.368E-01	3.009E-02	-0.601
		1078.86	*	6.208E-02	1.438E-01	2.504E-01	2.215E-02	0.248
CM-247		278.00		5.007E-01	7.342E-01	1.208E+00	1.346E-01	0.414
		287.40		7.570E-01	1.097E+00	1.813E+00	2.013E-01	0.418
		402.60	*	8.471E-03	3.702E-02	6.212E-02	5.727E-03	0.136
CF-249		252.85		4.533E-01	8.044E-01	1.328E+00	1.424E-01	0.341
		333.44		6.372E-03	1.765E-01	2.621E-01	2.756E-02	0.024
		387.95	*	4.660E-03	3.791E-02	6.341E-02	5.835E-03	0.073
CF-251		176.60	*	-2.102E-02	1.069E-01	1.740E-01	1.593E-02	-0.121
		227.00		1.522E-01	3.224E-01	5.337E-01	5.465E-02	0.285
		285.00		1.234E-01	1.549E+00	2.465E+00	2.742E-01	0.050

# 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]G244148015      *
* Acquisition date   : 20-JAN-2010 15:59:11 Detector SN#      :             *
* Detector ID        : GAM25                      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 02:00:01.83           Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244148015           Analyst initials: MXR1          *
* Batch Number      : 940268              Sample Quantity : 1.2054E+02 GRAM  *
* Recovery          : 1.00000             Carrier Weight  : 0.00000         *
*****
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000
* CALIB. DATE/TIME  : 7-OCT-2009 09:38:43 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	1.962E+01	2.278E+00	5.176E-01	0.000E+00
CD-109	3.781E+00	8.023E-01	7.478E-01	0.000E+00
SN-126	3.710E-01	7.874E-02	7.324E-02	0.000E+00
BA-137M	2.682E-01	7.972E-02	6.955E-02	0.000E+00
CS-137	2.835E-01	8.429E-02	7.352E-02	0.000E+00
EU-155	1.270E-01	9.139E-02	1.294E-01	0.000E+00
TL-208	5.254E-01	1.027E-01	5.632E-02	0.000E+00
BI-210	2.725E+00	7.277E-01	6.014E-01	0.000E+00
PB-210	2.725E+00	7.277E-01	6.014E-01	0.000E+00
PO-210	2.725E+00	7.200E-01	6.014E-01	0.000E+00
BI-211	4.219E+00	6.347E-01	3.111E-01	0.000E+00
PB-212	1.651E+00	2.123E-01	7.735E-02	0.000E+00
PO-212	1.651E+00	2.123E-01	7.735E-02	0.000E+00
BI-214	1.307E+00	2.283E-01	1.060E-01	0.000E+00
PB-214	1.468E+00	2.332E-01	1.085E-01	0.000E+00
PO-214	1.468E+00	2.332E-01	1.085E-01	0.000E+00
PO-216	1.651E+00	2.123E-01	7.735E-02	0.000E+00
PO-218	1.468E+00	2.332E-01	1.085E-01	0.000E+00
RA-224	4.381E+00	1.136E+00	8.813E-01	0.000E+00
RA-226	1.307E+00	2.283E-01	1.060E-01	0.000E+00
AC-228	1.553E+00	3.436E-01	2.245E-01	0.000E+00
RA-228	1.553E+00	3.436E-01	2.245E-01	0.000E+00
TH-228	1.678E+00	2.157E-01	7.861E-02	0.000E+00
TH-230	1.307E+00	2.283E-01	1.060E-01	0.000E+00
TH-232	1.553E+00	3.436E-01	2.245E-01	0.000E+00
TH-234	2.407E+00	8.788E-01	7.394E-01	0.000E+00
U-234	1.307E+00	2.283E-01	1.060E-01	0.000E+00
U-235	-6.182E-02	1.802E-01	3.033E-01	0.000E+00
NP-237	1.089E+00	3.194E-01	2.141E-01	0.000E+00
U-238	2.407E+00	8.788E-01	7.394E-01	0.000E+00
AM-243	3.681E-01	5.319E-02	4.588E-02	0.000E+00
ANH-511	1.486E-01	6.508E-02	4.713E-02	0.000E+00

### ---- Non-Identified Nuclides ----



Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	3.691E-01	3.235E-01	5.858E-01	0.000E+00	NOT IDENT.
NA-22	-2.302E-03	4.724E-02	7.881E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.146E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-6.212E-03	2.802E-02	4.446E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.031E-02	4.740E-02	0.000E+00	FAIL ABUN
SC-46	-1.653E-02	3.999E-02	6.367E-02	0.000E+00	FAIL ABUN
V-48	3.608E-02	7.195E-02	1.252E-01	0.000E+00	NOT IDENT.
CR-51	-2.308E-01	3.419E-01	5.722E-01	0.000E+00	NOT IDENT.
MN-52	2.338E-01	2.607E-01	4.881E-01	0.000E+00	NOT IDENT.
MN-54	2.823E-02	3.875E-02	6.897E-02	0.000E+00	NOT IDENT.
CO-56	1.304E-02	4.241E-02	7.302E-02	0.000E+00	NOT IDENT.
CO-57	-1.623E-02	1.793E-02	3.020E-02	0.000E+00	NOT IDENT.
CO-58	-3.253E-02	4.082E-02	6.313E-02	0.000E+00	NOT IDENT.
FE-59	8.107E-03	8.766E-02	1.508E-01	0.000E+00	NOT IDENT.
CO-60	2.664E-02	3.881E-02	7.026E-02	0.000E+00	NOT IDENT.
ZN-65	-5.618E-03	9.585E-02	1.392E-01	0.000E+00	NOT IDENT.
GE-68	-1.578E-03	1.269E+00	2.166E+00	0.000E+00	NOT IDENT.
AS-73	6.178E-02	1.741E-01	3.002E-01	0.000E+00	NOT IDENT.
AS-74	4.667E-02	9.440E-02	1.617E-01	0.000E+00	NOT IDENT.
SE-75	2.311E-02	4.049E-02	6.626E-02	0.000E+00	NOT IDENT.
BR-77	-9.172E+00	1.387E+01	2.173E+01	0.000E+00	FAIL ABUN
SR-82	-5.954E-01	4.091E-01	5.887E-01	0.000E+00	NOT IDENT.
RB-83	-3.680E-02	6.818E-02	1.082E-01	0.000E+00	NOT IDENT.
RB-84	7.296E-03	6.918E-02	1.167E-01	0.000E+00	NOT IDENT.
KR-85	6.444E+00	8.016E+00	1.261E+01	0.000E+00	NOT IDENT.
SR-85	3.340E-02	4.156E-02	6.535E-02	0.000E+00	NOT IDENT.
RB-86	2.737E-01	8.209E-01	1.446E+00	0.000E+00	NOT IDENT.
Y-88	-6.773E-03	3.675E-02	5.914E-02	0.000E+00	NOT IDENT.
ZR-88	1.085E-02	2.974E-02	5.215E-02	0.000E+00	NOT IDENT.
Y-91	1.631E+01	1.975E+01	3.567E+01	0.000E+00	NOT IDENT.
NB-94	-8.529E-03	3.540E-02	5.826E-02	0.000E+00	NOT IDENT.
NB-95	2.822E-02	4.534E-02	8.033E-02	0.000E+00	NOT IDENT.
NB-95M	1.508E-03	1.122E-01	1.674E-01	0.000E+00	NOT IDENT.
ZR-95	8.747E-02	7.542E-02	1.389E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.860E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.205E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-7.447E-01	1.406E+01	2.377E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.540E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	7.501E-03	2.999E-02	5.080E-02	0.000E+00	NOT IDENT.
RH-102	6.814E-04	3.055E-02	5.148E-02	0.000E+00	NOT IDENT.
RU-103	-2.018E-02	3.886E-02	6.196E-02	0.000E+00	FAIL ABUN
RH-106	1.166E-01	3.236E-01	5.741E-01	0.000E+00	FAIL ABUN
RU-106	1.166E-01	3.234E-01	5.741E-01	0.000E+00	FAIL ABUN
AG-108M	-6.812E-03	3.174E-02	5.304E-02	0.000E+00	NOT IDENT.
AG-110M	1.822E-02	3.654E-02	5.793E-02	0.000E+00	NOT IDENT.
IN-111	-1.000E+00	1.367E+00	1.902E+00	0.000E+00	NOT IDENT.
IN-113M	-2.203E-02	4.280E-02	7.082E-02	0.000E+00	NOT IDENT.
SN-113	-2.203E-02	4.280E-02	7.082E-02	0.000E+00	NOT IDENT.
IN-114M	5.049E-02	1.670E-01	2.597E-01	0.000E+00	NOT IDENT.
CD-115	8.828E+00	1.528E+01	2.656E+01	0.000E+00	NOT IDENT.
SN-117M	1.232E-02	4.765E-02	8.350E-02	0.000E+00	NOT IDENT.
SB-122	1.014E+00	2.703E+00	4.605E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.789E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	6.001E-04	2.353E-02	4.082E-02	0.000E+00	NOT IDENT.
I-124	-2.874E-01	8.545E-01	1.308E+00	0.000E+00	NOT IDENT.
SB-124	8.541E-03	7.484E-02	1.290E-01	0.000E+00	FAIL ABUN
SB-125	-2.082E-02	8.950E-02	1.496E-01	0.000E+00	FAIL ABUN
TE-125M	-5.238E-01	7.284E+00	1.166E+01	0.000E+00	NOT IDENT.
I-126	-6.492E-02	2.464E-01	3.580E-01	0.000E+00	NOT IDENT.
SB-126	-3.795E-02	1.792E-01	2.715E-01	0.000E+00	FAIL ABUN
SB-127	-8.413E-01	1.697E+00	2.783E+00	0.000E+00	NOT IDENT.
XE-127	-2.806E-03	4.010E-02	6.778E-02	0.000E+00	NOT IDENT.
I-131	-8.798E-02	1.108E-01	1.802E-01	0.000E+00	NOT IDENT.
TE-132	-5.360E-01	7.443E-01	1.188E+00	0.000E+00	NOT IDENT.
BA-133	-1.039E-02	4.413E-02	6.579E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.507E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.869E-02	9.812E-02	0.000E+00	FAIL ABUN
CS-135	9.858E-02	1.513E-01	2.339E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.413E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.944E-02	1.114E-01	1.744E-01	0.000E+00	FAIL ABUN
CE-139	2.925E-03	2.445E-02	4.245E-02	0.000E+00	NOT IDENT.
BA-140	-1.087E-01	2.782E-01	4.429E-01	0.000E+00	NOT IDENT.
LA-140	-8.731E-02	1.008E-01	1.490E-01	0.000E+00	FAIL ABUN

CE-141	4.401E-02	5.317E-02	9.554E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.860E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.054E-01	1.558E-01	2.637E-01	0.000E+00	NOT IDENT.
PM-144	8.931E-03	3.599E-02	6.269E-02	0.000E+00	NOT IDENT.
PR-144	6.056E-01	2.440E+00	4.251E+00	0.000E+00	NOT IDENT.
PM-146	4.009E-02	4.275E-02	7.668E-02	0.000E+00	NOT IDENT.
ND-147	3.050E-01	6.308E-01	1.086E+00	0.000E+00	FAIL ABUN
PM-149	-4.971E+01	1.157E+02	1.839E+02	0.000E+00	NOT IDENT.
EU-152	2.142E-02	8.998E-02	1.534E-01	0.000E+00	NOT IDENT.
GD-153	-2.811E-02	5.232E-02	8.227E-02	0.000E+00	FAIL ABUN
EU-154	5.506E-02	1.251E-01	2.193E-01	0.000E+00	NOT IDENT.
TB-160	-1.056E-01	1.478E-01	2.277E-01	0.000E+00	FAIL ABUN
HO-166M	-3.005E-02	6.376E-02	1.045E-01	0.000E+00	FAIL ABUN
TM-171	1.345E+01	1.216E+01	1.964E+01	0.000E+00	NOT IDENT.
LU-176	1.036E-02	2.237E-02	3.903E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.626E+00	2.182E+00	0.000E+00	FAIL ABUN
LU-177M	-5.417E-02	1.729E-01	2.886E-01	0.000E+00	FAIL ABUN
HF-181	-4.137E-02	3.874E-02	5.844E-02	0.000E+00	NOT IDENT.
W-181	-4.185E-02	1.517E-01	2.309E-01	0.000E+00	NOT IDENT.
TA-182	1.628E-01	2.052E-01	3.689E-01	0.000E+00	FAIL ABUN
RE-183	-2.207E-02	9.392E-02	1.581E-01	0.000E+00	FAIL ABUN
RE-184	1.213E-01	2.110E-01	3.621E-01	0.000E+00	NOT IDENT.
OS-185	-2.887E-04	4.289E-02	7.388E-02	0.000E+00	NOT IDENT.
RE-188	5.169E-02	1.437E-01	2.512E-01	0.000E+00	NOT IDENT.
W-188	-3.007E+00	6.774E+00	1.016E+01	0.000E+00	FAIL ABUN
IR-192	1.108E-04	3.021E-02	5.285E-02	0.000E+00	FAIL ABUN
AU-195	1.196E-01	1.359E-01	2.517E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.239E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.582E+00	7.360E+00	1.239E+01	0.000E+00	NOT IDENT.
TL-202	7.651E-02	7.191E-02	1.303E-01	0.000E+00	NOT IDENT.
HG-203	1.138E-02	3.713E-02	6.230E-02	0.000E+00	NOT IDENT.
BI-207	-3.262E-02	5.165E-02	8.251E-02	0.000E+00	FAIL ABUN
TL-207	6.924E-01	6.764E-01	1.106E+00	0.000E+00	FAIL ABUN
PO-209	-3.768E+00	7.536E+00	1.186E+01	0.000E+00	NOT IDENT.
PB-211	4.603E-02	9.190E-01	1.575E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.612E-01	6.758E-01	0.000E+00	FAIL ABUN
PO-215	6.924E-01	6.764E-01	1.106E+00	0.000E+00	FAIL ABUN
RN-219	-1.524E-01	4.096E-01	6.829E-01	0.000E+00	FAIL ABUN
RN-220	8.844E+00	2.657E+01	4.522E+01	0.000E+00	NOT IDENT.
RA-223	6.924E-01	6.764E-01	1.106E+00	0.000E+00	FAIL ABUN
AC-227	-2.303E-01	3.496E-01	5.533E-01	0.000E+00	FAIL ABUN
TH-227	-2.303E-01	3.502E-01	5.533E-01	0.000E+00	FAIL ABUN
TH-229	-8.045E-02	4.302E-01	7.258E-01	0.000E+00	FAIL ABUN
PA-231	-1.030E+00	1.371E+00	2.117E+00	0.000E+00	FAIL ABUN
TH-231	6.924E-01	6.764E-01	1.106E+00	0.000E+00	FAIL ABUN
U-231	3.482E-01	8.118E-01	1.347E+00	0.000E+00	FAIL ABUN
PA-233	6.177E-03	5.377E-02	9.482E-02	0.000E+00	FAIL ABUN
PA-234	-1.829E-01	3.337E-01	5.185E-01	0.000E+00	FAIL ABUN
PA-234M	2.446E+00	5.143E+00	8.958E+00	0.000E+00	NOT IDENT.
NP-236	5.135E-02	6.496E-02	1.162E-01	0.000E+00	NOT IDENT.
NP-239	-3.908E-02	1.320E-01	2.311E-01	0.000E+00	FAIL ABUN
AM-241	-4.628E-02	5.092E-02	7.480E-02	0.000E+00	NOT IDENT.
CM-243	4.575E-02	6.786E-02	1.133E-01	0.000E+00	FAIL ABUN
AM-246	6.208E-02	1.410E-01	2.508E-01	0.000E+00	NOT IDENT.
CM-247	8.471E-03	3.628E-02	6.296E-02	0.000E+00	NOT IDENT.
CF-249	4.660E-03	3.715E-02	6.430E-02	0.000E+00	NOT IDENT.
CF-251	-2.102E-02	1.047E-01	1.781E-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]G244148015.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 15:59:11
Sample ID          : G244148015      Sample quantity   : 1.20540E+02 GRAM
Detector name      : GAM25            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.83  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 940268            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	745	10.67*	1.109E+00	1.962E+01	1.962E+01	11.85
CD-109	88.03	415	3.72*	9.404E+00	3.690E+00	3.781E+00	21.66
SN-126	64.28	287	9.60	9.778E+00	9.528E-01	9.528E-01	35.98
	86.94	415	8.90	9.404E+00	1.542E+00	1.542E+00	45.88
	87.57	415	37.00*	9.404E+00	3.710E-01	3.710E-01	21.66
BA-137M	661.65	173	89.98*	2.231E+00	2.680E-01	2.682E-01	30.33
CS-137	661.65	173	85.12*	2.231E+00	2.833E-01	2.835E-01	30.33
EU-155	48.70	-----	4.60	9.341E+00	-----	Line Not Found	-----
	60.01	-----	1.11	9.748E+00	-----	Line Not Found	-----
	86.54	415	30.90	9.404E+00	4.443E-01	4.470E-01	21.69
	105.31	74	20.70*	8.827E+00	1.262E-01	1.270E-01	73.43
TL-208	277.35	-----	6.80	4.738E+00	-----	Line Not Found	-----
	510.84	134	21.60	2.809E+00	6.879E-01	6.879E-01	45.46
	583.14	355	84.20*	2.496E+00	5.254E-01	5.254E-01	19.95
	860.37	66	12.46	1.765E+00	9.388E-01	9.388E-01	55.45
BI-210	46.50	325	4.05*	9.193E+00	2.721E+00	2.725E+00	27.25
PB-210	46.50	325	4.05*	9.193E+00	2.721E+00	2.725E+00	27.25
PO-210	46.50	325	4.05*	9.193E+00	2.721E+00	2.725E+00	26.96
BI-211	72.87	-----	1.27	9.724E+00	-----	Line Not Found	-----
	351.07	681	12.94*	3.886E+00	4.219E+00	4.219E+00	15.35
PB-212	74.81	756	10.70	9.693E+00	2.271E+00	2.271E+00	17.46
	77.11	1219	18.00	9.652E+00	2.185E+00	2.185E+00	12.73
	87.30	415	8.00	9.404E+00	1.716E+00	1.716E+00	23.85
	238.63	1262	44.60*	5.339E+00	1.651E+00	1.651E+00	13.12
	300.09	77	3.41	4.439E+00	1.593E+00	1.593E+00	72.71
PO-212	74.81	756	10.70	9.693E+00	2.271E+00	2.271E+00	17.46
	77.11	1219	18.00	9.652E+00	2.185E+00	2.185E+00	12.73
	87.30	415	8.00	9.404E+00	1.716E+00	1.716E+00	23.85
	115.19	-----	0.60	8.498E+00	-----	Line Not Found	-----
	238.63	1262	44.60*	5.339E+00	1.651E+00	1.651E+00	13.12
	300.09	77	3.41	4.439E+00	1.593E+00	1.593E+00	72.71
BI-214	609.31	466	46.30*	2.401E+00	1.307E+00	1.307E+00	17.83

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-214	1120.29	89	15.10	1.398E+00	1.316E+00	1.316E+00	41.80
	1764.49	70	15.80	9.412E-01	1.462E+00	1.462E+00	29.75
	74.81	756	6.21	9.693E+00	3.912E+00	3.912E+00	16.50
	77.11	1219	10.50	9.652E+00	3.745E+00	3.745E+00	14.84
	87.30	415	4.67	9.404E+00	2.940E+00	2.940E+00	22.99
PO-214	241.98	294	7.49	5.288E+00	2.310E+00	2.310E+00	27.05
	295.21	405	19.20	4.502E+00	1.460E+00	1.460E+00	21.33
	351.92	681	37.20*	3.886E+00	1.468E+00	1.468E+00	16.21
	74.81	756	6.21	9.693E+00	3.912E+00	3.912E+00	16.50
	77.11	1219	10.50	9.652E+00	3.745E+00	3.745E+00	14.84
PO-216	87.30	415	4.67	9.404E+00	2.940E+00	2.940E+00	22.99
	241.98	294	7.49	5.288E+00	2.310E+00	2.310E+00	27.05
	295.21	405	19.20	4.502E+00	1.460E+00	1.460E+00	21.33
	351.92	681	37.20*	3.886E+00	1.468E+00	1.468E+00	16.21
	74.81	756	10.70	9.693E+00	2.271E+00	2.271E+00	17.46
PO-218	77.11	1219	18.00	9.652E+00	2.185E+00	2.185E+00	12.73
	87.30	415	8.00	9.404E+00	1.716E+00	1.716E+00	23.85
	238.63	1262	44.60*	5.339E+00	1.651E+00	1.651E+00	13.12
	300.09	77	3.41	4.439E+00	1.593E+00	1.593E+00	72.71
	74.81	756	6.21	9.693E+00	3.912E+00	3.912E+00	16.50
RA-224	77.11	1219	10.50	9.652E+00	3.745E+00	3.745E+00	14.84
	87.30	415	4.67	9.404E+00	2.940E+00	2.940E+00	22.99
	241.98	294	7.49	5.288E+00	2.310E+00	2.310E+00	27.05
	295.21	405	19.20	4.502E+00	1.460E+00	1.460E+00	21.33
	351.92	681	37.20*	3.886E+00	1.468E+00	1.468E+00	16.21
RA-226	240.98	294	3.95*	5.288E+00	4.381E+00	4.381E+00	26.47
AC-228	609.31	466	46.30*	2.401E+00	1.307E+00	1.307E+00	17.83
	1120.29	89	15.10	1.398E+00	1.316E+00	1.316E+00	41.80
	1764.49	70	15.80	9.412E-01	1.462E+00	1.462E+00	29.75
	338.32	257	11.40	4.018E+00	1.745E+00	1.745E+00	46.21
	911.07	232	27.70*	1.678E+00	1.553E+00	1.553E+00	22.58
RA-228	969.11	117	16.60	1.588E+00	1.382E+00	1.382E+00	56.21
	338.32	257	11.40	4.018E+00	1.745E+00	1.745E+00	46.21
	911.07	232	27.70*	1.678E+00	1.553E+00	1.553E+00	22.58
	969.11	117	16.60	1.588E+00	1.382E+00	1.382E+00	56.21
	74.81	756	10.70	9.693E+00	2.271E+00	2.307E+00	14.79
TH-228	77.11	1219	18.00	9.652E+00	2.185E+00	2.220E+00	12.73
	87.30	415	8.00	9.404E+00	1.716E+00	1.744E+00	21.66
	238.63	1262	44.60*	5.339E+00	1.651E+00	1.678E+00	13.12
	300.09	77	3.41	4.439E+00	1.593E+00	1.618E+00	93.23
	609.31	466	46.30*	2.401E+00	1.307E+00	1.307E+00	17.83
TH-230	1120.29	89	15.10	1.398E+00	1.316E+00	1.316E+00	41.80
	1764.49	70	15.80	9.412E-01	1.462E+00	1.462E+00	29.75
	338.32	257	11.40	4.018E+00	1.745E+00	1.745E+00	22.52
	911.07	232	27.70*	1.678E+00	1.553E+00	1.553E+00	22.58
	969.11	117	16.60	1.588E+00	1.382E+00	1.382E+00	56.21
TH-234	63.29	287	3.80*	9.778E+00	2.407E+00	2.407E+00	37.25
	92.38	475	5.41	9.242E+00	2.961E+00	2.961E+00	25.38
	609.31	466	46.30*	2.401E+00	1.307E+00	1.307E+00	17.83
	1120.29	89	15.10	1.398E+00	1.316E+00	1.316E+00	41.80
	1764.49	70	15.80	9.412E-01	1.462E+00	1.462E+00	29.75
U-234	338.32	257	11.40	4.018E+00	1.745E+00	1.745E+00	22.52
	911.07	232	27.70*	1.678E+00	1.553E+00	1.553E+00	22.58
	969.11	117	16.60	1.588E+00	1.382E+00	1.382E+00	56.21
	63.29	287	3.80*	9.778E+00	2.407E+00	2.407E+00	37.25
	92.38	475	5.41	9.242E+00	2.961E+00	2.961E+00	25.38

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-235	1120.29	89	15.10	1.398E+00	1.316E+00	1.316E+00	41.80
	1764.49	70	15.80	9.412E-01	1.462E+00	1.462E+00	29.75
	89.95	246	2.70	9.329E+00	3.040E+00	3.040E+00	39.62
	93.35	475	4.50	9.242E+00	3.560E+00	3.560E+00	33.21
	105.00	74	2.10	8.827E+00	1.244E+00	1.244E+00	78.78
	143.76	-----	10.50*	7.568E+00	-----	Line Not Found	-----
	163.35	-----	4.70	6.998E+00	-----	Line Not Found	-----
NP-237	185.71	292	54.00	6.419E+00	2.626E-01	2.626E-01	27.37
	205.31	-----	4.70	5.979E+00	-----	Line Not Found	-----
	86.50	415	12.60*	9.404E+00	1.089E+00	1.089E+00	29.91
	95.87	-----	2.60	9.143E+00	-----	Line Not Found	-----
U-238	63.29	287	3.80*	9.778E+00	2.407E+00	2.407E+00	37.25
	92.38	475	5.41	9.242E+00	2.961E+00	2.961E+00	19.79
AM-243	74.67	756	66.00*	9.693E+00	3.681E-01	3.681E-01	14.74
	86.72	415	0.34	9.404E+00	4.086E+01	4.086E+01	21.66
	117.66	-----	0.55	8.415E+00	-----	Line Not Found	-----
ANH-511	142.18	-----	0.13	7.617E+00	-----	Line Not Found	-----
	511.00	134	100.00*	2.809E+00	1.486E-01	1.486E-01	44.69

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	1.962E+01	1.962E+01	0.232E+01	11.85	
CD-109	464.00D	1.02	3.690E+00	3.781E+00	0.819E+00	21.66	
SN-126	1.00E+05Y	1.00	3.710E-01	3.710E-01	0.803E-01	21.66	
BA-137M	30.17Y	1.00	2.680E-01	2.682E-01	0.814E-01	30.33	
CS-137	30.17Y	1.00	2.833E-01	2.835E-01	0.860E-01	30.33	
EU-155	4.96Y	1.01	1.262E-01	1.270E-01	0.933E-01	73.43	
TL-208	1.41E+10Y	1.00	5.254E-01	5.254E-01	1.048E-01	19.95	
BI-210	22.26Y	1.00	2.721E+00	2.725E+00	0.743E+00	27.25	
PB-210	22.26Y	1.00	2.721E+00	2.725E+00	0.743E+00	27.25	
PO-210	22.26Y	1.00	2.721E+00	2.725E+00	0.735E+00	26.96	
BI-211	7.04E+08Y	1.00	4.219E+00	4.219E+00	0.648E+00	15.35	
PB-212	1.41E+10Y	1.00	1.651E+00	1.651E+00	0.217E+00	13.12	
PO-212	1.41E+10Y	1.00	1.651E+00	1.651E+00	0.217E+00	13.12	
BI-214	1600.00Y	1.00	1.307E+00	1.307E+00	0.233E+00	17.83	
PB-214	1600.00Y	1.00	1.468E+00	1.468E+00	0.238E+00	16.21	
PO-214	1600.00Y	1.00	1.468E+00	1.468E+00	0.238E+00	16.21	
PO-216	1.41E+10Y	1.00	1.651E+00	1.651E+00	0.217E+00	13.12	
PO-218	1600.00Y	1.00	1.468E+00	1.468E+00	0.238E+00	16.21	
RA-224	1.41E+10Y	1.00	4.381E+00	4.381E+00	1.159E+00	26.47	
RA-226	1600.00Y	1.00	1.307E+00	1.307E+00	0.233E+00	17.83	
AC-228	1.41E+10Y	1.00	1.553E+00	1.553E+00	0.351E+00	22.58	
RA-228	1.41E+10Y	1.00	1.553E+00	1.553E+00	0.351E+00	22.58	
TH-228	1.91Y	1.02	1.651E+00	1.678E+00	0.220E+00	13.12	
TH-230	4.47E+09Y	1.00	1.307E+00	1.307E+00	0.233E+00	17.83	
TH-232	1.41E+10Y	1.00	1.553E+00	1.553E+00	0.351E+00	22.58	
TH-234	4.47E+09Y	1.00	2.407E+00	2.407E+00	0.897E+00	37.25	
U-234	4.47E+09Y	1.00	1.307E+00	1.307E+00	0.233E+00	17.83	
U-235	7.04E+08Y	1.00	2.626E-01	2.626E-01	0.719E-01	27.37	K
NP-237	2.14E+06Y	1.00	1.089E+00	1.089E+00	0.326E+00	29.91	
U-238	4.47E+09Y	1.00	2.407E+00	2.407E+00	0.897E+00	37.25	
AM-243	7380.00Y	1.00	3.681E-01	3.681E-01	0.543E-01	14.74	
ANH-511	1.00E+09Y	1.00	1.486E-01	1.486E-01	0.664E-01	44.69	
Total Activity :			6.922E+01	6.935E+01			

Grand Total Activity : 6.922E+01 6.935E+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	84.27	173	378	1.31	168.10	165	27	2.40E-02	38.4	9.48E+00	T
0	128.94	85	254	0.58	257.42	254	6	1.19E-02	63.0	8.04E+00	T
0	209.39	124	269	0.87	418.32	414	9	1.73E-02	51.1	5.89E+00	T
0	270.06	122	199	1.24	539.65	535	12	1.69E-02	49.8	4.84E+00	T
0	328.11	63	143	0.99	655.73	651	8	8.69E-03	66.9	4.12E+00	T
0	463.24	68	117	1.20	925.99	920	12	9.47E-03	67.9	3.06E+00	T
0	727.26	70	65	1.54	1454.00	1448	11	9.74E-03	50.8	2.05E+00	T
0	795.65	51	49	1.29	1590.79	1586	12	7.04E-03	62.8	1.89E+00	T
0	933.08	50	35	0.84	1865.65	1859	14	6.88E-03	58.2	1.64E+00	
0	1377.93	44	11	1.82	2755.37	2750	12	6.11E-03	43.4	1.17E+00	

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]G244148015.CNF;1 *
* Acquisition date   : 20-JAN-2010 15:59:11  Detector SN#      :             *
* Detector ID        : GAM25                  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 02:00:01.83          Half life ratio  : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library   : SOLID        *
* Sample ID          : G244148015            Analyst initials : MXR1         *
* Batch Number       : 940268                Sample Quantity  : 1.20540E+02 GRAM *
*****
*                                     QC DATA                               *
*                                     *                                       *
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43.34MS 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	1.962E+01	2.324E+00	5.188E-01	4.418E-02	37.816
CD-109	3.781E+00	8.187E-01	7.248E-01	7.789E-02	5.216
SN-126	3.710E-01	8.035E-02	7.098E-02	7.611E-03	5.227
BA-137M	2.682E-01	8.135E-02	6.904E-02	7.648E-03	3.885
CS-137	2.835E-01	8.601E-02	7.298E-02	8.094E-03	3.885
EU-155	1.270E-01	9.326E-02	1.257E-01	1.486E-02	1.010
TL-208	5.254E-01	1.048E-01	5.582E-02	6.293E-03	9.412
BI-210	2.725E+00	7.425E-01	5.787E-01	5.967E-02	4.709
PB-210	2.725E+00	7.425E-01	5.787E-01	5.967E-02	4.709
PO-210	2.725E+00	7.347E-01	5.787E-01	5.512E-02	4.709
BI-211	4.219E+00	6.477E-01	3.064E-01	3.229E-02	13.770
PB-212	1.651E+00	2.166E-01	7.585E-02	8.635E-03	21.766
PO-212	1.651E+00	2.166E-01	7.585E-02	8.635E-03	21.766
BI-214	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
PB-214	1.468E+00	2.380E-01	1.069E-01	1.255E-02	13.736
PO-214	1.468E+00	2.380E-01	1.069E-01	1.255E-02	13.736
PO-216	1.651E+00	2.166E-01	7.585E-02	8.635E-03	21.766
PO-218	1.468E+00	2.380E-01	1.069E-01	1.255E-02	13.736



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	4.381E+00	1.159E+00	8.643E-01	9.083E-02	5.068
RA-226	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
AC-228	1.553E+00	3.506E-01	2.237E-01	2.661E-02	6.942
RA-228	1.553E+00	3.506E-01	2.237E-01	2.661E-02	6.942
TH-228	1.678E+00	2.201E-01	7.708E-02	8.776E-03	21.766
TH-230	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
TH-232	1.553E+00	3.506E-01	2.237E-01	2.661E-02	6.942
TH-234	2.407E+00	8.967E-01	7.139E-01	1.329E-01	3.372
U-234	1.307E+00	2.330E-01	1.051E-01	1.269E-02	12.428
U-235	2.626E-01	7.189E-02	2.957E-01	5.583E-02	0.888
NP-237	1.089E+00	3.259E-01	2.074E-01	4.819E-02	5.252
U-238	2.407E+00	8.967E-01	7.139E-01	1.329E-01	3.372
AM-243	3.681E-01	5.427E-02	4.438E-02	4.507E-03	8.294
ANH-511	1.486E-01	6.641E-02	4.663E-02	4.800E-03	3.186

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.691E-01		3.301E-01	5.792E-01	6.132E-02	0.637
NA-22	-2.302E-03		4.821E-02	7.886E-02	6.466E-03	-0.029
NA-24	1.340E+00		1.095E+00	Half-Life	too short	
AL-26	-6.212E-03		2.859E-02	4.468E-02	3.661E-03	-0.139
TI-44	4.032E-01	+	5.133E-02	4.588E-02	4.725E-03	8.788
SC-46	-1.653E-02		4.081E-02	6.342E-02	6.074E-03	-0.261
V-48	3.608E-02		7.342E-02	1.248E-01	1.157E-02	0.289
CR-51	-2.308E-01		3.489E-01	5.631E-01	6.253E-02	-0.410
MN-52	2.338E-01		2.661E-01	4.891E-01	4.030E-02	0.478
MN-54	2.823E-02		3.954E-02	6.866E-02	6.967E-03	0.411
CO-56	1.304E-02		4.328E-02	7.270E-02	7.295E-03	0.179
CO-57	-1.623E-02		1.829E-02	2.939E-02	3.790E-03	-0.552
CO-58	-3.253E-02		4.165E-02	6.282E-02	6.518E-03	-0.518
FE-59	8.107E-03		8.945E-02	1.506E-01	1.419E-02	0.054
CO-60	2.664E-02		3.960E-02	7.034E-02	5.712E-03	0.379
ZN-65	-5.618E-03		9.781E-02	1.391E-01	1.201E-02	-0.040
GE-68	-1.578E-03		1.294E+00	2.163E+00	1.915E-01	-0.001
AS-73	6.178E-02		1.776E-01	2.893E-01	2.777E-02	0.214
AS-74	4.667E-02		9.633E-02	1.603E-01	1.737E-02	0.291
SE-75	2.311E-02		4.132E-02	6.506E-02	7.130E-03	0.355
BR-77	-9.172E+00		1.415E+01	2.151E+01	2.230E+00	-0.426
SR-82	-5.954E-01		4.174E-01	5.855E-01	6.213E-02	-1.017
RB-83	-3.680E-02		6.957E-02	1.071E-01	1.110E-02	-0.344
RB-84	7.296E-03		7.059E-02	1.162E-01	1.124E-02	0.063
KR-85	6.444E+00		8.180E+00	1.247E+01	1.287E+00	0.517
SR-85	3.340E-02		4.241E-02	6.467E-02	6.672E-03	0.517
RB-86	2.737E-01		8.377E-01	1.444E+00	1.279E-01	0.190
Y-88	-6.773E-03		3.750E-02	5.944E-02	4.858E-03	-0.114
ZR-88	1.085E-02		3.035E-02	5.144E-02	4.682E-03	0.211

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	1.631E+01		2.015E+01	3.566E+01	2.935E+00	0.457
NB-94	-8.529E-03		3.612E-02	5.787E-02	6.355E-03	-0.147
NB-95	2.822E-02		4.627E-02	7.988E-02	8.532E-03	0.353
NB-95M	1.508E-03		1.145E-01	1.641E-01	1.881E-02	0.009
ZR-95	8.747E-02		7.696E-02	1.381E-01	1.581E-02	0.633
NB-97	1.931E-01		1.459E-01	Half-Life	too short	
ZR-97	4.923E+00		2.656E+00	Half-Life	too short	
MO-99	-7.447E-01		1.434E+01	2.363E+01	3.908E+00	-0.032
TC-99M	1.767E+11		2.827E+11	Half-Life	too short	
RH-101	7.501E-03		3.060E-02	4.971E-02	4.790E-03	0.151
RH-102	6.814E-04		3.117E-02	5.089E-02	5.081E-03	0.013
RU-103	-2.018E-02		3.965E-02	6.129E-02	9.293E-03	-0.329
RH-106	1.166E-01		3.302E-01	5.695E-01	8.523E-02	0.205
RU-106	1.166E-01		3.300E-01	5.695E-01	6.236E-02	0.205
AG-108M	-6.812E-03		3.239E-02	5.238E-02	5.176E-03	-0.130
AG-110M	1.822E-02		3.729E-02	5.750E-02	6.479E-03	0.317
IN-111	-1.000E+00		1.395E+00	1.866E+00	1.976E-01	-0.536
IN-113M	-2.203E-02		4.367E-02	6.986E-02	6.525E-03	-0.315
SN-113	-2.203E-02		4.367E-02	6.986E-02	6.525E-03	-0.315
IN-114M	5.049E-02		1.704E-01	2.539E-01	2.404E-02	0.199
CD-115	8.828E+00		1.559E+01	2.630E+01	2.741E+00	0.336
SN-117M	1.232E-02		4.862E-02	8.149E-02	7.912E-03	0.151
SB-122	1.014E+00		2.758E+00	4.562E+00	4.864E-01	0.222
I-123	4.562E-01		9.127E+00	Half-Life	too short	
TE-123M	6.001E-04		2.401E-02	3.984E-02	3.868E-03	0.015
I-124	-2.874E-01		8.719E-01	1.297E+00	1.410E-01	-0.222
SB-124	8.541E-03		7.637E-02	1.296E-01	1.120E-02	0.066
SB-125	-2.082E-02		9.132E-02	1.477E-01	1.427E-02	-0.141
TE-125M	-5.238E-01		7.433E+00	1.133E+01	1.505E+00	-0.046
I-126	-6.492E-02		2.514E-01	3.554E-01	3.934E-02	-0.183
SB-126	-3.795E-02		1.829E-01	2.698E-01	2.945E-02	-0.141
SB-127	-8.413E-01		1.731E+00	2.763E+00	3.750E-01	-0.304
XE-127	-2.806E-03		4.092E-02	6.634E-02	6.461E-03	-0.042
I-131	-8.798E-02		1.131E-01	1.776E-01	1.823E-02	-0.496
TE-132	-5.360E-01		7.595E-01	1.165E+00	1.964E-01	-0.460
BA-133	-1.039E-02		4.503E-02	6.482E-02	9.191E-03	-0.160
I-133	9.828E-04		7.688E-03	Half-Life	too short	
CS-134	1.101E-01	+	7.009E-02	9.762E-02	1.028E-02	1.128
CS-135	9.858E-02		1.544E-01	2.297E-01	2.772E-02	0.429
I-135	-6.452E+10		4.292E+10	Half-Life	too short	
CS-136	-8.944E-02		1.136E-01	1.740E-01	1.628E-02	-0.514
CE-139	2.925E-03		2.495E-02	4.144E-02	3.696E-03	0.071
BA-140	-1.087E-01		2.839E-01	4.385E-01	1.477E-01	-0.248
LA-140	-8.731E-02		1.029E-01	1.495E-01	1.243E-02	-0.584
CE-141	4.401E-02		5.425E-02	9.315E-02	1.036E-02	0.472
CE-143	7.097E-04		1.459E-04	Half-Life	too short	
CE-144	-1.054E-01		1.590E-01	2.568E-01	4.540E-02	-0.410
PM-144	8.931E-03		3.672E-02	6.227E-02	6.852E-03	0.143

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144	6.056E-01		2.490E+00	4.222E+00	4.644E-01	0.143
PM-146	4.009E-02		4.363E-02	7.577E-02	8.847E-03	0.529
ND-147	3.050E-01		6.437E-01	1.075E+00	1.728E-01	0.284
PM-149	-4.971E+01		1.181E+02	1.808E+02	3.083E+01	-0.275
EU-152	2.142E-02		9.182E-02	1.511E-01	1.623E-02	0.142
GD-153	-2.811E-02		5.338E-02	7.984E-02	8.991E-03	-0.352
EU-154	5.506E-02		1.277E-01	2.195E-01	2.411E-02	0.251
TB-160	-1.056E-01		1.508E-01	2.268E-01	2.198E-02	-0.466
HO-166M	-3.005E-02		6.506E-02	1.038E-01	1.137E-02	-0.289
TM-171	1.345E+01		1.241E+01	1.897E+01	1.883E+00	0.709
LU-176	1.036E-02		2.283E-02	3.838E-02	4.188E-03	0.270
LU-177	3.189E+00	+	1.660E+00	2.136E+00	2.106E-01	1.493
LU-177M	-5.417E-02		1.764E-01	2.848E-01	2.663E-02	-0.190
HF-181	-4.137E-02		3.953E-02	5.779E-02	5.806E-03	-0.716
W-181	-4.185E-02		1.548E-01	2.230E-01	2.207E-02	-0.188
TA-182	1.628E-01		2.094E-01	3.689E-01	3.034E-02	0.441
RE-183	-2.207E-02		9.584E-02	1.544E-01	1.437E-02	-0.143
RE-184	1.213E-01		2.153E-01	3.554E-01	3.811E-02	0.341
OS-185	-2.887E-04		4.377E-02	7.332E-02	8.090E-03	-0.004
RE-188	5.169E-02		1.466E-01	2.451E-01	2.469E-02	0.211
W-188	-3.007E+00		6.912E+00	9.985E+00	1.106E+00	-0.301
IR-192	1.108E-04		3.082E-02	5.200E-02	5.617E-03	0.002
AU-195	1.196E-01		1.387E-01	2.443E-01	2.772E-02	0.489
TL-200	2.244E-04		4.204E-04	Half-Life too short		
TL-201	-3.582E+00		7.511E+00	1.210E+01	1.083E+00	-0.296
TL-202	7.651E-02		7.338E-02	1.287E-01	1.240E-02	0.594
HG-203	1.138E-02		3.789E-02	6.120E-02	6.947E-03	0.186
BI-207	-3.262E-02		5.271E-02	8.238E-02	7.352E-03	-0.396
TL-207	6.924E-01		6.902E-01	1.088E+00	2.045E-01	0.636
PO-209	-3.768E+00		7.690E+00	1.182E+01	1.122E+00	-0.319
PB-211	4.603E-02		9.377E-01	1.554E+00	9.754E-01	0.030
BI-212	9.023E-01	+	4.706E-01	6.715E-01	8.069E-02	1.344
PO-215	6.924E-01		6.902E-01	1.088E+00	2.045E-01	0.636
RN-219	-1.524E-01		4.180E-01	6.738E-01	1.036E-01	-0.226
RN-220	8.844E+00		2.711E+01	4.479E+01	4.736E+00	0.197
RA-223	6.924E-01		6.902E-01	1.088E+00	2.045E-01	0.636
AC-227	-2.303E-01		3.567E-01	5.430E-01	9.046E-02	-0.424
TH-227	-2.303E-01		3.574E-01	5.430E-01	1.042E-01	-0.424
TH-229	-8.045E-02		4.390E-01	7.100E-01	6.773E-02	-0.113
PA-231	-1.030E+00		1.399E+00	2.080E+00	3.482E-01	-0.495
TH-231	6.924E-01		6.902E-01	1.088E+00	2.045E-01	0.636
U-231	3.482E-01		8.284E-01	1.307E+00	1.460E-01	0.266
PA-233	6.177E-03		5.487E-02	9.328E-02	1.030E-02	0.066
PA-234	-1.829E-01		3.405E-01	5.169E-01	9.886E-02	-0.354
PA-234M	2.446E+00		5.248E+00	8.937E+00	9.361E-01	0.274
NP-236	5.135E-02		6.628E-02	1.134E-01	1.080E-02	0.453
NP-239	-3.908E-02		1.347E-01	2.248E-01	2.816E-02	-0.174
AM-241	-4.628E-02		5.196E-02	7.218E-02	7.499E-03	-0.641

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	4.575E-02		6.925E-02	1.100E-01	1.281E-02	0.416
AM-246	6.208E-02		1.438E-01	2.504E-01	2.215E-02	0.248
CM-247	8.471E-03		3.702E-02	6.212E-02	5.727E-03	0.136
CF-249	4.660E-03		3.791E-02	6.341E-02	5.835E-03	0.073
CF-251	-2.102E-02		1.069E-01	1.740E-01	1.593E-02	-0.121

## VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G244148015          *
* Acquisition date   : 20-JAN-2010 15:59:11 Detector SN#                  *
* Detector ID        : GAM25                                           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 02:00:01.83                               Half life ratio  : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148015                               Analyst initials: MXR1        *
* Batch Number       : 940268                                   Sample Quantity : 1.2054E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43 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	1.962E+01	2.278E+00	2.590E-01	1.162E+00
CD-109	3.781E+00	8.023E-01	3.741E-01	4.094E-01
SN-126	3.710E-01	7.874E-02	3.664E-02	4.017E-02
BA-137M	2.682E-01	7.972E-02	3.480E-02	4.068E-02
CS-137	2.835E-01	8.429E-02	3.678E-02	4.300E-02
EU-155	1.270E-01	9.139E-02	6.475E-02	4.663E-02
TL-208	5.254E-01	1.027E-01	2.818E-02	5.240E-02
BI-210	2.725E+00	7.277E-01	3.009E-01	3.713E-01
PB-210	2.725E+00	7.277E-01	3.009E-01	3.713E-01
PO-210	2.725E+00	7.200E-01	3.009E-01	3.673E-01
BI-211	4.219E+00	6.347E-01	1.556E-01	3.238E-01
PB-212	1.651E+00	2.123E-01	3.870E-02	1.083E-01
PO-212	1.651E+00	2.123E-01	3.870E-02	1.083E-01
BI-214	1.307E+00	2.283E-01	5.305E-02	1.165E-01
PB-214	1.468E+00	2.332E-01	5.427E-02	1.190E-01
PO-214	1.468E+00	2.332E-01	5.427E-02	1.190E-01
PO-216	1.651E+00	2.123E-01	3.870E-02	1.083E-01
PO-218	1.468E+00	2.332E-01	5.427E-02	1.190E-01
RA-224	4.381E+00	1.136E+00	4.409E-01	5.797E-01
RA-226	1.307E+00	2.283E-01	5.305E-02	1.165E-01
AC-228	1.553E+00	3.436E-01	1.123E-01	1.753E-01
RA-228	1.553E+00	3.436E-01	1.123E-01	1.753E-01
TH-228	1.678E+00	2.157E-01	3.933E-02	1.101E-01
TH-230	1.307E+00	2.283E-01	5.305E-02	1.165E-01
TH-232	1.553E+00	3.436E-01	1.123E-01	1.753E-01
TH-234	2.407E+00	8.788E-01	3.699E-01	4.484E-01
U-234	1.307E+00	2.283E-01	5.305E-02	1.165E-01
U-235	-6.182E-02	1.802E-01	1.518E-01	9.193E-02
NP-237	1.089E+00	3.194E-01	1.071E-01	1.629E-01
U-238	2.407E+00	8.788E-01	3.699E-01	4.484E-01
AM-243	3.681E-01	5.319E-02	2.295E-02	2.714E-02
ANH-511	1.486E-01	6.508E-02	2.358E-02	3.320E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	3.691E-01	3.235E-01	2.931E-01	1.651E-01 NOT IDENT.
NA-22	-2.302E-03	4.724E-02	3.943E-02	2.410E-02 NOT IDENT.
NA-24	1.340E+06	2.146E+06	0.000E+00	1.095E+06 SHORT HLIF
AL-26	-6.212E-03	2.802E-02	2.224E-02	1.430E-02 NOT IDENT.
TI-44	4.032E-01	5.031E-02	2.371E-02	2.567E-02 FAIL ABUN
SC-46	-1.653E-02	3.999E-02	3.185E-02	2.041E-02 FAIL ABUN
V-48	3.608E-02	7.195E-02	6.262E-02	3.671E-02 NOT IDENT.
CR-51	-2.308E-01	3.419E-01	2.863E-01	1.744E-01 NOT IDENT.
MN-52	2.338E-01	2.607E-01	2.442E-01	1.330E-01 NOT IDENT.
MN-54	2.823E-02	3.875E-02	3.451E-02	1.977E-02 NOT IDENT.
CO-56	1.304E-02	4.241E-02	3.653E-02	2.164E-02 NOT IDENT.
CO-57	-1.623E-02	1.793E-02	1.511E-02	9.146E-03 NOT IDENT.
CO-58	-3.253E-02	4.082E-02	3.159E-02	2.082E-02 NOT IDENT.
FE-59	8.107E-03	8.766E-02	7.544E-02	4.473E-02 NOT IDENT.
CO-60	2.664E-02	3.881E-02	3.515E-02	1.980E-02 NOT IDENT.
ZN-65	-5.618E-03	9.585E-02	6.966E-02	4.890E-02 NOT IDENT.
GE-68	-1.578E-03	1.269E+00	1.084E+00	6.472E-01 NOT IDENT.
AS-73	6.178E-02	1.741E-01	1.502E-01	8.880E-02 NOT IDENT.
AS-74	4.667E-02	9.440E-02	8.091E-02	4.817E-02 NOT IDENT.
SE-75	2.311E-02	4.049E-02	3.315E-02	2.066E-02 NOT IDENT.
BR-77	-9.172E+00	1.387E+01	1.087E+01	7.075E+00 FAIL ABUN
SR-82	-5.954E-01	4.091E-01	2.945E-01	2.087E-01 NOT IDENT.
RB-83	-3.680E-02	6.818E-02	5.412E-02	3.478E-02 NOT IDENT.
RB-84	7.296E-03	6.918E-02	5.839E-02	3.530E-02 NOT IDENT.
KR-85	6.444E+00	8.016E+00	6.306E+00	4.090E+00 NOT IDENT.
SR-85	3.340E-02	4.156E-02	3.269E-02	2.120E-02 NOT IDENT.
RB-86	2.737E-01	8.209E-01	7.237E-01	4.188E-01 NOT IDENT.
Y-88	-6.773E-03	3.675E-02	2.959E-02	1.875E-02 NOT IDENT.
ZR-88	1.085E-02	2.974E-02	2.609E-02	1.517E-02 NOT IDENT.
Y-91	1.631E+01	1.975E+01	1.784E+01	1.007E+01 NOT IDENT.
NB-94	-8.529E-03	3.540E-02	2.915E-02	1.806E-02 NOT IDENT.
NB-95	2.822E-02	4.534E-02	4.019E-02	2.313E-02 NOT IDENT.
NB-95M	1.508E-03	1.122E-01	8.375E-02	5.726E-02 NOT IDENT.
ZR-95	8.747E-02	7.542E-02	6.948E-02	3.848E-02 NOT IDENT.
NB-97	1.931E+05	2.860E+05	0.000E+00	1.459E+05 SHORT HLIF
ZR-97	4.923E+06	5.205E+06	0.000E+00	2.656E+06 SHORT HLIF
MO-99	-7.447E-01	1.406E+01	1.189E+01	7.172E+00 NOT IDENT.
TC-99M	1.767E+17	5.540E+17	0.000E+00	0.000E+00 SHORT HLIF
RH-101	7.501E-03	2.999E-02	2.542E-02	1.530E-02 NOT IDENT.
RH-102	6.814E-04	3.055E-02	2.575E-02	1.559E-02 NOT IDENT.
RU-103	-2.018E-02	3.886E-02	3.100E-02	1.983E-02 FAIL ABUN
RH-106	1.166E-01	3.236E-01	2.872E-01	1.651E-01 FAIL ABUN
RU-106	1.166E-01	3.234E-01	2.872E-01	1.650E-01 FAIL ABUN
AG-108M	-6.812E-03	3.174E-02	2.654E-02	1.619E-02 NOT IDENT.
AG-110M	1.822E-02	3.654E-02	2.898E-02	1.864E-02 NOT IDENT.
IN-111	-1.000E+00	1.367E+00	9.515E-01	6.974E-01 NOT IDENT.
IN-113M	-2.203E-02	4.280E-02	3.543E-02	2.184E-02 NOT IDENT.
SN-113	-2.203E-02	4.280E-02	3.543E-02	2.184E-02 NOT IDENT.
IN-114M	5.049E-02	1.670E-01	1.299E-01	8.519E-02 NOT IDENT.
CD-115	8.828E+00	1.528E+01	1.329E+01	7.795E+00 NOT IDENT.
SN-117M	1.232E-02	4.765E-02	4.178E-02	2.431E-02 NOT IDENT.
SB-122	1.014E+00	2.703E+00	2.304E+00	1.379E+00 NOT IDENT.
I-123	4.562E+05	1.789E+07	0.000E+00	9.127E+06 SHORT HLIF
TE-123M	6.001E-04	2.353E-02	2.042E-02	1.201E-02 NOT IDENT.
I-124	-2.874E-01	8.545E-01	6.545E-01	4.360E-01 NOT IDENT.
SB-124	8.541E-03	7.484E-02	6.456E-02	3.819E-02 FAIL ABUN
SB-125	-2.082E-02	8.950E-02	7.486E-02	4.566E-02 FAIL ABUN
TE-125M	-5.238E-01	7.284E+00	5.833E+00	3.716E+00 NOT IDENT.
I-126	-6.492E-02	2.464E-01	1.791E-01	1.257E-01 NOT IDENT.
SB-126	-3.795E-02	1.792E-01	1.358E-01	9.144E-02 FAIL ABUN
SB-127	-8.413E-01	1.697E+00	1.392E+00	8.656E-01 NOT IDENT.
XE-127	-2.806E-03	4.010E-02	3.391E-02	2.046E-02 NOT IDENT.
I-131	-8.798E-02	1.108E-01	9.014E-02	5.653E-02 NOT IDENT.
TE-132	-5.360E-01	7.443E-01	5.946E-01	3.798E-01 NOT IDENT.
BA-133	-1.039E-02	4.413E-02	3.291E-02	2.252E-02 NOT IDENT.
I-133	9.828E+02	1.507E+04	0.000E+00	7.688E+03 SHORT HLIF
CS-134	1.101E-01	6.869E-02	4.909E-02	3.505E-02 FAIL ABUN
CS-135	9.858E-02	1.513E-01	1.170E-01	7.722E-02 NOT IDENT.
I-135	-6.452E+16	8.413E+16	0.000E+00	0.000E+00 SHORT HLIF
CS-136	-8.944E-02	1.114E-01	8.723E-02	5.682E-02 FAIL ABUN
CE-139	2.925E-03	2.445E-02	2.124E-02	1.247E-02 NOT IDENT.
BA-140	-1.087E-01	2.782E-01	2.216E-01	1.419E-01 NOT IDENT.
LA-140	-8.731E-02	1.008E-01	7.457E-02	5.143E-02 FAIL ABUN

CE-141	4.401E-02	5.317E-02	4.780E-02	2.713E-02	NOT IDENT.
CE-143	7.097E+02	2.860E+02	0.000E+00	1.459E+02	SHORT HLIF
CE-144	-1.054E-01	1.558E-01	1.319E-01	7.948E-02	NOT IDENT.
PM-144	8.931E-03	3.599E-02	3.137E-02	1.836E-02	NOT IDENT.
PR-144	6.056E-01	2.440E+00	2.127E+00	1.245E+00	NOT IDENT.
PM-146	4.009E-02	4.275E-02	3.836E-02	2.181E-02	NOT IDENT.
ND-147	3.050E-01	6.308E-01	5.433E-01	3.219E-01	FAIL ABUN
PM-149	-4.971E+01	1.157E+02	9.202E+01	5.903E+01	NOT IDENT.
EU-152	2.142E-02	8.998E-02	7.677E-02	4.591E-02	NOT IDENT.
GD-153	-2.811E-02	5.232E-02	4.116E-02	2.669E-02	FAIL ABUN
EU-154	5.506E-02	1.251E-01	1.097E-01	6.384E-02	NOT IDENT.
TB-160	-1.056E-01	1.478E-01	1.139E-01	7.539E-02	FAIL ABUN
HO-166M	-3.005E-02	6.376E-02	5.228E-02	3.253E-02	FAIL ABUN
TM-171	1.345E+01	1.216E+01	9.824E+00	6.205E+00	NOT IDENT.
LU-176	1.036E-02	2.237E-02	1.953E-02	1.142E-02	FAIL ABUN
LU-177	3.189E+00	1.626E+00	1.092E+00	8.298E-01	FAIL ABUN
LU-177M	-5.417E-02	1.729E-01	1.444E-01	8.819E-02	FAIL ABUN
HF-181	-4.137E-02	3.874E-02	2.924E-02	1.976E-02	NOT IDENT.
W-181	-4.185E-02	1.517E-01	1.155E-01	7.740E-02	NOT IDENT.
TA-182	1.628E-01	2.052E-01	1.846E-01	1.047E-01	FAIL ABUN
RE-183	-2.207E-02	9.392E-02	7.911E-02	4.792E-02	FAIL ABUN
RE-184	1.213E-01	2.110E-01	1.812E-01	1.077E-01	NOT IDENT.
OS-185	-2.887E-04	4.289E-02	3.696E-02	2.188E-02	NOT IDENT.
RE-188	5.169E-02	1.437E-01	1.257E-01	7.329E-02	NOT IDENT.
W-188	-3.007E+00	6.774E+00	5.083E+00	3.456E+00	FAIL ABUN
IR-192	1.108E-04	3.021E-02	2.644E-02	1.541E-02	FAIL ABUN
AU-195	1.196E-01	1.359E-01	1.259E-01	6.934E-02	FAIL ABUN
TL-200	2.244E+02	8.239E+02	0.000E+00	4.204E+02	SHORT HLIF
TL-201	-3.582E+00	7.360E+00	6.201E+00	3.755E+00	NOT IDENT.
TL-202	7.651E-02	7.191E-02	6.520E-02	3.669E-02	NOT IDENT.
HG-203	1.138E-02	3.713E-02	3.117E-02	1.895E-02	NOT IDENT.
BI-207	-3.262E-02	5.165E-02	4.128E-02	2.635E-02	FAIL ABUN
TL-207	6.924E-01	6.764E-01	5.531E-01	3.451E-01	FAIL ABUN
PO-209	-3.768E+00	7.536E+00	5.935E+00	3.845E+00	NOT IDENT.
PB-211	4.603E-02	9.190E-01	7.880E-01	4.689E-01	NOT IDENT.
BI-212	9.023E-01	4.612E-01	3.381E-01	2.353E-01	FAIL ABUN
PO-215	6.924E-01	6.764E-01	5.531E-01	3.451E-01	FAIL ABUN
RN-219	-1.524E-01	4.096E-01	3.417E-01	2.090E-01	FAIL ABUN
RN-220	8.844E+00	2.657E+01	2.263E+01	1.355E+01	NOT IDENT.
RA-223	6.924E-01	6.764E-01	5.531E-01	3.451E-01	FAIL ABUN
AC-227	-2.303E-01	3.496E-01	2.768E-01	1.783E-01	FAIL ABUN
TH-227	-2.303E-01	3.502E-01	2.768E-01	1.787E-01	FAIL ABUN
TH-229	-8.045E-02	4.302E-01	3.631E-01	2.195E-01	FAIL ABUN
PA-231	-1.030E+00	1.371E+00	1.059E+00	6.993E-01	FAIL ABUN
TH-231	6.924E-01	6.764E-01	5.531E-01	3.451E-01	FAIL ABUN
U-231	3.482E-01	8.118E-01	6.740E-01	4.142E-01	FAIL ABUN
PA-233	6.177E-03	5.377E-02	4.744E-02	2.743E-02	FAIL ABUN
PA-234	-1.829E-01	3.337E-01	2.594E-01	1.702E-01	FAIL ABUN
PA-234M	2.446E+00	5.143E+00	4.482E+00	2.624E+00	NOT IDENT.
NP-236	5.135E-02	6.496E-02	5.812E-02	3.314E-02	NOT IDENT.
NP-239	-3.908E-02	1.320E-01	1.156E-01	6.734E-02	FAIL ABUN
AM-241	-4.628E-02	5.092E-02	3.742E-02	2.598E-02	NOT IDENT.
CM-243	4.575E-02	6.786E-02	5.667E-02	3.462E-02	FAIL ABUN
AM-246	6.208E-02	1.410E-01	1.255E-01	7.192E-02	NOT IDENT.
CM-247	8.471E-03	3.628E-02	3.150E-02	1.851E-02	NOT IDENT.
CF-249	4.660E-03	3.715E-02	3.217E-02	1.896E-02	NOT IDENT.
CF-251	-2.102E-02	1.047E-01	8.910E-02	5.344E-02	NOT IDENT.

\*\*\*\*\*  
 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON , SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
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46.50	220.5313
46.50	220.5313
46.50	220.5313
48.70	212.3405
49.72	245.0079
51.35	288.4780
52.39	239.4619
52.97	237.8553
53.15	264.3614
53.44	276.7632
54.07	249.9594
56.28	301.1058
56.28	301.1100
57.37	0.0000
57.53	298.1475
57.53	298.1495
57.60	285.9434
57.98	293.0829
57.98	293.0829
59.32	341.8469
59.32	341.8469
59.40	349.4526
59.54	349.6410
59.72	342.3757
60.01	335.2407
61.10	289.8379
61.14	303.4701
61.30	303.6541
63.00	335.2361
63.29	335.5955
63.29	335.5955
63.58	335.9533
64.28	355.9090
65.12	375.3812
65.20	375.4902
65.20	375.4902
66.05	379.7138
66.72	331.3052
66.83	300.6071
66.91	300.6905
67.20	321.8384
67.20	321.8384
67.75	336.3789
67.85	356.2242
68.90	399.4540
68.90	399.4540
69.30	414.0033
69.67	397.0186
70.82	315.7360
70.82	315.7360
70.83	315.7462
72.80	398.0895
72.87	398.1821
72.87	398.1821
74.67	384.7179
74.81	384.8934
74.81	384.8934
74.81	384.8934
74.81	384.8934
74.81	384.8934
74.81	384.8934
74.81	384.8934
74.97	385.0936
75.28	385.4817
75.70	386.0082
77.11	387.7583
77.11	387.7583



77.11	387.7583
77.11	387.7583
77.11	387.7583
77.11	387.7583
77.11	387.7583
78.38	344.4606
79.62	371.5330
79.80	357.2587
79.80	357.2587
80.11	357.6019
80.18	357.6787
80.30	321.5472
80.30	321.5472
80.57	321.8151
81.00	319.8184
81.07	319.8869
81.07	319.8869
81.07	319.8869
81.07	319.8869
82.60	344.1075
83.37	370.9337
83.78	287.0965
83.78	287.0965
83.78	287.0965
83.78	287.0965
84.21	287.4659
84.90	288.0575
85.43	288.5093
86.29	289.2390
86.50	289.4165
86.54	289.4506
86.59	289.4937
86.72	289.6030
86.79	289.6604
86.94	289.7895
87.30	290.0925
87.30	290.0925
87.30	290.0925
87.30	290.0925
87.30	290.0925
87.30	290.0925
87.57	290.3202
87.88	290.5801
88.03	290.7057
88.36	290.9818
88.47	291.0750
89.95	292.3085
91.11	293.2677
92.29	299.6624
92.38	299.7382
92.38	299.7382
93.35	300.5434
94.00	301.0821
94.67	301.6317
94.67	301.6354
94.90	201.7773
94.90	201.7773
94.90	201.7773
94.90	201.7773
95.87	233.9204
95.87	233.9204
96.73	247.1391
97.43	248.8700
98.44	206.7616
98.44	206.7616
98.88	209.0414
99.55	202.6017
99.55	202.6017
99.86	224.0653
100.00	224.1469
100.10	224.2084
103.18	215.2581
103.76	210.4144
105.00	243.4496
105.31	248.8242
108.00	233.5377
109.28	255.2145

111.00	247.0856
111.00	247.0856
111.76	232.6163
112.95	248.2446
115.19	229.2110
116.30	190.7670
117.00	223.0720
117.00	223.0720
117.66	219.8537
121.11	194.6806
121.62	215.5627
121.78	223.7274
122.06	224.7671
122.32	215.0025
122.32	215.0025
122.32	215.0025
122.32	215.0025
123.07	209.0558
127.23	237.3550
129.76	226.3110
131.20	207.7471
133.02	238.4706
133.54	238.7314
135.34	208.1726
136.00	203.8241
136.25	199.2945
136.48	204.9529
140.51	222.5391
140.51	0.0000
142.18	248.6154
142.65	251.6671
143.76	266.3374
144.24	266.5907
144.24	266.5907
144.24	266.5907
144.24	266.5907
145.22	232.1840
145.44	237.9496
147.16	254.8555
152.43	243.0859
152.70	222.1445
153.22	220.4447
154.21	213.1723
154.21	213.1723
154.21	213.1723
154.21	213.1723
155.03	222.1552
156.02	262.0667
158.56	219.7377
159.00	0.0000
159.00	223.7883
160.31	201.9888
161.27	230.5509
162.32	222.2156
162.64	214.5416
163.35	219.6968
163.89	220.8871
165.85	210.8686
167.43	226.2097
171.28	214.8566
171.86	216.0618
172.10	231.0233
176.55	207.8011
176.60	207.8180
181.06	199.3011
184.41	207.9876
185.71	200.8198
186.00	200.9125
190.27	183.9001
192.34	214.2258
193.63	204.3888
197.04	213.7320
198.01	207.8476
198.60	198.7188
200.40	231.4387
201.83	187.2180
202.84	193.7538
205.31	213.2906

208.36	223.7081
208.81	189.1754
209.75	189.4354
209.75	189.4354
210.97	181.8669
215.65	180.4469
216.55	187.0573
218.09	177.8809
222.10	171.3908
223.80	172.8706
226.40	145.4755
227.00	148.8318
227.08	148.8486
227.20	155.3452
228.16	181.4736
228.18	181.4788
228.18	181.4788
231.56	0.0000
235.69	163.6871
236.00	163.7543
236.00	163.7543
238.63	155.5624
238.63	155.5624
238.63	155.5624
238.63	155.5624
239.00	155.6375
240.98	156.0434
241.98	156.2471
241.98	156.2471
241.98	156.2471
244.69	162.3185
245.39	172.4119
247.94	159.6724
248.90	145.4347
249.79	154.4916
252.40	139.3903
252.85	142.8177
252.85	142.8177
254.15	0.0000
256.20	165.8255
256.20	165.8255
260.50	137.4238
260.90	157.7763
262.80	131.0334
264.65	124.9884
268.24	127.9175
268.79	131.4156
269.46	142.3391
269.46	142.3391
269.46	142.3391
269.46	142.3391
271.23	142.6392
273.65	151.0593
276.40	144.6595
277.35	145.9678
277.60	146.0117
277.60	146.0117
278.00	154.1305
278.60	140.4271
279.20	135.9165
279.53	156.7104
280.46	171.8750
281.68	130.5321
283.67	138.9331
284.30	118.1782
285.00	119.4332
285.90	138.1264
286.10	138.1579
286.10	138.1579
287.40	110.4584
288.45	0.0000
290.67	128.8382
290.80	131.6574
291.72	128.9887
293.26	0.0000
293.70	122.2482
295.21	102.7489
295.21	102.7489

295.21	102.7489
295.96	102.8345
296.50	102.8951
297.23	119.9069
298.57	120.0833
299.80	131.5623
299.80	131.5623
300.09	131.6032
300.09	131.6032
300.09	131.6032
300.09	131.6032
300.12	131.6077
301.29	134.6096
302.84	139.0949
303.76	129.2884
303.91	129.3084
304.40	125.1121
304.40	125.1121
304.84	116.6378
306.84	119.1280
308.46	141.9029
311.98	111.0808
316.51	117.9112
318.01	109.0820
319.02	122.7333
319.41	130.0056
320.08	135.5164
323.87	111.7402
323.87	111.7402
323.87	111.7402
323.87	111.7402
325.23	126.4282
328.77	137.0917
333.44	128.9471
334.20	136.3781
334.20	136.3781
334.30	136.3917
338.28	115.9505
338.28	115.9505
338.28	115.9505
338.28	115.9505
338.32	115.9544
338.32	115.9544
338.32	115.9544
340.50	137.2318
340.57	137.2408
344.27	112.1388
345.85	121.6347
350.59	0.0000
351.07	113.6769
351.92	113.7700
351.92	113.7700
351.92	113.7700
355.39	0.0000
356.01	113.8386
364.48	107.5760
366.43	96.4265
367.43	107.8700
367.94	0.0000
369.80	101.4668
374.96	101.9468
383.85	121.0128
387.95	103.1387
388.63	103.2007
391.69	116.0504
391.69	116.0504
392.90	103.5877
398.62	107.0207
400.65	126.6992
401.10	126.7488
401.81	120.9727
402.60	109.3391
404.84	113.4618
410.95	95.3689
411.60	124.9323
413.65	112.3353
414.70	99.6130
415.30	103.6093

415.76	92.7909
417.63	0.0000
418.52	116.7486
423.70	99.3622
427.08	99.6368
427.89	100.6995
432.53	98.0763
433.93	97.1835
439.47	91.5762
439.56	79.5063
439.89	79.5268
443.98	92.9139
444.90	96.0133
445.03	101.0773
445.03	101.0773
445.03	101.0773
445.03	101.0773
453.90	78.3688
463.38	100.4673
468.07	97.1210
473.00	106.3602
475.06	97.2158
475.35	99.3062
476.78	88.0207
477.59	71.4942
477.96	70.4778
482.03	81.0850
484.57	70.8202
487.03	66.7744
490.36	0.0000
492.35	81.6955
497.08	78.8200
507.63	0.0000
510.53	0.0000
510.84	81.7120
511.00	81.7214
511.85	81.7696
511.85	81.7696
513.99	83.3808
513.99	83.3808
520.41	81.1884
520.65	82.2684
527.90	71.9399
528.96	0.0000
529.64	74.1758
529.87	0.0000
531.02	77.4712
537.32	81.0425
543.00	92.1957
546.56	0.0000
549.76	71.9075
552.65	77.5002
555.20	78.7236
563.23	74.7361
563.90	70.3711
568.70	70.5859
569.32	69.5099
569.50	69.5196
569.67	69.5273
573.80	92.9440
574.00	92.9568
574.64	97.4236
578.91	67.4908
579.30	0.0000
583.14	65.6656
585.48	60.6339
591.81	63.7823
592.07	63.7910
593.00	55.9891
595.88	62.8188
600.56	80.9978
602.52	0.0000
602.71	84.9653
602.71	84.9653
603.60	85.6554
604.41	88.7041
604.70	88.7209
609.31	65.1410

609.31	65.1410
609.31	65.1410
609.31	65.1410
610.33	63.3708
612.46	81.5801
614.37	75.6246
618.01	68.2086
621.84	69.2739
621.84	69.2739
631.29	68.7433
633.02	70.6460
633.10	70.6498
634.78	58.7797
635.90	62.4933
636.97	68.9685
645.85	67.4733
646.12	67.4840
656.30	61.9840
657.75	52.7293
657.90	0.0000
661.65	91.3917
661.65	91.3917
664.57	0.0000
666.33	91.9402
666.33	91.9402
675.00	70.4608
677.61	81.8514
685.20	74.6334
692.80	76.8373
695.00	78.8257
696.49	72.2353
696.49	72.2353
697.00	77.9601
697.49	76.0781
698.33	81.8218
698.50	78.9736
699.00	79.9477
702.63	74.3799
706.10	77.3811
706.58	0.0000
706.67	77.4048
709.31	63.1592
711.68	76.6504
713.82	63.3075
717.42	71.1148
720.50	75.6288
721.93	0.0000
722.20	62.6212
722.78	69.0649
722.78	69.0649
722.89	69.0684
722.95	70.6764
723.30	70.6890
724.18	78.7577
727.18	56.3438
733.00	69.1982
735.90	45.5989
739.58	51.5171
742.81	57.4429
744.21	55.5346
747.13	48.7866
751.79	83.1302
752.31	75.3250
753.82	55.8032
755.35	52.9058
756.15	50.9666
756.87	50.9856
763.93	82.6485
765.79	66.9674
766.42	63.0469
766.84	64.0463
776.49	77.2173
778.00	65.3861
778.57	52.5212
778.89	52.5303
783.80	62.5893
785.46	65.6213
792.07	48.2094

795.84	48.9617
796.30	48.9725
798.80	40.0244
801.93	61.7961
805.60	47.1801
810.29	66.3996
810.76	63.3953
815.85	60.5200
817.79	47.4498
818.51	46.4560
819.60	49.5108
826.30	45.6097
828.27	0.0000
831.60	62.9930
831.96	63.0036
834.83	52.9103
836.80	0.0000
846.75	54.2202
848.13	40.9463
856.28	0.0000
856.80	32.5418
860.37	32.9367
867.32	46.4590
867.82	42.7819
871.10	50.6736
873.19	45.5437
874.81	49.7191
875.33	0.0000
876.40	39.3888
879.36	58.1219
880.27	56.0685
880.51	51.9202
881.50	42.5926
883.24	40.5453
884.67	44.7322
889.25	51.0744
896.60	52.2815
898.02	54.4058
899.00	47.1017
903.28	49.8089
911.07	51.5517
911.07	51.5517
911.07	51.5517
919.63	47.5142
920.93	49.6529
925.00	50.2670
925.24	35.7193
926.50	26.4728
935.52	44.2861
937.48	56.7318
944.10	55.4633
946.00	59.7762
949.00	41.6813
962.29	69.8433
964.01	77.0592
966.15	66.3639
968.20	75.3936
969.11	75.4209
969.11	75.4209
969.11	75.4209
977.42	43.2402
980.50	35.7167
983.50	35.7594
989.30	40.1851
996.32	63.1656
1001.03	44.7336
1001.68	41.4707
1004.76	55.7252
1021.30	0.0000
1024.50	0.0000
1034.80	43.2880
1036.00	49.7593
1037.82	51.6364
1038.57	44.2715
1038.76	0.0000
1045.16	45.3055
1046.59	47.1816
1048.07	50.9090

1050.47	46.3216
1050.47	46.3216
1062.04	50.2427
1063.62	50.2712
1076.63	42.0941
1077.35	46.7834
1078.86	40.2548
1085.78	51.6185
1099.22	40.5505
1112.02	50.3447
1112.84	47.1108
1115.52	43.9033
1120.29	39.0904
1120.29	39.0904
1120.29	39.0904
1120.29	39.0904
1120.51	39.0938
1121.28	40.7331
1124.00	0.0000
1129.67	42.8961
1131.51	0.0000
1147.95	0.0000
1167.94	51.1885
1173.22	66.7623
1175.09	51.3136
1177.93	54.2682
1189.05	47.6622
1204.90	46.9355
1205.75	0.0000
1213.00	50.0018
1221.42	49.1557
1230.97	66.0731
1235.34	62.2156
1236.41	0.0000
1238.25	69.1939
1246.25	56.4874
1260.41	0.0000
1271.85	40.9616
1274.45	36.9955
1274.54	45.9944
1291.56	36.1875
1298.22	0.0000
1312.09	30.3467
1325.50	28.4386
1325.50	28.4386
1332.49	23.4099
1333.61	18.3267
1360.21	24.6299
1362.66	0.0000
1365.15	29.8048
1368.21	15.4297
1368.53	0.0000
1376.25	21.2109
1384.27	33.6622
1394.10	37.3125
1395.20	35.2506
1407.95	22.8925
1434.06	14.6762
1436.60	14.6864
1457.56	0.0000
1460.81	17.9546
1489.15	20.2231
1509.49	16.0535
1596.49	29.0928
1620.62	12.2750
1678.03	0.0000
1691.02	11.5296
1691.02	11.5296
1706.46	0.0000
1750.46	0.0000
1764.49	10.2660
1764.49	10.2660
1764.49	10.2660
1764.49	10.2660
1770.23	11.9928
1771.40	50.9227
1791.20	0.0000
1808.65	9.8769



1836.01

12.9197

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148015

Total Uranium Activity	7.1328E+00	ug/g
Total Uranium Counting Unc.	2.6158E+00	ug/g
Total Uranium Tpu	1.3346E-06	ug/g
Total Uranium Mda	1.1027E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940268          SAMPLE ID   : G244148015
*  ANALYST       : MXR1            DETECTOR    : GAM25
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 15:59:11.34  SAMPLE ALQT: 120.540 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.862E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.105E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.206E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.553E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 18:28:11.44

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148016.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 16:27:45
Sample ID          : G244148016          Sample quantity  : 1.25000E+02 GRAM
Detector name      : GAM04          Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.17  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	74.80*	287	374	1.11	149.63	146	14	3.98E-02	12.7	1.33E+00
2	2	77.10*	470	248	0.90	154.23	146	14	6.52E-02	7.0	
3	5	87.22	168	371	1.01	174.48	169	25	2.33E-02	18.6	1.90E+00
4	5	89.85	103	409	1.28	179.75	169	25	1.43E-02	35.3	
5	5	92.82*	284	370	1.46	185.68	169	25	3.94E-02	14.8	
6	0	128.98	62	261	1.34	258.01	255	7	8.61E-03	45.0	
7	0	185.96*	176	377	1.40	371.99	368	11	2.44E-02	23.0	
8	0	209.39	76	291	1.05	418.84	414	9	1.05E-02	42.3	
9	0	238.53*	1061	295	1.09	477.13	473	8	1.47E-01	4.2	
10	0	241.91	167	236	0.94	483.89	482	7	2.32E-02	17.8	
11	0	269.82	84	221	0.73	539.72	535	10	1.16E-02	34.9	
12	0	277.16	52	155	1.30	554.40	551	8	7.26E-03	43.4	
13	0	295.18	428	188	1.19	590.44	586	11	5.95E-02	7.9	
14	0	300.19	104	123	1.29	600.46	596	9	1.44E-02	21.7	
15	0	328.04	31	193	1.14	656.17	650	10	4.32E-03	85.4	
16	0	338.19*	205	140	1.24	676.46	672	9	2.84E-02	12.9	
17	0	351.92*	648	150	1.19	703.92	699	12	8.99E-02	5.5	
18	0	410.37	44	164	4.15	820.83	815	14	6.09E-03	63.9	
19	0	463.75	93	78	1.16	927.60	923	12	1.28E-02	22.0	
20	0	510.90*	136	104	1.59	1021.90	1015	16	1.89E-02	21.5	
21	0	583.20*	336	117	1.43	1166.49	1161	12	4.67E-02	8.7	
22	0	609.30*	454	104	1.59	1218.69	1212	15	6.31E-02	6.9	
23	0	662.06*	62	96	1.21	1324.22	1319	12	8.63E-03	35.1	
24	0	727.00	138	37	1.97	1454.08	1447	15	1.92E-02	12.9	
25	0	768.55	36	67	1.12	1537.18	1530	11	4.93E-03	48.1	
26	0	860.91	28	47	0.95	1721.89	1718	9	3.83E-03	48.1	
27	0	911.09*	221	38	1.71	1822.24	1817	11	3.06E-02	8.6	
28	0	968.86*	145	42	2.13	1937.78	1933	14	2.01E-02	12.8	
29	0	1120.45	80	59	2.02	2240.92	2233	16	1.12E-02	24.2	
30	0	1377.69	26	11	2.24	2755.31	2749	11	3.61E-03	31.5	
31	0	1460.62*	765	10	2.12	2921.13	2914	14	1.06E-01	3.8	
32	0	1496.35	13	3	0.59	2992.57	2989	6	1.79E-03	35.2	
33	0	1588.67	12	18	1.89	3177.17	3171	12	1.67E-03	76.4	
34	0	1764.63*	59	18	2.36	3528.99	3523	14	8.22E-03	21.7	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 18:28:14

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148016.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 4-JAN-2010 12:00:00 Acquisition date : 20-JAN-2010 16:27:45  
 Sample ID : G244148016 Sample quantity : 125.00 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA4 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.17 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.002E+01	2.071E+00	5.241E-01	3.724E-02	38.207
CD-109	+	88.03	*	2.764E+00	1.078E+00	1.254E+00	1.508E-01	2.203
SN-126		64.28		4.209E-01	6.425E-01	1.095E+00	1.886E-01	0.384
	+	86.94		1.128E+00	6.336E-01	5.213E-01	2.199E-01	2.163
	+	87.57	*	2.712E-01	1.058E-01	1.240E-01	1.488E-02	2.187
BA-137M	+	661.65	*	9.411E-02	6.618E-02	5.404E-02	2.636E-03	1.741
CS-137	+	661.65	*	9.948E-02	6.996E-02	5.713E-02	2.803E-03	1.741
TL-208	+	277.35		5.333E-01	4.668E-01	5.811E-01	6.421E-02	0.918
	+	510.84		6.930E-01	3.056E-01	1.913E-01	1.920E-02	3.622
	+	583.14	*	4.883E-01	8.998E-02	5.782E-02	3.638E-03	8.445
	+	860.37		3.814E-01	3.685E-01	4.415E-01	3.682E-02	0.864
BI-211		72.87		1.584E+00	3.980E+00	6.079E+00	6.969E-01	0.261
	+	351.07	*	4.145E+00	5.373E-01	3.360E-01	2.270E-02	12.335
PB-212	+	74.81		2.212E+00	6.497E-01	6.213E-01	9.183E-02	3.560
	+	77.11		1.996E+00	3.600E-01	3.429E-01	3.934E-02	5.821
	+	87.30		1.254E+00	5.051E-01	5.763E-01	8.990E-02	2.177
	+	238.63	*	1.480E+00	1.721E-01	1.261E-01	1.012E-02	11.738
	+	300.09		2.244E+00	9.950E-01	1.106E+00	9.736E-02	2.029
PO-212	+	74.81		2.212E+00	6.497E-01	6.213E-01	9.183E-02	3.560
	+	77.11		1.996E+00	3.600E-01	3.429E-01	3.934E-02	5.821
	+	87.30		1.254E+00	5.051E-01	5.763E-01	8.990E-02	2.177
	+	115.19		2.955E+00	3.295E+00	5.642E+00	4.245E-01	0.524
	+	238.63	*	1.480E+00	1.721E-01	1.261E-01	1.012E-02	11.738
	+	300.09		2.244E+00	9.950E-01	1.106E+00	9.736E-02	2.029
BI-214	+	609.31	*	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
	+	1120.29		1.177E+00	5.809E-01	4.343E-01	4.047E-02	2.710
	+	1764.49		1.181E+00	5.175E-01	3.716E-01	2.265E-02	3.177
PB-214	+	74.81		3.811E+00	1.098E+00	1.070E+00	1.460E-01	3.560
	+	77.11		3.422E+00	6.699E-01	5.879E-01	8.096E-02	5.821
	+	87.30		2.149E+00	8.544E-01	9.873E-01	1.406E-01	2.177
	+	241.98		1.400E+00	5.136E-01	5.321E-01	4.636E-02	2.630
	+	295.21		1.621E+00	2.940E-01	2.126E-01	1.930E-02	7.625
	+	351.92	*	1.442E+00	2.015E-01	1.111E-01	9.480E-03	12.973
PO-214	+	74.81		3.811E+00	1.098E+00	1.070E+00	1.460E-01	3.560

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		3.422E+00	6.699E-01	5.879E-01	8.096E-02	5.821
	+	87.30		2.149E+00	8.544E-01	9.873E-01	1.406E-01	2.177
	+	241.98		1.400E+00	5.136E-01	5.321E-01	4.636E-02	2.630
	+	295.21		1.621E+00	2.940E-01	2.126E-01	1.930E-02	7.625
	+	351.92	*	1.442E+00	2.015E-01	1.111E-01	9.480E-03	12.973
	+	74.81		2.212E+00	6.497E-01	6.213E-01	9.183E-02	3.560
	+	77.11		1.996E+00	3.600E-01	3.429E-01	3.934E-02	5.821
	+	87.30		1.254E+00	5.051E-01	5.763E-01	8.990E-02	2.177
PO-218	+	238.63	*	1.480E+00	1.721E-01	1.261E-01	1.012E-02	11.738
	+	300.09		2.244E+00	9.950E-01	1.106E+00	9.736E-02	2.029
	+	74.81		3.811E+00	1.098E+00	1.070E+00	1.460E-01	3.560
	+	77.11		3.422E+00	6.699E-01	5.879E-01	8.096E-02	5.821
	+	87.30		2.149E+00	8.544E-01	9.873E-01	1.406E-01	2.177
	+	241.98		1.400E+00	5.136E-01	5.321E-01	4.636E-02	2.630
	+	295.21		1.621E+00	2.940E-01	2.126E-01	1.930E-02	7.625
	+	351.92	*	1.442E+00	2.015E-01	1.111E-01	9.480E-03	12.973
RA-224	+	240.98	*	2.654E+00	9.623E-01	1.361E+00	9.072E-02	1.950
RA-226	+	609.31	*	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
AC-228	+	1120.29		1.177E+00	5.809E-01	4.343E-01	4.047E-02	2.710
	+	1764.49		1.181E+00	5.175E-01	3.716E-01	2.265E-02	3.177
	+	338.32		1.443E+00	6.972E-01	3.547E-01	1.449E-01	4.068
	+	911.07	*	1.447E+00	2.956E-01	2.047E-01	2.232E-02	7.070
RA-228	+	969.11		1.683E+00	5.796E-01	4.363E-01	1.006E-01	3.857
	+	338.32		1.443E+00	6.972E-01	3.547E-01	1.449E-01	4.068
	+	911.07	*	1.447E+00	2.956E-01	2.047E-01	2.232E-02	7.070
	+	969.11		1.683E+00	5.796E-01	4.363E-01	1.006E-01	3.857
TH-228	+	74.81		2.248E+00	6.264E-01	6.314E-01	7.265E-02	3.560
	+	77.11		2.029E+00	3.658E-01	3.485E-01	3.998E-02	5.821
	+	87.30		1.275E+00	4.972E-01	5.857E-01	7.012E-02	2.177
	+	238.63	*	1.504E+00	1.749E-01	1.281E-01	1.029E-02	11.738
TH-230	+	300.09		2.280E+00	1.671E+00	1.124E+00	6.632E-01	2.029
	+	609.31	*	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
	+	1120.29		1.177E+00	5.809E-01	4.343E-01	4.046E-02	2.710
	+	1764.49		1.181E+00	5.175E-01	3.716E-01	2.265E-02	3.177
TH-232	+	338.32		1.443E+00	3.835E-01	3.547E-01	2.230E-02	4.068
	+	911.07	*	1.447E+00	2.956E-01	2.047E-01	2.232E-02	7.070
	+	969.11		1.683E+00	5.796E-01	4.363E-01	1.006E-01	3.857
	+	609.31	*	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
U-234	+	1120.29		1.177E+00	5.809E-01	4.343E-01	4.046E-02	2.710
	+	1764.49		1.181E+00	5.175E-01	3.716E-01	2.265E-02	3.177
	+	86.50	*	7.965E-01	3.515E-01	3.711E-01	8.841E-02	2.146
	+	95.87		-2.248E-01	9.605E-01	1.408E+00	3.547E-01	-0.160
AM-243	+	74.67	*	3.586E-01	9.985E-02	1.012E-01	1.159E-02	3.543
	+	86.72		2.987E+01	1.165E+01	1.386E+01	1.653E+00	2.155
	+	117.66		-2.145E+00	3.477E+00	5.547E+00	4.049E-01	-0.387
	+	142.18		1.202E+01	1.665E+01	2.802E+01	1.833E+00	0.429
ANH-511	+	511.00	*	1.497E-01	6.482E-02	4.133E-02	2.312E-03	3.621

## ---- 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	*	-3.309E-01	3.258E-01	4.857E-01	3.217E-02	-0.681

## ---- 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	*		-1.868E-02	4.430E-02	7.071E-02	4.623E-03	-0.264
NA-24	1368.53	*		-7.421E-01	4.430E-02	Half-Life too short		
AL-26	1129.67			1.262E+00	1.649E+00	2.887E+00	1.863E-01	0.437
	1808.65	*		2.188E-02	2.333E-02	4.695E-02	2.785E-03	0.466
TI-44	67.85			3.140E-03	5.432E-02	9.176E-02	1.067E-02	0.034
	78.38	*	+	3.684E-01	6.643E-02	8.359E-02	9.612E-03	4.407
SC-46	889.25	*		-2.700E-02	3.636E-02	5.460E-02	4.416E-03	-0.494
	1120.51		+	2.033E-01	9.941E-02	1.283E-01	8.406E-03	1.584
V-48	944.10			1.705E-01	8.589E-01	1.439E+00	1.151E-01	0.118
	983.50	*		3.017E-02	6.417E-02	1.108E-01	8.585E-03	0.272
	1312.09			5.672E-02	7.703E-02	1.402E-01	9.444E-03	0.405
CR-51	320.08	*		3.130E-01	3.672E-01	6.440E-01	4.535E-02	0.486
MN-52	744.21			-8.501E-02	2.400E-01	3.863E-01	2.293E-02	-0.220
	848.13			-8.428E-01	7.818E+00	1.279E+01	9.512E-01	-0.066
	935.52			3.663E-01	2.902E-01	5.318E-01	4.277E-02	0.689
	1246.25			2.472E+00	8.355E+00	1.440E+01	9.163E-01	0.172
	1333.61			3.010E+00	5.319E+00	9.519E+00	6.523E-01	0.316
	1434.06	*		1.962E-01	2.055E-01	3.980E-01	2.716E-02	0.493
MN-54	834.83	*		-2.338E-04	4.112E-02	6.801E-02	4.922E-03	-0.003
CO-56	846.75	*		-2.405E-02	3.919E-02	6.070E-02	4.503E-03	-0.396
	977.42			1.094E+00	2.873E+00	4.653E+00	3.624E-01	0.235
	1037.82			1.470E-01	3.129E-01	5.349E-01	4.210E-02	0.275
	1175.09			1.515E+00	2.279E+00	3.927E+00	2.340E-01	0.386
	1238.25			4.243E-02	8.815E-02	1.539E-01	1.024E-02	0.276
	1360.21			3.898E-01	8.417E-01	1.501E+00	1.029E-01	0.260
	1771.40			-3.403E-02	2.503E-01	3.324E-01	2.018E-02	-0.102
CO-57	122.06	*		-8.467E-03	2.357E-02	3.805E-02	2.641E-03	-0.223
	136.48			-6.802E-02	2.009E-01	3.231E-01	2.403E-02	-0.211
CO-58	810.76	*		-3.583E-02	3.606E-02	5.318E-02	3.671E-03	-0.674
FE-59	142.65			3.817E+00	2.605E+00	4.510E+00	2.948E-01	0.846
	192.34			1.607E-02	9.547E-01	1.459E+00	1.774E-01	0.011
	1099.22	*		-3.166E-02	9.511E-02	1.481E-01	1.132E-02	-0.214
	1291.56			3.492E-02	1.061E-01	1.848E-01	1.494E-02	0.189
CO-60	1173.22			-2.161E-02	4.726E-02	7.321E-02	4.354E-03	-0.295
	1332.49	*		1.266E-02	3.578E-02	6.248E-02	4.281E-03	0.203
ZN-65	1115.52	*		1.413E-02	1.004E-01	1.431E-01	9.467E-03	0.099
GE-68	1077.35	*		-8.046E-01	1.311E+00	1.977E+00	1.381E-01	-0.407
AS-73	53.44	*		2.791E-01	1.525E+00	2.613E+00	3.418E-01	0.107
AS-74	595.88	*		7.118E-02	9.370E-02	1.604E-01	8.467E-03	0.444
	634.78			1.009E-01	3.453E-01	5.678E-01	2.872E-02	0.178
SE-75	66.05			-9.616E+00	6.176E+00	9.429E+00	1.237E+00	-1.020
	96.73			-7.699E-01	8.268E-01	1.150E+00	1.668E-01	-0.670
	121.11			-3.452E-02	1.262E-01	2.047E-01	2.054E-02	-0.169
	136.00			-2.602E-02	3.834E-02	6.063E-02	4.064E-03	-0.429
	198.60			1.750E+00	1.800E+00	2.923E+00	2.256E-01	0.599
	264.65	*		1.987E-02	4.585E-02	7.072E-02	4.757E-03	0.281
	279.53			-1.683E-02	1.102E-01	1.620E-01	1.144E-02	-0.104
	303.91			-1.506E-01	2.122E+00	3.121E+00	3.125E-01	-0.048
	400.65			-1.459E-01	2.408E-01	3.790E-01	3.412E-02	-0.385

## ---- 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		8.143E+02	3.176E+02	4.912E+02	5.903E+01	1.658
		200.40		1.271E+01	2.193E+02	3.521E+02	2.297E+01	0.036
	+	239.00		3.246E+02	3.484E+01	5.265E+01	3.508E+00	6.165
		249.79		-2.940E+01	8.305E+01	1.384E+02	9.238E+00	-0.213
		281.68		-1.323E+00	1.204E+02	1.790E+02	1.189E+01	-0.007
		297.23		3.340E+02	1.061E+02	1.544E+02	1.016E+01	2.164
		303.76		1.257E+01	2.426E+02	3.606E+02	2.361E+01	0.035
		439.47		1.135E+02	1.990E+02	3.393E+02	1.925E+01	0.334
		484.57		-5.116E+01	3.099E+02	4.979E+02	2.809E+01	-0.103
		520.65	*	2.315E+00	1.336E+01	2.199E+01	1.224E+00	0.105
		574.64		-2.251E+02	2.686E+02	3.962E+02	2.132E+01	-0.568
		578.91		1.178E+02	1.249E+02	1.954E+02	1.048E+01	0.603
		585.48		1.224E+03	3.318E+02	5.979E+02	3.187E+01	2.047
		755.35		1.414E+02	2.227E+02	3.914E+02	2.382E+01	0.361
		817.79		7.643E+01	1.743E+02	3.011E+02	2.102E+01	0.254
SR-82		698.33		-4.779E+00	3.079E+01	5.091E+01	2.714E+00	-0.094
		776.49	*	-5.714E-01	3.636E-01	5.026E-01	3.208E-02	-1.137
		1395.20		1.228E+01	1.016E+01	1.977E+01	1.353E+00	0.621
RB-83		520.41	*	6.832E-03	6.536E-02	1.069E-01	5.954E-03	0.064
		529.64		8.240E-03	1.024E-01	1.668E-01	9.250E-03	0.049
		552.65		-9.983E-03	1.953E-01	3.137E-01	1.715E-02	-0.032
RB-84		881.50	*	-2.289E-02	6.539E-02	1.007E-01	8.017E-03	-0.227
KR-85		513.99	*	9.934E+00	7.203E+00	1.175E+01	6.565E-01	0.845
SR-85		513.99	*	5.151E-02	3.735E-02	6.095E-02	3.404E-03	0.845
RB-86		1076.63	*	-4.358E-01	8.521E-01	1.301E+00	9.093E-02	-0.335
Y-88		898.02		-3.867E-02	3.814E-02	5.495E-02	4.547E-03	-0.704
		1836.01	*	1.992E-03	3.211E-02	5.282E-02	3.082E-03	0.038
ZR-88		392.90	*	3.749E-03	3.017E-02	5.027E-02	2.829E-03	0.075
Y-91		1204.90	*	1.287E+01	2.049E+01	3.493E+01	2.141E+00	0.368
NB-94		702.63	*	1.003E-02	3.056E-02	5.265E-02	2.836E-03	0.190
		871.10		-4.512E-03	3.370E-02	5.481E-02	4.274E-03	-0.082
NB-95		765.79	*	4.168E-02	4.759E-02	7.583E-02	4.726E-03	0.550
NB-95M		235.69	*	-9.646E-03	1.383E-01	1.937E-01	1.589E-02	-0.050
ZR-95		724.18		1.298E-01	1.005E-01	1.675E-01	1.130E-02	0.775
		756.15	*	3.627E-03	7.295E-02	1.221E-01	8.893E-03	0.030
NB-97		657.90	*	1.606E-01	7.295E-02	Half-Life	too short	
		1024.50		4.823E+00	7.295E-02	Half-Life	too short	
ZR-97		254.15		5.043E+00	7.295E-02	Half-Life	too short	
		355.39		-5.531E-01	7.295E-02	Half-Life	too short	
		507.63	*	3.798E+00	7.295E-02	Half-Life	too short	
		602.52		1.382E+01	7.295E-02	Half-Life	too short	
		1021.30		2.792E+01	7.295E-02	Half-Life	too short	
		1147.95		7.377E-01	7.295E-02	Half-Life	too short	
		1362.66		-1.580E+01	7.295E-02	Half-Life	too short	
		1750.46		6.261E+00	7.295E-02	Half-Life	too short	
MO-99		140.51		-1.693E+01	3.286E+01	5.181E+01	1.405E+01	-0.327
		181.06		1.511E+01	2.245E+01	3.549E+01	6.162E+00	0.426
		366.43		-2.713E+01	1.063E+02	1.733E+02	1.036E+01	-0.157
		739.58	*	-3.033E+00	1.445E+01	2.365E+01	3.266E+00	-0.128



## ----- 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			-4.683E+01	4.181E+01	6.152E+01	3.940E+00	-0.761
RH-101	140.51	*		-3.607E+11	4.181E+01	Half-Life too short		
	127.23			1.438E-02	3.399E-02	5.110E-02	3.470E-03	0.281
	198.01	*		1.970E-02	3.297E-02	5.264E-02	3.428E-03	0.374
	325.23			4.015E-02	2.358E-01	3.521E-01	2.254E-02	0.114
RH-102	418.52			-1.354E-01	2.720E-01	4.305E-01	2.438E-02	-0.315
	475.06	*		-5.390E-03	2.786E-02	4.470E-02	2.528E-03	-0.121
	631.29			-1.428E-02	5.056E-02	7.833E-02	3.979E-03	-0.182
	697.49			-8.034E-03	6.667E-02	1.106E-01	5.884E-03	-0.073
	766.84			1.818E-01	1.263E-01	2.102E-01	1.313E-02	0.865
	1046.59			-1.348E-01	1.156E-01	1.609E-01	1.168E-02	-0.838
	1112.84			-2.370E-02	2.579E-01	3.543E-01	2.349E-02	-0.067
RU-103	497.08	*		6.547E-04	3.771E-02	6.140E-02	7.714E-03	0.011
	610.33			1.369E+01	2.806E+00	3.149E+00	4.788E-01	4.345
RH-106	511.85	+		7.492E-01	3.244E-01	4.283E-01	2.394E-02	1.749
	621.84	*		1.022E-01	3.126E-01	5.150E-01	5.884E-02	0.198
	1050.47			-5.669E-01	2.176E+00	3.423E+00	2.475E-01	-0.166
RU-106	511.85	+		7.492E-01	3.244E-01	4.283E-01	2.394E-02	1.749
	621.84	*		1.022E-01	3.124E-01	5.150E-01	2.646E-02	0.198
	1050.47			-5.669E-01	2.176E+00	3.423E+00	2.475E-01	-0.166
AG-108M	433.93	*		-1.572E-02	3.217E-02	5.081E-02	3.139E-03	-0.309
	614.37			-3.615E-03	4.067E-02	5.606E-02	3.210E-03	-0.064
	722.95			-4.187E-03	4.363E-02	6.269E-02	3.858E-03	-0.067
AG-110M	657.75	*		2.197E-02	3.595E-02	5.664E-02	3.026E-03	0.388
	677.61			1.158E-01	2.690E-01	4.695E-01	2.570E-02	0.247
	706.67			-7.832E-02	2.035E-01	3.298E-01	1.916E-02	-0.237
	763.93			-6.409E-02	1.870E-01	2.591E-01	1.694E-02	-0.247
	884.67			1.175E-02	4.548E-02	7.702E-02	6.402E-03	0.153
	937.48			-9.223E-02	1.154E-01	1.730E-01	1.447E-02	-0.533
	1384.27			-1.210E-01	1.494E-01	1.896E-01	1.356E-02	-0.638
IN-111	171.28			8.219E-01	1.310E+00	2.178E+00	1.389E-01	0.377
	245.39	*		-2.817E-02	1.523E+00	2.135E+00	1.425E-01	-0.013
IN-113M	391.69	*		-3.502E-03	4.284E-02	7.038E-02	4.241E-03	-0.050
SN-113	391.69	*		-3.502E-03	4.284E-02	7.038E-02	4.241E-03	-0.050
IN-114M	190.27	*		9.292E-02	1.993E-01	2.939E-01	1.902E-02	0.316
CD-115	260.90			-4.763E+01	1.668E+02	2.782E+02	1.858E+01	-0.171
	492.35			2.613E+01	4.763E+01	8.102E+01	4.562E+00	0.322
	527.90	*		1.511E+00	1.424E+01	2.327E+01	1.291E+00	0.065
SN-117M	156.02			-1.217E+00	2.386E+00	3.778E+00	2.424E-01	-0.322
	158.56	*		1.349E-02	5.725E-02	9.387E-02	6.004E-03	0.144
SB-122	563.90	*		1.856E+00	2.725E+00	4.637E+00	2.516E-01	0.400
	692.80			-6.687E+00	5.463E+01	9.073E+01	4.774E+00	-0.074
I-123	159.00	*		1.034E+01	5.463E+01	Half-Life too short		
	528.96			-7.723E+00	5.463E+01	Half-Life too short		
TE-123M	159.00	*		1.326E-02	2.786E-02	4.618E-02	2.985E-03	0.287
I-124	602.71	*		5.550E-01	8.059E-01	1.228E+00	6.440E-02	0.452
	722.78			-7.075E-01	5.426E+00	7.761E+00	4.384E-01	-0.091
	1325.50			3.063E+00	3.794E+01	6.397E+01	4.358E+00	0.048
	1376.25	+		6.308E+01	4.003E+01	6.976E+01	4.780E+00	0.904

----- 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		3.027E+01	2.027E+01	3.973E+01	2.679E+00	0.762
		1691.02		-5.974E-01	4.562E+00	7.253E+00	4.597E-01	-0.082
		602.71		2.735E-02	3.971E-02	6.052E-02	3.175E-03	0.452
		645.85		-4.925E-02	4.800E-01	8.025E-01	4.683E-02	-0.061
		709.31		4.935E-01	2.748E+00	4.670E+00	2.556E-01	0.106
		713.82		-4.112E-01	1.635E+00	2.678E+00	2.695E-01	-0.154
		722.78		-5.054E-02	3.876E-01	5.545E-01	3.288E-02	-0.091
	+	968.20		1.754E+01	4.693E+00	7.502E+00	5.888E-01	2.338
		1045.16		1.112E+00	2.386E+00	4.083E+00	2.970E-01	0.272
		1325.50		2.337E-01	2.895E+00	4.881E+00	3.325E-01	0.048
		1368.21		-4.673E-01	1.434E+00	2.249E+00	2.793E-01	-0.208
		1436.60		1.194E+00	3.337E+00	5.853E+00	3.993E-01	0.204
SB-125		1691.02	*	-1.007E-02	7.687E-02	1.222E-01	8.304E-03	-0.082
		427.89	*	-1.891E-02	8.901E-02	1.439E-01	8.517E-03	-0.131
	+	463.38		9.218E-01	4.096E-01	5.402E-01	3.591E-02	1.706
		600.56		-1.636E-01	1.739E-01	2.535E-01	1.583E-02	-0.645
TE-125M I-126		635.90		1.193E-01	2.466E-01	4.133E-01	2.548E-02	0.289
		109.28	*	3.586E+00	9.114E+00	1.491E+01	1.480E+00	0.241
		388.63		-3.749E-02	2.147E-01	3.507E-01	1.989E-02	-0.107
		666.33	*	-1.308E-02	1.919E-01	2.788E-01	1.376E-02	-0.047
SB-126		753.82		7.656E-01	1.497E+00	2.607E+00	1.582E-01	0.294
		223.80		-1.124E+00	4.255E+00	6.664E+00	4.414E-01	-0.169
	+	278.60		3.743E+00	3.260E+00	4.392E+00	2.920E-01	0.852
	+	296.50		1.713E+01	2.917E+00	4.131E+00	2.720E-01	4.146
		414.70		4.753E-02	8.921E-02	1.354E-01	7.664E-03	0.351
		415.30		-2.020E+00	7.424E+00	1.043E+01	5.900E-01	-0.194
		555.20		-1.963E+00	4.220E+00	6.520E+00	3.559E-01	-0.301
		573.80		-5.902E-01	1.000E+00	1.513E+00	8.147E-02	-0.390
		593.00		6.465E-02	9.851E-01	1.590E+00	8.420E-02	0.041
		656.30		2.723E+00	3.556E+00	5.710E+00	2.807E-01	0.477
		666.33		-5.477E-03	8.040E-02	1.168E-01	5.762E-03	-0.047
		675.00		3.333E-01	1.914E+00	3.266E+00	1.646E-01	0.102
SB-127		695.00		5.128E-03	7.384E-02	1.246E-01	6.592E-03	0.041
		697.00		-1.089E-01	2.588E-01	4.178E-01	2.221E-02	-0.261
		720.50	*	3.595E-02	1.574E-01	2.359E-01	1.325E-02	0.152
		856.80		2.776E-02	5.518E-01	7.958E-01	6.027E-02	0.035
		989.30		-7.141E-01	1.228E+00	1.857E+00	1.431E-01	-0.384
		1034.80		-2.610E+00	8.850E+00	1.388E+01	1.021E+00	-0.188
		1213.00		-1.526E+00	5.266E+00	8.194E+00	5.060E-01	-0.186
		61.10		-1.076E+02	9.624E+01	1.530E+02	2.183E+01	-0.703
		252.40		1.687E-01	4.894E+00	8.319E+00	3.474E+00	0.020
		290.80		-7.601E+00	2.687E+01	3.896E+01	3.921E+00	-0.195
	+	411.60		2.206E+01	2.835E+01	2.558E+01	3.727E+00	0.862
		444.90		3.221E+00	1.237E+01	2.036E+01	2.251E+00	0.158
		473.00		-1.806E-01	1.965E+00	3.181E+00	3.635E-01	-0.057
		543.00		-8.914E+00	1.863E+01	2.866E+01	3.742E+00	-0.311
		603.60		2.655E+00	1.519E+01	2.170E+01	2.346E+00	0.122
		685.20	*	-2.761E-01	1.471E+00	2.427E+00	2.294E-01	-0.114
		698.50		-6.000E+00	1.649E+01	2.671E+01	3.887E+00	-0.225

----- 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		-3.940E+00	3.741E+01	5.369E+01	5.077E+00	-0.073
		783.80		4.901E+00	4.371E+00	7.893E+00	8.974E-01	0.621
		57.60		-3.081E+00	9.046E+00	1.508E+01	1.888E+00	-0.204
		145.22		-1.035E-01	6.757E-01	1.093E+00	7.113E-02	-0.095
		172.10		5.749E-02	1.213E-01	2.004E-01	1.278E-02	0.287
I-131		202.84	*	-3.453E-02	4.745E-02	7.287E-02	4.763E-03	-0.474
		374.96		1.534E-03	1.915E-01	3.175E-01	1.863E-02	0.005
		80.18		5.182E+00	5.366E+00	8.444E+00	9.798E-01	0.614
		284.30		-1.747E-01	1.483E+00	2.483E+00	1.792E-01	-0.070
		364.48	*	-3.361E-02	1.209E-01	1.970E-01	1.313E-02	-0.171
TE-132		636.97		-2.716E-01	1.658E+00	2.602E+00	1.520E-01	-0.104
		722.89		-8.924E-01	8.047E+00	1.154E+01	6.632E-01	-0.077
		49.72		2.498E+01	5.208E+01	9.043E+01	1.285E+01	0.276
		111.76		-1.927E+01	3.527E+01	5.665E+01	5.988E+00	-0.340
		116.30		8.034E+00	3.210E+01	5.348E+01	5.480E+00	0.150
BA-133		228.16	*	-3.158E-01	8.547E-01	1.326E+00	1.981E-01	-0.238
		53.15		2.051E+00	6.565E+00	1.131E+01	1.480E+00	0.181
		79.62		1.332E+00	1.390E+00	2.173E+00	3.705E-01	0.613
		81.00		-1.267E-01	1.132E-01	1.564E-01	2.764E-02	-0.810
	+	276.40		5.272E-01	4.631E-01	6.419E-01	8.582E-02	0.821
I-133		302.84		2.358E-02	1.417E-01	2.127E-01	2.562E-02	0.111
		356.01	*	1.099E-02	4.564E-02	6.818E-02	7.987E-03	0.161
		383.85		4.738E-02	3.010E-01	5.031E-01	5.454E-02	0.094
	+	510.53		3.581E+00	3.010E-01	Half-Life	too short	
		529.87	*	1.190E-03	3.010E-01	Half-Life	too short	
CS-134		706.58		-3.478E-01	3.010E-01	Half-Life	too short	
		856.28		-6.237E-02	3.010E-01	Half-Life	too short	
		875.33		-1.216E-01	3.010E-01	Half-Life	too short	
		1236.41		6.009E-01	3.010E-01	Half-Life	too short	
		1298.22		-6.883E-03	3.010E-01	Half-Life	too short	
CS-135		475.35		-1.635E-01	1.800E+00	2.914E+00	1.647E-01	-0.056
		563.23		4.140E-01	3.568E-01	6.293E-01	3.497E-02	0.658
		569.32		9.042E-02	1.763E-01	2.976E-01	1.663E-02	0.304
		604.70		2.081E-02	3.589E-02	5.375E-02	2.833E-03	0.387
		795.84	*	4.696E-02	4.610E-02	8.299E-02	5.593E-03	0.566
I-135		801.93		-1.921E-02	4.293E-01	7.158E-01	4.874E-02	-0.027
		1038.57		1.155E+00	3.890E+00	6.532E+00	4.788E-01	0.177
		1167.94		2.220E+00	2.549E+00	4.477E+00	2.691E-01	0.496
		1365.15		5.158E-02	9.426E-01	1.584E+00	1.163E-01	0.033
		268.24	*	1.805E-01	1.682E-01	2.688E-01	2.241E-02	0.671
I-135		288.45		1.593E+11	1.682E-01	Half-Life	too short	
		417.63		-3.685E+11	1.682E-01	Half-Life	too short	
		546.56		-9.535E+10	1.682E-01	Half-Life	too short	
		836.80		1.835E+11	1.682E-01	Half-Life	too short	
		1038.76		8.934E+10	1.682E-01	Half-Life	too short	
I-135		1124.00		-2.487E+11	1.682E-01	Half-Life	too short	
		1131.51		2.876E+10	1.682E-01	Half-Life	too short	
		1260.41	*	-3.336E+10	1.682E-01	Half-Life	too short	
		1457.56		6.076E+12	1.682E-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		1678.03	9.109E+10	1.682E-01	Half-Life	too short	
		1706.46	-1.842E+11	1.682E-01	Half-Life	too short	
		1791.20	6.264E+10	1.682E-01	Half-Life	too short	
		66.91	-4.491E-01	9.817E-01	1.619E+00	2.807E-01	-0.277
	+	86.29	3.745E+00	1.504E+00	2.297E+00	3.501E-01	1.630
		153.22	5.536E-01	6.661E-01	1.122E+00	8.689E-02	0.493
		163.89	-1.505E-01	1.089E+00	1.751E+00	1.350E-01	-0.086
		176.55	-3.038E-02	3.726E-01	5.982E-01	4.222E-02	-0.051
		273.65	2.611E-02	7.092E-01	7.742E-01	5.716E-02	0.034
		340.57	2.279E-01	1.359E-01	2.256E-01	1.490E-02	1.010
		818.51	-4.738E-03	7.744E-02	1.276E-01	8.933E-03	-0.037
		1048.07	* -2.621E-02	1.077E-01	1.699E-01	1.305E-02	-0.154
CE-139		1235.34	3.648E-01	5.925E-01	1.046E+00	1.076E-01	0.349
		165.85	* 2.134E-03	2.886E-02	4.687E-02	2.978E-03	0.046
	BA-140	162.64	1.788E-01	7.596E-01	1.244E+00	8.754E-02	0.144
LA-140		304.84	4.206E-01	1.379E+00	2.086E+00	5.727E-01	0.202
		423.70	-1.004E+00	1.929E+00	3.000E+00	9.529E-01	-0.335
		537.32	* 8.978E-02	2.735E-01	4.482E-01	1.455E-01	0.200
	+	328.77	2.872E-01	4.911E-01	5.954E-01	4.175E-02	0.482
		432.53	4.272E-01	2.096E+00	3.494E+00	2.198E-01	0.122
		487.03	-2.419E-02	1.414E-01	2.270E-01	1.458E-02	-0.107
		751.79	-1.058E+00	1.721E+00	2.701E+00	1.970E-01	-0.392
		815.85	1.600E-01	3.181E-01	5.534E-01	4.511E-02	0.289
		867.82	-8.362E-01	1.445E+00	2.161E+00	1.783E-01	-0.387
		919.63	-3.173E+00	2.796E+00	3.940E+00	4.039E-01	-0.805
		925.24	-2.594E-01	1.140E+00	1.822E+00	1.580E-01	-0.142
		1596.49	* -4.012E-02	1.069E-01	1.562E-01	1.029E-02	-0.257
CE-141		145.44	* -1.953E-02	6.116E-02	9.813E-02	6.587E-03	-0.199
CE-143		57.37	1.262E-04	6.116E-02	Half-Life	too short	
		231.56	1.381E-03	6.116E-02	Half-Life	too short	
		293.26	* 1.116E-03	6.116E-02	Half-Life	too short	
	+	350.59	5.632E-02	6.116E-02	Half-Life	too short	
		490.36	1.938E-03	6.116E-02	Half-Life	too short	
		664.57	1.424E-03	6.116E-02	Half-Life	too short	
		721.93	-3.265E-05	6.116E-02	Half-Life	too short	
CE-144		80.11	2.255E+00	2.264E+00	3.567E+00	4.121E-01	0.632
		133.54	* 9.863E-02	2.048E-01	3.267E-01	4.761E-02	0.302
PM-144		476.78	-2.627E-02	6.683E-02	1.055E-01	7.195E-03	-0.249
		618.01	1.173E-02	2.961E-02	4.921E-02	2.731E-03	0.238
		696.49	* -5.531E-03	3.037E-02	5.009E-02	2.662E-03	-0.110
		778.57	-1.781E+00	2.116E+00	3.216E+00	2.063E-01	-0.554
PR-144		696.49	* -3.750E-01	2.059E+00	3.396E+00	1.803E-01	-0.110
		1489.15	-8.711E-01	1.205E+01	1.873E+01	1.268E+00	-0.047
PM-146		453.90	* 2.567E-02	4.704E-02	7.903E-02	6.745E-03	0.325
		633.02	-1.050E+00	1.356E+00	1.894E+00	6.955E-01	-0.555
		735.90	4.062E-02	1.359E-01	2.326E-01	6.487E-02	0.175
		747.13	-1.339E-02	7.669E-02	1.256E-01	1.581E-02	-0.107
ND-147	+	91.11	5.862E-01	4.193E-01	5.327E-01	6.247E-02	1.100
		319.41	1.579E+00	3.459E+00	5.942E+00	3.831E-01	0.266

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149	439.89			7.502E-01	6.505E+00	1.068E+01	6.064E-01	0.070
	531.02	*		2.489E-01	5.716E-01	9.589E-01	1.286E-01	0.260
	285.90	*		-3.176E+01	1.167E+02	1.934E+02	2.811E+01	-0.164
	121.78			-2.177E-02	6.835E-02	1.106E-01	9.425E-03	-0.197
	244.69			2.463E-01	3.521E-01	5.221E-01	3.483E-02	0.472
	344.27	*		-8.393E-02	9.119E-02	1.424E-01	9.853E-03	-0.590
	443.98			3.973E-01	9.979E-01	1.659E+00	9.409E-02	0.240
	778.89			1.177E-02	2.251E-01	3.764E-01	2.415E-02	0.031
	867.32			-8.831E-01	8.610E-01	1.159E+00	8.969E-02	-0.762
	964.01			5.615E-01	3.118E-01	5.411E-01	4.261E-02	1.038
EU-152	1085.78			-1.971E-01	4.112E-01	6.295E-01	4.346E-02	-0.313
	1112.02			-7.375E-03	3.349E-01	5.081E-01	3.374E-02	-0.015
	1407.95			2.660E-01	1.876E-01	3.648E-01	2.495E-02	0.729
	69.67			-9.338E-02	1.957E+00	3.289E+00	3.798E-01	-0.028
	83.37			-1.942E+00	1.704E+01	2.542E+01	2.976E+00	-0.076
	97.43	*		-3.376E-02	8.301E-02	1.204E-01	1.182E-02	-0.280
	103.18			-1.119E-01	9.810E-02	1.528E-01	1.360E-02	-0.732
	123.07			-8.757E-03	4.896E-02	7.975E-02	8.072E-03	-0.110
	247.94			1.136E-01	3.519E-01	5.672E-01	5.727E-02	0.200
	591.81			-6.861E-02	6.042E-01	9.594E-01	9.101E-02	-0.072
GD-153	723.30			7.218E-02	1.776E-01	2.718E-01	1.892E-02	0.266
	756.87			2.187E-01	7.840E-01	1.337E+00	1.380E-01	0.164
	873.19			1.939E-01	2.857E-01	5.022E-01	5.877E-02	0.386
	996.32			1.309E-01	3.500E-01	5.937E-01	1.028E-01	0.220
	1004.76			-3.832E-02	2.084E-01	3.328E-01	3.629E-02	-0.115
	1274.45	*		-3.979E-02	1.222E-01	1.971E-01	1.934E-02	-0.202
	48.70			-2.973E+00	5.573E+00	9.258E+00	1.067E+00	-0.321
	60.01			1.197E+00	6.596E+00	1.126E+01	1.367E+00	0.106
	86.54			3.268E-01	1.275E-01	2.015E-01	2.414E-02	1.622
	105.31	*		4.374E-02	9.919E-02	1.674E-01	1.459E-02	0.261
EU-154	86.79			8.816E-01	3.438E-01	5.465E-01	6.521E-02	1.613
	197.04			-6.630E-01	5.840E-01	8.477E-01	5.516E-02	-0.782
	215.65			3.880E-01	7.400E-01	1.213E+00	7.996E-02	0.320
	298.57			2.360E-01	1.537E-01	1.995E-01	1.311E-02	1.183
	879.36	*		-5.841E-02	1.278E-01	1.995E-01	1.582E-02	-0.293
	962.29			2.709E-01	5.798E-01	9.085E-01	7.164E-02	0.298
	966.15			8.706E-01	2.794E-01	5.068E-01	3.984E-02	1.718
	1177.93			1.038E-01	3.737E-01	6.193E-01	3.700E-02	0.168
	1271.85			-1.302E-02	7.018E-01	1.172E+00	7.632E-02	-0.011
	80.57			5.395E-02	2.919E-01	4.431E-01	5.127E-02	0.122
TB-160	184.41			4.159E-02	4.010E-02	6.101E-02	3.930E-03	0.682
	280.46			-4.978E-02	8.672E-02	1.230E-01	8.171E-03	-0.405
	410.95			3.638E-01	4.650E-01	4.329E-01	2.448E-02	0.840
	711.68	*		2.575E-02	5.969E-02	1.035E-01	5.694E-03	0.249
	752.31			-5.820E-02	2.538E-01	4.141E-01	2.504E-02	-0.141
	810.29			-4.807E-02	5.424E-02	8.125E-02	5.582E-03	-0.592
	51.35			-1.648E+01	6.146E+01	1.033E+02	1.338E+01	-0.159
	52.39			-6.384E+00	2.991E+01	5.037E+01	6.588E+00	-0.127
	59.40			3.365E+00	3.657E+01	6.218E+01	7.583E+00	0.054
HO-166M								
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	*	-1.793E+01	3.365E+01	5.539E+01	6.476E+00	-0.324
		88.36		6.433E-01	2.509E-01	3.752E-01	4.473E-02	1.714
		201.83		-2.422E-02	2.864E-02	4.371E-02	2.855E-03	-0.554
		306.84	*	2.289E-03	2.273E-02	3.837E-02	2.505E-03	0.060
LU-177	+	401.10		-1.360E+00	6.227E+00	1.011E+01	5.703E-01	-0.135
		112.95		-5.752E-01	1.719E+00	2.791E+00	2.161E-01	-0.206
		208.36	*	2.090E+00	1.774E+00	2.187E+00	1.435E-01	0.956
LU-177M	+	52.97		5.176E-01	3.018E+00	5.170E+00	6.769E-01	0.100
		54.07		2.082E-01	1.497E+00	2.559E+00	3.337E-01	0.081
		61.30		-2.082E+00	2.047E+00	3.288E+00	3.967E-01	-0.633
		121.62		-1.011E-02	3.472E-01	5.700E-01	3.970E-02	-0.018
HF-181	+	147.16		-3.492E-01	6.263E-01	9.922E-01	6.437E-02	-0.352
		171.86		3.500E-01	4.872E-01	8.129E-01	5.184E-02	0.431
		218.09		-4.630E-01	8.508E-01	1.313E+00	8.668E-02	-0.353
		268.79		1.797E+00	1.261E+00	1.494E+00	9.964E-02	1.203
		319.02		9.230E-02	2.490E-01	4.258E-01	2.746E-02	0.217
		367.43		5.488E-02	8.451E-01	1.409E+00	8.401E-02	0.039
		413.65	*	1.945E-01	1.921E-01	3.043E-01	1.721E-02	0.639
		56.28		-3.280E-01	1.500E+00	2.518E+00	3.211E-01	-0.130
		57.53		-1.221E-01	7.556E-01	1.271E+00	1.593E-01	-0.096
		65.20		-1.114E+00	1.212E+00	1.936E+00	2.282E-01	-0.575
		133.02		3.668E-02	7.183E-02	1.082E-01	7.224E-03	0.339
W-181	+	136.25		-2.791E-01	4.544E-01	7.211E-01	4.774E-02	-0.387
		345.85		6.557E-02	1.942E-01	3.080E-01	1.913E-02	0.213
		482.03	*	1.414E-03	4.311E-02	7.043E-02	3.976E-03	0.020
		56.28		-1.269E-01	5.803E-01	9.746E-01	1.242E-01	-0.130
TA-182	+	57.53		-4.709E-02	2.927E-01	4.925E-01	6.172E-02	-0.096
		65.20	*	-4.279E-01	4.658E-01	7.438E-01	8.767E-02	-0.575
		67.75		2.845E-03	1.305E-01	2.202E-01	2.562E-02	0.013
		100.10		1.880E-01	1.663E-01	2.884E-01	2.699E-02	0.652
RE-183	+	152.43		5.200E-02	3.266E-01	5.348E-01	3.445E-02	0.097
		222.10		4.781E-02	3.376E-01	5.414E-01	3.583E-02	0.088
		1001.68		2.568E-01	1.950E+00	3.227E+00	2.458E-01	0.080
		1121.28		5.601E-01	2.739E-01	3.511E-01	2.297E-02	1.595
		1189.05		-6.403E-02	3.033E-01	4.757E-01	2.872E-02	-0.135
		1221.42	*	2.336E-02	1.909E-01	3.241E-01	2.017E-02	0.072
		1230.97		9.716E-02	4.725E-01	8.015E-01	5.032E-02	0.121
RE-184	+	57.98		-1.059E-01	2.866E-01	4.770E-01	5.939E-02	-0.222
		59.32		2.336E-03	1.517E-01	2.570E-01	3.138E-02	0.009
		67.20		5.004E-02	2.340E-01	3.979E-01	4.641E-02	0.126
		162.32	*	2.660E-02	1.059E-01	1.737E-01	1.107E-02	0.153
RE-184	+	208.81		1.701E+00	1.443E+00	1.794E+00	1.178E-01	0.948
		291.72		-1.227E-01	9.655E-01	1.418E+00	9.367E-02	-0.087
		57.98		-3.878E-01	1.050E+00	1.747E+00	2.175E-01	-0.222
		59.32		8.549E-03	5.549E-01	9.406E-01	1.148E-01	0.009
		67.20		1.832E-01	8.567E-01	1.457E+00	1.699E-01	0.126
		161.27		-9.241E-02	3.475E-01	5.557E-01	3.544E-02	-0.166
		216.55		2.416E-01	2.572E-01	4.304E-01	2.839E-02	0.561
		252.85	*	1.350E-01	2.131E-01	3.730E-01	2.491E-02	0.362

## ---- 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			1.378E-01	4.446E-01	7.575E-01	4.890E-02	0.182
	792.07			-4.210E-01	9.281E-01	1.474E+00	9.738E-02	-0.286
	903.28			6.268E-01	9.564E-01	1.642E+00	1.347E-01	0.382
	920.93			-1.877E-01	4.301E-01	6.710E-01	5.448E-02	-0.280
	59.72			9.269E-02	3.999E-01	6.840E-01	8.320E-02	0.136
	61.14			-2.496E-01	2.266E-01	3.622E-01	4.374E-02	-0.689
	69.30			2.471E-02	3.503E-01	5.916E-01	6.840E-02	0.042
	592.07			-2.379E-01	2.510E+00	3.993E+00	2.116E-01	-0.060
	646.12	*		-1.996E-03	4.087E-02	6.863E-02	3.421E-03	-0.029
	717.42			-1.624E-01	8.765E-01	1.443E+00	8.052E-02	-0.113
RE-188	874.81			2.869E-02	5.765E-01	9.554E-01	7.506E-02	0.030
	880.27			-8.248E-01	7.502E-01	1.046E+00	8.308E-02	-0.789
	155.03	*		2.207E-02	1.721E-01	2.811E-01	1.805E-02	0.079
	477.96			-1.754E+00	3.062E+00	4.757E+00	2.688E-01	-0.369
W-188	633.10			-2.067E+00	2.663E+00	3.895E+00	1.974E-01	-0.531
	63.58			7.546E+01	6.838E+01	1.197E+02	1.425E+01	0.630
IR-192	227.08			-3.915E-01	1.256E+01	1.992E+01	1.322E+00	-0.020
	290.67	*		-2.527E+00	7.738E+00	1.118E+01	7.391E-01	-0.226
	295.96		+	1.248E+00	2.130E-01	3.176E-01	2.117E-02	3.930
	308.46			-5.586E-02	9.020E-02	1.454E-01	9.566E-03	-0.384
AU-195	316.51	*		-1.137E-03	3.345E-02	5.591E-02	3.630E-03	-0.020
	468.07			1.868E-02	6.858E-02	1.012E-01	6.644E-03	0.185
	604.41			2.559E-01	5.008E-01	7.427E-01	8.223E-02	0.345
	612.46			6.259E-01	7.864E-01	1.201E+00	8.545E-02	0.521
	65.12			-1.838E-01	2.162E-01	3.467E-01	4.089E-02	-0.530
	66.83			-5.200E-02	1.116E-01	1.843E-01	2.153E-02	-0.282
	75.70		+	1.165E+00	3.244E-01	5.094E-01	5.836E-02	2.287
	98.88	*		3.770E-01	2.326E-01	3.753E-01	3.589E-02	1.004
TL-200	129.76		+	3.758E+00	3.394E+00	4.872E+00	3.282E-01	0.771
	367.94	*		-2.090E-04	3.394E+00	Half-Life	too short	
	579.30			7.219E-03	3.394E+00	Half-Life	too short	
	828.27			-1.049E-02	3.394E+00	Half-Life	too short	
TL-201	1205.75			2.972E-03	3.394E+00	Half-Life	too short	
	68.90			-2.359E-02	7.112E+00	1.198E+01	1.387E+00	-0.002
	70.82			1.045E+00	4.454E+00	6.814E+00	7.842E-01	0.153
	80.30			6.166E+00	6.771E+00	1.063E+01	1.229E+00	0.580
TL-202	135.34			-1.385E+01	3.080E+01	4.927E+01	3.269E+00	-0.281
	167.43	*		7.023E-01	8.656E+00	1.405E+01	8.934E-01	0.050
	68.90			-1.767E-03	5.328E-01	8.973E-01	1.039E-01	-0.002
	70.82			7.808E-02	3.327E-01	5.090E-01	5.858E-02	0.153
HG-203	80.30			4.607E-01	5.060E-01	7.946E-01	9.186E-02	0.580
	439.56	*		4.272E-02	7.493E-02	1.278E-01	7.248E-03	0.334
	70.83			3.277E-01	1.379E+00	2.110E+00	3.290E-01	0.155
	72.87			3.202E-01	8.050E-01	1.228E+00	1.869E-01	0.261
BI-207	82.60			4.030E-01	1.313E+00	1.838E+00	2.910E-01	0.219
	279.20	*		1.398E-02	4.205E-02	6.421E-02	4.470E-03	0.218
	72.80			1.073E-01	2.289E-01	3.531E-01	4.048E-02	0.304
	74.97		+	6.437E-01	1.792E-01	2.555E-01	2.927E-02	2.519
	84.90			2.840E-01	2.147E-01	3.389E-01	3.999E-02	0.838

---- 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		2.062E-02	2.757E-02	4.745E-02	2.563E-03	0.434
		1063.62	*	1.578E-02	5.204E-02	8.732E-02	6.210E-03	0.181
		1770.23		1.089E-01	4.358E-01	6.620E-01	4.022E-02	0.164
		81.07		-2.897E-01	2.465E-01	3.434E-01	3.981E-02	-0.844
		83.78		2.042E-03	1.471E-01	2.209E-01	2.591E-02	0.009
		94.90		-4.192E-03	2.229E-01	3.703E-01	3.816E-02	-0.011
		122.32		-4.393E-01	1.620E+00	2.627E+00	2.021E-01	-0.167
		144.24		2.011E-01	6.527E-01	1.079E+00	8.434E-02	0.186
		154.21		1.694E-01	3.920E-01	6.489E-01	4.893E-02	0.261
	+	269.46		4.188E-01	2.939E-01	3.614E-01	2.493E-02	1.159
		323.87	*	-2.526E-01	6.961E-01	9.907E-01	1.658E-01	-0.255
	+	338.28		6.026E+00	1.687E+00	2.507E+00	2.709E-01	2.403
		445.03		4.873E-01	2.368E+00	3.882E+00	3.959E-01	0.126
		260.50		-6.046E-01	8.918E+00	1.505E+01	1.005E+00	-0.040
PO-209		262.80		-1.603E+01	2.473E+01	4.036E+01	2.694E+00	-0.397
		896.60	*	-3.352E+00	6.591E+00	1.018E+01	8.355E-01	-0.329
BI-210		46.50	*	2.634E+00	9.213E+00	1.588E+01	1.384E+00	0.166
PB-210		46.50	*	2.634E+00	9.213E+00	1.588E+01	1.384E+00	0.166
PO-210		46.50	*	2.634E+00	9.212E+00	1.588E+01	1.233E+00	0.166
PB-211		404.84	*	8.578E-01	1.065E+00	1.461E+00	9.109E-01	0.587
BI-212		427.08		1.057E+00	2.045E+00	3.313E+00	2.048E+00	0.319
		831.96		4.168E-01	1.290E+00	2.152E+00	1.344E+00	0.194
	+	727.18	*	1.728E+00	4.638E-01	6.989E-01	5.342E-02	2.472
		785.46		1.895E+00	1.701E+00	3.093E+00	2.013E-01	0.613
PO-215		1620.62		9.878E-01	1.266E+00	2.339E+00	1.527E-01	0.422
		81.07		-2.897E-01	2.465E-01	3.434E-01	3.981E-02	-0.844
		83.78		2.042E-03	1.471E-01	2.209E-01	2.591E-02	0.009
		94.90		-4.192E-03	2.229E-01	3.703E-01	3.816E-02	-0.011
		122.32		-4.393E-01	1.620E+00	2.627E+00	2.021E-01	-0.167
		144.24		2.011E-01	6.527E-01	1.079E+00	8.434E-02	0.186
		154.21		1.694E-01	3.920E-01	6.489E-01	4.893E-02	0.261
	+	269.46		4.188E-01	2.939E-01	3.614E-01	2.493E-02	1.159
		323.87	*	-2.526E-01	6.961E-01	9.907E-01	1.658E-01	-0.255
	+	338.28		6.026E+00	1.687E+00	2.507E+00	2.709E-01	2.403
		445.03		4.873E-01	2.368E+00	3.882E+00	3.959E-01	0.126
	+	271.23		5.373E-01	3.782E-01	4.530E-01	3.962E-02	1.186
		401.81	*	-1.514E-01	3.875E-01	6.201E-01	8.396E-02	-0.244
		549.76	*	1.485E+01	2.520E+01	4.277E+01	2.343E+00	0.347
RN-220		81.07		-2.897E-01	2.465E-01	3.434E-01	3.981E-02	-0.844
		83.78		2.042E-03	1.471E-01	2.209E-01	2.591E-02	0.009
RA-223		94.90		-4.192E-03	2.229E-01	3.703E-01	3.816E-02	-0.011
		122.32		-4.393E-01	1.620E+00	2.627E+00	2.021E-01	-0.167
		144.24		2.011E-01	6.527E-01	1.079E+00	8.434E-02	0.186
		154.21		1.694E-01	3.920E-01	6.489E-01	4.893E-02	0.261
	+	269.46		4.188E-01	2.939E-01	3.614E-01	2.493E-02	1.159
		323.87	*	-2.526E-01	6.961E-01	9.907E-01	1.658E-01	-0.255
	+	338.28		6.026E+00	1.687E+00	2.507E+00	2.709E-01	2.403
		445.03		4.873E-01	2.368E+00	3.882E+00	3.959E-01	0.126
		79.80		1.901E+00	1.798E+00	2.780E+00	6.347E-01	0.684
AC-227								



---- 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		2.665E-01	2.533E-01	3.809E-01	4.171E-02	0.700
		256.20	*	-1.726E-01	3.528E-01	5.812E-01	8.339E-02	-0.297
		286.10		-4.225E-01	1.406E+00	2.326E+00	2.791E-01	-0.182
	+	299.80		4.158E+00	1.934E+00	2.661E+00	4.410E-01	1.563
		304.40		2.901E-01	1.882E+00	2.821E+00	4.954E-01	0.103
		334.20		-6.362E-01	2.417E+00	3.465E+00	6.413E-01	-0.184
		79.80		1.901E+00	1.799E+00	2.780E+00	6.419E-01	0.684
	+	94.00		1.112E+01	4.149E+00	3.708E+00	8.375E-01	2.999
		236.00		2.665E-01	2.529E-01	3.809E-01	3.667E-02	0.700
		256.20	*	-1.726E-01	3.532E-01	5.812E-01	1.001E-01	-0.297
		286.10		-4.225E-01	1.467E+00	2.326E+00	2.331E+00	-0.182
	+	299.80		4.158E+00	1.934E+00	2.661E+00	4.410E-01	1.563
TH-229		304.40		2.901E-01	1.882E+00	2.821E+00	4.954E-01	0.103
		334.20		-6.362E-01	2.417E+00	3.465E+00	6.413E-01	-0.184
		85.43		2.373E-01	2.167E-01	3.391E-01	4.013E-02	0.700
	+	88.47		3.703E-01	1.444E-01	2.136E-01	2.539E-02	1.734
		100.00		2.126E-01	1.727E-01	3.003E-01	2.816E-02	0.708
		193.63	*	-8.929E-02	4.868E-01	7.730E-01	5.017E-02	-0.116
		210.97		7.104E-01	8.528E-01	1.276E+00	8.392E-02	0.557
	PA-231	283.67	*	2.341E-01	1.373E+00	2.337E+00	3.307E-01	0.100
	+	301.29		1.663E+00	7.453E-01	1.015E+00	1.105E-01	1.639
	TH-231	81.07		-2.897E-01	2.465E-01	3.434E-01	3.981E-02	-0.844
		83.78		2.042E-03	1.471E-01	2.209E-01	2.591E-02	0.009
		94.90		-4.192E-03	2.229E-01	3.703E-01	3.816E-02	-0.011
U-231		122.32		-4.393E-01	1.620E+00	2.627E+00	2.021E-01	-0.167
		144.24		2.011E-01	6.527E-01	1.079E+00	8.434E-02	0.186
	+	154.21		1.694E-01	3.920E-01	6.489E-01	4.893E-02	0.261
		269.46		4.188E-01	2.939E-01	3.614E-01	2.493E-02	1.159
	+	323.87	*	-2.526E-01	6.961E-01	9.907E-01	1.658E-01	-0.255
	+	338.28		6.026E+00	1.687E+00	2.507E+00	2.709E-01	2.403
		445.03		4.873E-01	2.368E+00	3.882E+00	3.959E-01	0.126
	U-231	84.21		9.121E+00	7.320E+00	1.154E+01	1.356E+00	0.790
	+	92.29		1.310E+01	4.126E+00	4.999E+00	5.439E-01	2.621
		95.87	*	-3.039E-01	1.297E+00	1.903E+00	1.924E-01	-0.160
		108.00		-2.030E+00	2.424E+00	3.741E+00	3.097E-01	-0.543
	PA-233	75.28		1.878E+01	5.748E+00	7.555E+00	1.292E+00	2.486
PA-234	+	86.59		5.310E+00	2.471E+00	3.276E+00	9.192E-01	1.621
	+	300.12		1.159E+00	5.286E-01	7.387E-01	1.018E-01	1.569
		311.98	*	3.899E-02	6.264E-02	1.086E-01	7.408E-03	0.359
		340.50		1.258E+00	6.951E-01	1.073E+00	2.478E-01	1.172
		398.62		9.153E-01	1.960E+00	3.318E+00	8.568E-01	0.276
		415.76		-7.347E-01	1.798E+00	2.475E+00	5.087E-01	-0.297
	PA-234	63.00		2.229E+00	2.046E+00	3.549E+00	6.234E-01	0.628
		94.67		9.351E-02	1.639E-01	2.779E-01	3.797E-02	0.336
		98.44		1.117E-01	1.129E-01	1.499E-01	8.388E-02	0.745
		99.86		6.026E-01	4.412E-01	7.702E-01	7.240E-02	0.782
		111.00		-3.600E-02	1.737E-01	2.839E-01	3.298E-02	-0.127
		131.20		-3.450E-02	1.148E-01	1.649E-01	1.106E-02	-0.209
		152.70		2.307E-01	3.113E-01	5.199E-01	8.347E-02	0.444

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	186.00		4.634E+00	2.566E+00	2.554E+00	7.838E-01	1.814
		226.40		9.131E-02	3.973E-01	6.394E-01	7.673E-02	0.143
		227.20		-2.066E-02	4.195E-01	6.646E-01	4.409E-02	-0.031
		248.90		-5.445E-01	8.350E-01	1.251E+00	2.720E-01	-0.435
	+	293.70		7.779E+00	1.765E+00	1.770E+00	2.901E-01	4.394
		369.80		3.358E-01	8.197E-01	1.392E+00	2.903E-01	0.241
		568.70		2.387E-01	8.640E-01	1.429E+00	7.724E-02	0.167
		569.50		1.699E-01	2.434E-01	4.173E-01	2.254E-02	0.407
		574.00		-1.049E+00	1.368E+00	2.030E+00	1.093E-01	-0.516
		699.00		-4.013E-01	6.585E-01	1.038E+00	1.852E-01	-0.387
		706.10		-3.386E-02	1.016E+00	1.697E+00	7.483E-01	-0.020
		733.00		1.415E-01	3.780E-01	5.755E-01	1.223E-01	0.246
		742.81		-2.019E-02	1.254E+00	2.090E+00	1.399E+00	-0.010
		796.30		6.740E-01	9.107E-01	1.579E+00	4.183E-01	0.427
		805.60		4.852E-01	1.029E+00	1.761E+00	5.316E-01	0.276
		819.60		-5.163E-01	1.259E+00	1.978E+00	7.455E-01	-0.261
		826.30		-8.245E-01	8.675E-01	1.158E+00	5.148E-01	-0.712
		831.60		1.993E-01	6.499E-01	1.101E+00	3.242E-01	0.181
		876.40		-3.041E-01	8.574E-01	1.262E+00	1.297E+00	-0.241
		880.51		-3.097E-01	2.678E-01	3.694E-01	2.936E-02	-0.838
		883.24		-2.668E-02	2.590E-01	4.207E-01	2.825E-01	-0.063
PA-234M		899.00		-4.676E-01	7.847E-01	1.157E+00	5.049E-01	-0.404
		925.00		3.920E-01	1.079E+00	1.843E+00	1.492E-01	0.213
		926.50		-5.144E-03	1.595E-01	2.609E-01	6.549E-02	-0.020
		946.00	*	3.335E-02	2.837E-01	4.708E-01	8.701E-02	0.071
		949.00		-8.091E-03	4.123E-01	6.739E-01	5.368E-02	-0.012
		980.50		-2.666E-01	6.711E-01	1.043E+00	8.100E-02	-0.256
		1394.10		4.676E-01	1.129E+00	1.922E+00	1.247E+00	0.243
		766.42		1.963E+01	1.619E+01	2.167E+01	1.092E+01	0.906
		1001.03	*	8.414E-01	4.371E+00	7.280E+00	6.637E-01	0.116
		63.29	*	1.399E+00	1.729E+00	2.982E+00	5.901E-01	0.469
TH-234		92.38		2.878E+00	1.015E+00	1.100E+00	2.118E-01	2.616
U-235	+	89.95		2.182E+00	1.688E+00	1.868E+00	5.935E-01	1.168
	+	93.35		3.460E+00	1.428E+00	1.280E+00	3.674E-01	2.703
		105.00		5.572E-01	9.863E-01	1.652E+00	4.930E-01	0.337
		143.76	*	1.496E-01	2.015E-01	3.371E-01	5.587E-02	0.444
NP-236		163.35		-1.684E-01	4.569E-01	7.247E-01	1.317E-01	-0.232
	+	185.71		1.716E-01	7.988E-02	9.349E-02	6.028E-03	1.836
		205.31		-1.988E-01	5.775E-01	7.997E-01	1.458E-01	-0.249
		94.67		7.240E-02	1.243E-01	2.110E-01	2.185E-02	0.343
		98.44		8.442E-02	7.157E-02	1.133E-01	1.092E-02	0.745
		111.00		-2.723E-02	1.313E-01	2.148E-01	1.706E-02	-0.127
U-238		160.31	*	-4.930E-02	7.899E-02	1.241E-01	7.924E-03	-0.397
		63.29	*	1.399E+00	1.729E+00	2.982E+00	5.901E-01	0.469
NP-239	+	92.38		2.878E+00	9.064E-01	1.100E+00	1.194E-01	2.616
		99.55		2.296E-01	1.551E-01	2.615E-01	2.471E-02	0.878
		117.00	*	-5.925E-02	1.774E-01	2.875E-01	2.115E-02	-0.206
	+	209.75		1.327E+00	1.127E+00	1.416E+00	9.301E-02	0.937
		228.18		-8.454E-02	2.223E-01	3.452E-01	2.291E-02	-0.245

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	277.60		2.572E-01	2.240E-01	3.175E-01	2.112E-02	0.810
		334.30		-3.841E-01	1.367E+00	1.958E+00	1.238E-01	-0.196
AM-241		59.54	*	-2.168E-02	2.144E-01	3.615E-01	4.564E-02	-0.060
CM-243		99.55		2.363E-01	1.596E-01	2.691E-01	2.543E-02	0.878
		103.76	*	-2.179E-02	8.730E-02	1.428E-01	1.259E-02	-0.153
		117.00		-6.096E-02	1.825E-01	2.958E-01	2.176E-02	-0.206
	+	209.75		1.309E+00	1.111E+00	1.396E+00	9.170E-02	0.937
		228.18		-8.543E-02	2.247E-01	3.488E-01	2.315E-02	-0.245
	+	277.60		2.593E-01	2.258E-01	3.201E-01	2.129E-02	0.810
AM-246		798.80		-1.490E-01	1.469E-01	2.213E-01	1.483E-02	-0.673
		1036.00		4.914E-02	2.849E-01	4.728E-01	3.476E-02	0.104
		1062.04		-1.566E-01	2.290E-01	3.413E-01	2.432E-02	-0.459
		1078.86	*	1.087E-02	1.479E-01	2.416E-01	1.684E-02	0.045
CM-247	+	278.00		1.067E+00	9.288E-01	1.311E+00	8.722E-02	0.813
		287.40		3.083E-01	1.127E+00	1.928E+00	1.276E-01	0.160
		402.60	*	-4.912E-03	3.426E-02	5.591E-02	3.155E-03	-0.088
CF-249		252.85		5.044E-01	7.961E-01	1.394E+00	9.307E-02	0.362
		333.44		-2.001E-01	2.041E-01	2.518E-01	1.594E-02	-0.795
		387.95	*	5.975E-03	3.941E-02	6.581E-02	3.739E-03	0.091
CF-251		176.60	*	-9.907E-03	1.214E-01	1.950E-01	1.248E-02	-0.051
		227.00		-3.974E-02	3.751E-01	5.923E-01	3.929E-02	-0.067
		285.00		-2.059E-01	1.573E+00	2.631E+00	1.744E-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]G244148016      *
* Acquisition date   : 20-JAN-2010 16:27:45 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 02:00:01.17 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244148016 Analyst initials: MXR1                  *
* Batch Number      : 940268 Sample Quantity : 1.2500E+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	2.002E+01	2.029E+00	5.236E-01	0.000E+00
CD-109	2.764E+00	1.056E+00	1.303E+00	0.000E+00
SN-126	2.712E-01	1.037E-01	1.289E-01	0.000E+00
BA-137M	9.411E-02	6.486E-02	5.461E-02	0.000E+00
CS-137	9.948E-02	6.856E-02	5.773E-02	0.000E+00
TL-208	4.883E-01	8.818E-02	5.853E-02	0.000E+00
BI-211	4.145E+00	5.265E-01	3.425E-01	0.000E+00
PB-212	1.480E+00	1.687E-01	1.292E-01	0.000E+00
PO-212	1.480E+00	1.687E-01	1.292E-01	0.000E+00
BI-214	1.244E+00	1.901E-01	1.051E-01	0.000E+00
PB-214	1.442E+00	1.974E-01	1.133E-01	0.000E+00
PO-214	1.442E+00	1.974E-01	1.133E-01	0.000E+00
PO-216	1.480E+00	1.687E-01	1.292E-01	0.000E+00
PO-218	1.442E+00	1.974E-01	1.133E-01	0.000E+00
RA-224	2.654E+00	9.431E-01	1.394E+00	0.000E+00
RA-226	1.244E+00	1.901E-01	1.051E-01	0.000E+00
AC-228	1.447E+00	2.896E-01	2.059E-01	0.000E+00
RA-228	1.447E+00	2.896E-01	2.059E-01	0.000E+00
TH-228	1.504E+00	1.714E-01	1.313E-01	0.000E+00
TH-230	1.244E+00	1.901E-01	1.051E-01	0.000E+00
TH-232	1.447E+00	2.896E-01	2.059E-01	0.000E+00
U-234	1.244E+00	1.901E-01	1.051E-01	0.000E+00
NP-237	7.965E-01	3.444E-01	3.856E-01	0.000E+00
AM-243	3.586E-01	9.786E-02	1.054E-01	0.000E+00
ANH-511	1.497E-01	6.352E-02	4.192E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-3.309E-01	3.192E-01	4.930E-01	0.000E+00 NOT IDENT.
NA-22	-1.868E-02	4.342E-02	7.079E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	1.981E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.188E-02	2.286E-02	4.677E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.510E-02	8.696E-02	0.000E+00	FAIL ABUN
SC-46	-2.700E-02	3.563E-02	5.494E-02	0.000E+00	FAIL ABUN
V-48	3.017E-02	6.289E-02	1.113E-01	0.000E+00	NOT IDENT.
CR-51	3.130E-01	3.598E-01	6.573E-01	0.000E+00	NOT IDENT.
MN-52	1.962E-01	2.013E-01	3.978E-01	0.000E+00	NOT IDENT.
MN-54	-2.338E-04	4.030E-02	6.850E-02	0.000E+00	NOT IDENT.
CO-56	-2.405E-02	3.841E-02	6.112E-02	0.000E+00	NOT IDENT.
CO-57	-8.467E-03	2.309E-02	3.935E-02	0.000E+00	NOT IDENT.
CO-58	-3.583E-02	3.534E-02	5.358E-02	0.000E+00	NOT IDENT.
FE-59	-3.166E-02	9.321E-02	1.486E-01	0.000E+00	NOT IDENT.
CO-60	1.266E-02	3.507E-02	6.251E-02	0.000E+00	NOT IDENT.
ZN-65	1.413E-02	9.839E-02	1.435E-01	0.000E+00	NOT IDENT.
GE-68	-8.046E-01	1.285E+00	1.984E+00	0.000E+00	NOT IDENT.
AS-73	2.791E-01	1.495E+00	2.732E+00	0.000E+00	NOT IDENT.
AS-74	7.118E-02	9.183E-02	1.623E-01	0.000E+00	NOT IDENT.
SE-75	1.987E-02	4.493E-02	7.238E-02	0.000E+00	NOT IDENT.
BR-77	2.315E+00	1.310E+01	2.229E+01	0.000E+00	FAIL ABUN
SR-82	-5.714E-01	3.563E-01	5.068E-01	0.000E+00	NOT IDENT.
RB-83	6.832E-03	6.405E-02	1.084E-01	0.000E+00	NOT IDENT.
RB-84	-2.289E-02	6.408E-02	1.013E-01	0.000E+00	NOT IDENT.
KR-85	9.934E+00	7.058E+00	1.192E+01	0.000E+00	NOT IDENT.
SR-85	5.151E-02	3.660E-02	6.180E-02	0.000E+00	NOT IDENT.
RB-86	-4.358E-01	8.350E-01	1.305E+00	0.000E+00	NOT IDENT.
Y-88	1.992E-03	3.146E-02	5.260E-02	0.000E+00	NOT IDENT.
ZR-88	3.749E-03	2.957E-02	5.117E-02	0.000E+00	NOT IDENT.
Y-91	1.287E+01	2.008E+01	3.500E+01	0.000E+00	NOT IDENT.
NB-94	1.003E-02	2.995E-02	5.316E-02	0.000E+00	NOT IDENT.
NB-95	4.168E-02	4.664E-02	7.646E-02	0.000E+00	NOT IDENT.
NB-95M	-9.646E-03	1.355E-01	1.985E-01	0.000E+00	NOT IDENT.
ZR-95	3.627E-03	7.149E-02	1.232E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.793E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.455E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.033E+00	1.416E+01	2.386E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.877E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.970E-02	3.231E-02	5.409E-02	0.000E+00	NOT IDENT.
RH-102	-5.390E-03	2.730E-02	4.538E-02	0.000E+00	NOT IDENT.
RU-103	6.547E-04	3.695E-02	6.229E-02	0.000E+00	FAIL ABUN
RH-106	1.022E-01	3.063E-01	5.209E-01	0.000E+00	FAIL ABUN
RU-106	1.022E-01	3.061E-01	5.209E-01	0.000E+00	FAIL ABUN
AG-108M	-1.572E-02	3.152E-02	5.165E-02	0.000E+00	NOT IDENT.
AG-110M	2.197E-02	3.523E-02	5.724E-02	0.000E+00	NOT IDENT.
IN-111	-2.817E-02	1.493E+00	2.187E+00	0.000E+00	NOT IDENT.
IN-113M	-3.502E-03	4.198E-02	7.164E-02	0.000E+00	NOT IDENT.
SN-113	-3.502E-03	4.198E-02	7.164E-02	0.000E+00	NOT IDENT.
IN-114M	9.292E-02	1.953E-01	3.021E-01	0.000E+00	NOT IDENT.
CD-115	1.511E+00	1.395E+01	2.358E+01	0.000E+00	NOT IDENT.
SN-117M	1.349E-02	5.610E-02	9.674E-02	0.000E+00	NOT IDENT.
SB-122	1.856E+00	2.670E+00	4.696E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.128E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.326E-02	2.730E-02	4.759E-02	0.000E+00	NOT IDENT.
I-124	5.550E-01	7.897E-01	1.242E+00	0.000E+00	FAIL ABUN
SB-124	-1.007E-02	7.533E-02	1.218E-01	0.000E+00	FAIL ABUN
SB-125	-1.891E-02	8.723E-02	1.463E-01	0.000E+00	FAIL ABUN
TE-125M	3.586E+00	8.931E+00	1.544E+01	0.000E+00	NOT IDENT.
I-126	-1.308E-02	1.881E-01	2.817E-01	0.000E+00	NOT IDENT.
SB-126	3.595E-02	1.542E-01	2.380E-01	0.000E+00	FAIL ABUN
SB-127	-2.761E-01	1.442E+00	2.452E+00	0.000E+00	FAIL ABUN
XE-127	-3.453E-02	4.650E-02	7.485E-02	0.000E+00	NOT IDENT.
I-131	-3.361E-02	1.185E-01	2.007E-01	0.000E+00	NOT IDENT.
TE-132	-3.158E-01	8.376E-01	1.360E+00	0.000E+00	NOT IDENT.
BA-133	1.099E-02	4.472E-02	6.950E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.340E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.696E-02	4.518E-02	8.364E-02	0.000E+00	NOT IDENT.
CS-135	1.805E-01	1.648E-01	2.751E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.191E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.621E-02	1.056E-01	1.706E-01	0.000E+00	FAIL ABUN
CE-139	2.134E-03	2.828E-02	4.827E-02	0.000E+00	NOT IDENT.
BA-140	8.978E-02	2.681E-01	4.542E-01	0.000E+00	NOT IDENT.
LA-140	-4.012E-02	1.047E-01	1.559E-01	0.000E+00	FAIL ABUN
CE-141	-1.953E-02	5.994E-02	1.013E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.639E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	9.863E-02	2.007E-01	3.374E-01	0.000E+00	NOT IDENT.
PM-144	-5.531E-03	2.976E-02	5.058E-02	0.000E+00	NOT IDENT.
PR-144	-3.750E-01	2.018E+00	3.429E+00	0.000E+00	NOT IDENT.
PM-146	2.567E-02	4.610E-02	8.028E-02	0.000E+00	NOT IDENT.
ND-147	2.489E-01	5.602E-01	9.720E-01	0.000E+00	FAIL ABUN

PM-149	-3.176E+01	1.144E+02	1.977E+02	0.000E+00	NOT IDENT.
EU-152	-8.393E-02	8.936E-02	1.452E-01	0.000E+00	NOT IDENT.
GD-153	-3.376E-02	8.135E-02	1.249E-01	0.000E+00	NOT IDENT.
EU-154	-3.979E-02	1.198E-01	1.973E-01	0.000E+00	NOT IDENT.
EU-155	4.374E-02	9.721E-02	1.735E-01	0.000E+00	FAIL ABUN
TB-160	-5.841E-02	1.253E-01	2.008E-01	0.000E+00	FAIL ABUN
HO-166M	2.575E-02	5.850E-02	1.044E-01	0.000E+00	FAIL ABUN
TM-171	-1.793E+01	3.298E+01	5.775E+01	0.000E+00	NOT IDENT.
LU-176	2.289E-03	2.228E-02	3.919E-02	0.000E+00	FAIL ABUN
LU-177	2.090E+00	1.739E+00	2.246E+00	0.000E+00	FAIL ABUN
LU-177M	1.945E-01	1.883E-01	3.095E-01	0.000E+00	FAIL ABUN
HF-181	1.414E-03	4.225E-02	7.148E-02	0.000E+00	NOT IDENT.
W-181	-4.279E-01	4.565E-01	7.758E-01	0.000E+00	NOT IDENT.
TA-182	2.336E-02	1.870E-01	3.246E-01	0.000E+00	FAIL ABUN
RE-183	2.660E-02	1.038E-01	1.790E-01	0.000E+00	FAIL ABUN
RE-184	1.350E-01	2.088E-01	3.820E-01	0.000E+00	NOT IDENT.
OS-185	-1.996E-03	4.005E-02	6.937E-02	0.000E+00	NOT IDENT.
RE-188	2.207E-02	1.686E-01	2.897E-01	0.000E+00	NOT IDENT.
W-188	-2.527E+00	7.583E+00	1.143E+01	0.000E+00	NOT IDENT.
IR-192	-1.137E-03	3.279E-02	5.708E-02	0.000E+00	FAIL ABUN
AU-195	3.770E-01	2.279E-01	3.893E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.622E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	7.023E-01	8.483E+00	1.447E+01	0.000E+00	NOT IDENT.
TL-202	4.272E-02	7.343E-02	1.299E-01	0.000E+00	NOT IDENT.
HG-203	1.398E-02	4.121E-02	6.566E-02	0.000E+00	NOT IDENT.
BI-207	1.578E-02	5.100E-02	8.764E-02	0.000E+00	FAIL ABUN
TL-207	-2.526E-01	6.821E-01	1.011E+00	0.000E+00	FAIL ABUN
PO-209	-3.352E+00	6.459E+00	1.024E+01	0.000E+00	NOT IDENT.
BI-210	2.634E+00	9.029E+00	1.663E+01	0.000E+00	NOT IDENT.
PB-210	2.634E+00	9.029E+00	1.663E+01	0.000E+00	NOT IDENT.
PO-210	2.634E+00	9.028E+00	1.663E+01	0.000E+00	NOT IDENT.
PB-211	8.578E-01	1.043E+00	1.487E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.545E-01	7.053E-01	0.000E+00	FAIL ABUN
PO-215	-2.526E-01	6.821E-01	1.011E+00	0.000E+00	FAIL ABUN
RN-219	-1.514E-01	3.797E-01	6.310E-01	0.000E+00	FAIL ABUN
RN-220	1.485E+01	2.470E+01	4.333E+01	0.000E+00	NOT IDENT.
RA-223	-2.526E-01	6.821E-01	1.011E+00	0.000E+00	FAIL ABUN
AC-227	-1.726E-01	3.457E-01	5.951E-01	0.000E+00	FAIL ABUN
TH-227	-1.726E-01	3.461E-01	5.951E-01	0.000E+00	FAIL ABUN
TH-229	-8.929E-02	4.770E-01	7.945E-01	0.000E+00	FAIL ABUN
PA-231	2.341E-01	1.346E+00	2.390E+00	0.000E+00	FAIL ABUN
TH-231	-2.526E-01	6.821E-01	1.011E+00	0.000E+00	FAIL ABUN
U-231	-3.039E-01	1.271E+00	1.975E+00	0.000E+00	FAIL ABUN
PA-233	3.899E-02	6.139E-02	1.109E-01	0.000E+00	FAIL ABUN
PA-234	3.335E-02	2.780E-01	4.734E-01	0.000E+00	FAIL ABUN
PA-234M	8.414E-01	4.283E+00	7.313E+00	0.000E+00	NOT IDENT.
TH-234	1.399E+00	1.694E+00	3.112E+00	0.000E+00	FAIL ABUN
U-235	1.496E-01	1.974E-01	3.478E-01	0.000E+00	FAIL ABUN
NP-236	-4.930E-02	7.741E-02	1.279E-01	0.000E+00	NOT IDENT.
U-238	1.399E+00	1.694E+00	3.112E+00	0.000E+00	FAIL ABUN
NP-239	-5.925E-02	1.739E-01	2.975E-01	0.000E+00	FAIL ABUN
AM-241	-2.168E-02	2.101E-01	3.775E-01	0.000E+00	NOT IDENT.
CM-243	-2.179E-02	8.555E-02	1.480E-01	0.000E+00	FAIL ABUN
AM-246	1.087E-02	1.449E-01	2.425E-01	0.000E+00	NOT IDENT.
CM-247	-4.912E-03	3.357E-02	5.689E-02	0.000E+00	FAIL ABUN
CF-249	5.975E-03	3.862E-02	6.700E-02	0.000E+00	NOT IDENT.
CF-251	-9.907E-03	1.190E-01	2.007E-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]G244148016.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 16:27:45
Sample ID          : G244148016          Sample quantity  : 1.25000E+02 GRAM
Detector name      : GAM04              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.17  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	765	10.67*	1.075E+00	2.002E+01	2.002E+01	10.34
CD-109	88.03	168	3.72*	5.014E+00	2.698E+00	2.764E+00	39.00
SN-126	64.28	-----	9.60	2.203E+00	-----	Line Not Found	-----
	86.94	168	8.90	5.014E+00	1.128E+00	1.128E+00	56.19
	87.57	168	37.00*	5.014E+00	2.712E-01	2.712E-01	39.00
BA-137M	661.65	62	89.98*	2.207E+00	9.401E-02	9.411E-02	70.32
CS-137	661.65	62	85.12*	2.207E+00	9.938E-02	9.948E-02	70.33
TL-208	277.35	52	6.80	4.328E+00	5.333E-01	5.333E-01	87.52
	510.84	136	21.60	2.730E+00	6.930E-01	6.930E-01	44.10
	583.14	336	84.20*	2.455E+00	4.883E-01	4.883E-01	18.43
	860.37	28	12.46	1.743E+00	3.814E-01	3.814E-01	96.63
BI-211	72.87	-----	1.27	3.384E+00	-----	Line Not Found	-----
	351.07	648	12.94*	3.626E+00	4.145E+00	4.145E+00	12.96
PB-212	74.81	287	10.70	3.637E+00	2.212E+00	2.212E+00	29.37
	77.11	470	18.00	3.926E+00	1.996E+00	1.996E+00	18.03
	87.30	168	8.00	5.014E+00	1.254E+00	1.254E+00	40.27
	238.63	1061	44.60*	4.827E+00	1.480E+00	1.480E+00	11.63
	300.09	104	3.41	4.081E+00	2.244E+00	2.244E+00	44.34
PO-212	74.81	287	10.70	3.637E+00	2.212E+00	2.212E+00	29.37
	77.11	470	18.00	3.926E+00	1.996E+00	1.996E+00	18.03
	87.30	168	8.00	5.014E+00	1.254E+00	1.254E+00	40.27
	115.19	-----	0.60	6.408E+00	-----	Line Not Found	-----
	238.63	1061	44.60*	4.827E+00	1.480E+00	1.480E+00	11.63
	300.09	104	3.41	4.081E+00	2.244E+00	2.244E+00	44.34
BI-214	609.31	454	46.30*	2.367E+00	1.244E+00	1.244E+00	15.60
	1120.29	80	15.10	1.357E+00	1.177E+00	1.177E+00	49.35
	1764.49	59	15.80	9.529E-01	1.181E+00	1.181E+00	43.83
PB-214	74.81	287	6.21	3.637E+00	3.811E+00	3.811E+00	28.82
	77.11	470	10.50	3.926E+00	3.422E+00	3.422E+00	19.58
	87.30	168	4.67	5.014E+00	2.149E+00	2.149E+00	39.76
	241.98	167	7.49	4.779E+00	1.400E+00	1.400E+00	36.69
	295.21	428	19.20	4.132E+00	1.621E+00	1.621E+00	18.14

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	648	37.20*	3.626E+00	1.442E+00	1.442E+00	13.97
	74.81	287	6.21	3.637E+00	3.811E+00	3.811E+00	28.82
	77.11	470	10.50	3.926E+00	3.422E+00	3.422E+00	19.58
	87.30	168	4.67	5.014E+00	2.149E+00	2.149E+00	39.76
	241.98	167	7.49	4.779E+00	1.400E+00	1.400E+00	36.69
PO-216	295.21	428	19.20	4.132E+00	1.621E+00	1.621E+00	18.14
	351.92	648	37.20*	3.626E+00	1.442E+00	1.442E+00	13.97
	74.81	287	10.70	3.637E+00	2.212E+00	2.212E+00	29.37
	77.11	470	18.00	3.926E+00	1.996E+00	1.996E+00	18.03
	87.30	168	8.00	5.014E+00	1.254E+00	1.254E+00	40.27
PO-218	238.63	1061	44.60*	4.827E+00	1.480E+00	1.480E+00	11.63
	300.09	104	3.41	4.081E+00	2.244E+00	2.244E+00	44.34
	74.81	287	6.21	3.637E+00	3.811E+00	3.811E+00	28.82
	77.11	470	10.50	3.926E+00	3.422E+00	3.422E+00	19.58
	87.30	168	4.67	5.014E+00	2.149E+00	2.149E+00	39.76
RA-224	241.98	167	7.49	4.779E+00	1.400E+00	1.400E+00	36.69
	295.21	428	19.20	4.132E+00	1.621E+00	1.621E+00	18.14
	351.92	648	37.20*	3.626E+00	1.442E+00	1.442E+00	13.97
	240.98	167	3.95*	4.779E+00	2.654E+00	2.654E+00	36.26
	609.31	454	46.30*	2.367E+00	1.244E+00	1.244E+00	15.60
AC-228	1120.29	80	15.10	1.357E+00	1.177E+00	1.177E+00	49.35
	1764.49	59	15.80	9.529E-01	1.181E+00	1.181E+00	43.83
	338.32	205	11.40	3.735E+00	1.443E+00	1.443E+00	48.32
	911.07	221	27.70*	1.653E+00	1.447E+00	1.447E+00	20.42
	969.11	145	16.60	1.559E+00	1.683E+00	1.683E+00	34.44
RA-228	338.32	205	11.40	3.735E+00	1.443E+00	1.443E+00	48.32
	911.07	221	27.70*	1.653E+00	1.447E+00	1.447E+00	20.42
	969.11	145	16.60	1.559E+00	1.683E+00	1.683E+00	34.44
	74.81	287	10.70	3.637E+00	2.212E+00	2.248E+00	27.87
	77.11	470	18.00	3.926E+00	1.996E+00	2.029E+00	18.03
TH-228	87.30	168	8.00	5.014E+00	1.254E+00	1.275E+00	39.00
	238.63	1061	44.60*	4.827E+00	1.480E+00	1.504E+00	11.63
	300.09	104	3.41	4.081E+00	2.244E+00	2.280E+00	73.29
	609.31	454	46.30*	2.367E+00	1.244E+00	1.244E+00	15.60
	1120.29	80	15.10	1.357E+00	1.177E+00	1.177E+00	49.35
TH-230	1764.49	59	15.80	9.529E-01	1.181E+00	1.181E+00	43.83
	338.32	205	11.40	3.735E+00	1.443E+00	1.443E+00	26.58
	911.07	221	27.70*	1.653E+00	1.447E+00	1.447E+00	20.42
	969.11	145	16.60	1.559E+00	1.683E+00	1.683E+00	34.44
	609.31	454	46.30*	2.367E+00	1.244E+00	1.244E+00	15.60
U-234	1120.29	80	15.10	1.357E+00	1.177E+00	1.177E+00	49.35
	1764.49	59	15.80	9.529E-01	1.181E+00	1.181E+00	43.83
	86.50	168	12.60*	5.014E+00	7.965E-01	7.965E-01	44.13
	95.87	-----	2.60	5.678E+00	-----	Line Not Found	-----
	74.67	287	66.00*	3.637E+00	3.586E-01	3.586E-01	27.85
AM-243	86.72	168	0.34	5.014E+00	2.987E+01	2.987E+01	39.00
	117.66	-----	0.55	6.445E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.417E+00	-----	Line Not Found	-----
	511.00	136	100.00*	2.730E+00	1.497E-01	1.497E-01	43.30



Nuclide Line Activity Report (continued)  
Sample ID : G244148016

Page : 3  
Acquisition date : 20-JAN-2010 16:27:45

Flag: "\*" = Keyline

Total number of lines in spectrum 34  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 31 91.18%

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	2.002E+01	2.002E+01	0.207E+01	10.34	
CD-109	464.00D	1.02	2.698E+00	2.764E+00	1.078E+00	39.00	
SN-126	1.00E+05Y	1.00	2.712E-01	2.712E-01	1.058E-01	39.00	
BA-137M	30.17Y	1.00	9.401E-02	9.411E-02	6.618E-02	70.32	
CS-137	30.17Y	1.00	9.938E-02	9.948E-02	6.996E-02	70.33	
TL-208	1.41E+10Y	1.00	4.883E-01	4.883E-01	0.900E-01	18.43	
BI-211	7.04E+08Y	1.00	4.145E+00	4.145E+00	0.537E+00	12.96	
PB-212	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.172E+00	11.63	
PO-212	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.172E+00	11.63	
BI-214	1600.00Y	1.00	1.244E+00	1.244E+00	0.194E+00	15.60	
PB-214	1600.00Y	1.00	1.442E+00	1.442E+00	0.201E+00	13.97	
PO-214	1600.00Y	1.00	1.442E+00	1.442E+00	0.201E+00	13.97	
PO-216	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.172E+00	11.63	
PO-218	1600.00Y	1.00	1.442E+00	1.442E+00	0.201E+00	13.97	
RA-224	1.41E+10Y	1.00	2.654E+00	2.654E+00	0.962E+00	36.26	
RA-226	1600.00Y	1.00	1.244E+00	1.244E+00	0.194E+00	15.60	
AC-228	1.41E+10Y	1.00	1.447E+00	1.447E+00	0.296E+00	20.42	
RA-228	1.41E+10Y	1.00	1.447E+00	1.447E+00	0.296E+00	20.42	
TH-228	1.91Y	1.02	1.480E+00	1.504E+00	0.175E+00	11.63	
TH-230	4.47E+09Y	1.00	1.244E+00	1.244E+00	0.194E+00	15.60	
TH-232	1.41E+10Y	1.00	1.447E+00	1.447E+00	0.296E+00	20.42	
U-234	4.47E+09Y	1.00	1.244E+00	1.244E+00	0.194E+00	15.60	
NP-237	2.14E+06Y	1.00	7.965E-01	7.965E-01	3.515E-01	44.13	
AM-243	7380.00Y	1.00	3.586E-01	3.586E-01	0.999E-01	27.85	
ANH-511	1.00E+09Y	1.00	1.497E-01	1.497E-01	0.648E-01	43.30	

Total Activity : 5.134E+01 5.143E+01

Grand Total Activity : 5.134E+01 5.143E+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	89.85	103	409	1.28	179.75	169	25	1.43E-02	70.5	5.24E+00	T
5	92.82	284	370	1.46	185.68	169	25	3.94E-02	29.6	5.47E+00	T
0	128.98	62	261	1.34	258.01	255	7	8.61E-03	90.0	6.50E+00	T
0	185.96	176	377	1.40	371.99	368	11	2.44E-02	46.1	5.70E+00	T
0	209.39	76	291	1.05	418.84	414	9	1.05E-02	84.6	5.28E+00	T
0	269.82	84	221	0.73	539.72	535	10	1.16E-02	69.8	4.41E+00	T
0	328.04	31	193	1.14	656.17	650	10	4.32E-03	****	3.82E+00	T
0	410.37	44	164	4.15	820.83	815	14	6.09E-03	****	3.23E+00	T
0	463.75	93	78	1.16	927.60	923	12	1.28E-02	43.9	2.94E+00	T
0	727.00	138	37	1.97	1454.08	1447	15	1.92E-02	25.7	2.03E+00	T
0	768.55	36	67	1.12	1537.18	1530	11	4.93E-03	96.2	1.93E+00	
0	1377.69	26	11	2.24	2755.31	2749	11	3.61E-03	63.1	1.13E+00	T
0	1496.35	13	3	0.59	2992.57	2989	6	1.79E-03	70.3	1.06E+00	
0	1588.67	12	18	1.89	3177.17	3171	12	1.67E-03	****	1.01E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148016.CNF;1
* Acquisition date   : 20-JAN-2010 16:27:45  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 02:00:01.17             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244148016             Analyst initials: MXR1
* Batch Number       : 940268                 Sample Quantity : 1.25000E+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	2.002E+01	2.071E+00	5.241E-01	3.724E-02	38.207
CD-109	2.764E+00	1.078E+00	1.254E+00	1.508E-01	2.203
SN-126	2.712E-01	1.058E-01	1.240E-01	1.488E-02	2.187
BA-137M	9.411E-02	6.618E-02	5.404E-02	2.636E-03	1.741
CS-137	9.948E-02	6.996E-02	5.713E-02	2.803E-03	1.741
TL-208	4.883E-01	8.998E-02	5.782E-02	3.638E-03	8.445
BI-211	4.145E+00	5.373E-01	3.360E-01	2.270E-02	12.335
PB-212	1.480E+00	1.721E-01	1.261E-01	1.012E-02	11.738
PO-212	1.480E+00	1.721E-01	1.261E-01	1.012E-02	11.738
BI-214	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
PB-214	1.442E+00	2.015E-01	1.111E-01	9.480E-03	12.973
PO-214	1.442E+00	2.015E-01	1.111E-01	9.480E-03	12.973
PO-216	1.480E+00	1.721E-01	1.261E-01	1.012E-02	11.738
PO-218	1.442E+00	2.015E-01	1.111E-01	9.480E-03	12.973
RA-224	2.654E+00	9.623E-01	1.361E+00	9.072E-02	1.950
RA-226	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
AC-228	1.447E+00	2.956E-01	2.047E-01	2.232E-02	7.070
RA-228	1.447E+00	2.956E-01	2.047E-01	2.232E-02	7.070

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.504E+00	1.749E-01	1.281E-01	1.029E-02	11.738
TH-230	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
TH-232	1.447E+00	2.956E-01	2.047E-01	2.232E-02	7.070
U-234	1.244E+00	1.940E-01	1.039E-01	7.632E-03	11.976
NP-237	7.965E-01	3.515E-01	3.711E-01	8.841E-02	2.146
AM-243	3.586E-01	9.985E-02	1.012E-01	1.159E-02	3.543
ANH-511	1.497E-01	6.482E-02	4.133E-02	2.312E-03	3.621

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.309E-01		3.258E-01	4.857E-01	3.217E-02	-0.681
NA-22	-1.868E-02		4.430E-02	7.071E-02	4.623E-03	-0.264
NA-24	-7.421E-01		1.011E+00	Half-Life too short		
AL-26	2.188E-02		2.333E-02	4.695E-02	2.785E-03	0.466
TI-44	3.684E-01	+	6.643E-02	8.359E-02	9.612E-03	4.407
SC-46	-2.700E-02		3.636E-02	5.460E-02	4.416E-03	-0.494
V-48	3.017E-02		6.417E-02	1.108E-01	8.585E-03	0.272
CR-51	3.130E-01		3.672E-01	6.440E-01	4.535E-02	0.486
MN-52	1.962E-01		2.055E-01	3.980E-01	2.716E-02	0.493
MN-54	-2.338E-04		4.112E-02	6.801E-02	4.922E-03	-0.003
CO-56	-2.405E-02		3.919E-02	6.070E-02	4.503E-03	-0.396
CO-57	-8.467E-03		2.357E-02	3.805E-02	2.641E-03	-0.223
CO-58	-3.583E-02		3.606E-02	5.318E-02	3.671E-03	-0.674
FE-59	-3.166E-02		9.511E-02	1.481E-01	1.132E-02	-0.214
CO-60	1.266E-02		3.578E-02	6.248E-02	4.281E-03	0.203
ZN-65	1.413E-02		1.004E-01	1.431E-01	9.467E-03	0.099
GE-68	-8.046E-01		1.311E+00	1.977E+00	1.381E-01	-0.407
AS-73	2.791E-01		1.525E+00	2.613E+00	3.418E-01	0.107
AS-74	7.118E-02		9.370E-02	1.604E-01	8.467E-03	0.444
SE-75	1.987E-02		4.585E-02	7.072E-02	4.757E-03	0.281
BR-77	2.315E+00		1.336E+01	2.199E+01	1.224E+00	0.105
SR-82	-5.714E-01		3.636E-01	5.026E-01	3.208E-02	-1.137
RB-83	6.832E-03		6.536E-02	1.069E-01	5.954E-03	0.064
RB-84	-2.289E-02		6.539E-02	1.007E-01	8.017E-03	-0.227
KR-85	9.934E+00		7.203E+00	1.175E+01	6.565E-01	0.845
SR-85	5.151E-02		3.735E-02	6.095E-02	3.404E-03	0.845
RB-86	-4.358E-01		8.521E-01	1.301E+00	9.093E-02	-0.335
Y-88	1.992E-03		3.211E-02	5.282E-02	3.082E-03	0.038
ZR-88	3.749E-03		3.017E-02	5.027E-02	2.829E-03	0.075
Y-91	1.287E+01		2.049E+01	3.493E+01	2.141E+00	0.368
NB-94	1.003E-02		3.056E-02	5.265E-02	2.836E-03	0.190
NB-95	4.168E-02		4.759E-02	7.583E-02	4.726E-03	0.550
NB-95M	-9.646E-03		1.383E-01	1.937E-01	1.589E-02	-0.050
ZR-95	3.627E-03		7.295E-02	1.221E-01	8.893E-03	0.030
NB-97	1.606E-01		1.425E-01	Half-Life too short		
ZR-97	3.798E+00		2.783E+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	-3.033E+00		1.445E+01	2.365E+01	3.266E+00	-0.128
TC-99M	-3.607E+11		3.509E+11	Half-Life too short		
RH-101	1.970E-02		3.297E-02	5.264E-02	3.428E-03	0.374
RH-102	-5.390E-03		2.786E-02	4.470E-02	2.528E-03	-0.121
RU-103	6.547E-04		3.771E-02	6.140E-02	7.714E-03	0.011
RH-106	1.022E-01		3.126E-01	5.150E-01	5.884E-02	0.198
RU-106	1.022E-01		3.124E-01	5.150E-01	2.646E-02	0.198
AG-108M	-1.572E-02		3.217E-02	5.081E-02	3.139E-03	-0.309
AG-110M	2.197E-02		3.595E-02	5.664E-02	3.026E-03	0.388
IN-111	-2.817E-02		1.523E+00	2.135E+00	1.425E-01	-0.013
IN-113M	-3.502E-03		4.284E-02	7.038E-02	4.241E-03	-0.050
SN-113	-3.502E-03		4.284E-02	7.038E-02	4.241E-03	-0.050
IN-114M	9.292E-02		1.993E-01	2.939E-01	1.902E-02	0.316
CD-115	1.511E+00		1.424E+01	2.327E+01	1.291E+00	0.065
SN-117M	1.349E-02		5.725E-02	9.387E-02	6.004E-03	0.144
SB-122	1.856E+00		2.725E+00	4.637E+00	2.516E-01	0.400
I-123	1.034E+01		1.086E+01	Half-Life too short		
TE-123M	1.326E-02		2.786E-02	4.618E-02	2.985E-03	0.287
I-124	5.550E-01		8.059E-01	1.228E+00	6.440E-02	0.452
SB-124	-1.007E-02		7.687E-02	1.222E-01	8.304E-03	-0.082
SB-125	-1.891E-02		8.901E-02	1.439E-01	8.517E-03	-0.131
TE-125M	3.586E+00		9.114E+00	1.491E+01	1.480E+00	0.241
I-126	-1.308E-02		1.919E-01	2.788E-01	1.376E-02	-0.047
SB-126	3.595E-02		1.574E-01	2.359E-01	1.325E-02	0.152
SB-127	-2.761E-01		1.471E+00	2.427E+00	2.294E-01	-0.114
XE-127	-3.453E-02		4.745E-02	7.287E-02	4.763E-03	-0.474
I-131	-3.361E-02		1.209E-01	1.970E-01	1.313E-02	-0.171
TE-132	-3.158E-01		8.547E-01	1.326E+00	1.981E-01	-0.238
BA-133	1.099E-02		4.564E-02	6.818E-02	7.987E-03	0.161
I-133	1.190E-03		6.836E-03	Half-Life too short		
CS-134	4.696E-02		4.610E-02	8.299E-02	5.593E-03	0.566
CS-135	1.805E-01		1.682E-01	2.688E-01	2.241E-02	0.671
I-135	-3.336E+10		3.669E+10	Half-Life too short		
CS-136	-2.621E-02		1.077E-01	1.699E-01	1.305E-02	-0.154
CE-139	2.134E-03		2.886E-02	4.687E-02	2.978E-03	0.046
BA-140	8.978E-02		2.735E-01	4.482E-01	1.455E-01	0.200
LA-140	-4.012E-02		1.069E-01	1.562E-01	1.029E-02	-0.257
CE-141	-1.953E-02		6.116E-02	9.813E-02	6.587E-03	-0.199
CE-143	1.116E-03		1.857E-04	Half-Life too short		
CE-144	9.863E-02		2.048E-01	3.267E-01	4.761E-02	0.302
PM-144	-5.531E-03		3.037E-02	5.009E-02	2.662E-03	-0.110
PR-144	-3.750E-01		2.059E+00	3.396E+00	1.803E-01	-0.110
PM-146	2.567E-02		4.704E-02	7.903E-02	6.745E-03	0.325
ND-147	2.489E-01		5.716E-01	9.589E-01	1.286E-01	0.260
PM-149	-3.176E+01		1.167E+02	1.934E+02	2.811E+01	-0.164
EU-152	-8.393E-02		9.119E-02	1.424E-01	9.853E-03	-0.590
GD-153	-3.376E-02		8.301E-02	1.204E-01	1.182E-02	-0.280
EU-154	-3.979E-02		1.222E-01	1.971E-01	1.934E-02	-0.202

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	4.374E-02		9.919E-02	1.674E-01	1.459E-02	0.261
TB-160	-5.841E-02		1.278E-01	1.995E-01	1.582E-02	-0.293
HO-166M	2.575E-02		5.969E-02	1.035E-01	5.694E-03	0.249
TM-171	-1.793E+01		3.365E+01	5.539E+01	6.476E+00	-0.324
LU-176	2.289E-03		2.273E-02	3.837E-02	2.505E-03	0.060
LU-177	2.090E+00	+	1.774E+00	2.187E+00	1.435E-01	0.956
LU-177M	1.945E-01		1.921E-01	3.043E-01	1.721E-02	0.639
HF-181	1.414E-03		4.311E-02	7.043E-02	3.976E-03	0.020
W-181	-4.279E-01		4.658E-01	7.438E-01	8.767E-02	-0.575
TA-182	2.336E-02		1.909E-01	3.241E-01	2.017E-02	0.072
RE-183	2.660E-02		1.059E-01	1.737E-01	1.107E-02	0.153
RE-184	1.350E-01		2.131E-01	3.730E-01	2.491E-02	0.362
OS-185	-1.996E-03		4.087E-02	6.863E-02	3.421E-03	-0.029
RE-188	2.207E-02		1.721E-01	2.811E-01	1.805E-02	0.079
W-188	-2.527E+00		7.738E+00	1.118E+01	7.391E-01	-0.226
IR-192	-1.137E-03		3.345E-02	5.591E-02	3.630E-03	-0.020
AU-195	3.770E-01		2.326E-01	3.753E-01	3.589E-02	1.004
TL-200	-2.090E-04		4.399E-04	Half-Life too short		
TL-201	7.023E-01		8.656E+00	1.405E+01	8.934E-01	0.050
TL-202	4.272E-02		7.493E-02	1.278E-01	7.248E-03	0.334
HG-203	1.398E-02		4.205E-02	6.421E-02	4.470E-03	0.218
BI-207	1.578E-02		5.204E-02	8.732E-02	6.210E-03	0.181
TL-207	-2.526E-01		6.961E-01	9.907E-01	1.658E-01	-0.255
PO-209	-3.352E+00		6.591E+00	1.018E+01	8.355E-01	-0.329
BI-210	2.634E+00		9.213E+00	1.588E+01	1.384E+00	0.166
PB-210	2.634E+00		9.213E+00	1.588E+01	1.384E+00	0.166
PO-210	2.634E+00		9.212E+00	1.588E+01	1.233E+00	0.166
PB-211	8.578E-01		1.065E+00	1.461E+00	9.109E-01	0.587
BI-212	1.728E+00	+	4.638E-01	6.989E-01	5.342E-02	2.472
PO-215	-2.526E-01		6.961E-01	9.907E-01	1.658E-01	-0.255
RN-219	-1.514E-01		3.875E-01	6.201E-01	8.396E-02	-0.244
RN-220	1.485E+01		2.520E+01	4.277E+01	2.343E+00	0.347
RA-223	-2.526E-01		6.961E-01	9.907E-01	1.658E-01	-0.255
AC-227	-1.726E-01		3.528E-01	5.812E-01	8.339E-02	-0.297
TH-227	-1.726E-01		3.532E-01	5.812E-01	1.001E-01	-0.297
TH-229	-8.929E-02		4.868E-01	7.730E-01	5.017E-02	-0.116
PA-231	2.341E-01		1.373E+00	2.337E+00	3.307E-01	0.100
TH-231	-2.526E-01		6.961E-01	9.907E-01	1.658E-01	-0.255
U-231	-3.039E-01		1.297E+00	1.903E+00	1.924E-01	-0.160
PA-233	3.899E-02		6.264E-02	1.086E-01	7.408E-03	0.359
PA-234	3.335E-02		2.837E-01	4.708E-01	8.701E-02	0.071
PA-234M	8.414E-01		4.371E+00	7.280E+00	6.637E-01	0.116
TH-234	1.399E+00		1.729E+00	2.982E+00	5.901E-01	0.469
U-235	1.496E-01		2.015E-01	3.371E-01	5.587E-02	0.444
NP-236	-4.930E-02		7.899E-02	1.241E-01	7.924E-03	-0.397
U-238	1.399E+00		1.729E+00	2.982E+00	5.901E-01	0.469
NP-239	-5.925E-02		1.774E-01	2.875E-01	2.115E-02	-0.206
AM-241	-2.168E-02		2.144E-01	3.615E-01	4.564E-02	-0.060

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.179E-02		8.730E-02	1.428E-01	1.259E-02	-0.153
AM-246	1.087E-02		1.479E-01	2.416E-01	1.684E-02	0.045
CM-247	-4.912E-03		3.426E-02	5.591E-02	3.155E-03	-0.088
CF-249	5.975E-03		3.941E-02	6.581E-02	3.739E-03	0.091
CF-251	-9.907E-03		1.214E-01	1.950E-01	1.248E-02	-0.051



# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G244148016          *
* Acquisition date   : 20-JAN-2010 16:27:45 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 02:00:01.17                Half life ratio : 8.000    *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148016                Analyst initials: MXR1      *
* Batch Number       : 940268                     Sample Quantity : 1.2500E+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	2.002E+01	2.029E+00	2.620E-01	1.035E+00
CD-109	2.764E+00	1.056E+00	6.519E-01	5.390E-01
SN-126	2.712E-01	1.037E-01	6.447E-02	5.290E-02
BA-137M	9.411E-02	6.486E-02	2.732E-02	3.309E-02
CS-137	9.948E-02	6.856E-02	2.888E-02	3.498E-02
TL-208	4.883E-01	8.818E-02	2.928E-02	4.499E-02
BI-211	4.145E+00	5.265E-01	1.714E-01	2.686E-01
PB-212	1.480E+00	1.687E-01	6.464E-02	8.607E-02
PO-212	1.480E+00	1.687E-01	6.464E-02	8.607E-02
BI-214	1.244E+00	1.901E-01	5.256E-02	9.699E-02
PB-214	1.442E+00	1.974E-01	5.668E-02	1.007E-01
PO-214	1.442E+00	1.974E-01	5.668E-02	1.007E-01
PO-216	1.480E+00	1.687E-01	6.464E-02	8.607E-02
PO-218	1.442E+00	1.974E-01	5.668E-02	1.007E-01
RA-224	2.654E+00	9.431E-01	6.976E-01	4.812E-01
RA-226	1.244E+00	1.901E-01	5.256E-02	9.699E-02
AC-228	1.447E+00	2.896E-01	1.030E-01	1.478E-01
RA-228	1.447E+00	2.896E-01	1.030E-01	1.478E-01
TH-228	1.504E+00	1.714E-01	6.569E-02	8.747E-02
TH-230	1.244E+00	1.901E-01	5.256E-02	9.699E-02
TH-232	1.447E+00	2.896E-01	1.030E-01	1.478E-01
U-234	1.244E+00	1.901E-01	5.256E-02	9.699E-02
NP-237	7.965E-01	3.444E-01	1.929E-01	1.757E-01
AM-243	3.586E-01	9.786E-02	5.271E-02	4.993E-02
ANH-511	1.497E-01	6.352E-02	2.097E-02	3.241E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-3.309E-01	3.192E-01	2.466E-01	1.629E-01 NOT IDENT.
NA-22	-1.868E-02	4.342E-02	3.542E-02	2.215E-02 NOT IDENT.

NA-24	-7.421E+05	1.981E+06	0.000E+00	1.011E+06	SHORT HLIF
AL-26	2.188E-02	2.286E-02	2.340E-02	1.167E-02	NOT IDENT.
TI-44	3.684E-01	6.510E-02	4.351E-02	3.321E-02	FAIL ABUN
SC-46	-2.700E-02	3.563E-02	2.748E-02	1.818E-02	FAIL ABUN
V-48	3.017E-02	6.289E-02	5.570E-02	3.208E-02	NOT IDENT.
CR-51	3.130E-01	3.598E-01	3.289E-01	1.836E-01	NOT IDENT.
MN-52	1.962E-01	2.013E-01	1.990E-01	1.027E-01	NOT IDENT.
MN-54	-2.338E-04	4.030E-02	3.427E-02	2.056E-02	NOT IDENT.
CO-56	-2.405E-02	3.841E-02	3.058E-02	1.960E-02	NOT IDENT.
CO-57	-8.467E-03	2.309E-02	1.969E-02	1.178E-02	NOT IDENT.
CO-58	-3.583E-02	3.534E-02	2.681E-02	1.803E-02	NOT IDENT.
FE-59	-3.166E-02	9.321E-02	7.434E-02	4.756E-02	NOT IDENT.
CO-60	1.266E-02	3.507E-02	3.127E-02	1.789E-02	NOT IDENT.
ZN-65	1.413E-02	9.839E-02	7.182E-02	5.020E-02	NOT IDENT.
GE-68	-8.046E-01	1.285E+00	9.924E-01	6.555E-01	NOT IDENT.
AS-73	2.791E-01	1.495E+00	1.367E+00	7.625E-01	NOT IDENT.
AS-74	7.118E-02	9.183E-02	8.119E-02	4.685E-02	NOT IDENT.
SE-75	1.987E-02	4.493E-02	3.621E-02	2.292E-02	NOT IDENT.
BR-77	2.315E+00	1.310E+01	1.115E+01	6.681E+00	FAIL ABUN
SR-82	-5.714E-01	3.563E-01	2.535E-01	1.818E-01	NOT IDENT.
RB-83	6.832E-03	6.405E-02	5.422E-02	3.268E-02	NOT IDENT.
RB-84	-2.289E-02	6.408E-02	5.069E-02	3.270E-02	NOT IDENT.
KR-85	9.934E+00	7.058E+00	5.963E+00	3.601E+00	NOT IDENT.
SR-85	5.151E-02	3.660E-02	3.092E-02	1.867E-02	NOT IDENT.
RB-86	-4.358E-01	8.350E-01	6.530E-01	4.260E-01	NOT IDENT.
Y-88	1.992E-03	3.146E-02	2.632E-02	1.605E-02	NOT IDENT.
ZR-88	3.749E-03	2.957E-02	2.560E-02	1.509E-02	NOT IDENT.
Y-91	1.287E+01	2.008E+01	1.751E+01	1.024E+01	NOT IDENT.
NB-94	1.003E-02	2.995E-02	2.660E-02	1.528E-02	NOT IDENT.
NB-95	4.168E-02	4.664E-02	3.825E-02	2.380E-02	NOT IDENT.
NB-95M	-9.646E-03	1.355E-01	9.931E-02	6.913E-02	NOT IDENT.
ZR-95	3.627E-03	7.149E-02	6.163E-02	3.648E-02	NOT IDENT.
NB-97	1.606E+05	2.793E+05	0.000E+00	1.425E+05	SHORT HLIF
ZR-97	3.798E+06	5.455E+06	0.000E+00	2.783E+06	SHORT HLIF
MO-99	-3.033E+00	1.416E+01	1.194E+01	7.223E+00	NOT IDENT.
TC-99M	-3.607E+17	6.877E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.970E-02	3.231E-02	2.706E-02	1.649E-02	NOT IDENT.
RH-102	-5.390E-03	2.730E-02	2.270E-02	1.393E-02	NOT IDENT.
RU-103	6.547E-04	3.695E-02	3.117E-02	1.885E-02	FAIL ABUN
RH-106	1.022E-01	3.063E-01	2.606E-01	1.563E-01	FAIL ABUN
RU-106	1.022E-01	3.061E-01	2.606E-01	1.562E-01	FAIL ABUN
AG-108M	-1.572E-02	3.152E-02	2.584E-02	1.608E-02	NOT IDENT.
AG-110M	2.197E-02	3.523E-02	2.864E-02	1.798E-02	NOT IDENT.
IN-111	-2.817E-02	1.493E+00	1.094E+00	7.615E-01	NOT IDENT.
IN-113M	-3.502E-03	4.198E-02	3.584E-02	2.142E-02	NOT IDENT.
SN-113	-3.502E-03	4.198E-02	3.584E-02	2.142E-02	NOT IDENT.
IN-114M	9.292E-02	1.953E-01	1.512E-01	9.966E-02	NOT IDENT.
CD-115	1.511E+00	1.395E+01	1.180E+01	7.118E+00	NOT IDENT.
SN-117M	1.349E-02	5.610E-02	4.840E-02	2.862E-02	NOT IDENT.
SB-122	1.856E+00	2.670E+00	2.350E+00	1.362E+00	NOT IDENT.
I-123	1.034E+07	2.128E+07	0.000E+00	1.086E+07	SHORT HLIF
TE-123M	1.326E-02	2.730E-02	2.381E-02	1.393E-02	NOT IDENT.
I-124	5.550E-01	7.897E-01	6.216E-01	4.029E-01	FAIL ABUN
SB-124	-1.007E-02	7.533E-02	6.096E-02	3.843E-02	FAIL ABUN
SB-125	-1.891E-02	8.723E-02	7.318E-02	4.450E-02	FAIL ABUN
TE-125M	3.586E+00	8.931E+00	7.724E+00	4.557E+00	NOT IDENT.
I-126	-1.308E-02	1.881E-01	1.410E-01	9.597E-02	NOT IDENT.
SB-126	3.595E-02	1.542E-01	1.191E-01	7.868E-02	FAIL ABUN
SB-127	-2.761E-01	1.442E+00	1.227E+00	7.356E-01	FAIL ABUN
XE-127	-3.453E-02	4.650E-02	3.745E-02	2.372E-02	NOT IDENT.
I-131	-3.361E-02	1.185E-01	1.004E-01	6.047E-02	NOT IDENT.
TE-132	-3.158E-01	8.376E-01	6.804E-01	4.274E-01	NOT IDENT.
BA-133	1.099E-02	4.472E-02	3.477E-02	2.282E-02	FAIL ABUN
I-133	1.190E+03	1.340E+04	0.000E+00	6.836E+03	SHORT HLIF
CS-134	4.696E-02	4.518E-02	4.184E-02	2.305E-02	NOT IDENT.
CS-135	1.805E-01	1.648E-01	1.376E-01	8.409E-02	NOT IDENT.
I-135	-3.336E+16	7.191E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.621E-02	1.056E-01	8.534E-02	5.387E-02	FAIL ABUN
CE-139	2.134E-03	2.828E-02	2.415E-02	1.443E-02	NOT IDENT.
BA-140	8.978E-02	2.681E-01	2.272E-01	1.368E-01	NOT IDENT.
LA-140	-4.012E-02	1.047E-01	7.800E-02	5.344E-02	FAIL ABUN
CE-141	-1.953E-02	5.994E-02	5.066E-02	3.058E-02	NOT IDENT.
CE-143	1.116E+03	3.639E+02	0.000E+00	1.857E+02	SHORT HLIF
CE-144	9.863E-02	2.007E-01	1.688E-01	1.024E-01	NOT IDENT.
PM-144	-5.531E-03	2.976E-02	2.530E-02	1.518E-02	NOT IDENT.
PR-144	-3.750E-01	2.018E+00	1.716E+00	1.029E+00	NOT IDENT.
PM-146	2.567E-02	4.610E-02	4.016E-02	2.352E-02	NOT IDENT.
ND-147	2.489E-01	5.602E-01	4.863E-01	2.858E-01	FAIL ABUN

PM-149	-3.176E+01	1.144E+02	9.890E+01	5.835E+01	NOT IDENT.
EU-152	-8.393E-02	8.936E-02	7.263E-02	4.559E-02	NOT IDENT.
GD-153	-3.376E-02	8.135E-02	6.248E-02	4.151E-02	NOT IDENT.
EU-154	-3.979E-02	1.198E-01	9.872E-02	6.110E-02	NOT IDENT.
EU-155	4.374E-02	9.721E-02	8.678E-02	4.960E-02	FAIL ABUN
TB-160	-5.841E-02	1.253E-01	1.004E-01	6.391E-02	FAIL ABUN
HO-166M	2.575E-02	5.850E-02	5.225E-02	2.985E-02	FAIL ABUN
TM-171	-1.793E+01	3.298E+01	2.889E+01	1.682E+01	NOT IDENT.
LU-176	2.289E-03	2.228E-02	1.961E-02	1.137E-02	FAIL ABUN
LU-177	2.090E+00	1.739E+00	1.124E+00	8.871E-01	FAIL ABUN
LU-177M	1.945E-01	1.883E-01	1.548E-01	9.607E-02	FAIL ABUN
HF-181	1.414E-03	4.225E-02	3.576E-02	2.156E-02	NOT IDENT.
W-181	-4.279E-01	4.565E-01	3.881E-01	2.329E-01	NOT IDENT.
TA-182	2.336E-02	1.870E-01	1.624E-01	9.543E-02	FAIL ABUN
RE-183	2.660E-02	1.038E-01	8.953E-02	5.297E-02	FAIL ABUN
RE-184	1.350E-01	2.088E-01	1.911E-01	1.065E-01	NOT IDENT.
OS-185	-1.996E-03	4.005E-02	3.471E-02	2.044E-02	NOT IDENT.
RE-188	2.207E-02	1.686E-01	1.450E-01	8.604E-02	NOT IDENT.
W-188	-2.527E+00	7.583E+00	5.718E+00	3.869E+00	NOT IDENT.
IR-192	-1.137E-03	3.279E-02	2.856E-02	1.673E-02	FAIL ABUN
AU-195	3.770E-01	2.279E-01	1.948E-01	1.163E-01	FAIL ABUN
TL-200	-2.090E+02	8.622E+02	0.000E+00	4.399E+02	SHORT HLIF
TL-201	7.023E-01	8.483E+00	7.241E+00	4.328E+00	NOT IDENT.
TL-202	4.272E-02	7.343E-02	6.497E-02	3.746E-02	NOT IDENT.
HG-203	1.398E-02	4.121E-02	3.285E-02	2.102E-02	NOT IDENT.
BI-207	1.578E-02	5.100E-02	4.384E-02	2.602E-02	FAIL ABUN
TL-207	-2.526E-01	6.821E-01	5.058E-01	3.480E-01	FAIL ABUN
PO-209	-3.352E+00	6.459E+00	5.125E+00	3.296E+00	NOT IDENT.
BI-210	2.634E+00	9.029E+00	8.321E+00	4.607E+00	NOT IDENT.
PB-210	2.634E+00	9.029E+00	8.321E+00	4.607E+00	NOT IDENT.
PO-210	2.634E+00	9.028E+00	8.321E+00	4.606E+00	NOT IDENT.
PB-211	8.578E-01	1.043E+00	7.439E-01	5.323E-01	NOT IDENT.
BI-212	1.728E+00	4.545E-01	3.528E-01	2.319E-01	FAIL ABUN
PO-215	-2.526E-01	6.821E-01	5.058E-01	3.480E-01	FAIL ABUN
RN-219	-1.514E-01	3.797E-01	3.157E-01	1.937E-01	FAIL ABUN
RN-220	1.485E+01	2.470E+01	2.168E+01	1.260E+01	NOT IDENT.
RA-223	-2.526E-01	6.821E-01	5.058E-01	3.480E-01	FAIL ABUN
AC-227	-1.726E-01	3.457E-01	2.977E-01	1.764E-01	FAIL ABUN
TH-227	-1.726E-01	3.461E-01	2.977E-01	1.766E-01	FAIL ABUN
TH-229	-8.929E-02	4.770E-01	3.975E-01	2.434E-01	FAIL ABUN
PA-231	2.341E-01	1.346E+00	1.195E+00	6.867E-01	FAIL ABUN
TH-231	-2.526E-01	6.821E-01	5.058E-01	3.480E-01	FAIL ABUN
U-231	-3.039E-01	1.271E+00	9.879E-01	6.483E-01	FAIL ABUN
PA-233	3.899E-02	6.139E-02	5.549E-02	3.132E-02	FAIL ABUN
PA-234	3.335E-02	2.780E-01	2.368E-01	1.418E-01	FAIL ABUN
PA-234M	8.414E-01	4.283E+00	3.659E+00	2.185E+00	NOT IDENT.
TH-234	1.399E+00	1.694E+00	1.557E+00	8.645E-01	FAIL ABUN
U-235	1.496E-01	1.974E-01	1.740E-01	1.007E-01	FAIL ABUN
NP-236	-4.930E-02	7.741E-02	6.398E-02	3.950E-02	NOT IDENT.
U-238	1.399E+00	1.694E+00	1.557E+00	8.645E-01	FAIL ABUN
NP-239	-5.925E-02	1.739E-01	1.488E-01	8.871E-02	FAIL ABUN
AM-241	-2.168E-02	2.101E-01	1.889E-01	1.072E-01	NOT IDENT.
CM-243	-2.179E-02	8.555E-02	7.405E-02	4.365E-02	FAIL ABUN
AM-246	1.087E-02	1.449E-01	1.213E-01	7.393E-02	NOT IDENT.
CM-247	-4.912E-03	3.357E-02	2.846E-02	1.713E-02	FAIL ABUN
CF-249	5.975E-03	3.862E-02	3.352E-02	1.970E-02	NOT IDENT.
CF-251	-9.907E-03	1.190E-01	1.004E-01	6.072E-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	190.3238
46.50	190.3238
46.50	190.3238
48.70	213.0399
49.72	186.9606
51.35	209.4680
52.39	206.6049
52.97	200.8502
53.15	196.6005
53.44	202.8511
54.07	198.8401
56.28	202.6537
56.28	202.6555
57.37	0.0000
57.53	197.1615
57.53	197.1627
57.60	203.3604
57.98	200.9180
57.98	200.9180
59.32	206.0354
59.32	206.0354
59.40	206.0775
59.54	216.7682
59.72	201.8199
60.01	202.8548
61.10	269.1466
61.14	269.1736
61.30	269.2822
63.00	220.4426
63.29	232.2105
63.29	232.2105
63.58	223.4383
64.28	239.0395
65.12	278.9984
65.20	279.0522
65.20	279.0522
66.05	302.0989
66.72	269.2594
66.83	269.3308
66.91	271.1844
67.20	247.0276
67.20	247.0276
67.75	262.6945
67.85	262.7567
68.90	276.0727
68.90	276.0727
69.30	281.7646
69.67	292.8896
70.82	294.5693
70.82	294.5693
70.83	294.5759
72.80	319.1786
72.87	319.2284
72.87	319.2284
74.67	299.8714
74.81	299.9646
74.81	299.9646
74.81	299.9646
74.81	299.9646
74.81	299.9646
74.81	299.9646
74.81	299.9646
74.97	300.0693
75.28	300.2739
75.70	300.5500
77.11	301.4698
77.11	301.4698

77.11	301.4698
77.11	301.4698
77.11	301.4698
77.11	301.4698
77.11	301.4698
78.38	269.0116
79.62	232.1821
79.80	232.2701
79.80	232.2701
80.11	233.8134
80.18	233.8474
80.30	233.9057
80.30	233.9057
80.57	261.9008
81.00	322.0927
81.07	322.1385
81.07	322.1385
81.07	322.1385
81.07	322.1385
82.60	263.0067
83.37	320.8677
83.78	333.7596
83.78	333.7596
83.78	333.7596
83.78	333.7596
84.21	283.5231
84.90	285.3263
85.43	313.7707
86.29	274.3782
86.50	274.4926
86.54	274.5149
86.59	274.5416
86.72	274.6129
86.79	274.6500
86.94	274.7332
87.30	274.9307
87.30	274.9307
87.30	274.9307
87.30	274.9307
87.30	274.9307
87.30	274.9307
87.57	275.0778
87.88	275.2456
88.03	275.3273
88.36	275.5070
88.47	275.5664
89.95	276.3640
91.11	276.9847
92.29	277.6130
92.38	277.6605
92.38	277.6605
93.35	278.1729
94.00	278.5160
94.67	278.8635
94.67	278.8665
94.90	278.9868
94.90	278.9868
94.90	278.9868
94.90	278.9868
95.87	232.5920
95.87	232.5920
96.73	260.2869
97.43	240.4639
98.44	197.6326
98.44	197.6326
98.88	184.7979
99.55	196.5874
99.55	196.5874
99.86	196.6974
100.00	196.7472
100.10	196.7845
103.18	245.3974
103.76	214.5793
105.00	208.2355
105.31	211.2695
108.00	250.4023
109.28	212.7198

111.00	238.9028
111.00	238.9028
111.76	251.0195
112.95	246.5884
115.19	204.9322
116.30	218.1985
117.00	230.3622
117.00	230.3622
117.66	226.6328
121.11	219.8926
121.62	213.0683
121.78	225.1282
122.06	225.2277
122.32	222.3162
122.32	222.3162
122.32	222.3162
122.32	222.3162
123.07	231.6016
127.23	236.1275
129.76	271.9879
131.20	260.3956
133.02	233.6182
133.54	226.1598
135.34	246.1679
136.00	259.6973
136.25	260.8157
136.48	246.5786
140.51	254.1936
140.51	0.0000
142.18	226.9466
142.65	209.5482
143.76	229.5201
144.24	242.0909
144.24	242.0909
144.24	242.0909
144.24	242.0909
145.22	248.6401
145.44	249.7522
147.16	254.5055
152.43	237.5113
152.70	219.8053
153.22	218.9117
154.21	243.3234
154.21	243.3234
154.21	243.3234
154.21	243.3234
155.03	250.9422
156.02	264.9404
158.56	236.2933
159.00	0.0000
159.00	223.7641
160.31	255.8670
161.27	239.2491
162.32	219.4321
162.64	219.5227
163.35	237.7699
163.89	230.4985
165.85	223.6227
167.43	224.0714
171.28	220.8658
171.86	218.8792
172.10	218.9435
176.55	213.6682
176.60	213.6823
181.06	203.1161
184.41	238.5666
185.71	228.0218
186.00	228.0984
190.27	202.3618
192.34	197.8967
193.63	206.9962
197.04	228.7962
198.01	179.2540
198.60	168.2988
200.40	210.7967
201.83	235.5778
202.84	229.1662
205.31	224.2091

208.36	214.8809
208.81	201.5479
209.75	206.7968
209.75	206.7968
210.97	205.3835
215.65	182.7197
216.55	167.0872
218.09	204.6745
222.10	178.2748
223.80	193.3736
226.40	180.2027
227.00	182.5944
227.08	179.1851
227.20	179.2075
228.16	188.5220
228.18	188.5254
228.18	188.5254
231.56	0.0000
235.69	203.7596
236.00	183.0933
236.00	183.0933
238.63	377.5249
238.63	377.5249
238.63	377.5249
238.63	377.5249
239.00	339.5487
240.98	340.2037
241.98	185.9047
241.98	185.9047
241.98	185.9047
244.69	146.3258
245.39	163.8546
247.94	145.6159
248.90	172.5658
249.79	159.2917
252.40	154.4189
252.85	137.8074
252.85	137.8074
254.15	0.0000
256.20	161.1310
256.20	161.1310
260.50	151.1645
260.90	151.2193
262.80	158.5697
264.65	136.2961
268.24	143.8609
268.79	156.7581
269.46	165.7641
269.46	165.7641
269.46	165.7641
269.46	165.7641
271.23	188.5189
273.65	168.1719
276.40	164.9924
277.35	149.8734
277.60	114.8984
277.60	114.8984
278.00	116.3742
278.60	125.0604
279.20	132.3174
279.53	136.6715
280.46	143.9819
281.68	122.5133
283.67	124.5276
284.30	130.9173
285.00	129.1879
285.90	134.7130
286.10	136.5442
286.10	136.5442
287.40	126.7383
288.45	0.0000
290.67	140.8892
290.80	140.9034
291.72	135.1974
293.26	0.0000
293.70	129.5997
295.21	145.8008
295.21	145.8008

295.21	145.8008
295.96	145.8936
296.50	109.4678
297.23	109.5355
298.57	109.6564
299.80	122.9402
299.80	122.9402
300.09	121.5071
300.09	121.5071
300.09	121.5071
300.09	121.5071
300.12	121.5091
301.29	126.0228
302.84	114.4444
303.76	116.0004
303.91	120.4195
304.40	116.0602
304.40	116.0602
304.84	116.1026
306.84	118.6837
308.46	131.7365
311.98	121.9473
316.51	126.0992
318.01	127.1770
319.02	118.9160
319.41	121.7411
320.08	111.5771
323.87	125.3376
323.87	125.3376
323.87	125.3376
323.87	125.3376
325.23	122.4835
328.77	134.8022
333.44	150.3174
334.20	124.8364
334.20	124.8364
334.30	124.8445
338.28	116.9236
338.28	116.9236
338.28	116.9236
338.28	116.9236
338.32	116.9274
338.32	116.9274
338.32	116.9274
340.50	95.2075
340.57	95.2121
344.27	125.9742
345.85	103.6795
350.59	0.0000
351.07	127.9421
351.92	115.2580
351.92	115.2580
351.92	115.2580
355.39	0.0000
356.01	102.4171
364.48	107.6575
366.43	107.8062
367.43	96.3242
367.94	0.0000
369.80	97.4508
374.96	100.7087
383.85	108.1512
387.95	105.5231
388.63	111.4360
391.69	100.8924
391.69	100.8924
392.90	100.9741
398.62	86.6008
400.65	102.4845
401.10	96.6003
401.81	100.5915
402.60	94.7227
404.84	71.1475
410.95	100.2032
411.60	100.2464
413.65	82.6884
414.70	92.2931
415.30	101.8797



415.76	97.1324
417.63	0.0000
418.52	96.7069
423.70	95.0275
427.08	79.1917
427.89	93.2739
432.53	84.4935
433.93	97.6542
439.47	88.8983
439.56	88.9037
439.89	89.9330
443.98	88.1324
444.90	90.2100
445.03	90.2168
445.03	90.2168
445.03	90.2168
445.03	90.2168
453.90	91.7235
463.38	77.8949
468.07	69.0672
473.00	81.4302
475.06	80.4958
475.35	77.4124
476.78	88.8397
477.59	98.1833
477.96	89.9351
482.03	82.8931
484.57	84.0516
487.03	80.0137
490.36	0.0000
492.35	65.6638
497.08	66.8838
507.63	0.0000
510.53	0.0000
510.84	65.2908
511.00	65.2970
511.85	65.3272
511.85	65.3272
513.99	59.0745
513.99	59.0745
520.41	66.6914
520.65	65.6423
527.90	65.8977
528.96	0.0000
529.64	69.1518
529.87	0.0000
531.02	62.8135
537.32	64.0924
543.00	68.5703
546.56	0.0000
549.76	61.2861
552.65	69.9928
555.20	77.6316
563.23	59.5470
563.90	67.1484
568.70	53.1975
569.32	54.3015
569.50	52.1338
569.67	52.1382
573.80	66.3967
574.00	69.6699
574.64	74.0471
578.91	55.8719
579.30	0.0000
583.14	73.2669
585.48	71.8201
591.81	66.9924
592.07	68.0982
593.00	68.1304
595.88	59.4218
600.56	81.6150
602.52	0.0000
602.71	52.9951
602.71	52.9951
603.60	67.1568
604.41	65.4148
604.70	61.8875
609.31	66.4545

609.31	66.4545
609.31	66.4545
609.31	66.4545
610.33	66.4874
612.46	63.8930
614.37	62.1746
618.01	53.3848
621.84	59.0508
621.84	59.0508
631.29	57.0746
633.02	63.8415
633.10	63.8432
634.78	51.5633
635.90	47.1039
636.97	61.7139
645.85	63.0923
646.12	63.1008
656.30	46.7901
657.75	51.3514
657.90	0.0000
661.65	59.0062
661.65	59.0062
664.57	0.0000
666.33	56.0977
666.33	56.0977
675.00	53.8793
677.61	46.6271
685.20	55.0371
692.80	65.3422
695.00	56.1927
696.49	57.1510
696.49	57.1510
697.00	63.6178
697.49	55.3315
698.33	57.1956
698.50	61.8131
699.00	67.3628
702.63	55.4531
706.10	66.6422
706.58	0.0000
706.67	70.3612
709.31	63.0262
711.68	59.3781
713.82	66.8602
717.42	63.2420
720.50	51.2174
721.93	0.0000
722.20	57.4662
722.78	59.0348
722.78	59.0348
722.89	59.0364
722.95	59.0379
723.30	51.2778
724.18	48.1877
727.18	51.3611
733.00	45.2441
735.90	47.7976
739.58	57.2560
742.81	51.6927
744.21	50.7819
747.13	44.2518
751.79	61.3152
752.31	54.7233
753.82	50.9796
755.35	51.9559
756.15	62.3681
756.87	59.5501
763.93	67.9346
765.79	55.3369
766.42	52.1869
766.84	56.9414
776.49	66.6863
778.00	62.9127
778.57	58.1600
778.89	41.9568
783.80	47.7698
785.46	44.9323
792.07	58.4668

795.84	48.9543
796.30	51.8432
798.80	76.8789
801.93	54.8416
805.60	52.9919
810.29	54.0518
810.76	54.0613
815.85	40.6250
817.79	43.5586
818.51	51.3166
819.60	57.1490
826.30	58.2642
828.27	0.0000
831.60	56.4339
831.96	57.4141
834.83	71.1144
836.80	0.0000
846.75	56.7511
848.13	53.8439
856.28	0.0000
856.80	49.1040
860.37	47.2008
867.32	56.6858
867.82	50.3961
871.10	48.3719
873.19	37.5408
874.81	45.4699
875.33	0.0000
876.40	47.4738
879.36	43.5639
880.27	50.5107
880.51	50.5156
881.50	39.6338
883.24	39.6582
884.67	37.6948
889.25	46.6982
896.60	41.8380
898.02	48.8361
899.00	44.8649
903.28	36.6112
911.07	45.0538
911.07	45.0538
911.07	45.0538
919.63	51.2117
920.93	45.2065
925.00	35.2102
925.24	43.2614
926.50	38.2477
935.52	35.3367
937.48	58.5961
944.10	36.4518
946.00	39.5142
949.00	39.5541
962.29	50.9351
964.01	33.9762
966.15	44.1998
968.20	81.6563
969.11	65.3438
969.11	65.3438
969.11	65.3438
977.42	33.2728
980.50	39.9683
983.50	28.7232
989.30	41.1104
996.32	37.0828
1001.03	40.2340
1001.68	41.2744
1004.76	44.4141
1021.30	0.0000
1024.50	0.0000
1034.80	39.6235
1036.00	36.5090
1037.82	37.5732
1038.57	39.6699
1038.76	0.0000
1045.16	34.5211
1046.59	53.3732
1048.07	39.7868

1050.47	39.8165
1050.47	39.8165
1062.04	48.3696
1063.62	38.9259
1076.63	49.6415
1077.35	51.7658
1078.86	44.3912
1085.78	48.7200
1099.22	47.8521
1112.02	44.0295
1112.84	44.4865
1115.52	42.7402
1120.29	40.6589
1120.29	40.6589
1120.29	40.6589
1120.29	40.6589
1120.51	40.6626
1121.28	40.6719
1124.00	0.0000
1129.67	34.3328
1131.51	0.0000
1147.95	0.0000
1167.94	37.9651
1173.22	48.8848
1175.09	39.1289
1177.93	44.5995
1189.05	45.8288
1204.90	48.2217
1205.75	0.0000
1213.00	57.1162
1221.42	48.6243
1230.97	45.9920
1235.34	47.8867
1236.41	0.0000
1238.25	52.5330
1246.25	45.2576
1260.41	0.0000
1271.85	37.1956
1274.45	41.8744
1274.54	43.7355
1291.56	23.3673
1298.22	0.0000
1312.09	21.6121
1325.50	24.5146
1325.50	24.5146
1332.49	21.7249
1333.61	20.7861
1360.21	15.2181
1362.66	0.0000
1365.15	14.2847
1368.21	18.1078
1368.53	0.0000
1376.25	19.6440
1384.27	22.9639
1394.10	17.2639
1395.20	11.5127
1407.95	15.3978
1434.06	7.7471
1436.60	14.5343
1457.56	0.0000
1460.81	18.5160
1489.15	17.6572
1509.49	13.7972
1596.49	25.3210
1620.62	12.1206
1678.03	0.0000
1691.02	13.3269
1691.02	13.3269
1706.46	0.0000
1750.46	0.0000
1764.49	16.0545
1764.49	16.0545
1764.49	16.0545
1764.49	16.0545
1770.23	7.1434
1771.40	10.7176
1791.20	0.0000
1808.65	3.1489

1836.01

9.4973

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148016

Total Uranium Activity	4.2323E+00	ug/g
Total Uranium Counting Unc.	5.0419E+00	ug/g
Total Uranium Tpu	2.5724E-06	ug/g
Total Uranium Mda	4.6320E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940268          SAMPLE ID   : G244148016
*  ANALYST       : MXR1            DETECTOR    : GAM04
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 16:27:45.54 SAMPLE ALQT: 125.000 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.032E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.391E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.090E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.487E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 20:02:41.44

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148017.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 18:02:04
Sample ID        : G244148017      Sample quantity   : 1.31110E+02 GRAM
Detector name    : GAM18           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:01.60 0.0%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000        Sensitivity     : 5.00000
Batch ID        : 940268           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	63.28*	66	435	0.90	125.69	122	8	9.22E-03	57.5	
2	0	76.32*	1174	1042	3.08	151.76	142	19	1.63E-01	7.2	
3	0	87.36	242	439	1.09	173.82	171	7	3.36E-02	15.7	
4	0	93.17*	252	521	1.51	185.45	182	9	3.51E-02	18.5	
5	0	129.02	100	400	1.08	257.12	254	9	1.39E-02	37.1	
6	0	186.53*	376	498	1.58	372.10	366	15	5.22E-02	14.2	
7	0	209.51	260	449	2.98	418.04	412	16	3.61E-02	19.3	
8	3	238.77*	1606	242	1.26	476.54	469	21	2.23E-01	3.1	1.17E+00
9	3	241.68	441	268	1.77	482.35	469	21	6.12E-02	11.2	
10	0	270.39	125	248	1.92	539.76	535	10	1.74E-02	25.4	
11	0	295.29*	497	246	1.23	589.54	583	12	6.90E-02	8.0	
12	0	299.86	107	222	1.42	598.67	595	10	1.48E-02	27.7	
13	0	328.39	91	197	0.96	655.71	651	9	1.26E-02	29.7	
14	0	338.42*	276	264	1.70	675.78	669	12	3.83E-02	13.4	
15	0	351.91*	898	176	1.29	702.76	696	13	1.25E-01	4.6	
16	0	462.81	52	180	1.20	924.47	920	11	7.21E-03	52.1	
17	0	511.03*	193	178	2.11	1020.90	1013	19	2.68E-02	20.6	
18	0	583.20*	548	170	1.69	1165.20	1157	17	7.61E-02	7.0	
19	0	609.22*	721	168	1.61	1217.23	1211	14	1.00E-01	5.5	
20	0	661.80	134	111	1.63	1322.35	1317	11	1.86E-02	17.6	
21	0	727.16*	131	108	1.50	1453.04	1445	15	1.82E-02	18.6	
22	0	768.16	93	84	1.45	1535.02	1529	11	1.29E-02	21.8	
23	0	795.15	86	118	1.77	1588.99	1581	18	1.20E-02	31.3	
24	0	861.17	74	114	2.17	1721.01	1709	19	1.03E-02	36.3	
25	0	910.94*	410	92	1.68	1820.53	1812	18	5.70E-02	7.6	
26	1	964.17	73	63	2.32	1926.96	1918	29	1.01E-02	27.7	1.49E+00
27	1	968.66	257	63	2.33	1935.93	1918	29	3.57E-02	9.3	
28	0	1000.94*	37	43	1.45	2000.49	1997	10	5.13E-03	40.7	
29	0	1120.13*	149	68	1.70	2238.83	2230	16	2.07E-02	15.1	
30	0	1241.65	132	128	10.17	2481.84	2467	33	1.83E-02	29.2	
31	0	1460.20*	1479	39	2.06	2918.89	2908	19	2.05E-01	2.8	
32	0	1729.04	39	16	2.03	3456.54	3446	16	5.42E-03	28.0	
33	0	1763.70*	145	12	2.53	3525.85	3513	23	2.02E-02	10.9	

Flag: "\*" = Peak area was modified by background subtraction



VMS Nuclide Identification Report V3.1 Generated 20-JAN-2010 20:02:44

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148017.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 18:02:04
Sample ID        : G244148017             Sample quantity  : 131.11 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA18                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.60   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
    
```

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	*	2.095E+01	1.978E+00	3.701E-01	2.808E-02	56.625
CD-109	+	88.03	*	2.956E+00	9.685E-01	1.341E+00	1.239E-01	2.205
SN-126	+	64.28		6.431E-01	7.453E-01	8.321E-01	1.230E-01	0.773
	+	86.94		1.206E+00	6.277E-01	4.905E-01	2.034E-01	2.458
	+	87.57	*	2.900E-01	9.504E-02	1.276E-01	1.176E-02	2.272
BA-137M	+	661.65	*	1.188E-01	4.281E-02	4.687E-02	3.572E-03	2.534
CS-137	+	661.65	*	1.256E-01	4.526E-02	4.954E-02	3.786E-03	2.534
TL-208		277.35		5.061E-01	3.067E-01	5.288E-01	5.553E-02	0.957
	+	510.84		5.938E-01	2.524E-01	1.594E-01	1.695E-02	3.726
	+	583.14	*	4.735E-01	7.631E-02	4.294E-02	3.366E-03	11.027
	+	860.37		5.871E-01	4.312E-01	3.214E-01	3.595E-02	1.827
BI-211		72.87		3.934E+00	2.766E+00	4.766E+00	3.935E-01	0.826
	+	351.07	*	3.643E+00	4.098E-01	2.381E-01	1.528E-02	15.302
PB-212		74.81		2.212E+00	4.647E-01	7.089E-01	8.886E-02	3.120
	+	77.11		3.644E+00	6.106E-01	2.702E-01	2.290E-02	13.489
	+	87.30		1.341E+00	4.596E-01	5.926E-01	8.048E-02	2.264
	+	238.63	*	1.518E+00	1.432E-01	6.692E-02	4.781E-03	22.682
	+	300.09		1.494E+00	8.376E-01	8.505E-01	6.984E-02	1.756
PO-212		74.81		2.212E+00	4.647E-01	7.089E-01	8.886E-02	3.120
	+	77.11		3.644E+00	6.106E-01	2.702E-01	2.290E-02	13.489
	+	87.30		1.341E+00	4.596E-01	5.926E-01	8.048E-02	2.264
	+	115.19		-2.627E+00	3.139E+00	4.873E+00	3.070E-01	-0.539
	+	238.63	*	1.518E+00	1.432E-01	6.692E-02	4.781E-03	22.682
	+	300.09		1.494E+00	8.376E-01	8.505E-01	6.984E-02	1.756
BI-214	+	609.31	*	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
	+	1120.29		1.209E+00	3.837E-01	3.091E-01	2.960E-02	3.911
	+	1764.49		1.553E+00	3.504E-01	2.534E-01	1.541E-02	6.130
PB-214		74.81		3.811E+00	7.707E-01	1.222E+00	1.364E-01	3.120
	+	77.11		6.247E+00	1.150E+00	4.631E-01	5.278E-02	13.489
	+	87.30		2.298E+00	7.735E-01	1.015E+00	1.218E-01	2.264
	+	241.98		2.497E+00	5.949E-01	4.023E-01	3.181E-02	6.208
	+	295.21		1.227E+00	2.223E-01	1.635E-01	1.387E-02	7.504
	+	351.92	*	1.267E+00	1.571E-01	8.297E-02	6.864E-03	15.274
PO-214		74.81		3.811E+00	7.707E-01	1.222E+00	1.364E-01	3.120

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		6.247E+00	1.150E+00	4.631E-01	5.278E-02	13.489
	+	87.30		2.298E+00	7.735E-01	1.015E+00	1.218E-01	2.264
	+	241.98		2.497E+00	5.949E-01	4.023E-01	3.181E-02	6.208
	+	295.21		1.227E+00	2.223E-01	1.635E-01	1.387E-02	7.504
	+	351.92	*	1.267E+00	1.571E-01	8.297E-02	6.864E-03	15.274
	+	74.81		2.212E+00	4.647E-01	7.089E-01	8.886E-02	3.120
PO-218	+	77.11		3.644E+00	6.106E-01	2.702E-01	2.290E-02	13.489
	+	87.30		1.341E+00	4.596E-01	5.926E-01	8.048E-02	2.264
	+	238.63	*	1.518E+00	1.432E-01	6.692E-02	4.781E-03	22.682
	+	300.09		1.494E+00	8.376E-01	8.505E-01	6.984E-02	1.756
	+	74.81		3.811E+00	7.707E-01	1.222E+00	1.364E-01	3.120
	+	77.11		6.247E+00	1.150E+00	4.631E-01	5.278E-02	13.489
RA-224	+	87.30		2.298E+00	7.735E-01	1.015E+00	1.218E-01	2.264
	+	241.98		2.497E+00	5.949E-01	4.023E-01	3.181E-02	6.208
	+	295.21		1.227E+00	2.223E-01	1.635E-01	1.387E-02	7.504
	+	351.92	*	1.267E+00	1.571E-01	8.297E-02	6.864E-03	15.274
	+	240.98	*	4.735E+00	1.096E+00	7.606E-01	4.237E-02	6.225
	+	609.31	*	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
AC-228	+	1120.29		1.209E+00	3.837E-01	3.091E-01	2.960E-02	3.911
	+	1764.49		1.553E+00	3.504E-01	2.534E-01	1.541E-02	6.130
	+	338.32		1.240E+00	6.051E-01	2.899E-01	1.182E-01	4.278
	+	911.07	*	1.526E+00	3.076E-01	1.552E-01	2.057E-02	9.832
	+	969.11		1.680E+00	5.094E-01	2.614E-01	6.260E-02	6.427
	+	338.32		1.240E+00	6.051E-01	2.899E-01	1.182E-01	4.278
TH-228	+	911.07	*	1.526E+00	3.076E-01	1.552E-01	2.057E-02	9.832
	+	969.11		1.680E+00	5.094E-01	2.614E-01	6.260E-02	6.427
	+	74.81		2.248E+00	4.237E-01	7.205E-01	6.072E-02	3.120
	+	77.11		3.704E+00	6.206E-01	2.746E-01	2.327E-02	13.489
	+	87.30		1.363E+00	4.467E-01	6.022E-01	5.535E-02	2.264
	+	238.63	*	1.543E+00	1.455E-01	6.801E-02	4.859E-03	22.682
TH-230	+	300.09		1.518E+00	1.229E+00	8.644E-01	5.094E-01	1.756
	+	609.31	*	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
	+	1120.29		1.209E+00	3.837E-01	3.091E-01	2.959E-02	3.911
	+	1764.49		1.553E+00	3.504E-01	2.534E-01	1.541E-02	6.130
	+	338.32		1.240E+00	3.400E-01	2.899E-01	1.677E-02	4.278
	+	911.07	*	1.526E+00	3.076E-01	1.552E-01	2.057E-02	9.832
TH-232	+	969.11		1.680E+00	5.094E-01	2.614E-01	6.260E-02	6.427
	+	63.29	*	1.625E+00	1.889E+00	2.108E+00	3.716E-01	0.771
	+	92.38		1.915E+00	7.878E-01	8.535E-01	1.538E-01	2.244
	+	609.31	*	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
	+	1120.29		1.209E+00	3.837E-01	3.091E-01	2.959E-02	3.911
	+	1764.49		1.553E+00	3.504E-01	2.534E-01	1.541E-02	6.130
NP-237	+	86.50	*	8.517E-01	3.298E-01	3.523E-01	7.949E-02	2.417
	+	95.87		1.705E-01	8.713E-01	1.280E+00	3.126E-01	0.133
	+	63.29	*	1.625E+00	1.889E+00	2.108E+00	3.716E-01	0.771
	+	92.38		1.915E+00	7.266E-01	8.535E-01	7.254E-02	2.244
	+	511.00	*	1.283E-01	5.347E-02	3.444E-02	2.274E-03	3.725
	+	511.00	*	1.283E-01	5.347E-02	3.444E-02	2.274E-03	3.725

## ---- 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	*	2.824E-02	2.423E-01	4.025E-01	2.917E-02	0.070

## ---- 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	*		-3.723E-02	3.162E-02	4.606E-02	3.134E-03	-0.808
NA-24	1368.53	*		-3.956E-01	3.162E-02	Half-Life too short		
AL-26	1129.67			4.887E-01	1.266E+00	2.089E+00	1.395E-01	0.234
	1808.65	*		-3.538E-03	2.335E-02	3.744E-02	2.186E-03	-0.094
TI-44	67.85			1.469E-02	4.568E-02	7.338E-02	5.901E-03	0.200
	78.38	*		2.660E-01	4.482E-02	7.445E-02	6.365E-03	3.573
SC-46	889.25	*		-1.518E-03	3.091E-02	5.032E-02	5.613E-03	-0.030
	+ 1120.51			2.089E-01	6.485E-02	9.425E-02	6.511E-03	2.217
V-48	944.10			-2.009E-01	6.681E-01	1.056E+00	1.118E-01	-0.190
	983.50	*		3.768E-02	5.639E-02	9.608E-02	9.504E-03	0.392
	1312.09			2.200E-02	6.037E-02	1.023E-01	7.450E-03	0.215
CR-51	320.08	*		1.803E-01	2.876E-01	4.793E-01	3.086E-02	0.376
MN-52	744.21			5.007E-02	1.994E-01	3.368E-01	2.970E-02	0.149
	848.13			2.956E+00	5.667E+00	9.661E+00	1.011E+00	0.306
	935.52			2.345E-01	2.493E-01	4.154E-01	4.456E-02	0.564
	1246.25			8.485E-01	6.156E+00	1.024E+01	6.583E-01	0.083
	1333.61			-6.574E-01	4.253E+00	6.844E+00	5.170E-01	-0.096
	1434.06	*		-1.223E-01	1.957E-01	2.923E-01	2.154E-02	-0.418
MN-54	834.83	*		-5.093E-04	2.891E-02	4.747E-02	4.862E-03	-0.011
CO-56	846.75	*		-1.534E-02	3.023E-02	4.765E-02	4.975E-03	-0.322
	977.42			-3.577E-01	2.674E+00	3.643E+00	3.644E-01	-0.098
	1037.82			-7.912E-02	2.185E-01	3.548E-01	3.287E-02	-0.223
	1175.09			8.589E-01	1.672E+00	2.870E+00	1.593E-01	0.299
	1238.25			1.585E-01	7.036E-02	1.305E-01	8.701E-03	1.214
	1360.21			6.305E-02	8.116E-01	1.334E+00	1.003E-01	0.047
	1771.40			-9.456E-03	1.665E-01	2.287E-01	1.382E-02	-0.041
CO-57	122.06	*		4.942E-03	2.204E-02	3.569E-02	2.114E-03	0.138
	136.48			1.807E-02	1.821E-01	2.911E-01	1.906E-02	0.062
CO-58	810.76	*		-1.624E-02	2.903E-02	4.572E-02	4.513E-03	-0.355
FE-59	142.65			9.294E-01	2.415E+00	3.850E+00	2.118E-01	0.241
	192.34			-9.017E-01	8.790E-01	1.212E+00	1.406E-01	-0.744
	1099.22	*		-3.043E-03	6.631E-02	1.100E-01	9.056E-03	-0.028
	1291.56			5.222E-02	9.400E-02	1.614E-01	1.356E-02	0.324
CO-60	1173.22			2.893E-04	3.261E-02	5.400E-02	2.984E-03	0.005
	1332.49	*		-4.044E-03	2.820E-02	4.542E-02	3.432E-03	-0.089
ZN-65	1115.52	*		6.350E-02	7.447E-02	1.155E-01	8.139E-03	0.550
GE-68	1077.35	*		1.686E-01	8.762E-01	1.484E+00	1.179E-01	0.114
AS-73	53.44	*		1.425E-01	9.430E-01	1.596E+00	1.265E-01	0.089
AS-74	595.88	*		3.683E-02	7.090E-02	1.187E-01	8.532E-03	0.310
	634.78			-1.129E-01	2.929E-01	4.581E-01	3.411E-02	-0.246
SE-75	66.05			-3.432E+00	5.361E+00	7.634E+00	7.561E-01	-0.450
	96.73			-9.805E-01	7.649E-01	1.018E+00	1.343E-01	-0.963
	121.11			-3.795E-02	1.208E-01	1.912E-01	1.785E-02	-0.198
	136.00			-4.672E-03	3.426E-02	5.425E-02	3.089E-03	-0.086
	198.60			-1.176E+00	1.528E+00	2.445E+00	1.659E-01	-0.481
	264.65	*		-5.509E-03	3.877E-02	5.815E-02	3.326E-03	-0.095
	279.53			-9.070E-03	9.036E-02	1.464E-01	9.047E-03	-0.062
	303.91			8.616E-01	1.749E+00	2.563E+00	2.438E-01	0.336
	400.65			1.588E-02	1.969E-01	3.308E-01	3.014E-02	0.048

## ----- 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		8.876E+02	2.908E+02	4.239E+02	3.916E+01	2.094
		200.40		1.060E+01	1.837E+02	3.071E+02	1.654E+01	0.035
	+	239.00		3.394E+02	2.816E+01	4.362E+01	2.426E+00	7.781
		249.79		-5.377E+00	7.088E+01	1.160E+02	6.500E+00	-0.046
		281.68		-5.456E+01	9.963E+01	1.576E+02	8.995E+00	-0.346
		297.23		4.773E+02	9.174E+01	1.377E+02	7.908E+00	3.466
		303.76		1.110E+02	2.064E+02	3.036E+02	1.746E+01	0.366
		439.47		1.431E+02	1.520E+02	2.650E+02	1.616E+01	0.540
		484.57		-1.866E+02	2.331E+02	3.635E+02	2.333E+01	-0.513
		520.65	*	5.005E+00	1.121E+01	1.789E+01	1.194E+00	0.280
		574.64		-1.399E+01	2.485E+02	3.782E+02	2.663E+01	-0.037
		578.91		6.595E+01	1.050E+02	1.554E+02	1.099E+01	0.424
		585.48		2.117E+03	3.188E+02	5.582E+02	3.972E+01	3.792
		755.35		-5.918E+01	1.688E+02	2.728E+02	2.452E+01	-0.217
		817.79		4.287E+01	1.263E+02	2.136E+02	2.129E+01	0.201
		698.33		-2.382E+01	2.755E+01	4.347E+01	3.539E+00	-0.548
SR-82		776.49	*	-3.355E-01	2.940E-01	4.430E-01	4.126E-02	-0.757
		1395.20		-5.760E-01	8.349E+00	1.348E+01	1.005E+00	-0.043
RB-83		520.41	*	2.559E-02	5.384E-02	8.608E-02	5.741E-03	0.297
		529.64		-2.460E-02	8.109E-02	1.284E-01	8.643E-03	-0.192
		552.65		-1.337E-02	1.530E-01	2.478E-01	1.708E-02	-0.054
RB-84		881.50	*	1.181E-02	5.452E-02	9.065E-02	9.991E-03	0.130
KR-85		513.99	*	1.663E+01	6.349E+00	1.065E+01	7.057E-01	1.561
SR-85		513.99	*	8.626E-02	3.295E-02	5.527E-02	3.662E-03	1.561
RB-86		1076.63	*	-1.107E-01	5.859E-01	9.626E-01	7.662E-02	-0.115
Y-88		898.02		6.735E-03	3.349E-02	5.548E-02	6.289E-03	0.121
		1836.01	*	-2.188E-02	2.879E-02	4.198E-02	2.391E-03	-0.521
ZR-88		392.90	*	-2.319E-03	2.347E-02	3.912E-02	2.250E-03	-0.059
Y-91		1204.90	*	-7.636E+00	1.409E+01	2.231E+01	1.319E+00	-0.342
NB-94		702.63	*	2.627E-02	2.662E-02	4.681E-02	3.840E-03	0.561
		871.10		1.066E-02	2.547E-02	4.303E-02	4.666E-03	0.248
NB-95		765.79	*	8.610E-02	3.950E-02	6.545E-02	5.987E-03	1.315
NB-95M		235.69	*	8.119E-02	1.125E-01	1.691E-01	1.241E-02	0.480
ZR-95		724.18		1.328E-01	8.250E-02	1.336E-01	1.238E-02	0.994
		756.15	*	-1.806E-02	5.180E-02	8.371E-02	8.236E-03	-0.216
NB-97		657.90	*	1.550E-01	5.180E-02	Half-Life	too short	
		1024.50		1.044E+00	5.180E-02	Half-Life	too short	
ZR-97		254.15		2.252E+00	5.180E-02	Half-Life	too short	
		355.39		-8.449E-01	5.180E-02	Half-Life	too short	
		507.63	*	8.505E+00	5.180E-02	Half-Life	too short	
		602.52		-5.846E+00	5.180E-02	Half-Life	too short	
		1021.30		3.372E+00	5.180E-02	Half-Life	too short	
		1147.95		-3.076E+00	5.180E-02	Half-Life	too short	
		1362.66		1.512E+01	5.180E-02	Half-Life	too short	
		1750.46		1.273E+01	5.180E-02	Half-Life	too short	
		140.51		-2.901E+01	3.257E+01	4.769E+01	1.282E+01	-0.608
		181.06		2.815E+00	1.930E+01	2.881E+01	4.890E+00	0.098
MO-99		366.43		1.993E+00	8.384E+01	1.414E+02	8.169E+00	0.014
		739.58	*	9.002E+00	1.140E+01	1.983E+01	3.025E+00	0.454

## ----- 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			-4.433E+01	3.312E+01	4.876E+01	4.552E+00	-0.909
	140.51	*		-7.283E+11	3.312E+01	Half-Life	too short	
RH-101	127.23			1.842E-03	2.934E-02	4.193E-02	2.422E-03	0.044
	198.01	*		-9.928E-03	2.778E-02	4.524E-02	2.432E-03	-0.219
	325.23			2.862E-02	2.023E-01	2.870E-01	1.658E-02	0.100
RH-102	418.52			-1.535E-01	2.098E-01	3.347E-01	1.989E-02	-0.459
	475.06	*		5.290E-03	2.182E-02	3.652E-02	2.320E-03	0.145
	631.29			1.139E-02	4.181E-02	6.860E-02	5.092E-03	0.166
	697.49			-4.209E-02	5.917E-02	9.431E-02	7.667E-03	-0.446
	766.84	+		2.477E-01	1.104E-01	1.684E-01	1.543E-02	1.471
	1046.59			-2.277E-02	8.234E-02	1.347E-01	1.162E-02	-0.169
	1112.84			1.612E-01	1.749E-01	2.754E-01	1.955E-02	0.586
RU-103	497.08	*		-2.442E-03	2.999E-02	4.903E-02	6.366E-03	-0.050
	610.33	+		1.289E+01	2.500E+00	2.452E+00	3.931E-01	5.257
RH-106	511.85	+		6.420E-01	2.676E-01	3.450E-01	2.281E-02	1.861
	621.84	*		1.740E-01	2.505E-01	4.213E-01	5.300E-02	0.413
	1050.47			2.375E-01	1.715E+00	2.897E+00	2.475E-01	0.082
RU-106	511.85	+		6.420E-01	2.676E-01	3.450E-01	2.281E-02	1.861
	621.84	*		1.740E-01	2.499E-01	4.213E-01	3.100E-02	0.413
	1050.47			2.375E-01	1.715E+00	2.897E+00	2.475E-01	0.082
AG-108M	433.93	*		-5.781E-03	2.378E-02	3.896E-02	2.545E-03	-0.148
	614.37			-1.401E-02	3.404E-02	4.539E-02	3.497E-03	-0.309
	722.95			-4.451E-04	3.332E-02	4.773E-02	4.221E-03	-0.009
AG-110M	657.75	*		1.772E-02	2.948E-02	4.502E-02	3.551E-03	0.394
	677.61			-5.437E-02	2.286E-01	3.768E-01	3.056E-02	-0.144
	706.67			-1.552E-01	1.707E-01	2.684E-01	2.284E-02	-0.578
	763.93			2.909E-03	1.388E-01	1.983E-01	1.854E-02	0.015
	884.67			1.767E-02	3.842E-02	6.493E-02	7.332E-03	0.272
	937.48			-5.300E-03	8.655E-02	1.401E-01	1.533E-02	-0.038
	1384.27			-3.667E-02	1.319E-01	2.087E-01	1.618E-02	-0.176
IN-111	171.28			1.201E-01	1.039E+00	1.760E+00	9.260E-02	0.068
	245.39	*		9.755E-02	1.135E+00	1.647E+00	9.203E-02	0.059
IN-113M	391.69	*		1.659E-02	3.381E-02	5.806E-02	3.562E-03	0.286
SN-113	391.69	*		1.659E-02	3.381E-02	5.806E-02	3.562E-03	0.286
IN-114M	190.27	*		7.327E-02	1.606E-01	2.426E-01	1.295E-02	0.302
CD-115	260.90			-2.318E+01	1.481E+02	2.406E+02	1.358E+01	-0.096
	492.35			-3.288E+00	3.700E+01	6.052E+01	3.918E+00	-0.054
	527.90	*		7.843E-01	1.159E+01	1.881E+01	1.264E+00	0.042
SN-117M	156.02			-1.942E-01	1.848E+00	3.122E+00	1.668E-01	-0.062
	158.56	*		-2.408E-02	4.434E-02	7.354E-02	3.909E-03	-0.327
SB-122	563.90	*		1.818E-01	2.107E+00	3.445E+00	2.400E-01	0.053
	692.80			1.535E+01	4.332E+01	7.397E+01	5.964E+00	0.208
I-123	159.00	*		-9.863E+00	4.332E+01	Half-Life	too short	
	528.96			-2.903E+02	4.332E+01	Half-Life	too short	
TE-123M	159.00	*		-1.165E-02	2.192E-02	3.637E-02	1.962E-03	-0.320
I-124	602.71	*		-9.943E-02	7.149E-01	9.720E-01	7.029E-02	-0.102
	722.78			-2.348E-01	4.190E+00	5.975E+00	5.078E-01	-0.039
	1325.50			3.437E+00	3.193E+01	5.277E+01	3.938E+00	0.065
	1376.25			2.141E+01	3.041E+01	5.257E+01	3.936E+00	0.407

## ---- 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			1.119E+01	1.480E+01	2.649E+01	1.898E+00	0.423
	1691.02			1.621E+00	3.300E+00	5.823E+00	3.756E-01	0.278
	602.71			-4.851E-03	3.488E-02	4.742E-02	3.430E-03	-0.102
	645.85			-1.032E-01	3.735E-01	5.869E-01	4.758E-02	-0.176
	709.31			1.523E+00	2.224E+00	3.855E+00	3.200E-01	0.395
	713.82			-4.584E-01	1.238E+00	2.011E+00	2.385E-01	-0.228
	722.78			-1.661E-02	2.963E-01	4.226E-01	3.671E-02	-0.039
	968.20		+	1.752E+01	3.713E+00	5.784E+00	5.882E-01	3.030
	1045.16			-1.338E+00	1.783E+00	2.795E+00	2.420E-01	-0.479
	1325.50			2.596E-01	2.412E+00	3.986E+00	2.975E-01	0.065
	1368.21			-7.495E-01	1.392E+00	2.135E+00	2.731E-01	-0.351
	1436.60			-7.954E-01	2.738E+00	4.283E+00	3.154E-01	-0.186
SB-125	1691.02		*	2.703E-02	5.505E-02	9.714E-02	6.702E-03	0.278
	427.89		*	8.377E-03	6.774E-02	1.135E-01	7.094E-03	0.074
	463.38		+	3.158E-01	3.297E-01	4.142E-01	2.969E-02	0.762
	600.56			-2.928E-02	1.345E-01	2.142E-01	1.706E-02	-0.137
TE-125M	635.90			-1.996E-01	2.160E-01	3.231E-01	2.665E-02	-0.618
	109.28		*	5.401E+00	8.309E+00	1.375E+01	1.209E+00	0.393
I-126	388.63			3.645E-02	1.656E-01	2.808E-01	1.614E-02	0.130
	666.33		*	5.973E-02	1.674E-01	2.499E-01	1.921E-02	0.239
SB-126	753.82			6.086E-01	1.141E+00	1.960E+00	1.756E-01	0.311
	223.80			-1.342E-01	3.459E+00	5.716E+00	3.142E-01	-0.023
	278.60			2.508E+00	2.110E+00	3.615E+00	2.060E-01	0.694
	296.50		+	1.302E+01	2.213E+00	3.143E+00	1.804E-01	4.142
	414.70			1.296E-02	5.781E-02	9.766E-02	5.776E-03	0.133
	415.30			-1.495E+00	4.778E+00	7.827E+00	4.632E-01	-0.191
	555.20			-3.011E-01	3.167E+00	5.124E+00	3.540E-01	-0.059
	573.80			-1.142E-01	9.163E-01	1.435E+00	1.009E-01	-0.080
	593.00			-1.876E-03	7.444E-01	1.205E+00	8.633E-02	-0.002
	656.30			1.571E+00	2.931E+00	4.460E+00	3.384E-01	0.352
	666.33			2.502E-02	7.015E-02	1.047E-01	8.049E-03	0.239
	675.00			-1.045E+00	1.598E+00	2.560E+00	1.999E-01	-0.408
SB-127	695.00			5.258E-02	6.167E-02	1.082E-01	8.756E-03	0.486
	697.00			-6.528E-02	2.188E-01	3.586E-01	2.913E-02	-0.182
	720.50		*	-1.814E-03	1.227E-01	1.758E-01	1.488E-02	-0.010
	856.80			2.405E-02	4.475E-01	6.331E-01	6.715E-02	0.038
	989.30			-9.408E-01	9.873E-01	1.451E+00	1.420E-01	-0.648
	1034.80			-5.445E-02	7.008E+00	1.128E+01	1.002E+00	-0.005
	1213.00			9.012E-02	3.860E+00	6.379E+00	3.835E-01	0.014
	61.10			1.313E+01	7.737E+01	1.170E+02	1.268E+01	0.112
	252.40			7.299E-01	4.196E+00	6.923E+00	2.881E+00	0.105
	290.80			3.656E+00	2.312E+01	3.318E+01	3.162E+00	0.110
	411.60			7.658E+00	1.131E+01	1.945E+01	2.855E+00	0.394
	444.90			-6.728E+00	9.709E+00	1.491E+01	1.688E+00	-0.451
SB-127	473.00			8.658E-02	1.557E+00	2.579E+00	3.043E-01	0.034
	543.00			-2.820E+00	1.565E+01	2.522E+01	3.451E+00	-0.112
	603.60			2.984E+00	1.235E+01	1.740E+01	2.076E+00	0.171
	685.20		*	-3.041E-01	1.253E+00	2.062E+00	2.318E-01	-0.147
	698.50			-1.323E+01	1.466E+01	2.288E+01	3.617E+00	-0.579

## ---- 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			-2.477E+01	3.037E+01	3.972E+01	4.531E+00	-0.624
	783.80			4.416E+00	3.469E+00	6.120E+00	8.131E-01	0.722
	57.60			-3.231E+00	6.565E+00	1.078E+01	8.307E-01	-0.300
	145.22			4.167E-01	6.214E-01	1.000E+00	5.469E-02	0.416
	172.10			1.185E-02	9.613E-02	1.628E-01	8.568E-03	0.073
I-131	202.84		*	1.943E-02	3.909E-02	6.432E-02	3.472E-03	0.302
	374.96			3.732E-02	1.548E-01	2.635E-01	1.520E-02	0.142
	80.18			3.330E+00	4.516E+00	6.890E+00	6.012E-01	0.483
	284.30			-6.135E-02	1.276E+00	2.069E+00	1.320E-01	-0.030
	364.48		*	-4.861E-02	9.593E-02	1.574E-01	1.018E-02	-0.309
TE-132	636.97			-3.585E-01	1.310E+00	2.065E+00	1.656E-01	-0.174
	722.89			-1.756E-01	6.183E+00	8.842E+00	7.573E-01	-0.020
	49.72			-6.858E+00	3.061E+01	5.119E+01	5.390E+00	-0.134
	111.76			-6.650E+00	3.279E+01	5.247E+01	5.056E+00	-0.127
	116.30			-2.836E+00	3.077E+01	4.934E+01	4.658E+00	-0.057
BA-133	228.16		*	6.023E-01	7.159E-01	1.215E+00	1.760E-01	0.496
	53.15			5.789E-01	4.053E+00	6.858E+00	5.442E-01	0.084
	79.62			9.551E-02	1.207E+00	1.786E+00	2.719E-01	0.053
	81.00			6.071E-03	8.934E-02	1.320E-01	2.102E-02	0.046
	276.40			3.026E-01	3.108E-01	5.087E-01	6.571E-02	0.595
I-133	302.84			9.038E-02	1.232E-01	1.829E-01	2.127E-02	0.494
	356.01		*	3.738E-03	3.667E-02	5.145E-02	5.944E-03	0.073
	383.85			1.988E-01	2.217E-01	3.878E-01	4.206E-02	0.513
	510.53		+	3.233E+00	2.217E-01	Half-Life	too short	
	529.87		*	-3.851E-03	2.217E-01	Half-Life	too short	
CS-134	706.58			-7.208E-01	2.217E-01	Half-Life	too short	
	856.28			-6.995E-01	2.217E-01	Half-Life	too short	
	875.33			-1.755E-02	2.217E-01	Half-Life	too short	
	1236.41			1.992E+00	2.217E-01	Half-Life	too short	
	1298.22			-4.069E-01	2.217E-01	Half-Life	too short	
+ CS-135	475.35			3.348E-01	1.426E+00	2.386E+00	1.516E-01	0.140
	563.23			1.196E-02	2.692E-01	4.390E-01	3.102E-02	0.027
	569.32			6.388E-02	1.539E-01	2.565E-01	1.833E-02	0.249
	604.70			1.504E-02	2.871E-02	4.151E-02	3.018E-03	0.362
	795.84		*	1.050E-01	6.653E-02	6.974E-02	6.745E-03	1.506
I-135	801.93			-2.044E-01	3.469E-01	4.737E-01	4.621E-02	-0.432
	1038.57			-1.001E+00	2.715E+00	4.406E+00	3.877E-01	-0.227
	1167.94			-1.709E-01	1.703E+00	2.797E+00	1.586E-01	-0.061
	1365.15			-1.417E-01	9.803E-01	1.575E+00	1.253E-01	-0.090
	268.24		*	1.585E-01	1.451E-01	2.208E-01	1.669E-02	0.718
I-135	288.45			2.032E+11	1.451E-01	Half-Life	too short	
	417.63			-2.417E+11	1.451E-01	Half-Life	too short	
	546.56			5.617E+09	1.451E-01	Half-Life	too short	
	836.80			2.721E+11	1.451E-01	Half-Life	too short	
	1038.76			-1.399E+11	1.451E-01	Half-Life	too short	
I-135	1124.00			1.701E+11	1.451E-01	Half-Life	too short	
	1131.51			2.344E+10	1.451E-01	Half-Life	too short	
	1260.41		*	1.460E+10	1.451E-01	Half-Life	too short	
	1457.56			1.397E+13	1.451E-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		2.201E+10	1.451E-01	Half-Life	too short	
		1706.46		-3.175E+11	1.451E-01	Half-Life	too short	
		1791.20		1.941E+11	1.451E-01	Half-Life	too short	
		66.91		-4.148E-01	9.170E-01	1.318E+00	1.990E-01	-0.315
	+	86.29		4.018E+00	1.371E+00	1.882E+00	2.481E-01	2.135
		153.22		3.891E-02	5.485E-01	9.337E-01	6.428E-02	0.042
		163.89		4.666E-01	8.994E-01	1.548E+00	1.058E-01	0.301
		176.55		1.786E-01	3.072E-01	5.279E-01	3.200E-02	0.338
		273.65		-4.275E-01	4.310E-01	5.730E-01	3.734E-02	-0.746
		340.57		3.836E-01	1.325E-01	2.155E-01	1.326E-02	1.780
CE-139		818.51		8.275E-03	5.396E-02	8.996E-02	8.983E-03	0.092
		1048.07	*	1.532E-02	8.227E-02	1.396E-01	1.251E-02	0.110
		1235.34		7.510E-01	6.243E-01	9.429E-01	9.694E-02	0.796
		165.85	*	-2.275E-03	2.347E-02	3.951E-02	2.074E-03	-0.058
	BA-140	162.64		4.952E-01	6.303E-01	1.095E+00	6.639E-02	0.452
		304.84		-3.455E-01	1.164E+00	1.602E+00	4.369E-01	-0.216
		423.70		7.370E-01	1.552E+00	2.622E+00	8.341E-01	0.281
		537.32	*	9.535E-03	2.109E-01	3.453E-01	1.130E-01	0.028
	LA-140	328.77		5.415E-01	3.240E-01	4.653E-01	3.015E-02	1.164
	+	432.53		-8.838E-01	1.611E+00	2.590E+00	1.717E-01	-0.341
CE-141		487.03		7.869E-02	1.023E-01	1.766E-01	1.260E-02	0.445
		751.79		6.419E-01	1.312E+00	2.250E+00	2.211E-01	0.285
		815.85		2.167E-01	2.373E-01	4.170E-01	4.507E-02	0.520
		867.82		-2.380E-01	1.283E+00	1.763E+00	1.967E-01	-0.135
		919.63		5.317E-01	2.267E+00	3.388E+00	4.280E-01	0.157
		925.24		-5.191E-02	8.870E-01	1.437E+00	1.628E-01	-0.036
		1596.49	*	-6.776E-02	7.069E-02	1.040E-01	7.133E-03	-0.652
	CE-143	145.44	*	3.791E-02	5.653E-02	9.101E-02	5.195E-03	0.417
		57.37		-5.731E-04	5.653E-02	Half-Life	too short	
		231.56		-2.789E-03	5.653E-02	Half-Life	too short	
CE-144		293.26	*	1.002E-03	5.653E-02	Half-Life	too short	
	+	350.59		5.116E-02	5.653E-02	Half-Life	too short	
		490.36		-2.054E-04	5.653E-02	Half-Life	too short	
		664.57		4.376E-03	5.653E-02	Half-Life	too short	
		721.93		-1.697E-03	5.653E-02	Half-Life	too short	
		80.11		1.366E+00	1.890E+00	2.882E+00	2.496E-01	0.474
		133.54	*	3.358E-02	1.911E-01	2.737E-01	3.870E-02	0.123
	PM-144	476.78		9.126E-03	5.071E-02	8.455E-02	6.274E-03	0.108
		618.01		1.023E-02	2.577E-02	4.156E-02	3.164E-03	0.246
		696.49	*	1.663E-03	2.593E-02	4.349E-02	3.531E-03	0.038
PR-144		778.57		-1.548E+00	1.671E+00	2.562E+00	2.395E-01	-0.604
		696.49	*	1.127E-01	1.758E+00	2.949E+00	2.393E-01	0.038
		1489.15		-7.438E+00	9.179E+00	1.324E+01	9.569E-01	-0.562
	PM-146	453.90	*	-6.692E-03	3.312E-02	5.420E-02	4.822E-03	-0.123
		633.02		7.994E-01	1.089E+00	1.777E+00	6.597E-01	0.450
		735.90		-1.236E-01	1.165E-01	1.650E-01	4.723E-02	-0.749
		747.13		-7.290E-02	6.982E-02	1.061E-01	1.505E-02	-0.687
	ND-147	91.11		7.814E-01	3.640E-01	4.716E-01	4.435E-02	1.657
		319.41		-1.053E-01	2.701E+00	4.341E+00	2.508E-01	-0.024



---- 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		439.89		3.218E+00	4.805E+00	8.267E+00	5.045E-01	0.389
		531.02	*	1.116E-01	4.568E-01	7.580E-01	1.058E-01	0.147
		285.90	*	-5.256E+01	1.029E+02	1.624E+02	2.297E+01	-0.324
		121.78		-1.110E-02	6.467E-02	1.030E-01	7.939E-03	-0.108
		244.69		2.900E-01	2.611E-01	4.042E-01	2.258E-02	0.718
		344.27	*	3.829E-02	8.616E-02	1.230E-01	8.024E-03	0.311
		443.98		-5.058E-01	7.721E-01	1.191E+00	7.300E-02	-0.425
		778.89		-1.747E-01	1.928E-01	2.961E-01	2.769E-02	-0.590
		867.32		-2.923E-01	7.390E-01	9.901E-01	1.068E-01	-0.295
	+	964.01		5.494E-01	3.095E-01	4.581E-01	4.693E-02	1.199
GD-153		1085.78		1.214E-01	2.916E-01	5.012E-01	3.884E-02	0.242
		1112.02		9.686E-02	2.555E-01	3.796E-01	2.703E-02	0.255
		1407.95		-3.282E-02	1.515E-01	2.411E-01	1.790E-02	-0.136
		69.67		3.157E-01	1.715E+00	2.573E+00	2.088E-01	0.123
		83.37		1.885E+00	1.565E+01	2.093E+01	1.859E+00	0.090
		97.43	*	-7.025E-02	7.704E-02	1.061E-01	8.293E-03	-0.662
		103.18		-1.119E-01	9.120E-02	1.397E-01	1.007E-02	-0.801
		123.07		4.563E-02	4.419E-02	7.363E-02	6.964E-03	0.620
		247.94		-9.974E-02	3.112E-01	4.383E-01	4.129E-02	-0.228
		591.81		2.571E-02	4.882E-01	7.472E-01	7.947E-02	0.034
EU-154		723.30		1.908E-02	1.395E-01	2.028E-01	1.912E-02	0.094
		756.87		7.176E-02	5.592E-01	9.357E-01	1.147E-01	0.077
		873.19		8.063E-02	2.233E-01	3.754E-01	5.229E-02	0.215
		996.32		1.074E-01	2.918E-01	4.220E-01	7.718E-02	0.254
		1004.76		1.689E-01	1.710E-01	2.641E-01	3.247E-02	0.639
		1274.45	*	-6.160E-02	8.506E-02	1.297E-01	1.296E-02	-0.475
		48.70		-1.591E+00	3.114E+00	5.149E+00	3.905E-01	-0.309
		60.01		4.526E+00	5.522E+00	8.618E+00	6.576E-01	0.525
	+	86.54		3.495E-01	1.146E-01	1.671E-01	1.539E-02	2.091
		105.31	*	1.334E-01	9.287E-02	1.583E-01	1.132E-02	0.843
TB-160	+	86.79		9.433E-01	3.091E-01	4.563E-01	4.175E-02	2.067
		197.04		2.020E-01	4.724E-01	7.919E-01	4.253E-02	0.255
		215.65		-4.314E-02	6.526E-01	9.483E-01	5.176E-02	-0.045
	+	298.57		2.197E-01	1.225E-01	1.547E-01	8.886E-03	1.420
		879.36	*	-6.796E-02	1.062E-01	1.643E-01	1.805E-02	-0.414
		962.29		9.849E-01	4.824E-01	7.877E-01	8.093E-02	1.250
		966.15		1.335E+00	2.512E-01	4.412E-01	4.502E-02	3.027
		1177.93		5.691E-03	2.799E-01	4.637E-01	2.589E-02	0.012
		1271.85		4.937E-01	4.788E-01	8.585E-01	5.802E-02	0.575
		80.57		8.648E-02	2.459E-01	3.684E-01	3.200E-02	0.235
HO-166M		184.41		5.186E-02	3.301E-02	5.342E-02	2.838E-03	0.971
		280.46		-6.996E-02	6.956E-02	1.076E-01	6.134E-03	-0.651
		410.95		1.675E-01	1.863E-01	3.249E-01	1.912E-02	0.515
		711.68	*	1.183E-02	4.691E-02	7.943E-02	6.621E-03	0.149
		752.31		1.871E-01	1.996E-01	3.512E-01	3.140E-02	0.533
		810.29		-2.307E-02	4.378E-02	6.918E-02	6.812E-03	-0.333
		51.35		-9.916E+00	3.622E+01	6.033E+01	4.782E+00	-0.164
		52.39		1.018E+01	1.827E+01	3.141E+01	2.495E+00	0.324
		59.40		2.002E+01	3.014E+01	4.675E+01	3.550E+00	0.428
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	*	-2.018E+01	3.163E+01	4.510E+01	3.606E+00	-0.447
		88.36		6.879E-01	2.254E-01	3.275E-01	3.007E-02	2.100
		201.83		4.322E-03	2.320E-02	3.896E-02	2.101E-03	0.111
		306.84	*	-8.215E-03	1.929E-02	2.928E-02	1.686E-03	-0.281
LU-177	+	401.10		-1.576E+00	5.074E+00	8.347E+00	4.852E-01	-0.189
		112.95		-9.878E-01	1.579E+00	2.477E+00	1.596E-01	-0.399
		208.36	*	5.017E+00	1.957E+00	1.833E+00	9.942E-02	2.737
		52.97		8.121E-02	1.861E+00	3.137E+00	2.491E-01	0.026
LU-177M	+	54.07		-1.033E-01	9.616E-01	1.609E+00	1.272E-01	-0.064
		61.30		2.966E-01	1.633E+00	2.470E+00	1.908E-01	0.120
		121.62		-7.146E-02	3.327E-01	5.291E-01	3.139E-02	-0.135
		147.16		-7.189E-01	5.881E-01	8.816E-01	4.797E-02	-0.815
HF-181	+	171.86		-4.752E-02	3.822E-01	6.412E-01	3.375E-02	-0.074
		218.09		-1.371E-01	6.935E-01	1.102E+00	6.026E-02	-0.124
		268.79		1.313E+00	7.479E-01	1.176E+00	6.668E-02	1.117
		319.02		-1.291E-02	1.949E-01	3.128E-01	1.806E-02	-0.041
W-181	+	367.43		-1.248E-03	6.663E-01	1.122E+00	6.480E-02	-0.001
		413.65	*	-1.062E-01	1.337E-01	2.132E-01	1.259E-02	-0.498
		56.28		-2.226E-01	1.029E+00	1.710E+00	1.332E-01	-0.130
		57.53		-1.574E-01	5.463E-01	9.048E-01	6.977E-02	-0.174
TA-182	+	65.20		-1.034E+00	1.089E+00	1.527E+00	1.211E-01	-0.677
		133.02		-2.772E-02	6.459E-02	8.934E-02	5.054E-03	-0.310
		136.25		6.424E-02	4.013E-01	6.435E-01	3.603E-02	0.100
		345.85		-1.132E-02	1.730E-01	2.401E-01	1.389E-02	-0.047
RE-183	+	482.03	*	5.725E-03	3.111E-02	5.187E-02	3.320E-03	0.110
		56.28		-8.587E-02	3.978E-01	6.614E-01	5.152E-02	-0.130
		57.53		-6.093E-02	2.115E-01	3.502E-01	2.701E-02	-0.174
		65.20	*	-3.970E-01	4.180E-01	5.863E-01	4.651E-02	-0.677
RE-184	+	67.75		-9.419E-02	1.172E-01	1.758E-01	1.413E-02	-0.536
		100.10		1.764E-01	1.521E-01	2.578E-01	1.938E-02	0.684
		152.43		-1.384E-01	2.881E-01	4.455E-01	2.396E-02	-0.311
		222.10		1.140E-01	2.788E-01	4.694E-01	2.576E-02	0.243
RE-183	+	1001.68		2.177E+00	1.785E+00	2.855E+00	2.725E-01	0.762
		1121.28		5.755E-01	1.787E-01	2.528E-01	1.741E-02	2.277
		1189.05		-1.463E-01	2.258E-01	3.542E-01	2.026E-02	-0.413
		1221.42	*	5.998E-02	1.569E-01	2.653E-01	1.623E-02	0.226
RE-183	+	1230.97		-6.092E-02	4.401E-01	6.101E-01	3.805E-02	-0.100
		57.98		-1.996E-02	2.107E-01	3.516E-01	2.701E-02	-0.057
		59.32		7.957E-02	1.253E-01	1.941E-01	1.474E-02	0.410
		67.20		-1.382E-01	2.263E-01	3.232E-01	2.591E-02	-0.428
RE-184	+	162.32	*	5.692E-02	8.696E-02	1.505E-01	7.945E-03	0.378
		208.81		4.057E+00	1.582E+00	1.489E+00	8.078E-02	2.725
		291.72		1.097E-01	8.145E-01	1.167E+00	6.686E-02	0.094
		57.98		-7.308E-02	7.712E-01	1.287E+00	9.888E-02	-0.057
RE-184	+	59.32		2.911E-01	4.582E-01	7.098E-01	5.393E-02	0.410
		67.20		-5.057E-01	8.281E-01	1.183E+00	9.481E-02	-0.428
		161.27		6.327E-03	2.794E-01	4.732E-01	2.503E-02	0.013
		216.55		1.600E-01	2.260E-01	3.433E-01	1.876E-02	0.466
RE-184	+	252.85	*	-7.375E-02	1.847E-01	2.972E-01	1.669E-02	-0.248

## ---- 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		-3.569E-01	3.392E-01	5.115E-01	2.952E-02	-0.698
		792.07		6.296E-01	9.298E-01	1.399E+00	1.337E-01	0.450
		903.28		1.027E-01	9.009E-01	1.276E+00	1.432E-01	0.080
		920.93		-5.710E-02	3.334E-01	5.084E-01	5.571E-02	-0.112
		59.72		2.932E-01	3.318E-01	5.195E-01	3.951E-02	0.564
		61.14		3.097E-02	1.808E-01	2.734E-01	2.110E-02	0.113
		69.30		6.964E-03	3.123E-01	4.651E-01	3.767E-02	0.015
		592.07		3.358E-02	1.937E+00	3.055E+00	2.187E-01	0.011
		646.12	*	3.891E-03	3.091E-02	5.013E-02	3.770E-03	0.078
		717.42		7.905E-02	6.584E-01	1.083E+00	9.118E-02	0.073
RE-188		874.81		1.449E-02	4.415E-01	7.245E-01	7.903E-02	0.020
		880.27		1.621E-02	5.907E-01	9.684E-01	1.065E-01	0.017
		155.03	*	1.637E-01	1.342E-01	2.371E-01	1.269E-02	0.691
		477.96		1.224E-01	2.296E+00	3.800E+00	2.421E-01	0.032
		633.10		1.689E+00	2.137E+00	3.627E+00	2.696E-01	0.466
W-188	+	63.58		6.604E+01	7.609E+01	9.280E+01	7.291E+00	0.712
		227.08		2.768E+00	1.043E+01	1.743E+01	9.605E-01	0.159
IR-192		290.67	*	8.992E-01	6.595E+00	9.450E+00	5.413E-01	0.095
	+	295.96		9.456E-01	1.611E-01	2.312E-01	1.348E-02	4.090
		308.46		-1.018E-02	7.225E-02	1.158E-01	6.746E-03	-0.088
		316.51	*	-1.137E-02	2.562E-02	4.020E-02	2.332E-03	-0.283
		468.07		-8.811E-03	5.729E-02	8.096E-02	5.769E-03	-0.109
AU-195		604.41		2.360E-01	3.887E-01	5.652E-01	6.867E-02	0.418
		612.46		3.005E+00	7.587E-01	1.291E+00	1.132E-01	2.329
		65.12		-1.768E-01	1.936E-01	2.722E-01	2.158E-02	-0.650
		66.83		-5.016E-02	1.041E-01	1.496E-01	1.197E-02	-0.335
	+	75.70		3.230E+00	5.412E-01	4.058E-01	3.408E-02	7.960
		98.88	*	1.802E-01	1.928E-01	3.245E-01	2.483E-02	0.555
TL-200	+	129.76		4.578E+00	3.405E+00	4.279E+00	2.448E-01	1.070
		367.94	*	-6.415E-05	3.405E+00	Half-Life	too short	
		579.30		5.885E-03	3.405E+00	Half-Life	too short	
		828.27		4.164E-03	3.405E+00	Half-Life	too short	
TL-201		1205.75		-7.667E-04	3.405E+00	Half-Life	too short	
		68.90		1.836E+00	6.451E+00	9.726E+00	7.863E-01	0.189
		70.82		1.236E+00	3.503E+00	5.289E+00	4.318E-01	0.234
		80.30		1.967E+00	5.892E+00	8.822E+00	7.649E-01	0.223
TL-202		135.34		-1.666E+01	2.834E+01	4.399E+01	2.470E+00	-0.379
		167.43	*	-5.972E+00	7.127E+00	1.164E+01	6.112E-01	-0.513
		68.90		1.360E-01	4.779E-01	7.205E-01	5.825E-02	0.189
		70.82		9.131E-02	2.587E-01	3.907E-01	3.190E-02	0.234
HG-203		80.30		1.454E-01	4.354E-01	6.519E-01	5.652E-02	0.223
		439.56	*	5.246E-02	5.631E-02	9.816E-02	5.984E-03	0.534
		70.83		3.763E-01	1.070E+00	1.614E+00	2.151E-01	0.233
		72.87		7.959E-01	5.651E-01	9.641E-01	1.250E-01	0.826
BI-207		82.60		-7.876E-01	1.087E+00	1.534E+00	2.128E-01	-0.514
		279.20	*	1.642E-02	3.367E-02	5.603E-02	3.398E-03	0.293
		72.80		1.923E-01	1.599E-01	2.743E-01	2.264E-02	0.701
	+	74.97		1.784E+00	2.989E-01	2.063E-01	1.725E-02	8.648
		84.90		2.560E-01	1.781E-01	2.732E-01	2.458E-02	0.937

## ----- 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		1.364E-02	2.392E-02	4.022E-02	2.819E-03	0.339
		1063.62	*	-1.333E-02	4.022E-02	6.550E-02	5.407E-03	-0.203
		1770.23		2.838E-01	2.982E-01	5.194E-01	3.142E-02	0.546
		81.07		9.662E-03	1.969E-01	2.905E-01	2.534E-02	0.033
		83.78		5.043E-02	1.207E-01	1.782E-01	1.588E-02	0.283
		94.90		5.326E-01	2.200E-01	3.518E-01	2.863E-02	1.514
		122.32		2.950E-01	1.517E+00	2.454E+00	1.666E-01	0.120
		144.24		-4.779E-02	6.090E-01	9.521E-01	6.644E-02	-0.050
		154.21		2.607E-01	3.067E-01	5.354E-01	3.563E-02	0.487
	+	269.46		4.145E-01	2.116E-01	2.832E-01	1.682E-02	1.464
		323.87	*	-1.698E-03	5.984E-01	8.402E-01	1.387E-01	-0.002
	+	338.28		5.180E+00	1.491E+00	1.921E+00	2.022E-01	2.696
PO-209		445.03		-1.413E+00	1.853E+00	2.833E+00	2.965E-01	-0.499
		260.50		1.000E-01	7.654E+00	1.254E+01	7.075E-01	0.008
		262.80		3.850E+00	2.138E+01	3.527E+01	1.993E+00	0.109
		896.60	*	-6.432E-01	5.875E+00	9.513E+00	1.073E+00	-0.068
BI-210		46.50	*	2.333E+00	4.719E+00	8.136E+00	6.295E-01	0.287
PB-210		46.50	*	2.333E+00	4.719E+00	8.136E+00	6.295E-01	0.287
PO-210		46.50	*	2.333E+00	4.718E+00	8.136E+00	5.412E-01	0.287
PB-211		404.84	*	-5.643E-01	8.099E-01	1.171E+00	7.299E-01	-0.482
BI-212		427.08		1.946E-01	1.534E+00	2.564E+00	1.585E+00	0.076
		831.96		-8.721E-01	1.055E+00	1.374E+00	8.643E-01	-0.635
	+	727.18	*	9.524E-01	3.663E-01	5.094E-01	5.073E-02	1.870
		785.46		1.300E+00	1.406E+00	2.409E+00	2.277E-01	0.540
PO-215		1620.62		8.555E-01	1.072E+00	1.920E+00	1.299E-01	0.445
		81.07		9.662E-03	1.969E-01	2.905E-01	2.534E-02	0.033
		83.78		5.043E-02	1.207E-01	1.782E-01	1.588E-02	0.283
		94.90		5.326E-01	2.200E-01	3.518E-01	2.863E-02	1.514
		122.32		2.950E-01	1.517E+00	2.454E+00	1.666E-01	0.120
		144.24		-4.779E-02	6.090E-01	9.521E-01	6.644E-02	-0.050
		154.21		2.607E-01	3.067E-01	5.354E-01	3.563E-02	0.487
	+	269.46		4.145E-01	2.116E-01	2.832E-01	1.682E-02	1.464
		323.87	*	-1.698E-03	5.984E-01	8.402E-01	1.387E-01	-0.002
	+	338.28		5.180E+00	1.491E+00	1.921E+00	2.022E-01	2.696
		445.03		-1.413E+00	1.853E+00	2.833E+00	2.965E-01	-0.499
	+	271.23		5.319E-01	2.730E-01	3.515E-01	2.818E-02	1.513
RN-219		401.81	*	-8.620E-02	3.161E-01	5.209E-01	7.091E-02	-0.165
RN-220		549.76	*	8.052E+00	1.995E+01	3.335E+01	2.292E+00	0.241
RA-223		81.07		9.662E-03	1.969E-01	2.905E-01	2.534E-02	0.033
		83.78		5.043E-02	1.207E-01	1.782E-01	1.588E-02	0.283
		94.90		5.326E-01	2.200E-01	3.518E-01	2.863E-02	1.514
		122.32		2.950E-01	1.517E+00	2.454E+00	1.666E-01	0.120
		144.24		-4.779E-02	6.090E-01	9.521E-01	6.644E-02	-0.050
		154.21		2.607E-01	3.067E-01	5.354E-01	3.563E-02	0.487
	+	269.46		4.145E-01	2.116E-01	2.832E-01	1.682E-02	1.464
		323.87	*	-1.698E-03	5.984E-01	8.402E-01	1.387E-01	-0.002
	+	338.28		5.180E+00	1.491E+00	1.921E+00	2.022E-01	2.696
		445.03		-1.413E+00	1.853E+00	2.833E+00	2.965E-01	-0.499
		79.80		9.603E-01	1.471E+00	2.219E+00	4.773E-01	0.433
AC-227								

---- 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		5.262E-01	2.256E-01	3.548E-01	3.660E-02	1.483
		256.20	*	-4.556E-02	2.988E-01	4.861E-01	6.752E-02	-0.094
		286.10		-6.523E-01	1.206E+00	1.901E+00	2.190E-01	-0.343
	+	299.80		2.768E+00	1.600E+00	2.055E+00	3.343E-01	1.347
		304.40		2.466E-01	1.586E+00	2.267E+00	3.918E-01	0.109
		334.20		2.499E-01	2.163E+00	2.841E+00	5.206E-01	0.088
		79.80		9.603E-01	1.471E+00	2.219E+00	4.834E-01	0.433
	+	94.00		7.400E+00	3.174E+00	3.440E+00	7.444E-01	2.151
		236.00		5.262E-01	2.240E-01	3.548E-01	3.157E-02	1.483
		256.20	*	-4.556E-02	2.989E-01	4.861E-01	8.187E-02	-0.094
TH-229		286.10		-6.523E-01	1.369E+00	1.901E+00	1.904E+00	-0.343
	+	299.80		2.768E+00	1.600E+00	2.055E+00	3.343E-01	1.347
		304.40		2.466E-01	1.586E+00	2.267E+00	3.918E-01	0.109
		334.20		2.499E-01	2.163E+00	2.841E+00	5.206E-01	0.088
		85.43		2.679E-01	1.803E-01	2.766E-01	2.500E-02	0.968
	+	88.47		3.960E-01	1.298E-01	1.883E-01	1.725E-02	2.103
		100.00		1.865E-01	1.570E-01	2.664E-01	2.006E-02	0.700
		193.63	*	1.450E-02	4.337E-01	6.741E-01	3.609E-02	0.022
	+	210.97		3.142E+00	1.225E+00	1.076E+00	5.852E-02	2.919
		283.67	*	-4.602E-01	1.194E+00	1.900E+00	2.612E-01	-0.242
PA-231	+	301.29		1.107E+00	6.250E-01	8.300E-01	8.652E-02	1.334
TH-231		81.07		9.662E-03	1.969E-01	2.905E-01	2.534E-02	0.033
		83.78		5.043E-02	1.207E-01	1.782E-01	1.588E-02	0.283
		94.90		5.326E-01	2.200E-01	3.518E-01	2.863E-02	1.514
		122.32		2.950E-01	1.517E+00	2.454E+00	1.666E-01	0.120
		144.24		-4.779E-02	6.090E-01	9.521E-01	6.644E-02	-0.050
		154.21		2.607E-01	3.067E-01	5.354E-01	3.563E-02	0.487
	+	269.46		4.145E-01	2.116E-01	2.832E-01	1.682E-02	1.464
		323.87	*	-1.698E-03	5.984E-01	8.402E-01	1.387E-01	-0.002
	+	338.28		5.180E+00	1.491E+00	1.921E+00	2.022E-01	2.696
		445.03		-1.413E+00	1.853E+00	2.833E+00	2.965E-01	-0.499
U-231		84.21		2.133E+00	6.267E+00	9.217E+00	8.245E-01	0.231
	+	92.29		8.813E+00	3.344E+00	4.349E+00	3.702E-01	2.026
		95.87	*	2.329E-01	1.189E+00	1.749E+00	1.401E-01	0.133
		108.00		-5.005E-01	2.209E+00	3.540E+00	2.407E-01	-0.141
	+	75.28		5.206E+01	1.094E+01	6.095E+00	9.272E-01	8.541
	+	86.59		5.678E+00	2.354E+00	2.726E+00	7.356E-01	2.083
	+	300.12		7.718E-01	4.404E-01	5.759E-01	7.725E-01	1.340
		311.98	*	-3.632E-03	4.801E-02	7.715E-02	4.726E-03	-0.047
		340.50		1.909E+00	7.443E-01	1.004E+00	2.306E-01	1.901
		398.62		2.595E-01	1.588E+00	2.678E+00	6.924E-01	0.097
PA-234		415.76		-1.305E-01	1.174E+00	1.946E+00	4.012E-01	-0.067
	+	63.00		1.894E+00	2.195E+00	2.745E+00	4.138E-01	0.690
	+	94.67		6.599E-01	2.572E-01	2.656E-01	3.212E-02	2.485
		98.44		5.304E-02	8.674E-02	1.302E-01	7.246E-02	0.407
		99.86		4.878E-01	3.984E-01	6.769E-01	5.106E-02	0.721
		111.00		1.306E-02	1.603E-01	2.596E-01	2.785E-02	0.050
		131.20		1.077E-02	1.024E-01	1.463E-01	8.327E-03	0.074
		152.70		-8.975E-02	2.769E-01	4.307E-01	6.744E-02	-0.208

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	186.00		7.047E+00	2.940E+00	2.189E+00	6.670E-01	3.219
		226.40		4.551E-04	3.244E-01	5.366E-01	6.127E-02	0.001
		227.20		1.937E-01	3.461E-01	5.851E-01	3.225E-02	0.331
		248.90		-2.067E-01	6.451E-01	1.004E+00	2.151E-01	-0.206
		293.70		4.596E+00	1.070E+00	1.381E+00	2.217E-01	3.329
		369.80		-3.041E-01	6.405E-01	1.046E+00	2.178E-01	-0.291
		568.70		2.460E-01	7.802E-01	1.293E+00	9.050E-02	0.190
		569.50		1.188E-01	2.121E-01	3.565E-01	2.498E-02	0.333
		574.00		2.621E-01	1.217E+00	1.950E+00	1.372E-01	0.134
		699.00		-6.019E-01	5.769E-01	8.836E-01	1.668E-01	-0.681
		706.10		-1.800E-01	8.637E-01	1.418E+00	6.311E-01	-0.127
		733.00		-4.378E-02	2.939E-01	4.137E-01	9.188E-02	-0.106
		742.81		4.791E-01	1.071E+00	1.750E+00	1.177E+00	0.274
	+	796.30		2.038E+00	1.393E+00	1.363E+00	3.732E-01	1.496
		805.60		5.795E-01	7.607E-01	1.265E+00	3.920E-01	0.458
		819.60		-2.285E-01	8.607E-01	1.379E+00	5.290E-01	-0.166
		826.30		-5.473E-02	5.773E-01	9.417E-01	4.242E-01	-0.058
		831.60		-6.224E-01	5.057E-01	6.932E-01	2.103E-01	-0.898
		876.40		-1.240E-01	6.349E-01	1.002E+00	1.032E+00	-0.124
		880.51		4.124E-02	2.120E-01	3.520E-01	3.873E-02	0.117
PA-234M		883.24		6.365E-02	2.266E-01	3.718E-01	2.512E-01	0.171
		899.00		9.182E-02	6.760E-01	1.113E+00	4.931E-01	0.083
		925.00		-1.763E-01	8.686E-01	1.390E+00	1.514E-01	-0.127
		926.50		1.621E-02	1.300E-01	2.138E-01	5.586E-02	0.076
		946.00	*	1.462E-02	2.136E-01	3.492E-01	6.888E-02	0.042
		949.00		-1.812E-02	3.189E-01	5.155E-01	5.414E-02	-0.035
		980.50		-1.292E-02	5.680E-01	9.180E-01	9.131E-02	-0.014
		1394.10		-4.077E-01	8.974E-01	1.318E+00	8.558E-01	-0.309
		766.42		3.070E+01	1.855E+01	1.789E+01	9.096E+00	1.715
	+	1001.03	*	4.908E+00	4.032E+00	6.151E+00	6.636E-01	0.798
U-235		89.95		4.429E-01	1.406E+00	1.650E+00	5.103E-01	0.268
	+	93.35		2.302E+00	1.068E+00	1.127E+00	3.150E-01	2.042
		105.00		9.218E-01	9.501E-01	1.536E+00	4.519E-01	0.600
		143.76	*	-1.564E-02	1.880E-01	2.939E-01	4.760E-02	-0.053
		163.35		3.536E-01	3.792E-01	6.536E-01	1.165E-01	0.541
NP-236	+	185.71		2.610E-01	7.565E-02	8.095E-02	4.306E-03	3.224
		205.31		-3.412E-01	4.678E-01	6.517E-01	1.164E-01	-0.524
	+	94.67		5.005E-01	1.899E-01	2.017E-01	1.648E-02	2.481
		98.44		4.008E-02	6.174E-02	9.842E-02	7.580E-03	0.407
		111.00		9.881E-03	1.212E-01	1.964E-01	1.292E-02	0.050
NP-239		160.31	*	-2.239E-02	6.169E-02	1.030E-01	5.458E-03	-0.217
		99.55		1.707E-01	1.330E-01	2.264E-01	1.715E-02	0.754
		117.00	*	4.454E-02	1.655E-01	2.693E-01	1.667E-02	0.165
	+	209.75		3.165E+00	1.234E+00	1.155E+00	6.271E-02	2.741
		228.18		1.549E-01	1.828E-01	3.122E-01	1.722E-02	0.496
AM-241		277.60		2.296E-01	1.457E-01	2.532E-01	1.442E-02	0.907
		334.30		6.628E-02	1.222E+00	1.597E+00	9.235E-02	0.042
	*	59.54		1.248E-01	1.749E-01	2.717E-01	2.253E-02	0.459
AM-243		74.67	*	3.549E-01	6.741E-02	1.150E-01	9.594E-03	3.087

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	+	86.72		3.194E+01	1.047E+01	1.544E+01	1.412E+00	2.069
		117.66		8.233E-01	3.278E+00	5.327E+00	3.277E-01	0.155
		142.18		2.586E+00	1.506E+01	2.409E+01	1.327E+00	0.107
		99.55		1.757E-01	1.369E-01	2.330E-01	1.765E-02	0.754
		103.76	*	-1.535E-02	8.199E-02	1.319E-01	9.440E-03	-0.116
		117.00		4.583E-02	1.703E-01	2.770E-01	1.715E-02	0.165
AM-246	+	209.75		3.120E+00	1.217E+00	1.138E+00	6.182E-02	2.741
		228.18		1.566E-01	1.847E-01	3.155E-01	1.740E-02	0.496
		277.60		2.315E-01	1.469E-01	2.552E-01	1.454E-02	0.907
		798.80		1.243E-02	1.175E-01	1.685E-01	1.628E-02	0.074
		1036.00		-5.501E-03	2.091E-01	3.493E-01	3.093E-02	-0.016
		1062.04		-4.869E-02	1.715E-01	2.803E-01	2.324E-02	-0.174
CM-247		1078.86	*	-2.531E-02	1.027E-01	1.680E-01	1.328E-02	-0.151
		278.00		7.455E-01	6.049E-01	1.038E+00	5.911E-02	0.718
		287.40		-3.397E-01	9.558E-01	1.524E+00	8.718E-02	-0.223
CF-249		402.60	*	-7.367E-03	2.796E-02	4.610E-02	2.685E-03	-0.160
		252.85		-2.754E-01	6.898E-01	1.110E+00	6.235E-02	-0.248
		333.44		6.850E-03	2.121E-01	2.133E-01	1.233E-02	0.032
CF-251		387.95	*	-6.271E-03	3.055E-02	5.070E-02	2.914E-03	-0.124
		176.60	*	5.718E-02	9.975E-02	1.714E-01	9.049E-03	0.334
		227.00		6.822E-02	3.088E-01	5.152E-01	2.839E-02	0.132
		285.00		1.634E-01	1.342E+00	2.196E+00	1.255E-01	0.074

# 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]G244148017      *
* Acquisition date   : 20-JAN-2010 18:02:04 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 02:00:01.60                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148017                               Analyst initials: MXR1        *
* Batch Number       : 940268                                   Sample Quantity : 1.3111E+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	2.095E+01	1.938E+00	3.704E-01	0.000E+00
CD-109	2.956E+00	9.492E-01	1.406E+00	0.000E+00
SN-126	2.900E-01	9.314E-02	1.338E-01	0.000E+00
BA-137M	1.188E-01	4.196E-02	4.755E-02	0.000E+00
CS-137	1.256E-01	4.436E-02	5.026E-02	0.000E+00
TL-208	4.735E-01	7.479E-02	4.366E-02	0.000E+00
BI-211	3.643E+00	4.016E-01	2.441E-01	0.000E+00
PB-212	1.518E+00	1.403E-01	6.905E-02	0.000E+00
PO-212	1.518E+00	1.403E-01	6.905E-02	0.000E+00
BI-214	1.170E+00	1.618E-01	8.402E-02	0.000E+00
PB-214	1.267E+00	1.540E-01	8.507E-02	0.000E+00
PO-214	1.267E+00	1.540E-01	8.507E-02	0.000E+00
PO-216	1.518E+00	1.403E-01	6.905E-02	0.000E+00
PO-218	1.267E+00	1.540E-01	8.507E-02	0.000E+00
RA-224	4.735E+00	1.074E+00	7.847E-01	0.000E+00
RA-226	1.170E+00	1.618E-01	8.402E-02	0.000E+00
AC-228	1.526E+00	3.014E-01	1.566E-01	0.000E+00
RA-228	1.526E+00	3.014E-01	1.566E-01	0.000E+00
TH-228	1.543E+00	1.426E-01	7.018E-02	0.000E+00
TH-230	1.170E+00	1.618E-01	8.402E-02	0.000E+00
TH-232	1.526E+00	3.014E-01	1.566E-01	0.000E+00
TH-234	1.625E+00	1.851E+00	2.221E+00	0.000E+00
U-234	1.170E+00	1.618E-01	8.402E-02	0.000E+00
NP-237	8.517E-01	3.232E-01	3.695E-01	0.000E+00
U-238	1.625E+00	1.851E+00	2.221E+00	0.000E+00
ANH-511	1.283E-01	5.240E-02	3.509E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	2.824E-02	2.375E-01	4.106E-01	0.000E+00 NOT IDENT.



NA-22	-3.723E-02	3.099E-02	4.622E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.958E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-3.538E-03	2.288E-02	3.734E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.392E-02	7.819E-02	0.000E+00	NOT IDENT.
SC-46	-1.518E-03	3.029E-02	5.080E-02	0.000E+00	FAIL ABUN
V-48	3.768E-02	5.526E-02	9.684E-02	0.000E+00	NOT IDENT.
CR-51	1.803E-01	2.819E-01	4.921E-01	0.000E+00	NOT IDENT.
MN-52	-1.223E-01	1.918E-01	2.927E-01	0.000E+00	NOT IDENT.
MN-54	-5.093E-04	2.833E-02	4.797E-02	0.000E+00	NOT IDENT.
CO-56	-1.534E-02	2.963E-02	4.815E-02	0.000E+00	NOT IDENT.
CO-57	4.942E-03	2.159E-02	3.722E-02	0.000E+00	NOT IDENT.
CO-58	-1.624E-02	2.845E-02	4.623E-02	0.000E+00	NOT IDENT.
FE-59	-3.043E-03	6.499E-02	1.107E-01	0.000E+00	NOT IDENT.
CO-60	-4.044E-03	2.764E-02	4.554E-02	0.000E+00	NOT IDENT.
ZN-65	6.350E-02	7.298E-02	1.162E-01	0.000E+00	NOT IDENT.
GE-68	1.686E-01	8.587E-01	1.493E+00	0.000E+00	NOT IDENT.
AS-73	1.425E-01	9.242E-01	1.686E+00	0.000E+00	NOT IDENT.
AS-74	3.683E-02	6.948E-02	1.207E-01	0.000E+00	NOT IDENT.
SE-75	-5.509E-03	3.799E-02	5.990E-02	0.000E+00	NOT IDENT.
BR-77	5.005E+00	1.099E+01	1.823E+01	0.000E+00	FAIL ABUN
SR-82	-3.355E-01	2.881E-01	4.483E-01	0.000E+00	NOT IDENT.
RB-83	2.559E-02	5.276E-02	8.769E-02	0.000E+00	NOT IDENT.
RB-84	1.181E-02	5.343E-02	9.153E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	6.222E+00	1.085E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.229E-02	5.631E-02	0.000E+00	NOT IDENT.
RB-86	-1.107E-01	5.742E-01	9.686E-01	0.000E+00	NOT IDENT.
Y-88	-2.188E-02	2.821E-02	4.185E-02	0.000E+00	NOT IDENT.
ZR-88	-2.319E-03	2.300E-02	4.003E-02	0.000E+00	NOT IDENT.
Y-91	-7.636E+00	1.381E+01	2.240E+01	0.000E+00	NOT IDENT.
NB-94	2.627E-02	2.609E-02	4.744E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	3.871E-02	6.624E-02	0.000E+00	NOT IDENT.
NB-95M	8.119E-02	1.103E-01	1.745E-01	0.000E+00	NOT IDENT.
ZR-95	-1.806E-02	5.077E-02	8.474E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.456E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	4.686E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	9.002E+00	1.117E+01	2.008E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.077E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-9.928E-03	2.723E-02	4.683E-02	0.000E+00	NOT IDENT.
RH-102	5.290E-03	2.138E-02	3.726E-02	0.000E+00	FAIL ABUN
RU-103	-2.442E-03	2.939E-02	4.998E-02	0.000E+00	FAIL ABUN
RH-106	1.740E-01	2.455E-01	4.279E-01	0.000E+00	FAIL ABUN
RU-106	1.740E-01	2.449E-01	4.279E-01	0.000E+00	FAIL ABUN
AG-108M	-5.781E-03	2.331E-02	3.981E-02	0.000E+00	NOT IDENT.
AG-110M	1.772E-02	2.889E-02	4.568E-02	0.000E+00	NOT IDENT.
IN-111	9.755E-02	1.113E+00	1.698E+00	0.000E+00	NOT IDENT.
IN-113M	1.659E-02	3.313E-02	5.942E-02	0.000E+00	NOT IDENT.
SN-113	1.659E-02	3.313E-02	5.942E-02	0.000E+00	NOT IDENT.
IN-114M	7.327E-02	1.574E-01	2.513E-01	0.000E+00	NOT IDENT.
CD-115	7.843E-01	1.136E+01	1.916E+01	0.000E+00	NOT IDENT.
SN-117M	-2.408E-02	4.345E-02	7.638E-02	0.000E+00	NOT IDENT.
SB-122	1.818E-01	2.065E+00	3.505E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.819E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.165E-02	2.148E-02	3.777E-02	0.000E+00	NOT IDENT.
I-124	-9.943E-02	7.006E-01	9.878E-01	0.000E+00	NOT IDENT.
SB-124	2.703E-02	5.395E-02	9.699E-02	0.000E+00	FAIL ABUN
SB-125	8.377E-03	6.639E-02	1.160E-01	0.000E+00	FAIL ABUN
TE-125M	5.401E+00	8.143E+00	1.437E+01	0.000E+00	NOT IDENT.
I-126	5.973E-02	1.641E-01	2.535E-01	0.000E+00	NOT IDENT.
SB-126	-1.814E-03	1.203E-01	1.781E-01	0.000E+00	FAIL ABUN
SB-127	-3.041E-01	1.228E+00	2.091E+00	0.000E+00	NOT IDENT.
XE-127	1.943E-02	3.831E-02	6.654E-02	0.000E+00	NOT IDENT.
I-131	-4.861E-02	9.401E-02	1.612E-01	0.000E+00	NOT IDENT.
TE-132	6.023E-01	7.016E-01	1.255E+00	0.000E+00	NOT IDENT.
BA-133	3.738E-03	3.593E-02	5.274E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.120E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.520E-02	7.054E-02	0.000E+00	FAIL ABUN
CS-135	1.585E-01	1.422E-01	2.274E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.312E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.532E-02	8.063E-02	1.405E-01	0.000E+00	FAIL ABUN
CE-139	-2.275E-03	2.300E-02	4.101E-02	0.000E+00	NOT IDENT.
BA-140	9.535E-03	2.067E-01	3.516E-01	0.000E+00	NOT IDENT.
LA-140	-6.776E-02	6.927E-02	1.039E-01	0.000E+00	FAIL ABUN
CE-141	3.791E-02	5.540E-02	9.465E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.296E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	3.358E-02	1.873E-01	2.851E-01	0.000E+00	NOT IDENT.
PM-144	1.663E-03	2.541E-02	4.408E-02	0.000E+00	NOT IDENT.
PR-144	1.127E-01	1.723E+00	2.989E+00	0.000E+00	NOT IDENT.
PM-146	-6.692E-03	3.245E-02	5.534E-02	0.000E+00	NOT IDENT.

ND-147	1.116E-01	4.476E-01	7.719E-01	0.000E+00	NOT IDENT.
PM-149	-5.256E+01	1.008E+02	1.670E+02	0.000E+00	NOT IDENT.
EU-152	3.829E-02	8.444E-02	1.261E-01	0.000E+00	FAIL ABUN
GD-153	-7.025E-02	7.549E-02	1.110E-01	0.000E+00	NOT IDENT.
EU-154	-6.160E-02	8.336E-02	1.302E-01	0.000E+00	NOT IDENT.
EU-155	1.334E-01	9.101E-02	1.655E-01	0.000E+00	FAIL ABUN
TB-160	-6.796E-02	1.041E-01	1.659E-01	0.000E+00	FAIL ABUN
HO-166M	1.183E-02	4.597E-02	8.049E-02	0.000E+00	NOT IDENT.
TM-171	-2.018E+01	3.099E+01	4.749E+01	0.000E+00	NOT IDENT.
LU-176	-8.215E-03	1.891E-02	3.009E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.918E+00	1.895E+00	0.000E+00	FAIL ABUN
LU-177M	-1.062E-01	1.310E-01	2.180E-01	0.000E+00	NOT IDENT.
HF-181	5.725E-03	3.049E-02	5.290E-02	0.000E+00	NOT IDENT.
W-181	-3.970E-01	4.096E-01	6.176E-01	0.000E+00	NOT IDENT.
TA-182	5.998E-02	1.538E-01	2.664E-01	0.000E+00	FAIL ABUN
RE-183	5.692E-02	8.522E-02	1.563E-01	0.000E+00	FAIL ABUN
RE-184	-7.375E-02	1.810E-01	3.064E-01	0.000E+00	NOT IDENT.
OS-185	3.891E-03	3.029E-02	5.088E-02	0.000E+00	NOT IDENT.
RE-188	1.637E-01	1.315E-01	2.463E-01	0.000E+00	NOT IDENT.
W-188	8.992E-01	6.463E+00	9.720E+00	0.000E+00	FAIL ABUN
IR-192	-1.137E-02	2.511E-02	4.129E-02	0.000E+00	FAIL ABUN
AU-195	1.802E-01	1.889E-01	3.396E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	6.876E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-5.972E+00	6.985E+00	1.208E+01	0.000E+00	NOT IDENT.
TL-202	5.246E-02	5.518E-02	1.003E-01	0.000E+00	NOT IDENT.
HG-203	1.642E-02	3.299E-02	5.766E-02	0.000E+00	NOT IDENT.
BI-207	-1.333E-02	3.942E-02	6.593E-02	0.000E+00	FAIL ABUN
TL-207	-1.698E-03	5.864E-01	8.626E-01	0.000E+00	FAIL ABUN
PO-209	-6.432E-01	5.757E+00	9.603E+00	0.000E+00	NOT IDENT.
BI-210	2.333E+00	4.624E+00	8.615E+00	0.000E+00	NOT IDENT.
PB-210	2.333E+00	4.624E+00	8.615E+00	0.000E+00	NOT IDENT.
PO-210	2.333E+00	4.623E+00	8.615E+00	0.000E+00	NOT IDENT.
PB-211	-5.643E-01	7.937E-01	1.198E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	3.590E-01	5.160E-01	0.000E+00	FAIL ABUN
PO-215	-1.698E-03	5.864E-01	8.626E-01	0.000E+00	FAIL ABUN
RN-219	-8.620E-02	3.098E-01	5.329E-01	0.000E+00	FAIL ABUN
RN-220	8.052E+00	1.955E+01	3.394E+01	0.000E+00	NOT IDENT.
RA-223	-1.698E-03	5.864E-01	8.626E-01	0.000E+00	FAIL ABUN
AC-227	-4.556E-02	2.929E-01	5.010E-01	0.000E+00	FAIL ABUN
TH-227	-4.556E-02	2.929E-01	5.010E-01	0.000E+00	FAIL ABUN
TH-229	1.450E-02	4.250E-01	6.979E-01	0.000E+00	FAIL ABUN
PA-231	-4.602E-01	1.170E+00	1.955E+00	0.000E+00	FAIL ABUN
TH-231	-1.698E-03	5.864E-01	8.626E-01	0.000E+00	FAIL ABUN
U-231	2.329E-01	1.166E+00	1.831E+00	0.000E+00	FAIL ABUN
PA-233	-3.632E-03	4.705E-02	7.925E-02	0.000E+00	FAIL ABUN
PA-234	1.462E-02	2.094E-01	3.521E-01	0.000E+00	FAIL ABUN
PA-234M	4.908E+00	3.951E+00	6.197E+00	0.000E+00	FAIL ABUN
U-235	-1.564E-02	1.842E-01	3.057E-01	0.000E+00	FAIL ABUN
NP-236	-2.239E-02	6.046E-02	1.070E-01	0.000E+00	FAIL ABUN
NP-239	4.454E-02	1.622E-01	2.810E-01	0.000E+00	FAIL ABUN
AM-241	1.248E-01	1.714E-01	2.866E-01	0.000E+00	NOT IDENT.
AM-243	0.000E+00	6.606E-02	1.208E-01	0.000E+00	FAIL ABUN
CM-243	-1.535E-02	8.035E-02	1.379E-01	0.000E+00	FAIL ABUN
AM-246	-2.531E-02	1.007E-01	1.690E-01	0.000E+00	NOT IDENT.
CM-247	-7.367E-03	2.740E-02	4.716E-02	0.000E+00	NOT IDENT.
CF-249	-6.271E-03	2.994E-02	5.189E-02	0.000E+00	NOT IDENT.
CF-251	5.718E-02	9.776E-02	1.777E-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]G244148017.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 18:02:04
Sample ID          : G244148017      Sample quantity   : 1.31110E+02 GRAM
Detector name      : GAM18           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.60  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 940268          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	1479	10.67*	1.893E+00	2.095E+01	2.095E+01	9.44
CD-109	88.03	242	3.72*	6.453E+00	2.885E+00	2.956E+00	32.77
SN-126	64.28	66	9.60	3.079E+00	6.431E-01	6.431E-01	115.89
	86.94	242	8.90	6.453E+00	1.206E+00	1.206E+00	52.06
	87.57	242	37.00*	6.453E+00	2.900E-01	2.900E-01	32.77
BA-137M	661.65	134	89.98*	3.587E+00	1.187E-01	1.188E-01	36.05
CS-137	661.65	134	85.12*	3.587E+00	1.254E-01	1.256E-01	36.05
TL-208	277.35	-----	6.80	6.258E+00	-----	Line Not Found	-----
	510.84	193	21.60	4.309E+00	5.938E-01	5.938E-01	42.51
	583.14	548	84.20*	3.933E+00	4.735E-01	4.735E-01	16.12
	860.37	74	12.46	2.913E+00	5.871E-01	5.871E-01	73.44
BI-211	72.87	-----	1.27	4.622E+00	-----	Line Not Found	-----
	351.07	898	12.94*	5.451E+00	3.643E+00	3.643E+00	11.25
PB-212	74.81	-----	10.70	4.909E+00	-----	Line Not Found	-----
	77.11	1174	18.00	5.124E+00	3.644E+00	3.644E+00	16.76
	87.30	242	8.00	6.453E+00	1.341E+00	1.341E+00	34.26
	238.63	1606	44.60*	6.791E+00	1.518E+00	1.518E+00	9.43
	300.09	107	3.41	5.987E+00	1.494E+00	1.494E+00	56.07
PO-212	74.81	-----	10.70	4.909E+00	-----	Line Not Found	-----
	77.11	1174	18.00	5.124E+00	3.644E+00	3.644E+00	16.76
	87.30	242	8.00	6.453E+00	1.341E+00	1.341E+00	34.26
	115.19	-----	0.60	8.058E+00	-----	Line Not Found	-----
	238.63	1606	44.60*	6.791E+00	1.518E+00	1.518E+00	9.43
	300.09	107	3.41	5.987E+00	1.494E+00	1.494E+00	56.07
BI-214	609.31	721	46.30*	3.812E+00	1.170E+00	1.170E+00	14.11
	1120.29	149	15.10	2.334E+00	1.209E+00	1.209E+00	31.74
	1764.49	145	15.80	1.695E+00	1.553E+00	1.553E+00	22.56
PB-214	74.81	-----	6.21	4.909E+00	-----	Line Not Found	-----
	77.11	1174	10.50	5.124E+00	6.247E+00	6.247E+00	18.41
	87.30	242	4.67	6.453E+00	2.298E+00	2.298E+00	33.66
	241.98	441	7.49	6.748E+00	2.497E+00	2.497E+00	23.82
	295.21	497	19.20	6.040E+00	1.227E+00	1.227E+00	18.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	898	37.20*	5.451E+00	1.267E+00	1.267E+00	12.40
	74.81	-----	6.21	4.909E+00	-----	Line Not Found	-----
	77.11	1174	10.50	5.124E+00	6.247E+00	6.247E+00	18.41
	87.30	242	4.67	6.453E+00	2.298E+00	2.298E+00	33.66
	241.98	441	7.49	6.748E+00	2.497E+00	2.497E+00	23.82
	295.21	497	19.20	6.040E+00	1.227E+00	1.227E+00	18.11
	351.92	898	37.20*	5.451E+00	1.267E+00	1.267E+00	12.40
PO-216	74.81	-----	10.70	4.909E+00	-----	Line Not Found	-----
	77.11	1174	18.00	5.124E+00	3.644E+00	3.644E+00	16.76
	87.30	242	8.00	6.453E+00	1.341E+00	1.341E+00	34.26
	238.63	1606	44.60*	6.791E+00	1.518E+00	1.518E+00	9.43
	300.09	107	3.41	5.987E+00	1.494E+00	1.494E+00	56.07
PO-218	74.81	-----	6.21	4.909E+00	-----	Line Not Found	-----
	77.11	1174	10.50	5.124E+00	6.247E+00	6.247E+00	18.41
	87.30	242	4.67	6.453E+00	2.298E+00	2.298E+00	33.66
	241.98	441	7.49	6.748E+00	2.497E+00	2.497E+00	23.82
	295.21	497	19.20	6.040E+00	1.227E+00	1.227E+00	18.11
	351.92	898	37.20*	5.451E+00	1.267E+00	1.267E+00	12.40
RA-224	240.98	441	3.95*	6.748E+00	4.735E+00	4.735E+00	23.15
RA-226	609.31	721	46.30*	3.812E+00	1.170E+00	1.170E+00	14.11
	1120.29	149	15.10	2.334E+00	1.209E+00	1.209E+00	31.74
	1764.49	145	15.80	1.695E+00	1.553E+00	1.553E+00	22.56
AC-228	338.32	276	11.40	5.579E+00	1.240E+00	1.240E+00	48.78
	911.07	410	27.70*	2.780E+00	1.526E+00	1.526E+00	20.15
	969.11	257	16.60	2.640E+00	1.680E+00	1.680E+00	30.32
RA-228	338.32	276	11.40	5.579E+00	1.240E+00	1.240E+00	48.78
	911.07	410	27.70*	2.780E+00	1.526E+00	1.526E+00	20.15
	969.11	257	16.60	2.640E+00	1.680E+00	1.680E+00	30.32
TH-228	74.81	-----	10.70	4.909E+00	-----	Line Not Found	-----
	77.11	1174	18.00	5.124E+00	3.644E+00	3.704E+00	16.76
	87.30	242	8.00	6.453E+00	1.341E+00	1.363E+00	32.77
	238.63	1606	44.60*	6.791E+00	1.518E+00	1.543E+00	9.43
	300.09	107	3.41	5.987E+00	1.494E+00	1.518E+00	80.93
TH-230	609.31	721	46.30*	3.812E+00	1.170E+00	1.170E+00	14.11
	1120.29	149	15.10	2.334E+00	1.209E+00	1.209E+00	31.74
	1764.49	145	15.80	1.695E+00	1.553E+00	1.553E+00	22.56
TH-232	338.32	276	11.40	5.579E+00	1.240E+00	1.240E+00	27.41
	911.07	410	27.70*	2.780E+00	1.526E+00	1.526E+00	20.15
	969.11	257	16.60	2.640E+00	1.680E+00	1.680E+00	30.32
TH-234	63.29	66	3.80*	3.079E+00	1.625E+00	1.625E+00	116.30
	92.38	252	5.41	6.976E+00	1.915E+00	1.915E+00	41.14
U-234	609.31	721	46.30*	3.812E+00	1.170E+00	1.170E+00	14.11
	1120.29	149	15.10	2.334E+00	1.209E+00	1.209E+00	31.74
	1764.49	145	15.80	1.695E+00	1.553E+00	1.553E+00	22.56
NP-237	86.50	242	12.60*	6.453E+00	8.517E-01	8.517E-01	38.72
	95.87	-----	2.60	7.180E+00	-----	Line Not Found	-----
U-238	63.29	66	3.80*	3.079E+00	1.625E+00	1.625E+00	116.30
	92.38	252	5.41	6.976E+00	1.915E+00	1.915E+00	37.94
ANH-511	511.00	193	100.00*	4.309E+00	1.283E-01	1.283E-01	41.69

Flag: "\*" = Keyline

Total number of lines in spectrum 33  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 31 93.94%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.095E+01	2.095E+01	0.198E+01	9.44	
CD-109	464.00D	1.02	2.885E+00	2.956E+00	0.969E+00	32.77	
SN-126	1.00E+05Y	1.00	2.900E-01	2.900E-01	0.950E-01	32.77	
BA-137M	30.17Y	1.00	1.187E-01	1.188E-01	0.428E-01	36.05	
CS-137	30.17Y	1.00	1.254E-01	1.256E-01	0.453E-01	36.05	
TL-208	1.41E+10Y	1.00	4.735E-01	4.735E-01	0.763E-01	16.12	
BI-211	7.04E+08Y	1.00	3.643E+00	3.643E+00	0.410E+00	11.25	
PB-212	1.41E+10Y	1.00	1.518E+00	1.518E+00	0.143E+00	9.43	
PO-212	1.41E+10Y	1.00	1.518E+00	1.518E+00	0.143E+00	9.43	
BI-214	1600.00Y	1.00	1.170E+00	1.170E+00	0.165E+00	14.11	
PB-214	1600.00Y	1.00	1.267E+00	1.267E+00	0.157E+00	12.40	
PO-214	1600.00Y	1.00	1.267E+00	1.267E+00	0.157E+00	12.40	
PO-216	1.41E+10Y	1.00	1.518E+00	1.518E+00	0.143E+00	9.43	
PO-218	1600.00Y	1.00	1.267E+00	1.267E+00	0.157E+00	12.40	
RA-224	1.41E+10Y	1.00	4.735E+00	4.735E+00	1.096E+00	23.15	
RA-226	1600.00Y	1.00	1.170E+00	1.170E+00	0.165E+00	14.11	
AC-228	1.41E+10Y	1.00	1.526E+00	1.526E+00	0.308E+00	20.15	
RA-228	1.41E+10Y	1.00	1.526E+00	1.526E+00	0.308E+00	20.15	
TH-228	1.91Y	1.02	1.518E+00	1.543E+00	0.145E+00	9.43	
TH-230	4.47E+09Y	1.00	1.170E+00	1.170E+00	0.165E+00	14.11	
TH-232	1.41E+10Y	1.00	1.526E+00	1.526E+00	0.308E+00	20.15	
TH-234	4.47E+09Y	1.00	1.625E+00	1.625E+00	1.889E+00	116.30	
U-234	4.47E+09Y	1.00	1.170E+00	1.170E+00	0.165E+00	14.11	
NP-237	2.14E+06Y	1.00	8.517E-01	8.517E-01	3.298E-01	38.72	
U-238	4.47E+09Y	1.00	1.625E+00	1.625E+00	1.889E+00	116.30	
ANH-511	1.00E+09Y	1.00	1.283E-01	1.283E-01	0.535E-01	41.69	

Total Activity : 5.659E+01 5.668E+01

Grand Total Activity : 5.659E+01 5.668E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244148017

Page : 5  
Acquisition date : 20-JAN-2010 18:02:04

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.02	100	400	1.08	257.12	254	9	1.39E-02	74.2	8.25E+00	T
0	186.53	376	498	1.58	372.10	366	15	5.22E-02	28.5	7.64E+00	T
0	209.51	260	449	2.98	418.04	412	16	3.61E-02	38.6	7.25E+00	T
0	270.39	125	248	1.92	539.76	535	10	1.74E-02	50.7	6.35E+00	T
0	328.39	91	197	0.96	655.71	651	9	1.26E-02	59.5	5.68E+00	T
0	462.81	52	180	1.20	924.47	920	11	7.21E-03	****	4.60E+00	T
0	727.16	131	108	1.50	1453.04	1445	15	1.82E-02	37.1	3.34E+00	T
0	768.16	93	84	1.45	1535.02	1529	11	1.29E-02	43.6	3.20E+00	T
0	795.15	86	118	1.77	1588.99	1581	18	1.20E-02	62.6	3.11E+00	T
1	964.17	73	63	2.32	1926.96	1918	29	1.01E-02	55.4	2.65E+00	T
0	1000.94	37	43	1.45	2000.49	1997	10	5.13E-03	81.4	2.57E+00	T
0	1241.65	132	128	10.17	2481.84	2467	33	1.83E-02	58.4	2.14E+00	
0	1729.04	39	16	2.03	3456.54	3446	16	5.42E-03	55.9	1.71E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148017.CNF;1
* Acquisition date   : 20-JAN-2010 18:02:04  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 02:00:01.60              Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244148017              Analyst initials: MXR1
* Batch Number       : 940268                  Sample Quantity : 1.31110E+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	2.095E+01	1.978E+00	3.701E-01	2.808E-02	56.625
CD-109	2.956E+00	9.685E-01	1.341E+00	1.239E-01	2.205
SN-126	2.900E-01	9.504E-02	1.276E-01	1.176E-02	2.272
BA-137M	1.188E-01	4.281E-02	4.687E-02	3.572E-03	2.534
CS-137	1.256E-01	4.526E-02	4.954E-02	3.786E-03	2.534
TL-208	4.735E-01	7.631E-02	4.294E-02	3.366E-03	11.027
BI-211	3.643E+00	4.098E-01	2.381E-01	1.528E-02	15.302
PB-212	1.518E+00	1.432E-01	6.692E-02	4.781E-03	22.682
PO-212	1.518E+00	1.432E-01	6.692E-02	4.781E-03	22.682
BI-214	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
PB-214	1.267E+00	1.571E-01	8.297E-02	6.864E-03	15.274
PO-214	1.267E+00	1.571E-01	8.297E-02	6.864E-03	15.274
PO-216	1.518E+00	1.432E-01	6.692E-02	4.781E-03	22.682
PO-218	1.267E+00	1.571E-01	8.297E-02	6.864E-03	15.274
RA-224	4.735E+00	1.096E+00	7.606E-01	4.237E-02	6.225
RA-226	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
AC-228	1.526E+00	3.076E-01	1.552E-01	2.057E-02	9.832
RA-228	1.526E+00	3.076E-01	1.552E-01	2.057E-02	9.832



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.543E+00	1.455E-01	6.801E-02	4.859E-03	22.682
TH-230	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
TH-232	1.526E+00	3.076E-01	1.552E-01	2.057E-02	9.832
TH-234	1.625E+00	1.889E+00	2.108E+00	3.716E-01	0.771
U-234	1.170E+00	1.651E-01	8.269E-02	7.387E-03	14.149
NP-237	8.517E-01	3.298E-01	3.523E-01	7.949E-02	2.417
U-238	1.625E+00	1.889E+00	2.108E+00	3.716E-01	0.771
ANH-511	1.283E-01	5.347E-02	3.444E-02	2.274E-03	3.725

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.824E-02		2.423E-01	4.025E-01	2.917E-02	0.070
NA-22	-3.723E-02		3.162E-02	4.606E-02	3.134E-03	-0.808
NA-24	-3.956E-01		9.991E-01	Half-Life too short		
AL-26	-3.538E-03		2.335E-02	3.744E-02	2.186E-03	-0.094
TI-44	2.660E-01		4.482E-02	7.445E-02	6.365E-03	3.573
SC-46	-1.518E-03		3.091E-02	5.032E-02	5.613E-03	-0.030
V-48	3.768E-02		5.639E-02	9.608E-02	9.504E-03	0.392
CR-51	1.803E-01		2.876E-01	4.793E-01	3.086E-02	0.376
MN-52	-1.223E-01		1.957E-01	2.923E-01	2.154E-02	-0.418
MN-54	-5.093E-04		2.891E-02	4.747E-02	4.862E-03	-0.011
CO-56	-1.534E-02		3.023E-02	4.765E-02	4.975E-03	-0.322
CO-57	4.942E-03		2.204E-02	3.569E-02	2.114E-03	0.138
CO-58	-1.624E-02		2.903E-02	4.572E-02	4.513E-03	-0.355
FE-59	-3.043E-03		6.631E-02	1.100E-01	9.056E-03	-0.028
CO-60	-4.044E-03		2.820E-02	4.542E-02	3.432E-03	-0.089
ZN-65	6.350E-02		7.447E-02	1.155E-01	8.139E-03	0.550
GE-68	1.686E-01		8.762E-01	1.484E+00	1.179E-01	0.114
AS-73	1.425E-01		9.430E-01	1.596E+00	1.265E-01	0.089
AS-74	3.683E-02		7.090E-02	1.187E-01	8.532E-03	0.310
SE-75	-5.509E-03		3.877E-02	5.815E-02	3.326E-03	-0.095
BR-77	5.005E+00		1.121E+01	1.789E+01	1.194E+00	0.280
SR-82	-3.355E-01		2.940E-01	4.430E-01	4.126E-02	-0.757
RB-83	2.559E-02		5.384E-02	8.608E-02	5.741E-03	0.297
RB-84	1.181E-02		5.452E-02	9.065E-02	9.991E-03	0.130
KR-85	1.663E+01		6.349E+00	1.065E+01	7.057E-01	1.561
SR-85	8.626E-02		3.295E-02	5.527E-02	3.662E-03	1.561
RB-86	-1.107E-01		5.859E-01	9.626E-01	7.662E-02	-0.115
Y-88	-2.188E-02		2.879E-02	4.198E-02	2.391E-03	-0.521
ZR-88	-2.319E-03		2.347E-02	3.912E-02	2.250E-03	-0.059
Y-91	-7.636E+00		1.409E+01	2.231E+01	1.319E+00	-0.342
NB-94	2.627E-02		2.662E-02	4.681E-02	3.840E-03	0.561
NB-95	8.610E-02		3.950E-02	6.545E-02	5.987E-03	1.315
NB-95M	8.119E-02		1.125E-01	1.691E-01	1.241E-02	0.480
ZR-95	-1.806E-02		5.180E-02	8.371E-02	8.236E-03	-0.216
NB-97	1.550E-01		1.253E-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	8.505E+00		2.391E+00	Half-Life too short		
MO-99	9.002E+00		1.140E+01	1.983E+01	3.025E+00	0.454
TC-99M	-7.283E+11		4.121E+11	Half-Life too short		
RH-101	-9.928E-03		2.778E-02	4.524E-02	2.432E-03	-0.219
RH-102	5.290E-03		2.182E-02	3.652E-02	2.320E-03	0.145
RU-103	-2.442E-03		2.999E-02	4.903E-02	6.366E-03	-0.050
RH-106	1.740E-01		2.505E-01	4.213E-01	5.300E-02	0.413
RU-106	1.740E-01		2.499E-01	4.213E-01	3.100E-02	0.413
AG-108M	-5.781E-03		2.378E-02	3.896E-02	2.545E-03	-0.148
AG-110M	1.772E-02		2.948E-02	4.502E-02	3.551E-03	0.394
IN-111	9.755E-02		1.135E+00	1.647E+00	9.203E-02	0.059
IN-113M	1.659E-02		3.381E-02	5.806E-02	3.562E-03	0.286
SN-113	1.659E-02		3.381E-02	5.806E-02	3.562E-03	0.286
IN-114M	7.327E-02		1.606E-01	2.426E-01	1.295E-02	0.302
CD-115	7.843E-01		1.159E+01	1.881E+01	1.264E+00	0.042
SN-117M	-2.408E-02		4.434E-02	7.354E-02	3.909E-03	-0.327
SB-122	1.818E-01		2.107E+00	3.445E+00	2.400E-01	0.053
I-123	-9.863E+00		9.279E+00	Half-Life too short		
TE-123M	-1.165E-02		2.192E-02	3.637E-02	1.962E-03	-0.320
I-124	-9.943E-02		7.149E-01	9.720E-01	7.029E-02	-0.102
SB-124	2.703E-02		5.505E-02	9.714E-02	6.702E-03	0.278
SB-125	8.377E-03		6.774E-02	1.135E-01	7.094E-03	0.074
TE-125M	5.401E+00		8.309E+00	1.375E+01	1.209E+00	0.393
I-126	5.973E-02		1.674E-01	2.499E-01	1.921E-02	0.239
SB-126	-1.814E-03		1.227E-01	1.758E-01	1.488E-02	-0.010
SB-127	-3.041E-01		1.253E+00	2.062E+00	2.318E-01	-0.147
XE-127	1.943E-02		3.909E-02	6.432E-02	3.472E-03	0.302
I-131	-4.861E-02		9.593E-02	1.574E-01	1.018E-02	-0.309
TE-132	6.023E-01		7.159E-01	1.215E+00	1.760E-01	0.496
BA-133	3.738E-03		3.667E-02	5.145E-02	5.944E-03	0.073
I-133	-3.851E-03		5.716E-03	Half-Life too short		
CS-134	1.050E-01	+	6.653E-02	6.974E-02	6.745E-03	1.506
CS-135	1.585E-01		1.451E-01	2.208E-01	1.669E-02	0.718
I-135	1.460E+10		3.730E+10	Half-Life too short		
CS-136	1.532E-02		8.227E-02	1.396E-01	1.251E-02	0.110
CE-139	-2.275E-03		2.347E-02	3.951E-02	2.074E-03	-0.058
BA-140	9.535E-03		2.109E-01	3.453E-01	1.130E-01	0.028
LA-140	-6.776E-02		7.069E-02	1.040E-01	7.133E-03	-0.652
CE-141	3.791E-02		5.653E-02	9.101E-02	5.195E-03	0.417
CE-143	1.002E-03		1.682E-04	Half-Life too short		
CE-144	3.358E-02		1.911E-01	2.737E-01	3.870E-02	0.123
PM-144	1.663E-03		2.593E-02	4.349E-02	3.531E-03	0.038
PR-144	1.127E-01		1.758E+00	2.949E+00	2.393E-01	0.038
PM-146	-6.692E-03		3.312E-02	5.420E-02	4.822E-03	-0.123
ND-147	1.116E-01		4.568E-01	7.580E-01	1.058E-01	0.147
PM-149	-5.256E+01		1.029E+02	1.624E+02	2.297E+01	-0.324
EU-152	3.829E-02		8.616E-02	1.230E-01	8.024E-03	0.311
GD-153	-7.025E-02		7.704E-02	1.061E-01	8.293E-03	-0.662

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	-6.160E-02		8.506E-02	1.297E-01	1.296E-02	-0.475
EU-155	1.334E-01		9.287E-02	1.583E-01	1.132E-02	0.843
TB-160	-6.796E-02		1.062E-01	1.643E-01	1.805E-02	-0.414
HO-166M	1.183E-02		4.691E-02	7.943E-02	6.621E-03	0.149
TM-171	-2.018E+01		3.163E+01	4.510E+01	3.606E+00	-0.447
LU-176	-8.215E-03		1.929E-02	2.928E-02	1.686E-03	-0.281
LU-177	5.017E+00	+	1.957E+00	1.833E+00	9.942E-02	2.737
LU-177M	-1.062E-01		1.337E-01	2.132E-01	1.259E-02	-0.498
HF-181	5.725E-03		3.111E-02	5.187E-02	3.320E-03	0.110
W-181	-3.970E-01		4.180E-01	5.863E-01	4.651E-02	-0.677
TA-182	5.998E-02		1.569E-01	2.653E-01	1.623E-02	0.226
RE-183	5.692E-02		8.696E-02	1.505E-01	7.945E-03	0.378
RE-184	-7.375E-02		1.847E-01	2.972E-01	1.669E-02	-0.248
OS-185	3.891E-03		3.091E-02	5.013E-02	3.770E-03	0.078
RE-188	1.637E-01		1.342E-01	2.371E-01	1.269E-02	0.691
W-188	8.992E-01		6.595E+00	9.450E+00	5.413E-01	0.095
IR-192	-1.137E-02		2.562E-02	4.020E-02	2.332E-03	-0.283
AU-195	1.802E-01		1.928E-01	3.245E-01	2.483E-02	0.555
TL-200	-6.415E-05		3.508E-04	Half-Life too short		
TL-201	-5.972E+00		7.127E+00	1.164E+01	6.112E-01	-0.513
TL-202	5.246E-02		5.631E-02	9.816E-02	5.984E-03	0.534
HG-203	1.642E-02		3.367E-02	5.603E-02	3.398E-03	0.293
BI-207	-1.333E-02		4.022E-02	6.550E-02	5.407E-03	-0.203
TL-207	-1.698E-03		5.984E-01	8.402E-01	1.387E-01	-0.002
PO-209	-6.432E-01		5.875E+00	9.513E+00	1.073E+00	-0.068
BI-210	2.333E+00		4.719E+00	8.136E+00	6.295E-01	0.287
PB-210	2.333E+00		4.719E+00	8.136E+00	6.295E-01	0.287
PO-210	2.333E+00		4.718E+00	8.136E+00	5.412E-01	0.287
PB-211	-5.643E-01		8.099E-01	1.171E+00	7.299E-01	-0.482
BI-212	9.524E-01	+	3.663E-01	5.094E-01	5.073E-02	1.870
PO-215	-1.698E-03		5.984E-01	8.402E-01	1.387E-01	-0.002
RN-219	-8.620E-02		3.161E-01	5.209E-01	7.091E-02	-0.165
RN-220	8.052E+00		1.995E+01	3.335E+01	2.292E+00	0.241
RA-223	-1.698E-03		5.984E-01	8.402E-01	1.387E-01	-0.002
AC-227	-4.556E-02		2.988E-01	4.861E-01	6.752E-02	-0.094
TH-227	-4.556E-02		2.989E-01	4.861E-01	8.187E-02	-0.094
TH-229	1.450E-02		4.337E-01	6.741E-01	3.609E-02	0.022
PA-231	-4.602E-01		1.194E+00	1.900E+00	2.612E-01	-0.242
TH-231	-1.698E-03		5.984E-01	8.402E-01	1.387E-01	-0.002
U-231	2.329E-01		1.189E+00	1.749E+00	1.401E-01	0.133
PA-233	-3.632E-03		4.801E-02	7.715E-02	4.726E-03	-0.047
PA-234	1.462E-02		2.136E-01	3.492E-01	6.888E-02	0.042
PA-234M	4.908E+00	+	4.032E+00	6.151E+00	6.636E-01	0.798
U-235	-1.564E-02		1.880E-01	2.939E-01	4.760E-02	-0.053
NP-236	-2.239E-02		6.169E-02	1.030E-01	5.458E-03	-0.217
NP-239	4.454E-02		1.655E-01	2.693E-01	1.667E-02	0.165
AM-241	1.248E-01		1.749E-01	2.717E-01	2.253E-02	0.459
AM-243	3.549E-01		6.741E-02	1.150E-01	9.594E-03	3.087

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.535E-02		8.199E-02	1.319E-01	9.440E-03	-0.116
AM-246	-2.531E-02		1.027E-01	1.680E-01	1.328E-02	-0.151
CM-247	-7.367E-03		2.796E-02	4.610E-02	2.685E-03	-0.160
CF-249	-6.271E-03		3.055E-02	5.070E-02	2.914E-03	-0.124
CF-251	5.718E-02		9.975E-02	1.714E-01	9.049E-03	0.334

## VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G244148017          *
* Acquisition date   : 20-JAN-2010 18:02:04 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 02:00:01.60                               Half life ratio  : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148017                               Analyst initials: MXR1        *
* Batch Number       : 940268                                   Sample Quantity : 1.3111E+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	2.095E+01	1.938E+00	1.853E-01	9.889E-01
CD-109	2.956E+00	9.492E-01	7.032E-01	4.843E-01
SN-126	2.900E-01	9.314E-02	6.695E-02	4.752E-02
BA-137M	1.188E-01	4.196E-02	2.379E-02	2.141E-02
CS-137	1.256E-01	4.436E-02	2.515E-02	2.263E-02
TL-208	4.735E-01	7.479E-02	2.184E-02	3.816E-02
BI-211	3.643E+00	4.016E-01	1.221E-01	2.049E-01
PB-212	1.518E+00	1.403E-01	3.455E-02	7.158E-02
PO-212	1.518E+00	1.403E-01	3.455E-02	7.158E-02
BI-214	1.170E+00	1.618E-01	4.203E-02	8.253E-02
PB-214	1.267E+00	1.540E-01	4.256E-02	7.857E-02
PO-214	1.267E+00	1.540E-01	4.256E-02	7.857E-02
PO-216	1.518E+00	1.403E-01	3.455E-02	7.158E-02
PO-218	1.267E+00	1.540E-01	4.256E-02	7.857E-02
RA-224	4.735E+00	1.074E+00	3.926E-01	5.481E-01
RA-226	1.170E+00	1.618E-01	4.203E-02	8.253E-02
AC-228	1.526E+00	3.014E-01	7.837E-02	1.538E-01
RA-228	1.526E+00	3.014E-01	7.837E-02	1.538E-01
TH-228	1.543E+00	1.426E-01	3.511E-02	7.275E-02
TH-230	1.170E+00	1.618E-01	4.203E-02	8.253E-02
TH-232	1.526E+00	3.014E-01	7.837E-02	1.538E-01
TH-234	1.625E+00	1.851E+00	1.111E+00	9.446E-01
U-234	1.170E+00	1.618E-01	4.203E-02	8.253E-02
NP-237	8.517E-01	3.232E-01	1.848E-01	1.649E-01
U-238	1.625E+00	1.851E+00	1.111E+00	9.446E-01
ANH-511	1.283E-01	5.240E-02	1.756E-02	2.673E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	2.824E-02	2.375E-01	2.054E-01	1.212E-01 NOT IDENT.

NA-22	-3.723E-02	3.099E-02	2.312E-02	1.581E-02	NOT IDENT.
NA-24	-3.956E+05	1.958E+06	0.000E+00	9.991E+05	SHORT HLIF
AL-26	-3.538E-03	2.288E-02	1.868E-02	1.168E-02	NOT IDENT.
TI-44	2.660E-01	4.392E-02	3.912E-02	2.241E-02	NOT IDENT.
SC-46	-1.518E-03	3.029E-02	2.542E-02	1.545E-02	FAIL ABUN
V-48	3.768E-02	5.526E-02	4.845E-02	2.819E-02	NOT IDENT.
CR-51	1.803E-01	2.819E-01	2.462E-01	1.438E-01	NOT IDENT.
MN-52	-1.223E-01	1.918E-01	1.464E-01	9.784E-02	NOT IDENT.
MN-54	-5.093E-04	2.833E-02	2.400E-02	1.445E-02	NOT IDENT.
CO-56	-1.534E-02	2.963E-02	2.409E-02	1.512E-02	NOT IDENT.
CO-57	4.942E-03	2.159E-02	1.862E-02	1.102E-02	NOT IDENT.
CO-58	-1.624E-02	2.845E-02	2.313E-02	1.452E-02	NOT IDENT.
FE-59	-3.043E-03	6.499E-02	5.537E-02	3.316E-02	NOT IDENT.
CO-60	-4.044E-03	2.764E-02	2.278E-02	1.410E-02	NOT IDENT.
ZN-65	6.350E-02	7.298E-02	5.813E-02	3.724E-02	NOT IDENT.
GE-68	1.686E-01	8.587E-01	7.471E-01	4.381E-01	NOT IDENT.
AS-73	1.425E-01	9.242E-01	8.435E-01	4.715E-01	NOT IDENT.
AS-74	3.683E-02	6.948E-02	6.038E-02	3.545E-02	NOT IDENT.
SE-75	-5.509E-03	3.799E-02	2.997E-02	1.938E-02	NOT IDENT.
BR-77	5.005E+00	1.099E+01	9.119E+00	5.607E+00	FAIL ABUN
SR-82	-3.355E-01	2.881E-01	2.243E-01	1.470E-01	NOT IDENT.
RB-83	2.559E-02	5.276E-02	4.387E-02	2.692E-02	NOT IDENT.
RB-84	1.181E-02	5.343E-02	4.579E-02	2.726E-02	NOT IDENT.
KR-85	1.663E+01	6.222E+00	5.430E+00	3.175E+00	NOT IDENT.
SR-85	8.626E-02	3.229E-02	2.817E-02	1.647E-02	NOT IDENT.
RB-86	-1.107E-01	5.742E-01	4.846E-01	2.930E-01	NOT IDENT.
Y-88	-2.188E-02	2.821E-02	2.094E-02	1.439E-02	NOT IDENT.
ZR-88	-2.319E-03	2.300E-02	2.003E-02	1.173E-02	NOT IDENT.
Y-91	-7.636E+00	1.381E+01	1.121E+01	7.046E+00	NOT IDENT.
NB-94	2.627E-02	2.609E-02	2.374E-02	1.331E-02	NOT IDENT.
NB-95	8.610E-02	3.871E-02	3.314E-02	1.975E-02	NOT IDENT.
NB-95M	8.119E-02	1.103E-01	8.732E-02	5.627E-02	NOT IDENT.
ZR-95	-1.806E-02	5.077E-02	4.239E-02	2.590E-02	NOT IDENT.
NB-97	1.550E+05	2.456E+05	0.000E+00	1.253E+05	SHORT HLIF
ZR-97	8.505E+06	4.686E+06	0.000E+00	2.391E+06	SHORT HLIF
MO-99	9.002E+00	1.117E+01	1.004E+01	5.701E+00	NOT IDENT.
TC-99M	-7.283E+17	8.077E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-9.928E-03	2.723E-02	2.343E-02	1.389E-02	NOT IDENT.
RH-102	5.290E-03	2.138E-02	1.864E-02	1.091E-02	FAIL ABUN
RU-103	-2.442E-03	2.939E-02	2.501E-02	1.499E-02	FAIL ABUN
RH-106	1.740E-01	2.455E-01	2.141E-01	1.253E-01	FAIL ABUN
RU-106	1.740E-01	2.449E-01	2.141E-01	1.249E-01	FAIL ABUN
AG-108M	-5.781E-03	2.331E-02	1.992E-02	1.189E-02	NOT IDENT.
AG-110M	1.772E-02	2.889E-02	2.286E-02	1.474E-02	NOT IDENT.
IN-111	9.755E-02	1.113E+00	8.497E-01	5.676E-01	NOT IDENT.
IN-113M	1.659E-02	3.313E-02	2.973E-02	1.690E-02	NOT IDENT.
SN-113	1.659E-02	3.313E-02	2.973E-02	1.690E-02	NOT IDENT.
IN-114M	7.327E-02	1.574E-01	1.257E-01	8.029E-02	NOT IDENT.
CD-115	7.843E-01	1.136E+01	9.585E+00	5.794E+00	NOT IDENT.
SN-117M	-2.408E-02	4.345E-02	3.821E-02	2.217E-02	NOT IDENT.
SB-122	1.818E-01	2.065E+00	1.753E+00	1.053E+00	NOT IDENT.
I-123	-9.863E+06	1.819E+07	0.000E+00	9.279E+06	SHORT HLIF
TE-123M	-1.165E-02	2.148E-02	1.890E-02	1.096E-02	NOT IDENT.
I-124	-9.943E-02	7.006E-01	4.942E-01	3.574E-01	NOT IDENT.
SB-124	2.703E-02	5.395E-02	4.853E-02	2.752E-02	FAIL ABUN
SB-125	8.377E-03	6.639E-02	5.805E-02	3.387E-02	FAIL ABUN
TE-125M	5.401E+00	8.143E+00	7.189E+00	4.155E+00	NOT IDENT.
I-126	5.973E-02	1.641E-01	1.268E-01	8.372E-02	NOT IDENT.
SB-126	-1.814E-03	1.203E-01	8.910E-02	6.135E-02	FAIL ABUN
SB-127	-3.041E-01	1.228E+00	1.046E+00	6.264E-01	NOT IDENT.
XE-127	1.943E-02	3.831E-02	3.329E-02	1.954E-02	NOT IDENT.
I-131	-4.861E-02	9.401E-02	8.067E-02	4.796E-02	NOT IDENT.
TE-132	6.023E-01	7.016E-01	6.276E-01	3.580E-01	NOT IDENT.
BA-133	3.738E-03	3.593E-02	2.639E-02	1.833E-02	NOT IDENT.
I-133	-3.851E+03	1.120E+04	0.000E+00	5.716E+03	SHORT HLIF
CS-134	1.050E-01	6.520E-02	3.529E-02	3.326E-02	FAIL ABUN
CS-135	1.585E-01	1.422E-01	1.138E-01	7.257E-02	NOT IDENT.
I-135	1.460E+16	7.312E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.532E-02	8.063E-02	7.029E-02	4.114E-02	FAIL ABUN
CE-139	-2.275E-03	2.300E-02	2.052E-02	1.174E-02	NOT IDENT.
BA-140	9.535E-03	2.067E-01	1.759E-01	1.054E-01	NOT IDENT.
LA-140	-6.776E-02	6.927E-02	5.199E-02	3.534E-02	FAIL ABUN
CE-141	3.791E-02	5.540E-02	4.736E-02	2.827E-02	NOT IDENT.
CE-143	1.002E+03	3.296E+02	0.000E+00	1.682E+02	SHORT HLIF
CE-144	3.358E-02	1.873E-01	1.426E-01	9.554E-02	NOT IDENT.
PM-144	1.663E-03	2.541E-02	2.205E-02	1.296E-02	NOT IDENT.
PR-144	1.127E-01	1.723E+00	1.495E+00	8.791E-01	NOT IDENT.
PM-146	-6.692E-03	3.245E-02	2.768E-02	1.656E-02	NOT IDENT.

ND-147	1.116E-01	4.476E-01	3.862E-01	2.284E-01	NOT IDENT.
PM-149	-5.256E+01	1.008E+02	8.357E+01	5.143E+01	NOT IDENT.
EU-152	3.829E-02	8.444E-02	6.310E-02	4.308E-02	FAIL ABUN
GD-153	-7.025E-02	7.549E-02	5.554E-02	3.852E-02	NOT IDENT.
EU-154	-6.160E-02	8.336E-02	6.513E-02	4.253E-02	NOT IDENT.
EU-155	1.334E-01	9.101E-02	8.281E-02	4.644E-02	FAIL ABUN
TB-160	-6.796E-02	1.041E-01	8.300E-02	5.310E-02	FAIL ABUN
HO-166M	1.183E-02	4.597E-02	4.027E-02	2.346E-02	NOT IDENT.
TM-171	-2.018E+01	3.099E+01	2.376E+01	1.581E+01	NOT IDENT.
LU-176	-8.215E-03	1.891E-02	1.505E-02	9.646E-03	FAIL ABUN
LU-177	5.017E+00	1.918E+00	9.482E-01	9.784E-01	FAIL ABUN
LU-177M	-1.062E-01	1.310E-01	1.091E-01	6.685E-02	NOT IDENT.
HF-181	5.725E-03	3.049E-02	2.647E-02	1.555E-02	NOT IDENT.
W-181	-3.970E-01	4.096E-01	3.090E-01	2.090E-01	NOT IDENT.
TA-182	5.998E-02	1.538E-01	1.333E-01	7.846E-02	FAIL ABUN
RE-183	5.692E-02	8.522E-02	7.818E-02	4.348E-02	FAIL ABUN
RE-184	-7.375E-02	1.810E-01	1.533E-01	9.234E-02	NOT IDENT.
OS-185	3.891E-03	3.029E-02	2.546E-02	1.545E-02	NOT IDENT.
RE-188	1.637E-01	1.315E-01	1.232E-01	6.710E-02	NOT IDENT.
W-188	8.992E-01	6.463E+00	4.863E+00	3.297E+00	FAIL ABUN
IR-192	-1.137E-02	2.511E-02	2.066E-02	1.281E-02	FAIL ABUN
AU-195	1.802E-01	1.889E-01	1.699E-01	9.638E-02	FAIL ABUN
TL-200	-6.415E+01	6.876E+02	0.000E+00	3.508E+02	SHORT HLIF
TL-201	-5.972E+00	6.985E+00	6.044E+00	3.564E+00	NOT IDENT.
TL-202	5.246E-02	5.518E-02	5.017E-02	2.815E-02	NOT IDENT.
HG-203	1.642E-02	3.299E-02	2.885E-02	1.683E-02	NOT IDENT.
BI-207	-1.333E-02	3.942E-02	3.298E-02	2.011E-02	FAIL ABUN
TL-207	-1.698E-03	5.864E-01	4.316E-01	2.992E-01	FAIL ABUN
PO-209	-6.432E-01	5.757E+00	4.804E+00	2.937E+00	NOT IDENT.
BI-210	2.333E+00	4.624E+00	4.310E+00	2.359E+00	NOT IDENT.
PB-210	2.333E+00	4.624E+00	4.310E+00	2.359E+00	NOT IDENT.
PO-210	2.333E+00	4.623E+00	4.310E+00	2.359E+00	NOT IDENT.
PB-211	-5.643E-01	7.937E-01	5.992E-01	4.050E-01	NOT IDENT.
BI-212	9.524E-01	3.590E-01	2.582E-01	1.831E-01	FAIL ABUN
PO-215	-1.698E-03	5.864E-01	4.316E-01	2.992E-01	FAIL ABUN
RN-219	-8.620E-02	3.098E-01	2.666E-01	1.581E-01	FAIL ABUN
RN-220	8.052E+00	1.955E+01	1.698E+01	9.974E+00	NOT IDENT.
RA-223	-1.698E-03	5.864E-01	4.316E-01	2.992E-01	FAIL ABUN
AC-227	-4.556E-02	2.929E-01	2.507E-01	1.494E-01	FAIL ABUN
TH-227	-4.556E-02	2.929E-01	2.507E-01	1.494E-01	FAIL ABUN
TH-229	1.450E-02	4.250E-01	3.491E-01	2.168E-01	FAIL ABUN
PA-231	-4.602E-01	1.170E+00	9.783E-01	5.969E-01	FAIL ABUN
TH-231	-1.698E-03	5.864E-01	4.316E-01	2.992E-01	FAIL ABUN
U-231	2.329E-01	1.166E+00	9.159E-01	5.947E-01	FAIL ABUN
PA-233	-3.632E-03	4.705E-02	3.965E-02	2.400E-02	FAIL ABUN
PA-234	1.462E-02	2.094E-01	1.762E-01	1.068E-01	FAIL ABUN
PA-234M	4.908E+00	3.951E+00	3.101E+00	2.016E+00	FAIL ABUN
U-235	-1.564E-02	1.842E-01	1.530E-01	9.399E-02	FAIL ABUN
NP-236	-2.239E-02	6.046E-02	5.352E-02	3.085E-02	FAIL ABUN
NP-239	4.454E-02	1.622E-01	1.406E-01	8.275E-02	FAIL ABUN
AM-241	1.248E-01	1.714E-01	1.434E-01	8.743E-02	NOT IDENT.
AM-243	3.549E-01	6.606E-02	6.046E-02	3.370E-02	FAIL ABUN
CM-243	-1.535E-02	8.035E-02	6.899E-02	4.099E-02	FAIL ABUN
AM-246	-2.531E-02	1.007E-01	8.455E-02	5.136E-02	NOT IDENT.
CM-247	-7.367E-03	2.740E-02	2.360E-02	1.398E-02	NOT IDENT.
CF-249	-6.271E-03	2.994E-02	2.596E-02	1.528E-02	NOT IDENT.
CF-251	5.718E-02	9.776E-02	8.889E-02	4.988E-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	258.7244
46.50	258.7244
46.50	258.7244
48.70	281.6396
49.72	272.0231
51.35	266.5485
52.39	249.4803
52.97	262.7639
53.15	257.4850
53.44	258.6801
54.07	271.1654
56.28	279.8372
56.28	279.8403
57.37	0.0000
57.53	292.2086
57.53	292.2102
57.60	302.4561
57.98	292.6811
57.98	292.6811
59.32	286.1667
59.32	286.1667
59.40	286.2472
59.54	286.3880
59.72	279.5792
60.01	284.0609
61.10	316.0398
61.14	316.0835
61.30	316.2578
63.00	343.0718
63.29	343.4069
63.29	343.4069
63.58	343.7411
64.28	379.0957
65.12	371.6087
65.20	371.7068
65.20	371.7068
66.05	352.7503
66.72	367.8297
66.83	359.3724
66.91	359.4644
67.20	377.0031
67.20	377.0031
67.75	380.2540
67.85	358.5429
68.90	367.5255
68.90	367.5255
69.30	379.5353
69.67	371.3120
70.82	358.1436
70.82	358.1436
70.83	358.1549
72.80	360.8158
72.87	360.8932
72.87	360.8932
74.67	362.8557
74.81	363.0076
74.81	363.0076
74.81	363.0076
74.81	363.0076
74.81	363.0076
74.81	363.0076
74.81	363.0076
74.97	363.1802
75.28	363.5161
75.70	363.9690
77.11	365.4786
77.11	365.4786



77.11	365.4786
77.11	365.4786
77.11	365.4786
77.11	365.4786
77.11	365.4786
78.38	366.8278
79.62	355.7321
79.80	309.7498
79.80	309.7498
80.11	310.0227
80.18	310.0846
80.30	334.0500
80.30	334.0500
80.57	334.3064
81.00	346.6654
81.07	346.7344
81.07	346.7344
81.07	346.7344
81.07	346.7344
82.60	408.2573
83.37	375.0310
83.78	364.4161
83.78	364.4161
83.78	364.4161
83.78	364.4161
84.21	372.3845
84.90	326.2610
85.43	350.9329
86.29	450.2993
86.50	450.5530
86.54	450.6006
86.59	450.6618
86.72	441.7107
86.79	441.7906
86.94	441.9705
87.30	527.0247
87.30	527.0247
87.30	527.0247
87.30	527.0247
87.30	527.0247
87.30	527.0247
87.30	527.0247
87.57	527.4030
87.88	567.9320
88.03	568.1597
88.36	510.2140
88.47	510.3621
89.95	474.5858
91.11	396.1687
92.29	574.4972
92.38	574.6309
92.38	574.6309
93.35	454.0455
94.00	454.7947
94.67	294.4064
94.67	294.4107
94.90	294.5803
94.90	294.5803
94.90	294.5803
94.90	294.5803
95.87	310.8368
95.87	310.8368
96.73	372.2468
97.43	354.1645
98.44	299.0476
98.44	299.0476
98.88	292.2705
99.55	279.1544
99.55	279.1544
99.86	281.4561
100.00	281.5519
100.10	281.6217
103.18	350.1360
103.76	312.5955
105.00	296.5558
105.31	282.9922
108.00	356.2001
109.28	325.1493

111.00	329.6290
111.00	329.6290
111.76	339.8662
112.95	346.1532
115.19	359.7730
116.30	334.5682
117.00	316.5777
117.00	316.5777
117.66	310.4895
121.11	334.7091
121.62	330.6716
121.78	330.7819
122.06	312.2818
122.32	312.4494
122.32	312.4494
122.32	312.4494
122.32	312.4494
123.07	282.0833
127.23	301.7111
129.76	295.9812
131.20	336.0291
133.02	338.9146
133.54	300.4348
135.34	344.3909
136.00	335.7806
136.25	323.4985
136.48	331.5623
140.51	377.4257
140.51	0.0000
142.18	337.4237
142.65	328.5593
143.76	355.6151
144.24	354.7792
144.24	354.7792
144.24	354.7792
144.24	354.7792
145.22	318.6075
145.44	318.7371
147.16	400.5269
152.43	339.0530
152.70	338.0472
153.22	322.0225
154.21	291.0218
154.21	291.0218
154.21	291.0218
154.21	291.0218
155.03	280.0255
156.02	310.4020
158.56	307.3409
159.00	0.0000
159.00	309.3369
160.31	312.6805
161.27	309.6379
162.32	294.1858
162.64	295.2316
163.35	294.6908
163.89	304.7581
165.85	311.1110
167.43	329.8445
171.28	296.7305
171.86	306.0342
172.10	298.0227
176.55	288.3067
176.60	288.3285
181.06	284.2863
184.41	316.6736
185.71	288.7021
186.00	288.8287
190.27	280.8307
192.34	332.3604
193.63	303.6224
197.04	301.9978
198.01	331.5327
198.60	343.0925
200.40	315.7034
201.83	314.4537
202.84	290.7193
205.31	324.9106

208.36	262.0590
208.81	262.2206
209.75	262.5584
209.75	262.5584
210.97	262.9969
215.65	264.8573
216.55	237.4254
218.09	280.2885
222.10	273.7318
223.80	286.0125
226.40	285.0248
227.00	278.4073
227.08	278.4355
227.20	267.7307
228.16	264.1477
228.18	264.1539
228.18	264.1539
231.56	0.0000
235.69	290.7748
236.00	294.0489
236.00	294.0489
238.63	231.9648
238.63	231.9648
238.63	231.9648
238.63	231.9648
239.00	232.0701
240.98	232.6360
241.98	232.9217
241.98	232.9217
241.98	232.9217
244.69	180.5614
245.39	203.1039
247.94	222.9786
248.90	224.8408
249.79	224.0753
252.40	226.7870
252.85	242.0343
252.85	242.0343
254.15	0.0000
256.20	232.8647
256.20	232.8647
260.50	231.9939
260.90	236.1737
262.80	228.5288
264.65	239.9160
268.24	229.9438
268.79	225.1570
269.46	240.1265
269.46	240.1265
269.46	240.1265
269.46	240.1265
271.23	230.7163
273.65	262.7343
276.40	226.1230
277.35	210.5084
277.60	210.5642
277.60	210.5642
278.00	218.9589
278.60	214.9501
279.20	231.7143
279.53	251.5454
280.46	262.2090
281.68	234.4242
283.67	215.0905
284.30	204.7867
285.00	197.6229
285.90	219.7925
286.10	219.8373
286.10	219.8373
287.40	211.7585
288.45	0.0000
290.67	208.7051
290.80	208.7354
291.72	200.5132
293.26	0.0000
293.70	217.8135
295.21	202.9395
295.21	202.9395

295.21	202.9395
295.96	139.6296
296.50	139.7082
297.23	139.8129
298.57	140.0083
299.80	140.1855
299.80	140.1855
300.09	169.9731
300.09	169.9731
300.09	169.9731
300.09	169.9731
300.12	169.9780
301.29	187.1987
302.84	177.2697
303.76	167.2005
303.91	167.2245
304.40	179.2588
304.40	179.2588
304.84	189.5889
306.84	185.8146
308.46	175.7114
311.98	174.1816
316.51	171.7251
318.01	190.3677
319.02	172.1497
319.41	175.4646
320.08	160.4048
323.87	196.6796
323.87	196.6796
323.87	196.6796
323.87	196.6796
325.23	200.4218
328.77	209.8477
333.44	193.2170
334.20	184.5652
334.20	184.5652
334.30	184.5831
338.28	191.8896
338.28	191.8896
338.28	191.8896
338.28	191.8896
338.32	191.8976
338.32	191.8976
338.32	191.8976
340.50	189.1936
340.57	189.2066
344.27	157.9163
345.85	174.1366
350.59	0.0000
351.07	159.5680
351.92	159.6924
351.92	159.6924
351.92	159.6924
355.39	0.0000
356.01	152.4335
364.48	176.1689
366.43	161.9915
367.43	156.6989
367.94	0.0000
369.80	172.4519
374.96	166.8401
383.85	139.6277
387.95	174.2136
388.63	165.0899
391.69	154.4138
391.69	154.4138
392.90	165.6755
398.62	160.8761
400.65	165.7973
401.10	170.5193
401.81	173.4134
402.60	168.8589
404.84	191.5969
410.95	151.2107
411.60	150.3496
413.65	174.1240
414.70	139.4148
415.30	146.0788

415.76	139.5323
417.63	0.0000
418.52	155.8960
423.70	144.1959
427.08	142.6703
427.89	138.9531
432.53	147.0877
433.93	138.6403
439.47	130.5813
439.56	130.5896
439.89	137.3460
443.98	160.8884
444.90	161.9625
445.03	164.8714
445.03	164.8714
445.03	164.8714
445.03	164.8714
453.90	146.5448
463.38	118.8923
468.07	137.2690
473.00	134.7992
475.06	128.0973
475.35	128.1243
476.78	130.2259
477.59	128.3258
477.96	127.3717
482.03	116.8433
484.57	135.8962
487.03	100.3577
490.36	0.0000
492.35	117.6788
497.08	119.0596
507.63	0.0000
510.53	0.0000
510.84	124.2042
511.00	124.2169
511.85	124.2875
511.85	124.2875
513.99	112.9943
513.99	112.9943
520.41	107.9672
520.65	107.9854
527.90	112.3230
528.96	0.0000
529.64	121.6496
529.87	0.0000
531.02	117.6644
537.32	123.2783
543.00	126.8137
546.56	0.0000
549.76	114.9295
552.65	122.3962
555.20	116.3559
563.23	119.0209
563.90	123.2460
568.70	125.7041
569.32	123.6551
569.50	120.5226
569.67	120.5366
573.80	137.7659
574.00	128.4408
574.64	136.6682
578.91	115.9377
579.30	0.0000
583.14	114.1172
585.48	104.0470
591.81	108.8612
592.07	108.5837
593.00	112.6561
595.88	104.3308
600.56	125.9627
602.52	0.0000
602.71	122.9147
602.71	122.9147
603.60	114.0651
604.41	103.4211
604.70	107.0044
609.31	120.1621

609.31	120.1621
609.31	120.1621
609.31	120.1621
610.33	105.5619
612.46	102.1064
614.37	127.3239
618.01	113.8098
621.84	105.8907
621.84	105.8907
631.29	104.2805
633.02	94.5934
633.10	93.5103
634.78	119.7190
635.90	129.5926
636.97	112.2363
645.85	101.8323
646.12	91.9919
656.30	95.9593
657.75	100.7567
657.90	0.0000
661.65	128.8403
661.65	128.8403
664.57	0.0000
666.33	113.8711
666.33	113.8711
675.00	121.4106
677.61	110.4391
685.20	112.7408
692.80	107.5692
695.00	101.1357
696.49	116.2071
696.49	116.2071
697.00	126.5488
697.49	135.0205
698.33	142.5804
698.50	142.5928
699.00	149.1984
702.63	113.7501
706.10	142.2015
706.58	0.0000
706.67	149.7806
709.31	113.1909
711.68	112.3808
713.82	112.5019
717.42	95.0547
720.50	92.6866
721.93	0.0000
722.20	113.9209
722.78	97.6758
722.78	97.6758
722.89	97.6800
722.95	97.6821
723.30	96.0725
724.18	94.4846
727.18	91.3613
733.00	86.7147
735.90	111.5620
739.58	85.2138
742.81	93.9785
744.21	91.1615
747.13	117.2369
751.79	86.6785
752.31	81.8838
753.82	88.6908
755.35	101.2979
756.15	98.4410
756.87	92.6816
763.93	102.9556
765.79	93.0742
766.42	79.8013
766.84	89.7935
776.49	114.0031
778.00	110.1814
778.57	104.3594
778.89	104.3746
783.80	89.9467
785.46	97.1318
792.07	109.3565

795.84	90.4446
796.30	90.4633
798.80	91.1288
801.93	92.9487
805.60	77.5595
810.29	95.9837
810.76	94.0259
815.85	63.4870
817.79	68.5073
818.51	71.5078
819.60	78.4985
826.30	78.7316
828.27	0.0000
831.60	112.8782
831.96	106.9020
834.83	106.0345
836.80	0.0000
846.75	97.5348
848.13	75.4593
856.28	0.0000
856.80	95.2161
860.37	76.8674
867.32	92.1640
867.82	85.2271
871.10	76.2009
873.19	77.2849
874.81	81.4079
875.33	0.0000
876.40	83.4981
879.36	90.7383
880.27	82.6133
880.51	80.5815
881.50	81.6357
883.24	83.7367
884.67	80.7214
889.25	89.0656
896.60	92.4152
898.02	91.4426
899.00	93.5346
903.28	88.2551
911.07	80.5676
911.07	80.5676
911.07	80.5676
919.63	63.7434
920.93	70.9327
925.00	78.9425
925.24	76.8726
926.50	75.8724
935.52	79.2734
937.48	88.7302
944.10	74.3093
946.00	70.1747
949.00	73.4037
962.29	75.8906
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	81.7854
980.50	81.7295
983.50	69.0704
989.30	83.0670
996.32	60.4052
1001.03	89.8516
1001.68	81.3128
1004.76	55.0875
1021.30	0.0000
1024.50	0.0000
1034.80	72.5615
1036.00	69.6533
1037.82	73.4150
1038.57	74.3638
1038.76	0.0000
1045.16	81.9967
1046.59	77.3783
1048.07	71.8223

1050.47	77.4854
1050.47	77.4854
1062.04	84.3656
1063.62	89.1023
1076.63	74.4372
1077.35	67.8566
1078.86	77.3240
1085.78	70.8932
1099.22	75.0213
1112.02	68.4343
1112.84	58.4366
1115.52	71.8591
1120.29	66.9531
1120.29	66.9531
1120.29	66.9531
1120.29	66.9531
1120.51	66.9580
1121.28	75.3470
1124.00	0.0000
1129.67	72.7626
1131.51	0.0000
1147.95	0.0000
1167.94	72.8786
1173.22	81.7646
1175.09	77.9185
1177.93	91.6395
1189.05	92.9457
1204.90	97.3495
1205.75	0.0000
1213.00	100.5592
1221.42	101.8109
1230.97	111.0391
1235.34	111.1914
1236.41	0.0000
1238.25	80.4858
1246.25	80.6864
1260.41	0.0000
1271.85	44.1734
1274.45	68.3202
1274.54	78.3700
1291.56	58.5725
1298.22	0.0000
1312.09	49.7861
1325.50	55.0811
1325.50	55.0811
1332.49	50.0835
1333.61	52.1437
1360.21	53.5742
1362.66	0.0000
1365.15	52.6187
1368.21	54.7283
1368.53	0.0000
1376.25	55.8890
1384.27	57.0525
1394.10	44.7277
1395.20	42.6602
1407.95	57.4285
1434.06	42.0661
1436.60	38.9383
1457.56	0.0000
1460.81	31.5129
1489.15	42.6897
1509.49	37.5525
1596.49	47.0261
1620.62	34.7552
1678.03	0.0000
1691.02	19.6362
1691.02	19.6362
1706.46	0.0000
1750.46	0.0000
1764.49	25.9619
1764.49	25.9619
1764.49	25.9619
1764.49	25.9619
1770.23	8.8873
1771.40	16.0015
1791.20	0.0000
1808.65	24.2021



1836.01

33.4784

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148017

Total Uranium Activity	4.8258E+00	ug/g
Total Uranium Counting Unc.	5.5088E+00	ug/g
Total Uranium Tpu	2.8106E-06	ug/g
Total Uranium Mda	3.3064E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148017
*  ANALYST       : MXR1                             DETECTOR    : GAM18
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 18:02:04.97          SAMPLE ALQT  : 131.110 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.356E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.143E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.154E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.042E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 20:03:39.94

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148018.CNF;1
Sample date   : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 18:02:42
Sample ID     : G244148018           Sample quantity : 1.29030E+02 GRAM
Detector name : GAM22                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00      Elapsed real time: 0 02:00:02.14 0.0%
Energy tolerance: 1.50000 keV         Analyst Initials : MXR1
Abundance limit: 75.00000             Sensitivity      : 5.00000
Batch ID      : 940268                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	63.24*	60	554	1.03	126.74	123	8	8.38E-03	71.6	
2	2	74.78*	626	583	1.22	149.80	143	16	8.69E-02	7.6	1.71E+00
3	2	77.09*	861	484	1.03	154.41	143	16	1.20E-01	5.5	
4	6	84.21*	159	398	1.38	168.64	165	27	2.21E-02	21.9	1.34E+00
5	6	87.17*	355	462	1.23	174.55	165	27	4.93E-02	11.6	
6	6	89.94*	174	460	1.19	180.08	165	27	2.42E-02	22.1	
7	6	92.82*	289	522	1.38	185.84	165	27	4.01E-02	16.0	
8	0	129.05	90	452	0.79	258.23	255	8	1.25E-02	42.0	
9	0	185.82*	291	720	1.46	371.65	364	15	4.05E-02	21.4	
10	0	209.31	164	395	1.36	418.59	414	9	2.27E-02	23.2	
11	3	238.69*	1795	294	1.17	477.30	472	17	2.49E-01	2.9	7.11E-01
12	3	241.74	485	365	1.67	483.40	472	17	6.73E-02	10.6	
13	0	270.17	233	243	2.17	540.21	535	10	3.24E-02	14.1	
14	0	276.93	37	310	1.03	553.72	550	9	5.11E-03	87.7	
15	0	295.21*	624	309	1.28	590.24	584	12	8.67E-02	7.0	
16	0	300.31	158	285	1.14	600.43	596	11	2.19E-02	22.2	
17	0	328.12	138	269	1.67	656.00	651	12	1.91E-02	25.3	
18	0	338.38*	473	329	1.63	676.52	669	16	6.57E-02	9.9	
19	0	352.01*	977	288	1.38	703.75	698	12	1.36E-01	4.8	
20	0	462.46	91	209	2.42	924.50	919	13	1.26E-02	34.4	
21	0	510.96*	127	259	2.01	1021.43	1014	17	1.77E-02	34.7	
22	0	583.17*	629	169	1.80	1165.75	1158	15	8.74E-02	6.2	
23	0	609.51*	763	210	1.89	1218.40	1211	17	1.06E-01	5.8	
24	0	727.51*	182	119	1.92	1454.27	1448	16	2.52E-02	15.8	
25	0	769.32	138	197	3.48	1537.85	1527	24	1.91E-02	28.7	
26	0	795.13	85	104	1.65	1589.47	1583	14	1.18E-02	27.8	
27	0	860.17	107	105	2.21	1719.50	1710	19	1.48E-02	25.0	
28	0	911.36*	510	85	2.09	1821.83	1813	19	7.08E-02	6.4	
29	5	964.82	52	145	2.39	1928.72	1919	25	7.23E-03	50.3	3.42E+00
30	5	969.16*	258	109	2.05	1937.41	1919	25	3.58E-02	10.6	
31	0	1120.53*	164	87	2.44	2240.09	2232	14	2.28E-02	14.8	
32	0	1239.92	24	88	0.99	2478.84	2473	9	3.28E-03	77.4	
33	0	1460.99*	1486	27	2.83	2921.01	2910	26	2.06E-01	2.8	
34	0	1730.61	34	23	1.82	3460.40	3453	16	4.73E-03	36.3	
35	0	1764.54*	161	27	2.54	3528.27	3516	21	2.24E-02	12.1	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244148018.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 18:02:42
Sample ID         : G244148018           Sample quantity  : 129.03 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA22              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00        Elapsed real time: 0 02:00:02.14    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	*	2.122E+01	2.288E+00	3.985E-01	3.651E-02	53.245
CD-109	+	88.03	*	3.801E+00	9.480E-01	1.034E+00	9.813E-02	3.676
SN-126	+	64.28		4.225E-01	6.077E-01	6.460E-01	9.382E-02	0.654
	+	86.94		1.551E+00	7.368E-01	4.260E-01	1.769E-01	3.640
	+	87.57	*	3.730E-01	9.302E-02	1.019E-01	9.619E-03	3.661
TL-208	+	277.35		2.544E-01	4.481E-01	5.295E-01	8.731E-02	0.480
	+	510.84		3.988E-01	2.816E-01	1.837E-01	2.394E-02	2.170
	+	583.14	*	5.529E-01	9.133E-02	4.887E-02	5.299E-03	11.315
	+	860.37		8.504E-01	4.361E-01	3.818E-01	4.450E-02	2.227
BI-211		72.87		6.316E+00	2.755E+00	4.672E+00	3.739E-01	1.352
	+	351.07	*	4.066E+00	6.151E-01	3.045E-01	3.553E-02	13.351
PB-212	+	74.81		2.762E+00	5.421E-01	4.614E-01	5.725E-02	5.987
	+	77.11		2.154E+00	2.992E-01	2.627E-01	2.197E-02	8.199
	+	87.30		1.725E+00	4.635E-01	4.723E-01	6.486E-02	3.652
	+	238.63	*	1.746E+00	2.523E-01	8.555E-02	1.130E-02	20.404
	+	300.09		2.276E+00	1.065E+00	1.042E+00	1.520E-01	2.184
PO-212	+	74.81		2.762E+00	5.421E-01	4.614E-01	5.725E-02	5.987
	+	77.11		2.154E+00	2.992E-01	2.627E-01	2.197E-02	8.199
	+	87.30		1.725E+00	4.635E-01	4.723E-01	6.486E-02	3.652
		115.19		3.636E+00	3.378E+00	5.573E+00	4.617E-01	0.652
	+	238.63	*	1.746E+00	2.523E-01	8.555E-02	1.130E-02	20.404
	+	300.09		2.276E+00	1.065E+00	1.042E+00	1.520E-01	2.184
BI-214	+	609.31	*	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568
	+	1120.29		1.346E+00	4.251E-01	3.598E-01	3.975E-02	3.740
	+	1764.49		1.730E+00	4.423E-01	2.305E-01	1.920E-02	7.504
PB-214	+	74.81		4.759E+00	8.939E-01	7.949E-01	8.762E-02	5.987
	+	77.11		3.692E+00	5.849E-01	4.503E-01	5.095E-02	8.199
	+	87.30		2.955E+00	7.714E-01	8.091E-01	9.843E-02	3.652
	+	241.98		2.825E+00	7.148E-01	5.144E-01	7.074E-02	5.492
	+	295.21		1.584E+00	3.237E-01	1.967E-01	2.929E-02	8.051
	+	351.92	*	1.414E+00	2.264E-01	1.036E-01	1.320E-02	13.656
PO-214	+	74.81		4.759E+00	8.939E-01	7.949E-01	8.762E-02	5.987
	+	77.11		3.692E+00	5.849E-01	4.503E-01	5.095E-02	8.199
	+	87.30		2.955E+00	7.714E-01	8.091E-01	9.843E-02	3.652

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	241.98		2.825E+00	7.148E-01	5.144E-01	7.074E-02	5.492
	+	295.21		1.584E+00	3.237E-01	1.967E-01	2.929E-02	8.051
	+	351.92	*	1.414E+00	2.264E-01	1.036E-01	1.320E-02	13.656
PO-216	+	74.81		2.762E+00	5.421E-01	4.614E-01	5.725E-02	5.987
	+	77.11		2.154E+00	2.992E-01	2.627E-01	2.197E-02	8.199
	+	87.30		1.725E+00	4.635E-01	4.723E-01	6.486E-02	3.652
	+	238.63	*	1.746E+00	2.523E-01	8.555E-02	1.130E-02	20.404
	+	300.09		2.276E+00	1.065E+00	1.042E+00	1.520E-01	2.184
PO-218	+	74.81		4.759E+00	8.939E-01	7.949E-01	8.762E-02	5.987
	+	77.11		3.692E+00	5.849E-01	4.503E-01	5.095E-02	8.199
	+	87.30		2.955E+00	7.714E-01	8.091E-01	9.843E-02	3.652
	+	241.98		2.825E+00	7.148E-01	5.144E-01	7.074E-02	5.492
	+	295.21		1.584E+00	3.237E-01	1.967E-01	2.929E-02	8.051
	+	351.92	*	1.414E+00	2.264E-01	1.036E-01	1.320E-02	13.656
RA-224	+	240.98	*	5.357E+00	1.322E+00	9.726E-01	1.218E-01	5.508
RA-226	+	609.31	*	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568
	+	1120.29		1.346E+00	4.251E-01	3.598E-01	3.975E-02	3.740
	+	1764.49		1.730E+00	4.423E-01	2.305E-01	1.920E-02	7.504
AC-228	+	338.32		2.185E+00	1.015E+00	3.247E-01	1.366E-01	6.728
	+	911.07	*	1.920E+00	3.536E-01	1.737E-01	2.301E-02	11.053
	+	969.11		1.705E+00	5.487E-01	3.042E-01	7.347E-02	5.605
RA-228	+	338.32		2.185E+00	1.015E+00	3.247E-01	1.366E-01	6.728
	+	911.07	*	1.920E+00	3.536E-01	1.737E-01	2.301E-02	11.053
	+	969.11		1.705E+00	5.487E-01	3.042E-01	7.347E-02	5.605
TH-228	+	74.81		2.807E+00	4.855E-01	4.689E-01	3.863E-02	5.987
	+	77.11		2.189E+00	3.040E-01	2.670E-01	2.233E-02	8.199
	+	87.30		1.753E+00	4.373E-01	4.800E-01	4.518E-02	3.652
	+	238.63	*	1.774E+00	2.564E-01	8.695E-02	1.149E-02	20.404
	+	300.09		2.313E+00	1.730E+00	1.059E+00	6.371E-01	2.184
TH-230	+	609.31	*	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568
	+	1120.29		1.346E+00	4.250E-01	3.598E-01	3.975E-02	3.740
	+	1764.49		1.730E+00	4.423E-01	2.305E-01	1.920E-02	7.504
TH-232	+	338.32		2.185E+00	5.036E-01	3.247E-01	3.862E-02	6.728
	+	911.07	*	1.920E+00	3.536E-01	1.737E-01	2.301E-02	11.053
	+	969.11		1.705E+00	5.487E-01	3.042E-01	7.347E-02	5.605
TH-234	+	63.29	*	1.067E+00	1.539E+00	1.679E+00	2.923E-01	0.636
	+	92.38		1.974E+00	7.287E-01	6.718E-01	1.231E-01	2.939
U-234	+	609.31	*	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568
	+	1120.29		1.346E+00	4.250E-01	3.598E-01	3.975E-02	3.740
	+	1764.49		1.730E+00	4.423E-01	2.305E-01	1.920E-02	7.504
NP-237	+	86.50	*	1.095E+00	3.545E-01	3.021E-01	6.841E-02	3.625
	+	95.87		6.436E-01	9.213E-01	1.350E+00	3.337E-01	0.477
U-238	+	63.29	*	1.067E+00	1.539E+00	1.679E+00	2.923E-01	0.636
	+	92.38		1.974E+00	6.577E-01	6.718E-01	6.122E-02	2.939
AM-243	+	74.67	*	4.478E-01	7.729E-02	7.501E-02	6.114E-03	5.970
	+	86.72		4.107E+01	1.024E+01	1.131E+01	1.056E+00	3.633
	+	117.66		3.759E-01	3.636E+00	5.802E+00	4.793E-01	0.065
	+	142.18		-6.875E+00	1.632E+01	2.714E+01	2.397E+00	-0.253
ANH-511	+	511.00	*	8.613E-02	6.041E-02	3.970E-02	3.978E-03	2.170

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	477.59	*		-4.102E-02	2.770E-01	4.435E-01	4.629E-02	-0.092
NA-22	1274.54	*		4.333E-03	3.577E-02	5.975E-02	5.149E-03	0.073
NA-24	1368.53	*		-2.197E+00	3.577E-02	Half-Life too short		
AL-26	1129.67			8.642E-01	1.527E+00	2.478E+00	2.158E-01	0.349
	1808.65	*		-5.254E-03	2.348E-02	3.733E-02	3.053E-03	-0.141
TI-44	67.85			-3.834E-02	4.078E-02	6.134E-02	4.682E-03	-0.625
	78.38	*	+	3.975E-01	5.521E-02	6.958E-02	5.900E-03	5.712
SC-46	889.25	*		-7.881E-03	3.372E-02	5.503E-02	6.160E-03	-0.143
	1120.51	*	+	2.325E-01	7.182E-02	1.098E-01	9.708E-03	2.118
V-48	944.10			-3.813E-01	7.962E-01	1.267E+00	1.374E-01	-0.301
	983.50	*		-2.934E-02	5.889E-02	9.281E-02	9.733E-03	-0.316
	1312.09			1.343E-02	7.115E-02	1.192E-01	1.050E-02	0.113
CR-51	320.08	*		1.428E-01	3.308E-01	5.629E-01	7.289E-02	0.254
MN-52	744.21			-1.248E-01	2.683E-01	3.903E-01	4.241E-02	-0.320
	848.13			-6.270E+00	6.536E+00	1.012E+01	1.127E+00	-0.619
	935.52			4.144E-01	2.696E-01	4.798E-01	5.238E-02	0.864
	1246.25			-3.089E+00	7.488E+00	1.045E+01	8.834E-01	-0.296
	1333.61			4.182E-01	5.128E+00	8.504E+00	7.584E-01	0.049
	1434.06	*		-9.465E-02	2.373E-01	3.724E-01	3.328E-02	-0.254
MN-54	834.83	*		2.352E-03	3.282E-02	5.499E-02	6.109E-03	0.043
CO-56	846.75	*		-4.552E-02	3.455E-02	5.197E-02	5.785E-03	-0.876
	977.42			-5.741E-01	2.683E+00	3.943E+00	4.158E-01	-0.146
	1037.82			9.192E-02	2.431E-01	4.089E-01	4.216E-02	0.225
	1175.09			-5.337E-01	1.772E+00	2.893E+00	2.330E-01	-0.184
	1238.25			1.440E-01	8.021E-02	1.433E-01	1.242E-01	1.005
	1360.21			2.676E-01	8.565E-01	1.447E+00	1.293E-01	0.185
	1771.40			4.766E-02	2.162E-01	3.148E-01	2.616E-02	0.151
CO-57	122.06	*		2.603E-02	2.485E-02	3.987E-02	3.288E-03	0.653
	136.48			-1.316E-01	1.945E-01	3.213E-01	2.981E-02	-0.409
CO-58	810.76	*		-3.810E-03	3.247E-02	5.392E-02	5.970E-03	-0.071
FE-59	142.65			-1.200E+00	2.666E+00	4.294E+00	3.800E-01	-0.279
	192.34			1.044E-01	9.540E-01	1.464E+00	2.174E-01	0.071
	1099.22	*		2.868E-03	8.298E-02	1.351E-01	1.324E-02	0.021
	1291.56			-5.679E-02	1.053E-01	1.664E-01	1.640E-02	-0.341
CO-60	1173.22			-1.824E-02	3.513E-02	5.641E-02	4.537E-03	-0.323
	1332.49	*		-7.652E-03	3.566E-02	5.773E-02	5.148E-03	-0.133
ZN-65	1115.52	*		1.770E-02	8.294E-02	1.170E-01	1.044E-02	0.151
GE-68	1077.35	*		-1.594E-01	1.043E+00	1.678E+00	1.582E-01	-0.095
AS-73	53.44	*		-2.262E-01	6.984E-01	1.142E+00	8.628E-02	-0.198
AS-74	595.88	*		-5.598E-03	8.808E-02	1.455E-01	1.508E-02	-0.038
	634.78			-3.142E-01	2.975E-01	4.527E-01	4.745E-02	-0.694
SE-75	66.05			-1.412E+00	4.393E+00	6.383E+00	6.089E-01	-0.221
	96.73			-4.755E-01	7.702E-01	1.068E+00	1.471E-01	-0.445
	121.11			4.032E-02	1.340E-01	2.097E-01	2.292E-02	0.192
	136.00			-2.047E-03	3.634E-02	6.134E-02	5.323E-03	-0.033
	198.60			-7.622E-01	1.806E+00	2.838E+00	3.317E-01	-0.269
	264.65	*		1.458E-02	4.583E-02	6.551E-02	8.818E-03	0.223
	279.53			-5.440E-02	1.211E-01	1.638E-01	2.325E-02	-0.332
	303.91			1.502E+00	2.056E+00	3.122E+00	4.758E-01	0.481

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	400.65		1.719E-02	2.294E-01	3.779E-01	4.423E-02	0.045
		87.88		1.142E+03	2.847E+02	4.150E+02	3.934E+01	2.750
	+	200.40		-3.372E+00	2.163E+02	3.554E+02	3.908E+01	-0.009
		239.00		3.903E+02	5.362E+01	4.869E+01	6.058E+00	8.016
		249.79		4.020E+00	8.476E+01	1.372E+02	1.764E+01	0.029
		281.68		3.381E+01	1.298E+02	1.838E+02	2.560E+01	0.184
		297.23		6.404E+02	1.442E+02	1.688E+02	2.270E+01	3.793
		303.76		1.711E+02	2.416E+02	3.671E+02	4.856E+01	0.466
		439.47		2.656E+01	1.792E+02	2.941E+02	2.830E+01	0.090
		484.57		-1.955E+01	2.639E+02	4.239E+02	4.190E+01	-0.046
		520.65	*	3.464E+00	1.316E+01	2.141E+01	2.155E+00	0.162
		574.64		-4.113E+01	2.634E+02	4.018E+02	4.135E+01	-0.102
		578.91		3.784E+01	1.170E+02	1.716E+02	1.768E+01	0.221
		585.48		2.784E+03	4.397E+02	6.565E+02	6.781E+01	4.241
		755.35		-5.287E+01	1.924E+02	3.059E+02	3.335E+01	-0.173
		817.79		-1.408E+02	1.447E+02	2.237E+02	2.477E+01	-0.630
SR-82		698.33		-1.713E+01	3.123E+01	4.927E+01	5.272E+00	-0.348
		776.49	*	-6.121E-02	3.882E-01	5.277E-01	5.787E-02	-0.116
RB-83		1395.20		8.257E-01	9.328E+00	1.543E+01	1.380E+00	0.054
		520.41	*	1.009E-02	6.267E-02	1.014E-01	1.020E-02	0.100
		529.64		2.305E-02	8.841E-02	1.501E-01	1.517E-02	0.154
		552.65		-1.076E-01	1.683E-01	2.701E-01	2.756E-02	-0.398
RB-84		881.50	*	1.547E-02	6.224E-02	1.050E-01	1.174E-02	0.147
KR-85		513.99	*	2.558E+01	8.134E+00	1.303E+01	1.308E+00	1.963
SR-85		513.99	*	1.327E-01	4.220E-02	6.763E-02	6.786E-03	1.963
RB-86		1076.63	*	-2.874E-01	6.983E-01	1.100E+00	1.038E-01	-0.261
Y-88		898.02		-1.392E-02	3.542E-02	5.706E-02	6.411E-03	-0.244
		1836.01	*	-3.203E-03	2.795E-02	4.516E-02	3.651E-03	-0.071
ZR-88		392.90	*	-1.349E-02	2.732E-02	4.377E-02	4.076E-03	-0.308
Y-91		1204.90	*	-1.727E-02	1.429E+01	2.378E+01	1.955E+00	-0.001
NB-94		702.63	*	1.275E-02	2.893E-02	4.841E-02	5.187E-03	0.263
		871.10		1.261E-02	2.838E-02	4.773E-02	5.332E-03	0.264
NB-95		765.79	*	1.108E-01	4.606E-02	7.388E-02	8.079E-03	1.499
NB-95M		235.69	*	2.380E-01	1.378E-01	2.071E-01	2.737E-02	1.149
ZR-95		724.18		1.528E-01	1.064E-01	1.626E-01	1.853E-02	0.940
		756.15	*	3.453E-03	6.091E-02	9.911E-02	1.150E-02	0.035
NB-97		657.90	*	-8.559E-04	6.091E-02	Half-Life	too short	
		1024.50		1.474E+01	6.091E-02	Half-Life	too short	
ZR-97		254.15		1.152E+01	6.091E-02	Half-Life	too short	
		355.39		1.009E+01	6.091E-02	Half-Life	too short	
		507.63	*	1.540E+01	6.091E-02	Half-Life	too short	
		602.52		-9.447E-01	6.091E-02	Half-Life	too short	
		1021.30		2.784E+00	6.091E-02	Half-Life	too short	
		1147.95		1.737E+00	6.091E-02	Half-Life	too short	
		1362.66		9.613E+00	6.091E-02	Half-Life	too short	
		1750.46		-2.716E+00	6.091E-02	Half-Life	too short	
MO-99		140.51		-7.508E+00	3.318E+01	5.427E+01	1.505E+01	-0.138
		181.06		-3.631E+00	2.362E+01	3.411E+01	6.530E+00	-0.106
		366.43		-1.112E+01	9.933E+01	1.634E+02	1.733E+01	-0.068



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	739.58	*	-7.284E+00	1.353E+01	2.110E+01	3.493E+00	-0.345	
	778.00		-2.252E+01	4.499E+01	5.884E+01	6.455E+00	-0.383	
TC-99M	140.51	*	-1.887E+11	4.499E+01	Half-Life	too short		
RH-101	127.23		3.491E-02	3.338E-02	4.918E-02	4.111E-03	0.710	
	198.01	*	1.239E-03	3.269E-02	5.230E-02	5.705E-03	0.024	
	325.23		1.475E-01	2.250E-01	3.388E-01	4.211E-02	0.435	
RH-102	418.52		-8.223E-02	2.426E-01	3.891E-01	3.693E-02	-0.211	
	475.06	*	7.419E-03	2.617E-02	4.211E-02	4.141E-03	0.176	
	631.29		-4.236E-02	4.429E-02	6.809E-02	7.130E-03	-0.622	
	697.49		-5.580E-02	6.866E-02	1.063E-01	1.137E-02	-0.525	
	766.84		2.551E-01	1.064E-01	1.878E-01	2.054E-02	1.358	
	1046.59		-1.581E-02	9.212E-02	1.483E-01	1.455E-02	-0.107	
	1112.84		-1.994E-01	2.260E-01	2.795E-01	2.501E-02	-0.714	
RU-103	497.08	*	-4.304E-03	3.696E-02	5.908E-02	8.867E-03	-0.073	
	610.33	+	1.387E+01	2.937E+00	2.618E+00	4.628E-01	5.296	
RH-106	511.85	+	4.311E-01	3.024E-01	3.776E-01	3.785E-02	1.142	
	621.84	*	2.449E-02	2.953E-01	4.898E-01	7.153E-02	0.050	
	1050.47		1.920E+00	1.878E+00	3.283E+00	3.204E-01	0.585	
RU-106	511.85	+	4.311E-01	3.024E-01	3.776E-01	3.785E-02	1.142	
	621.84	*	2.449E-02	2.953E-01	4.898E-01	5.116E-02	0.050	
	1050.47		1.920E+00	1.878E+00	3.283E+00	3.204E-01	0.585	
AG-108M	433.93	*	-3.142E-03	2.978E-02	4.828E-02	4.779E-03	-0.065	
	614.37		-1.102E-02	3.918E-02	5.439E-02	5.822E-03	-0.203	
	722.95		-6.156E-03	4.440E-02	6.142E-02	6.796E-03	-0.100	
AG-110M	557.75	*	1.239E-03	2.986E-02	4.917E-02	5.285E-03	0.025	
	677.61		3.890E-02	2.514E-01	4.159E-01	4.497E-02	0.094	
	706.67		1.057E-01	1.822E-01	3.069E-01	3.353E-02	0.344	
	763.93		1.953E-01	1.680E-01	2.545E-01	2.831E-02	0.767	
	884.67		3.337E-02	4.306E-02	7.474E-02	8.523E-03	0.447	
	937.48		8.058E-02	9.993E-02	1.726E-01	1.925E-02	0.467	
	1384.27		-1.538E-01	1.510E-01	2.244E-01	2.059E-02	-0.685	
IN-111	171.28		-3.720E-03	1.205E+00	2.004E+00	2.000E-01	-0.002	
	245.39	*	-1.341E-01	1.447E+00	2.034E+00	2.581E-01	-0.066	
IN-113M	391.69	*	-1.965E-02	3.993E-02	6.401E-02	6.113E-03	-0.307	
SN-113	391.69	*	-1.965E-02	3.993E-02	6.401E-02	6.113E-03	-0.307	
IN-114M	190.27	*	-1.012E-02	1.922E-01	2.777E-01	2.953E-02	-0.036	
CD-115	260.90		5.935E+01	1.731E+02	2.825E+02	3.754E+01	0.210	
	492.35		3.579E+01	4.726E+01	7.913E+01	7.855E+00	0.452	
	527.90	*	9.506E+00	1.261E+01	2.194E+01	2.216E+00	0.433	
SN-117M	156.02		1.108E+00	2.257E+00	3.835E+00	3.595E-01	0.289	
	158.56	*	-6.497E-03	5.457E-02	9.095E-02	8.625E-03	-0.071	
SB-122	563.90	*	2.912E+00	2.456E+00	4.307E+00	4.414E-01	0.676	
	692.80		4.605E+01	5.207E+01	8.904E+01	9.506E+00	0.517	
I-123	159.00	*	-1.693E+01	5.207E+01	Half-Life	too short		
	528.96		2.755E+02	5.207E+01	Half-Life	too short		
TE-123M	159.00	*	-1.999E-02	2.700E-02	4.395E-02	4.197E-03	-0.455	
I-124	602.71	*	-3.100E-01	8.514E-01	1.178E+00	1.224E-01	-0.263	
	722.78		-8.221E-01	5.596E+00	7.736E+00	8.349E-01	-0.106	
	1325.50		1.102E+01	3.333E+01	5.653E+01	5.020E+00	0.195	

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25		6.239E+01	3.293E+01	6.066E+01	5.421E+00	1.029
		1509.49		1.051E+01	1.669E+01	2.876E+01	2.557E+00	0.366
		1691.02		-7.039E-01	3.496E+00	5.628E+00	4.813E-01	-0.125
		602.71		-1.512E-02	4.153E-02	5.748E-02	5.971E-03	-0.263
		645.85		-1.080E-01	4.359E-01	7.016E-01	7.673E-02	-0.154
		709.31		-1.663E+00	2.466E+00	3.843E+00	4.129E-01	-0.433
		713.82		-9.430E-01	1.465E+00	2.282E+00	3.115E-01	-0.413
		722.78		-5.813E-02	3.957E-01	5.471E-01	5.986E-02	-0.106
	+	968.20		1.779E+01	4.228E+00	6.686E+00	7.109E-01	2.660
		1045.16		-9.699E-01	2.009E+00	3.151E+00	3.096E-01	-0.308
		1325.50		8.324E-01	2.517E+00	4.270E+00	3.792E-01	0.195
		1368.21		-1.252E+00	1.466E+00	2.185E+00	2.989E-01	-0.573
		1436.60		9.244E-02	3.151E+00	5.168E+00	4.618E-01	0.018
		1691.02	*	-1.174E-02	5.832E-02	9.387E-02	8.350E-03	-0.125
SB-125		427.89	*	-5.178E-02	8.524E-02	1.345E-01	1.305E-02	-0.385
	+	463.38		5.639E-01	3.920E-01	4.646E-01	4.817E-02	1.214
		600.56		-1.482E-02	1.694E-01	2.664E-01	2.907E-02	-0.056
		635.90		-4.837E-02	2.187E-01	3.551E-01	3.929E-02	-0.136
TE-125M		109.28	*	2.629E+00	8.959E+00	1.412E+01	1.431E+00	0.186
I-126		388.63		1.426E-01	1.874E-01	3.193E-01	3.023E-02	0.447
		666.33	*	1.884E-01	1.665E-01	2.889E-01	3.052E-02	0.652
SB-126		753.82		-1.129E+00	1.321E+00	2.004E+00	2.184E-01	-0.563
		223.80		1.522E+00	4.120E+00	6.800E+00	8.068E-01	0.224
		278.60		2.797E+00	2.839E+00	4.157E+00	5.811E-01	0.673
	+	296.50		1.680E+01	3.269E+00	3.634E+00	4.895E-01	4.624
		414.70		-1.285E-01	7.298E-02	1.067E-01	1.010E-02	-1.204
		415.30		-5.050E+00	5.725E+00	8.890E+00	8.417E-01	-0.568
		555.20		-1.706E-01	3.501E+00	5.824E+00	5.950E-01	-0.029
		573.80		-3.806E-02	9.755E-01	1.545E+00	1.589E-01	-0.025
		593.00		-3.207E-01	8.901E-01	1.446E+00	1.498E-01	-0.222
		656.30		1.284E+00	3.058E+00	5.145E+00	5.419E-01	0.250
SB-127		666.33		7.895E-02	6.974E-02	1.210E-01	1.279E-02	0.652
		675.00		2.516E-01	1.760E+00	2.909E+00	3.085E-01	0.086
		695.00		3.453E-02	7.360E-02	1.234E-01	1.318E-02	0.280
		697.00		-6.351E-02	2.497E-01	4.016E-01	4.295E-02	-0.158
		720.50	*	1.424E-01	1.599E-01	2.390E-01	2.577E-02	0.596
		856.80		3.578E-01	4.873E-01	7.391E-01	8.240E-02	0.484
		989.30		5.034E-01	1.066E+00	1.810E+00	1.888E-01	0.278
		1034.80		3.406E+00	7.652E+00	1.292E+01	1.284E+00	0.264
		1213.00		-1.098E+00	3.758E+00	6.119E+00	5.059E-01	-0.179
		61.10		3.546E+01	5.987E+01	9.135E+01	9.564E+00	0.388
		252.40		-1.558E+00	5.043E+00	7.955E+00	3.438E+00	-0.196
		290.80		-6.090E+00	2.575E+01	3.729E+01	5.830E+00	-0.163
		411.60		9.032E+00	1.408E+01	2.362E+01	3.881E+00	0.382
		444.90		-4.621E+00	1.080E+01	1.713E+01	2.323E+00	-0.270
		473.00		3.858E-01	1.884E+00	3.080E+00	4.306E-01	0.125
		543.00		1.394E+01	1.701E+01	2.947E+01	4.604E+00	0.473
		603.60		-1.157E+01	1.519E+01	2.025E+01	2.849E+00	-0.571
		685.20	*	-1.621E-01	1.444E+00	2.346E+00	3.117E-01	-0.069

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		698.50		-8.114E+00	1.662E+01	2.627E+01	4.536E+00	-0.309
		722.20		6.657E+00	3.812E+01	5.416E+01	7.154E+00	0.123
		783.80		5.093E+00	3.898E+00	6.704E+00	9.678E-01	0.760
		57.60		-1.423E+00	4.865E+00	8.016E+00	5.758E-01	-0.178
		145.22		7.835E-01	6.781E-01	1.140E+00	1.020E-01	0.687
I-131		172.10		-1.671E-02	1.137E-01	1.881E-01	1.883E-02	-0.089
		202.84	*	1.349E-02	4.662E-02	7.478E-02	8.289E-03	0.180
		374.96		9.047E-02	1.765E-01	2.982E-01	3.036E-02	0.303
		80.18		-1.029E+00	5.842E+00	6.637E+00	5.783E-01	-0.155
		284.30		1.287E+00	1.501E+00	2.478E+00	3.504E-01	0.519
TE-132		364.48	*	-7.127E-02	1.117E-01	1.787E-01	1.982E-02	-0.399
		636.97		2.993E-01	1.341E+00	2.242E+00	2.442E-01	0.134
		722.89		-1.167E+00	8.246E+00	1.140E+01	1.236E+00	-0.102
		49.72		-1.585E+01	1.942E+01	3.149E+01	3.369E+00	-0.503
		111.76		-2.059E+00	3.559E+01	5.666E+01	6.199E+00	-0.036
BA-133		116.30		2.367E+01	3.382E+01	5.506E+01	6.000E+00	0.430
		228.16	*	2.916E-01	8.418E-01	1.385E+00	2.494E-01	0.211
		53.15		1.373E-01	2.956E+00	4.899E+00	3.718E-01	0.028
		79.62		-5.848E-02	1.508E+00	1.731E+00	2.633E-01	-0.034
		81.00		3.959E-02	1.070E-01	1.261E-01	2.009E-02	0.314
I-133	+	276.40		2.514E-01	4.433E-01	5.832E-01	1.055E-01	0.431
		302.84		6.579E-02	1.462E-01	2.189E-01	3.650E-02	0.301
		356.01	*	-6.829E-03	4.256E-02	6.056E-02	9.050E-03	-0.113
		383.85		-2.059E-01	2.623E-01	4.127E-01	5.522E-02	-0.499
	+	510.53		2.172E+00	2.623E-01	Half-Life	too short	
CS-134		529.87	*	3.969E-03	2.623E-01	Half-Life	too short	
		706.58		5.207E-01	2.623E-01	Half-Life	too short	
		856.28		1.203E+00	2.623E-01	Half-Life	too short	
		875.33		-2.316E-01	2.623E-01	Half-Life	too short	
		1236.41		1.347E+00	2.623E-01	Half-Life	too short	
I-135		1298.22		-4.338E-01	2.623E-01	Half-Life	too short	
		475.35		3.399E-01	1.724E+00	2.761E+00	2.716E-01	0.123
		563.23		2.566E-01	3.208E-01	5.545E-01	5.720E-02	0.463
		569.32		-3.719E-02	1.735E-01	2.855E-01	2.960E-02	-0.130
		604.70		-2.458E-02	3.549E-02	4.772E-02	4.968E-03	-0.515
CS-135	+	795.84	*	1.046E-01	5.932E-02	7.691E-02	8.513E-03	1.360
		801.93		-5.787E-02	4.215E-01	5.812E-01	6.436E-02	-0.100
		1038.57		1.672E-01	3.021E+00	4.957E+00	4.908E-01	0.034
		1167.94		8.464E-01	1.921E+00	3.303E+00	2.684E-01	0.256
		1365.15		-8.164E-01	1.035E+00	1.565E+00	1.458E-01	-0.522
I-135		268.24	*	3.174E-01	1.708E-01	2.563E-01	3.708E-02	1.238
		288.45		5.457E+11	1.708E-01	Half-Life	too short	
		417.63		-1.760E+11	1.708E-01	Half-Life	too short	
		546.56		5.449E+10	1.708E-01	Half-Life	too short	
		836.80		2.695E+11	1.708E-01	Half-Life	too short	
I-135		1038.76		2.062E+10	1.708E-01	Half-Life	too short	
		1124.00		1.894E+12	1.708E-01	Half-Life	too short	
		1131.51		9.300E+10	1.708E-01	Half-Life	too short	
		1260.41	*	2.849E+10	1.708E-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		1.198E+13	1.708E-01	Half-Life	too short	
		1678.03		1.897E+10	1.708E-01	Half-Life	too short	
		1706.46		-2.137E+11	1.708E-01	Half-Life	too short	
		1791.20		-8.284E+10	1.708E-01	Half-Life	too short	
		66.91		-7.603E-01	7.812E-01	1.091E+00	1.622E-01	-0.697
	+	86.29		5.167E+00	1.380E+00	1.902E+00	2.533E-01	2.716
		153.22		1.837E-03	6.681E-01	1.121E+00	1.144E-01	0.002
		163.89		3.451E-01	1.085E+00	1.784E+00	1.899E-01	0.193
		176.55		4.753E-02	3.717E-01	6.196E-01	6.557E-02	0.077
		273.65		5.430E-01	6.341E-01	6.918E-01	9.787E-02	0.785
		340.57		8.112E-01	1.723E-01	2.646E-01	3.170E-02	3.066
		818.51		-3.909E-02	6.107E-02	9.720E-02	1.077E-02	-0.402
		1048.07	*	5.213E-02	9.066E-02	1.543E-01	1.561E-02	0.338
		1235.34		2.552E-01	6.517E-01	9.496E-01	1.110E-01	0.269
BA-137M		661.65	*	-3.469E-02	3.198E-02	4.879E-02	5.145E-03	-0.711
CS-137		661.65	*	-3.667E-02	3.380E-02	5.158E-02	5.446E-03	-0.711
CE-139		165.85	*	-1.297E-02	2.763E-02	4.530E-02	4.443E-03	-0.286
BA-140		162.64		3.656E-02	7.720E-01	1.260E+00	1.275E-01	0.029
		304.84		1.297E+00	1.350E+00	2.008E+00	5.974E-01	0.646
		423.70		7.578E-01	1.795E+00	2.968E+00	9.695E-01	0.255
LA-140	+	537.32	*	1.335E-02	2.202E-01	3.696E-01	1.241E-01	0.036
		328.77		8.403E-01	4.389E-01	5.302E-01	6.698E-02	1.585
		432.53		-1.613E-01	2.025E+00	3.289E+00	3.276E-01	-0.049
		487.03		-3.651E-02	1.242E-01	1.966E-01	2.037E-02	-0.186
		751.79		-1.868E+00	1.562E+00	2.296E+00	2.672E-01	-0.814
		815.85		9.730E-03	2.668E-01	4.472E-01	5.303E-02	0.022
		867.82		4.332E-02	1.412E+00	2.015E+00	2.322E-01	0.021
		919.63		2.212E+00	2.740E+00	4.181E+00	5.306E-01	0.529
		925.24		-4.231E-01	9.845E-01	1.574E+00	1.799E-01	-0.269
		1596.49	*	-6.208E-02	8.950E-02	1.395E-01	1.223E-02	-0.445
CE-141		145.44	*	5.808E-02	5.961E-02	1.030E-01	9.372E-03	0.564
CE-143		57.37		-1.471E-04	5.961E-02	Half-Life	too short	
		231.56		-2.521E-03	5.961E-02	Half-Life	too short	
		293.26	*	1.640E-03	5.961E-02	Half-Life	too short	
	+	350.59		5.711E-02	5.961E-02	Half-Life	too short	
		490.36		1.049E-03	5.961E-02	Half-Life	too short	
		664.57		1.914E-03	5.961E-02	Half-Life	too short	
		721.93		3.560E-04	5.961E-02	Half-Life	too short	
CE-144		80.11		-3.608E-01	2.447E+00	2.786E+00	2.408E-01	-0.130
		133.54	*	-8.926E-02	2.131E-01	3.121E-01	4.845E-02	-0.286
PM-144		476.78		4.544E-03	6.049E-02	9.615E-02	1.015E-02	0.047
		618.01		2.638E-02	3.193E-02	4.988E-02	5.303E-03	0.529
		696.49	*	-2.798E-03	3.055E-02	4.965E-02	5.310E-03	-0.056
		778.57		-1.586E+00	2.349E+00	3.013E+00	3.307E-01	-0.526
PR-144		696.49	*	-1.897E-01	2.072E+00	3.367E+00	3.599E-01	-0.056
		1489.15		-1.734E+01	1.016E+01	1.287E+01	1.146E+00	-1.347
PM-146		453.90	*	1.400E-02	3.896E-02	6.441E-02	7.486E-03	0.217
		633.02		-1.474E+00	1.227E+00	1.637E+00	6.195E-01	-0.901
		735.90		1.071E-02	1.433E-01	2.008E-01	5.894E-02	0.053

---- 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		8.900E-02	7.746E-02	1.332E-01	2.068E-02	0.668
		91.11		6.579E-01	2.981E-01	4.790E-01	4.733E-02	1.374
		319.41		1.479E+00	3.089E+00	5.267E+00	6.667E-01	0.281
		439.89		-7.522E-01	5.629E+00	9.097E+00	8.761E-01	-0.083
PM-149	*	531.02		-3.599E-01	5.036E-01	8.042E-01	1.275E-01	-0.447
		285.90		-3.035E+01	1.219E+02	1.921E+02	3.635E+01	-0.158
		121.78		7.677E-02	7.136E-02	1.144E-01	1.098E-02	0.671
		244.69		-3.672E-02	3.568E-01	5.014E-01	6.349E-02	-0.073
EU-152	*	344.27		-1.122E-01	1.060E-01	1.316E-01	1.582E-02	-0.853
		443.98		-5.996E-01	8.696E-01	1.359E+00	1.312E-01	-0.441
		778.89		-1.354E-01	2.667E-01	3.488E-01	3.827E-02	-0.388
		867.32		-1.323E-01	7.889E-01	1.102E+00	1.231E-01	-0.120
	+	964.01		3.966E-01	4.011E-01	4.858E-01	5.184E-02	0.817
		1085.78		9.701E-02	3.389E-01	5.627E-01	5.243E-02	0.172
		1112.02		-3.845E-01	3.288E-01	3.914E-01	3.507E-02	-0.982
		1407.95		1.029E-01	1.778E-01	2.876E-01	2.571E-02	0.358
GD-153	+	69.67		6.904E-01	1.515E+00	2.275E+00	1.766E-01	0.304
		83.37		3.056E+01	1.367E+01	2.134E+01	1.915E+00	1.432
		97.43	*	-4.400E-02	7.949E-02	1.108E-01	9.745E-03	-0.397
		103.18		-4.545E-02	9.690E-02	1.526E-01	1.304E-02	-0.298
EU-154		123.07		4.480E-02	4.946E-02	8.072E-02	8.954E-03	0.555
		247.94		1.286E-01	3.442E-01	5.455E-01	8.108E-02	0.236
		591.81		-4.878E-01	5.996E-01	8.960E-01	1.165E-01	-0.544
		723.30		3.339E-02	1.875E-01	2.662E-01	3.070E-02	0.125
		756.87		1.967E-01	6.543E-01	1.081E+00	1.482E-01	0.182
		873.19		-2.857E-02	2.435E-01	4.012E-01	5.681E-02	-0.071
		996.32		-1.072E-01	3.080E-01	4.914E-01	9.175E-02	-0.218
		1004.76		2.277E-02	1.745E-01	2.887E-01	3.727E-02	0.079
EU-155	*	1274.45		1.210E-02	9.987E-02	1.668E-01	1.885E-02	0.073
		48.70		-1.649E+00	1.909E+00	3.098E+00	2.523E-01	-0.532
		60.01		1.451E+00	4.218E+00	6.384E+00	4.534E-01	0.227
		86.54		4.494E-01	1.122E-01	1.660E-01	1.561E-02	2.707
TB-160	+	105.31	*	7.197E-02	1.019E-01	1.645E-01	1.412E-02	0.438
		86.79		1.213E+00	3.025E-01	4.450E-01	4.162E-02	2.726
		197.04		2.956E-02	5.606E-01	8.974E-01	9.758E-02	0.033
		215.65		3.581E-01	7.147E-01	1.188E+00	1.373E-01	0.301
		298.57		3.156E-01	1.685E-01	1.943E-01	2.605E-02	1.624
		879.36	*	3.309E-03	1.193E-01	1.985E-01	2.219E-02	0.017
		962.29		9.493E-01	5.463E-01	8.678E-01	9.275E-02	1.094
		966.15		2.753E-01	2.784E-01	4.869E-01	5.187E-02	0.565
HO-166M	+	1177.93		3.897E-02	2.828E-01	4.762E-01	3.842E-02	0.082
		1271.85		-5.279E-01	5.709E-01	8.708E-01	7.484E-02	-0.606
		80.57		-5.284E-02	3.123E-01	3.548E-01	3.083E-02	-0.149
		184.41		1.547E-01	6.817E-02	6.305E-02	6.574E-03	2.454
	+	280.46		-5.224E-02	9.013E-02	1.205E-01	1.683E-02	-0.434
		410.95		2.621E-01	2.321E-01	3.974E-01	3.751E-02	0.660
		711.68	*	-2.089E-02	5.270E-02	8.371E-02	8.999E-03	-0.250
		752.31		-2.085E-01	2.313E-01	3.497E-01	3.810E-02	-0.596
		810.29		-1.078E-02	4.799E-02	7.910E-02	8.745E-03	-0.136

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		8.950E+00	2.427E+01	4.123E+01	3.216E+00	0.217
		52.39		4.365E+00	1.298E+01	2.173E+01	1.668E+00	0.201
		59.40		7.133E+00	2.256E+01	3.414E+01	2.413E+00	0.209
		66.72	*	-2.723E+01	2.655E+01	3.727E+01	2.816E+00	-0.730
LU-176	+	88.36		8.846E-01	2.206E-01	3.189E-01	3.016E-02	2.774
		201.83		-2.841E-02	2.810E-02	4.426E-02	4.890E-03	-0.642
		306.84	*	1.549E-02	2.337E-02	3.691E-02	4.842E-03	0.420
		401.10		-1.942E+00	6.040E+00	9.755E+00	9.140E-01	-0.199
LU-177		112.95		-5.861E-01	1.740E+00	2.738E+00	2.276E-01	-0.214
	+	208.36	*	3.241E+00	1.551E+00	2.083E+00	2.352E-01	1.556
LU-177M		52.97		2.806E-03	1.346E+00	2.228E+00	1.695E-01	0.001
		54.07		-2.484E-01	7.033E-01	1.147E+00	8.592E-02	-0.217
		61.30		1.056E+00	1.276E+00	1.967E+00	1.415E-01	0.537
		121.62		3.678E-01	3.660E-01	5.865E-01	4.831E-02	0.627
		147.16		-7.059E-01	6.053E-01	9.742E-01	8.784E-02	-0.725
		171.86		-9.345E-02	4.497E-01	7.424E-01	7.424E-02	-0.126
		218.09		1.386E-01	8.216E-01	1.350E+00	1.573E-01	0.103
	+	268.79		3.417E+00	1.070E+00	1.377E+00	1.872E-01	2.481
		319.02		4.709E-02	2.261E-01	3.817E-01	4.837E-02	0.123
		367.43		3.226E-01	8.062E-01	1.358E+00	1.433E-01	0.238
		413.65	*	-2.878E-01	1.636E-01	2.399E-01	2.269E-02	-1.199
HF-181		56.28		7.610E-02	7.612E-01	1.274E+00	9.282E-02	0.060
		57.53		-4.547E-02	4.060E-01	6.736E-01	4.841E-02	-0.067
		65.20		-1.350E-01	8.719E-01	1.278E+00	9.527E-02	-0.106
		133.02		-1.269E-02	6.965E-02	1.023E-01	8.720E-03	-0.124
		136.25		-6.541E-02	4.276E-01	7.195E-01	6.206E-02	-0.091
		345.85		-3.128E-01	2.688E-01	2.661E-01	3.077E-02	-1.176
		482.03	*	-2.523E-03	3.589E-02	5.769E-02	5.695E-03	-0.044
W-181		56.28		2.997E-02	2.944E-01	4.928E-01	3.590E-02	0.061
		57.53		-1.757E-02	1.572E-01	2.607E-01	1.874E-02	-0.067
		65.20	*	-5.185E-02	3.348E-01	4.907E-01	3.658E-02	-0.106
TA-182		67.75		-9.336E-02	9.798E-02	1.473E-01	1.123E-02	-0.634
		100.10		1.317E-01	1.593E-01	2.635E-01	2.283E-02	0.500
		152.43		2.942E-02	3.204E-01	5.390E-01	4.973E-02	0.055
		222.10		5.281E-02	3.329E-01	5.460E-01	6.443E-02	0.097
		1001.68		8.450E-01	1.770E+00	2.839E+00	2.926E-01	0.298
	+	1121.28		6.406E-01	1.978E-01	3.043E-01	2.687E-02	2.105
		1189.05		5.517E-02	2.375E-01	4.022E-01	3.271E-02	0.137
		1221.42	*	-9.209E-02	1.557E-01	2.481E-01	2.063E-02	-0.371
		1230.97		-2.329E-01	4.406E-01	6.319E-01	5.288E-02	-0.369
RE-183		57.98		-8.100E-02	1.573E-01	2.568E-01	1.838E-02	-0.315
		59.32		2.911E-02	9.375E-02	1.418E-01	1.003E-02	0.205
		67.20		-1.130E-01	1.860E-01	2.665E-01	2.022E-02	-0.424
		162.32	*	3.864E-03	1.077E-01	1.758E-01	1.696E-02	0.022
	+	208.81		2.621E+00	1.254E+00	1.690E+00	1.910E-01	1.551
		291.72		7.532E-01	9.090E-01	1.392E+00	1.896E-01	0.541
RE-184		57.98		-2.965E-01	5.758E-01	9.401E-01	6.728E-02	-0.315
		59.32		1.065E-01	3.429E-01	5.188E-01	3.669E-02	0.205
		67.20		-4.135E-01	6.808E-01	9.751E-01	7.400E-02	-0.424

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		8.276E-02	3.298E-01	5.555E-01	5.334E-02	0.149
		216.55		2.210E-01	2.515E-01	4.221E-01	4.893E-02	0.524
		252.85	*	5.829E-03	2.170E-01	3.505E-01	4.548E-02	0.017
		318.01		-1.382E-01	3.907E-01	6.432E-01	8.175E-02	-0.215
		792.07		5.898E-01	1.072E+00	1.547E+00	1.703E-01	0.381
		903.28		-2.554E-01	9.785E-01	1.347E+00	1.504E-01	-0.190
		920.93		3.671E-01	4.067E-01	6.450E-01	7.117E-02	0.569
		59.72		6.770E-02	2.528E-01	3.814E-01	2.700E-02	0.178
		61.14		8.565E-02	1.399E-01	2.139E-01	1.536E-02	0.400
		69.30		1.188E-01	2.700E-01	4.054E-01	3.135E-02	0.293
		592.07		-1.990E+00	2.383E+00	3.665E+00	3.794E-01	-0.543
		646.12	*	-1.565E-02	3.749E-02	5.969E-02	6.273E-03	-0.262
		717.42		-2.835E-01	8.758E-01	1.340E+00	1.444E-01	-0.212
		874.81		-2.960E-01	4.920E-01	7.814E-01	8.733E-02	-0.379
		880.27		4.735E-01	6.762E-01	1.170E+00	1.308E-01	0.405
RE-188		155.03	*	3.103E-01	1.662E-01	2.902E-01	2.709E-02	1.069
		477.96		-1.212E+00	2.665E+00	4.185E+00	4.122E-01	-0.290
		633.10		-3.145E+00	2.268E+00	3.348E+00	3.507E-01	-0.939
W-188	+	63.58		4.339E+01	6.217E+01	7.677E+01	5.641E+00	0.565
		227.08		-1.726E+00	1.241E+01	2.009E+01	2.408E+00	-0.086
IR-192		290.67	*	-2.074E+00	7.338E+00	1.060E+01	1.447E+00	-0.196
	+	295.96		1.221E+00	2.379E-01	2.657E-01	3.594E-02	4.595
		308.46		-3.589E-02	8.439E-02	1.388E-01	1.817E-02	-0.259
		316.51	*	-1.989E-02	3.020E-02	4.891E-02	6.251E-03	-0.407
		468.07		-1.261E-02	6.946E-02	9.559E-02	9.889E-03	-0.132
		604.41		-3.503E-01	4.851E-01	6.488E-01	9.249E-02	-0.540
AU-195		612.46		5.593E+00	1.135E+00	1.741E+00	2.002E-01	3.212
		65.12		1.222E-02	1.536E-01	2.276E-01	1.695E-02	0.054
		66.83		-8.804E-02	8.809E-02	1.238E-01	9.365E-03	-0.711
	+	75.70		1.455E+00	2.512E-01	4.188E-01	3.450E-02	3.475
		98.88	*	-2.154E-02	2.000E-01	3.206E-01	2.796E-02	-0.067
TL-200	+	129.76		4.044E+00	3.413E+00	4.659E+00	3.926E-01	0.868
		367.94	*	2.608E-04	3.413E+00	Half-Life	too short	
		579.30		9.919E-03	3.413E+00	Half-Life	too short	
		828.27		5.220E-03	3.413E+00	Half-Life	too short	
TL-201		1205.75		1.219E-03	3.413E+00	Half-Life	too short	
		68.90		8.683E-01	5.638E+00	8.371E+00	6.451E-01	0.104
		70.82		1.329E+00	3.216E+00	4.814E+00	3.777E-01	0.276
		80.30		-1.307E+00	7.475E+00	8.491E+00	7.355E-01	-0.154
		135.34		1.699E+01	2.997E+01	5.153E+01	4.430E+00	0.330
TL-202		167.43	*	-5.695E-01	8.141E+00	1.353E+01	1.334E+00	-0.042
		68.90		6.431E-02	4.176E-01	6.200E-01	4.778E-02	0.104
		70.82		9.816E-02	2.376E-01	3.556E-01	2.790E-02	0.276
		80.30		-9.659E-02	5.523E-01	6.274E-01	5.435E-02	-0.154
		439.56	*	1.210E-03	6.673E-02	1.088E-01	1.047E-02	0.011
HG-203		70.83		4.087E-01	9.828E-01	1.470E+00	1.930E-01	0.278
		72.87		1.278E+00	5.718E-01	9.451E-01	1.211E-01	1.352
		82.60		3.170E-02	1.071E+00	1.535E+00	2.136E-01	0.021
		279.20	*	-3.210E-03	4.623E-02	6.420E-02	9.086E-03	-0.050

## ---- 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		3.182E-01	1.588E-01	2.683E-01	2.146E-02	1.186
	+	74.97		8.039E-01	1.387E-01	2.048E-01	1.674E-02	3.925
	+	84.90		3.940E-01	1.762E-01	2.828E-01	2.585E-02	1.393
		569.67		1.601E-03	2.667E-02	4.453E-02	4.573E-03	0.036
		1063.62	*	1.112E-02	4.684E-02	7.758E-02	7.448E-03	0.143
		1770.23		7.161E-01	5.315E-01	8.880E-01	7.381E-02	0.806
TL-207		81.07		7.750E-02	2.355E-01	2.770E-01	2.421E-02	0.280
	+	83.78		2.598E-01	1.162E-01	1.825E-01	1.646E-02	1.423
		94.90		6.120E-01	2.279E-01	3.577E-01	3.197E-02	1.711
		122.32		1.898E+00	1.719E+00	2.760E+00	2.456E-01	0.688
		144.24		6.843E-01	6.491E-01	1.089E+00	1.078E-01	0.629
		154.21		4.389E-01	3.802E-01	6.555E-01	6.621E-02	0.670
	+	269.46		7.961E-01	2.497E-01	3.339E-01	4.586E-02	2.384
		323.87	*	1.464E-01	6.452E-01	9.505E-01	1.889E-01	0.154
	+	338.28		9.124E+00	2.251E+00	2.295E+00	3.395E-01	3.975
		445.03		-8.086E-01	2.054E+00	3.266E+00	4.197E-01	-0.248
PO-209		260.50		1.034E+00	9.063E+00	1.466E+01	1.945E+00	0.071
		262.80		3.380E+00	2.505E+01	4.051E+01	5.413E+00	0.083
		896.60	*	1.547E+00	6.249E+00	1.053E+01	1.179E+00	0.147
BI-210		46.50	*	8.070E-01	2.841E+00	4.672E+00	4.340E-01	0.173
PB-210		46.50	*	8.070E-01	2.841E+00	4.672E+00	4.340E-01	0.173
PO-210		46.50	*	8.070E-01	2.841E+00	4.672E+00	3.928E-01	0.173
PB-211		404.84	*	-1.088E+00	1.136E+00	1.406E+00	8.828E-01	-0.774
		427.08		1.137E-03	1.856E+00	3.030E+00	1.887E+00	0.000
		831.96		-4.744E-01	1.083E+00	1.689E+00	1.065E+00	-0.281
BI-212	+	727.18	*	1.340E+00	4.529E-01	5.716E-01	6.828E-02	2.345
		785.46		2.116E+00	1.541E+00	2.635E+00	2.896E-01	0.803
		1620.62		1.444E+00	1.161E+00	2.142E+00	1.867E-01	0.674
PO-215		81.07		7.750E-02	2.355E-01	2.770E-01	2.421E-02	0.280
	+	83.78		2.598E-01	1.162E-01	1.825E-01	1.646E-02	1.423
		94.90		6.120E-01	2.279E-01	3.577E-01	3.197E-02	1.711
		122.32		1.898E+00	1.719E+00	2.760E+00	2.456E-01	0.688
		144.24		6.843E-01	6.491E-01	1.089E+00	1.078E-01	0.629
		154.21		4.389E-01	3.802E-01	6.555E-01	6.621E-02	0.670
	+	269.46		7.961E-01	2.497E-01	3.339E-01	4.586E-02	2.384
		323.87	*	1.464E-01	6.452E-01	9.505E-01	1.889E-01	0.154
	+	338.28		9.124E+00	2.251E+00	2.295E+00	3.395E-01	3.975
		445.03		-8.086E-01	2.054E+00	3.266E+00	4.197E-01	-0.248
RN-219	+	271.23		1.021E+00	3.251E-01	4.338E-01	6.426E-02	2.355
		401.81	*	-1.012E-01	3.751E-01	6.070E-01	9.391E-02	-0.167
RN-220		549.76	*	3.440E+00	2.205E+01	3.713E+01	3.784E+00	0.093
RA-223		81.07		7.750E-02	2.355E-01	2.770E-01	2.421E-02	0.280
	+	83.78		2.598E-01	1.162E-01	1.825E-01	1.646E-02	1.423
		94.90		6.120E-01	2.279E-01	3.577E-01	3.197E-02	1.711
		122.32		1.898E+00	1.719E+00	2.760E+00	2.456E-01	0.688
		144.24		6.843E-01	6.491E-01	1.089E+00	1.078E-01	0.629
		154.21		4.389E-01	3.802E-01	6.555E-01	6.621E-02	0.670
	+	269.46		7.961E-01	2.497E-01	3.339E-01	4.586E-02	2.384
		323.87	*	1.464E-01	6.452E-01	9.505E-01	1.889E-01	0.154



## ---- 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		9.124E+00	2.251E+00	2.295E+00	3.395E-01	3.975
		445.03		-8.086E-01	2.054E+00	3.266E+00	4.197E-01	-0.248
		79.80		-3.279E-01	1.908E+00	2.168E+00	4.660E-01	-0.151
		236.00		1.095E+00	3.156E-01	4.487E-01	6.769E-02	2.441
		256.20	*	-1.600E-01	3.583E-01	5.642E-01	1.030E-01	-0.284
		286.10		-1.159E+00	1.486E+00	2.266E+00	3.861E-01	-0.512
TH-227	+	299.80		4.217E+00	2.060E+00	2.413E+00	4.886E-01	1.748
		304.40		8.497E-01	1.844E+00	2.760E+00	5.788E-01	0.308
		334.20		1.181E+00	3.215E+00	3.265E+00	6.911E-01	0.362
		79.80		-3.279E-01	1.908E+00	2.168E+00	4.720E-01	-0.151
	+	94.00		7.629E+00	2.964E+00	3.416E+00	7.493E-01	2.233
		236.00		1.095E+00	3.104E-01	4.487E-01	6.351E-02	2.441
TH-229		256.20	*	-1.600E-01	3.586E-01	5.642E-01	1.161E-01	-0.284
		286.10		-1.159E+00	1.881E+00	2.266E+00	2.287E+00	-0.512
	+	299.80		4.217E+00	2.060E+00	2.413E+00	4.886E-01	1.748
		304.40		8.497E-01	1.844E+00	2.760E+00	5.788E-01	0.308
		334.20		1.181E+00	3.215E+00	3.265E+00	6.911E-01	0.362
	+	85.43		3.889E-01	1.739E-01	2.910E-01	2.677E-02	1.336
PA-231	+	88.47		5.092E-01	1.270E-01	1.820E-01	1.719E-02	2.799
		100.00		1.508E-01	1.639E-01	2.719E-01	2.357E-02	0.555
		193.63	*	-6.881E-02	4.693E-01	7.695E-01	8.273E-02	-0.089
		210.97		1.260E+00	8.355E-01	1.267E+00	1.442E-01	0.995
		283.67	*	-8.578E-02	1.425E+00	2.270E+00	4.240E-01	-0.038
	+	301.29		1.687E+00	7.967E-01	9.660E-01	1.536E-01	1.746
TH-231		81.07		7.750E-02	2.355E-01	2.770E-01	2.421E-02	0.280
	+	83.78		2.598E-01	1.162E-01	1.825E-01	1.646E-02	1.423
		94.90		6.120E-01	2.279E-01	3.577E-01	3.197E-02	1.711
		122.32		1.898E+00	1.719E+00	2.760E+00	2.456E-01	0.688
		144.24		6.843E-01	6.491E-01	1.089E+00	1.078E-01	0.629
		154.21		4.389E-01	3.802E-01	6.555E-01	6.621E-02	0.670
U-231	+	269.46		7.961E-01	2.497E-01	3.339E-01	4.586E-02	2.384
		323.87	*	1.464E-01	6.452E-01	9.505E-01	1.889E-01	0.154
	+	338.28		9.124E+00	2.251E+00	2.295E+00	3.395E-01	3.975
		445.03		-8.086E-01	2.054E+00	3.266E+00	4.197E-01	-0.248
	+	84.21		1.349E+01	6.034E+00	9.522E+00	8.632E-01	1.417
	+	92.29		9.086E+00	3.027E+00	4.314E+00	3.934E-01	2.106
PA-233		95.87	*	8.795E-01	1.243E+00	1.844E+00	1.638E-01	0.477
		108.00		-2.887E+00	2.347E+00	3.559E+00	2.992E-01	-0.811
	+	75.28		2.346E+01	5.026E+00	6.246E+00	9.442E-01	3.755
	+	86.59		7.301E+00	2.599E+00	2.697E+00	7.296E-01	2.707
	+	300.12		1.176E+00	5.641E-01	6.794E-01	1.225E-01	1.731
		311.98	*	2.811E-02	5.512E-02	9.425E-02	1.235E-02	0.298
PA-234		340.50		3.870E+00	1.174E+00	1.226E+00	3.084E-01	3.157
		398.62		-6.198E-01	1.924E+00	3.004E+00	8.072E-01	-0.206
		415.76		-8.735E-01	1.415E+00	2.217E+00	4.857E-01	-0.394
	+	63.00		1.244E+00	1.790E+00	2.256E+00	3.341E-01	0.551
		94.67		5.572E-01	1.762E-01	2.670E-01	3.374E-02	2.087
		98.44		-2.374E-02	8.661E-02	1.296E-01	7.232E-02	-0.183
		99.86		3.738E-01	4.146E-01	6.875E-01	5.964E-02	0.544

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00		-1.420E-02	1.784E-01	2.773E-01	3.298E-02	-0.051
		131.20		-6.332E-02	1.103E-01	1.592E-01	1.348E-02	-0.398
		152.70		-7.923E-02	3.093E-01	5.143E-01	8.931E-02	-0.154
	+	186.00		5.570E+00	2.969E+00	2.406E+00	7.645E-01	2.315
		226.40		-1.459E-01	3.868E-01	6.196E-01	9.661E-02	-0.235
		227.20		-4.552E-03	4.122E-01	6.706E-01	8.043E-02	-0.007
		248.90		2.702E-01	7.745E-01	1.265E+00	3.079E-01	0.214
		293.70		6.222E+00	1.518E+00	1.581E+00	3.196E-01	3.937
		369.80		4.231E-01	7.700E-01	1.296E+00	2.923E-01	0.327
		568.70		-3.335E-01	8.855E-01	1.444E+00	1.482E-01	-0.231
		569.50		1.421E-02	2.366E-01	3.951E-01	4.058E-02	0.036
		574.00		2.371E-01	1.301E+00	2.089E+00	2.149E-01	0.114
		699.00		-3.185E-01	6.240E-01	9.824E-01	1.975E-01	-0.324
		706.10		7.851E-01	9.554E-01	1.525E+00	6.870E-01	0.515
		733.00		-1.535E-02	3.524E-01	4.882E-01	1.130E-01	-0.031
		742.81		-1.790E-01	1.321E+00	1.957E+00	1.322E+00	-0.091
	+	796.30		2.031E+00	1.264E+00	1.480E+00	4.130E-01	1.372
		805.60		5.461E-01	8.640E-01	1.472E+00	4.625E-01	0.371
		819.60		-6.859E-01	1.013E+00	1.555E+00	6.011E-01	-0.441
		826.30		-1.314E-01	6.605E-01	1.084E+00	4.908E-01	-0.121
		831.60		-5.711E-01	5.716E-01	8.495E-01	2.604E-01	-0.672
		876.40		-6.865E-01	1.004E+00	1.105E+00	1.139E+00	-0.621
		880.51		1.681E-01	2.434E-01	4.208E-01	4.706E-02	0.399
		883.24		2.332E-01	2.921E-01	4.331E-01	2.928E-01	0.538
		899.00		6.346E-03	7.056E-01	1.170E+00	5.182E-01	0.005
		925.00		-4.504E-01	9.742E-01	1.554E+00	1.710E-01	-0.290
		926.50		-1.306E-01	1.521E-01	2.295E-01	6.007E-02	-0.569
		946.00	*	8.639E-02	2.482E-01	4.183E-01	8.314E-02	0.207
		949.00		-5.476E-02	3.802E-01	6.204E-01	6.703E-02	-0.088
		980.50		-2.231E-01	5.967E-01	9.519E-01	1.001E-01	-0.234
		1394.10		-7.348E-03	1.004E+00	1.646E+00	1.072E+00	-0.004
PA-234M		766.42		2.481E+01	1.765E+01	1.965E+01	1.006E+01	1.263
		1001.03	*	2.561E-01	4.074E+00	6.363E+00	7.292E-01	0.040
U-235	+	89.95		2.439E+00	1.318E+00	1.597E+00	4.960E-01	1.527
	+	93.35		2.373E+00	1.013E+00	1.135E+00	3.195E-01	2.092
		105.00		6.566E-01	1.016E+00	1.609E+00	4.795E-01	0.408
		143.76	*	1.089E-01	2.015E-01	3.332E-01	5.879E-02	0.327
		163.35		6.993E-03	4.505E-01	7.340E-01	1.438E-01	0.010
	+	185.71		2.063E-01	9.090E-02	8.921E-02	9.341E-03	2.312
		205.31		4.908E-02	5.623E-01	7.970E-01	1.623E-01	0.062
NP-236		94.67		4.249E-01	1.283E-01	2.027E-01	1.815E-02	2.096
		98.44		-1.792E-02	6.472E-02	9.797E-02	8.564E-03	-0.183
		111.00		-1.074E-02	1.350E-01	2.097E-01	1.750E-02	-0.051
		160.31	*	-5.209E-02	7.507E-02	1.224E-01	1.170E-02	-0.426
NP-239		99.55		5.187E-02	1.395E-01	2.274E-01	1.976E-02	0.228
		117.00	*	-3.351E-03	1.826E-01	2.901E-01	2.398E-02	-0.012
	+	209.75		2.044E+00	9.780E-01	1.338E+00	1.518E-01	1.528
		228.18		7.602E-02	2.161E-01	3.560E-01	4.283E-02	0.214
	+	277.60		1.227E-01	2.158E-01	2.872E-01	4.004E-02	0.427

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		1.214E+00	1.758E+00	1.859E+00	2.242E-01	0.653
AM-241		59.54	*	4.266E-02	1.309E-01	1.981E-01	1.549E-02	0.215
CM-243		99.55		5.338E-02	1.435E-01	2.340E-01	2.033E-02	0.228
		103.76	*	4.950E-03	8.961E-02	1.440E-01	1.228E-02	0.034
		117.00		-3.447E-03	1.879E-01	2.985E-01	2.467E-02	-0.012
	+	209.75		2.016E+00	9.642E-01	1.319E+00	1.496E-01	1.528
		228.18		7.682E-02	2.184E-01	3.598E-01	4.328E-02	0.214
	+	277.60		1.237E-01	2.176E-01	2.896E-01	4.037E-02	0.427
AM-246		798.80		2.363E-02	1.455E-01	2.034E-01	2.243E-02	0.116
		1036.00		9.517E-02	2.373E-01	3.996E-01	3.968E-02	0.238
		1062.04		8.335E-02	1.991E-01	3.339E-01	3.212E-02	0.250
		1078.86	*	7.449E-03	1.167E-01	1.909E-01	1.796E-02	0.039
CM-247	+	278.00		5.087E-01	8.950E-01	1.199E+00	1.674E-01	0.424
		287.40		3.230E-01	1.141E+00	1.843E+00	2.536E-01	0.175
		402.60	*	-4.864E-03	3.335E-02	5.432E-02	5.096E-03	-0.090
CF-249		252.85		2.177E-02	8.105E-01	1.309E+00	1.699E-01	0.017
		333.44		1.195E-01	2.282E-01	2.371E-01	2.868E-02	0.504
		387.95	*	2.650E-02	3.404E-02	5.805E-02	5.518E-03	0.456
CF-251		176.60	*	1.396E-02	1.207E-01	2.011E-01	2.043E-02	0.069
		227.00		-5.009E-02	3.681E-01	5.961E-01	7.145E-02	-0.084
		285.00		1.192E+00	1.606E+00	2.640E+00	3.652E-01	0.451

## 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]G244148018      *
* Acquisition date   : 20-JAN-2010 18:02:42 Detector SN#                   *
* Detector ID        : GAM22                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance : 1.500      *
* Elapsed live time   : 0 02:00:00.00                               Abundance limit  : 75.000      *
* Elapsed real time  : 0 02:00:02.14                               Half life ratio   : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244148018                               Analyst initials : MXR1         *
* Batch Number       : 940268                                   Sample Quantity  : 1.2903E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight   : 0.00000      *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                       *
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope                :      *
* MSD DPM             : 0.000                                       MSD Isotope       :      *
* LCS DPM             : 0.000                                       LCS Isotope       :      *
* LCSD DPM           : 0.000                                       LCSD Isotope      :      *
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.122E+01	2.242E+00	3.987E-01	0.000E+00
CD-109	3.801E+00	9.291E-01	1.081E+00	0.000E+00
SN-126	3.730E-01	9.116E-02	1.065E-01	0.000E+00
TL-208	5.529E-01	8.950E-02	4.961E-02	0.000E+00
BI-211	4.066E+00	6.028E-01	3.116E-01	0.000E+00
PB-212	1.746E+00	2.472E-01	8.807E-02	0.000E+00
PO-212	1.746E+00	2.472E-01	8.807E-02	0.000E+00
BI-214	1.259E+00	2.033E-01	1.016E-01	0.000E+00
PB-214	1.414E+00	2.218E-01	1.060E-01	0.000E+00
PO-214	1.414E+00	2.218E-01	1.060E-01	0.000E+00
PO-216	1.746E+00	2.472E-01	8.807E-02	0.000E+00
PO-218	1.414E+00	2.218E-01	1.060E-01	0.000E+00
RA-224	5.357E+00	1.295E+00	1.001E+00	0.000E+00
RA-226	1.259E+00	2.033E-01	1.016E-01	0.000E+00
AC-228	1.920E+00	3.466E-01	1.751E-01	0.000E+00
RA-228	1.920E+00	3.466E-01	1.751E-01	0.000E+00
TH-228	1.774E+00	2.512E-01	8.951E-02	0.000E+00
TH-230	1.259E+00	2.033E-01	1.016E-01	0.000E+00
TH-232	1.920E+00	3.466E-01	1.751E-01	0.000E+00
TH-234	1.067E+00	1.508E+00	1.764E+00	0.000E+00
U-234	1.259E+00	2.033E-01	1.016E-01	0.000E+00
NP-237	1.095E+00	3.474E-01	3.158E-01	0.000E+00
U-238	1.067E+00	1.508E+00	1.764E+00	0.000E+00
AM-243	4.478E-01	7.574E-02	7.858E-02	0.000E+00
ANH-511	8.613E-02	5.920E-02	4.039E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-4.102E-02	2.714E-01	4.517E-01	0.000E+00 NOT IDENT.
NA-22	4.333E-03	3.506E-02	5.990E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.152E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-5.254E-03	2.301E-02	3.722E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.411E-02	7.285E-02	0.000E+00	FAIL ABUN
SC-46	-7.881E-03	3.305E-02	5.549E-02	0.000E+00	FAIL ABUN
V-48	-2.934E-02	5.771E-02	9.344E-02	0.000E+00	NOT IDENT.
CR-51	1.428E-01	3.242E-01	5.769E-01	0.000E+00	NOT IDENT.
MN-52	-9.465E-02	2.325E-01	3.726E-01	0.000E+00	NOT IDENT.
MN-54	2.352E-03	3.216E-02	5.551E-02	0.000E+00	NOT IDENT.
CO-56	-4.552E-02	3.386E-02	5.245E-02	0.000E+00	NOT IDENT.
CO-57	2.603E-02	2.435E-02	4.146E-02	0.000E+00	NOT IDENT.
CO-58	-3.810E-03	3.182E-02	5.445E-02	0.000E+00	NOT IDENT.
FE-59	2.868E-03	8.132E-02	1.358E-01	0.000E+00	NOT IDENT.
CO-60	-7.652E-03	3.494E-02	5.783E-02	0.000E+00	NOT IDENT.
ZN-65	1.770E-02	8.128E-02	1.176E-01	0.000E+00	NOT IDENT.
GE-68	-1.594E-01	1.022E+00	1.687E+00	0.000E+00	NOT IDENT.
AS-73	-2.262E-01	6.845E-01	1.202E+00	0.000E+00	NOT IDENT.
AS-74	-5.598E-03	8.632E-02	1.477E-01	0.000E+00	NOT IDENT.
SE-75	1.458E-02	4.491E-02	6.734E-02	0.000E+00	NOT IDENT.
BR-77	3.464E+00	1.289E+01	2.177E+01	0.000E+00	FAIL ABUN
SR-82	-6.121E-02	3.804E-01	5.333E-01	0.000E+00	NOT IDENT.
RB-83	1.009E-02	6.142E-02	1.031E-01	0.000E+00	NOT IDENT.
RB-84	1.547E-02	6.100E-02	1.059E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	7.971E+00	1.326E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.136E-02	6.880E-02	0.000E+00	NOT IDENT.
RB-86	-2.874E-01	6.843E-01	1.106E+00	0.000E+00	NOT IDENT.
Y-88	-3.203E-03	2.739E-02	4.501E-02	0.000E+00	NOT IDENT.
ZR-88	-1.349E-02	2.678E-02	4.471E-02	0.000E+00	NOT IDENT.
Y-91	-1.727E-02	1.401E+01	2.387E+01	0.000E+00	NOT IDENT.
NB-94	1.275E-02	2.835E-02	4.900E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.514E-02	7.468E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.350E-01	2.132E-01	0.000E+00	NOT IDENT.
ZR-95	3.453E-03	5.970E-02	1.002E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.479E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.835E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-7.284E+00	1.326E+01	2.134E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.177E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.239E-03	3.204E-02	5.399E-02	0.000E+00	NOT IDENT.
RH-102	7.419E-03	2.565E-02	4.288E-02	0.000E+00	NOT IDENT.
RU-103	-4.304E-03	3.622E-02	6.013E-02	0.000E+00	FAIL ABUN
RH-106	2.449E-02	2.894E-01	4.968E-01	0.000E+00	FAIL ABUN
RU-106	2.449E-02	2.894E-01	4.968E-01	0.000E+00	FAIL ABUN
AG-108M	-3.142E-03	2.919E-02	4.924E-02	0.000E+00	NOT IDENT.
AG-110M	1.239E-03	2.926E-02	4.982E-02	0.000E+00	NOT IDENT.
IN-111	-1.341E-01	1.418E+00	2.093E+00	0.000E+00	NOT IDENT.
IN-113M	-1.965E-02	3.913E-02	6.539E-02	0.000E+00	NOT IDENT.
SN-113	-1.965E-02	3.913E-02	6.539E-02	0.000E+00	NOT IDENT.
IN-114M	-1.012E-02	1.883E-01	2.869E-01	0.000E+00	NOT IDENT.
CD-115	9.506E+00	1.236E+01	2.231E+01	0.000E+00	NOT IDENT.
SN-117M	-6.497E-03	5.348E-02	9.421E-02	0.000E+00	NOT IDENT.
SB-122	2.912E+00	2.407E+00	4.374E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.241E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.999E-02	2.646E-02	4.552E-02	0.000E+00	NOT IDENT.
I-124	-3.100E-01	8.343E-01	1.195E+00	0.000E+00	NOT IDENT.
SB-124	-1.174E-02	5.715E-02	9.369E-02	0.000E+00	FAIL ABUN
SB-125	-5.178E-02	8.353E-02	1.372E-01	0.000E+00	FAIL ABUN
TE-125M	2.629E+00	8.780E+00	1.471E+01	0.000E+00	NOT IDENT.
I-126	1.884E-01	1.631E-01	2.927E-01	0.000E+00	NOT IDENT.
SB-126	1.424E-01	1.567E-01	2.418E-01	0.000E+00	FAIL ABUN
SB-127	-1.621E-01	1.415E+00	2.376E+00	0.000E+00	NOT IDENT.
XE-127	1.349E-02	4.569E-02	7.717E-02	0.000E+00	NOT IDENT.
I-131	-7.127E-02	1.095E-01	1.828E-01	0.000E+00	NOT IDENT.
TE-132	2.916E-01	8.250E-01	1.427E+00	0.000E+00	NOT IDENT.
BA-133	-6.829E-03	4.171E-02	6.196E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.209E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.813E-02	7.769E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.674E-01	2.634E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.060E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.213E-02	8.885E-02	1.552E-01	0.000E+00	FAIL ABUN
BA-137M	-3.469E-02	3.134E-02	4.944E-02	0.000E+00	NOT IDENT.
CS-137	-3.667E-02	3.313E-02	5.226E-02	0.000E+00	NOT IDENT.
CE-139	-1.297E-02	2.708E-02	4.690E-02	0.000E+00	NOT IDENT.
BA-140	1.335E-02	2.158E-01	3.758E-01	0.000E+00	NOT IDENT.
LA-140	-6.208E-02	8.771E-02	1.394E-01	0.000E+00	FAIL ABUN
CE-141	5.808E-02	5.842E-02	1.068E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.886E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.926E-02	2.089E-01	3.242E-01	0.000E+00	NOT IDENT.
PM-144	-2.798E-03	2.994E-02	5.026E-02	0.000E+00	NOT IDENT.
PR-144	-1.897E-01	2.030E+00	3.408E+00	0.000E+00	NOT IDENT.

PM-146	1.400E-02	3.818E-02	6.565E-02	0.000E+00	NOT IDENT.
ND-147	-3.599E-01	4.935E-01	8.177E-01	0.000E+00	FAIL ABUN
PM-149	-3.035E+01	1.194E+02	1.972E+02	0.000E+00	NOT IDENT.
EU-152	-1.122E-01	1.039E-01	1.348E-01	0.000E+00	FAIL ABUN
GD-153	-4.400E-02	7.790E-02	1.157E-01	0.000E+00	FAIL ABUN
EU-154	1.210E-02	9.787E-02	1.672E-01	0.000E+00	NOT IDENT.
EU-155	7.197E-02	9.988E-02	1.714E-01	0.000E+00	FAIL ABUN
TB-160	3.309E-03	1.169E-01	2.002E-01	0.000E+00	FAIL ABUN
HO-166M	-2.089E-02	5.165E-02	8.471E-02	0.000E+00	FAIL ABUN
TM-171	-2.723E+01	2.602E+01	3.912E+01	0.000E+00	NOT IDENT.
LU-176	1.549E-02	2.290E-02	3.785E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.520E+00	2.149E+00	0.000E+00	FAIL ABUN
LU-177M	-2.878E-01	1.603E-01	2.449E-01	0.000E+00	FAIL ABUN
HF-181	-2.523E-03	3.517E-02	5.874E-02	0.000E+00	NOT IDENT.
W-181	-5.185E-02	3.281E-01	5.152E-01	0.000E+00	NOT IDENT.
TA-182	-9.209E-02	1.526E-01	2.489E-01	0.000E+00	FAIL ABUN
RE-183	3.864E-03	1.055E-01	1.821E-01	0.000E+00	FAIL ABUN
RE-184	5.829E-03	2.127E-01	3.605E-01	0.000E+00	NOT IDENT.
OS-185	-1.565E-02	3.674E-02	6.050E-02	0.000E+00	NOT IDENT.
RE-188	0.000E+00	1.629E-01	3.008E-01	0.000E+00	NOT IDENT.
W-188	-2.074E+00	7.192E+00	1.088E+01	0.000E+00	FAIL ABUN
IR-192	-1.989E-02	2.960E-02	5.013E-02	0.000E+00	FAIL ABUN
AU-195	-2.154E-02	1.960E-01	3.345E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.238E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-5.695E-01	7.978E+00	1.401E+01	0.000E+00	NOT IDENT.
TL-202	1.210E-03	6.540E-02	1.109E-01	0.000E+00	NOT IDENT.
HG-203	-3.210E-03	4.530E-02	6.593E-02	0.000E+00	NOT IDENT.
BI-207	1.112E-02	4.590E-02	7.801E-02	0.000E+00	FAIL ABUN
TL-207	1.464E-01	6.323E-01	9.739E-01	0.000E+00	FAIL ABUN
PO-209	1.547E+00	6.124E+00	1.061E+01	0.000E+00	NOT IDENT.
BI-210	8.070E-01	2.784E+00	4.929E+00	0.000E+00	NOT IDENT.
PB-210	8.070E-01	2.784E+00	4.929E+00	0.000E+00	NOT IDENT.
PO-210	8.070E-01	2.784E+00	4.929E+00	0.000E+00	NOT IDENT.
PB-211	-1.088E+00	1.113E+00	1.436E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.439E-01	5.783E-01	0.000E+00	FAIL ABUN
PO-215	1.464E-01	6.323E-01	9.739E-01	0.000E+00	FAIL ABUN
RN-219	-1.012E-01	3.676E-01	6.198E-01	0.000E+00	FAIL ABUN
RN-220	3.440E+00	2.161E+01	3.773E+01	0.000E+00	NOT IDENT.
RA-223	1.464E-01	6.323E-01	9.739E-01	0.000E+00	FAIL ABUN
AC-227	-1.600E-01	3.511E-01	5.802E-01	0.000E+00	FAIL ABUN
TH-227	-1.600E-01	3.514E-01	5.802E-01	0.000E+00	FAIL ABUN
TH-229	-6.881E-02	4.599E-01	7.947E-01	0.000E+00	FAIL ABUN
PA-231	-8.578E-02	1.397E+00	2.331E+00	0.000E+00	FAIL ABUN
TH-231	1.464E-01	6.323E-01	9.739E-01	0.000E+00	FAIL ABUN
U-231	8.795E-01	1.218E+00	1.925E+00	0.000E+00	FAIL ABUN
PA-233	2.811E-02	5.402E-02	9.662E-02	0.000E+00	FAIL ABUN
PA-234	8.639E-02	2.432E-01	4.214E-01	0.000E+00	FAIL ABUN
PA-234M	2.561E-01	3.993E+00	6.405E+00	0.000E+00	NOT IDENT.
U-235	1.089E-01	1.975E-01	3.457E-01	0.000E+00	FAIL ABUN
NP-236	-5.209E-02	7.357E-02	1.267E-01	0.000E+00	NOT IDENT.
NP-239	-3.351E-03	1.789E-01	3.019E-01	0.000E+00	FAIL ABUN
AM-241	4.266E-02	1.283E-01	2.082E-01	0.000E+00	NOT IDENT.
CM-243	4.950E-03	8.782E-02	1.502E-01	0.000E+00	FAIL ABUN
AM-246	7.449E-03	1.144E-01	1.919E-01	0.000E+00	NOT IDENT.
CM-247	-4.864E-03	3.268E-02	5.547E-02	0.000E+00	FAIL ABUN
CF-249	2.650E-02	3.336E-02	5.931E-02	0.000E+00	NOT IDENT.
CF-251	1.396E-02	1.183E-01	2.080E-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]G244148018.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 18:02:42
Sample ID          : G244148018          Sample quantity   : 1.29030E+02 GRAM
Detector name      : GAM22              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time  : 0 02:00:02.14  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940268             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	1486	10.67*	1.909E+00	2.122E+01	2.122E+01	10.78
CD-109	88.03	355	3.72*	7.476E+00	3.710E+00	3.801E+00	24.94
SN-126	64.28	60	9.60	4.326E+00	4.225E-01	4.225E-01	143.84
	86.94	355	8.90	7.476E+00	1.551E+00	1.551E+00	47.52
	87.57	355	37.00*	7.476E+00	3.730E-01	3.730E-01	24.94
TL-208	277.35	37	6.80	6.187E+00	2.544E-01	2.544E-01	176.16
	510.84	127	21.60	4.298E+00	3.988E-01	3.988E-01	70.63
	583.14	629	84.20*	3.931E+00	5.529E-01	5.529E-01	16.52
	860.37	107	12.46	2.924E+00	8.504E-01	8.504E-01	51.29
BI-211	72.87	-----	1.27	5.897E+00	-----	Line Not Found	-----
	351.07	977	12.94*	5.401E+00	4.066E+00	4.066E+00	15.13
PB-212	74.81	626	10.70	6.162E+00	2.762E+00	2.762E+00	19.63
	77.11	861	18.00	6.459E+00	2.154E+00	2.154E+00	13.89
	87.30	355	8.00	7.476E+00	1.725E+00	1.725E+00	26.87
	238.63	1795	44.60*	6.709E+00	1.746E+00	1.746E+00	14.45
	300.09	158	3.41	5.913E+00	2.276E+00	2.276E+00	46.79
PO-212	74.81	626	10.70	6.162E+00	2.762E+00	2.762E+00	19.63
	77.11	861	18.00	6.459E+00	2.154E+00	2.154E+00	13.89
	87.30	355	8.00	7.476E+00	1.725E+00	1.725E+00	26.87
	115.19	-----	0.60	8.535E+00	-----	Line Not Found	-----
	238.63	1795	44.60*	6.709E+00	1.746E+00	1.746E+00	14.45
	300.09	158	3.41	5.913E+00	2.276E+00	2.276E+00	46.79
BI-214	609.31	763	46.30*	3.810E+00	1.259E+00	1.259E+00	16.48
	1120.29	164	15.10	2.345E+00	1.346E+00	1.346E+00	31.59
	1764.49	161	15.80	1.716E+00	1.730E+00	1.730E+00	25.57
PB-214	74.81	626	6.21	6.162E+00	4.759E+00	4.759E+00	18.78
	77.11	861	10.50	6.459E+00	3.692E+00	3.692E+00	15.84
	87.30	355	4.67	7.476E+00	2.955E+00	2.955E+00	26.11
	241.98	485	7.49	6.664E+00	2.825E+00	2.825E+00	25.30
	295.21	624	19.20	5.970E+00	1.584E+00	1.584E+00	20.44
	351.92	977	37.20*	5.401E+00	1.414E+00	1.414E+00	16.01
PO-214	74.81	626	6.21	6.162E+00	4.759E+00	4.759E+00	18.78

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	861	10.50	6.459E+00	3.692E+00	3.692E+00	15.84
	87.30	355	4.67	7.476E+00	2.955E+00	2.955E+00	26.11
	241.98	485	7.49	6.664E+00	2.825E+00	2.825E+00	25.30
	295.21	624	19.20	5.970E+00	1.584E+00	1.584E+00	20.44
	351.92	977	37.20*	5.401E+00	1.414E+00	1.414E+00	16.01
PO-216	74.81	626	10.70	6.162E+00	2.762E+00	2.762E+00	19.63
	77.11	861	18.00	6.459E+00	2.154E+00	2.154E+00	13.89
	87.30	355	8.00	7.476E+00	1.725E+00	1.725E+00	26.87
	238.63	1795	44.60*	6.709E+00	1.746E+00	1.746E+00	14.45
	300.09	158	3.41	5.913E+00	2.276E+00	2.276E+00	46.79
PO-218	74.81	626	6.21	6.162E+00	4.759E+00	4.759E+00	18.78
	77.11	861	10.50	6.459E+00	3.692E+00	3.692E+00	15.84
	87.30	355	4.67	7.476E+00	2.955E+00	2.955E+00	26.11
	241.98	485	7.49	6.664E+00	2.825E+00	2.825E+00	25.30
	295.21	624	19.20	5.970E+00	1.584E+00	1.584E+00	20.44
	351.92	977	37.20*	5.401E+00	1.414E+00	1.414E+00	16.01
RA-224	240.98	485	3.95*	6.664E+00	5.357E+00	5.357E+00	24.67
RA-226	609.31	763	46.30*	3.810E+00	1.259E+00	1.259E+00	16.48
	1120.29	164	15.10	2.345E+00	1.346E+00	1.346E+00	31.59
	1764.49	161	15.80	1.716E+00	1.730E+00	1.730E+00	25.57
AC-228	338.32	473	11.40	5.525E+00	2.185E+00	2.185E+00	46.47
	911.07	510	27.70*	2.788E+00	1.920E+00	1.920E+00	18.42
	969.11	258	16.60	2.648E+00	1.705E+00	1.705E+00	32.18
RA-228	338.32	473	11.40	5.525E+00	2.185E+00	2.185E+00	46.47
	911.07	510	27.70*	2.788E+00	1.920E+00	1.920E+00	18.42
	969.11	258	16.60	2.648E+00	1.705E+00	1.705E+00	32.18
TH-228	74.81	626	10.70	6.162E+00	2.762E+00	2.807E+00	17.30
	77.11	861	18.00	6.459E+00	2.154E+00	2.189E+00	13.89
	87.30	355	8.00	7.476E+00	1.725E+00	1.753E+00	24.94
	238.63	1795	44.60*	6.709E+00	1.746E+00	1.774E+00	14.45
	300.09	158	3.41	5.913E+00	2.276E+00	2.313E+00	74.80
TH-230	609.31	763	46.30*	3.810E+00	1.259E+00	1.259E+00	16.48
	1120.29	164	15.10	2.345E+00	1.346E+00	1.346E+00	31.59
	1764.49	161	15.80	1.716E+00	1.730E+00	1.730E+00	25.57
TH-232	338.32	473	11.40	5.525E+00	2.185E+00	2.185E+00	23.05
	911.07	510	27.70*	2.788E+00	1.920E+00	1.920E+00	18.42
	969.11	258	16.60	2.648E+00	1.705E+00	1.705E+00	32.18
TH-234	63.29	60	3.80*	4.326E+00	1.067E+00	1.067E+00	144.16
	92.38	289	5.41	7.867E+00	1.974E+00	1.974E+00	36.91
U-234	609.31	763	46.30*	3.810E+00	1.259E+00	1.259E+00	16.48
	1120.29	164	15.10	2.345E+00	1.346E+00	1.346E+00	31.59
	1764.49	161	15.80	1.716E+00	1.730E+00	1.730E+00	25.57
NP-237	86.50	355	12.60*	7.476E+00	1.095E+00	1.095E+00	32.37
	95.87	-----	2.60	8.032E+00	-----	Line Not Found	-----
U-238	63.29	60	3.80*	4.326E+00	1.067E+00	1.067E+00	144.16
	92.38	289	5.41	7.867E+00	1.974E+00	1.974E+00	33.31
AM-243	74.67	626	66.00*	6.162E+00	4.478E-01	4.478E-01	17.26
	86.72	355	0.34	7.476E+00	4.107E+01	4.107E+01	24.94
	117.66	-----	0.55	8.550E+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	8.387E+00	-----	Line Not Found	-----
ANH-511	511.00	127	100.00*	4.298E+00	8.613E-02	8.613E-02	70.13

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	2.122E+01	2.122E+01	0.229E+01	10.78	
CD-109	464.00D	1.02	3.710E+00	3.801E+00	0.948E+00	24.94	
SN-126	1.00E+05Y	1.00	3.730E-01	3.730E-01	0.930E-01	24.94	
TL-208	1.41E+10Y	1.00	5.529E-01	5.529E-01	0.913E-01	16.52	
BI-211	7.04E+08Y	1.00	4.066E+00	4.066E+00	0.615E+00	15.13	
PB-212	1.41E+10Y	1.00	1.746E+00	1.746E+00	0.252E+00	14.45	
PO-212	1.41E+10Y	1.00	1.746E+00	1.746E+00	0.252E+00	14.45	
BI-214	1600.00Y	1.00	1.259E+00	1.259E+00	0.207E+00	16.48	
PB-214	1600.00Y	1.00	1.414E+00	1.414E+00	0.226E+00	16.01	
PO-214	1600.00Y	1.00	1.414E+00	1.414E+00	0.226E+00	16.01	
PO-216	1.41E+10Y	1.00	1.746E+00	1.746E+00	0.252E+00	14.45	
PO-218	1600.00Y	1.00	1.414E+00	1.414E+00	0.226E+00	16.01	
RA-224	1.41E+10Y	1.00	5.357E+00	5.357E+00	1.322E+00	24.67	
RA-226	1600.00Y	1.00	1.259E+00	1.259E+00	0.207E+00	16.48	
AC-228	1.41E+10Y	1.00	1.920E+00	1.920E+00	0.354E+00	18.42	
RA-228	1.41E+10Y	1.00	1.920E+00	1.920E+00	0.354E+00	18.42	
TH-228	1.91Y	1.02	1.746E+00	1.774E+00	0.256E+00	14.45	
TH-230	4.47E+09Y	1.00	1.259E+00	1.259E+00	0.207E+00	16.48	
TH-232	1.41E+10Y	1.00	1.920E+00	1.920E+00	0.354E+00	18.42	
TH-234	4.47E+09Y	1.00	1.067E+00	1.067E+00	1.539E+00	144.16	
U-234	4.47E+09Y	1.00	1.259E+00	1.259E+00	0.207E+00	16.48	
NP-237	2.14E+06Y	1.00	1.095E+00	1.095E+00	0.355E+00	32.37	
U-238	4.47E+09Y	1.00	1.067E+00	1.067E+00	1.539E+00	144.16	
AM-243	7380.00Y	1.00	4.478E-01	4.478E-01	0.773E-01	17.26	
ANH-511	1.00E+09Y	1.00	8.613E-02	8.613E-02	6.041E-02	70.13	

Total Activity : 6.106E+01 6.118E+01

Grand Total Activity : 6.106E+01 6.118E+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	84.21	159	398	1.38	168.64	165	27	2.21E-02	43.8	7.22E+00	T
6	89.94	174	460	1.19	180.08	165	27	2.42E-02	44.2	7.68E+00	T
0	129.05	90	452	0.79	258.23	255	8	1.25E-02	84.0	8.53E+00	T
0	185.82	291	720	1.46	371.65	364	15	4.05E-02	42.8	7.61E+00	T
0	209.31	164	395	1.36	418.59	414	9	2.27E-02	46.5	7.18E+00	T
0	270.17	233	243	2.17	540.21	535	10	3.24E-02	28.2	6.27E+00	T
0	328.12	138	269	1.67	656.00	651	12	1.91E-02	50.7	5.62E+00	T
0	462.46	91	209	2.42	924.50	919	13	1.26E-02	68.7	4.58E+00	T
0	727.51	182	119	1.92	1454.27	1448	16	2.52E-02	31.6	3.34E+00	T
0	769.32	138	197	3.48	1537.85	1527	24	1.91E-02	57.3	3.20E+00	
0	795.13	85	104	1.65	1589.47	1583	14	1.18E-02	55.6	3.12E+00	T
5	964.82	52	145	2.39	1928.72	1919	25	7.23E-03	****	2.66E+00	T
0	1239.92	24	88	0.99	2478.84	2473	9	3.28E-03	****	2.16E+00	
0	1730.61	34	23	1.82	3460.40	3453	16	4.73E-03	72.6	1.73E+00	

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]G244148018.CNF;1
* Acquisition date   : 20-JAN-2010 18:02:42  Detector SN#      :
* Detector ID        : GAM22                Sensitivity        : 5.00000
* Geometry           : CAN                  Energy tolerance    : 1.50000
* Elapsed live time  : 0 02:00:00.00        Abundance limit    : 75.00000
* Elapsed real time  : 0 02:00:02.14        Half life ratio    : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.  Nuclide Library   : SOLID
* Sample ID          : G244148018           Analyst initials  : MXR1
* Batch Number       : 940268              Sample Quantity   : 1.29030E+02 GRAM
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28.08MS Isotope       :
* MSD ID             :                      MSD Isotope        :
* LCS ID             : 1032-A              LCS Isotope         :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.122E+01	2.288E+00	3.985E-01	3.651E-02	53.245
CD-109	3.801E+00	9.480E-01	1.034E+00	9.813E-02	3.676
SN-126	3.730E-01	9.302E-02	1.019E-01	9.619E-03	3.661
TL-208	5.529E-01	9.133E-02	4.887E-02	5.299E-03	11.315
BI-211	4.066E+00	6.151E-01	3.045E-01	3.553E-02	13.351
PB-212	1.746E+00	2.523E-01	8.555E-02	1.130E-02	20.404
PO-212	1.746E+00	2.523E-01	8.555E-02	1.130E-02	20.404
BI-214	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568
PB-214	1.414E+00	2.264E-01	1.036E-01	1.320E-02	13.656
PO-214	1.414E+00	2.264E-01	1.036E-01	1.320E-02	13.656
PO-216	1.746E+00	2.523E-01	8.555E-02	1.130E-02	20.404
PO-218	1.414E+00	2.264E-01	1.036E-01	1.320E-02	13.656
RA-224	5.357E+00	1.322E+00	9.726E-01	1.218E-01	5.508
RA-226	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568
AC-228	1.920E+00	3.536E-01	1.737E-01	2.301E-02	11.053
RA-228	1.920E+00	3.536E-01	1.737E-01	2.301E-02	11.053
TH-228	1.774E+00	2.564E-01	8.695E-02	1.149E-02	20.404
TH-230	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.920E+00	3.536E-01	1.737E-01	2.301E-02	11.053
TH-234	1.067E+00	1.539E+00	1.679E+00	2.923E-01	0.636
U-234	1.259E+00	2.074E-01	1.001E-01	1.164E-02	12.568
NP-237	1.095E+00	3.545E-01	3.021E-01	6.841E-02	3.625
U-238	1.067E+00	1.539E+00	1.679E+00	2.923E-01	0.636
AM-243	4.478E-01	7.729E-02	7.501E-02	6.114E-03	5.970
ANH-511	8.613E-02	6.041E-02	3.970E-02	3.978E-03	2.170

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.102E-02		2.770E-01	4.435E-01	4.629E-02	-0.092
NA-22	4.333E-03		3.577E-02	5.975E-02	5.149E-03	0.073
NA-24	-2.197E+00		1.098E+00	Half-Life too short		
AL-26	-5.254E-03		2.348E-02	3.733E-02	3.053E-03	-0.141
TI-44	3.975E-01	+	5.521E-02	6.958E-02	5.900E-03	5.712
SC-46	-7.881E-03		3.372E-02	5.503E-02	6.160E-03	-0.143
V-48	-2.934E-02		5.889E-02	9.281E-02	9.733E-03	-0.316
CR-51	1.428E-01		3.308E-01	5.629E-01	7.289E-02	0.254
MN-52	-9.465E-02		2.373E-01	3.724E-01	3.328E-02	-0.254
MN-54	2.352E-03		3.282E-02	5.499E-02	6.109E-03	0.043
CO-56	-4.552E-02		3.455E-02	5.197E-02	5.785E-03	-0.876
CO-57	2.603E-02		2.485E-02	3.987E-02	3.288E-03	0.653
CO-58	-3.810E-03		3.247E-02	5.392E-02	5.970E-03	-0.071
FE-59	2.868E-03		8.298E-02	1.351E-01	1.324E-02	0.021
CO-60	-7.652E-03		3.566E-02	5.773E-02	5.148E-03	-0.133
ZN-65	1.770E-02		8.294E-02	1.170E-01	1.044E-02	0.151
GE-68	-1.594E-01		1.043E+00	1.678E+00	1.582E-01	-0.095
AS-73	-2.262E-01		6.984E-01	1.142E+00	8.628E-02	-0.198
AS-74	-5.598E-03		8.808E-02	1.455E-01	1.508E-02	-0.038
SE-75	1.458E-02		4.583E-02	6.551E-02	8.818E-03	0.223
BR-77	3.464E+00		1.316E+01	2.141E+01	2.155E+00	0.162
SR-82	-6.121E-02		3.882E-01	5.277E-01	5.787E-02	-0.116
RB-83	1.009E-02		6.267E-02	1.014E-01	1.020E-02	0.100
RB-84	1.547E-02		6.224E-02	1.050E-01	1.174E-02	0.147
KR-85	2.558E+01		8.134E+00	1.303E+01	1.308E+00	1.963
SR-85	1.327E-01		4.220E-02	6.763E-02	6.786E-03	1.963
RB-86	-2.874E-01		6.983E-01	1.100E+00	1.038E-01	-0.261
Y-88	-3.203E-03		2.795E-02	4.516E-02	3.651E-03	-0.071
ZR-88	-1.349E-02		2.732E-02	4.377E-02	4.076E-03	-0.308
Y-91	-1.727E-02		1.429E+01	2.378E+01	1.955E+00	-0.001
NB-94	1.275E-02		2.893E-02	4.841E-02	5.187E-03	0.263
NB-95	1.108E-01		4.606E-02	7.388E-02	8.079E-03	1.499
NB-95M	2.380E-01		1.378E-01	2.071E-01	2.737E-02	1.149
ZR-95	3.453E-03		6.091E-02	9.911E-02	1.150E-02	0.035
NB-97	-8.559E-04		1.265E-01	Half-Life too short		
ZR-97	1.540E+01		2.977E+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	-7.284E+00		1.353E+01	2.110E+01	3.493E+00	-0.345
TC-99M	-1.887E+11		4.172E+11	Half-Life too short		
RH-101	1.239E-03		3.269E-02	5.230E-02	5.705E-03	0.024
RH-102	7.419E-03		2.617E-02	4.211E-02	4.141E-03	0.176
RU-103	-4.304E-03		3.696E-02	5.908E-02	8.867E-03	-0.073
RH-106	2.449E-02		2.953E-01	4.898E-01	7.153E-02	0.050
RU-106	2.449E-02		2.953E-01	4.898E-01	5.116E-02	0.050
AG-108M	-3.142E-03		2.978E-02	4.828E-02	4.779E-03	-0.065
AG-110M	1.239E-03		2.986E-02	4.917E-02	5.285E-03	0.025
IN-111	-1.341E-01		1.447E+00	2.034E+00	2.581E-01	-0.066
IN-113M	-1.965E-02		3.993E-02	6.401E-02	6.113E-03	-0.307
SN-113	-1.965E-02		3.993E-02	6.401E-02	6.113E-03	-0.307
IN-114M	-1.012E-02		1.922E-01	2.777E-01	2.953E-02	-0.036
CD-115	9.506E+00		1.261E+01	2.194E+01	2.216E+00	0.433
SN-117M	-6.497E-03		5.457E-02	9.095E-02	8.625E-03	-0.071
SB-122	2.912E+00		2.456E+00	4.307E+00	4.414E-01	0.676
I-123	-1.693E+01		1.143E+01	Half-Life too short		
TE-123M	-1.999E-02		2.700E-02	4.395E-02	4.197E-03	-0.455
I-124	-3.100E-01		8.514E-01	1.178E+00	1.224E-01	-0.263
SB-124	-1.174E-02		5.832E-02	9.387E-02	8.350E-03	-0.125
SB-125	-5.178E-02		8.524E-02	1.345E-01	1.305E-02	-0.385
TE-125M	2.629E+00		8.959E+00	1.412E+01	1.431E+00	0.186
I-126	1.884E-01		1.665E-01	2.889E-01	3.052E-02	0.652
SB-126	1.424E-01		1.599E-01	2.390E-01	2.577E-02	0.596
SB-127	-1.621E-01		1.444E+00	2.346E+00	3.117E-01	-0.069
XE-127	1.349E-02		4.662E-02	7.478E-02	8.289E-03	0.180
I-131	-7.127E-02		1.117E-01	1.787E-01	1.982E-02	-0.399
TE-132	2.916E-01		8.418E-01	1.385E+00	2.494E-01	0.211
BA-133	-6.829E-03		4.256E-02	6.056E-02	9.050E-03	-0.113
I-133	3.969E-03		6.166E-03	Half-Life too short		
CS-134	1.046E-01	+	5.932E-02	7.691E-02	8.513E-03	1.360
CS-135	3.174E-01		1.708E-01	2.563E-01	3.708E-02	1.238
I-135	2.849E+10		4.112E+10	Half-Life too short		
CS-136	5.213E-02		9.066E-02	1.543E-01	1.561E-02	0.338
BA-137M	-3.469E-02		3.198E-02	4.879E-02	5.145E-03	-0.711
CS-137	-3.667E-02		3.380E-02	5.158E-02	5.446E-03	-0.711
CE-139	-1.297E-02		2.763E-02	4.530E-02	4.443E-03	-0.286
BA-140	1.335E-02		2.202E-01	3.696E-01	1.241E-01	0.036
LA-140	-6.208E-02		8.950E-02	1.395E-01	1.223E-02	-0.445
CE-141	5.808E-02		5.961E-02	1.030E-01	9.372E-03	0.564
CE-143	1.640E-03		2.493E-04	Half-Life too short		
CE-144	-8.926E-02		2.131E-01	3.121E-01	4.845E-02	-0.286
PM-144	-2.798E-03		3.055E-02	4.965E-02	5.310E-03	-0.056
PR-144	-1.897E-01		2.072E+00	3.367E+00	3.599E-01	-0.056
PM-146	1.400E-02		3.896E-02	6.441E-02	7.486E-03	0.217
ND-147	-3.599E-01		5.036E-01	8.042E-01	1.275E-01	-0.447
PM-149	-3.035E+01		1.219E+02	1.921E+02	3.635E+01	-0.158
EU-152	-1.122E-01		1.060E-01	1.316E-01	1.582E-02	-0.853

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-4.400E-02		7.949E-02	1.108E-01	9.745E-03	-0.397
EU-154	1.210E-02		9.987E-02	1.668E-01	1.885E-02	0.073
EU-155	7.197E-02		1.019E-01	1.645E-01	1.412E-02	0.438
TB-160	3.309E-03		1.193E-01	1.985E-01	2.219E-02	0.017
HO-166M	-2.089E-02		5.270E-02	8.371E-02	8.999E-03	-0.250
TM-171	-2.723E+01		2.655E+01	3.727E+01	2.816E+00	-0.730
LU-176	1.549E-02		2.337E-02	3.691E-02	4.842E-03	0.420
LU-177	3.241E+00	+	1.551E+00	2.083E+00	2.352E-01	1.556
LU-177M	-2.878E-01		1.636E-01	2.399E-01	2.269E-02	-1.199
HF-181	-2.523E-03		3.589E-02	5.769E-02	5.695E-03	-0.044
W-181	-5.185E-02		3.348E-01	4.907E-01	3.658E-02	-0.106
TA-182	-9.209E-02		1.557E-01	2.481E-01	2.063E-02	-0.371
RE-183	3.864E-03		1.077E-01	1.758E-01	1.696E-02	0.022
RE-184	5.829E-03		2.170E-01	3.505E-01	4.548E-02	0.017
OS-185	-1.565E-02		3.749E-02	5.969E-02	6.273E-03	-0.262
RE-188	3.103E-01		1.662E-01	2.902E-01	2.709E-02	1.069
W-188	-2.074E+00		7.338E+00	1.060E+01	1.447E+00	-0.196
IR-192	-1.989E-02		3.020E-02	4.891E-02	6.251E-03	-0.407
AU-195	-2.154E-02		2.000E-01	3.206E-01	2.796E-02	-0.067
TL-200	2.608E-04		4.203E-04	Half-Life too short		
TL-201	-5.695E-01		8.141E+00	1.353E+01	1.334E+00	-0.042
TL-202	1.210E-03		6.673E-02	1.088E-01	1.047E-02	0.011
HG-203	-3.210E-03		4.623E-02	6.420E-02	9.086E-03	-0.050
BI-207	1.112E-02		4.684E-02	7.758E-02	7.448E-03	0.143
TL-207	1.464E-01		6.452E-01	9.505E-01	1.889E-01	0.154
PO-209	1.547E+00		6.249E+00	1.053E+01	1.179E+00	0.147
BI-210	8.070E-01		2.841E+00	4.672E+00	4.340E-01	0.173
PB-210	8.070E-01		2.841E+00	4.672E+00	4.340E-01	0.173
PO-210	8.070E-01		2.841E+00	4.672E+00	3.928E-01	0.173
PB-211	-1.088E+00		1.136E+00	1.406E+00	8.828E-01	-0.774
BI-212	1.340E+00	+	4.529E-01	5.716E-01	6.828E-02	2.345
PO-215	1.464E-01		6.452E-01	9.505E-01	1.889E-01	0.154
RN-219	-1.012E-01		3.751E-01	6.070E-01	9.391E-02	-0.167
RN-220	3.440E+00		2.205E+01	3.713E+01	3.784E+00	0.093
RA-223	1.464E-01		6.452E-01	9.505E-01	1.889E-01	0.154
AC-227	-1.600E-01		3.583E-01	5.642E-01	1.030E-01	-0.284
TH-227	-1.600E-01		3.586E-01	5.642E-01	1.161E-01	-0.284
TH-229	-6.881E-02		4.693E-01	7.695E-01	8.273E-02	-0.089
PA-231	-8.578E-02		1.425E+00	2.270E+00	4.240E-01	-0.038
TH-231	1.464E-01		6.452E-01	9.505E-01	1.889E-01	0.154
U-231	8.795E-01		1.243E+00	1.844E+00	1.638E-01	0.477
PA-233	2.811E-02		5.512E-02	9.425E-02	1.235E-02	0.298
PA-234	8.639E-02		2.482E-01	4.183E-01	8.314E-02	0.207
PA-234M	2.561E-01		4.074E+00	6.363E+00	7.292E-01	0.040
U-235	1.089E-01		2.015E-01	3.332E-01	5.879E-02	0.327
NP-236	-5.209E-02		7.507E-02	1.224E-01	1.170E-02	-0.426
NP-239	-3.351E-03		1.826E-01	2.901E-01	2.398E-02	-0.012
AM-241	4.266E-02		1.309E-01	1.981E-01	1.549E-02	0.215

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	4.950E-03		8.961E-02	1.440E-01	1.228E-02	0.034
AM-246	7.449E-03		1.167E-01	1.909E-01	1.796E-02	0.039
CM-247	-4.864E-03		3.335E-02	5.432E-02	5.096E-03	-0.090
CF-249	2.650E-02		3.404E-02	5.805E-02	5.518E-03	0.456
CF-251	1.396E-02		1.207E-01	2.011E-01	2.043E-02	0.069



# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G244148018          *
* Acquisition date   : 20-JAN-2010 18:02:42 Detector SN# :                  *
* Detector ID        : GAM22 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000           *
* Elapsed real time  : 0 02:00:02.14 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244148018 Analyst initials: MXR1                  *
* Batch Number      : 940268 Sample Quantity : 1.2903E+02 GRAM          *
* Recovery          : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME  : 2-DEC-2009 16:47:28 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.122E+01	2.242E+00	1.995E-01	1.144E+00
CD-109	3.801E+00	9.291E-01	5.407E-01	4.740E-01
SN-126	3.730E-01	9.116E-02	5.327E-02	4.651E-02
TL-208	5.529E-01	8.950E-02	2.482E-02	4.566E-02
BI-211	4.066E+00	6.028E-01	1.559E-01	3.076E-01
PB-212	1.746E+00	2.472E-01	4.406E-02	1.261E-01
PO-212	1.746E+00	2.472E-01	4.406E-02	1.261E-01
BI-214	1.259E+00	2.033E-01	5.083E-02	1.037E-01
PB-214	1.414E+00	2.218E-01	5.302E-02	1.132E-01
PO-214	1.414E+00	2.218E-01	5.302E-02	1.132E-01
PO-216	1.746E+00	2.472E-01	4.406E-02	1.261E-01
PO-218	1.414E+00	2.218E-01	5.302E-02	1.132E-01
RA-224	5.357E+00	1.295E+00	5.008E-01	6.608E-01
RA-226	1.259E+00	2.033E-01	5.083E-02	1.037E-01
AC-228	1.920E+00	3.466E-01	8.759E-02	1.768E-01
RA-228	1.920E+00	3.466E-01	8.759E-02	1.768E-01
TH-228	1.774E+00	2.512E-01	4.478E-02	1.282E-01
TH-230	1.259E+00	2.033E-01	5.083E-02	1.037E-01
TH-232	1.920E+00	3.466E-01	8.759E-02	1.768E-01
TH-234	1.067E+00	1.508E+00	8.823E-01	7.693E-01
U-234	1.259E+00	2.033E-01	5.083E-02	1.037E-01
NP-237	1.095E+00	3.474E-01	1.580E-01	1.773E-01
U-238	1.067E+00	1.508E+00	8.823E-01	7.693E-01
AM-243	4.478E-01	7.574E-02	3.931E-02	3.864E-02
ANH-511	8.613E-02	5.920E-02	2.021E-02	3.020E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-4.102E-02	2.714E-01	2.260E-01	1.385E-01 NOT IDENT.
NA-22	4.333E-03	3.506E-02	2.997E-02	1.789E-02 NOT IDENT.

NA-24	-2.197E+06	2.152E+06	0.000E+00	1.098E+06	SHORT HLIF
AL-26	-5.254E-03	2.301E-02	1.862E-02	1.174E-02	NOT IDENT.
TI-44	3.975E-01	5.411E-02	3.645E-02	2.760E-02	FAIL ABUN
SC-46	-7.881E-03	3.305E-02	2.776E-02	1.686E-02	FAIL ABUN
V-48	-2.934E-02	5.771E-02	4.675E-02	2.944E-02	NOT IDENT.
CR-51	1.428E-01	3.242E-01	2.886E-01	1.654E-01	NOT IDENT.
MN-52	-9.465E-02	2.325E-01	1.864E-01	1.186E-01	NOT IDENT.
MN-54	2.352E-03	3.216E-02	2.777E-02	1.641E-02	NOT IDENT.
CO-56	-4.552E-02	3.386E-02	2.624E-02	1.728E-02	NOT IDENT.
CO-57	2.603E-02	2.435E-02	2.074E-02	1.243E-02	NOT IDENT.
CO-58	-3.810E-03	3.182E-02	2.724E-02	1.624E-02	NOT IDENT.
FE-59	2.868E-03	8.132E-02	6.794E-02	4.149E-02	NOT IDENT.
CO-60	-7.652E-03	3.494E-02	2.893E-02	1.783E-02	NOT IDENT.
ZN-65	1.770E-02	8.128E-02	5.883E-02	4.147E-02	NOT IDENT.
GE-68	-1.594E-01	1.022E+00	8.441E-01	5.216E-01	NOT IDENT.
AS-73	-2.262E-01	6.845E-01	6.015E-01	3.492E-01	NOT IDENT.
AS-74	-5.598E-03	8.632E-02	7.389E-02	4.404E-02	NOT IDENT.
SE-75	1.458E-02	4.491E-02	3.369E-02	2.291E-02	NOT IDENT.
BR-77	3.464E+00	1.289E+01	1.089E+01	6.578E+00	FAIL ABUN
SR-82	-6.121E-02	3.804E-01	2.668E-01	1.941E-01	NOT IDENT.
RB-83	1.009E-02	6.142E-02	5.159E-02	3.134E-02	NOT IDENT.
RB-84	1.547E-02	6.100E-02	5.296E-02	3.112E-02	NOT IDENT.
KR-85	2.558E+01	7.971E+00	6.633E+00	4.067E+00	NOT IDENT.
SR-85	1.327E-01	4.136E-02	3.442E-02	2.110E-02	NOT IDENT.
RB-86	-2.874E-01	6.843E-01	5.535E-01	3.491E-01	NOT IDENT.
Y-88	-3.203E-03	2.739E-02	2.252E-02	1.398E-02	NOT IDENT.
ZR-88	-1.349E-02	2.678E-02	2.237E-02	1.366E-02	NOT IDENT.
Y-91	-1.727E-02	1.401E+01	1.194E+01	7.146E+00	NOT IDENT.
NB-94	1.275E-02	2.835E-02	2.451E-02	1.446E-02	NOT IDENT.
NB-95	1.108E-01	4.514E-02	3.736E-02	2.303E-02	NOT IDENT.
NB-95M	2.380E-01	1.350E-01	1.067E-01	6.888E-02	NOT IDENT.
ZR-95	3.453E-03	5.970E-02	5.013E-02	3.046E-02	NOT IDENT.
NB-97	-8.559E+02	2.479E+05	0.000E+00	1.265E+05	SHORT HLIF
ZR-97	1.540E+07	5.835E+06	0.000E+00	2.977E+06	SHORT HLIF
MO-99	-7.284E+00	1.326E+01	1.068E+01	6.763E+00	NOT IDENT.
TC-99M	-1.887E+17	8.177E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.239E-03	3.204E-02	2.701E-02	1.635E-02	NOT IDENT.
RH-102	7.419E-03	2.565E-02	2.145E-02	1.309E-02	NOT IDENT.
RU-103	-4.304E-03	3.622E-02	3.008E-02	1.848E-02	FAIL ABUN
RH-106	2.449E-02	2.894E-01	2.485E-01	1.477E-01	FAIL ABUN
RU-106	2.449E-02	2.894E-01	2.485E-01	1.477E-01	FAIL ABUN
AG-108M	-3.142E-03	2.919E-02	2.463E-02	1.489E-02	NOT IDENT.
AG-110M	1.239E-03	2.926E-02	2.493E-02	1.493E-02	NOT IDENT.
IN-111	-1.341E-01	1.418E+00	1.047E+00	7.237E-01	NOT IDENT.
IN-113M	-1.965E-02	3.913E-02	3.272E-02	1.997E-02	NOT IDENT.
SN-113	-1.965E-02	3.913E-02	3.272E-02	1.997E-02	NOT IDENT.
IN-114M	-1.012E-02	1.883E-01	1.435E-01	9.609E-02	NOT IDENT.
CD-115	9.506E+00	1.236E+01	1.116E+01	6.306E+00	NOT IDENT.
SN-117M	-6.497E-03	5.348E-02	4.713E-02	2.729E-02	NOT IDENT.
SB-122	2.912E+00	2.407E+00	2.189E+00	1.228E+00	NOT IDENT.
I-123	-1.693E+07	2.241E+07	0.000E+00	1.143E+07	SHORT HLIF
TE-123M	-1.999E-02	2.646E-02	2.277E-02	1.350E-02	NOT IDENT.
I-124	-3.100E-01	8.343E-01	5.981E-01	4.257E-01	NOT IDENT.
SB-124	-1.174E-02	5.715E-02	4.687E-02	2.916E-02	FAIL ABUN
SB-125	-5.178E-02	8.353E-02	6.866E-02	4.262E-02	FAIL ABUN
TE-125M	2.629E+00	8.780E+00	7.361E+00	4.480E+00	NOT IDENT.
I-126	1.884E-01	1.631E-01	1.464E-01	8.323E-02	NOT IDENT.
SB-126	1.424E-01	1.567E-01	1.210E-01	7.993E-02	FAIL ABUN
SB-127	-1.621E-01	1.415E+00	1.189E+00	7.221E-01	NOT IDENT.
XE-127	1.349E-02	4.569E-02	3.861E-02	2.331E-02	NOT IDENT.
I-131	-7.127E-02	1.095E-01	9.144E-02	5.587E-02	NOT IDENT.
TE-132	2.916E-01	8.250E-01	7.139E-01	4.209E-01	NOT IDENT.
BA-133	-6.829E-03	4.171E-02	3.100E-02	2.128E-02	FAIL ABUN
I-133	3.969E+03	1.209E+04	0.000E+00	6.166E+03	SHORT HLIF
CS-134	1.046E-01	5.813E-02	3.887E-02	2.966E-02	FAIL ABUN
CS-135	3.174E-01	1.674E-01	1.318E-01	8.540E-02	NOT IDENT.
I-135	2.849E+16	8.060E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.213E-02	8.885E-02	7.765E-02	4.533E-02	FAIL ABUN
BA-137M	-3.469E-02	3.134E-02	2.473E-02	1.599E-02	NOT IDENT.
CS-137	-3.667E-02	3.313E-02	2.615E-02	1.690E-02	NOT IDENT.
CE-139	-1.297E-02	2.708E-02	2.346E-02	1.382E-02	NOT IDENT.
BA-140	1.335E-02	2.158E-01	1.880E-01	1.101E-01	NOT IDENT.
LA-140	-6.208E-02	8.771E-02	6.974E-02	4.475E-02	FAIL ABUN
CE-141	5.808E-02	5.842E-02	5.343E-02	2.980E-02	NOT IDENT.
CE-143	1.640E+03	4.886E+02	0.000E+00	2.493E+02	SHORT HLIF
CE-144	-8.926E-02	2.089E-01	1.622E-01	1.066E-01	NOT IDENT.
PM-144	-2.798E-03	2.994E-02	2.515E-02	1.528E-02	NOT IDENT.
PR-144	-1.897E-01	2.030E+00	1.705E+00	1.036E+00	NOT IDENT.

PM-146	1.400E-02	3.818E-02	3.285E-02	1.948E-02	NOT IDENT.
ND-147	-3.599E-01	4.935E-01	4.091E-01	2.518E-01	FAIL ABUN
PM-149	-3.035E+01	1.194E+02	9.866E+01	6.094E+01	NOT IDENT.
EU-152	-1.122E-01	1.039E-01	6.742E-02	5.299E-02	FAIL ABUN
GD-153	-4.400E-02	7.790E-02	5.786E-02	3.974E-02	FAIL ABUN
EU-154	1.210E-02	9.787E-02	8.366E-02	4.993E-02	NOT IDENT.
EU-155	7.197E-02	9.988E-02	8.577E-02	5.096E-02	FAIL ABUN
TB-160	3.309E-03	1.169E-01	1.002E-01	5.966E-02	FAIL ABUN
HO-166M	-2.089E-02	5.165E-02	4.238E-02	2.635E-02	FAIL ABUN
TM-171	-2.723E+01	2.602E+01	1.957E+01	1.328E+01	NOT IDENT.
LU-176	1.549E-02	2.290E-02	1.894E-02	1.169E-02	FAIL ABUN
LU-177	3.241E+00	1.520E+00	1.075E+00	7.753E-01	FAIL ABUN
LU-177M	-2.878E-01	1.603E-01	1.225E-01	8.180E-02	FAIL ABUN
HF-181	-2.523E-03	3.517E-02	2.939E-02	1.794E-02	NOT IDENT.
W-181	-5.185E-02	3.281E-01	2.577E-01	1.674E-01	NOT IDENT.
TA-182	-9.209E-02	1.526E-01	1.245E-01	7.787E-02	FAIL ABUN
RE-183	3.864E-03	1.055E-01	9.108E-02	5.384E-02	FAIL ABUN
RE-184	5.829E-03	2.127E-01	1.804E-01	1.085E-01	NOT IDENT.
OS-185	-1.565E-02	3.674E-02	3.027E-02	1.875E-02	NOT IDENT.
RE-188	3.103E-01	1.629E-01	1.505E-01	8.312E-02	NOT IDENT.
W-188	-2.074E+00	7.192E+00	5.441E+00	3.669E+00	FAIL ABUN
IR-192	-1.989E-02	2.960E-02	2.508E-02	1.510E-02	FAIL ABUN
AU-195	-2.154E-02	1.960E-01	1.673E-01	1.000E-01	FAIL ABUN
TL-200	2.608E+02	8.238E+02	0.000E+00	4.203E+02	SHORT HLIF
TL-201	-5.695E-01	7.978E+00	7.008E+00	4.071E+00	NOT IDENT.
TL-202	1.210E-03	6.540E-02	5.548E-02	3.337E-02	NOT IDENT.
HG-203	-3.210E-03	4.530E-02	3.298E-02	2.311E-02	NOT IDENT.
BI-207	1.112E-02	4.590E-02	3.903E-02	2.342E-02	FAIL ABUN
TL-207	1.464E-01	6.323E-01	4.872E-01	3.226E-01	FAIL ABUN
PO-209	1.547E+00	6.124E+00	5.310E+00	3.125E+00	NOT IDENT.
BI-210	8.070E-01	2.784E+00	2.466E+00	1.420E+00	NOT IDENT.
PB-210	8.070E-01	2.784E+00	2.466E+00	1.420E+00	NOT IDENT.
PO-210	8.070E-01	2.784E+00	2.466E+00	1.420E+00	NOT IDENT.
PB-211	-1.088E+00	1.113E+00	7.183E-01	5.679E-01	NOT IDENT.
BI-212	1.340E+00	4.439E-01	2.893E-01	2.265E-01	FAIL ABUN
PO-215	1.464E-01	6.323E-01	4.872E-01	3.226E-01	FAIL ABUN
RN-219	-1.012E-01	3.676E-01	3.101E-01	1.875E-01	FAIL ABUN
RN-220	3.440E+00	2.161E+01	1.888E+01	1.102E+01	NOT IDENT.
RA-223	1.464E-01	6.323E-01	4.872E-01	3.226E-01	FAIL ABUN
AC-227	-1.600E-01	3.511E-01	2.903E-01	1.791E-01	FAIL ABUN
TH-227	-1.600E-01	3.514E-01	2.903E-01	1.793E-01	FAIL ABUN
TH-229	-6.881E-02	4.599E-01	3.976E-01	2.347E-01	FAIL ABUN
PA-231	-8.578E-02	1.397E+00	1.166E+00	7.126E-01	FAIL ABUN
TH-231	1.464E-01	6.323E-01	4.872E-01	3.226E-01	FAIL ABUN
U-231	8.795E-01	1.218E+00	9.630E-01	6.213E-01	FAIL ABUN
PA-233	2.811E-02	5.402E-02	4.834E-02	2.756E-02	FAIL ABUN
PA-234	8.639E-02	2.432E-01	2.108E-01	1.241E-01	FAIL ABUN
PA-234M	2.561E-01	3.993E+00	3.204E+00	2.037E+00	NOT IDENT.
U-235	1.089E-01	1.975E-01	1.730E-01	1.008E-01	FAIL ABUN
NP-236	-5.209E-02	7.357E-02	6.340E-02	3.753E-02	NOT IDENT.
NP-239	-3.351E-03	1.789E-01	1.511E-01	9.129E-02	FAIL ABUN
AM-241	4.266E-02	1.283E-01	1.042E-01	6.545E-02	NOT IDENT.
CM-243	4.950E-03	8.782E-02	7.513E-02	4.480E-02	FAIL ABUN
AM-246	7.449E-03	1.144E-01	9.602E-02	5.837E-02	NOT IDENT.
CM-247	-4.864E-03	3.268E-02	2.775E-02	1.667E-02	FAIL ABUN
CF-249	2.650E-02	3.336E-02	2.967E-02	1.702E-02	NOT IDENT.
CF-251	1.396E-02	1.183E-01	1.041E-01	6.034E-02	NOT IDENT.

\*\*\*\*\*  
 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON ,SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
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46.50	302.5629
46.50	302.5629
46.50	302.5629
48.70	340.3686
49.72	341.0416
51.35	316.7596
52.39	321.9212
52.97	336.6850
53.15	335.0858
53.44	354.1432
54.07	345.7553
56.28	346.1476
56.28	346.1513
57.37	0.0000
57.53	353.6213
57.53	353.6241
57.60	362.2577
57.98	368.5159
57.98	368.5159
59.32	346.6324
59.32	346.6324
59.40	346.7423
59.54	346.9352
59.72	355.7914
60.01	356.2001
61.10	366.3817
61.14	366.4384
61.30	366.6666
63.00	417.5088
63.29	417.9702
63.29	417.9702
63.58	418.4295
64.28	427.8088
65.12	426.2246
65.20	439.5378
65.20	439.5378
66.05	442.3900
66.72	493.5699
66.83	493.7692
66.91	493.9149
67.20	469.3455
67.20	469.3455
67.75	492.1668
67.85	492.3458
68.90	472.2253
68.90	472.2253
69.30	456.5393
69.67	467.5647
70.82	484.4056
70.82	484.4056
70.83	484.4229
72.80	502.7863
72.87	502.9086
72.87	502.9086
74.67	505.9843
74.81	506.2213
74.81	506.2213
74.81	506.2213
74.81	506.2213
74.81	506.2213
74.81	506.2213
74.81	506.2213
74.97	506.4940
75.28	507.0189
75.70	507.7273
77.11	510.0946
77.11	510.0946

77.11	510.0946
77.11	510.0946
77.11	510.0946
77.11	510.0946
77.11	510.0946
78.38	467.7363
79.62	486.5439
79.80	486.8235
79.80	486.8235
80.11	478.0531
80.18	478.1595
80.30	478.3416
80.30	478.3416
80.57	478.7508
81.00	417.5450
81.07	417.6377
81.07	417.6377
81.07	417.6377
81.07	417.6377
82.60	477.1509
83.37	440.8964
83.78	432.6182
83.78	432.6182
83.78	432.6182
83.78	432.6182
84.21	433.1916
84.90	434.1057
85.43	434.8060
86.29	435.9359
86.50	436.2110
86.54	436.2639
86.59	436.3294
86.72	436.5008
86.79	436.5897
86.94	436.7886
87.30	437.2583
87.30	437.2583
87.30	437.2583
87.30	437.2583
87.30	437.2583
87.30	437.2583
87.30	437.2583
87.57	437.6096
87.88	438.0137
88.03	438.2083
88.36	438.6358
88.47	438.7796
89.95	440.6882
91.11	442.1756
92.29	443.6779
92.38	443.7922
92.38	443.7922
93.35	445.0173
94.00	445.8361
94.67	370.4370
94.67	370.4423
94.90	370.6809
94.90	370.6809
94.90	370.6809
94.90	370.6809
95.87	387.8448
95.87	387.8448
96.73	432.5081
97.43	430.0933
98.44	410.1229
98.44	410.1248
98.88	399.7523
99.55	388.5077
99.55	388.5077
99.86	365.9585
100.00	366.0969
100.10	370.5590
103.18	423.0441
103.76	412.6835
105.00	383.1035
105.31	382.3057
108.00	465.0518
109.28	397.3530

111.00	418.1187
111.00	418.1187
111.76	426.7675
112.95	440.4080
115.19	383.9200
116.30	401.9789
117.00	415.1622
117.00	415.1622
117.66	406.7002
121.11	382.4398
121.62	350.6969
121.78	350.8257
122.06	359.1091
122.32	359.3234
122.32	359.3234
122.32	359.3234
122.32	359.3234
123.07	371.4805
127.23	368.5827
129.76	396.3009
131.20	442.6626
133.02	420.3500
133.54	440.6580
135.34	406.2625
136.00	430.8668
136.25	431.0957
136.48	456.2578
140.51	443.9337
140.51	0.0000
142.18	467.1019
142.65	466.6458
143.76	421.5623
144.24	397.5222
144.24	397.5222
144.24	397.5222
144.24	397.5222
145.22	394.6801
145.44	413.9180
147.16	470.9018
152.43	448.1840
152.70	466.8336
153.22	462.6932
154.21	422.0186
154.21	422.0186
154.21	422.0186
154.21	422.0186
155.03	389.3845
156.02	424.4062
158.56	429.2401
159.00	0.0000
159.00	449.1611
160.31	447.4582
161.27	404.2716
162.32	410.6785
162.64	407.1697
163.35	397.3661
163.89	387.4130
165.85	418.0502
167.43	383.2811
171.28	379.2436
171.86	400.6137
172.10	400.7835
176.55	412.5499
176.60	412.5858
181.06	403.1301
184.41	386.8806
185.71	387.7135
186.00	387.9013
190.27	385.6956
192.34	376.4544
193.63	387.7861
197.04	386.9047
198.01	390.4807
198.60	408.7863
200.40	406.9379
201.83	456.9428
202.84	388.8326
205.31	388.4625

208.36	446.9367
208.81	386.8788
209.75	347.2615
209.75	347.2615
210.97	377.1558
215.65	361.1496
216.55	343.1838
218.09	375.7816
222.10	366.5975
223.80	360.2397
226.40	380.2662
227.00	373.3083
227.08	373.3494
227.20	366.1313
228.16	355.1658
228.18	355.1762
228.18	355.1762
231.56	0.0000
235.69	353.6085
236.00	370.6055
236.00	370.6055
238.63	358.1882
238.63	358.1882
238.63	358.1882
238.63	358.1882
239.00	358.3667
240.98	359.3185
241.98	359.7996
241.98	359.7996
241.98	359.7996
244.69	342.5588
245.39	303.6408
247.94	284.8525
248.90	298.8258
249.79	289.5200
252.40	307.7132
252.85	293.8949
252.85	293.8949
254.15	0.0000
256.20	310.2923
256.20	310.2923
260.50	294.5868
260.90	281.6846
262.80	287.8033
264.65	262.2400
268.24	254.6173
268.79	251.2764
269.46	246.2065
269.46	246.2065
269.46	246.2065
269.46	246.2065
271.23	267.2977
273.65	229.7820
276.40	301.4761
277.35	270.7471
277.60	239.7469
277.60	239.7469
278.00	257.6299
278.60	277.3723
279.20	318.4941
279.53	318.6165
280.46	290.4552
281.68	256.9676
283.67	271.6508
284.30	234.9330
285.00	241.8431
285.90	274.6007
286.10	303.8123
286.10	303.8123
287.40	259.3569
288.45	0.0000
290.67	270.4761
290.80	270.5164
291.72	236.1995
293.26	0.0000
293.70	263.8707
295.21	277.9167
295.21	277.9167

295.21	277.9167
295.96	240.3600
296.50	240.5056
297.23	240.7029
298.57	241.0652
299.80	241.3952
299.80	241.3952
300.09	241.4761
300.09	241.4761
300.09	241.4761
300.09	241.4761
300.12	241.4825
301.29	258.5244
302.84	262.0172
303.76	228.7354
303.91	228.7720
304.40	238.0530
304.40	238.0530
304.84	213.7398
306.84	222.9531
308.46	250.1490
311.98	220.6374
316.51	245.8302
318.01	240.6499
319.02	230.6745
319.41	222.3966
320.08	222.5512
323.87	227.4923
323.87	227.4923
323.87	227.4923
323.87	227.4923
325.23	240.2960
328.77	251.8290
333.44	193.5563
334.20	212.6047
334.20	212.6047
334.30	193.7265
338.28	228.6646
338.28	228.6646
338.28	228.6646
338.28	228.6646
338.32	228.6764
338.32	228.6764
338.32	228.6764
340.50	174.3390
340.57	174.3502
344.27	253.9014
345.85	277.2452
350.59	0.0000
351.07	248.2422
351.92	236.5858
351.92	236.5858
351.92	236.5858
355.39	0.0000
356.01	214.0306
364.48	219.9886
366.43	211.6174
367.43	202.0549
367.94	0.0000
369.80	204.4587
374.96	193.6477
383.85	216.0387
387.95	178.0451
388.63	183.1308
391.69	219.5596
391.69	219.5596
392.90	213.8015
398.62	207.8541
400.65	207.2171
401.10	221.3884
401.81	223.5393
402.60	217.6479
404.84	278.6448
410.95	213.1300
411.60	218.3253
413.65	251.2574
414.70	240.2838
415.30	201.6956



415.76	192.6037
417.63	0.0000
418.52	182.8370
423.70	180.5547
427.08	196.4931
427.89	217.2126
432.53	202.5413
433.93	196.5660
439.47	186.0206
439.56	190.1909
439.89	191.2818
443.98	202.3407
444.90	194.1398
445.03	194.1602
445.03	194.1602
445.03	194.1602
445.03	194.1602
453.90	175.5539
463.38	171.2064
468.07	184.2238
473.00	179.2260
475.06	158.1353
475.35	162.4463
476.78	161.5508
477.59	159.5075
477.96	167.0487
482.03	148.2237
484.57	147.4288
487.03	157.3991
490.36	0.0000
492.35	160.1822
497.08	167.2513
507.63	0.0000
510.53	0.0000
510.84	159.0398
511.00	159.0575
511.85	159.1522
511.85	159.1522
513.99	155.7296
513.99	155.7296
520.41	159.0082
520.65	159.0363
527.90	130.4233
528.96	0.0000
529.64	144.4695
529.87	0.0000
531.02	160.3678
537.32	135.9215
543.00	131.7715
546.56	0.0000
549.76	147.3887
552.65	158.9601
555.20	143.2113
563.23	156.2787
563.90	146.8735
568.70	177.7474
569.32	172.1105
569.50	162.6226
569.67	162.6400
573.80	151.0556
574.00	144.2079
574.64	152.6660
578.91	150.8958
579.30	0.0000
583.14	142.9402
585.48	156.4657
591.81	185.1992
592.07	183.1217
593.00	169.8913
595.88	176.9648
600.56	181.5519
602.52	0.0000
602.71	191.4474
602.71	191.4474
603.60	203.2114
604.41	199.9805
604.70	200.0139
609.31	170.6314

609.31	170.6314
609.31	170.6314
609.31	170.6314
610.33	170.7382
612.46	167.4700
614.37	167.6618
618.01	144.0870
621.84	164.0679
621.84	164.0679
631.29	137.3258
633.02	137.4672
633.10	139.4509
634.78	134.6387
635.90	124.8208
636.97	112.0137
645.85	133.5175
646.12	140.5152
656.30	132.3169
657.75	138.4464
657.90	0.0000
661.65	173.9433
661.65	173.9433
664.57	0.0000
666.33	125.0066
666.33	125.0066
675.00	123.5885
677.61	117.6803
685.20	136.5136
692.80	135.0347
695.00	143.3895
696.49	152.7317
696.49	152.7317
697.00	151.7488
697.49	168.1974
698.33	163.1439
698.50	163.1600
699.00	156.0171
702.63	135.7544
706.10	122.6122
706.58	0.0000
706.67	132.9578
709.31	152.7545
711.68	142.6129
713.82	148.9834
717.42	150.3042
720.50	129.9320
721.93	0.0000
722.20	140.7353
722.78	153.2535
722.78	153.2535
722.89	153.2625
722.95	153.2655
723.30	151.5130
724.18	153.3645
727.18	166.1071
733.00	112.8647
735.90	113.0361
739.58	135.2700
742.81	126.0425
744.21	135.5901
747.13	97.8967
751.79	139.2805
752.31	131.9300
753.82	132.0292
755.35	120.5034
756.15	119.4947
756.87	115.3069
763.93	120.1153
765.79	112.9394
766.42	134.8399
766.84	129.7044
776.49	119.0333
778.00	122.7858
778.57	131.9866
778.89	126.5064
783.80	106.1362
785.46	100.6629
792.07	136.5485

795.84	133.0990
796.30	138.6762
798.80	127.7361
801.93	118.6585
805.60	110.5083
810.29	110.7552
810.76	110.7802
815.85	95.1821
817.79	108.3454
818.51	102.7759
819.60	108.4365
826.30	104.0896
828.27	0.0000
831.60	144.7671
831.96	132.5686
834.83	135.5700
836.80	0.0000
846.75	137.2599
848.13	123.1377
856.28	0.0000
856.80	103.1776
860.37	105.7233
867.32	101.9937
867.82	100.3436
871.10	91.7294
873.19	99.6256
874.81	110.2411
875.33	0.0000
876.40	120.8716
879.36	104.7004
880.27	98.0156
880.51	98.9873
881.50	106.7221
883.24	93.3327
884.67	97.2431
889.25	109.0155
896.60	99.6861
898.02	111.3681
899.00	104.6325
903.28	108.7090
911.07	98.3598
911.07	98.3598
911.07	98.3598
919.63	78.6821
920.93	77.5846
925.00	102.8613
925.24	99.9331
926.50	113.7101
935.52	98.3974
937.48	104.3863
944.10	107.6352
946.00	90.9203
949.00	105.8748
962.29	106.2046
964.01	97.5659
966.15	97.6514
968.20	97.7317
969.11	97.7693
969.11	97.7693
969.11	97.7693
977.42	95.2930
980.50	95.2104
983.50	91.3110
989.30	78.4475
996.32	102.8716
1001.03	89.9266
1001.68	78.8325
1004.76	92.0823
1021.30	0.0000
1024.50	0.0000
1034.80	80.8736
1036.00	77.8369
1037.82	74.8153
1038.57	79.9641
1038.76	0.0000
1045.16	92.4955
1046.59	88.4325
1048.07	76.1370

1050.47	74.1445
1050.47	74.1445
1062.04	95.1510
1063.62	103.4877
1076.63	100.8669
1077.35	94.6531
1078.86	88.4626
1085.78	91.8150
1099.22	107.9934
1112.02	123.4985
1112.84	114.3163
1115.52	90.4335
1120.29	88.7373
1120.29	88.7373
1120.29	88.7373
1120.29	88.7373
1120.51	94.2927
1121.28	94.3176
1124.00	0.0000
1129.67	96.4526
1131.51	0.0000
1147.95	0.0000
1167.94	84.5865
1173.22	101.6851
1175.09	98.9246
1177.93	91.4763
1189.05	89.9265
1204.90	92.3081
1205.75	0.0000
1213.00	99.2361
1221.42	113.8649
1230.97	129.8400
1235.34	145.2498
1236.41	0.0000
1238.25	100.0613
1246.25	98.7750
1260.41	0.0000
1271.85	89.4731
1274.45	81.7595
1274.54	81.7621
1291.56	88.0719
1298.22	0.0000
1312.09	71.8928
1325.50	57.3557
1325.50	57.3557
1332.49	80.2708
1333.61	72.3673
1360.21	56.9600
1362.66	0.0000
1365.15	65.0496
1368.21	63.1057
1368.53	0.0000
1376.25	41.1664
1384.27	82.5280
1394.10	55.5136
1395.20	51.4918
1407.95	50.6699
1434.06	58.1968
1436.60	48.0227
1457.56	0.0000
1460.81	36.0062
1489.15	59.0996
1509.49	46.9171
1596.49	69.2276
1620.62	36.2600
1678.03	0.0000
1691.02	27.1911
1691.02	27.1911
1706.46	0.0000
1750.46	0.0000
1764.49	21.3486
1764.49	21.3486
1764.49	21.3486
1764.49	21.3486
1770.23	30.2846
1771.40	24.9471
1791.20	0.0000
1808.65	24.9641

1836.01

27.1304

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244148018

Total Uranium Activity	3.2255E+00	ug/g
Total Uranium Counting Unc.	4.4867E+00	ug/g
Total Uranium Tpu	2.2891E-06	ug/g
Total Uranium Mda	2.6262E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G244148018
*  ANALYST       : MXR1                             DETECTOR    : GAM22
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 20-JAN-2010 18:02:42.52          SAMPLE ALQT: 129.030 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.013E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.319E+00
GROSS GAMMA MDA (pCi/GRAM ) : 2.361E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.146E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 20:04:35.95

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                          *
*                                     Charleston, SC 29414                       *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012156.CNF;1
Sample date        : 12-JAN-2010 00:00:00 Acquisition date : 20-JAN-2010 18:03:29
Sample ID          : G1202012156 Sample quantity : 1.39900E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.86 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 940268 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	92.88*	22	128	1.56	185.76	180	13	3.09E-03	117.4	
2	0	185.33*	13	71	0.88	370.66	366	10	1.84E-03	141.5	
3	0	238.73*	18	41	1.22	477.45	472	9	2.48E-03	78.9	

Flag: "\*" = Peak area was modified by background subtraction



```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012156.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 12-JAN-2010 00:00:00 Acquisition date : 20-JAN-2010 18:03:29
Sample ID        : G1202012156 Sample quantity : 139.90 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.86 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

## ---- 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	*	-3.241E-02	1.554E-01	2.485E-01	1.689E-02	-0.130	
NA-22	1274.54	*	5.260E-03	1.988E-02	3.449E-02	2.316E-03	0.153	
NA-24	1368.53	*	-2.060E-04	1.988E-02	Half-Life	too short		
AL-26	1129.67		-6.193E-01	8.608E-01	1.191E+00	7.584E-02	-0.520	
	1808.65	*	3.436E-03	1.637E-02	2.911E-02	1.750E-03	0.118	
K-40	1460.81	*	-1.074E-01	2.696E-01	4.282E-01	3.203E-02	-0.251	
TI-44	67.85		4.180E-04	2.510E-02	4.070E-02	3.544E-03	0.010	
	78.38	*	-1.099E-02	1.670E-02	2.617E-02	2.372E-03	-0.420	
SC-46	889.25	*	-5.258E-03	2.159E-02	3.451E-02	3.083E-03	-0.152	
	1120.51		-1.594E-02	2.481E-02	3.554E-02	2.315E-03	-0.449	
V-48	944.10		5.254E-02	3.373E-01	5.768E-01	5.025E-02	0.091	
	983.50	*	1.286E-02	2.806E-02	5.036E-02	4.190E-03	0.255	
	1312.09		-2.315E-02	2.874E-02	3.511E-02	2.498E-03	-0.659	
CR-51	320.08	*	8.538E-03	1.788E-01	3.013E-01	1.976E-02	0.028	
MN-52	744.21		1.892E-02	5.963E-02	1.011E-01	6.436E-03	0.187	
	848.13		7.429E-01	1.768E+00	3.139E+00	2.562E-01	0.237	
	935.52		-2.531E-02	6.153E-02	9.441E-02	8.300E-03	-0.268	
	1246.25		1.416E-01	1.622E+00	2.696E+00	1.725E-01	0.053	
	1333.61		-3.644E-02	1.205E+00	1.942E+00	1.426E-01	-0.019	
	1434.06	*	-3.496E-02	5.748E-02	7.442E-02	5.384E-03	-0.470	
MN-54	834.83	*	1.581E-02	2.283E-02	4.154E-02	3.289E-03	0.381	
CO-56	846.75	*	4.454E-03	2.212E-02	3.806E-02	3.096E-03	0.117	
	977.42		-7.087E-01	1.391E+00	2.056E+00	1.724E-01	-0.345	
	1037.82		7.684E-02	1.576E-01	2.831E-01	2.321E-02	0.271	
	1175.09		-1.006E+00	1.184E+00	1.612E+00	9.123E-02	-0.624	
	1238.25		-3.738E-02	3.492E-02	4.111E-02	2.735E-03	-0.909	
	1360.21		1.021E-02	5.663E-01	9.229E-01	6.757E-02	0.011	
	1771.40		-2.722E-02	1.605E-01	2.539E-01	1.570E-02	-0.107	
CO-57	122.06	*	6.798E-04	1.356E-02	2.238E-02	1.319E-03	0.030	
	136.48		-3.964E-02	1.070E-01	1.701E-01	1.106E-02	-0.233	
CO-58	810.76	*	9.698E-03	2.129E-02	3.800E-02	2.855E-03	0.255	
FE-59	142.65		3.278E-01	1.365E+00	2.131E+00	1.159E-01	0.154	
	192.34		4.312E-01	4.766E-01	8.230E-01	9.521E-02	0.524	
	1099.22	*	7.995E-03	4.319E-02	7.359E-02	5.668E-03	0.109	

## ---- 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			-1.608E-02	5.245E-02	7.840E-02	6.507E-03	-0.205
	1173.22			1.410E-02	2.310E-02	4.212E-02	2.376E-03	0.335
	1332.49	*		1.063E-03	2.098E-02	3.452E-02	2.534E-03	0.031
ZN-65	1115.52	*		2.376E-02	4.344E-02	7.870E-02	5.198E-03	0.302
GE-68	1077.35	*		2.079E-01	6.389E-01	1.118E+00	8.001E-02	0.186
AS-73	53.44	*		-4.578E-02	5.088E-01	8.489E-01	7.494E-02	-0.054
AS-74	595.88	*		-2.701E-02	4.316E-02	6.396E-02	3.527E-03	-0.422
SE-75	634.78			1.510E-02	1.761E-01	2.891E-01	1.530E-02	0.052
	66.05			-3.827E+00	2.740E+00	3.960E+00	4.156E-01	-0.966
	96.73			8.239E-02	4.082E-01	6.066E-01	8.133E-02	0.136
	121.11			-1.492E-02	7.240E-02	1.173E-01	1.094E-02	-0.127
	136.00			-2.116E-03	1.960E-02	3.185E-02	1.799E-03	-0.066
	198.60			-2.641E-01	1.018E+00	1.557E+00	1.051E-01	-0.170
	264.65	*		1.606E-02	2.300E-02	3.939E-02	2.293E-03	0.408
	279.53			-2.331E-02	5.476E-02	8.871E-02	5.579E-03	-0.263
	303.91			5.040E-01	1.100E+00	1.924E+00	1.846E-01	0.262
	400.65			5.952E-03	1.444E-01	2.408E-01	2.191E-02	0.025
	87.88			-7.097E+00	1.375E+01	1.891E+01	1.845E+00	-0.375
	200.40			-2.295E+00	1.352E+01	2.152E+01	1.151E+00	-0.107
BR-77	239.00	+		5.824E-01	9.199E-01	1.316E+00	7.397E-02	0.443
	249.79			-3.551E+00	6.288E+00	9.532E+00	5.419E-01	-0.373
	281.68			2.127E+00	7.639E+00	1.319E+01	7.686E-01	0.161
	297.23			2.803E+00	4.459E+00	7.896E+00	4.637E-01	0.355
	303.76			6.044E+00	1.510E+01	2.629E+01	1.547E+00	0.230
	439.47			1.004E+01	1.236E+01	2.236E+01	1.308E+00	0.449
	484.57			1.792E+01	1.921E+01	3.536E+01	2.067E+00	0.507
	520.65	*		-1.736E-01	9.147E-01	1.460E+00	8.451E-02	-0.119
	574.64			-8.140E+00	1.947E+01	2.990E+01	1.678E+00	-0.272
	578.91			-2.663E+00	7.826E+00	1.215E+01	6.800E-01	-0.219
	585.48			-1.843E+00	1.560E+01	2.503E+01	1.393E+00	-0.074
	755.35			1.633E+01	1.450E+01	2.743E+01	1.796E+00	0.595
	817.79			-3.571E+00	1.130E+01	1.790E+01	1.363E+00	-0.200
	698.33			-9.910E+00	1.538E+01	2.203E+01	1.244E+00	-0.450
SR-82	776.49	*		3.558E-02	1.677E-01	2.908E-01	2.006E-02	0.122
RB-83	1395.20			5.839E-01	4.857E+00	8.130E+00	5.925E-01	0.072
	520.41	*		-4.576E-03	3.709E-02	5.978E-02	3.461E-03	-0.077
	529.64			-1.081E-02	5.572E-02	8.875E-02	5.118E-03	-0.122
RB-84	552.65			3.170E-02	1.144E-01	1.937E-01	1.103E-02	0.164
	881.50	*		-3.173E-03	3.625E-02	5.958E-02	5.235E-03	-0.053
KR-85	513.99	*		-1.235E+01	6.571E+00	9.058E+00	5.256E-01	-1.364
SR-85	513.99	*		-5.924E-02	3.151E-02	4.344E-02	2.521E-03	-1.364
RB-86	1076.63	*		1.883E-01	3.410E-01	6.171E-01	4.423E-02	0.305
Y-88	898.02			-2.497E-03	2.162E-02	3.528E-02	3.226E-03	-0.071
ZR-88	1836.01	*		-1.282E-02	2.285E-02	3.108E-02	1.830E-03	-0.412
	392.90	*		9.517E-03	1.577E-02	2.794E-02	1.613E-03	0.341
Y-91	1204.90	*		1.102E+00	7.121E+00	1.207E+01	7.203E-01	0.091
NB-94	702.63	*		-1.488E-02	1.957E-02	2.763E-02	1.579E-03	-0.539
NB-95	871.10			-1.355E-03	2.195E-02	3.558E-02	3.056E-03	-0.038
	765.79	*		-1.551E-02	2.003E-02	2.723E-02	1.829E-03	-0.570

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NB-95M	235.69	*		-1.433E-02	6.911E-02	9.423E-02	6.951E-03	-0.152
ZR-95	724.18			1.641E-02	4.827E-02	8.186E-02	5.787E-03	0.200
	756.15	*		1.607E-02	3.828E-02	6.567E-02	5.039E-03	0.245
NB-97	657.90	*		2.647E-05	3.828E-02	Half-Life	too short	
	1024.50			-1.421E-03	3.828E-02	Half-Life	too short	
ZR-97	254.15			3.283E-03	3.828E-02	Half-Life	too short	
	355.39			-5.135E-05	3.828E-02	Half-Life	too short	
	507.63	*		-2.605E-03	3.828E-02	Half-Life	too short	
	602.52			1.840E-03	3.828E-02	Half-Life	too short	
	1021.30			2.271E-04	3.828E-02	Half-Life	too short	
	1147.95			-4.564E-03	3.828E-02	Half-Life	too short	
	1362.66			-1.509E-03	3.828E-02	Half-Life	too short	
	1750.46			3.225E-03	3.828E-02	Half-Life	too short	
MO-99	140.51			-1.623E+00	3.051E+00	4.438E+00	1.193E+00	-0.366
	181.06			-1.312E+00	2.086E+00	2.720E+00	4.609E-01	-0.483
	366.43			3.687E+00	9.558E+00	1.657E+01	9.712E-01	0.222
	739.58	*		-1.583E-01	1.269E+00	1.994E+00	2.791E-01	-0.079
	778.00			-1.030E+00	3.501E+00	5.587E+00	3.868E-01	-0.184
TC-99M	140.51	*		-2.698E+02	3.501E+00	Half-Life	too short	
RH-101	127.23			-1.504E-04	1.666E-02	2.734E-02	1.570E-03	-0.005
	198.01	*		-6.947E-03	1.936E-02	2.937E-02	1.566E-03	-0.237
	325.23			7.411E-03	1.175E-01	1.981E-01	1.170E-02	0.037
RH-102	418.52			2.192E-02	1.679E-01	2.822E-01	1.644E-02	0.078
	475.06	*		1.856E-02	1.567E-02	2.955E-02	1.729E-03	0.628
	631.29			1.277E-02	3.438E-02	5.858E-02	3.114E-03	0.218
	697.49			-1.642E-02	4.174E-02	6.290E-02	3.545E-03	-0.261
	766.84			4.657E-03	4.944E-02	8.081E-02	5.444E-03	0.058
	1046.59			-3.260E-02	6.461E-02	9.633E-02	7.295E-03	-0.338
	1112.84			-1.128E-02	1.123E-01	1.808E-01	1.199E-02	-0.062
RU-103	497.08	*		-2.640E-03	2.424E-02	3.845E-02	4.867E-03	-0.069
	610.33			-2.368E-01	4.771E-01	6.823E-01	1.043E-01	-0.347
RH-106	511.85			-2.732E-01	1.644E-01	2.920E-01	1.695E-02	-0.936
	621.84	*		-1.616E-01	1.834E-01	2.544E-01	2.933E-02	-0.635
	1050.47			-3.393E-01	1.260E+00	1.972E+00	1.484E-01	-0.172
RU-106	511.85			-2.732E-01	1.644E-01	2.920E-01	1.695E-02	-0.936
	621.84	*		-1.616E-01	1.827E-01	2.544E-01	1.367E-02	-0.635
	1050.47			-3.393E-01	1.260E+00	1.972E+00	1.484E-01	-0.172
AG-108M	433.93	*		-1.358E-03	2.020E-02	3.318E-02	2.103E-03	-0.041
	614.37			1.481E-03	2.348E-02	3.848E-02	2.286E-03	0.038
	722.95			5.132E-04	2.395E-02	3.871E-02	2.517E-03	0.013
CD-109	88.03	*		-2.244E-01	4.015E-01	5.492E-01	5.362E-02	-0.409
AG-110M	657.75	*		5.330E-03	1.913E-02	3.230E-02	1.795E-03	0.165
	677.61			3.321E-02	1.677E-01	2.798E-01	1.601E-02	0.119
	706.67			9.405E-02	1.281E-01	2.272E-01	1.392E-02	0.414
	763.93			-3.376E-02	6.883E-02	9.782E-02	6.848E-03	-0.345
	884.67			3.265E-02	2.898E-02	5.601E-02	5.106E-03	0.583
	937.48			2.407E-02	5.430E-02	9.746E-02	8.850E-03	0.247
	1384.27			-4.202E-02	9.760E-02	1.411E-01	1.070E-02	-0.298
IN-111	171.28			-6.475E-02	1.182E-01	1.837E-01	9.424E-03	-0.352

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	245.39	*		5.361E-02	1.271E-01	2.116E-01	1.198E-02	0.253
IN-113M	391.69	*		1.071E-02	2.364E-02	4.122E-02	2.539E-03	0.260
SN-113	391.69	*		1.071E-02	2.364E-02	4.122E-02	2.539E-03	0.260
IN-114M	190.27	*		-2.061E-02	1.054E-01	1.458E-01	7.686E-03	-0.141
CD-115	260.90			1.638E+00	9.802E+00	1.595E+01	9.160E-01	0.103
	492.35			-1.115E+00	2.779E+00	4.316E+00	2.520E-01	-0.258
	527.90	*		3.088E-01	8.153E-01	1.406E+00	8.114E-02	0.220
SN-117M	156.02			4.572E-02	8.822E-01	1.445E+00	7.562E-02	0.032
	158.56	*		-2.792E-04	2.150E-02	3.501E-02	1.820E-03	-0.008
SB-122	563.90	*		-1.221E-03	2.492E-01	4.067E-01	2.300E-02	-0.003
	692.80			6.318E+00	4.739E+00	9.124E+00	5.078E-01	0.692
I-123	159.00	*		5.083E-05	4.739E+00	Half-Life	too short	
	528.96			3.092E-03	4.739E+00	Half-Life	too short	
TE-123M	159.00	*		7.690E-04	1.467E-02	2.401E-02	1.267E-03	0.032
I-124	602.71	*		5.037E-03	1.540E-01	2.416E-01	1.324E-02	0.021
	722.78			8.297E-02	8.802E-01	1.438E+00	8.666E-02	0.058
	1325.50			-4.373E+00	8.146E+00	1.175E+01	8.538E-01	-0.372
	1376.25			4.273E+00	6.314E+00	1.170E+01	8.548E-01	0.365
	1509.49			-1.494E+00	3.096E+00	4.242E+00	3.009E-01	-0.352
	1691.02			4.496E-01	7.711E-01	1.498E+00	9.781E-02	0.300
SB-124	602.71			7.818E-04	2.390E-02	3.749E-02	2.055E-03	0.021
	645.85			3.107E-01	2.859E-01	5.306E-01	3.203E-02	0.586
	709.31			-8.544E-01	1.714E+00	2.565E+00	1.492E-01	-0.333
	713.82			5.452E-01	9.157E-01	1.603E+00	1.645E-01	0.340
	722.78			1.867E-02	1.980E-01	3.235E-01	2.035E-02	0.058
	968.20			6.067E-02	1.231E+00	2.057E+00	1.744E-01	0.029
	1045.16			3.159E-01	1.261E+00	2.175E+00	1.651E-01	0.145
	1325.50			-1.051E+00	1.957E+00	2.824E+00	2.051E-01	-0.372
	1368.21			-8.111E-01	1.139E+00	1.674E+00	2.123E-01	-0.485
	1436.60			3.743E-01	2.256E+00	3.791E+00	2.742E-01	0.099
	1691.02	*		2.385E-02	4.092E-02	7.951E-02	5.543E-03	0.300
SB-125	427.89	*		2.407E-03	5.229E-02	8.703E-02	5.294E-03	0.028
	463.38			-7.791E-02	1.267E-01	1.888E-01	1.287E-02	-0.413
	600.56			1.088E-01	1.084E-01	1.980E-01	1.276E-02	0.549
	635.90			4.115E-02	1.684E-01	2.824E-01	1.796E-02	0.146
TE-125M	109.28	*		-1.416E+00	4.241E+00	6.808E+00	6.063E-01	-0.208
I-126	388.63			-8.663E-02	8.822E-02	1.264E-01	7.310E-03	-0.685
	666.33	*		2.689E-02	6.695E-02	1.154E-01	5.971E-03	0.233
	753.82			6.034E-01	5.577E-01	1.056E+00	6.888E-02	0.571
SB-126	223.80			-1.069E+00	1.528E+00	2.292E+00	1.266E-01	-0.466
	278.60			-4.655E-01	9.195E-01	1.480E+00	8.612E-02	-0.314
	296.50			4.132E-01	5.177E-01	9.287E-01	5.452E-02	0.445
	414.70			4.672E-04	2.973E-02	4.938E-02	2.874E-03	0.009
	415.30			-8.399E-01	2.539E+00	4.051E+00	2.358E-01	-0.207
	555.20			-8.902E-01	1.728E+00	2.628E+00	1.495E-01	-0.339
	573.80			-9.806E-02	4.373E-01	6.916E-01	3.885E-02	-0.142
	593.00			-2.105E-01	3.883E-01	5.823E-01	3.220E-02	-0.362
	656.30			6.711E-01	1.375E+00	2.356E+00	1.213E-01	0.285
	666.33			1.107E-02	2.757E-02	4.752E-02	2.459E-03	0.233

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	675.00			-5.443E-01	7.632E-01	1.078E+00	5.712E-02	-0.505
	695.00			4.628E-03	3.152E-02	5.202E-02	2.912E-03	0.089
	697.00			-6.310E-02	1.072E-01	1.563E-01	8.799E-03	-0.404
	720.50	*		5.041E-03	6.007E-02	9.802E-02	5.871E-03	0.051
	856.80			3.428E-02	1.919E-01	3.288E-01	2.736E-02	0.104
	989.30			-3.441E-01	4.916E-01	7.021E-01	5.797E-02	-0.490
	1034.80			4.386E-02	3.639E+00	5.636E+00	4.353E-01	0.008
	1213.00			6.993E-01	1.439E+00	2.594E+00	1.570E-01	0.270
SN-126	64.28			2.417E-01	2.871E-01	5.028E-01	7.653E-02	0.481
	86.94			-1.779E-01	1.893E-01	2.264E-01	9.415E-02	-0.786
	87.57	*		-1.455E-02	3.908E-02	5.465E-02	5.318E-03	-0.266
SB-127	61.10			6.358E+00	1.041E+01	1.816E+01	1.745E+00	0.350
	252.40			4.037E-02	8.120E-01	1.306E+00	5.373E-01	0.031
	290.80			-4.230E-01	3.863E+00	6.443E+00	4.611E-01	-0.066
	411.60			-1.190E+00	2.193E+00	3.402E+00	4.481E-01	-0.350
	444.90			-1.987E+00	1.633E+00	2.207E+00	2.019E-01	-0.900
	473.00			-9.724E-02	3.088E-01	4.884E-01	4.688E-02	-0.199
	543.00			1.252E+00	3.055E+00	5.266E+00	6.058E-01	0.238
	603.60			-9.382E-01	2.412E+00	3.568E+00	3.167E-01	-0.263
	685.20	*		3.017E-02	2.386E-01	3.935E-01	2.828E-02	0.077
	698.50			-9.912E-01	2.500E+00	3.746E+00	4.948E-01	-0.265
	722.20			1.742E+00	5.444E+00	9.197E+00	6.702E-01	0.189
	783.80			2.952E-01	6.080E-01	1.092E+00	1.069E-01	0.270
XE-127	57.60			-1.040E+00	3.271E+00	5.353E+00	4.689E-01	-0.194
	145.22			-3.625E-02	3.304E-01	4.978E-01	2.686E-02	-0.073
	172.10			6.959E-03	5.690E-02	9.343E-02	4.798E-03	0.074
	202.84	*		-2.705E-04	2.084E-02	3.363E-02	1.805E-03	-0.008
	374.96			2.127E-02	9.477E-02	1.617E-01	9.436E-03	0.131
I-131	80.18			-3.894E-01	1.247E+00	2.027E+00	1.863E-01	-0.192
	284.30			-7.155E-02	5.049E-01	8.406E-01	5.408E-02	-0.085
	364.48	*		1.132E-02	3.610E-02	6.224E-02	4.036E-03	0.182
	636.97			2.406E-01	5.503E-01	9.466E-01	5.662E-02	0.254
	722.89			1.107E-01	2.340E+00	3.796E+00	2.298E-01	0.029
TE-132	49.72			-1.338E+00	3.473E+00	5.661E+00	5.223E-01	-0.236
	111.76			5.027E-01	3.956E+00	6.585E+00	5.056E-01	0.076
	116.30			-1.570E+00	3.791E+00	6.046E+00	4.454E-01	-0.260
	228.16	*		5.869E-02	9.639E-02	1.631E-01	2.156E-02	0.360
BA-133	53.15			-4.714E-01	2.357E+00	3.899E+00	3.439E-01	-0.121
	79.62			-1.983E-01	5.949E-01	9.642E-01	1.497E-01	-0.206
	81.00			-8.081E-03	4.421E-02	7.252E-02	1.176E-02	-0.111
	276.40			-2.311E-02	2.030E-01	3.199E-01	4.148E-02	-0.072
	302.84			-5.761E-02	7.857E-02	1.224E-01	1.433E-02	-0.470
	356.01	*		-1.079E-02	2.558E-02	3.912E-02	4.538E-03	-0.276
	383.85			-1.390E-01	1.773E-01	2.688E-01	2.922E-02	-0.517
I-133	510.53			-2.294E-03	1.773E-01	Half-Life	too short	
	529.87	*		-4.873E-06	1.773E-01	Half-Life	too short	
	706.58			1.184E-03	1.773E-01	Half-Life	too short	
	856.28			-2.411E-04	1.773E-01	Half-Life	too short	
	875.33			-2.601E-04	1.773E-01	Half-Life	too short	

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1236.41			-7.966E-04	1.773E-01	Half-Life	too short	
	1298.22			-3.198E-04	1.773E-01	Half-Life	too short	
	475.35			1.338E+00	1.003E+00	1.924E+00	1.126E-01	0.695
	563.23			-1.217E-01	2.310E-01	3.518E-01	2.035E-02	-0.346
	569.32			1.265E-01	1.237E-01	2.260E-01	1.314E-02	0.560
	604.70			-1.435E-02	2.159E-02	3.214E-02	1.769E-03	-0.447
	795.84	*		2.198E-02	2.375E-02	4.520E-02	3.301E-03	0.486
	801.93			-6.067E-02	2.213E-01	3.552E-01	2.625E-02	-0.171
	1038.57			6.568E-01	2.145E+00	3.735E+00	2.867E-01	0.176
	1167.94			3.150E-02	1.423E+00	2.342E+00	1.343E-01	0.013
CS-135	1365.15			3.054E-01	7.731E-01	1.363E+00	1.060E-01	0.224
I-135	268.24	*		-2.291E-02	8.816E-02	1.371E-01	1.047E-02	-0.167
CS-136	288.45			-1.726E+02	8.816E-02	Half-Life	too short	
	417.63			5.094E+02	8.816E-02	Half-Life	too short	
	546.56			-3.678E+02	8.816E-02	Half-Life	too short	
	836.80			1.012E+03	8.816E-02	Half-Life	too short	
	1038.76			2.978E+02	8.816E-02	Half-Life	too short	
	1124.00			1.342E+03	8.816E-02	Half-Life	too short	
	1131.51			-1.781E+02	8.816E-02	Half-Life	too short	
	1260.41	*		2.527E+01	8.816E-02	Half-Life	too short	
	1457.56			2.738E+02	8.816E-02	Half-Life	too short	
	1678.03			-8.889E+01	8.816E-02	Half-Life	too short	
	1706.46			-2.036E+02	8.816E-02	Half-Life	too short	
	1791.20			-1.657E+02	8.816E-02	Half-Life	too short	
	66.91			-2.883E-01	3.240E-01	4.884E-01	7.559E-02	-0.590
	86.29			-2.242E-01	3.450E-01	5.208E-01	7.051E-02	-0.430
	153.22			1.464E-01	2.433E-01	4.155E-01	2.826E-02	0.352
	163.89			1.858E-01	4.112E-01	6.930E-01	4.654E-02	0.268
	176.55			2.093E-02	1.410E-01	2.318E-01	1.380E-02	0.090
	273.65			8.912E-02	1.735E-01	2.911E-01	1.924E-02	0.306
	340.57			-4.372E-03	4.824E-02	7.998E-02	5.005E-03	-0.055
	818.51			-2.302E-02	2.884E-02	4.139E-02	3.158E-03	-0.556
BA-137M	1048.07	*		-2.477E-02	4.318E-02	6.326E-02	5.038E-03	-0.391
	1235.34			3.260E-02	1.614E-01	2.760E-01	2.835E-02	0.118
	661.65	*		-1.542E-02	1.948E-02	2.723E-02	1.391E-03	-0.566
CS-137	661.65	*		-1.630E-02	2.059E-02	2.878E-02	1.478E-03	-0.566
CE-139	165.85	*		3.703E-03	1.575E-02	2.611E-02	1.331E-03	0.142
BA-140	162.64			-6.201E-02	2.849E-01	4.559E-01	2.710E-02	-0.136
LA-140	304.84			5.756E-01	5.150E-01	9.097E-01	2.484E-01	0.633
	423.70			1.178E-01	7.709E-01	1.298E+00	4.125E-01	0.091
	537.32	*		2.626E-02	1.035E-01	1.747E-01	5.681E-02	0.150
	328.77			-6.419E-02	1.150E-01	1.822E-01	1.201E-02	-0.352
	432.53			4.242E-01	8.667E-01	1.511E+00	9.741E-02	0.281
	487.03			-1.631E-02	5.334E-02	8.405E-02	5.551E-03	-0.194
	751.79			-4.954E-02	6.447E-01	1.021E+00	7.835E-02	-0.049
	815.85			3.556E-02	1.195E-01	2.098E-01	1.824E-02	0.169
	867.82			-2.880E-01	6.055E-01	9.620E-01	8.646E-02	-0.299
	919.63			-1.037E-01	8.760E-01	1.419E+00	1.547E-01	-0.073
	925.24			-5.021E-02	3.895E-01	6.305E-01	5.932E-02	-0.080

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1596.49		*	6.818E-03	3.662E-02	6.386E-02	4.381E-03	0.107
CE-141	145.44		*	3.230E-03	2.689E-02	4.440E-02	2.504E-03	0.073
CE-143	57.37			-4.194E+00	2.601E+01	4.309E+01	4.431E+00	-0.097
	231.56			-4.055E+01	5.840E+01	8.551E+01	2.649E+01	-0.474
	293.26		*	2.125E-01	2.965E+00	5.019E+00	1.036E+00	0.042
	350.59			-1.049E+01	4.203E+01	6.467E+01	1.971E+01	-0.162
	490.36			1.096E+01	6.226E+01	1.047E+02	3.249E+01	0.105
	664.57			3.745E+00	2.675E+01	4.427E+01	1.402E+01	0.085
	721.93			5.996E+00	3.245E+01	5.369E+01	1.536E+01	0.112
CE-144	80.11			-4.492E-01	9.892E-01	1.591E+00	1.458E-01	-0.282
	133.54		*	1.181E-02	1.031E-01	1.705E-01	2.408E-02	0.069
PM-144	476.78			4.609E-03	3.653E-02	6.114E-02	4.271E-03	0.075
	618.01			2.365E-03	1.867E-02	3.088E-02	1.780E-03	0.077
	696.49		*	-1.486E-02	1.984E-02	2.810E-02	1.580E-03	-0.529
	778.57			-9.183E-01	1.215E+00	1.783E+00	1.236E-01	-0.515
PR-144	696.49		*	-1.004E+00	1.340E+00	1.898E+00	1.067E-01	-0.529
	1489.15			-2.753E+00	7.209E+00	1.031E+01	7.357E-01	-0.267
PM-146	453.90		*	-5.510E-03	2.607E-02	4.197E-02	3.635E-03	-0.131
	633.02			-5.844E-01	9.431E-01	1.359E+00	4.994E-01	-0.430
	735.90			-6.285E-02	7.845E-02	1.023E-01	2.862E-02	-0.614
	747.13			-6.758E-03	4.651E-02	7.264E-02	9.300E-03	-0.093
ND-147	91.11			1.444E-02	1.091E-01	1.801E-01	1.771E-02	0.080
	319.41			2.118E-01	1.244E+00	2.120E+00	1.252E-01	0.100
	439.89			1.243E+00	2.157E+00	3.808E+00	2.228E-01	0.327
	531.02		*	-1.124E-01	2.126E-01	3.208E-01	4.333E-02	-0.350
PM-149	285.90		*	-5.126E-01	7.079E+00	1.185E+01	1.680E+00	-0.043
EU-152	121.78			2.829E-03	4.002E-02	6.616E-02	5.087E-03	0.043
	244.69			9.491E-02	1.800E-01	3.028E-01	1.713E-02	0.313
	344.27		*	3.536E-02	5.554E-02	9.837E-02	6.520E-03	0.359
	443.98			-5.463E-01	4.908E-01	6.778E-01	3.968E-02	-0.806
	778.89			-1.072E-01	1.419E-01	2.081E-01	1.444E-02	-0.515
	867.32			-1.339E-01	5.024E-01	8.260E-01	7.035E-02	-0.162
	964.01			-1.724E-02	1.434E-01	2.328E-01	1.984E-02	-0.074
	1085.78			1.049E-01	2.071E-01	3.736E-01	2.629E-02	0.281
	1112.02			-1.336E-02	1.535E-01	2.478E-01	1.647E-02	-0.054
	1407.95			2.234E-03	9.228E-02	1.504E-01	1.094E-02	0.015
GD-153	69.67			4.395E-01	8.016E-01	1.390E+00	1.214E-01	0.316
	83.37			-1.103E+00	7.116E+00	1.113E+01	1.045E+00	-0.099
	97.43		*	-1.462E-03	4.283E-02	6.206E-02	5.070E-03	-0.024
	103.18			5.724E-03	4.920E-02	8.208E-02	6.134E-03	0.070
EU-154	123.07			5.030E-03	2.802E-02	4.667E-02	4.405E-03	0.108
	247.94			6.130E-02	2.117E-01	3.483E-01	3.297E-02	0.176
	591.81			2.110E-04	3.812E-01	6.209E-01	5.973E-02	0.000
	723.30			4.309E-03	1.003E-01	1.627E-01	1.183E-02	0.026
	756.87			4.908E-03	4.538E-01	7.302E-01	7.739E-02	0.007
	873.19			-4.052E-02	1.806E-01	2.906E-01	3.559E-02	-0.139
	996.32			-6.559E-02	1.802E-01	2.749E-01	4.826E-02	-0.239
	1004.76			-2.369E-02	1.155E-01	1.837E-01	2.066E-02	-0.129
	1274.45		*	1.474E-02	5.573E-02	9.664E-02	9.594E-03	0.153

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	48.70			2.137E-01	1.719E+00	2.923E+00	2.357E-01	0.073
	60.01			-2.468E+00	3.036E+00	4.782E+00	4.154E-01	-0.516
	86.54			-4.275E-02	4.735E-02	6.635E-02	6.449E-03	-0.644
TB-160	105.31	*		2.335E-03	5.157E-02	8.549E-02	6.305E-03	0.027
	86.79			-1.072E-01	1.180E-01	1.651E-01	1.595E-02	-0.650
	197.04			1.491E-01	2.914E-01	4.907E-01	2.612E-02	0.304
	215.65			4.107E-02	3.704E-01	6.032E-01	3.296E-02	0.068
	298.57			1.957E-02	5.774E-02	9.991E-02	5.871E-03	0.196
	879.36	*		-3.902E-02	7.629E-02	1.161E-01	1.015E-02	-0.336
	962.29			7.023E-02	2.591E-01	4.485E-01	3.830E-02	0.157
	966.15			-7.235E-02	9.636E-02	1.378E-01	1.172E-02	-0.525
	1177.93			9.482E-02	1.508E-01	2.799E-01	1.593E-02	0.339
	1271.85			1.935E-01	3.146E-01	5.845E-01	3.901E-02	0.331
HO-166M	80.57			-4.256E-02	1.260E-01	2.044E-01	1.879E-02	-0.208
	184.41	+		8.973E-03	2.540E-02	3.352E-02	1.752E-03	0.268
	280.46			5.334E-03	4.494E-02	7.656E-02	4.459E-03	0.070
	410.95			-3.480E-02	1.350E-01	2.174E-01	1.264E-02	-0.160
	711.68	*		-1.045E-03	3.794E-02	6.092E-02	3.565E-03	-0.017
	752.31			3.479E-02	1.532E-01	2.557E-01	1.661E-02	0.136
	810.29			5.179E-03	3.401E-02	5.825E-02	4.357E-03	0.089
	51.35			-9.261E+00	2.058E+01	3.335E+01	2.899E+00	-0.278
TM-171	52.39			-1.955E+00	1.024E+01	1.695E+01	1.489E+00	-0.115
	59.40			-2.076E+01	1.620E+01	2.441E+01	2.120E+00	-0.851
	66.72	*		-1.857E+01	1.633E+01	2.426E+01	2.110E+00	-0.765
LU-176	88.36			-6.944E-02	9.556E-02	1.286E-01	1.247E-02	-0.540
	201.83			-1.289E-02	1.503E-02	2.236E-02	1.198E-03	-0.576
	306.84	*		4.256E-03	1.395E-02	2.408E-02	1.418E-03	0.177
	401.10			-1.772E-01	3.831E+00	6.329E+00	3.667E-01	-0.028
LU-177	112.95			6.700E-02	4.344E-01	7.244E-01	4.750E-02	0.092
	208.36	*		6.581E-02	2.824E-01	4.652E-01	2.517E-02	0.141
LU-177M	52.97			-2.867E-01	1.043E+00	1.715E+00	1.511E-01	-0.167
	54.07			5.079E-02	5.317E-01	8.998E-01	7.952E-02	0.056
	61.30			-2.640E-02	9.180E-01	1.490E+00	1.294E-01	-0.018
	121.62			7.042E-03	2.004E-01	3.305E-01	1.954E-02	0.021
	147.16			-2.693E-01	3.116E-01	4.709E-01	2.526E-02	-0.572
	171.86			1.656E-02	2.507E-01	4.098E-01	2.104E-02	0.040
	218.09			4.403E-01	4.536E-01	7.909E-01	4.336E-02	0.557
	268.79			-1.514E-01	4.282E-01	6.589E-01	3.808E-02	-0.230
	319.02			1.531E-02	1.414E-01	2.396E-01	1.415E-02	0.064
	367.43			2.086E-01	5.034E-01	8.748E-01	5.123E-02	0.238
	413.65	*		-3.775E-03	9.383E-02	1.549E-01	9.010E-03	-0.024
	56.28			5.913E-03	5.191E-01	8.720E-01	7.678E-02	0.007
	57.53			-1.489E-01	2.855E-01	4.597E-01	4.028E-02	-0.324
	65.20			-5.750E-01	5.118E-01	7.641E-01	6.638E-02	-0.753
HF-181	133.02			-4.461E-03	3.081E-02	4.997E-02	2.805E-03	-0.089
	136.25			-1.009E-01	2.170E-01	3.424E-01	1.900E-02	-0.295
	345.85			-5.910E-02	1.038E-01	1.639E-01	9.667E-03	-0.361
	482.03	*		6.621E-03	2.029E-02	3.487E-02	2.039E-03	0.190
	56.28			2.421E-03	2.174E-01	3.652E-01	3.215E-02	0.007
W-181	56.28			2.421E-03	2.174E-01	3.652E-01	3.215E-02	0.007



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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TA-182	57.53			-6.240E-02	1.197E-01	1.927E-01	1.688E-02	-0.324
	65.20	*		-2.391E-01	2.128E-01	3.177E-01	2.760E-02	-0.753
	67.75			3.071E-03	5.790E-02	9.413E-02	8.196E-03	0.033
	100.10			-2.893E-02	8.638E-02	1.340E-01	1.048E-02	-0.216
	152.43			9.282E-02	1.669E-01	2.842E-01	1.502E-02	0.327
	222.10			-1.262E-01	1.876E-01	2.834E-01	1.561E-02	-0.445
	1001.68			-3.345E-01	1.071E+00	1.562E+00	1.268E-01	-0.214
	1121.28			-5.973E-03	6.454E-02	1.041E-01	6.767E-03	-0.057
	1189.05			-1.940E-01	1.422E-01	1.516E-01	8.796E-03	-1.280
	1221.42	*		-2.913E-02	7.518E-02	1.105E-01	6.785E-03	-0.264
RE-183	1230.97			-3.407E-02	2.061E-01	3.246E-01	2.025E-02	-0.105
	57.98			-7.150E-02	1.111E-01	1.767E-01	1.546E-02	-0.405
	59.32			-8.308E-02	6.289E-02	9.435E-02	8.200E-03	-0.881
	67.20			-1.860E-02	1.041E-01	1.666E-01	1.450E-02	-0.112
	162.32	*		-2.038E-02	5.626E-02	8.901E-02	4.578E-03	-0.229
	208.81			2.206E-01	4.522E-01	7.616E-01	4.123E-02	0.290
RE-184	291.72			-3.397E-01	4.906E-01	7.746E-01	4.538E-02	-0.439
	57.98			-2.734E-01	4.248E-01	6.758E-01	5.910E-02	-0.405
	59.32			-3.174E-01	2.403E-01	3.605E-01	3.133E-02	-0.881
	67.20			-7.108E-02	3.978E-01	6.368E-01	5.540E-02	-0.112
	161.27			-6.324E-03	1.867E-01	3.034E-01	1.565E-02	-0.021
	216.55			1.443E-01	1.380E-01	2.424E-01	1.326E-02	0.595
	252.85	*		2.848E-02	1.351E-01	2.206E-01	1.258E-02	0.129
	318.01			-6.334E-02	2.362E-01	3.856E-01	2.277E-02	-0.164
	792.07			-1.336E-01	5.214E-01	8.399E-01	6.017E-02	-0.159
	903.28			4.865E-02	5.087E-01	8.609E-01	7.803E-02	0.057
OS-185	920.93			-1.084E-01	1.860E-01	2.646E-01	2.360E-02	-0.410
	59.72			-1.708E-01	1.727E-01	2.677E-01	2.325E-02	-0.638
	61.14			6.282E-02	8.900E-02	1.562E-01	1.356E-02	0.402
	69.30			4.992E-02	1.419E-01	2.428E-01	2.120E-02	0.206
	592.07			-3.630E-02	1.455E+00	2.361E+00	1.307E-01	-0.015
	646.12	*		1.701E-02	2.608E-02	4.592E-02	2.396E-03	0.370
	717.42			-1.353E-01	5.365E-01	8.313E-01	4.939E-02	-0.163
	874.81			-1.660E-01	3.065E-01	4.610E-01	3.991E-02	-0.360
	880.27			-2.462E-02	4.182E-01	6.903E-01	6.049E-02	-0.036
	155.03	*		3.875E-02	8.632E-02	1.456E-01	7.641E-03	0.266
RE-188	477.96			-8.277E-01	1.534E+00	2.332E+00	1.365E-01	-0.355
	633.10			-1.076E+00	1.751E+00	2.599E+00	1.379E-01	-0.414
	63.58			2.036E+00	3.002E+01	4.906E+01	4.261E+00	0.041
W-188	227.08			4.707E+00	6.345E+00	1.090E+01	6.041E-01	0.432
	290.67	*		-5.770E-01	3.935E+00	6.541E+00	3.831E-01	-0.088
IR-192	295.96			1.308E-02	5.541E-02	9.504E-02	5.664E-03	0.138
	308.46			-4.974E-02	5.248E-02	8.013E-02	4.775E-03	-0.621
	316.51	*		-3.394E-03	1.905E-02	3.143E-02	1.865E-03	-0.108
	468.07			2.499E-02	3.158E-02	5.742E-02	3.867E-03	0.435
AU-195	604.41			-1.411E-01	2.699E-01	4.087E-01	4.571E-02	-0.345
	612.46			-1.617E-01	4.072E-01	6.269E-01	4.571E-02	-0.258
	65.12			-1.074E-01	1.002E-01	1.504E-01	1.306E-02	-0.714
	66.83			-5.656E-02	5.319E-02	7.960E-02	6.923E-03	-0.711

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	75.70			1.091E-02	8.454E-02	1.409E-01	1.258E-02	0.077
	98.88	*		-6.691E-04	1.219E-01	1.771E-01	1.413E-02	-0.004
	129.76			-4.815E-02	1.399E+00	2.290E+00	1.302E-01	-0.021
TL-200	367.94	*		-7.109E-08	1.399E+00	Half-Life too short		
	579.30			-6.546E-06	1.399E+00	Half-Life too short		
	828.27			-2.437E-05	1.399E+00	Half-Life too short		
	1205.75			-1.092E-05	1.399E+00	Half-Life too short		
TL-201	68.90			2.377E-01	5.623E-01	9.671E-01	8.436E-02	0.246
	70.82			-1.366E-01	3.089E-01	4.985E-01	4.368E-02	-0.274
	80.30			-1.823E-01	5.510E-01	8.944E-01	8.208E-02	-0.204
	135.34			1.491E+00	3.070E+00	5.219E+00	2.906E-01	0.286
	167.43	*		5.831E-01	8.750E-01	1.498E+00	7.647E-02	0.389
TL-202	68.90			6.349E-02	1.502E-01	2.583E-01	2.253E-02	0.246
	70.82			-3.638E-02	8.229E-02	1.328E-01	1.164E-02	-0.274
	80.30			-4.858E-02	1.468E-01	2.383E-01	2.187E-02	-0.204
	439.56	*		2.047E-02	2.654E-02	4.784E-02	2.799E-03	0.428
HG-203	72.83			-2.071E-01	4.656E-01	7.504E-01	1.028E-01	-0.276
	72.87			-4.140E-02	2.587E-01	4.265E-01	5.687E-02	-0.097
	82.60			3.289E-01	4.575E-01	7.966E-01	1.131E-01	0.413
	279.20	*		-6.259E-03	1.967E-02	3.222E-02	1.990E-03	-0.194
BI-207	72.80			-2.127E-02	8.382E-02	1.372E-01	1.210E-02	-0.155
	74.97			2.428E-02	4.646E-02	8.027E-02	7.143E-03	0.302
	84.90			-4.758E-02	9.085E-02	1.376E-01	1.308E-02	-0.346
	569.67			1.291E-02	1.943E-02	3.423E-02	1.929E-03	0.377
	1063.62	*		1.582E-02	2.525E-02	4.680E-02	3.439E-03	0.338
	1770.23			-4.542E-02	3.399E-01	5.434E-01	3.364E-02	-0.084
TL-207	81.07			-1.891E-02	9.752E-02	1.599E-01	1.475E-02	-0.118
	83.78			-1.834E-02	6.135E-02	9.481E-02	8.930E-03	-0.193
	94.90			6.510E-02	1.283E-01	1.959E-01	1.672E-02	0.332
	122.32			5.938E-02	9.535E-01	1.575E+00	1.066E-01	0.038
	144.24			6.599E-03	3.781E-01	5.792E-01	4.010E-02	0.011
	154.21			5.824E-02	2.141E-01	3.567E-01	2.344E-02	0.163
	269.46			-7.244E-02	1.099E-01	1.589E-01	9.606E-03	-0.456
	323.87	*		4.703E-02	3.460E-01	5.877E-01	9.728E-02	0.080
	338.28			-2.255E-01	5.337E-01	8.547E-01	9.052E-02	-0.264
	445.03			-1.414E+00	1.203E+00	1.639E+00	1.689E-01	-0.862
TL-208	277.35			-5.674E-02	2.032E-01	3.143E-01	3.321E-02	-0.181
	510.84			-1.959E-01	1.558E-01	2.811E-01	2.855E-02	-0.697
	583.14	*		3.071E-03	2.257E-02	3.635E-02	2.360E-03	0.084
	860.37			6.290E-02	1.680E-01	2.956E-01	2.672E-02	0.213
PO-209	260.50			1.257E+00	5.264E+00	8.626E+00	4.952E-01	0.146
	262.80			-1.303E+01	1.548E+01	2.254E+01	1.296E+00	-0.578
	896.60	*		2.001E+00	4.008E+00	7.226E+00	6.559E-01	0.277
BI-210	46.50	*		-1.517E+00	3.083E+00	4.445E+00	3.460E-01	-0.341
PB-210	46.50	*		-1.517E+00	3.083E+00	4.445E+00	3.460E-01	-0.341
PO-210	46.50	*		-1.517E+00	3.082E+00	4.445E+00	2.982E-01	-0.341
BI-211	72.87			-2.288E-01	1.430E+00	2.357E+00	2.079E-01	-0.097
	351.07	*		2.366E-02	1.250E-01	2.003E-01	1.305E-02	0.118
PB-211	404.84	*		2.660E-02	5.262E-01	8.778E-01	5.472E-01	0.030

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-212		427.08		-1.244E-01	1.184E+00	1.932E+00	1.194E+00	-0.064
		831.96		4.340E-02	6.771E-01	1.143E+00	7.149E-01	0.038
		727.18	*	3.837E-02	1.607E-01	2.685E-01	2.131E-02	0.143
		785.46		7.925E-01	9.447E-01	1.773E+00	1.250E-01	0.447
PB-212		1620.62		-4.450E-01	6.871E-01	9.021E-01	6.118E-02	-0.493
		74.81		8.641E-02	1.599E-01	2.763E-01	3.565E-02	0.313
		77.11		-3.250E-02	9.241E-02	1.485E-01	1.336E-02	-0.219
		87.30		-1.579E-01	1.901E-01	2.505E-01	3.491E-02	-0.630
PO-212	+	238.63	*	2.321E-02	3.667E-02	5.073E-02	3.647E-03	0.458
		300.09		-3.002E-01	4.086E-01	6.386E-01	5.303E-02	-0.470
		74.81		8.641E-02	1.599E-01	2.763E-01	3.565E-02	0.313
		77.11		-3.250E-02	9.241E-02	1.485E-01	1.336E-02	-0.219
BI-214		87.30		-1.579E-01	1.901E-01	2.505E-01	3.491E-02	-0.630
		115.19		-4.645E-03	1.835E+00	3.022E+00	1.928E-01	-0.002
	+	238.63	*	2.321E-02	3.667E-02	5.073E-02	3.647E-03	0.458
		300.09		-3.002E-01	4.086E-01	6.386E-01	5.303E-02	-0.470
PB-214		609.31	*	-1.070E-02	4.826E-02	7.167E-02	5.388E-03	-0.149
		1120.29		-1.106E-01	1.506E-01	2.099E-01	1.951E-02	-0.527
		1764.49		1.096E-02	1.172E-01	2.072E-01	1.288E-02	0.053
		74.81		1.489E-01	2.754E-01	4.762E-01	5.511E-02	0.313
PO-214		77.11		-5.571E-02	1.585E-01	2.545E-01	3.001E-02	-0.219
		87.30		-2.705E-01	3.252E-01	4.291E-01	5.319E-02	-0.630
		241.98		-1.453E-01	2.074E-01	2.614E-01	2.079E-02	-0.556
		295.21		2.336E-02	7.574E-02	1.307E-01	1.120E-02	0.179
PO-215		351.92	*	2.233E-03	4.334E-02	6.848E-02	5.716E-03	0.033
		74.81		1.489E-01	2.754E-01	4.762E-01	5.511E-02	0.313
		77.11		-5.571E-02	1.585E-01	2.545E-01	3.001E-02	-0.219
		87.30		-2.705E-01	3.252E-01	4.291E-01	5.319E-02	-0.630
PO-216		241.98		-1.453E-01	2.074E-01	2.614E-01	2.079E-02	-0.556
		295.21		2.336E-02	7.574E-02	1.307E-01	1.120E-02	0.179
		351.92	*	2.233E-03	4.334E-02	6.848E-02	5.716E-03	0.033
		81.07		-1.891E-02	9.752E-02	1.599E-01	1.475E-02	-0.118
PO-218		83.78		-1.834E-02	6.135E-02	9.481E-02	8.930E-03	-0.193
		94.90		6.510E-02	1.283E-01	1.959E-01	1.672E-02	0.332
		122.32		5.938E-02	9.535E-01	1.575E+00	1.066E-01	0.038
		144.24		6.599E-03	3.781E-01	5.792E-01	4.010E-02	0.011
PO-216		154.21		5.824E-02	2.141E-01	3.567E-01	2.344E-02	0.163
		269.46		-7.244E-02	1.099E-01	1.589E-01	9.606E-03	-0.456
		323.87	*	4.703E-02	3.460E-01	5.877E-01	9.728E-02	0.080
		338.28		-2.255E-01	5.337E-01	8.547E-01	9.052E-02	-0.264
PO-216		445.03		-1.414E+00	1.203E+00	1.639E+00	1.689E-01	-0.862
		74.81		8.641E-02	1.599E-01	2.763E-01	3.565E-02	0.313
		77.11		-3.250E-02	9.241E-02	1.485E-01	1.336E-02	-0.219
		87.30		-1.579E-01	1.901E-01	2.505E-01	3.491E-02	-0.630
PO-218	+	238.63	*	2.321E-02	3.667E-02	5.073E-02	3.647E-03	0.458
		300.09		-3.002E-01	4.086E-01	6.386E-01	5.303E-02	-0.470
		74.81		1.489E-01	2.754E-01	4.762E-01	5.511E-02	0.313
		77.11		-5.571E-02	1.585E-01	2.545E-01	3.001E-02	-0.219
		87.30		-2.705E-01	3.252E-01	4.291E-01	5.319E-02	-0.630

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	241.98			-1.453E-01	2.074E-01	2.614E-01	2.079E-02	-0.556
	295.21			2.336E-02	7.574E-02	1.307E-01	1.120E-02	0.179
	351.92	*		2.233E-03	4.334E-02	6.848E-02	5.716E-03	0.033
RN-219	271.23			-1.106E-01	1.442E-01	2.060E-01	1.668E-02	-0.537
	401.81	*		-2.091E-01	2.437E-01	3.633E-01	4.943E-02	-0.575
RN-220	549.76	*		8.176E+00	1.576E+01	2.747E+01	1.568E+00	0.298
RA-223	81.07			-1.891E-02	9.752E-02	1.599E-01	1.475E-02	-0.118
	83.78			-1.834E-02	6.135E-02	9.481E-02	8.930E-03	-0.193
	94.90			6.510E-02	1.283E-01	1.959E-01	1.672E-02	0.332
	122.32			5.938E-02	9.535E-01	1.575E+00	1.066E-01	0.038
	144.24			6.599E-03	3.781E-01	5.792E-01	4.010E-02	0.011
	154.21			5.824E-02	2.141E-01	3.567E-01	2.344E-02	0.163
	269.46			-7.244E-02	1.099E-01	1.589E-01	9.606E-03	-0.456
	323.87	*		4.703E-02	3.460E-01	5.877E-01	9.728E-02	0.080
	338.28			-2.255E-01	5.337E-01	8.547E-01	9.052E-02	-0.264
	445.03			-1.414E+00	1.203E+00	1.639E+00	1.689E-01	-0.862
RA-224	240.98	*		3.544E-03	3.566E-01	4.999E-01	2.816E-02	0.007
RA-226	609.31	*		-1.070E-02	4.826E-02	7.167E-02	5.388E-03	-0.149
	1120.29			-1.106E-01	1.506E-01	2.099E-01	1.951E-02	-0.527
	1764.49			1.096E-02	1.172E-01	2.072E-01	1.288E-02	0.053
AC-227	79.80			-2.649E-01	7.671E-01	1.241E+00	2.695E-01	-0.213
	236.00			5.725E-02	1.325E-01	1.958E-01	2.025E-02	0.292
	256.20	*		-1.189E-01	2.299E-01	3.486E-01	4.855E-02	-0.341
	286.10			1.767E-01	8.541E-01	1.464E+00	1.696E-01	0.121
	299.80			-4.699E-01	7.611E-01	1.200E+00	1.958E-01	-0.392
	304.40			9.611E-01	1.032E+00	1.854E+00	3.213E-01	0.518
	334.20			2.923E-02	1.273E+00	2.136E+00	3.922E-01	0.014
TH-227	79.80			-2.649E-01	7.672E-01	1.241E+00	2.729E-01	-0.213
	94.00	+		7.610E-01	1.795E+00	1.920E+00	4.184E-01	0.396
	236.00			5.725E-02	1.325E-01	1.958E-01	1.749E-02	0.292
	256.20	*		-1.189E-01	2.301E-01	3.486E-01	5.882E-02	-0.341
	286.10			1.767E-01	8.720E-01	1.464E+00	1.467E+00	0.121
	299.80			-4.699E-01	7.611E-01	1.200E+00	1.958E-01	-0.392
	304.40			9.611E-01	1.032E+00	1.854E+00	3.213E-01	0.518
	334.20			2.923E-02	1.273E+00	2.136E+00	3.922E-01	0.014
AC-228	338.32			-5.612E-02	1.295E-01	2.039E-01	8.317E-02	-0.275
	911.07	*		6.278E-02	6.361E-02	1.235E-01	1.425E-02	0.508
	969.11			7.593E-03	1.327E-01	2.219E-01	5.167E-02	0.034
RA-228	338.32			-5.612E-02	1.295E-01	2.039E-01	8.317E-02	-0.275
	911.07	*		6.278E-02	6.361E-02	1.235E-01	1.425E-02	0.508
	969.11			7.593E-03	1.327E-01	2.219E-01	5.167E-02	0.034
TH-228	74.81			8.717E-02	1.611E-01	2.788E-01	2.499E-02	0.313
	77.11			-3.278E-02	9.322E-02	1.498E-01	1.348E-02	-0.219
	87.30			-1.593E-01	1.911E-01	2.527E-01	2.453E-02	-0.630
	238.63	+	*	2.341E-02	3.699E-02	5.118E-02	3.679E-03	0.458
	300.09			-3.029E-01	4.485E-01	6.442E-01	3.797E-01	-0.470
TH-229	85.43			-8.340E-02	9.129E-02	1.340E-01	1.279E-02	-0.623
	88.47			-3.705E-02	5.511E-02	7.473E-02	7.227E-03	-0.496
	100.00			-2.894E-02	9.337E-02	1.452E-01	1.138E-02	-0.199

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	193.63	*		1.427E-01	2.966E-01	4.977E-01	2.637E-02	0.287
	210.97			1.453E-01	3.672E-01	6.142E-01	3.335E-02	0.237
	609.31	*		-1.070E-02	4.826E-02	7.167E-02	5.388E-03	-0.149
	1120.29			-1.106E-01	1.506E-01	2.099E-01	1.951E-02	-0.527
	1764.49			1.096E-02	1.172E-01	2.072E-01	1.288E-02	0.053
PA-231	283.67	*		-1.299E-01	8.592E-01	1.429E+00	1.971E-01	-0.091
TH-231	301.29			-3.345E-01	3.023E-01	4.505E-01	4.729E-02	-0.742
	81.07			-1.891E-02	9.752E-02	1.599E-01	1.475E-02	-0.118
	83.78			-1.834E-02	6.135E-02	9.481E-02	8.930E-03	-0.193
	94.90			6.510E-02	1.283E-01	1.959E-01	1.672E-02	0.332
	122.32			5.938E-02	9.535E-01	1.575E+00	1.066E-01	0.038
U-231	144.24			6.599E-03	3.781E-01	5.792E-01	4.010E-02	0.011
	154.21			5.824E-02	2.141E-01	3.567E-01	2.344E-02	0.163
	269.46			-7.244E-02	1.099E-01	1.589E-01	9.606E-03	-0.456
	323.87	*		4.703E-02	3.460E-01	5.877E-01	9.728E-02	0.080
	338.28			-2.255E-01	5.337E-01	8.547E-01	9.052E-02	-0.264
	445.03			-1.414E+00	1.203E+00	1.639E+00	1.689E-01	-0.862
	84.21			-4.655E-01	9.351E-01	1.425E+00	1.347E-01	-0.327
	92.29		+	2.629E-01	6.179E-01	7.352E-01	6.581E-02	0.358
	95.87	*		-1.974E-02	2.123E-01	3.059E-01	2.566E-02	-0.065
	108.00			-2.339E-01	3.463E-01	5.390E-01	3.767E-02	-0.434
TH-232	338.32			-5.612E-02	1.275E-01	2.039E-01	1.205E-02	-0.275
PA-233	911.07	*		6.278E-02	6.361E-02	1.235E-01	1.425E-02	0.508
	969.11			7.593E-03	1.327E-01	2.219E-01	5.167E-02	0.034
	75.28			6.950E-01	1.362E+00	2.345E+00	3.638E-01	0.296
	86.59			-7.044E-01	7.909E-01	1.078E+00	2.929E-01	-0.653
	300.12			-1.570E-01	2.116E-01	3.293E-01	4.437E-02	-0.477
PA-234	311.98	*		-4.763E-03	3.571E-02	5.919E-02	3.700E-03	-0.080
	340.50			-2.492E-02	3.277E-01	5.439E-01	1.251E-01	-0.046
	398.62			5.451E-01	1.145E+00	1.988E+00	5.139E-01	0.274
	415.76			-4.046E-01	9.651E-01	1.518E+00	3.126E-01	-0.267
	63.00			2.393E-01	9.762E-01	1.614E+00	2.508E-01	0.148
	94.67			6.138E-02	9.514E-02	1.466E-01	1.812E-02	0.419
	98.44			4.513E-02	5.398E-02	7.676E-02	4.275E-02	0.588
	99.86			-6.556E-02	2.371E-01	3.698E-01	2.905E-02	-0.177
	111.00			5.332E-02	9.292E-02	1.596E-01	1.727E-02	0.334
	131.20			-2.385E-02	5.282E-02	8.347E-02	4.718E-03	-0.286
	152.70			9.373E-02	1.728E-01	2.928E-01	4.575E-02	0.320
	186.00		+	3.230E-01	9.194E-01	1.231E+00	3.748E-01	0.262
	226.40			8.020E-04	2.189E-01	3.523E-01	4.027E-02	0.002
	227.20			1.718E-01	2.286E-01	3.929E-01	2.179E-02	0.437
	248.90			-2.671E-01	4.917E-01	7.416E-01	1.591E-01	-0.360
	293.70			1.275E-01	3.719E-01	6.426E-01	1.035E-01	0.198
	369.80			-7.575E-02	4.900E-01	8.028E-01	1.673E-01	-0.094
	568.70			4.166E-01	6.505E-01	1.141E+00	6.431E-02	0.365
	569.50			1.289E-01	1.743E-01	3.092E-01	1.742E-02	0.417
	574.00			-3.907E-01	9.036E-01	1.386E+00	7.785E-02	-0.282
	699.00			4.275E-02	3.361E-01	5.551E-01	9.957E-02	0.077
	706.10			8.228E-01	7.279E-01	1.199E+00	5.290E-01	0.686

## ----- Non-Identified Nuclides -----

Line Energy		Activity	Act error	MDA	MDA error	Act/MDA
Nuclide	Ided (keV) Key	(pCi/GRAM)		(pCi/GRAM)		
	733.00	-6.469E-02	1.993E-01	3.008E-01	6.428E-02	-0.215
	742.81	3.975E-01	7.990E-01	1.319E+00	8.834E-01	0.301
	796.30	2.974E-01	4.718E-01	8.549E-01	2.278E-01	0.348
	805.60	4.953E-01	5.716E-01	1.045E+00	3.168E-01	0.474
	819.60	-1.685E-01	6.438E-01	1.023E+00	3.868E-01	-0.165
	826.30	3.130E-02	3.996E-01	6.777E-01	3.021E-01	0.046
	831.60	-5.966E-02	3.626E-01	5.907E-01	1.750E-01	-0.101
	876.40	-1.493E-01	4.875E-01	7.282E-01	7.487E-01	-0.205
	880.51	-1.453E-02	1.621E-01	2.662E-01	2.334E-02	-0.055
	883.24	4.869E-02	1.794E-01	3.062E-01	2.059E-01	0.159
	899.00	2.473E-02	4.549E-01	7.643E-01	3.348E-01	0.032
	925.00	-1.022E-01	5.654E-01	9.049E-01	8.039E-02	-0.113
	926.50	9.228E-03	8.913E-02	1.510E-01	3.830E-02	0.061
	946.00 *	-1.342E-02	1.589E-01	2.597E-01	4.882E-02	-0.052
	949.00	7.938E-02	2.293E-01	4.044E-01	3.505E-02	0.196
	980.50	-9.875E-02	3.701E-01	5.798E-01	4.842E-02	-0.170
	1394.10	-1.554E-01	5.696E-01	8.247E-01	5.355E-01	-0.188
PA-234M	766.42	-2.783E+00	5.762E+00	8.105E+00	4.089E+00	-0.343
	1001.03 *	2.020E-01	2.465E+00	3.893E+00	3.715E-01	0.052
TH-234	63.29 *	1.203E-01	8.159E-01	1.341E+00	2.416E-01	0.090
	92.38	1.969E-01	4.640E-01	5.504E-01	1.004E-01	0.358
U-234	609.31 *	-1.070E-02	4.826E-02	7.167E-02	5.388E-03	-0.149
	1120.29	-1.106E-01	1.506E-01	2.099E-01	1.951E-02	-0.527
	1764.49	1.096E-02	1.172E-01	2.072E-01	1.288E-02	0.053
U-235	89.95	1.134E-01	5.611E-01	8.361E-01	2.598E-01	0.136
	93.35	2.368E-01	5.601E-01	6.458E-01	1.813E-01	0.367
	105.00	1.887E-01	4.969E-01	8.413E-01	2.481E-01	0.224
	143.76 *	-1.207E-02	1.185E-01	1.802E-01	2.915E-02	-0.067
	163.35	-1.177E-02	2.561E-01	4.156E-01	7.387E-02	-0.028
	185.71	1.196E-02	3.386E-02	4.582E-02	2.399E-03	0.261
	205.31	-1.508E-01	2.655E-01	4.041E-01	7.214E-02	-0.373
NP-236	94.67	4.710E-02	7.208E-02	1.113E-01	9.535E-03	0.423
	98.44	3.415E-02	3.621E-02	5.803E-02	4.663E-03	0.588
	111.00	4.033E-02	7.020E-02	1.208E-01	8.115E-03	0.334
	160.31 *	3.242E-03	4.275E-02	7.009E-02	3.625E-03	0.046
NP-237	86.50 *	-1.036E-01	1.178E-01	1.625E-01	3.702E-02	-0.637
	95.87	-4.979E-02	5.356E-01	7.717E-01	1.895E-01	-0.065
U-238	63.29 *	1.203E-01	8.159E-01	1.341E+00	2.416E-01	0.090
	92.38	1.969E-01	4.629E-01	5.504E-01	4.918E-02	0.358
NP-239	99.55	-2.281E-02	8.361E-02	1.248E-01	9.850E-03	-0.183
	117.00 *	-3.387E-02	1.032E-01	1.657E-01	1.034E-02	-0.204
	209.75	2.106E-01	3.708E-01	6.294E-01	3.412E-02	0.335
	228.18	7.476E-02	1.218E-01	2.068E-01	1.148E-02	0.362
	277.60	-4.427E-02	9.958E-02	1.512E-01	8.793E-03	-0.293
	334.30	-5.558E-03	7.191E-01	1.203E+00	7.106E-02	-0.005
AM-241	59.54 *	-1.157E-01	9.584E-02	1.455E-01	1.354E-02	-0.795
AM-243	74.67 *	1.321E-02	2.592E-02	4.477E-02	3.979E-03	0.295
	86.72	-3.863E+00	4.299E+00	6.024E+00	5.817E-01	-0.641
	117.66	-4.863E-01	2.001E+00	3.232E+00	2.002E-01	-0.150

----- 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			6.835E+00	8.853E+00	1.534E+01	8.352E-01	0.446
	99.55			-2.346E-02	8.600E-02	1.283E-01	1.013E-02	-0.183
	103.76	*		2.620E-02	4.581E-02	7.913E-02	5.863E-03	0.331
	117.00			-3.483E-02	1.061E-01	1.704E-01	1.064E-02	-0.204
	209.75			2.075E-01	3.654E-01	6.202E-01	3.362E-02	0.335
AM-246	228.18			7.551E-02	1.230E-01	2.088E-01	1.159E-02	0.362
	277.60			-4.462E-02	1.003E-01	1.524E-01	8.861E-03	-0.293
	798.80			-5.960E-02	7.623E-02	1.113E-01	8.103E-03	-0.535
	1036.00			-5.689E-02	1.759E-01	2.535E-01	1.954E-02	-0.224
	1062.04			3.535E-02	1.130E-01	1.980E-01	1.459E-02	0.179
CM-247	1078.86	*		-2.413E-02	7.025E-02	1.070E-01	7.637E-03	-0.225
	278.00			-1.623E-01	3.872E-01	6.280E-01	3.652E-02	-0.258
	287.40			7.323E-01	7.106E-01	1.295E+00	7.574E-02	0.565
CF-249	402.60	*		-1.040E-02	2.165E-02	3.405E-02	1.973E-03	-0.305
	252.85			1.097E-01	5.203E-01	8.495E-01	4.844E-02	0.129
	333.44			1.849E-02	9.416E-02	1.605E-01	9.486E-03	0.115
CF-251	387.95	*		-2.903E-02	2.370E-02	3.258E-02	1.885E-03	-0.891
	176.60	*		9.823E-03	6.797E-02	1.117E-01	5.773E-03	0.088
	227.00			1.381E-01	2.035E-01	3.476E-01	1.927E-02	0.397
ANH-511	285.00			-6.000E-02	1.010E+00	1.693E+00	9.884E-02	-0.035
	511.00	*		-4.266E-02	3.345E-02	6.067E-02	3.524E-03	-0.703

# 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]G1202012156
* Acquisition date   : 20-JAN-2010 18:03:29 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 02:00:00.86                                Half life ratio  : 8.000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202012156 Analyst initials: MXR1
* Batch Number       : 940268 Sample Quantity : 1.3990E+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

---- 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	-3.241E-02	1.523E-01	2.553E-01	0.000E+00 NOT IDENT.
NA-22	5.260E-03	1.948E-02	3.471E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.182E+02	0.000E+00	0.000E+00 SHORT HLIF
AL-26	3.436E-03	1.604E-02	2.909E-02	0.000E+00 NOT IDENT.
K-40	-1.074E-01	2.642E-01	4.298E-01	0.000E+00 NOT IDENT.
TI-44	-1.099E-02	1.637E-02	2.786E-02	0.000E+00 NOT IDENT.
SC-46	-5.258E-03	2.116E-02	3.500E-02	0.000E+00 NOT IDENT.
V-48	1.286E-02	2.750E-02	5.098E-02	0.000E+00 NOT IDENT.
CR-51	8.538E-03	1.753E-01	3.120E-01	0.000E+00 NOT IDENT.
MN-52	-3.496E-02	5.633E-02	7.472E-02	0.000E+00 NOT IDENT.
MN-54	1.581E-02	2.237E-02	4.219E-02	0.000E+00 NOT IDENT.
CO-56	4.454E-03	2.168E-02	3.864E-02	0.000E+00 NOT IDENT.
CO-57	6.798E-04	1.329E-02	2.362E-02	0.000E+00 NOT IDENT.
CO-58	9.698E-03	2.086E-02	3.862E-02	0.000E+00 NOT IDENT.
FE-59	7.995E-03	4.233E-02	7.431E-02	0.000E+00 NOT IDENT.
CO-60	1.063E-03	2.056E-02	3.472E-02	0.000E+00 NOT IDENT.
ZN-65	2.376E-02	4.257E-02	7.945E-02	0.000E+00 NOT IDENT.
GE-68	2.079E-01	6.261E-01	1.129E+00	0.000E+00 NOT IDENT.
AS-73	-4.578E-02	4.986E-01	9.100E-01	0.000E+00 NOT IDENT.
AS-74	-2.701E-02	4.230E-02	6.541E-02	0.000E+00 NOT IDENT.
SE-75	1.606E-02	2.254E-02	4.094E-02	0.000E+00 NOT IDENT.
BR-77	-1.736E-01	8.964E-01	1.497E+00	0.000E+00 FAIL ABUN
SR-82	3.558E-02	1.644E-01	2.958E-01	0.000E+00 NOT IDENT.
RB-83	-4.576E-03	3.635E-02	6.131E-02	0.000E+00 NOT IDENT.
RB-84	-3.173E-03	3.553E-02	6.045E-02	0.000E+00 NOT IDENT.
KR-85	-1.235E+01	6.440E+00	9.292E+00	0.000E+00 NOT IDENT.



SR-85	-5.924E-02	3.088E-02	4.456E-02	0.000E+00	NOT IDENT.
RB-86	1.883E-01	3.342E-01	6.234E-01	0.000E+00	NOT IDENT.
Y-88	-1.282E-02	2.239E-02	3.104E-02	0.000E+00	NOT IDENT.
ZR-88	9.517E-03	1.545E-02	2.882E-02	0.000E+00	NOT IDENT.
Y-91	1.102E+00	6.978E+00	1.217E+01	0.000E+00	NOT IDENT.
NB-94	-1.488E-02	1.918E-02	2.816E-02	0.000E+00	NOT IDENT.
NB-95	-1.551E-02	1.963E-02	2.770E-02	0.000E+00	NOT IDENT.
NB-95M	-1.433E-02	6.773E-02	9.818E-02	0.000E+00	NOT IDENT.
ZR-95	1.607E-02	3.752E-02	6.683E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.008E+02	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.984E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.583E-01	1.243E+00	2.031E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.940E+08	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.947E-03	1.897E-02	3.070E-02	0.000E+00	NOT IDENT.
RH-102	1.856E-02	1.535E-02	3.036E-02	0.000E+00	NOT IDENT.
RU-103	-2.640E-03	2.376E-02	3.947E-02	0.000E+00	NOT IDENT.
RH-106	-1.616E-01	1.797E-01	2.599E-01	0.000E+00	NOT IDENT.
RU-106	-1.616E-01	1.790E-01	2.599E-01	0.000E+00	NOT IDENT.
AG-108M	-1.358E-03	1.980E-02	3.415E-02	0.000E+00	NOT IDENT.
CD-109	-2.244E-01	3.934E-01	5.833E-01	0.000E+00	NOT IDENT.
AG-110M	5.330E-03	1.874E-02	3.297E-02	0.000E+00	NOT IDENT.
IN-111	5.361E-02	1.245E-01	2.203E-01	0.000E+00	NOT IDENT.
IN-113M	1.071E-02	2.316E-02	4.251E-02	0.000E+00	NOT IDENT.
SN-113	1.071E-02	2.316E-02	4.251E-02	0.000E+00	NOT IDENT.
IN-114M	-2.061E-02	1.033E-01	1.526E-01	0.000E+00	NOT IDENT.
CD-115	3.088E-01	7.990E-01	1.442E+00	0.000E+00	NOT IDENT.
SN-117M	-2.792E-04	2.107E-02	3.677E-02	0.000E+00	NOT IDENT.
SB-122	-1.221E-03	2.442E-01	4.164E-01	0.000E+00	NOT IDENT.
I-123	0.000E+00	9.503E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	7.690E-04	1.438E-02	2.522E-02	0.000E+00	NOT IDENT.
I-124	5.037E-03	1.509E-01	2.470E-01	0.000E+00	NOT IDENT.
SB-124	2.385E-02	4.010E-02	7.956E-02	0.000E+00	NOT IDENT.
SB-125	2.407E-03	5.124E-02	8.961E-02	0.000E+00	NOT IDENT.
TE-125M	-1.416E+00	4.156E+00	7.201E+00	0.000E+00	NOT IDENT.
I-126	2.689E-02	6.561E-02	1.177E-01	0.000E+00	NOT IDENT.
SB-126	5.041E-03	5.887E-02	9.985E-02	0.000E+00	NOT IDENT.
SN-126	-1.455E-02	3.830E-02	5.805E-02	0.000E+00	NOT IDENT.
SB-127	3.017E-02	2.338E-01	4.013E-01	0.000E+00	NOT IDENT.
XE-127	-2.705E-04	2.042E-02	3.515E-02	0.000E+00	NOT IDENT.
I-131	1.132E-02	3.538E-02	6.429E-02	0.000E+00	NOT IDENT.
TE-132	5.869E-02	9.446E-02	1.701E-01	0.000E+00	NOT IDENT.
BA-133	-1.079E-02	2.507E-02	4.042E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.014E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.198E-02	2.328E-02	4.595E-02	0.000E+00	NOT IDENT.
CS-135	-2.291E-02	8.639E-02	1.425E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.010E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.477E-02	4.232E-02	6.395E-02	0.000E+00	NOT IDENT.
BA-137M	-1.542E-02	1.909E-02	2.778E-02	0.000E+00	NOT IDENT.
CS-137	-1.630E-02	2.018E-02	2.937E-02	0.000E+00	NOT IDENT.
CE-139	3.703E-03	1.543E-02	2.739E-02	0.000E+00	NOT IDENT.
BA-140	2.626E-02	1.014E-01	1.791E-01	0.000E+00	NOT IDENT.
LA-140	6.818E-03	3.589E-02	6.398E-02	0.000E+00	NOT IDENT.
CE-141	3.230E-03	2.635E-02	4.670E-02	0.000E+00	NOT IDENT.
CE-143	2.125E-01	2.905E+00	5.207E+00	0.000E+00	NOT IDENT.
CE-144	1.181E-02	1.010E-01	1.796E-01	0.000E+00	NOT IDENT.
PM-144	-1.486E-02	1.945E-02	2.865E-02	0.000E+00	NOT IDENT.
PR-144	-1.004E+00	1.313E+00	2.835E+00	0.000E+00	NOT IDENT.
PM-146	-5.510E-03	2.555E-02	4.316E-02	0.000E+00	NOT IDENT.
ND-147	-1.124E-01	2.084E-01	3.289E-01	0.000E+00	NOT IDENT.
PM-149	-5.126E-01	6.938E+00	1.230E+01	0.000E+00	NOT IDENT.
EU-152	3.536E-02	5.443E-02	1.017E-01	0.000E+00	NOT IDENT.
GD-153	-1.462E-03	4.197E-02	6.578E-02	0.000E+00	NOT IDENT.
EU-154	1.474E-02	5.461E-02	9.728E-02	0.000E+00	NOT IDENT.
EU-155	2.335E-03	5.053E-02	9.049E-02	0.000E+00	NOT IDENT.
TB-160	-3.902E-02	7.477E-02	1.178E-01	0.000E+00	NOT IDENT.
HO-166M	-1.045E-03	3.718E-02	6.207E-02	0.000E+00	FAIL ABUN
TM-171	-1.857E+01	1.601E+01	2.590E+01	0.000E+00	NOT IDENT.
LU-176	4.256E-03	1.367E-02	2.495E-02	0.000E+00	NOT IDENT.
LU-177	6.581E-02	2.767E-01	4.859E-01	0.000E+00	NOT IDENT.
LU-177M	-3.775E-03	9.195E-02	1.595E-01	0.000E+00	NOT IDENT.
HF-181	6.621E-03	1.989E-02	3.581E-02	0.000E+00	NOT IDENT.
W-181	-2.391E-01	2.086E-01	3.393E-01	0.000E+00	NOT IDENT.
TA-182	-2.913E-02	7.367E-02	1.114E-01	0.000E+00	NOT IDENT.
RE-183	-2.038E-02	5.513E-02	9.342E-02	0.000E+00	NOT IDENT.
RE-184	2.848E-02	1.324E-01	2.295E-01	0.000E+00	NOT IDENT.
OS-185	1.701E-02	2.556E-02	4.688E-02	0.000E+00	NOT IDENT.
RE-188	3.875E-02	8.459E-02	1.530E-01	0.000E+00	NOT IDENT.
W-188	-5.770E-01	3.856E+00	6.788E+00	0.000E+00	NOT IDENT.

IR-192	-3.394E-03	1.867E-02	3.256E-02	0.000E+00	NOT IDENT.
AU-195	-6.691E-04	1.194E-01	1.876E-01	0.000E+00	NOT IDENT.
TL-200	0.000E+00	4.579E+00	0.000E+00	0.000E+00	SHORT HLIF
TL-201	5.831E-01	8.575E-01	1.572E+00	0.000E+00	NOT IDENT.
TL-202	2.047E-02	2.601E-02	4.923E-02	0.000E+00	NOT IDENT.
HG-203	-6.259E-03	1.928E-02	3.346E-02	0.000E+00	NOT IDENT.
BI-207	1.582E-02	2.474E-02	4.729E-02	0.000E+00	NOT IDENT.
TL-207	4.703E-02	3.391E-01	6.085E-01	0.000E+00	NOT IDENT.
TL-208	3.071E-03	2.212E-02	3.720E-02	0.000E+00	NOT IDENT.
PO-209	2.001E+00	3.928E+00	7.328E+00	0.000E+00	NOT IDENT.
BI-210	-1.517E+00	3.021E+00	4.777E+00	0.000E+00	NOT IDENT.
PB-210	-1.517E+00	3.021E+00	4.777E+00	0.000E+00	NOT IDENT.
PO-210	-1.517E+00	3.021E+00	4.777E+00	0.000E+00	NOT IDENT.
BI-211	2.366E-02	1.225E-01	2.070E-01	0.000E+00	NOT IDENT.
PB-211	2.660E-02	5.157E-01	9.049E-01	0.000E+00	NOT IDENT.
BI-212	3.837E-02	1.574E-01	2.735E-01	0.000E+00	NOT IDENT.
PB-212	2.321E-02	3.594E-02	5.285E-02	0.000E+00	FAIL ABUN
PO-212	2.321E-02	3.594E-02	5.285E-02	0.000E+00	FAIL ABUN
BI-214	-1.070E-02	4.729E-02	7.327E-02	0.000E+00	NOT IDENT.
PB-214	2.233E-03	4.248E-02	7.078E-02	0.000E+00	NOT IDENT.
PO-214	2.233E-03	4.248E-02	7.078E-02	0.000E+00	NOT IDENT.
PO-215	4.703E-02	3.391E-01	6.085E-01	0.000E+00	NOT IDENT.
PO-216	2.321E-02	3.594E-02	5.285E-02	0.000E+00	FAIL ABUN
PO-218	2.233E-03	4.248E-02	7.078E-02	0.000E+00	NOT IDENT.
RN-219	-2.091E-01	2.389E-01	3.746E-01	0.000E+00	NOT IDENT.
RN-220	8.176E+00	1.544E+01	2.814E+01	0.000E+00	NOT IDENT.
RA-223	4.703E-02	3.391E-01	6.085E-01	0.000E+00	NOT IDENT.
RA-224	3.544E-03	3.494E-01	5.206E-01	0.000E+00	NOT IDENT.
RA-226	-1.070E-02	4.729E-02	7.327E-02	0.000E+00	NOT IDENT.
AC-227	-1.189E-01	2.253E-01	3.626E-01	0.000E+00	NOT IDENT.
TH-227	-1.189E-01	2.255E-01	3.626E-01	0.000E+00	FAIL ABUN
AC-228	6.278E-02	6.234E-02	1.252E-01	0.000E+00	NOT IDENT.
RA-228	6.278E-02	6.234E-02	1.252E-01	0.000E+00	NOT IDENT.
TH-228	2.341E-02	3.625E-02	5.331E-02	0.000E+00	FAIL ABUN
TH-229	1.427E-01	2.907E-01	5.206E-01	0.000E+00	NOT IDENT.
TH-230	-1.070E-02	4.729E-02	7.327E-02	0.000E+00	NOT IDENT.
PA-231	-1.299E-01	8.420E-01	1.483E+00	0.000E+00	NOT IDENT.
TH-231	4.703E-02	3.391E-01	6.085E-01	0.000E+00	NOT IDENT.
U-231	-1.974E-02	2.080E-01	3.243E-01	0.000E+00	FAIL ABUN
TH-232	6.278E-02	6.234E-02	1.252E-01	0.000E+00	NOT IDENT.
PA-233	-4.763E-03	3.500E-02	6.133E-02	0.000E+00	NOT IDENT.
PA-234	-1.342E-02	1.558E-01	2.631E-01	0.000E+00	FAIL ABUN
PA-234M	2.020E-01	2.416E+00	3.939E+00	0.000E+00	NOT IDENT.
TH-234	1.203E-01	7.996E-01	1.433E+00	0.000E+00	FAIL ABUN
U-234	-1.070E-02	4.729E-02	7.327E-02	0.000E+00	NOT IDENT.
U-235	-1.207E-02	1.162E-01	1.896E-01	0.000E+00	FAIL ABUN
NP-236	3.242E-03	4.189E-02	7.359E-02	0.000E+00	NOT IDENT.
NP-237	-1.036E-01	1.154E-01	1.727E-01	0.000E+00	NOT IDENT.
U-238	1.203E-01	7.996E-01	1.433E+00	0.000E+00	FAIL ABUN
NP-239	-3.387E-02	1.011E-01	1.750E-01	0.000E+00	NOT IDENT.
AM-241	-1.157E-01	9.392E-02	1.557E-01	0.000E+00	NOT IDENT.
AM-243	1.321E-02	2.541E-02	4.769E-02	0.000E+00	NOT IDENT.
CM-243	2.620E-02	4.490E-02	8.377E-02	0.000E+00	NOT IDENT.
AM-246	-2.413E-02	6.885E-02	1.081E-01	0.000E+00	NOT IDENT.
CM-247	-1.040E-02	2.122E-02	3.510E-02	0.000E+00	NOT IDENT.
CF-249	-2.903E-02	2.323E-02	3.361E-02	0.000E+00	NOT IDENT.
CF-251	9.823E-03	6.661E-02	1.171E-01	0.000E+00	NOT IDENT.
ANH-511	-4.266E-02	3.278E-02	6.224E-02	0.000E+00	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012156.CNF;1
Sample date        : 12-JAN-2010 00:00:00 Acquisition date : 20-JAN-2010 18:03:29
Sample ID          : G1202012156      Sample quantity   : 1.39900E+02 GRAM
Detector name      : GAM23             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.86  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             Detector SN#      :
Matrix Spike ID    :                    LCS ID           : 1032-A
*****

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# Nuclide Line Activity Report

Flag: "\*" = Keyline

Summary of Nuclide Activity  
Sample ID : G1202012156

Page : 2  
Acquisition date : 20-JAN-2010 18:03:29

Total number of lines in spectrum 3  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 3 100.00%  
\*\*\*\* 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 : G1202012156

Page : 3  
Acquisition date : 20-JAN-2010 18:03:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.88	22	128	1.56	185.76	180	13	3.09E-03	****	5.60E+00	T
0	185.33	13	71	0.88	370.66	366	10	1.84E-03	****	5.50E+00	T
0	238.73	18	41	1.22	477.45	472	9	2.48E-03	****	4.63E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012156.CNF;1 *
* Acquisition date   : 20-JAN-2010 18:03:29 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 02:00:00.86             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*                                     *                                         *
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202012156             Analyst initials: MXR1         *
* Batch Number       : 940268                  Sample Quantity : 1.39900E+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

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.241E-02		1.554E-01	2.485E-01	1.689E-02	-0.130
NA-22	5.260E-03		1.988E-02	3.449E-02	2.316E-03	0.153
NA-24	-2.060E-04		2.134E-04	Half-Life too short		
AL-26	3.436E-03		1.637E-02	2.911E-02	1.750E-03	0.118
K-40	-1.074E-01		2.696E-01	4.282E-01	3.203E-02	-0.251
TI-44	-1.099E-02		1.670E-02	2.617E-02	2.372E-03	-0.420
SC-46	-5.258E-03		2.159E-02	3.451E-02	3.083E-03	-0.152
V-48	1.286E-02		2.806E-02	5.036E-02	4.190E-03	0.255
CR-51	8.538E-03		1.788E-01	3.013E-01	1.976E-02	0.028
MN-52	-3.496E-02		5.748E-02	7.442E-02	5.384E-03	-0.470
MN-54	1.581E-02		2.283E-02	4.154E-02	3.289E-03	0.381
CO-56	4.454E-03		2.212E-02	3.806E-02	3.096E-03	0.117
CO-57	6.798E-04		1.356E-02	2.238E-02	1.319E-03	0.030
CO-58	9.698E-03		2.129E-02	3.800E-02	2.855E-03	0.255
FE-59	7.995E-03		4.319E-02	7.359E-02	5.668E-03	0.109
CO-60	1.063E-03		2.098E-02	3.452E-02	2.534E-03	0.031
ZN-65	2.376E-02		4.344E-02	7.870E-02	5.198E-03	0.302

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GE-68	2.079E-01		6.389E-01	1.118E+00	8.001E-02	0.186
AS-73	-4.578E-02		5.088E-01	8.489E-01	7.494E-02	-0.054
AS-74	-2.701E-02		4.316E-02	6.396E-02	3.527E-03	-0.422
SE-75	1.606E-02		2.300E-02	3.939E-02	2.293E-03	0.408
BR-77	-1.736E-01		9.147E-01	1.460E+00	8.451E-02	-0.119
SR-82	3.558E-02		1.677E-01	2.908E-01	2.006E-02	0.122
RB-83	-4.576E-03		3.709E-02	5.978E-02	3.461E-03	-0.077
RB-84	-3.173E-03		3.625E-02	5.958E-02	5.235E-03	-0.053
KR-85	-1.235E+01		6.571E+00	9.058E+00	5.256E-01	-1.364
SR-85	-5.924E-02		3.151E-02	4.344E-02	2.521E-03	-1.364
RB-86	1.883E-01		3.410E-01	6.171E-01	4.423E-02	0.305
Y-88	-1.282E-02		2.285E-02	3.108E-02	1.830E-03	-0.412
ZR-88	9.517E-03		1.577E-02	2.794E-02	1.613E-03	0.341
Y-91	1.102E+00		7.121E+00	1.207E+01	7.203E-01	0.091
NB-94	-1.488E-02		1.957E-02	2.763E-02	1.579E-03	-0.539
NB-95	-1.551E-02		2.003E-02	2.723E-02	1.829E-03	-0.570
NB-95M	-1.433E-02		6.911E-02	9.423E-02	6.951E-03	-0.152
ZR-95	1.607E-02		3.828E-02	6.567E-02	5.039E-03	0.245
NB-97	2.647E-05		5.145E-05	Half-Life too short		
ZR-97	-2.605E-03		1.523E-03	Half-Life too short		
MO-99	-1.583E-01		1.269E+00	1.994E+00	2.791E-01	-0.079
TC-99M	-2.698E+02		2.520E+02	Half-Life too short		
RH-101	-6.947E-03		1.936E-02	2.937E-02	1.566E-03	-0.237
RH-102	1.856E-02		1.567E-02	2.955E-02	1.729E-03	0.628
RU-103	-2.640E-03		2.424E-02	3.845E-02	4.867E-03	-0.069
RH-106	-1.616E-01		1.834E-01	2.544E-01	2.933E-02	-0.635
RU-106	-1.616E-01		1.827E-01	2.544E-01	1.367E-02	-0.635
AG-108M	-1.358E-03		2.020E-02	3.318E-02	2.103E-03	-0.041
CD-109	-2.244E-01		4.015E-01	5.492E-01	5.362E-02	-0.409
AG-110M	5.330E-03		1.913E-02	3.230E-02	1.795E-03	0.165
IN-111	5.361E-02		1.271E-01	2.116E-01	1.198E-02	0.253
IN-113M	1.071E-02		2.364E-02	4.122E-02	2.539E-03	0.260
SN-113	1.071E-02		2.364E-02	4.122E-02	2.539E-03	0.260
IN-114M	-2.061E-02		1.054E-01	1.458E-01	7.686E-03	-0.141
CD-115	3.088E-01		8.153E-01	1.406E+00	8.114E-02	0.220
SN-117M	-2.792E-04		2.150E-02	3.501E-02	1.820E-03	-0.008
SB-122	-1.221E-03		2.492E-01	4.067E-01	2.300E-02	-0.003
I-123	5.083E-05		4.848E-04	Half-Life too short		
TE-123M	7.690E-04		1.467E-02	2.401E-02	1.267E-03	0.032
I-124	5.037E-03		1.540E-01	2.416E-01	1.324E-02	0.021
SB-124	2.385E-02		4.092E-02	7.951E-02	5.543E-03	0.300
SB-125	2.407E-03		5.229E-02	8.703E-02	5.294E-03	0.028
TE-125M	-1.416E+00		4.241E+00	6.808E+00	6.063E-01	-0.208
I-126	2.689E-02		6.695E-02	1.154E-01	5.971E-03	0.233
SB-126	5.041E-03		6.007E-02	9.802E-02	5.871E-03	0.051
SN-126	-1.455E-02		3.908E-02	5.465E-02	5.318E-03	-0.266
SB-127	3.017E-02		2.386E-01	3.935E-01	2.828E-02	0.077
XE-127	-2.705E-04		2.084E-02	3.363E-02	1.805E-03	-0.008

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	1.132E-02		3.610E-02	6.224E-02	4.036E-03	0.182
TE-132	5.869E-02		9.639E-02	1.631E-01	2.156E-02	0.360
BA-133	-1.079E-02		2.558E-02	3.912E-02	4.538E-03	-0.276
I-133	-4.873E-06		1.028E-05	Half-Life too short		
CS-134	2.198E-02		2.375E-02	4.520E-02	3.301E-03	0.486
CS-135	-2.291E-02		8.816E-02	1.371E-01	1.047E-02	-0.167
I-135	2.527E+01		1.026E+02	Half-Life too short		
CS-136	-2.477E-02		4.318E-02	6.326E-02	5.038E-03	-0.391
BA-137M	-1.542E-02		1.948E-02	2.723E-02	1.391E-03	-0.566
CS-137	-1.630E-02		2.059E-02	2.878E-02	1.478E-03	-0.566
CE-139	3.703E-03		1.575E-02	2.611E-02	1.331E-03	0.142
BA-140	2.626E-02		1.035E-01	1.747E-01	5.681E-02	0.150
LA-140	6.818E-03		3.662E-02	6.386E-02	4.381E-03	0.107
CE-141	3.230E-03		2.689E-02	4.440E-02	2.504E-03	0.073
CE-143	2.125E-01		2.965E+00	5.019E+00	1.036E+00	0.042
CE-144	1.181E-02		1.031E-01	1.705E-01	2.408E-02	0.069
PM-144	-1.486E-02		1.984E-02	2.810E-02	1.580E-03	-0.529
PR-144	-1.004E+00		1.340E+00	1.898E+00	1.067E-01	-0.529
PM-146	-5.510E-03		2.607E-02	4.197E-02	3.635E-03	-0.131
ND-147	-1.124E-01		2.126E-01	3.208E-01	4.333E-02	-0.350
PM-149	-5.126E-01		7.079E+00	1.185E+01	1.680E+00	-0.043
EU-152	3.536E-02		5.554E-02	9.837E-02	6.520E-03	0.359
GD-153	-1.462E-03		4.283E-02	6.206E-02	5.070E-03	-0.024
EU-154	1.474E-02		5.573E-02	9.664E-02	9.594E-03	0.153
EU-155	2.335E-03		5.157E-02	8.549E-02	6.305E-03	0.027
TB-160	-3.902E-02		7.629E-02	1.161E-01	1.015E-02	-0.336
HO-166M	-1.045E-03		3.794E-02	6.092E-02	3.565E-03	-0.017
TM-171	-1.857E+01		1.633E+01	2.426E+01	2.110E+00	-0.765
LU-176	4.256E-03		1.395E-02	2.408E-02	1.418E-03	0.177
LU-177	6.581E-02		2.824E-01	4.652E-01	2.517E-02	0.141
LU-177M	-3.775E-03		9.383E-02	1.549E-01	9.010E-03	-0.024
HF-181	6.621E-03		2.029E-02	3.487E-02	2.039E-03	0.190
W-181	-2.391E-01		2.128E-01	3.177E-01	2.760E-02	-0.753
TA-182	-2.913E-02		7.518E-02	1.105E-01	6.785E-03	-0.264
RE-183	-2.038E-02		5.626E-02	8.901E-02	4.578E-03	-0.229
RE-184	2.848E-02		1.351E-01	2.206E-01	1.258E-02	0.129
OS-185	1.701E-02		2.608E-02	4.592E-02	2.396E-03	0.370
RE-188	3.875E-02		8.632E-02	1.456E-01	7.641E-03	0.266
W-188	-5.770E-01		3.935E+00	6.541E+00	3.831E-01	-0.088
IR-192	-3.394E-03		1.905E-02	3.143E-02	1.865E-03	-0.108
AU-195	-6.691E-04		1.219E-01	1.771E-01	1.413E-02	-0.004
TL-200	-7.109E-08		2.336E-06	Half-Life too short		
TL-201	5.831E-01		8.750E-01	1.498E+00	7.647E-02	0.389
TL-202	2.047E-02		2.654E-02	4.784E-02	2.799E-03	0.428
HG-203	-6.259E-03		1.967E-02	3.222E-02	1.990E-03	-0.194
BI-207	1.582E-02		2.525E-02	4.680E-02	3.439E-03	0.338
TL-207	4.703E-02		3.460E-01	5.877E-01	9.728E-02	0.080
TL-208	3.071E-03		2.257E-02	3.635E-02	2.360E-03	0.084



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-209	2.001E+00		4.008E+00	7.226E+00	6.559E-01	0.277
BI-210	-1.517E+00		3.083E+00	4.445E+00	3.460E-01	-0.341
PB-210	-1.517E+00		3.083E+00	4.445E+00	3.460E-01	-0.341
PO-210	-1.517E+00		3.082E+00	4.445E+00	2.982E-01	-0.341
BI-211	2.366E-02		1.250E-01	2.003E-01	1.305E-02	0.118
PB-211	2.660E-02		5.262E-01	8.778E-01	5.472E-01	0.030
BI-212	3.837E-02		1.607E-01	2.685E-01	2.131E-02	0.143
PB-212	2.321E-02	+	3.667E-02	5.073E-02	3.647E-03	0.458
PO-212	2.321E-02	+	3.667E-02	5.073E-02	3.647E-03	0.458
BI-214	-1.070E-02		4.826E-02	7.167E-02	5.388E-03	-0.149
PB-214	2.233E-03		4.334E-02	6.848E-02	5.716E-03	0.033
PO-214	2.233E-03		4.334E-02	6.848E-02	5.716E-03	0.033
PO-215	4.703E-02		3.460E-01	5.877E-01	9.728E-02	0.080
PO-216	2.321E-02	+	3.667E-02	5.073E-02	3.647E-03	0.458
PO-218	2.233E-03		4.334E-02	6.848E-02	5.716E-03	0.033
RN-219	-2.091E-01		2.437E-01	3.633E-01	4.943E-02	-0.575
RN-220	8.176E+00		1.576E+01	2.747E+01	1.568E+00	0.298
RA-223	4.703E-02		3.460E-01	5.877E-01	9.728E-02	0.080
RA-224	3.544E-03		3.566E-01	4.999E-01	2.816E-02	0.007
RA-226	-1.070E-02		4.826E-02	7.167E-02	5.388E-03	-0.149
AC-227	-1.189E-01		2.299E-01	3.486E-01	4.855E-02	-0.341
TH-227	-1.189E-01		2.301E-01	3.486E-01	5.882E-02	-0.341
AC-228	6.278E-02		6.361E-02	1.235E-01	1.425E-02	0.508
RA-228	6.278E-02		6.361E-02	1.235E-01	1.425E-02	0.508
TH-228	2.341E-02	+	3.699E-02	5.118E-02	3.679E-03	0.458
TH-229	1.427E-01		2.966E-01	4.977E-01	2.637E-02	0.287
TH-230	-1.070E-02		4.826E-02	7.167E-02	5.388E-03	-0.149
PA-231	-1.299E-01		8.592E-01	1.429E+00	1.971E-01	-0.091
TH-231	4.703E-02		3.460E-01	5.877E-01	9.728E-02	0.080
U-231	-1.974E-02		2.123E-01	3.059E-01	2.566E-02	-0.065
TH-232	6.278E-02		6.361E-02	1.235E-01	1.425E-02	0.508
PA-233	-4.763E-03		3.571E-02	5.919E-02	3.700E-03	-0.080
PA-234	-1.342E-02		1.589E-01	2.597E-01	4.882E-02	-0.052
PA-234M	2.020E-01		2.465E+00	3.893E+00	3.715E-01	0.052
TH-234	1.203E-01		8.159E-01	1.341E+00	2.416E-01	0.090
U-234	-1.070E-02		4.826E-02	7.167E-02	5.388E-03	-0.149
U-235	-1.207E-02		1.185E-01	1.802E-01	2.915E-02	-0.067
NP-236	3.242E-03		4.275E-02	7.009E-02	3.625E-03	0.046
NP-237	-1.036E-01		1.178E-01	1.625E-01	3.702E-02	-0.637
U-238	1.203E-01		8.159E-01	1.341E+00	2.416E-01	0.090
NP-239	-3.387E-02		1.032E-01	1.657E-01	1.034E-02	-0.204
AM-241	-1.157E-01		9.584E-02	1.455E-01	1.354E-02	-0.795
AM-243	1.321E-02		2.592E-02	4.477E-02	3.979E-03	0.295
CM-243	2.620E-02		4.581E-02	7.913E-02	5.863E-03	0.331
AM-246	-2.413E-02		7.025E-02	1.070E-01	7.637E-03	-0.225
CM-247	-1.040E-02		2.165E-02	3.405E-02	1.973E-03	-0.305
CF-249	-2.903E-02		2.370E-02	3.258E-02	1.885E-03	-0.891
CF-251	9.823E-03		6.797E-02	1.117E-01	5.773E-03	0.088

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	-4.266E-02		3.345E-02	6.067E-02	3.524E-03	-0.703

# 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]G1202012156          *
* Acquisition date   : 20-JAN-2010 18:03:29 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 02:00:00.86 Half life ratio : 8.000            *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202012156 Analyst initials: MXR1                 *
* Batch Number       : 940268 Sample Quantity : 1.3990E+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

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act Error	DLC (pCi/GRAM )	TPU
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---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-3.241E-02	1.523E-01	1.277E-01	7.771E-02 NOT IDENT.
NA-22	5.260E-03	1.948E-02	1.737E-02	9.941E-03 NOT IDENT.
NA-24	-2.060E+02	4.182E+02	0.000E+00	2.134E+02 SHORT HLIF
AL-26	3.436E-03	1.604E-02	1.455E-02	8.184E-03 NOT IDENT.
K-40	-1.074E-01	2.642E-01	2.150E-01	1.348E-01 NOT IDENT.
TI-44	-1.099E-02	1.637E-02	1.394E-02	8.352E-03 NOT IDENT.
SC-46	-5.258E-03	2.116E-02	1.751E-02	1.079E-02 NOT IDENT.
V-48	1.286E-02	2.750E-02	2.550E-02	1.403E-02 NOT IDENT.
CR-51	8.538E-03	1.753E-01	1.561E-01	8.942E-02 NOT IDENT.
MN-52	-3.496E-02	5.633E-02	3.738E-02	2.874E-02 NOT IDENT.
MN-54	1.581E-02	2.237E-02	2.111E-02	1.141E-02 NOT IDENT.
CO-56	4.454E-03	2.168E-02	1.933E-02	1.106E-02 NOT IDENT.
CO-57	6.798E-04	1.329E-02	1.182E-02	6.778E-03 NOT IDENT.
CO-58	9.698E-03	2.086E-02	1.932E-02	1.064E-02 NOT IDENT.
FE-59	7.995E-03	4.233E-02	3.718E-02	2.160E-02 NOT IDENT.
CO-60	1.063E-03	2.056E-02	1.737E-02	1.049E-02 NOT IDENT.
ZN-65	2.376E-02	4.257E-02	3.975E-02	2.172E-02 NOT IDENT.
GE-68	2.079E-01	6.261E-01	5.650E-01	3.194E-01 NOT IDENT.
AS-73	-4.578E-02	4.986E-01	4.553E-01	2.544E-01 NOT IDENT.
AS-74	-2.701E-02	4.230E-02	3.272E-02	2.158E-02 NOT IDENT.
SE-75	1.606E-02	2.254E-02	2.048E-02	1.150E-02 NOT IDENT.
BR-77	-1.736E-01	8.964E-01	7.491E-01	4.574E-01 FAIL ABUN
SR-82	3.558E-02	1.644E-01	1.480E-01	8.387E-02 NOT IDENT.
RB-83	-4.576E-03	3.635E-02	3.067E-02	1.854E-02 NOT IDENT.
RB-84	-3.173E-03	3.553E-02	3.024E-02	1.813E-02 NOT IDENT.
KR-85	-1.235E+01	6.440E+00	4.649E+00	3.286E+00 NOT IDENT.

SR-85	-5.924E-02	3.088E-02	2.229E-02	1.576E-02	NOT IDENT.
RB-86	1.883E-01	3.342E-01	3.119E-01	1.705E-01	NOT IDENT.
Y-88	-1.282E-02	2.239E-02	1.553E-02	1.142E-02	NOT IDENT.
ZR-88	9.517E-03	1.545E-02	1.442E-02	7.884E-03	NOT IDENT.
Y-91	1.102E+00	6.978E+00	6.088E+00	3.560E+00	NOT IDENT.
NB-94	-1.488E-02	1.918E-02	1.409E-02	9.785E-03	NOT IDENT.
NB-95	-1.551E-02	1.963E-02	1.386E-02	1.002E-02	NOT IDENT.
NB-95M	-1.433E-02	6.773E-02	4.912E-02	3.456E-02	NOT IDENT.
ZR-95	1.607E-02	3.752E-02	3.344E-02	1.914E-02	NOT IDENT.
NB-97	2.647E+01	1.008E+02	0.000E+00	5.145E+01	SHORT HLIF
ZR-97	-2.605E+03	2.984E+03	0.000E+00	1.523E+03	SHORT HLIF
MO-99	-1.583E-01	1.243E+00	1.016E+00	6.344E-01	NOT IDENT.
TC-99M	-2.698E+08	4.940E+08	0.000E+00	2.520E+08	SHORT HLIF
RH-101	-6.947E-03	1.897E-02	1.536E-02	9.679E-03	NOT IDENT.
RH-102	1.856E-02	1.535E-02	1.519E-02	7.833E-03	NOT IDENT.
RU-103	-2.640E-03	2.376E-02	1.975E-02	1.212E-02	NOT IDENT.
RH-106	-1.616E-01	1.797E-01	1.300E-01	9.170E-02	NOT IDENT.
RU-106	-1.616E-01	1.790E-01	1.300E-01	9.133E-02	NOT IDENT.
AG-108M	-1.358E-03	1.980E-02	1.709E-02	1.010E-02	NOT IDENT.
CD-109	-2.244E-01	3.934E-01	2.918E-01	2.007E-01	NOT IDENT.
AG-110M	5.330E-03	1.874E-02	1.649E-02	9.564E-03	NOT IDENT.
IN-111	5.361E-02	1.245E-01	1.102E-01	6.353E-02	NOT IDENT.
IN-113M	1.071E-02	2.316E-02	2.127E-02	1.182E-02	NOT IDENT.
SN-113	1.071E-02	2.316E-02	2.127E-02	1.182E-02	NOT IDENT.
IN-114M	-2.061E-02	1.033E-01	7.633E-02	5.268E-02	NOT IDENT.
CD-115	3.088E-01	7.990E-01	7.212E-01	4.077E-01	NOT IDENT.
SN-117M	-2.792E-04	2.107E-02	1.840E-02	1.075E-02	NOT IDENT.
SB-122	-1.221E-03	2.442E-01	2.083E-01	1.246E-01	NOT IDENT.
I-123	5.083E+01	9.503E+02	0.000E+00	4.848E+02	SHORT HLIF
TE-123M	7.690E-04	1.438E-02	1.262E-02	7.335E-03	NOT IDENT.
I-124	5.037E-03	1.509E-01	1.236E-01	7.699E-02	NOT IDENT.
SB-124	2.385E-02	4.010E-02	3.980E-02	2.046E-02	NOT IDENT.
SB-125	2.407E-03	5.124E-02	4.483E-02	2.615E-02	NOT IDENT.
TE-125M	-1.416E+00	4.156E+00	3.603E+00	2.121E+00	NOT IDENT.
I-126	2.689E-02	6.561E-02	5.890E-02	3.348E-02	NOT IDENT.
SB-126	5.041E-03	5.887E-02	4.995E-02	3.003E-02	NOT IDENT.
SN-126	-1.455E-02	3.830E-02	2.904E-02	1.954E-02	NOT IDENT.
SB-127	3.017E-02	2.338E-01	2.008E-01	1.193E-01	NOT IDENT.
XE-127	-2.705E-04	2.042E-02	1.758E-02	1.042E-02	NOT IDENT.
I-131	1.132E-02	3.538E-02	3.217E-02	1.805E-02	NOT IDENT.
TE-132	5.869E-02	9.446E-02	8.510E-02	4.820E-02	NOT IDENT.
BA-133	-1.079E-02	2.507E-02	2.022E-02	1.279E-02	NOT IDENT.
I-133	-4.873E+00	2.014E+01	0.000E+00	1.028E+01	SHORT HLIF
CS-134	2.198E-02	2.328E-02	2.299E-02	1.188E-02	NOT IDENT.
CS-135	-2.291E-02	8.639E-02	7.127E-02	4.408E-02	NOT IDENT.
I-135	2.527E+07	2.010E+08	0.000E+00	1.026E+08	SHORT HLIF
CS-136	-2.477E-02	4.232E-02	3.199E-02	2.159E-02	NOT IDENT.
BA-137M	-1.542E-02	1.909E-02	1.390E-02	9.739E-03	NOT IDENT.
CS-137	-1.630E-02	2.018E-02	1.469E-02	1.030E-02	NOT IDENT.
CE-139	3.703E-03	1.543E-02	1.370E-02	7.875E-03	NOT IDENT.
BA-140	2.626E-02	1.014E-01	8.960E-02	5.175E-02	NOT IDENT.
LA-140	6.818E-03	3.589E-02	3.201E-02	1.831E-02	NOT IDENT.
CE-141	3.230E-03	2.635E-02	2.337E-02	1.344E-02	NOT IDENT.
CE-143	2.125E-01	2.905E+00	2.605E+00	1.482E+00	NOT IDENT.
CE-144	1.181E-02	1.010E-01	8.987E-02	5.153E-02	NOT IDENT.
PM-144	-1.486E-02	1.945E-02	1.433E-02	9.922E-03	NOT IDENT.
PR-144	-1.004E+00	1.313E+00	9.680E-01	6.701E-01	NOT IDENT.
PM-146	-5.510E-03	2.555E-02	2.159E-02	1.304E-02	NOT IDENT.
ND-147	-1.124E-01	2.084E-01	1.645E-01	1.063E-01	NOT IDENT.
PM-149	-5.126E-01	6.938E+00	6.155E+00	3.540E+00	NOT IDENT.
EU-152	3.536E-02	5.443E-02	5.090E-02	2.777E-02	NOT IDENT.
GD-153	-1.462E-03	4.197E-02	3.291E-02	2.142E-02	NOT IDENT.
EU-154	1.474E-02	5.461E-02	4.867E-02	2.786E-02	NOT IDENT.
EU-155	2.335E-03	5.053E-02	4.527E-02	2.578E-02	NOT IDENT.
TB-160	-3.902E-02	7.477E-02	5.894E-02	3.815E-02	NOT IDENT.
HO-166M	-1.045E-03	3.718E-02	3.105E-02	1.897E-02	FAIL ABUN
TM-171	-1.857E+01	1.601E+01	1.296E+01	8.167E+00	NOT IDENT.
LU-176	4.256E-03	1.367E-02	1.248E-02	6.973E-03	NOT IDENT.
LU-177	6.581E-02	2.767E-01	2.431E-01	1.412E-01	NOT IDENT.
LU-177M	-3.775E-03	9.195E-02	7.982E-02	4.691E-02	NOT IDENT.
HF-181	6.621E-03	1.989E-02	1.792E-02	1.015E-02	NOT IDENT.
W-181	-2.391E-01	2.086E-01	1.698E-01	1.064E-01	NOT IDENT.
TA-182	-2.913E-02	7.367E-02	5.572E-02	3.759E-02	NOT IDENT.
RE-183	-2.038E-02	5.513E-02	4.674E-02	2.813E-02	NOT IDENT.
RE-184	2.848E-02	1.324E-01	1.148E-01	6.754E-02	NOT IDENT.
OS-185	1.701E-02	2.556E-02	2.346E-02	1.304E-02	NOT IDENT.
RE-188	3.875E-02	8.459E-02	7.654E-02	4.316E-02	NOT IDENT.
W-188	-5.770E-01	3.856E+00	3.396E+00	1.967E+00	NOT IDENT.

IR-192	-3.394E-03	1.867E-02	1.629E-02	9.523E-03	NOT IDENT.
AU-195	-6.691E-04	1.194E-01	9.387E-02	6.093E-02	NOT IDENT.
TL-200	-7.109E-02	4.579E+00	0.000E+00	2.336E+00	SHORT HLIF
TL-201	5.831E-01	8.575E-01	7.863E-01	4.375E-01	NOT IDENT.
TL-202	2.047E-02	2.601E-02	2.463E-02	1.327E-02	NOT IDENT.
HG-203	-6.259E-03	1.928E-02	1.674E-02	9.834E-03	NOT IDENT.
BI-207	1.582E-02	2.474E-02	2.366E-02	1.262E-02	NOT IDENT.
TL-207	4.703E-02	3.391E-01	3.044E-01	1.730E-01	NOT IDENT.
TL-208	3.071E-03	2.212E-02	1.861E-02	1.129E-02	NOT IDENT.
PO-209	2.001E+00	3.928E+00	3.666E+00	2.004E+00	NOT IDENT.
BI-210	-1.517E+00	3.021E+00	2.390E+00	1.542E+00	NOT IDENT.
PB-210	-1.517E+00	3.021E+00	2.390E+00	1.542E+00	NOT IDENT.
PO-210	-1.517E+00	3.021E+00	2.390E+00	1.541E+00	NOT IDENT.
BI-211	2.366E-02	1.225E-01	1.036E-01	6.248E-02	NOT IDENT.
PB-211	2.660E-02	5.157E-01	4.527E-01	2.631E-01	NOT IDENT.
BI-212	3.837E-02	1.574E-01	1.368E-01	8.033E-02	NOT IDENT.
PB-212	2.321E-02	3.594E-02	2.644E-02	1.834E-02	FAIL ABUN
PO-212	2.321E-02	3.594E-02	2.644E-02	1.834E-02	FAIL ABUN
BI-214	-1.070E-02	4.729E-02	3.666E-02	2.413E-02	NOT IDENT.
PB-214	2.233E-03	4.248E-02	3.541E-02	2.167E-02	NOT IDENT.
PO-214	2.233E-03	4.248E-02	3.541E-02	2.167E-02	NOT IDENT.
PO-215	4.703E-02	3.391E-01	3.044E-01	1.730E-01	NOT IDENT.
PO-216	2.321E-02	3.594E-02	2.644E-02	1.834E-02	FAIL ABUN
PO-218	2.233E-03	4.248E-02	3.541E-02	2.167E-02	NOT IDENT.
RN-219	-2.091E-01	2.389E-01	1.874E-01	1.219E-01	NOT IDENT.
RN-220	8.176E+00	1.544E+01	1.408E+01	7.880E+00	NOT IDENT.
RA-223	4.703E-02	3.391E-01	3.044E-01	1.730E-01	NOT IDENT.
RA-224	3.544E-03	3.494E-01	2.605E-01	1.783E-01	NOT IDENT.
RA-226	-1.070E-02	4.729E-02	3.666E-02	2.413E-02	NOT IDENT.
AC-227	-1.189E-01	2.253E-01	1.814E-01	1.149E-01	NOT IDENT.
TH-227	-1.189E-01	2.255E-01	1.814E-01	1.151E-01	FAIL ABUN
AC-228	6.278E-02	6.234E-02	6.266E-02	3.181E-02	NOT IDENT.
RA-228	6.278E-02	6.234E-02	6.266E-02	3.181E-02	NOT IDENT.
TH-228	2.341E-02	3.625E-02	2.667E-02	1.850E-02	FAIL ABUN
TH-229	1.427E-01	2.907E-01	2.605E-01	1.483E-01	NOT IDENT.
TH-230	-1.070E-02	4.729E-02	3.666E-02	2.413E-02	NOT IDENT.
PA-231	-1.299E-01	8.420E-01	7.420E-01	4.296E-01	NOT IDENT.
TH-231	4.703E-02	3.391E-01	3.044E-01	1.730E-01	NOT IDENT.
U-231	-1.974E-02	2.080E-01	1.623E-01	1.061E-01	FAIL ABUN
TH-232	6.278E-02	6.234E-02	6.266E-02	3.181E-02	NOT IDENT.
PA-233	-4.763E-03	3.500E-02	3.068E-02	1.785E-02	NOT IDENT.
PA-234	-1.342E-02	1.558E-01	1.316E-01	7.947E-02	FAIL ABUN
PA-234M	2.020E-01	2.416E+00	1.971E+00	1.233E+00	NOT IDENT.
TH-234	1.203E-01	7.996E-01	7.167E-01	4.080E-01	FAIL ABUN
U-234	-1.070E-02	4.729E-02	3.666E-02	2.413E-02	NOT IDENT.
U-235	-1.207E-02	1.162E-01	9.487E-02	5.926E-02	FAIL ABUN
NP-236	3.242E-03	4.189E-02	3.682E-02	2.137E-02	NOT IDENT.
NP-237	-1.036E-01	1.154E-01	8.639E-02	5.890E-02	NOT IDENT.
U-238	1.203E-01	7.996E-01	7.167E-01	4.080E-01	FAIL ABUN
NP-239	-3.387E-02	1.011E-01	8.757E-02	5.159E-02	NOT IDENT.
AM-241	-1.157E-01	9.392E-02	7.788E-02	4.792E-02	NOT IDENT.
AM-243	1.321E-02	2.541E-02	2.386E-02	1.296E-02	NOT IDENT.
CM-243	2.620E-02	4.490E-02	4.191E-02	2.291E-02	NOT IDENT.
AM-246	-2.413E-02	6.885E-02	5.409E-02	3.513E-02	NOT IDENT.
CM-247	-1.040E-02	2.122E-02	1.756E-02	1.082E-02	NOT IDENT.
CF-249	-2.903E-02	2.323E-02	1.682E-02	1.185E-02	NOT IDENT.
CF-251	9.823E-03	6.661E-02	5.856E-02	3.398E-02	NOT IDENT.
ANH-511	-4.266E-02	3.278E-02	3.114E-02	1.672E-02	NOT IDENT.

\*\*\*\*\*  
 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON , SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
46.50	65.0469
46.50	65.0469
46.50	65.0469
48.70	68.0263
49.72	74.5096
51.35	76.5435
52.39	72.1157
52.97	76.7555
53.15	75.8648
53.44	73.1584
54.07	71.4049
56.28	73.5033
56.28	73.5036
57.37	79.1563
57.53	88.3834
57.53	88.3835
57.60	82.8687
57.98	84.7620
57.98	84.7620
59.32	106.1788
59.32	106.1788
59.40	106.1922
59.54	108.0629
59.72	105.3221
60.01	104.4458
61.10	78.6993
61.14	77.7783
61.30	77.7977
63.00	82.6444
63.29	81.7518
63.29	81.7518
63.58	80.8586
64.28	87.4570
65.12	113.6513
65.20	113.6648
65.20	113.6648
66.05	113.8091
66.72	109.2523
66.83	109.2706
66.91	105.5474
67.20	87.8378
67.20	87.8378
67.75	81.3620
67.85	81.3740
68.90	80.5617
68.90	80.5617
69.30	82.4829
69.67	77.8382
70.82	92.0559
70.82	92.0559
70.83	92.0574
72.80	90.4299
72.87	88.5546
72.87	88.5546
74.67	78.3875
74.81	78.4027
74.81	78.4027
74.81	78.4027
74.81	78.4027
74.81	78.4027
74.81	78.4027
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75.70	80.3898
77.11	82.4393
77.11	82.4393

77.11	82.4393
77.11	82.4393
77.11	82.4393
77.11	82.4393
77.11	82.4393
78.38	88.2756
79.62	89.3721
79.80	92.2463
79.80	92.2463
80.11	97.0413
80.18	93.2444
80.30	93.2590
80.30	93.2590
80.57	92.3403
81.00	85.7249
81.07	85.7328
81.07	85.7328
81.07	85.7328
81.07	85.7328
82.60	74.4503
83.37	70.7023
83.78	72.6517
83.78	72.6517
83.78	72.6517
83.78	72.6517
84.21	79.3874
84.90	74.6708
85.43	85.2586
86.29	89.8727
86.50	97.2053
86.54	97.2099
86.59	97.2161
86.72	95.9530
86.79	95.9610
86.94	101.3541
87.30	95.2546
87.30	95.2546
87.30	95.2546
87.30	95.2546
87.30	95.2546
87.30	95.2546
87.30	95.2546
87.57	82.9917
87.88	89.1739
88.03	89.1906
88.36	83.0734
88.47	83.0850
89.95	78.6130
91.11	81.8123
92.29	85.9875
92.38	85.9971
92.38	85.9971
93.35	86.0979
94.00	86.1651
94.67	89.9154
94.67	89.9159
94.90	85.2886
94.90	85.2886
94.90	85.2886
94.90	85.2886
95.87	88.4919
95.87	88.4919
96.73	77.7036
97.43	79.3227
98.44	59.1728
98.44	59.1730
98.88	77.8989
99.55	83.1569
99.55	83.1569
99.86	81.3297
100.00	81.3427
100.10	81.3526
103.18	71.4342
103.76	64.6266
105.00	65.6973
105.31	73.5672
108.00	83.6252
109.28	82.7574

111.00	74.0290
111.00	74.0290
111.76	84.9561
112.95	84.0756
115.19	84.2763
116.30	94.3013
117.00	95.3639
117.00	95.3639
117.66	88.4714
121.11	94.7731
121.62	89.8321
121.78	88.8482
122.06	88.8737
122.32	88.8971
122.32	88.8971
122.32	88.8971
122.32	88.8971
123.07	86.9658
127.23	88.3335
129.76	83.5231
131.20	85.6563
133.02	86.8169
133.54	79.7908
135.34	75.8818
136.00	84.0284
136.25	91.1371
136.48	88.1184
140.51	88.4536
140.51	0.0000
142.18	71.2801
142.65	72.3298
143.76	79.5425
144.24	74.4765
144.24	74.4765
144.24	74.4765
144.24	74.4765
145.22	69.4376
145.44	74.5583
147.16	85.9277
152.43	74.0012
152.70	79.1589
153.22	74.0528
154.21	85.4405
154.21	85.4405
154.21	85.4405
154.21	85.4405
155.03	81.3820
156.02	86.6077
158.56	85.7660
159.00	0.0000
159.00	82.6971
160.31	82.7905
161.27	84.9304
162.32	91.2260
162.64	86.0661
163.35	86.1181
163.89	77.8533
165.85	82.1414
167.43	71.8385
171.28	92.9573
171.86	77.3276
172.10	77.3428
176.55	76.5745
176.60	76.5773
181.06	85.9050
184.41	75.9990
185.71	64.2424
186.00	64.2572
190.27	84.8291
192.34	69.0327
193.63	82.9208
197.04	74.6084
198.01	77.8627
198.60	75.7625
200.40	74.7964
201.83	81.2933
202.84	65.2974
205.31	75.0677



208.36	65.5618
208.81	60.2075
209.75	55.9447
209.75	55.9447
210.97	57.0707
215.65	64.8248
216.55	55.1361
218.09	58.4429
222.10	80.3136
223.80	73.8889
226.40	66.4014
227.00	55.5388
227.08	54.4529
227.20	54.4575
228.16	57.7625
228.18	57.7633
228.18	57.7633
231.56	76.4669
235.69	70.1069
236.00	59.6033
236.00	59.6033
238.63	49.1712
238.63	49.1712
238.63	49.1712
238.63	49.1712
239.00	49.1832
240.98	52.7655
241.98	70.4004
241.98	70.4004
241.98	70.4004
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245.39	60.6355
247.94	61.8400
248.90	72.9282
249.79	75.1812
252.40	63.1252
252.85	63.1435
252.85	63.1435
254.15	0.0000
256.20	72.1590
256.20	72.1590
260.50	51.2046
260.90	51.2180
262.80	67.9995
264.65	44.6411
268.24	61.5175
268.79	61.5385
269.46	58.2056
269.46	58.2056
269.46	58.2056
269.46	58.2056
271.23	61.6308
273.65	49.3771
276.40	56.2035
277.35	56.2355
277.60	59.6185
277.60	59.6185
278.00	58.5079
278.60	62.1303
279.20	58.5500
279.53	57.6602
280.46	52.2835
281.68	52.3218
283.67	58.7055
284.30	63.2452
285.00	60.5593
285.90	58.7833
286.10	53.3629
286.10	53.3629
287.40	47.9730
288.45	0.0000
290.67	61.6682
290.80	61.6723
291.72	66.2427
293.26	61.7611
293.70	59.0515
295.21	56.3744
295.21	56.3744

295.21	56.3744
295.96	59.1284
296.50	48.2273
297.23	50.0680
298.57	53.7504
299.80	60.1702
299.80	60.1702
300.09	61.0917
300.09	61.0917
300.09	61.0917
300.09	61.0917
300.12	61.0925
301.29	63.8707
302.84	60.2741
303.76	46.5998
303.91	46.6035
304.40	41.1323
304.40	41.1323
304.84	38.3993
306.84	48.5113
308.46	64.1296
311.98	50.4863
316.51	55.2136
318.01	47.8918
319.02	47.9178
319.41	47.0063
320.08	48.8678
323.87	42.5011
323.87	42.5011
323.87	42.5011
323.87	42.5011
325.23	45.3059
328.77	56.5091
333.44	47.3630
334.20	49.2404
334.20	49.2404
334.30	49.2430
338.28	52.1397
338.28	52.1397
338.28	52.1397
338.28	52.1397
338.32	52.1404
338.32	52.1404
338.32	52.1404
340.50	49.4041
340.57	49.4054
344.27	41.0953
345.85	57.9540
350.59	47.7888
351.07	37.4907
351.92	38.4445
351.92	38.4445
351.92	38.4445
355.39	0.0000
356.01	37.5850
364.48	34.9147
366.43	36.8381
367.43	37.8013
367.94	0.0000
369.80	43.5226
374.96	35.0963
383.85	50.4910
387.95	45.8180
388.63	45.8326
391.69	33.4683
391.69	33.4683
392.90	30.6172
398.62	31.6594
400.65	41.2925
401.10	40.3409
401.81	49.9624
402.60	46.1361
404.84	38.4868
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411.60	43.4333
413.65	35.7453
414.70	36.7290
415.30	41.5733

415.76	42.5493
417.63	0.0000
418.52	37.7613
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427.08	36.9354
427.89	35.0042
432.53	33.1280
433.93	40.9479
439.47	25.4109
439.56	25.4119
439.89	27.3708
443.98	35.2538
444.90	37.2272
445.03	37.2295
445.03	37.2295
445.03	37.2295
445.03	37.2295
453.90	38.3559
463.38	26.6618
468.07	19.7886
473.00	34.7018
475.06	18.8541
475.35	16.8715
476.78	27.8048
477.59	27.8144
477.96	30.7991
482.03	23.8846
484.57	19.9246
487.03	29.9172
490.36	24.9649
492.35	30.9815
497.08	34.0448
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510.53	0.0000
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511.00	44.3032
511.85	48.3475
511.85	48.3475
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513.99	113.9132
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520.65	28.3001
527.90	22.2986
528.96	0.0000
529.64	27.3850
529.87	0.0000
531.02	30.4438
537.32	24.4137
543.00	24.4664
546.56	0.0000
549.76	25.5511
552.65	27.6249
555.20	34.8201
563.23	39.0326
563.90	31.8507
568.70	29.8482
569.32	24.7078
569.50	27.7983
569.67	27.7996
573.80	30.9353
574.00	33.0000
574.64	31.9763
578.91	30.9924
579.30	0.0000
583.14	25.8667
585.48	32.1020
591.81	29.0609
592.07	28.0257
593.00	31.1499
595.88	33.2602
600.56	22.9045
602.52	0.0000
602.71	29.1730
602.71	29.1730
603.60	32.3093
604.41	38.5736
604.70	41.7051
609.31	24.0192

609.31	24.0192
609.31	24.0192
609.31	24.0192
610.33	28.2063
612.46	35.5456
614.37	29.2927
618.01	25.1397
621.84	30.4167
621.84	30.4167
631.29	25.2545
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633.10	35.7988
634.78	27.3914
635.90	25.2938
636.97	23.1945
645.85	17.9766
646.12	23.2660
656.30	15.9170
657.75	20.1713
657.90	0.0000
661.65	26.5753
661.65	26.5753
664.57	18.0886
666.33	17.0344
666.33	17.0344
675.00	24.5560
677.61	19.2340
685.20	19.2810
692.80	12.8854
695.00	22.5653
696.49	29.0263
696.49	29.0263
697.00	26.8805
697.49	23.6586
698.33	24.7402
698.50	21.5146
699.00	15.0626
702.63	29.0823
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706.67	21.5698
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711.68	25.9248
713.82	19.4563
717.42	27.0532
720.50	22.7462
721.93	21.6729
722.20	20.5908
722.78	22.7621
722.78	22.7621
722.89	22.7632
722.95	22.7637
723.30	22.7662
724.18	19.5192
727.18	19.5372
733.00	19.5719
735.90	20.6778
739.58	18.5215
742.81	15.2681
744.21	16.3656
747.13	16.3802
751.79	17.4965
752.31	17.4992
753.82	10.9421
755.35	12.0417
756.15	17.5195
756.87	20.8091
763.93	14.2676
765.79	21.9624
766.42	19.7697
766.84	14.2800
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778.57	22.9635
778.89	22.9655
783.80	15.6390
785.46	13.8058
792.07	21.2097

795.84	12.0010
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798.80	24.0227
801.93	21.2700
805.60	12.9604
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810.76	16.6879
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817.79	18.5791
818.51	21.3702
819.60	16.7296
826.30	13.0364
828.27	0.0000
831.60	21.4488
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834.83	19.6016
836.80	0.0000
846.75	18.7297
848.13	15.9264
856.28	0.0000
856.80	18.7813
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867.32	18.8350
867.82	20.7212
871.10	16.0260
873.19	20.7512
874.81	18.8733
875.33	0.0000
876.40	17.9370
879.36	20.7857
880.27	17.0109
880.51	17.9571
881.50	18.9071
883.24	17.9698
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889.25	18.9461
896.60	12.3391
898.02	16.1416
899.00	15.1960
903.28	14.2624
911.07	7.6221
911.07	7.6221
911.07	7.6221
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920.93	11.4624
925.00	12.4306
925.24	12.4314
926.50	12.4356
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937.48	10.5520
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946.00	14.4205
949.00	11.5452
962.29	15.4450
964.01	16.4172
966.15	21.2574
968.20	16.4345
969.11	17.4053
969.11	17.4053
969.11	17.4053
977.42	14.5343
980.50	13.5756
983.50	10.6746
989.30	18.4642
996.32	13.6286
1001.03	7.7967
1001.68	10.7220
1004.76	15.6074
1021.30	0.0000
1024.50	0.0000
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1036.00	13.7590
1037.82	10.8156
1038.57	12.7842
1038.76	0.0000
1045.16	12.8043
1046.59	17.7349
1048.07	17.7407

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1050.47	15.7786
1062.04	9.8885
1063.62	7.9137
1076.63	10.9141
1077.35	10.9159
1078.86	12.9048
1085.78	9.9426
1099.22	11.9678
1112.02	12.0024
1112.84	13.0053
1115.52	10.0098
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1120.29	18.0374
1120.29	18.0374
1120.29	18.0374
1120.51	18.0381
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1131.51	0.0000
1147.95	0.0000
1167.94	16.2018
1173.22	10.1379
1175.09	20.2840
1177.93	7.1037
1189.05	18.3105
1204.90	8.1654
1205.75	0.0000
1213.00	8.1794
1221.42	10.2425
1230.97	12.3154
1235.34	8.2178
1236.41	0.0000
1238.25	15.4175
1246.25	11.3250
1260.41	0.0000
1271.85	6.2097
1274.45	7.2484
1274.54	7.2487
1291.56	9.3516
1298.22	0.0000
1312.09	10.4333
1325.50	16.7376
1325.50	16.7376
1332.49	8.3805
1333.61	8.3822
1360.21	9.4790
1362.66	0.0000
1365.15	8.4336
1368.21	10.5485
1368.53	0.0000
1376.25	7.3953
1384.27	11.6392
1394.10	6.3604
1395.20	6.3618
1407.95	6.3770
1434.06	8.5443
1436.60	8.5482
1457.56	0.0000
1460.81	9.6599
1489.15	8.6309
1509.49	8.6621
1596.49	6.5959
1620.62	7.5692
1678.03	0.0000
1691.02	2.8718
1691.02	2.8718
1706.46	0.0000
1750.46	0.0000
1764.49	1.9373
1764.49	1.9373
1764.49	1.9373
1764.49	1.9373
1770.23	7.7561
1771.40	7.7575
1791.20	0.0000
1808.65	2.9261

1836.01

7.8359

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202012156

Total Uranium Activity	3.5223E-01	ug/g
Total Uranium Counting Unc.	2.3794E+00	ug/g
Total Uranium Tpu	1.2140E-06	ug/g
Total Uranium Mda	2.1327E+00	ug/g



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*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G1202012156
*  ANALYST       : MXR1                             DETECTOR    : GAM23
*  SAMPLE DATE   : 12-JAN-2010 00:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 18:03:29.74          SAMPLE ALQT  : 139.900 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.747E-02
GROSS GAMMA ERROR (pCi/GRAM )   : 3.108E-02
GROSS GAMMA MDA (pCi/GRAM )     : 6.219E-02
GROSS GAMMA DLC (pCi/GRAM )     : 2.902E-02

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## VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 20:05:31.86

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012157.CNF;1
Sample date       : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 18:04:18
Sample ID        : G1202012157      Sample quantity   : 1.30860E+02 GRAM
Detector name    : GAM16             Detector geometry: CAN
Elapsed live time: 0 02:00:00.00     Elapsed real time: 0 02:00:01.93  0.0%
Energy tolerance : 1.50000 keV       Analyst Initials  : MXR1
Abundance limit  : 75.00000          Sensitivity     : 5.00000
Batch ID        : 940268             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	63.79*	76	432	0.74	127.76	124	8	1.06E-02	50.3	
2	3	74.92	423	409	0.99	150.02	146	12	5.88E-02	8.8	2.53E+00
3	3	77.12*	747	348	0.94	154.43	146	12	1.04E-01	5.6	
4	0	84.40*	84	346	1.48	168.99	166	6	1.17E-02	37.7	
5	0	87.11	202	461	1.05	174.42	172	7	2.80E-02	18.9	
6	6	89.98	153	296	0.82	180.15	178	14	2.13E-02	18.1	4.23E+00
7	6	92.90*	357	439	1.56	186.00	178	14	4.96E-02	12.6	
8	0	129.04	108	228	1.29	258.27	255	6	1.49E-02	24.3	
9	0	185.80*	281	340	1.33	371.79	367	11	3.91E-02	14.5	
10	0	209.02	129	318	1.00	418.24	415	9	1.79E-02	26.4	
11	5	238.53*	1416	134	0.99	477.25	470	20	1.97E-01	3.0	1.85E+00
12	5	241.55	387	190	1.74	483.29	470	20	5.38E-02	10.5	
13	0	269.96	81	156	0.97	540.12	537	7	1.12E-02	27.9	
14	0	277.39	79	137	1.53	554.97	552	8	1.10E-02	27.8	
15	0	295.09*	471	169	1.03	590.38	586	9	6.54E-02	6.9	
16	0	300.12*	65	200	0.77	600.44	596	9	9.07E-03	41.6	
17	0	327.74	54	208	0.98	655.66	651	9	7.55E-03	49.6	
18	0	338.32	297	204	1.20	676.83	671	13	4.12E-02	11.6	
19	0	351.86*	702	231	1.20	703.91	697	14	9.74E-02	6.0	
20	0	408.98	44	114	0.77	818.13	814	9	6.18E-03	46.1	
21	0	462.99	74	120	1.40	926.14	921	10	1.03E-02	29.9	
22	0	510.61*	121	107	1.62	1021.38	1015	14	1.67E-02	24.1	
23	0	583.09*	381	87	1.35	1166.32	1161	10	5.29E-02	7.1	
24	0	609.24*	524	120	1.27	1218.62	1212	13	7.28E-02	6.2	
25	0	661.28	75	55	0.98	1322.68	1317	10	1.04E-02	21.8	
26	0	727.27	87	75	1.39	1454.62	1450	10	1.21E-02	21.5	
27	0	768.02	80	22	1.71	1536.11	1532	8	1.11E-02	15.1	
28	0	860.78	36	62	0.89	1721.59	1716	10	4.96E-03	44.6	
29	0	911.03*	301	77	1.63	1822.07	1814	17	4.17E-02	8.9	
30	2	964.64	51	50	1.94	1929.27	1921	23	7.06E-03	30.6	1.00E+00
31	2	968.78*	177	32	1.53	1937.53	1921	23	2.45E-02	9.8	
32	0	1119.74*	140	42	2.43	2239.36	2231	14	1.95E-02	13.2	
33	0	1237.37	53	42	0.96	2474.53	2468	12	7.34E-03	28.1	
34	0	1377.65	45	21	2.09	2754.97	2747	14	6.23E-03	26.3	
35	0	1460.43*	975	26	1.90	2920.45	2913	15	1.35E-01	3.4	
36	0	1622.13	10	24	1.08	3243.70	3234	12	1.39E-03	103.0	
37	0	1729.29	19	10	1.71	3457.89	3452	10	2.64E-03	38.7	
38	0	1764.42*	105	6	1.70	3528.12	3522	15	1.45E-02	11.7	

Peak Search Report (continued)  
Sample ID : G1202012157

Page : 2  
Acquisition date : 20-JAN-2010 18:04:18

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1848.06	8	14	0.58	3695.30	3690	8	1.06E-03	92.3	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012157.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 4-JAN-2010 12:00:00   Acquisition date : 20-JAN-2010 18:04:18
Sample ID        : G1202012157           Sample quantity  : 130.86 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.93   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	*	2.170E+01	2.420E+00	5.445E-01	4.786E-02	39.851
CD-109	+	88.03	*	2.548E+00	9.941E-01	1.064E+00	1.025E-01	2.395
SN-126	+	64.28		6.305E-01	6.405E-01	6.662E-01	9.706E-02	0.946
	+	86.94		1.040E+00	5.842E-01	4.086E-01	1.698E-01	2.544
	+	87.57	*	2.500E-01	9.754E-02	1.105E-01	1.059E-02	2.264
BA-137M	+	661.65	*	9.948E-02	4.427E-02	5.643E-02	5.008E-03	1.763
CS-137	+	661.65	*	1.052E-01	4.680E-02	5.965E-02	5.303E-03	1.763
TL-208	+	277.35		7.101E-01	4.093E-01	5.242E-01	7.792E-02	1.355
	+	510.84		5.400E-01	2.693E-01	1.964E-01	2.484E-02	2.749
	+	583.14	*	4.868E-01	8.422E-02	4.814E-02	4.772E-03	10.111
	+	860.37		4.289E-01	3.850E-01	4.295E-01	4.300E-02	0.999
BI-211		72.87		1.395E+00	2.623E+00	4.145E+00	3.370E-01	0.336
	+	351.07	*	3.947E+00	6.420E-01	2.787E-01	3.048E-02	14.160
PB-212	+	74.81		2.218E+00	4.796E-01	4.585E-01	5.729E-02	4.837
	+	77.11		2.218E+00	3.107E-01	2.602E-01	2.210E-02	8.525
	+	87.30		1.156E+00	4.657E-01	5.123E-01	7.086E-02	2.258
	+	238.63	*	1.743E+00	2.317E-01	7.367E-02	8.722E-03	23.664
	+	300.09		1.240E+00	1.044E+00	1.044E+00	1.368E-01	1.187
PO-212	+	74.81		2.218E+00	4.796E-01	4.585E-01	5.729E-02	4.837
	+	77.11		2.218E+00	3.107E-01	2.602E-01	2.210E-02	8.525
	+	87.30		1.156E+00	4.657E-01	5.123E-01	7.086E-02	2.258
		115.19		1.965E+00	2.904E+00	5.007E+00	4.178E-01	0.393
	+	238.63	*	1.743E+00	2.317E-01	7.367E-02	8.722E-03	23.664
	+	300.09		1.240E+00	1.044E+00	1.044E+00	1.368E-01	1.187
BI-214	+	609.31	*	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
	+	1120.29		1.757E+00	4.998E-01	4.409E-01	4.734E-02	3.984
	+	1764.49		1.798E+00	4.454E-01	2.511E-01	2.078E-02	7.160
PB-214	+	74.81		3.821E+00	7.972E-01	7.901E-01	8.784E-02	4.837
	+	77.11		3.802E+00	6.064E-01	4.460E-01	5.089E-02	8.525
	+	87.30		1.981E+00	7.878E-01	8.776E-01	1.077E-01	2.258
	+	241.98		2.864E+00	6.989E-01	4.437E-01	5.497E-02	6.455
	+	295.21		1.568E+00	3.001E-01	1.806E-01	2.411E-02	8.677
	+	351.92	*	1.373E+00	2.345E-01	9.717E-02	1.175E-02	14.130
PO-214	+	74.81		3.821E+00	7.972E-01	7.901E-01	8.784E-02	4.837

----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		3.802E+00	6.064E-01	4.460E-01	5.089E-02	8.525
	+	87.30		1.981E+00	7.878E-01	8.776E-01	1.077E-01	2.258
	+	241.98		2.864E+00	6.989E-01	4.437E-01	5.497E-02	6.455
	+	295.21		1.568E+00	3.001E-01	1.806E-01	2.411E-02	8.677
	+	351.92	*	1.373E+00	2.345E-01	9.717E-02	1.175E-02	14.130
PO-216	+	74.81		2.218E+00	4.796E-01	4.585E-01	5.729E-02	4.837
	+	77.11		2.218E+00	3.107E-01	2.602E-01	2.210E-02	8.525
	+	87.30		1.156E+00	4.657E-01	5.123E-01	7.086E-02	2.258
	+	238.63	*	1.743E+00	2.317E-01	7.367E-02	8.722E-03	23.664
	+	300.09		1.240E+00	1.044E+00	1.044E+00	1.368E-01	1.187
PO-218	+	74.81		3.821E+00	7.972E-01	7.901E-01	8.784E-02	4.837
	+	77.11		3.802E+00	6.064E-01	4.460E-01	5.089E-02	8.525
	+	87.30		1.981E+00	7.878E-01	8.776E-01	1.077E-01	2.258
	+	241.98		2.864E+00	6.989E-01	4.437E-01	5.497E-02	6.455
	+	295.21		1.568E+00	3.001E-01	1.806E-01	2.411E-02	8.677
	+	351.92	*	1.373E+00	2.345E-01	9.717E-02	1.175E-02	14.130
RA-224	+	240.98	*	5.431E+00	1.290E+00	8.385E-01	9.240E-02	6.477
RA-226	+	609.31	*	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
	+	1120.29		1.757E+00	4.998E-01	4.409E-01	4.734E-02	3.984
	+	1764.49		1.798E+00	4.454E-01	2.511E-01	2.078E-02	7.160
AC-228	+	338.32		1.841E+00	8.795E-01	3.203E-01	1.339E-01	5.748
	+	911.07	*	1.706E+00	3.659E-01	1.795E-01	2.132E-02	9.504
	+	969.11		1.768E+00	5.426E-01	2.995E-01	7.063E-02	5.902
RA-228	+	338.32		1.841E+00	8.795E-01	3.203E-01	1.339E-01	5.748
	+	911.07	*	1.706E+00	3.659E-01	1.795E-01	2.132E-02	9.504
	+	969.11		1.768E+00	5.426E-01	2.995E-01	7.063E-02	5.902
TH-228	+	74.81		2.254E+00	4.403E-01	4.660E-01	3.899E-02	4.837
	+	77.11		2.254E+00	3.158E-01	2.644E-01	2.246E-02	8.525
	+	87.30		1.175E+00	4.585E-01	5.206E-01	4.975E-02	2.258
	+	238.63	*	1.772E+00	2.355E-01	7.487E-02	8.864E-03	23.664
	+	300.09		1.260E+00	1.291E+00	1.061E+00	6.348E-01	1.187
TH-230	+	609.31	*	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
	+	1120.29		1.757E+00	4.998E-01	4.409E-01	4.734E-02	3.984
	+	1764.49		1.798E+00	4.453E-01	2.511E-01	2.078E-02	7.160
TH-232	+	338.32		1.841E+00	4.706E-01	3.203E-01	3.497E-02	5.748
	+	911.07	*	1.706E+00	3.659E-01	1.795E-01	2.132E-02	9.504
	+	969.11		1.768E+00	5.426E-01	2.995E-01	7.063E-02	5.902
TH-234	+	63.29	*	1.593E+00	1.625E+00	1.753E+00	3.057E-01	0.909
	+	92.38		2.869E+00	8.955E-01	6.011E-01	1.105E-01	4.774
U-234	+	609.31	*	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
	+	1120.29		1.757E+00	4.998E-01	4.409E-01	4.734E-02	3.984
	+	1764.49		1.798E+00	4.453E-01	2.511E-01	2.078E-02	7.160
NP-237	+	86.50	*	7.343E-01	3.240E-01	2.900E-01	6.582E-02	2.532
	+	95.87		-9.062E-02	8.014E-01	1.214E+00	3.005E-01	-0.075
U-238	+	63.29	*	1.593E+00	1.625E+00	1.753E+00	3.057E-01	0.909
	+	92.38		2.869E+00	7.707E-01	6.011E-01	5.546E-02	4.774
AM-243	+	74.67	*	3.596E-01	7.012E-02	7.457E-02	6.173E-03	4.822
	+	86.72		2.753E+01	1.074E+01	1.085E+01	1.029E+00	2.538
	+	117.66		-5.104E+00	3.168E+00	4.893E+00	4.071E-01	-1.043

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	+	142.18	*	-1.539E+01	1.545E+01	2.452E+01	2.091E+00	-0.628
		511.00	*	1.166E-01	5.734E-02	4.244E-02	4.036E-03	2.748

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-5.383E-02	2.779E-01	4.536E-01	4.589E-02	-0.119
NA-22		1274.54	*	-4.844E-03	3.897E-02	6.227E-02	5.181E-03	-0.078
NA-24		1368.53	*	-2.384E-01	3.897E-02	Half-Life too short		
AL-26		1129.67		4.502E-01	1.686E+00	2.829E+00	2.371E-01	0.159
		1808.65	*	2.159E-02	2.807E-02	5.262E-02	4.303E-03	0.410
TI-44		67.85		-1.170E-02	4.416E-02	6.196E-02	4.799E-03	-0.189
	+	78.38	*	4.093E-01	5.734E-02	6.462E-02	5.565E-03	6.334
SC-46		889.25	*	-1.377E-02	3.413E-02	5.471E-02	5.172E-03	-0.252
	+	1120.51		3.036E-01	8.399E-02	1.310E-01	1.107E-02	2.318
V-48		944.10		4.724E-01	8.914E-01	1.550E+00	1.448E-01	0.305
		983.50	*	-3.967E-02	6.534E-02	1.012E-01	9.319E-03	-0.392
		1312.09		-2.092E-02	8.266E-02	1.297E-01	1.088E-02	-0.161
CR-51		320.08	*	-1.104E-01	3.230E-01	4.976E-01	5.818E-02	-0.222
MN-52		744.21		-1.236E-01	2.638E-01	4.034E-01	3.704E-02	-0.306
		848.13		-2.583E+00	6.723E+00	1.086E+01	1.022E+00	-0.238
		935.52		8.994E-02	2.593E-01	4.452E-01	4.170E-02	0.202
		1246.25		1.735E+00	7.803E+00	1.295E+01	1.068E+00	0.134
		1333.61		-2.128E+00	5.643E+00	8.686E+00	7.328E-01	-0.245
		1434.06	*	-5.469E-02	2.378E-01	3.668E-01	3.130E-02	-0.149
MN-54		834.83	*	-3.909E-04	3.465E-02	5.812E-02	5.459E-03	-0.007
CO-56		846.75	*	3.429E-02	3.231E-02	5.927E-02	5.577E-03	0.579
		977.42		2.899E-01	2.434E+00	4.088E+00	3.772E-01	0.071
		1037.82		-1.150E-01	2.301E-01	3.548E-01	3.335E-02	-0.324
		1175.09		-3.731E-01	2.003E+00	3.207E+00	2.580E-01	-0.116
	+	1238.25		1.881E-01	1.070E-01	1.518E-01	1.288E-02	1.239
		1360.21		-1.487E-01	9.016E-01	1.418E+00	1.201E-01	-0.105
		1771.40		1.683E-01	1.460E-01	2.980E-01	2.462E-02	0.565
CO-57		122.06	*	-5.024E-03	2.166E-02	3.592E-02	2.985E-03	-0.140
		136.48		-6.682E-02	1.837E-01	3.013E-01	2.739E-02	-0.222
CO-58		810.76	*	-2.067E-02	3.304E-02	5.218E-02	4.888E-03	-0.396
FE-59		142.65		-1.461E+00	2.470E+00	3.919E+00	3.346E-01	-0.373
		192.34		3.339E-01	8.277E-01	1.378E+00	1.950E-01	0.242
		1099.22	*	-8.819E-02	8.347E-02	1.207E-01	1.122E-02	-0.731
		1291.56		-8.498E-02	1.054E-01	1.514E-01	1.446E-02	-0.561
CO-60		1173.22		2.760E-03	3.866E-02	6.360E-02	5.114E-03	0.043
		1332.49	*	-9.158E-03	3.816E-02	5.985E-02	5.049E-03	-0.153
ZN-65		1115.52	*	-1.205E-02	8.792E-02	1.222E-01	1.038E-02	-0.099
GE-68		1077.35	*	3.825E-01	1.098E+00	1.871E+00	1.634E-01	0.204
AS-73		53.44	*	2.869E-01	7.455E-01	1.191E+00	9.087E-02	0.241
AS-74		595.88	*	-3.193E-02	9.165E-02	1.393E-01	1.293E-02	-0.229
		634.78		3.317E-01	3.335E-01	5.851E-01	5.304E-02	0.567
SE-75		66.05		-3.527E+00	4.602E+00	6.257E+00	6.020E-01	-0.564

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	96.73			-6.125E-01	6.895E-01	9.919E-01	1.371E-01	-0.618
	121.11			-2.036E-02	1.162E-01	1.932E-01	2.121E-02	-0.105
	136.00			3.005E-02	3.357E-02	5.787E-02	4.911E-03	0.519
	198.60			3.987E-01	1.602E+00	2.631E+00	2.820E-01	0.152
	264.65	*		3.928E-02	3.849E-02	6.510E-02	7.597E-03	0.603
	279.53			7.840E-02	1.017E-01	1.535E-01	1.879E-02	0.511
	303.91			4.566E-01	2.016E+00	2.903E+00	4.034E-01	0.157
	400.65			1.154E-01	2.284E-01	3.942E-01	4.589E-02	0.293
BR-77	+	87.88		7.655E+02	2.986E+02	4.140E+02	3.985E+01	1.849
	+	200.40		9.701E+01	2.007E+02	3.345E+02	3.324E+01	0.290
	+	239.00		3.899E+02	4.878E+01	5.166E+01	5.666E+00	7.547
		249.79		-8.189E+01	7.703E+01	1.145E+02	1.289E+01	-0.715
		281.68		-2.194E+01	1.191E+02	1.662E+02	1.992E+01	-0.132
		297.23		1.161E+02	1.013E+02	1.258E+02	1.479E+01	0.923
		303.76		2.054E+01	2.405E+02	3.421E+02	3.987E+01	0.060
		439.47		1.976E+02	1.709E+02	3.057E+02	2.884E+01	0.646
		484.57		9.463E+01	2.727E+02	4.630E+02	4.404E+01	0.204
		520.65	*	-6.674E+00	1.140E+01	1.774E+01	1.686E+00	-0.376
		574.64		-2.313E+02	2.484E+02	3.709E+02	3.475E+01	-0.624
		578.91		1.262E+02	1.173E+02	1.871E+02	1.750E+01	0.674
		585.48		8.149E+02	2.631E+02	4.657E+02	4.344E+01	1.750
		755.35		1.343E+02	2.110E+02	3.574E+02	3.293E+01	0.376
		817.79		1.367E+01	1.601E+02	2.712E+02	2.539E+01	0.050
SR-82		698.33		-1.448E+01	2.947E+01	4.511E+01	4.071E+00	-0.321
		776.49	*	-1.802E-01	3.616E-01	5.474E-01	5.076E-02	-0.329
		1395.20		-7.547E+00	1.029E+01	1.458E+01	1.240E+00	-0.518
RB-83		520.41	*	-3.314E-02	5.449E-02	8.461E-02	8.039E-03	-0.392
		529.64		-9.359E-02	9.296E-02	1.392E-01	1.321E-02	-0.672
		552.65		1.330E-01	1.774E-01	3.074E-01	2.902E-02	0.432
RB-84		881.50	*	4.470E-02	6.396E-02	1.134E-01	1.072E-02	0.394
KR-85		513.99	*	2.706E+00	6.492E+00	9.804E+00	9.322E-01	0.276
SR-85		513.99	*	1.404E-02	3.369E-02	5.087E-02	4.837E-03	0.276
RB-86		1076.63	*	3.031E-01	7.218E-01	1.238E+00	1.082E-01	0.245
Y-88		898.02		-7.948E-03	3.620E-02	5.914E-02	5.616E-03	-0.134
		1836.01	*	1.117E-02	2.756E-02	4.924E-02	3.998E-03	0.227
ZR-88		392.90	*	-8.258E-03	2.868E-02	4.731E-02	4.376E-03	-0.175
Y-91		1204.90	*	6.674E+00	1.658E+01	2.809E+01	2.284E+00	0.238
NB-94		702.63	*	3.037E-02	2.832E-02	4.987E-02	4.508E-03	0.609
		871.10		-1.322E-02	3.296E-02	5.319E-02	5.020E-03	-0.249
NB-95		765.79	*	3.477E-02	4.526E-02	6.879E-02	6.359E-03	0.505
NB-95M		235.69	*	1.164E-01	1.167E-01	1.785E-01	2.123E-02	0.652
ZR-95		724.18		1.595E-02	9.766E-02	1.396E-01	1.371E-02	0.114
		756.15	*	2.352E-02	6.639E-02	1.097E-01	1.101E-02	0.214
NB-97		657.90	*	6.440E-02	6.639E-02	Half-Life	too short	
		1024.50		4.916E+00	6.639E-02	Half-Life	too short	
ZR-97		254.15		-2.847E+00	6.639E-02	Half-Life	too short	
		355.39		6.263E+00	6.639E-02	Half-Life	too short	
		507.63	*	6.087E+00	6.639E-02	Half-Life	too short	
		602.52		-1.861E+01	6.639E-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			-1.343E+01	6.639E-02	Half-Life	too short	
	1147.95			6.157E+00	6.639E-02	Half-Life	too short	
	1362.66			4.073E+00	6.639E-02	Half-Life	too short	
	1750.46			-1.580E+00	6.639E-02	Half-Life	too short	
MO-99	140.51			1.284E+01	3.076E+01	5.090E+01	1.408E+01	0.252
	181.06			1.646E+01	2.189E+01	3.328E+01	6.218E+00	0.495
	366.43			-3.947E+01	9.418E+01	1.544E+02	1.562E+01	-0.256
	739.58	*		2.393E+00	1.476E+01	2.400E+01	3.720E+00	0.100
	778.00			3.736E+00	3.981E+01	6.416E+01	5.952E+00	0.058
TC-99M	140.51	*		3.236E+11	3.981E+01	Half-Life	too short	
RH-101	127.23			1.480E-02	2.865E-02	4.422E-02	3.682E-03	0.335
	198.01	*		-1.191E-02	2.887E-02	4.590E-02	4.531E-03	-0.259
	325.23			6.220E-02	2.303E-01	3.308E-01	3.713E-02	0.188
RH-102	418.52			1.182E-01	2.404E-01	4.149E-01	3.887E-02	0.285
	475.06	*		1.089E-02	2.475E-02	4.235E-02	4.025E-03	0.257
	631.29			-3.127E-02	4.988E-02	7.625E-02	6.929E-03	-0.410
	697.49			-5.967E-03	6.390E-02	1.020E-01	9.198E-03	-0.059
	766.84	+		3.220E-01	1.017E-01	1.938E-01	1.792E-02	1.662
	1046.59			-1.903E-02	8.922E-02	1.434E-01	1.278E-02	-0.133
	1112.84			-7.279E-02	2.380E-01	3.229E-01	2.746E-02	-0.225
RU-103	497.08	*		-2.329E-02	3.406E-02	5.273E-02	7.764E-03	-0.442
	610.33	+		1.390E+01	2.930E+00	3.009E+00	5.114E-01	4.620
RH-106	511.85	+		5.839E-01	2.870E-01	3.839E-01	3.651E-02	1.521
	621.84	*		-1.780E-02	2.842E-01	4.593E-01	6.294E-02	-0.039
	1050.47			1.565E+00	1.858E+00	3.334E+00	2.964E-01	0.469
RU-106	511.85	+		5.839E-01	2.870E-01	3.839E-01	3.651E-02	1.521
	621.84	*		-1.780E-02	2.842E-01	4.593E-01	4.200E-02	-0.039
	1050.47			1.565E+00	1.858E+00	3.334E+00	2.964E-01	0.469
AG-108M	433.93	*		-1.163E-02	2.658E-02	4.283E-02	4.170E-03	-0.271
	614.37			4.586E-02	3.519E-02	5.760E-02	5.475E-03	0.796
	722.95			1.427E-03	4.418E-02	6.215E-02	5.862E-03	0.023
AG-110M	657.75	*		1.715E-02	3.477E-02	5.214E-02	4.773E-03	0.329
	677.61			2.006E-01	2.611E-01	4.512E-01	4.140E-02	0.445
	706.67			2.000E-02	1.688E-01	2.748E-01	2.551E-02	0.073
	763.93			3.901E-02	1.675E-01	2.405E-01	2.277E-02	0.162
	884.67			1.730E-03	4.461E-02	7.483E-02	7.261E-03	0.023
	937.48			-1.172E-01	9.513E-02	1.364E-01	1.316E-02	-0.859
	1384.27			-8.094E-03	1.551E-01	2.234E-01	1.953E-02	-0.036
IN-111	171.28			-2.701E-01	1.159E+00	1.886E+00	1.734E-01	-0.143
	245.39	*		2.641E-01	1.234E+00	1.802E+00	2.007E-01	0.147
IN-113M	391.69	*		2.428E-03	4.177E-02	7.039E-02	6.681E-03	0.034
SN-113	391.69	*		2.428E-03	4.177E-02	7.039E-02	6.681E-03	0.034
IN-114M	190.27	*		4.681E-02	1.730E-01	2.573E-01	2.488E-02	0.182
CD-115	260.90			-2.205E+02	1.627E+02	2.349E+02	2.711E+01	-0.939
	492.35			-2.062E+01	4.356E+01	6.920E+01	6.585E+00	-0.298
	527.90	*		2.195E-01	1.313E+01	2.162E+01	2.052E+00	0.010
SN-117M	156.02			4.018E-01	2.090E+00	3.485E+00	3.074E-01	0.115
	158.56	*		-2.581E-02	5.057E-02	8.159E-02	7.247E-03	-0.316
SB-122	563.90	*		1.293E+00	2.438E+00	4.155E+00	3.909E-01	0.311



---- 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			-2.249E+01	5.525E+01	8.404E+01	7.566E+00	-0.268
	159.00	*		-1.218E+01	5.525E+01	Half-Life	too short	
	528.96			-7.371E+02	5.525E+01	Half-Life	too short	
TE-123M	159.00	*		-1.437E-02	2.496E-02	4.013E-02	3.589E-03	-0.358
I-124	602.71	*		-8.627E-01	8.755E-01	1.063E+00	9.831E-02	-0.812
	722.78			2.025E+00	5.364E+00	7.868E+00	7.169E-01	0.257
	1325.50			1.389E+01	3.789E+01	6.409E+01	5.397E+00	0.217
+	1376.25			9.346E+01	4.986E+01	7.296E+01	6.192E+00	1.281
	1509.49			9.363E+00	1.843E+01	3.272E+01	2.798E+00	0.286
	1691.02			-1.219E-01	3.871E+00	6.370E+00	5.356E-01	-0.019
SB-124	602.71			-4.208E-02	4.270E-02	5.185E-02	4.796E-03	-0.812
	645.85			1.207E-01	4.211E-01	7.009E-01	6.650E-02	0.172
	709.31			-2.666E+00	2.487E+00	3.442E+00	3.120E-01	-0.775
	713.82			1.058E+00	1.588E+00	2.651E+00	3.280E-01	0.399
	722.78			1.432E-01	3.792E-01	5.563E-01	5.167E-02	0.257
+	968.20			1.844E+01	4.004E+00	7.193E+00	6.663E-01	2.563
	1045.16			-6.037E-01	2.001E+00	3.184E+00	2.839E-01	-0.190
	1325.50			1.049E+00	2.861E+00	4.839E+00	4.075E-01	0.217
	1368.21			4.504E-02	1.501E+00	2.363E+00	3.163E-01	0.019
	1436.60			1.896E-02	3.291E+00	5.531E+00	4.720E-01	0.003
	1691.02	*		-2.034E-03	6.456E-02	1.062E-01	9.304E-03	-0.019
SB-125	427.89	*		-8.540E-03	7.710E-02	1.277E-01	1.220E-02	-0.067
+	463.38			6.507E-01	3.948E-01	5.229E-01	5.285E-02	1.244
	600.56			-1.938E-02	1.580E-01	2.547E-01	2.510E-02	-0.076
	635.90			2.379E-01	2.506E-01	4.372E-01	4.250E-02	0.544
TE-125M	109.28	*		-2.012E+00	7.489E+00	1.246E+01	1.269E+00	-0.161
I-126	388.63			-5.076E-02	1.945E-01	3.215E-01	3.008E-02	-0.158
	666.33	*		1.743E-01	1.984E-01	3.082E-01	2.741E-02	0.566
	753.82			6.812E-01	1.418E+00	2.371E+00	2.183E-01	0.287
SB-126	223.80			7.020E-01	3.613E+00	5.916E+00	6.248E-01	0.119
+	278.60			5.003E+00	2.849E+00	4.028E+00	4.831E-01	1.242
+	296.50			1.663E+01	3.009E+00	3.705E+00	4.362E-01	4.488
	414.70			5.392E-03	6.992E-02	1.138E-01	1.064E-02	0.047
	415.30			-1.418E+00	5.723E+00	9.412E+00	8.804E-01	-0.151
	555.20			1.191E-01	3.769E+00	6.193E+00	5.842E-01	0.019
	573.80			-9.941E-01	9.507E-01	1.402E+00	1.314E-01	-0.709
	593.00			-2.175E-01	8.450E-01	1.346E+00	1.251E-01	-0.162
	656.30			3.328E+00	3.297E+00	5.259E+00	4.689E-01	0.633
	666.33			7.304E-02	8.311E-02	1.291E-01	1.149E-02	0.566
	675.00			3.547E-01	1.819E+00	2.992E+00	2.672E-01	0.119
	695.00			2.275E-02	7.178E-02	1.190E-01	1.072E-02	0.191
	697.00			6.023E-02	2.393E-01	3.945E-01	3.558E-02	0.153
	720.50	*		6.431E-02	1.463E-01	2.408E-01	2.192E-02	0.267
	856.80			1.351E-02	5.147E-01	7.530E-01	7.095E-02	0.018
	989.30			1.241E+00	1.172E+00	2.133E+00	1.959E-01	0.582
	1034.80			4.163E+00	6.923E+00	1.224E+01	1.098E+00	0.340
	1213.00			2.056E+00	4.287E+00	7.311E+00	5.962E-01	0.281
SB-127	61.10			1.067E+01	6.310E+01	9.130E+01	9.595E+00	0.117
	252.40			2.028E+00	4.471E+00	7.259E+00	3.104E+00	0.279

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		290.80	1.157E+01	2.515E+01	3.697E+01	5.211E+00	0.313
		411.60	-5.617E+00	1.412E+01	1.997E+01	3.270E+00	-0.281
		444.90	-2.637E+00	1.010E+01	1.648E+01	2.211E+00	-0.160
		473.00	-6.389E-02	1.747E+00	2.888E+00	3.974E-01	-0.022
		543.00	1.135E+01	1.784E+01	3.064E+01	4.650E+00	0.370
		603.60	-9.307E+00	1.473E+01	1.867E+01	2.472E+00	-0.499
		685.20	* 1.323E-01	1.499E+00	2.436E+00	2.920E-01	0.054
		698.50	-1.259E+01	1.625E+01	2.399E+01	3.906E+00	-0.525
		722.20	1.073E+00	3.935E+01	5.532E+01	6.570E+00	0.019
		783.80	4.131E+00	4.140E+00	7.154E+00	9.436E-01	0.577
		57.60	-1.114E+00	5.465E+00	8.449E+00	6.108E-01	-0.132
		145.22	8.485E-02	6.299E-01	1.031E+00	8.850E-02	0.082
		172.10	7.521E-02	1.066E-01	1.807E-01	1.665E-02	0.416
		202.84	* -3.997E-03	4.217E-02	6.841E-02	6.842E-03	-0.058
I-131		374.96	-2.428E-02	1.777E-01	2.967E-01	2.918E-02	-0.082
		80.18	5.496E+00	4.444E+00	6.693E+00	5.922E-01	0.821
		284.30	9.200E-02	1.464E+00	2.345E+00	2.880E-01	0.039
		364.48	* 5.656E-02	1.070E-01	1.862E-01	1.970E-02	0.304
TE-132		636.97	4.252E-01	1.564E+00	2.595E+00	2.470E-01	0.164
		722.89	2.855E+00	7.891E+00	1.155E+01	1.060E+00	0.247
		49.72	1.695E+01	2.194E+01	3.576E+01	3.846E+00	0.474
		111.76	1.947E-01	3.037E+01	5.110E+01	5.614E+00	0.004
BA-133		116.30	-5.757E+00	2.847E+01	4.738E+01	5.184E+00	-0.122
		228.16	* 2.117E-01	7.580E-01	1.244E+00	2.131E-01	0.170
		53.15	-1.068E+00	3.207E+00	4.938E+00	3.783E-01	-0.216
		79.62	2.454E-01	1.067E+00	1.659E+00	2.537E-01	0.148
I-133		81.00	2.611E-02	8.728E-02	1.252E-01	2.005E-02	0.209
	+	276.40	7.019E-01	4.080E-01	5.647E-01	9.399E-02	1.243
		302.84	-3.921E-02	1.414E-01	1.944E-01	3.002E-02	-0.202
		356.01	* 9.379E-03	3.725E-02	5.683E-02	8.212E-03	0.165
CS-134		383.85	5.349E-02	2.596E-01	4.421E-01	5.854E-02	0.121
	+	510.53	2.944E+00	2.596E-01	Half-Life	too short	
		529.87	* -8.880E-03	2.596E-01	Half-Life	too short	
		706.58	1.603E-01	2.596E-01	Half-Life	too short	
I-135		856.28	-2.886E-02	2.596E-01	Half-Life	too short	
		875.33	1.537E-02	2.596E-01	Half-Life	too short	
	+	1236.41	3.347E+00	2.596E-01	Half-Life	too short	
		1298.22	4.750E-01	2.596E-01	Half-Life	too short	
CS-135		475.35	1.068E+00	1.601E+00	2.781E+00	2.643E-01	0.384
		563.23	2.307E-01	3.249E-01	5.600E-01	5.311E-02	0.412
		569.32	1.153E-04	1.727E-01	2.784E-01	2.644E-02	0.000
		604.70	8.391E-03	3.164E-02	4.651E-02	4.306E-03	0.180
I-135		795.84	* 8.202E-02	4.521E-02	8.478E-02	7.949E-03	0.967
		801.93	-2.977E-01	3.490E-01	5.429E-01	5.090E-02	-0.548
		1038.57	-1.203E+00	2.867E+00	4.476E+00	4.008E-01	-0.269
		1167.94	-1.440E+00	2.298E+00	3.509E+00	2.837E-01	-0.410
CS-135		1365.15	5.065E-02	1.110E+00	1.800E+00	1.598E-01	0.028
		268.24	* 1.093E-01	1.506E-01	2.263E-01	2.886E-02	0.483
I-135		288.45	-3.437E+10	1.506E-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			7.514E+10	1.506E-01	Half-Life	too short	
	546.56			-4.281E+10	1.506E-01	Half-Life	too short	
	836.80			1.067E+10	1.506E-01	Half-Life	too short	
	1038.76			-1.157E+11	1.506E-01	Half-Life	too short	
	1124.00			-1.190E+11	1.506E-01	Half-Life	too short	
	1131.51			3.279E+10	1.506E-01	Half-Life	too short	
	1260.41	*		-3.404E+10	1.506E-01	Half-Life	too short	
	1457.56			7.660E+12	1.506E-01	Half-Life	too short	
	1678.03			3.786E+10	1.506E-01	Half-Life	too short	
	1706.46			-3.988E+11	1.506E-01	Half-Life	too short	
	1791.20			3.662E+10	1.506E-01	Half-Life	too short	
CS-136	66.91			-1.521E-01	7.762E-01	1.094E+00	1.633E-01	-0.139
+	86.29			3.464E+00	1.391E+00	1.814E+00	2.434E-01	1.910
	153.22			-2.949E-02	6.005E-01	9.921E-01	9.681E-02	-0.030
	163.89			-1.398E-01	9.951E-01	1.631E+00	1.634E-01	-0.086
	176.55			1.620E-01	3.474E-01	5.822E-01	5.698E-02	0.278
	273.65			3.354E-01	5.513E-01	6.630E-01	8.148E-02	0.506
	340.57			1.802E-01	1.202E-01	1.984E-01	2.194E-02	0.908
	818.51			1.506E-02	6.841E-02	1.173E-01	1.099E-02	0.128
	1048.07	*		-7.881E-02	9.326E-02	1.379E-01	1.279E-02	-0.571
	1235.34			8.170E-01	6.449E-01	1.039E+00	1.201E-01	0.786
CE-139	165.85	*		1.042E-03	2.658E-02	4.391E-02	3.982E-03	0.024
BA-140	162.64			2.109E-01	6.988E-01	1.168E+00	1.106E-01	0.181
	304.84			4.817E-01	1.304E+00	1.892E+00	5.504E-01	0.255
	423.70			6.080E-01	1.752E+00	2.977E+00	9.714E-01	0.204
	537.32	*		-7.917E-02	2.498E-01	3.977E-01	1.327E-01	-0.199
LA-140	328.77			4.431E-01	4.425E-01	5.644E-01	6.504E-02	0.785
+	432.53			-1.764E-01	1.804E+00	2.926E+00	2.868E-01	-0.060
	487.03			-9.442E-03	1.229E-01	2.022E-01	2.022E-02	-0.047
	751.79			-2.133E+00	1.794E+00	2.522E+00	2.540E-01	-0.846
	815.85			-2.765E-02	2.897E-01	4.829E-01	4.964E-02	-0.057
	867.82			-4.018E-01	1.381E+00	2.252E+00	2.219E-01	-0.178
	919.63			-1.551E+00	2.275E+00	3.355E+00	3.790E-01	-0.462
	925.24			5.782E-01	9.103E-01	1.619E+00	1.602E-01	0.357
	1596.49	*		-7.746E-02	8.886E-02	1.284E-01	1.094E-02	-0.603
CE-141	145.44	*		8.731E-03	5.481E-02	9.161E-02	8.014E-03	0.095
CE-143	57.37			2.470E-04	5.481E-02	Half-Life	too short	
	231.56			-2.270E-03	5.481E-02	Half-Life	too short	
	293.26	*		9.306E-04	5.481E-02	Half-Life	too short	
+	350.59			5.548E-02	5.481E-02	Half-Life	too short	
	490.36			-9.855E-04	5.481E-02	Half-Life	too short	
	664.57			1.900E-04	5.481E-02	Half-Life	too short	
	721.93			3.656E-04	5.481E-02	Half-Life	too short	
CE-144	80.11			2.287E+00	1.859E+00	2.800E+00	2.458E-01	0.817
	133.54	*		-1.864E-01	1.788E-01	2.810E-01	4.340E-02	-0.663
PM-144	476.78			3.509E-03	5.660E-02	9.424E-02	9.654E-03	0.037
	618.01			-1.536E-02	2.845E-02	4.398E-02	4.131E-03	-0.349
	696.49	*		1.907E-03	2.946E-02	4.775E-02	4.307E-03	0.040
	778.57			1.632E-02	2.043E+00	3.264E+00	3.029E-01	0.005

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144	696.49	*		1.293E-01	1.998E+00	3.237E+00	2.919E-01	0.040
	1489.15			-2.916E+00	1.003E+01	1.601E+01	1.369E+00	-0.182
PM-146	453.90	*		2.885E-02	3.643E-02	6.380E-02	7.286E-03	0.452
	633.02			-2.507E-02	1.281E+00	2.076E+00	7.780E-01	-0.012
	735.90			5.705E-03	1.340E-01	2.157E-01	6.205E-02	0.026
	747.13			-2.479E-02	8.436E-02	1.311E-01	1.887E-02	-0.189
ND-147	91.11	+		6.821E-01	2.558E-01	4.561E-01	4.559E-02	1.495
	319.41			-1.807E+00	3.040E+00	4.585E+00	5.207E-01	-0.394
	439.89			5.978E+00	5.350E+00	9.551E+00	9.016E-01	0.626
	531.02	*		-1.404E-01	5.346E-01	8.598E-01	1.330E-01	-0.163
PM-149	285.90	*		1.876E+01	1.166E+02	1.878E+02	3.305E+01	0.100
EU-152	121.78			-1.031E-02	6.217E-02	1.034E-01	9.983E-03	-0.100
	244.69			-9.880E-02	3.008E-01	4.199E-01	4.668E-02	-0.235
	344.27	*		-5.531E-02	9.210E-02	1.303E-01	1.457E-02	-0.424
	443.98			-4.536E-01	8.092E-01	1.290E+00	1.219E-01	-0.352
	778.89			1.567E-02	2.367E-01	3.802E-01	3.528E-02	0.041
	867.32			-1.497E-01	7.935E-01	1.271E+00	1.199E-01	-0.118
	964.01	+		5.851E-01	3.624E-01	5.180E-01	4.806E-02	1.129
	1085.78			-5.610E-02	3.440E-01	5.554E-01	4.822E-02	-0.101
	1112.02			-1.245E-01	3.458E-01	4.658E-01	3.963E-02	-0.267
	1407.95			1.509E-01	1.707E-01	3.112E-01	2.650E-02	0.485
GD-153	69.67			-9.161E-02	1.314E+00	2.250E+00	1.773E-01	-0.041
	83.37	+		1.901E+01	1.444E+01	2.094E+01	1.908E+00	0.908
	97.43	*		-4.851E-02	7.348E-02	1.062E-01	9.438E-03	-0.457
	103.18			-1.003E-01	8.755E-02	1.402E-01	1.208E-02	-0.715
EU-154	123.07			3.912E-03	4.279E-02	7.193E-02	8.003E-03	0.054
	247.94			8.853E-02	2.939E-01	4.818E-01	6.516E-02	0.184
	591.81			8.524E-02	4.935E-01	8.178E-01	9.962E-02	0.104
	723.30			-9.978E-03	1.837E-01	2.555E-01	2.549E-02	-0.039
	756.87			3.947E-01	7.274E-01	1.219E+00	1.514E-01	0.324
	873.19			1.572E-01	2.766E-01	4.845E-01	6.218E-02	0.324
	996.32			-1.461E-01	3.107E-01	4.868E-01	8.776E-02	-0.300
	1004.76			-4.087E-02	1.995E-01	3.235E-01	3.886E-02	-0.126
	1274.45	*		-1.638E-02	1.085E-01	1.728E-01	1.914E-02	-0.095
EU-155	48.70			-1.557E+00	2.284E+00	3.464E+00	2.846E-01	-0.449
	60.01			1.893E+00	4.431E+00	6.519E+00	4.656E-01	0.290
	86.54	+		3.013E-01	1.176E-01	1.603E-01	1.530E-02	1.880
	105.31	*		1.027E-01	8.960E-02	1.572E-01	1.360E-02	0.653
TB-160	86.79	+		8.132E-01	3.172E-01	4.384E-01	4.163E-02	1.855
	197.04			-7.917E-01	5.003E-01	7.377E-01	7.265E-02	-1.073
	215.65			-1.860E-02	6.538E-01	1.060E+00	1.097E-01	-0.018
	298.57			1.007E-01	1.559E-01	1.847E-01	2.169E-02	0.545
	879.36	*		-2.769E-02	1.285E-01	2.106E-01	1.989E-02	-0.132
	962.29			4.099E-01	5.522E-01	8.646E-01	8.026E-02	0.474
	966.15			9.040E-01	2.383E-01	4.624E-01	4.286E-02	1.955
	1177.93			-3.137E-02	3.008E-01	4.854E-01	3.910E-02	-0.065
	1271.85			1.657E-01	5.904E-01	9.906E-01	8.227E-02	0.167
HO-166M	80.57			-6.000E-02	2.914E-01	3.530E-01	3.115E-02	-0.170
	184.41	+		1.823E-01	5.559E-02	5.786E-02	5.508E-03	3.151

## ---- 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		4.517E-02	7.918E-02	1.178E-01	1.413E-02	0.383
		410.95		5.794E-02	2.435E-01	3.665E-01	3.422E-02	0.158
		711.68	*	7.452E-03	5.411E-02	8.812E-02	7.995E-03	0.085
		752.31		-3.698E-01	2.726E-01	3.756E-01	3.458E-02	-0.985
		810.29		-6.356E-02	5.175E-02	7.650E-02	7.151E-03	-0.831
		51.35		-1.246E+01	2.702E+01	4.135E+01	3.258E+00	-0.301
		52.39		-1.741E+01	1.419E+01	2.068E+01	1.603E+00	-0.842
		59.40		-1.662E+01	2.300E+01	3.453E+01	2.452E+00	-0.481
		66.72	*	-9.914E+00	2.667E+01	3.720E+01	2.851E+00	-0.266
		88.36		5.931E-01	2.313E-01	3.028E-01	2.907E-02	1.958
LU-176	+	201.83		-3.194E-02	2.606E-02	3.965E-02	3.955E-03	-0.806
		306.84	*	1.206E-02	2.152E-02	3.541E-02	4.107E-03	0.341
LU-177		401.10		4.494E+00	5.914E+00	1.035E+01	9.620E-01	0.434
		112.95		-2.014E-01	1.490E+00	2.492E+00	2.086E-01	-0.081
LU-177M	+	208.36	*	3.165E+00	1.701E+00	2.125E+00	2.157E-01	1.490
		52.97		-8.496E-01	1.445E+00	2.192E+00	1.684E-01	-0.388
HF-181		54.07		4.667E-01	7.694E-01	1.241E+00	9.382E-02	0.376
		61.30		1.453E-01	1.330E+00	1.918E+00	1.391E-01	0.076
		121.62		-1.052E-01	3.186E-01	5.261E-01	4.367E-02	-0.200
		147.16		-6.790E-01	5.704E-01	8.927E-01	7.699E-02	-0.761
		171.86		2.323E-01	4.190E-01	7.062E-01	6.503E-02	0.329
		218.09		2.280E-01	7.261E-01	1.197E+00	1.246E-01	0.190
	+	268.79		1.523E+00	8.700E-01	1.237E+00	1.453E-01	1.232
		319.02		-7.741E-02	2.203E-01	3.393E-01	3.855E-02	-0.228
		367.43		-5.129E-01	7.692E-01	1.238E+00	1.249E-01	-0.414
		413.65	*	8.681E-02	1.638E-01	2.533E-01	2.367E-02	0.343
W-181		56.28		-1.257E-01	8.789E-01	1.365E+00	1.002E-01	-0.092
		57.53		-8.190E-02	4.591E-01	7.108E-01	5.142E-02	-0.115
	+	65.20		1.254E+00	1.264E+00	1.287E+00	9.718E-02	0.975
		133.02		-3.426E-02	5.943E-02	9.186E-02	7.703E-03	-0.373
		136.25		-6.652E-02	4.122E-01	6.821E-01	5.750E-02	-0.098
TA-182		345.85		-1.391E-01	1.931E-01	2.675E-01	2.868E-02	-0.520
		482.03	*	1.340E-02	3.718E-02	6.320E-02	6.011E-03	0.212
		56.28		-4.850E-02	3.399E-01	5.278E-01	3.874E-02	-0.092
		57.53		-3.157E-02	1.777E-01	2.751E-01	1.990E-02	-0.115
	+	65.20	*	4.815E-01	4.854E-01	4.941E-01	3.731E-02	0.975
RE-183		67.75		-4.788E-02	1.077E-01	1.496E-01	1.158E-02	-0.320
		100.10		1.681E-01	1.510E-01	2.648E-01	2.316E-02	0.635
		152.43		-1.619E-01	2.907E-01	4.691E-01	4.098E-02	-0.345
		222.10		-4.478E-02	3.014E-01	4.846E-01	5.096E-02	-0.092
		1001.68		8.363E-01	1.984E+00	3.387E+00	3.093E-01	0.247
		1121.28		5.442E-01	1.990E-01	3.458E-01	2.920E-02	1.574
		1189.05		3.334E-02	2.713E-01	4.482E-01	3.624E-02	0.074
		1221.42	*	-2.769E-02	1.722E-01	2.756E-01	2.254E-02	-0.100
		1230.97		-7.110E-02	4.891E-01	6.729E-01	5.520E-02	-0.106
		57.98		-7.469E-02	1.770E-01	2.704E-01	1.947E-02	-0.276
RE-183		59.32		-4.829E-02	9.467E-02	1.438E-01	1.022E-02	-0.336
		67.20		7.733E-03	1.902E-01	2.717E-01	2.091E-02	0.028
		162.32	*	3.794E-02	9.751E-02	1.636E-01	1.468E-02	0.232

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	208.81		2.559E+00	1.376E+00	1.734E+00	1.762E-01	1.476
		291.72		-2.033E-01	9.218E-01	1.280E+00	1.516E-01	-0.159
		57.98		-2.734E-01	6.479E-01	9.897E-01	7.126E-02	-0.276
		59.32		-1.766E-01	3.463E-01	5.259E-01	3.738E-02	-0.336
		67.20		2.830E-02	6.959E-01	9.942E-01	7.653E-02	0.028
		161.27		8.344E-02	3.126E-01	5.221E-01	4.673E-02	0.160
		216.55		-3.661E-02	2.304E-01	3.709E-01	3.846E-02	-0.099
		252.85	*	3.420E-02	1.973E-01	3.207E-01	3.634E-02	0.107
		318.01		-6.899E-02	3.936E-01	6.153E-01	7.003E-02	-0.112
		792.07		-3.088E-01	9.037E-01	1.481E+00	1.379E-01	-0.209
OS-185		903.28		5.000E-01	9.270E-01	1.499E+00	1.416E-01	0.334
		920.93		-2.834E-01	3.501E-01	5.265E-01	4.935E-02	-0.538
		59.72		-1.381E-01	2.789E-01	3.875E-01	2.757E-02	-0.357
		61.14		2.316E-02	1.474E-01	2.131E-01	1.543E-02	0.109
		69.30		3.508E-02	2.383E-01	4.110E-01	3.227E-02	0.085
		592.07		2.541E-01	2.022E+00	3.337E+00	3.103E-01	0.076
		646.12	*	1.298E-02	3.527E-02	5.915E-02	5.317E-03	0.219
		717.42		-5.200E-01	8.600E-01	1.302E+00	1.184E-01	-0.399
		874.81		1.835E-01	5.344E-01	9.211E-01	8.697E-02	0.199
		880.27		-2.999E-02	7.084E-01	1.180E+00	1.115E-01	-0.025
RE-188		155.03	*	1.312E-01	1.486E-01	2.545E-01	2.239E-02	0.515
		477.96		-9.119E-01	2.624E+00	4.228E+00	4.020E-01	-0.216
		633.10		-5.787E-01	2.689E+00	4.283E+00	3.887E-01	-0.135
W-188	+	63.58		6.475E+01	6.527E+01	7.906E+01	5.876E+00	0.819
IR-192		227.08		-4.961E+00	1.107E+01	1.745E+01	1.858E+00	-0.284
	*	290.67		3.840E+00	7.207E+00	1.066E+01	1.264E+00	0.360
	+	295.96		1.208E+00	2.190E-01	2.923E-01	3.457E-02	4.133
AU-195		308.46		-6.092E-02	8.692E-02	1.307E-01	1.516E-02	-0.466
	*	316.51		1.273E-02	3.024E-02	4.928E-02	5.632E-03	0.258
		468.07		6.268E-02	6.475E-02	1.031E-01	1.038E-02	0.608
		604.41		8.722E-02	4.300E-01	6.275E-01	8.432E-02	0.139
		612.46		9.656E-02	7.418E-01	1.071E+00	1.114E-01	0.090
TL-200	+	65.12		2.220E-01	2.238E-01	2.285E-01	1.725E-02	0.971
		66.83		-2.812E-02	8.857E-02	1.239E-01	9.507E-03	-0.227
	+	75.70		1.169E+00	2.279E-01	3.940E-01	3.297E-02	2.966
	*	98.88		2.134E-01	1.921E-01	3.305E-01	2.910E-02	0.646
TL-201	+	129.76		5.679E+00	2.796E+00	4.496E+00	3.753E-01	1.263
	*	367.94		-3.358E-04	2.796E+00	Half-Life	too short	
		579.30		6.733E-03	2.796E+00	Half-Life	too short	
		828.27		-1.483E-02	2.796E+00	Half-Life	too short	
TL-202		1205.75		1.045E-03	2.796E+00	Half-Life	too short	
		68.90		3.336E+00	4.871E+00	8.542E+00	6.681E-01	0.391
		70.82		5.965E-01	3.059E+00	4.775E+00	3.804E-01	0.125
		80.30		7.104E+00	5.688E+00	8.571E+00	7.540E-01	0.829
		135.34		2.829E+01	2.785E+01	4.822E+01	4.058E+00	0.587
TL-202	*	167.43		6.863E+00	7.948E+00	1.356E+01	1.234E+00	0.506
		68.90		2.471E-01	3.607E-01	6.326E-01	4.948E-02	0.391
		70.82		4.405E-02	2.259E-01	3.527E-01	2.810E-02	0.125
		80.30		5.248E-01	4.202E-01	6.332E-01	5.571E-02	0.829

## ----- 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	*	7.196E-02	6.324E-02	1.130E-01	1.066E-02	0.637
		70.83		1.847E-01	9.338E-01	1.458E+00	1.924E-01	0.127
		72.87		2.821E-01	5.313E-01	8.386E-01	1.081E-01	0.336
		82.60		-8.184E-01	1.001E+00	1.455E+00	2.039E-01	-0.562
BI-207		279.20	*	3.140E-02	3.994E-02	6.018E-02	7.334E-03	0.522
		72.80		8.259E-02	1.532E-01	2.423E-01	1.968E-02	0.341
	+	74.97		6.455E-01	1.259E-01	1.968E-01	1.635E-02	3.279
	+	84.90		2.451E-01	1.862E-01	2.659E-01	2.468E-02	0.922
TL-207		569.67		-4.176E-03	2.674E-02	4.253E-02	3.992E-03	-0.098
		1063.62	*	1.520E-02	4.361E-02	7.448E-02	6.566E-03	0.204
		1770.23		1.836E-01	3.811E-01	6.249E-01	5.164E-02	0.294
		81.07		5.902E-02	1.925E-01	2.764E-01	2.453E-02	0.214
	+	83.78		1.616E-01	1.228E-01	1.799E-01	1.648E-02	0.898
		94.90		2.697E-01	1.981E-01	3.203E-01	2.896E-02	0.842
		122.32		-2.405E-01	1.485E+00	2.469E+00	2.211E-01	-0.097
		144.24		5.273E-01	6.042E-01	1.016E+00	9.745E-02	0.519
		154.21		1.811E-01	3.404E-01	5.756E-01	5.539E-02	0.315
	+	269.46		3.549E-01	2.028E-01	3.021E-01	3.593E-02	1.175
		323.87	*	1.405E-01	6.625E-01	9.476E-01	1.812E-01	0.148
	+	338.28		7.689E+00	2.078E+00	2.406E+00	3.373E-01	3.195
PO-209		445.03		-3.269E-01	1.930E+00	3.174E+00	4.029E-01	-0.103
		260.50		-7.437E+00	8.237E+00	1.238E+01	1.427E+00	-0.601
		262.80		8.007E+00	2.288E+01	3.746E+01	4.343E+00	0.214
		896.60	*	-1.366E+00	6.588E+00	1.078E+01	1.020E+00	-0.127
BI-210		46.50	*	5.305E-01	3.281E+00	5.203E+00	4.852E-01	0.102
PB-210		46.50	*	5.305E-01	3.281E+00	5.203E+00	4.852E-01	0.102
PO-210		46.50	*	5.305E-01	3.281E+00	5.203E+00	4.395E-01	0.102
PB-211		404.84	*	-3.652E-01	9.740E-01	1.350E+00	8.471E-01	-0.271
BI-212		427.08		3.975E-01	1.787E+00	3.000E+00	1.867E+00	0.133
		831.96		2.776E-01	1.093E+00	1.851E+00	1.162E+00	0.150
	+	727.18	*	9.522E-01	4.211E-01	6.296E-01	6.578E-02	1.512
		785.46		2.423E+00	1.497E+00	2.823E+00	2.623E-01	0.858
PO-215		1620.62		6.613E-01	1.633E+00	2.507E+00	2.130E-01	0.264
		81.07		5.902E-02	1.925E-01	2.764E-01	2.453E-02	0.214
	+	83.78		1.616E-01	1.228E-01	1.799E-01	1.648E-02	0.898
		94.90		2.697E-01	1.981E-01	3.203E-01	2.896E-02	0.842
		122.32		-2.405E-01	1.485E+00	2.469E+00	2.211E-01	-0.097
		144.24		5.273E-01	6.042E-01	1.016E+00	9.745E-02	0.519
		154.21		1.811E-01	3.404E-01	5.756E-01	5.539E-02	0.315
	+	269.46		3.549E-01	2.028E-01	3.021E-01	3.593E-02	1.175
		323.87	*	1.405E-01	6.625E-01	9.476E-01	1.812E-01	0.148
	+	338.28		7.689E+00	2.078E+00	2.406E+00	3.373E-01	3.195
		445.03		-3.269E-01	1.930E+00	3.174E+00	4.029E-01	-0.103
	+	271.23		4.554E-01	2.613E-01	3.929E-01	5.144E-02	1.159
RN-219		401.81	*	3.073E-01	3.702E-01	6.469E-01	9.977E-02	0.475
RN-220		549.76	*	-1.189E+01	2.267E+01	3.548E+01	3.352E+00	-0.335
RA-223		81.07		5.902E-02	1.925E-01	2.764E-01	2.453E-02	0.214
	+	83.78		1.616E-01	1.228E-01	1.799E-01	1.648E-02	0.898
		94.90		2.697E-01	1.981E-01	3.203E-01	2.896E-02	0.842

## ---- 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		-2.405E-01	1.485E+00	2.469E+00	2.211E-01	-0.097
		144.24		5.273E-01	6.042E-01	1.016E+00	9.745E-02	0.519
		154.21		1.811E-01	3.404E-01	5.756E-01	5.539E-02	0.315
	+	269.46		3.549E-01	2.028E-01	3.021E-01	3.593E-02	1.175
		323.87	*	1.405E-01	6.625E-01	9.476E-01	1.812E-01	0.148
	+	338.28		7.689E+00	2.078E+00	2.406E+00	3.373E-01	3.195
		445.03		-3.269E-01	1.930E+00	3.174E+00	4.029E-01	-0.103
		79.80		5.766E-01	1.368E+00	2.138E+00	4.608E-01	0.270
		236.00		2.499E-01	2.203E-01	3.374E-01	4.701E-02	0.741
		256.20	*	3.055E-03	3.365E-01	5.409E-01	9.237E-02	0.006
		286.10		-2.245E-01	1.396E+00	2.204E+00	3.430E-01	-0.102
	+	299.80		2.298E+00	1.961E+00	2.452E+00	4.709E-01	0.937
TH-227		304.40		3.669E-02	1.824E+00	2.579E+00	5.164E-01	0.014
		334.20		-4.302E-01	2.184E+00	3.221E+00	6.631E-01	-0.134
		79.80		5.766E-01	1.368E+00	2.138E+00	4.667E-01	0.270
	+	94.00		1.109E+01	3.713E+00	3.317E+00	7.290E-01	3.342
		236.00		2.499E-01	2.199E-01	3.374E-01	4.359E-02	0.741
		256.20	*	3.055E-03	3.365E-01	5.409E-01	1.058E-01	0.006
		286.10		-2.245E-01	1.414E+00	2.204E+00	2.220E+00	-0.102
	+	299.80		2.298E+00	1.961E+00	2.452E+00	4.709E-01	0.937
		304.40		3.669E-02	1.824E+00	2.579E+00	5.164E-01	0.014
		334.20		-4.302E-01	2.184E+00	3.221E+00	6.631E-01	-0.134
	+	85.43		2.419E-01	1.838E-01	2.568E-01	2.398E-02	0.942
	+	88.47		3.414E-01	1.332E-01	1.735E-01	1.664E-02	1.968
PA-231		100.00		1.596E-01	1.599E-01	2.741E-01	2.399E-02	0.582
		193.63	*	1.704E-01	4.245E-01	7.071E-01	6.900E-02	0.241
		210.97		4.937E-01	7.691E-01	1.158E+00	1.183E-01	0.426
		283.67	*	-4.437E-01	1.343E+00	2.093E+00	3.621E-01	-0.212
TH-231	+	301.29		9.191E-01	7.762E-01	9.678E-01	1.410E-01	0.950
		81.07		5.902E-02	1.925E-01	2.764E-01	2.453E-02	0.214
	+	83.78		1.616E-01	1.228E-01	1.799E-01	1.648E-02	0.898
		94.90		2.697E-01	1.981E-01	3.203E-01	2.896E-02	0.842
U-231		122.32		-2.405E-01	1.485E+00	2.469E+00	2.211E-01	-0.097
		144.24		5.273E-01	6.042E-01	1.016E+00	9.745E-02	0.519
		154.21		1.811E-01	3.404E-01	5.756E-01	5.539E-02	0.315
	+	269.46		3.549E-01	2.028E-01	3.021E-01	3.593E-02	1.175
		323.87	*	1.405E-01	6.625E-01	9.476E-01	1.812E-01	0.148
	+	338.28		7.689E+00	2.078E+00	2.406E+00	3.373E-01	3.195
		445.03		-3.269E-01	1.930E+00	3.174E+00	4.029E-01	-0.103
	+	84.21		8.392E+00	6.377E+00	9.341E+00	8.599E-01	0.898
	+	92.29		1.321E+01	3.548E+00	4.372E+00	4.038E-01	3.021
		95.87	*	-1.239E-01	1.095E+00	1.659E+00	1.489E-01	-0.075
		108.00		-1.079E+00	2.038E+00	3.356E+00	2.842E-01	-0.321
	+	75.28		1.883E+01	4.383E+00	5.863E+00	8.905E-01	3.212
PA-233	+	86.59		4.895E+00	2.279E+00	2.611E+00	7.078E-01	1.875
	+	300.12		6.406E-01	5.437E-01	6.850E-01	1.155E-01	0.935
		311.98	*	6.004E-02	5.684E-02	9.590E-02	1.121E-02	0.626
		340.50		8.981E-01	5.892E-01	9.203E-01	2.276E-01	0.976
		398.62		-2.377E+00	2.025E+00	2.973E+00	7.984E-01	-0.800



---- 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		-4.455E-01	1.405E+00	2.294E+00	5.015E-01	-0.194
		63.00		1.857E+00	1.887E+00	2.238E+00	3.324E-01	0.829
		94.67		3.195E-01	1.490E-01	2.420E-01	3.076E-02	1.320
		98.44		7.018E-02	8.976E-02	1.333E-01	7.440E-02	0.527
		99.86		4.495E-01	4.047E-01	6.961E-01	6.096E-02	0.646
		111.00		-2.779E-02	1.458E-01	2.432E-01	2.903E-02	-0.114
		131.20		8.990E-02	9.576E-02	1.506E-01	1.260E-02	0.597
		152.70		-5.406E-02	2.754E-01	4.520E-01	7.733E-02	-0.120
		186.00		6.564E+00	2.808E+00	2.446E+00	7.702E-01	2.684
		226.40		-3.300E-01	3.497E-01	5.312E-01	7.753E-02	-0.621
		227.20		-1.433E-01	3.707E-01	5.868E-01	6.251E-02	-0.244
		248.90		-2.289E-01	6.738E-01	1.058E+00	2.489E-01	-0.216
		293.70		7.524E+00	1.769E+00	1.592E+00	3.040E-01	4.726
		369.80		-4.746E-02	7.168E-01	1.203E+00	2.690E-01	-0.039
		568.70		2.358E-01	8.928E-01	1.471E+00	1.382E-01	0.160
		569.50		-1.363E-02	2.375E-01	3.811E-01	3.578E-02	-0.036
		574.00		-1.382E+00	1.278E+00	1.876E+00	1.759E-01	-0.737
		699.00		-6.619E-01	6.422E-01	9.105E-01	1.754E-01	-0.727
		706.10		2.349E-01	8.993E-01	1.473E+00	6.580E-01	0.159
		733.00		-2.013E-01	3.672E-01	5.013E-01	1.123E-01	-0.402
		742.81		1.017E+00	1.406E+00	2.123E+00	1.429E+00	0.479
		796.30		1.154E+00	9.156E-01	1.588E+00	4.333E-01	0.727
		805.60		6.748E-01	8.939E-01	1.559E+00	4.810E-01	0.433
		819.60		-5.500E-01	1.097E+00	1.725E+00	6.591E-01	-0.319
		826.30		3.003E-01	7.620E-01	1.303E+00	5.848E-01	0.230
		831.60		7.748E-02	5.571E-01	9.457E-01	2.844E-01	0.082
		876.40		-2.396E-01	7.990E-01	1.234E+00	1.270E+00	-0.194
		880.51		5.454E-02	2.494E-01	4.253E-01	4.018E-02	0.128
		883.24		1.433E-01	2.724E-01	4.476E-01	3.014E-01	0.320
		899.00		5.892E-02	7.270E-01	1.222E+00	5.363E-01	0.048
		925.00		3.752E-01	9.123E-01	1.586E+00	1.490E-01	0.237
		926.50		-2.406E-02	1.400E-01	2.286E-01	5.841E-02	-0.105
		946.00	*	1.056E-01	2.881E-01	4.933E-01	9.425E-02	0.214
		949.00		-9.939E-02	4.248E-01	6.909E-01	6.444E-02	-0.144
		980.50		3.472E-01	6.112E-01	1.071E+00	9.874E-02	0.324
		1394.10		-7.705E-01	1.123E+00	1.405E+00	9.144E-01	-0.548
PA-234M		766.42		1.582E+01	1.481E+01	1.981E+01	1.007E+01	0.799
		1001.03	*	2.420E+00	4.487E+00	7.730E+00	8.048E-01	0.313
U-235	+	89.95		2.529E+00	1.205E+00	1.645E+00	5.116E-01	1.537
		93.35		3.449E+00	1.306E+00	1.161E+00	3.273E-01	2.972
		105.00		8.187E-01	9.135E-01	1.539E+00	4.589E-01	0.532
		143.76	*	1.249E-01	1.861E-01	3.094E-01	5.407E-02	0.404
		163.35		2.155E-02	4.164E-01	6.887E-01	1.326E-01	0.031
NP-236	+	185.71		2.431E-01	7.412E-02	9.045E-02	8.641E-03	2.688
		205.31		2.807E-01	5.045E-01	7.554E-01	1.494E-01	0.372
		94.67		2.441E-01	1.110E-01	1.838E-01	1.665E-02	1.328
		98.44		5.303E-02	6.123E-02	1.008E-01	8.896E-03	0.526
		111.00		-2.102E-02	1.103E-01	1.840E-01	1.547E-02	-0.114
		160.31	*	-2.863E-02	6.948E-02	1.126E-01	1.005E-02	-0.254

---- 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		1.322E-01	1.349E-01	2.313E-01	2.029E-02	0.572
		117.00	*	-1.962E-01	1.552E-01	2.445E-01	2.035E-02	-0.802
	+	209.75		1.996E+00	1.073E+00	1.360E+00	1.385E-01	1.468
		228.18		5.696E-02	1.947E-01	3.199E-01	3.417E-02	0.178
	+	277.60		3.425E-01	1.951E-01	2.833E-01	3.391E-02	1.209
AM-241		334.30		-3.059E-01	1.234E+00	1.812E+00	1.996E-01	-0.169
		59.54	*	-8.402E-02	1.456E-01	2.011E-01	1.578E-02	-0.418
CM-243		99.55		1.361E-01	1.389E-01	2.380E-01	2.088E-02	0.572
		103.76	*	-6.854E-02	8.030E-02	1.305E-01	1.121E-02	-0.525
		117.00		-2.018E-01	1.596E-01	2.515E-01	2.094E-02	-0.802
	+	209.75		1.968E+00	1.058E+00	1.341E+00	1.366E-01	1.468
		228.18		5.756E-02	1.968E-01	3.233E-01	3.453E-02	0.178
AM-246	+	277.60		3.453E-01	1.967E-01	2.856E-01	3.419E-02	1.209
		798.80		-2.593E-01	1.310E-01	1.788E-01	1.667E-02	-1.450
		1036.00		5.740E-02	2.201E-01	3.748E-01	3.360E-02	0.153
		1062.04		-1.490E-02	1.997E-01	3.263E-01	2.879E-02	-0.046
		1078.86	*	8.850E-02	1.232E-01	2.172E-01	1.895E-02	0.408
CM-247	+	278.00		1.420E+00	8.089E-01	1.173E+00	1.405E-01	1.211
		287.40		-7.744E-01	1.138E+00	1.730E+00	2.060E-01	-0.448
		402.60	*	1.562E-02	3.336E-02	5.745E-02	5.342E-03	0.272
CF-249		252.85		1.277E-01	7.371E-01	1.198E+00	1.357E-01	0.107
		333.44		-7.175E-02	1.680E-01	2.433E-01	2.685E-02	-0.295
		387.95	*	-1.048E-02	3.498E-02	5.765E-02	5.409E-03	-0.182
CF-251		176.60	*	5.442E-02	1.129E-01	1.894E-01	1.766E-02	0.287
		227.00		-1.938E-01	3.300E-01	5.158E-01	5.492E-02	-0.376
		285.00		1.315E+00	1.511E+00	2.533E+00	3.025E-01	0.519

## 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]G1202012157
* Acquisition date   : 20-JAN-2010 18:04:18 Detector SN#      :
* Detector ID        : GAM16                               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 02:00:01.93                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 4-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202012157 Analyst initials: MXR1
* Batch Number       : 940268 Sample Quantity : 1.3086E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 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	2.170E+01	2.372E+00	5.450E-01	0.000E+00
CD-109	2.548E+00	9.742E-01	1.115E+00	0.000E+00
SN-126	2.500E-01	9.559E-02	1.158E-01	0.000E+00
BA-137M	9.948E-02	4.338E-02	5.724E-02	0.000E+00
CS-137	1.052E-01	4.586E-02	6.051E-02	0.000E+00
TL-208	4.868E-01	8.254E-02	4.894E-02	0.000E+00
BI-211	3.947E+00	6.291E-01	2.857E-01	0.000E+00
PB-212	1.743E+00	2.270E-01	7.599E-02	0.000E+00
PO-212	1.743E+00	2.270E-01	7.599E-02	0.000E+00
BI-214	1.262E+00	2.021E-01	1.031E-01	0.000E+00
PB-214	1.373E+00	2.298E-01	9.960E-02	0.000E+00
PO-214	1.373E+00	2.298E-01	9.960E-02	0.000E+00
PO-216	1.743E+00	2.270E-01	7.599E-02	0.000E+00
PO-218	1.373E+00	2.298E-01	9.960E-02	0.000E+00
RA-224	5.431E+00	1.264E+00	8.648E-01	0.000E+00
RA-226	1.262E+00	2.021E-01	1.031E-01	0.000E+00
AC-228	1.706E+00	3.585E-01	1.811E-01	0.000E+00
RA-228	1.706E+00	3.585E-01	1.811E-01	0.000E+00
TH-228	1.772E+00	2.307E-01	7.723E-02	0.000E+00
TH-230	1.262E+00	2.021E-01	1.031E-01	0.000E+00
TH-232	1.706E+00	3.585E-01	1.811E-01	0.000E+00
TH-234	1.593E+00	1.593E+00	1.846E+00	0.000E+00
U-234	1.262E+00	2.021E-01	1.031E-01	0.000E+00
NP-237	7.343E-01	3.176E-01	3.040E-01	0.000E+00
U-238	1.593E+00	1.593E+00	1.846E+00	0.000E+00
AM-243	3.596E-01	6.872E-02	7.834E-02	0.000E+00
ANH-511	1.166E-01	5.620E-02	4.324E-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	-5.383E-02	2.724E-01	4.627E-01	0.000E+00	NOT IDENT.
NA-22	-4.844E-03	3.819E-02	6.247E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.114E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.159E-02	2.750E-02	5.248E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.620E-02	6.784E-02	0.000E+00	FAIL ABUN
SC-46	-1.377E-02	3.345E-02	5.522E-02	0.000E+00	FAIL ABUN
V-48	-3.967E-02	6.403E-02	1.020E-01	0.000E+00	NOT IDENT.
CR-51	-1.104E-01	3.165E-01	5.109E-01	0.000E+00	NOT IDENT.
MN-52	-5.469E-02	2.330E-01	3.673E-01	0.000E+00	NOT IDENT.
MN-54	-3.909E-04	3.396E-02	5.873E-02	0.000E+00	NOT IDENT.
CO-56	3.429E-02	3.167E-02	5.987E-02	0.000E+00	FAIL ABUN
CO-57	-5.024E-03	2.123E-02	3.745E-02	0.000E+00	NOT IDENT.
CO-58	-2.067E-02	3.237E-02	5.275E-02	0.000E+00	NOT IDENT.
FE-59	-8.819E-02	8.180E-02	1.214E-01	0.000E+00	NOT IDENT.
CO-60	-9.158E-03	3.740E-02	6.000E-02	0.000E+00	NOT IDENT.
ZN-65	-1.205E-02	8.617E-02	1.229E-01	0.000E+00	NOT IDENT.
GE-68	3.825E-01	1.076E+00	1.882E+00	0.000E+00	NOT IDENT.
AS-73	2.869E-01	7.306E-01	1.258E+00	0.000E+00	NOT IDENT.
AS-74	-3.193E-02	8.982E-02	1.415E-01	0.000E+00	NOT IDENT.
SE-75	3.928E-02	3.772E-02	6.704E-02	0.000E+00	NOT IDENT.
BR-77	-6.674E+00	1.117E+01	1.807E+01	0.000E+00	FAIL ABUN
SR-82	-1.802E-01	3.543E-01	5.538E-01	0.000E+00	NOT IDENT.
RB-83	-3.314E-02	5.341E-02	8.617E-02	0.000E+00	NOT IDENT.
RB-84	4.470E-02	6.269E-02	1.145E-01	0.000E+00	NOT IDENT.
KR-85	2.706E+00	6.363E+00	9.987E+00	0.000E+00	NOT IDENT.
SR-85	1.404E-02	3.301E-02	5.182E-02	0.000E+00	NOT IDENT.
RB-86	3.031E-01	7.073E-01	1.246E+00	0.000E+00	NOT IDENT.
Y-88	1.117E-02	2.701E-02	4.910E-02	0.000E+00	NOT IDENT.
ZR-88	-8.258E-03	2.811E-02	4.841E-02	0.000E+00	NOT IDENT.
Y-91	6.674E+00	1.625E+01	2.821E+01	0.000E+00	NOT IDENT.
NB-94	3.037E-02	2.776E-02	5.054E-02	0.000E+00	NOT IDENT.
NB-95	3.477E-02	4.436E-02	6.961E-02	0.000E+00	NOT IDENT.
NB-95M	1.164E-01	1.144E-01	1.842E-01	0.000E+00	NOT IDENT.
ZR-95	2.352E-02	6.506E-02	1.111E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.986E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.337E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	2.393E+00	1.446E+01	2.430E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.612E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.191E-02	2.829E-02	4.749E-02	0.000E+00	NOT IDENT.
RH-102	1.089E-02	2.426E-02	4.319E-02	0.000E+00	FAIL ABUN
RU-103	-2.329E-02	3.337E-02	5.375E-02	0.000E+00	FAIL ABUN
RH-106	-1.780E-02	2.786E-01	4.664E-01	0.000E+00	FAIL ABUN
RU-106	-1.780E-02	2.785E-01	4.664E-01	0.000E+00	FAIL ABUN
AG-108M	-1.163E-02	2.605E-02	4.376E-02	0.000E+00	NOT IDENT.
AG-110M	1.715E-02	3.407E-02	5.290E-02	0.000E+00	NOT IDENT.
IN-111	2.641E-01	1.209E+00	1.858E+00	0.000E+00	NOT IDENT.
IN-113M	2.428E-03	4.093E-02	7.202E-02	0.000E+00	NOT IDENT.
SN-113	2.428E-03	4.093E-02	7.202E-02	0.000E+00	NOT IDENT.
IN-114M	4.681E-02	1.695E-01	2.664E-01	0.000E+00	NOT IDENT.
CD-115	2.195E-01	1.286E+01	2.202E+01	0.000E+00	NOT IDENT.
SN-117M	-2.581E-02	4.956E-02	8.472E-02	0.000E+00	NOT IDENT.
SB-122	1.293E+00	2.389E+00	4.226E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.075E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.437E-02	2.446E-02	4.167E-02	0.000E+00	NOT IDENT.
I-124	-8.627E-01	8.580E-01	1.080E+00	0.000E+00	FAIL ABUN
SB-124	-2.034E-03	6.327E-02	1.061E-01	0.000E+00	FAIL ABUN
SB-125	-8.540E-03	7.556E-02	1.305E-01	0.000E+00	FAIL ABUN
TE-125M	-2.012E+00	7.340E+00	1.302E+01	0.000E+00	NOT IDENT.
I-126	1.743E-01	1.944E-01	3.126E-01	0.000E+00	NOT IDENT.
SB-126	6.431E-02	1.433E-01	2.439E-01	0.000E+00	FAIL ABUN
SB-127	1.323E-01	1.469E+00	2.470E+00	0.000E+00	NOT IDENT.
XE-127	-3.997E-03	4.132E-02	7.075E-02	0.000E+00	NOT IDENT.
I-131	5.656E-02	1.049E-01	1.907E-01	0.000E+00	NOT IDENT.
TE-132	2.117E-01	7.428E-01	1.284E+00	0.000E+00	NOT IDENT.
BA-133	9.379E-03	3.650E-02	5.824E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.276E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.202E-02	4.431E-02	8.574E-02	0.000E+00	NOT IDENT.
CS-135	1.093E-01	1.476E-01	2.330E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.595E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.881E-02	9.140E-02	1.388E-01	0.000E+00	FAIL ABUN
CE-139	1.042E-03	2.605E-02	4.556E-02	0.000E+00	NOT IDENT.
BA-140	-7.917E-02	2.448E-01	4.049E-01	0.000E+00	NOT IDENT.
LA-140	-7.746E-02	8.709E-02	1.284E-01	0.000E+00	FAIL ABUN
CE-141	8.731E-03	5.372E-02	9.525E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.362E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.864E-01	1.752E-01	2.926E-01	0.000E+00	NOT IDENT.
PM-144	1.907E-03	2.888E-02	4.839E-02	0.000E+00	NOT IDENT.
PR-144	1.293E-01	1.958E+00	3.281E+00	0.000E+00	NOT IDENT.

PM-146	2.885E-02	3.570E-02	6.513E-02	0.000E+00	NOT IDENT.
ND-147	-1.404E-01	5.239E-01	8.754E-01	0.000E+00	FAIL ABUN
PM-149	1.876E+01	1.143E+02	1.932E+02	0.000E+00	NOT IDENT.
EU-152	-5.531E-02	9.026E-02	1.337E-01	0.000E+00	FAIL ABUN
GD-153	-4.851E-02	7.201E-02	1.112E-01	0.000E+00	FAIL ABUN
EU-154	-1.638E-02	1.063E-01	1.733E-01	0.000E+00	NOT IDENT.
EU-155	1.027E-01	8.781E-02	1.642E-01	0.000E+00	FAIL ABUN
TB-160	-2.769E-02	1.259E-01	2.126E-01	0.000E+00	FAIL ABUN
HO-166M	7.452E-03	5.303E-02	8.928E-02	0.000E+00	FAIL ABUN
TM-171	-9.914E+00	2.614E+01	3.916E+01	0.000E+00	NOT IDENT.
LU-176	1.206E-02	2.109E-02	3.638E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.667E+00	2.197E+00	0.000E+00	FAIL ABUN
LU-177M	8.681E-02	1.605E-01	2.589E-01	0.000E+00	FAIL ABUN
HF-181	1.340E-02	3.644E-02	6.445E-02	0.000E+00	FAIL ABUN
W-181	4.815E-01	4.757E-01	5.202E-01	0.000E+00	FAIL ABUN
TA-182	-2.769E-02	1.687E-01	2.767E-01	0.000E+00	NOT IDENT.
RE-183	3.794E-02	9.556E-02	1.698E-01	0.000E+00	FAIL ABUN
RE-184	3.420E-02	1.934E-01	3.305E-01	0.000E+00	NOT IDENT.
OS-185	1.298E-02	3.456E-02	6.003E-02	0.000E+00	NOT IDENT.
RE-188	1.312E-01	1.456E-01	2.643E-01	0.000E+00	NOT IDENT.
W-188	3.840E+00	7.063E+00	1.096E+01	0.000E+00	FAIL ABUN
IR-192	1.273E-02	2.963E-02	5.060E-02	0.000E+00	FAIL ABUN
AU-195	2.134E-01	1.882E-01	3.457E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	7.758E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	6.863E+00	7.789E+00	1.406E+01	0.000E+00	NOT IDENT.
TL-202	7.196E-02	6.197E-02	1.154E-01	0.000E+00	NOT IDENT.
HG-203	3.140E-02	3.914E-02	6.192E-02	0.000E+00	NOT IDENT.
BI-207	1.520E-02	4.274E-02	7.495E-02	0.000E+00	FAIL ABUN
TL-207	1.405E-01	6.493E-01	9.726E-01	0.000E+00	FAIL ABUN
PO-209	-1.366E+00	6.456E+00	1.088E+01	0.000E+00	NOT IDENT.
BI-210	5.305E-01	3.215E+00	5.507E+00	0.000E+00	NOT IDENT.
PB-210	5.305E-01	3.215E+00	5.507E+00	0.000E+00	NOT IDENT.
PO-210	5.305E-01	3.215E+00	5.507E+00	0.000E+00	NOT IDENT.
PB-211	-3.652E-01	9.545E-01	1.380E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.127E-01	6.377E-01	0.000E+00	FAIL ABUN
PO-215	1.405E-01	6.493E-01	9.726E-01	0.000E+00	FAIL ABUN
RN-219	3.073E-01	3.628E-01	6.616E-01	0.000E+00	FAIL ABUN
RN-220	-1.189E+01	2.222E+01	3.610E+01	0.000E+00	NOT IDENT.
RA-223	1.405E-01	6.493E-01	9.726E-01	0.000E+00	FAIL ABUN
AC-227	3.055E-03	3.297E-01	5.573E-01	0.000E+00	FAIL ABUN
TH-227	3.055E-03	3.297E-01	5.573E-01	0.000E+00	FAIL ABUN
TH-229	1.704E-01	4.160E-01	7.318E-01	0.000E+00	FAIL ABUN
PA-231	-4.437E-01	1.316E+00	2.153E+00	0.000E+00	FAIL ABUN
TH-231	1.405E-01	6.493E-01	9.726E-01	0.000E+00	FAIL ABUN
U-231	-1.239E-01	1.073E+00	1.736E+00	0.000E+00	FAIL ABUN
PA-233	6.004E-02	5.571E-02	9.850E-02	0.000E+00	FAIL ABUN
PA-234	1.056E-01	2.823E-01	4.975E-01	0.000E+00	FAIL ABUN
PA-234M	2.420E+00	4.397E+00	7.787E+00	0.000E+00	NOT IDENT.
U-235	1.249E-01	1.824E-01	3.217E-01	0.000E+00	FAIL ABUN
NP-236	-2.863E-02	6.809E-02	1.169E-01	0.000E+00	NOT IDENT.
NP-239	-1.962E-01	1.521E-01	2.550E-01	0.000E+00	FAIL ABUN
AM-241	-8.402E-02	1.427E-01	2.120E-01	0.000E+00	NOT IDENT.
CM-243	-6.854E-02	7.869E-02	1.364E-01	0.000E+00	FAIL ABUN
AM-246	8.850E-02	1.207E-01	2.185E-01	0.000E+00	NOT IDENT.
CM-247	1.562E-02	3.269E-02	5.876E-02	0.000E+00	FAIL ABUN
CF-249	-1.048E-02	3.428E-02	5.900E-02	0.000E+00	NOT IDENT.
CF-251	5.442E-02	1.107E-01	1.963E-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]G1202012157.CNF;1
Sample date        : 4-JAN-2010 12:00:00. Acquisition date : 20-JAN-2010 18:04:18
Sample ID          : G1202012157      Sample quantity   : 1.30860E+02 GRAM
Detector name      : GAM16             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:01.93  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940268             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	975	10.67*	1.208E+00	2.170E+01	2.170E+01	11.15
CD-109	88.03	202	3.72*	6.249E+00	2.487E+00	2.548E+00	39.01
SN-126	64.28	76	9.60	3.606E+00	6.305E-01	6.305E-01	101.58
	86.94	202	8.90	6.249E+00	1.040E+00	1.040E+00	56.20
	87.57	202	37.00*	6.249E+00	2.500E-01	2.500E-01	39.01
BA-137M	661.65	75	89.98*	2.406E+00	9.938E-02	9.948E-02	44.50
CS-137	661.65	75	85.12*	2.406E+00	1.051E-01	1.052E-01	44.50
TL-208	277.35	79	6.80	4.694E+00	7.101E-01	7.101E-01	57.63
	510.84	121	21.60	2.965E+00	5.400E-01	5.400E-01	49.86
	583.14	381	84.20*	2.668E+00	4.868E-01	4.868E-01	17.30
	860.37	36	12.46	1.919E+00	4.289E-01	4.289E-01	89.78
BI-211	72.87	-----	1.27	4.872E+00	-----	Line Not Found	-----
	351.07	702	12.94*	3.940E+00	3.947E+00	3.947E+00	16.26
PB-212	74.81	423	10.70	5.117E+00	2.218E+00	2.218E+00	21.63
	77.11	747	18.00	5.364E+00	2.218E+00	2.218E+00	14.01
	87.30	202	8.00	6.249E+00	1.156E+00	1.156E+00	40.27
	238.63	1416	44.60*	5.226E+00	1.743E+00	1.743E+00	13.29
	300.09	65	3.41	4.432E+00	1.240E+00	1.240E+00	84.20
PO-212	74.81	423	10.70	5.117E+00	2.218E+00	2.218E+00	21.63
	77.11	747	18.00	5.364E+00	2.218E+00	2.218E+00	14.01
	87.30	202	8.00	6.249E+00	1.156E+00	1.156E+00	40.27
	115.19	-----	0.60	7.166E+00	-----	Line Not Found	-----
	238.63	1416	44.60*	5.226E+00	1.743E+00	1.743E+00	13.29
	300.09	65	3.41	4.432E+00	1.240E+00	1.240E+00	84.20
BI-214	609.31	524	46.30*	2.575E+00	1.262E+00	1.262E+00	16.34
	1120.29	140	15.10	1.517E+00	1.757E+00	1.757E+00	28.45
	1764.49	105	15.80	1.056E+00	1.798E+00	1.798E+00	24.77
PB-214	74.81	423	6.21	5.117E+00	3.821E+00	3.821E+00	20.86
	77.11	747	10.50	5.364E+00	3.802E+00	3.802E+00	15.95
	87.30	202	4.67	6.249E+00	1.981E+00	1.981E+00	39.76
	241.98	387	7.49	5.180E+00	2.864E+00	2.864E+00	24.40
	295.21	471	19.20	4.487E+00	1.568E+00	1.568E+00	19.15

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	702	37.20*	3.940E+00	1.373E+00	1.373E+00	17.08
	74.81	423	6.21	5.117E+00	3.821E+00	3.821E+00	20.86
	77.11	747	10.50	5.364E+00	3.802E+00	3.802E+00	15.95
	87.30	202	4.67	6.249E+00	1.981E+00	1.981E+00	39.76
	241.98	387	7.49	5.180E+00	2.864E+00	2.864E+00	24.40
PO-216	295.21	471	19.20	4.487E+00	1.568E+00	1.568E+00	19.15
	351.92	702	37.20*	3.940E+00	1.373E+00	1.373E+00	17.08
	74.81	423	10.70	5.117E+00	2.218E+00	2.218E+00	21.63
	77.11	747	18.00	5.364E+00	2.218E+00	2.218E+00	14.01
	87.30	202	8.00	6.249E+00	1.156E+00	1.156E+00	40.27
PO-218	238.63	1416	44.60*	5.226E+00	1.743E+00	1.743E+00	13.29
	300.09	65	3.41	4.432E+00	1.240E+00	1.240E+00	84.20
	74.81	423	6.21	5.117E+00	3.821E+00	3.821E+00	20.86
	77.11	747	10.50	5.364E+00	3.802E+00	3.802E+00	15.95
	87.30	202	4.67	6.249E+00	1.981E+00	1.981E+00	39.76
RA-224	241.98	387	7.49	5.180E+00	2.864E+00	2.864E+00	24.40
	295.21	471	19.20	4.487E+00	1.568E+00	1.568E+00	19.15
	351.92	702	37.20*	3.940E+00	1.373E+00	1.373E+00	17.08
	240.98	387	3.95*	5.180E+00	5.431E+00	5.431E+00	23.75
	609.31	524	46.30*	2.575E+00	1.262E+00	1.262E+00	16.34
RA-226	1120.29	140	15.10	1.517E+00	1.757E+00	1.757E+00	28.45
	1764.49	105	15.80	1.056E+00	1.798E+00	1.798E+00	24.77
	338.32	297	11.40	4.057E+00	1.841E+00	1.841E+00	47.77
	911.07	301	27.70*	1.825E+00	1.706E+00	1.706E+00	21.45
	969.11	177	16.60	1.727E+00	1.768E+00	1.768E+00	30.69
AC-228	338.32	297	11.40	4.057E+00	1.841E+00	1.841E+00	47.77
	911.07	301	27.70*	1.825E+00	1.706E+00	1.706E+00	21.45
	969.11	177	16.60	1.727E+00	1.768E+00	1.768E+00	30.69
	74.81	423	10.70	5.117E+00	2.218E+00	2.254E+00	19.53
	77.11	747	18.00	5.364E+00	2.218E+00	2.254E+00	14.01
TH-228	87.30	202	8.00	6.249E+00	1.156E+00	1.175E+00	39.01
	238.63	1416	44.60*	5.226E+00	1.743E+00	1.772E+00	13.29
	300.09	65	3.41	4.432E+00	1.240E+00	1.260E+00	102.45
	609.31	524	46.30*	2.575E+00	1.262E+00	1.262E+00	16.34
	1120.29	140	15.10	1.517E+00	1.757E+00	1.757E+00	28.45
TH-230	1764.49	105	15.80	1.056E+00	1.798E+00	1.798E+00	24.77
	338.32	297	11.40	4.057E+00	1.841E+00	1.841E+00	25.56
	911.07	301	27.70*	1.825E+00	1.706E+00	1.706E+00	21.45
	969.11	177	16.60	1.727E+00	1.768E+00	1.768E+00	30.69
	63.29	76	3.80*	3.606E+00	1.593E+00	1.593E+00	102.04
TH-234	92.38	357	5.41	6.601E+00	2.869E+00	2.869E+00	31.21
	609.31	524	46.30*	2.575E+00	1.262E+00	1.262E+00	16.34
	1120.29	140	15.10	1.517E+00	1.757E+00	1.757E+00	28.45
	1764.49	105	15.80	1.056E+00	1.798E+00	1.798E+00	24.77
	86.50	202	12.60*	6.249E+00	7.343E-01	7.343E-01	44.13
NP-237	95.87	-----	2.60	6.742E+00	-----	Line Not Found	-----
	63.29	76	3.80*	3.606E+00	1.593E+00	1.593E+00	102.04
	92.38	357	5.41	6.601E+00	2.869E+00	2.869E+00	26.86
	74.67	423	66.00*	5.117E+00	3.596E-01	3.596E-01	19.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	202	0.34	6.249E+00	2.753E+01	2.753E+01	39.01
	117.66	-----	0.55	7.175E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.968E+00	-----	Line Not Found	-----
ANH-511	511.00	121	100.00*	2.965E+00	1.166E-01	1.166E-01	49.16

Flag: "\*" = Keyline



Total number of lines in spectrum 39  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 35 89.74%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.170E+01	2.170E+01	0.242E+01	11.15	
CD-109	464.00D	1.02	2.487E+00	2.548E+00	0.994E+00	39.01	
SN-126	1.00E+05Y	1.00	2.500E-01	2.500E-01	0.975E-01	39.01	
BA-137M	30.17Y	1.00	9.938E-02	9.948E-02	4.427E-02	44.50	
CS-137	30.17Y	1.00	1.051E-01	1.052E-01	0.468E-01	44.50	
TL-208	1.41E+10Y	1.00	4.868E-01	4.868E-01	0.842E-01	17.30	
BI-211	7.04E+08Y	1.00	3.947E+00	3.947E+00	0.642E+00	16.26	
PB-212	1.41E+10Y	1.00	1.743E+00	1.743E+00	0.232E+00	13.29	
PO-212	1.41E+10Y	1.00	1.743E+00	1.743E+00	0.232E+00	13.29	
BI-214	1600.00Y	1.00	1.262E+00	1.262E+00	0.206E+00	16.34	
PB-214	1600.00Y	1.00	1.373E+00	1.373E+00	0.235E+00	17.08	
PO-214	1600.00Y	1.00	1.373E+00	1.373E+00	0.235E+00	17.08	
PO-216	1.41E+10Y	1.00	1.743E+00	1.743E+00	0.232E+00	13.29	
PO-218	1600.00Y	1.00	1.373E+00	1.373E+00	0.235E+00	17.08	
RA-224	1.41E+10Y	1.00	5.431E+00	5.431E+00	1.290E+00	23.75	
RA-226	1600.00Y	1.00	1.262E+00	1.262E+00	0.206E+00	16.34	
AC-228	1.41E+10Y	1.00	1.706E+00	1.706E+00	0.366E+00	21.45	
RA-228	1.41E+10Y	1.00	1.706E+00	1.706E+00	0.366E+00	21.45	
TH-228	1.91Y	1.02	1.743E+00	1.772E+00	0.235E+00	13.29	
TH-230	4.47E+09Y	1.00	1.262E+00	1.262E+00	0.206E+00	16.34	
TH-232	1.41E+10Y	1.00	1.706E+00	1.706E+00	0.366E+00	21.45	
TH-234	4.47E+09Y	1.00	1.593E+00	1.593E+00	1.625E+00	102.04	
U-234	4.47E+09Y	1.00	1.262E+00	1.262E+00	0.206E+00	16.34	
NP-237	2.14E+06Y	1.00	7.343E-01	7.343E-01	3.240E-01	44.13	
U-238	4.47E+09Y	1.00	1.593E+00	1.593E+00	1.625E+00	102.04	
AM-243	7380.00Y	1.00	3.596E-01	3.596E-01	0.701E-01	19.50	
ANH-511	1.00E+09Y	1.00	1.166E-01	1.166E-01	0.573E-01	49.16	

Total Activity : 6.016E+01 6.025E+01

Grand Total Activity : 6.016E+01 6.025E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.40	84	346	1.48	168.99	166	6	1.17E-02	75.4	6.05E+00	T
6	89.98	153	296	0.82	180.15	178	14	2.13E-02	36.1	6.44E+00	T
0	129.04	108	228	1.29	258.27	255	6	1.49E-02	48.5	7.13E+00	T
0	185.80	281	340	1.33	371.79	367	11	3.91E-02	28.9	6.15E+00	T
0	209.02	129	318	1.00	418.24	415	9	1.79E-02	52.8	5.71E+00	T
0	269.96	81	156	0.97	540.12	537	7	1.12E-02	55.9	4.79E+00	T
0	327.74	54	208	0.98	655.66	651	9	7.55E-03	99.2	4.15E+00	T
0	408.98	44	114	0.77	818.13	814	9	6.18E-03	92.3	3.52E+00	
0	462.99	74	120	1.40	926.14	921	10	1.03E-02	59.8	3.20E+00	T
0	727.27	87	75	1.39	1454.62	1450	10	1.21E-02	43.0	2.22E+00	T
0	768.02	80	22	1.71	1536.11	1532	8	1.11E-02	30.2	2.12E+00	T
2	964.64	51	50	1.94	1929.27	1921	23	7.06E-03	61.2	1.73E+00	T
0	1237.37	53	42	0.96	2474.53	2468	12	7.34E-03	56.3	1.39E+00	T
0	1377.65	45	21	2.09	2754.97	2747	14	6.23E-03	52.7	1.27E+00	T
0	1622.13	10	24	1.08	3243.70	3234	12	1.39E-03	****	1.12E+00	
0	1729.29	19	10	1.71	3457.89	3452	10	2.64E-03	77.4	1.07E+00	
0	1848.06	8	14	0.58	3695.30	3690	8	1.06E-03	****	1.03E+00	

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]G1202012157.CNF;1
* Acquisition date   : 20-JAN-2010 18:04:18   Detector SN#      :
* Detector ID        : GAM16                   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 02:00:01.93           Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 4-JAN-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G1202012157             Analyst initials: MXR1
* Batch Number       : 940268                  Sample Quantity : 1.30860E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16.1MS 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	2.170E+01	2.420E+00	5.445E-01	4.786E-02	39.851
CD-109	2.548E+00	9.941E-01	1.064E+00	1.025E-01	2.395
SN-126	2.500E-01	9.754E-02	1.105E-01	1.059E-02	2.264
BA-137M	9.948E-02	4.427E-02	5.643E-02	5.008E-03	1.763
CS-137	1.052E-01	4.680E-02	5.965E-02	5.303E-03	1.763
TL-208	4.868E-01	8.422E-02	4.814E-02	4.772E-03	10.111
BI-211	3.947E+00	6.420E-01	2.787E-01	3.048E-02	14.160
PB-212	1.743E+00	2.317E-01	7.367E-02	8.722E-03	23.664
PO-212	1.743E+00	2.317E-01	7.367E-02	8.722E-03	23.664
BI-214	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
PB-214	1.373E+00	2.345E-01	9.717E-02	1.175E-02	14.130
PO-214	1.373E+00	2.345E-01	9.717E-02	1.175E-02	14.130
PO-216	1.743E+00	2.317E-01	7.367E-02	8.722E-03	23.664
PO-218	1.373E+00	2.345E-01	9.717E-02	1.175E-02	14.130
RA-224	5.431E+00	1.290E+00	8.385E-01	9.240E-02	6.477
RA-226	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
AC-228	1.706E+00	3.659E-01	1.795E-01	2.132E-02	9.504
RA-228	1.706E+00	3.659E-01	1.795E-01	2.132E-02	9.504

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.772E+00	2.355E-01	7.487E-02	8.864E-03	23.664
TH-230	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
TH-232	1.706E+00	3.659E-01	1.795E-01	2.132E-02	9.504
TH-234	1.593E+00	1.625E+00	1.753E+00	3.057E-01	0.909
U-234	1.262E+00	2.062E-01	1.015E-01	1.073E-02	12.434
NP-237	7.343E-01	3.240E-01	2.900E-01	6.582E-02	2.532
U-238	1.593E+00	1.625E+00	1.753E+00	3.057E-01	0.909
AM-243	3.596E-01	7.012E-02	7.457E-02	6.173E-03	4.822
ANH-511	1.166E-01	5.734E-02	4.244E-02	4.036E-03	2.748

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-5.383E-02		2.779E-01	4.536E-01	4.589E-02	-0.119
NA-22	-4.844E-03		3.897E-02	6.227E-02	5.181E-03	-0.078
NA-24	-2.384E-01		1.079E+00	Half-Life too short		
AL-26	2.159E-02		2.807E-02	5.262E-02	4.303E-03	0.410
TI-44	4.093E-01	+	5.734E-02	6.462E-02	5.565E-03	6.334
SC-46	-1.377E-02		3.413E-02	5.471E-02	5.172E-03	-0.252
V-48	-3.967E-02		6.534E-02	1.012E-01	9.319E-03	-0.392
CR-51	-1.104E-01		3.230E-01	4.976E-01	5.818E-02	-0.222
MN-52	-5.469E-02		2.378E-01	3.668E-01	3.130E-02	-0.149
MN-54	-3.909E-04		3.465E-02	5.812E-02	5.459E-03	-0.007
CO-56	3.429E-02		3.231E-02	5.927E-02	5.577E-03	0.579
CO-57	-5.024E-03		2.166E-02	3.592E-02	2.985E-03	-0.140
CO-58	-2.067E-02		3.304E-02	5.218E-02	4.888E-03	-0.396
FE-59	-8.819E-02		8.347E-02	1.207E-01	1.122E-02	-0.731
CO-60	-9.158E-03		3.816E-02	5.985E-02	5.049E-03	-0.153
ZN-65	-1.205E-02		8.792E-02	1.222E-01	1.038E-02	-0.099
GE-68	3.825E-01		1.098E+00	1.871E+00	1.634E-01	0.204
AS-73	2.869E-01		7.455E-01	1.191E+00	9.087E-02	0.241
AS-74	-3.193E-02		9.165E-02	1.393E-01	1.293E-02	-0.229
SE-75	3.928E-02		3.849E-02	6.510E-02	7.597E-03	0.603
BR-77	-6.674E+00		1.140E+01	1.774E+01	1.686E+00	-0.376
SR-82	-1.802E-01		3.616E-01	5.474E-01	5.076E-02	-0.329
RB-83	-3.314E-02		5.449E-02	8.461E-02	8.039E-03	-0.392
RB-84	4.470E-02		6.396E-02	1.134E-01	1.072E-02	0.394
KR-85	2.706E+00		6.492E+00	9.804E+00	9.322E-01	0.276
SR-85	1.404E-02		3.369E-02	5.087E-02	4.837E-03	0.276
RB-86	3.031E-01		7.218E-01	1.238E+00	1.082E-01	0.245
Y-88	1.117E-02		2.756E-02	4.924E-02	3.998E-03	0.227
ZR-88	-8.258E-03		2.868E-02	4.731E-02	4.376E-03	-0.175
Y-91	6.674E+00		1.658E+01	2.809E+01	2.284E+00	0.238
NB-94	3.037E-02		2.832E-02	4.987E-02	4.508E-03	0.609
NB-95	3.477E-02		4.526E-02	6.879E-02	6.359E-03	0.505
NB-95M	1.164E-01		1.167E-01	1.785E-01	2.123E-02	0.652
ZR-95	2.352E-02		6.639E-02	1.097E-01	1.101E-02	0.214

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	6.440E-02		1.524E-01	Half-Life too short		
ZR-97	6.087E+00		2.723E+00	Half-Life too short		
MO-99	2.393E+00		1.476E+01	2.400E+01	3.720E+00	0.100
TC-99M	3.236E+11		3.884E+11	Half-Life too short		
RH-101	-1.191E-02		2.887E-02	4.590E-02	4.531E-03	-0.259
RH-102	1.089E-02		2.475E-02	4.235E-02	4.025E-03	0.257
RU-103	-2.329E-02		3.406E-02	5.273E-02	7.764E-03	-0.442
RH-106	-1.780E-02		2.842E-01	4.593E-01	6.294E-02	-0.039
RU-106	-1.780E-02		2.842E-01	4.593E-01	4.200E-02	-0.039
AG-108M	-1.163E-02		2.658E-02	4.283E-02	4.170E-03	-0.271
AG-110M	1.715E-02		3.477E-02	5.214E-02	4.773E-03	0.329
IN-111	2.641E-01		1.234E+00	1.802E+00	2.007E-01	0.147
IN-113M	2.428E-03		4.177E-02	7.039E-02	6.681E-03	0.034
SN-113	2.428E-03		4.177E-02	7.039E-02	6.681E-03	0.034
IN-114M	4.681E-02		1.730E-01	2.573E-01	2.488E-02	0.182
CD-115	2.195E-01		1.313E+01	2.162E+01	2.052E+00	0.010
SN-117M	-2.581E-02		5.057E-02	8.159E-02	7.247E-03	-0.316
SB-122	1.293E+00		2.438E+00	4.155E+00	3.909E-01	0.311
I-123	-1.218E+01		1.059E+01	Half-Life too short		
TE-123M	-1.437E-02		2.496E-02	4.013E-02	3.589E-03	-0.358
I-124	-8.627E-01		8.755E-01	1.063E+00	9.831E-02	-0.812
SB-124	-2.034E-03		6.456E-02	1.062E-01	9.304E-03	-0.019
SB-125	-8.540E-03		7.710E-02	1.277E-01	1.220E-02	-0.067
TE-125M	-2.012E+00		7.489E+00	1.246E+01	1.269E+00	-0.161
I-126	1.743E-01		1.984E-01	3.082E-01	2.741E-02	0.566
SB-126	6.431E-02		1.463E-01	2.408E-01	2.192E-02	0.267
SB-127	1.323E-01		1.499E+00	2.436E+00	2.920E-01	0.054
XE-127	-3.997E-03		4.217E-02	6.841E-02	6.842E-03	-0.058
I-131	5.656E-02		1.070E-01	1.862E-01	1.970E-02	0.304
TE-132	2.117E-01		7.580E-01	1.244E+00	2.131E-01	0.170
BA-133	9.379E-03		3.725E-02	5.683E-02	8.212E-03	0.165
I-133	-8.880E-03		6.511E-03	Half-Life too short		
CS-134	8.202E-02		4.521E-02	8.478E-02	7.949E-03	0.967
CS-135	1.093E-01		1.506E-01	2.263E-01	2.886E-02	0.483
I-135	-3.404E+10		4.385E+10	Half-Life too short		
CS-136	-7.881E-02		9.326E-02	1.379E-01	1.277E-02	-0.571
CE-139	1.042E-03		2.658E-02	4.391E-02	3.982E-03	0.024
BA-140	-7.917E-02		2.498E-01	3.977E-01	1.327E-01	-0.199
LA-140	-7.746E-02		8.886E-02	1.284E-01	1.094E-02	-0.603
CE-141	8.731E-03		5.481E-02	9.161E-02	8.014E-03	0.095
CE-143	9.306E-04		1.715E-04	Half-Life too short		
CE-144	-1.864E-01		1.788E-01	2.810E-01	4.340E-02	-0.663
PM-144	1.907E-03		2.946E-02	4.775E-02	4.307E-03	0.040
PR-144	1.293E-01		1.998E+00	3.237E+00	2.919E-01	0.040
PM-146	2.885E-02		3.643E-02	6.380E-02	7.286E-03	0.452
ND-147	-1.404E-01		5.346E-01	8.598E-01	1.330E-01	-0.163
PM-149	1.876E+01		1.166E+02	1.878E+02	3.305E+01	0.100
EU-152	-5.531E-02		9.210E-02	1.303E-01	1.457E-02	-0.424

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-4.851E-02		7.348E-02	1.062E-01	9.438E-03	-0.457
EU-154	-1.638E-02		1.085E-01	1.728E-01	1.914E-02	-0.095
EU-155	1.027E-01		8.960E-02	1.572E-01	1.360E-02	0.653
TB-160	-2.769E-02		1.285E-01	2.106E-01	1.989E-02	-0.132
HO-166M	7.452E-03		5.411E-02	8.812E-02	7.995E-03	0.085
TM-171	-9.914E+00		2.667E+01	3.720E+01	2.851E+00	-0.266
LU-176	1.206E-02		2.152E-02	3.541E-02	4.107E-03	0.341
LU-177	3.165E+00	+	1.701E+00	2.125E+00	2.157E-01	1.490
LU-177M	8.681E-02		1.638E-01	2.533E-01	2.367E-02	0.343
HF-181	1.340E-02		3.718E-02	6.320E-02	6.011E-03	0.212
W-181	4.815E-01	+	4.854E-01	4.941E-01	3.731E-02	0.975
TA-182	-2.769E-02		1.722E-01	2.756E-01	2.254E-02	-0.100
RE-183	3.794E-02		9.751E-02	1.636E-01	1.468E-02	0.232
RE-184	3.420E-02		1.973E-01	3.207E-01	3.634E-02	0.107
OS-185	1.298E-02		3.527E-02	5.915E-02	5.317E-03	0.219
RE-188	1.312E-01		1.486E-01	2.545E-01	2.239E-02	0.515
W-188	3.840E+00		7.207E+00	1.066E+01	1.264E+00	0.360
IR-192	1.273E-02		3.024E-02	4.928E-02	5.632E-03	0.258
AU-195	2.134E-01		1.921E-01	3.305E-01	2.910E-02	0.646
TL-200	-3.358E-04		3.958E-04	Half-Life too short		
TL-201	6.863E+00		7.948E+00	1.356E+01	1.234E+00	0.506
TL-202	7.196E-02		6.324E-02	1.130E-01	1.066E-02	0.637
HG-203	3.140E-02		3.994E-02	6.018E-02	7.334E-03	0.522
BI-207	1.520E-02		4.361E-02	7.448E-02	6.566E-03	0.204
TL-207	1.405E-01		6.625E-01	9.476E-01	1.812E-01	0.148
PO-209	-1.366E+00		6.588E+00	1.078E+01	1.020E+00	-0.127
BI-210	5.305E-01		3.281E+00	5.203E+00	4.852E-01	0.102
PB-210	5.305E-01		3.281E+00	5.203E+00	4.852E-01	0.102
PO-210	5.305E-01		3.281E+00	5.203E+00	4.395E-01	0.102
PB-211	-3.652E-01		9.740E-01	1.350E+00	8.471E-01	-0.271
BI-212	9.522E-01	+	4.211E-01	6.296E-01	6.578E-02	1.512
PO-215	1.405E-01		6.625E-01	9.476E-01	1.812E-01	0.148
RN-219	3.073E-01		3.702E-01	6.469E-01	9.977E-02	0.475
RN-220	-1.189E+01		2.267E+01	3.548E+01	3.352E+00	-0.335
RA-223	1.405E-01		6.625E-01	9.476E-01	1.812E-01	0.148
AC-227	3.055E-03		3.365E-01	5.409E-01	9.237E-02	0.006
TH-227	3.055E-03		3.365E-01	5.409E-01	1.058E-01	0.006
TH-229	1.704E-01		4.245E-01	7.071E-01	6.900E-02	0.241
PA-231	-4.437E-01		1.343E+00	2.093E+00	3.621E-01	-0.212
TH-231	1.405E-01		6.625E-01	9.476E-01	1.812E-01	0.148
U-231	-1.239E-01		1.095E+00	1.659E+00	1.489E-01	-0.075
PA-233	6.004E-02		5.684E-02	9.590E-02	1.121E-02	0.626
PA-234	1.056E-01		2.881E-01	4.933E-01	9.425E-02	0.214
PA-234M	2.420E+00		4.487E+00	7.730E+00	8.048E-01	0.313
U-235	1.249E-01		1.861E-01	3.094E-01	5.407E-02	0.404
NP-236	-2.863E-02		6.948E-02	1.126E-01	1.005E-02	-0.254
NP-239	-1.962E-01		1.552E-01	2.445E-01	2.035E-02	-0.802
AM-241	-8.402E-02		1.456E-01	2.011E-01	1.578E-02	-0.418

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-6.854E-02		8.030E-02	1.305E-01	1.121E-02	-0.525
AM-246	8.850E-02		1.232E-01	2.172E-01	1.895E-02	0.408
CM-247	1.562E-02		3.336E-02	5.745E-02	5.342E-03	0.272
CF-249	-1.048E-02		3.498E-02	5.765E-02	5.409E-03	-0.182
CF-251	5.442E-02		1.129E-01	1.894E-01	1.766E-02	0.287

# 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]G1202012157          *
* Acquisition date   : 20-JAN-2010 18:04:18 Detector SN# :                  *
* Detector ID        : GAM16 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 02:00:01.93 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 4-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G1202012157 Analyst initials: MXR1                 *
* Batch Number      : 940268 Sample Quantity : 1.3086E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight  : 0.00000                 *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 16-NOV-2009 11:22:16 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	2.170E+01	2.372E+00	2.727E-01	1.210E+00
CD-109	2.548E+00	9.742E-01	5.579E-01	4.970E-01
SN-126	2.500E-01	9.559E-02	5.792E-02	4.877E-02
BA-137M	9.948E-02	4.338E-02	2.864E-02	2.213E-02
CS-137	1.052E-01	4.586E-02	3.027E-02	2.340E-02
TL-208	4.868E-01	8.254E-02	2.448E-02	4.211E-02
BI-211	3.947E+00	6.291E-01	1.430E-01	3.210E-01
PB-212	1.743E+00	2.270E-01	3.802E-02	1.158E-01
PO-212	1.743E+00	2.270E-01	3.802E-02	1.158E-01
BI-214	1.262E+00	2.021E-01	5.157E-02	1.031E-01
PB-214	1.373E+00	2.298E-01	4.983E-02	1.173E-01
PO-214	1.373E+00	2.298E-01	4.983E-02	1.173E-01
PO-216	1.743E+00	2.270E-01	3.802E-02	1.158E-01
PO-218	1.373E+00	2.298E-01	4.983E-02	1.173E-01
RA-224	5.431E+00	1.264E+00	4.326E-01	6.449E-01
RA-226	1.262E+00	2.021E-01	5.157E-02	1.031E-01
AC-228	1.706E+00	3.585E-01	9.062E-02	1.829E-01
RA-228	1.706E+00	3.585E-01	9.062E-02	1.829E-01
TH-228	1.772E+00	2.307E-01	3.864E-02	1.177E-01
TH-230	1.262E+00	2.021E-01	5.157E-02	1.031E-01
TH-232	1.706E+00	3.585E-01	9.062E-02	1.829E-01
TH-234	1.593E+00	1.593E+00	9.237E-01	8.126E-01
U-234	1.262E+00	2.021E-01	5.157E-02	1.031E-01
NP-237	7.343E-01	3.176E-01	1.521E-01	1.620E-01
U-238	1.593E+00	1.593E+00	9.237E-01	8.126E-01
AM-243	3.596E-01	6.872E-02	3.920E-02	3.506E-02
ANH-511	1.166E-01	5.620E-02	2.163E-02	2.867E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-5.383E-02	2.724E-01	2.315E-01	1.390E-01	NOT IDENT.
NA-22	-4.844E-03	3.819E-02	3.125E-02	1.949E-02	NOT IDENT.
NA-24	-2.384E+05	2.114E+06	0.000E+00	1.079E+06	SHORT HLIF
AL-26	2.159E-02	2.750E-02	2.625E-02	1.403E-02	NOT IDENT.
TI-44	4.093E-01	5.620E-02	3.394E-02	2.867E-02	FAIL ABUN
SC-46	-1.377E-02	3.345E-02	2.763E-02	1.706E-02	FAIL ABUN
V-48	-3.967E-02	6.403E-02	5.104E-02	3.267E-02	NOT IDENT.
CR-51	-1.104E-01	3.165E-01	2.556E-01	1.615E-01	NOT IDENT.
MN-52	-5.469E-02	2.330E-01	1.838E-01	1.189E-01	NOT IDENT.
MN-54	-3.909E-04	3.396E-02	2.938E-02	1.733E-02	NOT IDENT.
CO-56	3.429E-02	3.167E-02	2.995E-02	1.616E-02	FAIL ABUN
CO-57	-5.024E-03	2.123E-02	1.874E-02	1.083E-02	NOT IDENT.
CO-58	-2.067E-02	3.237E-02	1.652E-02	1.652E-02	NOT IDENT.
FE-59	-8.819E-02	8.180E-02	6.072E-02	4.174E-02	NOT IDENT.
CO-60	-9.158E-03	3.740E-02	3.002E-02	1.908E-02	NOT IDENT.
ZN-65	-1.205E-02	8.617E-02	6.150E-02	4.396E-02	NOT IDENT.
GE-68	3.825E-01	1.076E+00	9.416E-01	5.491E-01	NOT IDENT.
AS-73	2.869E-01	7.306E-01	6.294E-01	3.728E-01	NOT IDENT.
AS-74	-3.193E-02	8.982E-02	7.081E-02	4.583E-02	NOT IDENT.
SE-75	3.928E-02	3.772E-02	3.354E-02	1.925E-02	NOT IDENT.
BR-77	-6.674E+00	1.117E+01	9.039E+00	5.699E+00	FAIL ABUN
SR-82	-1.802E-01	3.543E-01	2.771E-01	1.808E-01	NOT IDENT.
RB-83	-3.314E-02	5.341E-02	4.311E-02	2.725E-02	NOT IDENT.
RB-84	4.470E-02	6.269E-02	5.730E-02	3.198E-02	NOT IDENT.
KR-85	2.706E+00	6.363E+00	4.997E+00	3.246E+00	NOT IDENT.
SR-85	1.404E-02	3.301E-02	2.593E-02	1.684E-02	NOT IDENT.
RB-86	3.031E-01	7.073E-01	6.232E-01	3.609E-01	NOT IDENT.
Y-88	1.117E-02	2.701E-02	2.456E-02	1.378E-02	NOT IDENT.
ZR-88	-8.258E-03	2.811E-02	2.422E-02	1.434E-02	NOT IDENT.
Y-91	6.674E+00	1.625E+01	1.411E+01	8.289E+00	NOT IDENT.
NB-94	3.037E-02	2.776E-02	2.529E-02	1.416E-02	NOT IDENT.
NB-95	3.477E-02	4.436E-02	3.483E-02	2.263E-02	NOT IDENT.
NB-95M	1.164E-01	1.144E-01	9.216E-02	5.837E-02	NOT IDENT.
ZR-95	2.352E-02	6.506E-02	5.556E-02	3.320E-02	NOT IDENT.
NB-97	6.440E+04	2.986E+05	0.000E+00	1.524E+05	SHORT HLIF
ZR-97	6.087E+06	5.337E+06	0.000E+00	2.723E+06	SHORT HLIF
MO-99	2.393E+00	1.446E+01	1.216E+01	7.378E+00	NOT IDENT.
TC-99M	3.236E+17	7.612E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.191E-02	2.829E-02	2.376E-02	1.443E-02	NOT IDENT.
RH-102	1.089E-02	2.426E-02	2.161E-02	1.238E-02	FAIL ABUN
RU-103	-2.329E-02	3.337E-02	2.689E-02	1.703E-02	FAIL ABUN
RH-106	-1.780E-02	2.786E-01	2.334E-01	1.421E-01	FAIL ABUN
RU-106	-1.780E-02	2.785E-01	2.334E-01	1.421E-01	FAIL ABUN
AG-108M	-1.163E-02	2.605E-02	2.189E-02	1.329E-02	NOT IDENT.
AG-110M	1.715E-02	3.407E-02	2.647E-02	1.738E-02	NOT IDENT.
IN-111	2.641E-01	1.209E+00	9.296E-01	6.169E-01	NOT IDENT.
IN-113M	2.428E-03	4.093E-02	3.603E-02	2.088E-02	NOT IDENT.
SN-113	2.428E-03	4.093E-02	3.603E-02	2.088E-02	NOT IDENT.
IN-114M	4.681E-02	1.695E-01	1.333E-01	8.650E-02	NOT IDENT.
CD-115	2.195E-01	1.286E+01	1.102E+01	6.563E+00	NOT IDENT.
SN-117M	-2.581E-02	4.956E-02	4.239E-02	2.529E-02	NOT IDENT.
SB-122	1.293E+00	2.389E+00	2.114E+00	1.219E+00	NOT IDENT.
I-123	-1.218E+07	2.075E+07	0.000E+00	1.059E+07	SHORT HLIF
TE-123M	-1.437E-02	2.446E-02	2.085E-02	1.248E-02	NOT IDENT.
I-124	-8.627E-01	8.580E-01	5.403E-01	4.377E-01	FAIL ABUN
SB-124	-2.034E-03	6.327E-02	5.307E-02	3.228E-02	FAIL ABUN
SB-125	-8.540E-03	7.556E-02	6.528E-02	3.855E-02	FAIL ABUN
TE-125M	-2.012E+00	7.340E+00	6.512E+00	3.745E+00	NOT IDENT.
I-126	1.743E-01	1.944E-01	1.564E-01	9.918E-02	NOT IDENT.
SB-126	6.431E-02	1.433E-01	1.220E-01	7.313E-02	FAIL ABUN
SB-127	1.323E-01	1.469E+00	1.236E+00	7.493E-01	NOT IDENT.
XE-127	-3.997E-03	4.132E-02	3.540E-02	2.108E-02	NOT IDENT.
I-131	5.656E-02	1.049E-01	9.543E-02	5.350E-02	NOT IDENT.
TE-132	2.117E-01	7.428E-01	6.424E-01	3.790E-01	NOT IDENT.
BA-133	9.379E-03	3.650E-02	2.914E-02	1.862E-02	FAIL ABUN
I-133	-8.880E+03	1.276E+04	0.000E+00	6.511E+03	SHORT HLIF
CS-134	8.202E-02	4.431E-02	4.290E-02	2.261E-02	NOT IDENT.
CS-135	1.093E-01	1.476E-01	1.166E-01	7.532E-02	NOT IDENT.
I-135	-3.404E+16	8.595E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.881E-02	9.140E-02	6.947E-02	4.663E-02	FAIL ABUN
CE-139	1.042E-03	2.605E-02	2.279E-02	1.329E-02	NOT IDENT.
BA-140	-7.917E-02	2.448E-01	2.025E-01	1.249E-01	NOT IDENT.
LA-140	-7.746E-02	8.709E-02	6.421E-02	4.443E-02	FAIL ABUN
CE-141	8.731E-03	5.372E-02	4.765E-02	2.741E-02	NOT IDENT.
CE-143	9.306E+02	3.362E+02	0.000E+00	1.715E+02	SHORT HLIF
CE-144	-1.864E-01	1.752E-01	1.464E-01	8.940E-02	NOT IDENT.
PM-144	1.907E-03	2.888E-02	2.421E-02	1.473E-02	NOT IDENT.
PR-144	1.293E-01	1.958E+00	1.642E+00	9.989E-01	NOT IDENT.

PM-146	2.885E-02	3.570E-02	3.258E-02	1.821E-02	NOT IDENT.
ND-147	-1.404E-01	5.239E-01	4.380E-01	2.673E-01	FAIL ABUN
PM-149	1.876E+01	1.143E+02	9.665E+01	5.830E+01	NOT IDENT.
EU-152	-5.531E-02	9.026E-02	6.687E-02	4.605E-02	FAIL ABUN
GD-153	-4.851E-02	7.201E-02	5.561E-02	3.674E-02	FAIL ABUN
EU-154	-1.638E-02	1.063E-01	8.671E-02	5.424E-02	NOT IDENT.
EU-155	1.027E-01	8.781E-02	8.217E-02	4.480E-02	FAIL ABUN
TB-160	-2.769E-02	1.259E-01	1.064E-01	6.425E-02	FAIL ABUN
HO-166M	7.452E-03	5.303E-02	4.467E-02	2.706E-02	FAIL ABUN
TM-171	-9.914E+00	2.614E+01	1.959E+01	1.334E+01	NOT IDENT.
LU-176	1.206E-02	2.109E-02	1.820E-02	1.076E-02	FAIL ABUN
LU-177	3.165E+00	1.667E+00	1.099E+00	8.507E-01	FAIL ABUN
LU-177M	8.681E-02	1.605E-01	1.295E-01	8.188E-02	FAIL ABUN
HF-181	1.340E-02	3.644E-02	3.224E-02	1.859E-02	FAIL ABUN
W-181	4.815E-01	4.757E-01	2.603E-01	2.427E-01	FAIL ABUN
TA-182	-2.769E-02	1.687E-01	1.384E-01	8.608E-02	NOT IDENT.
RE-183	3.794E-02	9.556E-02	8.495E-02	4.875E-02	FAIL ABUN
RE-184	3.420E-02	1.934E-01	1.653E-01	9.867E-02	NOT IDENT.
OS-185	1.298E-02	3.456E-02	3.003E-02	1.763E-02	NOT IDENT.
RE-188	1.312E-01	1.456E-01	1.322E-01	7.430E-02	NOT IDENT.
W-188	3.840E+00	7.063E+00	5.482E+00	3.604E+00	FAIL ABUN
IR-192	1.273E-02	2.963E-02	2.532E-02	1.512E-02	FAIL ABUN
AU-195	2.134E-01	1.882E-01	1.730E-01	9.603E-02	FAIL ABUN
TL-200	-3.358E+02	7.758E+02	0.000E+00	3.958E+02	SHORT HLIF
TL-201	6.863E+00	7.789E+00	7.036E+00	3.974E+00	NOT IDENT.
TL-202	7.196E-02	6.197E-02	5.774E-02	3.162E-02	NOT IDENT.
HG-203	3.140E-02	3.914E-02	3.098E-02	1.997E-02	NOT IDENT.
BI-207	1.520E-02	4.274E-02	3.750E-02	2.180E-02	FAIL ABUN
TL-207	1.405E-01	6.493E-01	4.866E-01	3.313E-01	FAIL ABUN
PO-209	-1.366E+00	6.456E+00	5.444E+00	3.294E+00	NOT IDENT.
BI-210	5.305E-01	3.215E+00	2.755E+00	1.640E+00	NOT IDENT.
PB-210	5.305E-01	3.215E+00	2.755E+00	1.640E+00	NOT IDENT.
PO-210	5.305E-01	3.215E+00	2.755E+00	1.640E+00	NOT IDENT.
PB-211	-3.652E-01	9.545E-01	6.906E-01	4.870E-01	NOT IDENT.
BI-212	9.522E-01	4.127E-01	3.190E-01	2.106E-01	FAIL ABUN
PO-215	1.405E-01	6.493E-01	4.866E-01	3.313E-01	FAIL ABUN
RN-219	3.073E-01	3.628E-01	3.310E-01	1.851E-01	FAIL ABUN
RN-220	-1.189E+01	2.222E+01	1.806E+01	1.134E+01	NOT IDENT.
RA-223	1.405E-01	6.493E-01	4.866E-01	3.313E-01	FAIL ABUN
AC-227	3.055E-03	3.297E-01	2.788E-01	1.682E-01	FAIL ABUN
TH-227	3.055E-03	3.297E-01	2.788E-01	1.682E-01	FAIL ABUN
TH-229	1.704E-01	4.160E-01	3.661E-01	2.122E-01	FAIL ABUN
PA-231	-4.437E-01	1.316E+00	1.077E+00	6.715E-01	FAIL ABUN
TH-231	1.405E-01	6.493E-01	4.866E-01	3.313E-01	FAIL ABUN
U-231	-1.239E-01	1.073E+00	8.686E-01	5.475E-01	FAIL ABUN
PA-233	6.004E-02	5.571E-02	4.928E-02	2.842E-02	FAIL ABUN
PA-234	1.056E-01	2.823E-01	2.489E-01	1.440E-01	FAIL ABUN
PA-234M	2.420E+00	4.397E+00	3.896E+00	2.244E+00	NOT IDENT.
U-235	1.249E-01	1.824E-01	1.610E-01	9.306E-02	FAIL ABUN
NP-236	-2.863E-02	6.809E-02	5.847E-02	3.474E-02	NOT IDENT.
NP-239	-1.962E-01	1.521E-01	1.276E-01	7.758E-02	FAIL ABUN
AM-241	-8.402E-02	1.427E-01	1.061E-01	7.278E-02	NOT IDENT.
CM-243	-6.854E-02	7.869E-02	6.822E-02	4.015E-02	FAIL ABUN
AM-246	8.850E-02	1.207E-01	1.093E-01	6.158E-02	NOT IDENT.
CM-247	1.562E-02	3.269E-02	2.940E-02	1.668E-02	FAIL ABUN
CF-249	-1.048E-02	3.428E-02	2.952E-02	1.749E-02	NOT IDENT.
CF-251	5.442E-02	1.107E-01	9.821E-02	5.646E-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	219.8140
46.50	219.8140
46.50	219.8140
48.70	271.0351
49.72	214.8919
51.35	239.8054
52.39	266.8686
52.97	250.5383
53.15	250.6694
53.44	234.0745
54.07	235.7018
56.28	274.6914
56.28	274.6932
57.37	0.0000
57.53	267.1469
57.53	267.1481
57.60	267.1985
57.98	273.5562
57.98	273.5562
59.32	276.9948
59.32	276.9948
59.40	286.8186
59.54	284.8922
59.72	285.0297
60.01	242.8715
61.10	263.1940
61.14	263.2214
61.30	263.3324
63.00	310.5074
63.29	310.7409
63.29	310.7409
63.58	310.9736
64.28	311.5321
65.12	289.0742
65.20	289.1317
65.20	289.1317
66.05	326.1790
66.72	315.1166
66.83	315.2036
66.91	310.2894
67.20	308.8515
67.20	308.8515
67.75	337.5383
67.85	337.6230
68.90	315.1500
68.90	315.1500
69.30	340.4939
69.67	343.3069
70.82	341.7452
70.82	341.7452
70.83	341.7535
72.80	339.5706
72.87	339.6260
72.87	339.6260
74.67	352.4673
74.81	352.5797
74.81	352.5797
74.81	352.5797
74.81	352.5797
74.81	352.5797
74.81	352.5797
74.97	352.7112
75.28	352.9636
75.70	353.3030
77.11	354.4398
77.11	354.4398

77.11	354.4398
77.11	354.4398
77.11	354.4398
77.11	354.4398
77.11	354.4398
78.38	332.4406
79.62	303.8714
79.80	303.9926
79.80	303.9926
80.11	265.2663
80.18	265.3073
80.30	265.3766
80.30	265.3766
80.57	341.7684
81.00	298.3651
81.07	298.4111
81.07	298.4111
81.07	298.4111
81.07	298.4111
82.60	351.0276
83.37	347.7306
83.78	322.1620
83.78	322.1620
83.78	322.1620
83.78	322.1620
84.21	293.9680
84.90	287.9147
85.43	288.2382
86.29	288.7616
86.50	288.8886
86.54	288.9123
86.59	288.9428
86.72	289.0207
86.79	289.0614
86.94	289.1545
87.30	370.1867
87.30	370.1867
87.30	370.1867
87.30	370.1867
87.30	370.1867
87.30	370.1867
87.57	370.3947
87.88	334.0918
88.03	334.1953
88.36	334.4238
88.47	334.5000
89.95	335.5156
91.11	256.1711
92.29	256.7810
92.38	256.8272
92.38	256.8272
93.35	257.3241
94.00	257.6573
94.67	246.0876
94.67	246.0904
94.90	254.1431
94.90	254.1431
94.90	254.1431
94.90	254.1431
95.87	259.9312
95.87	259.9312
96.73	289.5945
97.43	289.9853
98.44	252.6963
98.44	252.6978
98.88	244.5512
99.55	254.6584
99.55	254.6584
99.86	251.2452
100.00	254.8759
100.10	254.9268
103.18	294.0536
103.76	286.2933
105.00	248.2678
105.31	239.4092
108.00	275.8524
109.28	251.1045

111.00	243.6874
111.00	243.6874
111.76	249.4762
112.95	258.2076
115.19	232.6486
116.30	246.8570
117.00	267.3657
117.00	267.3657
117.66	283.3015
121.11	257.1904
121.62	256.4823
121.78	255.6237
122.06	261.3027
122.32	256.7795
122.32	256.7795
122.32	256.7795
122.32	256.7795
123.07	239.4618
127.23	229.8705
129.76	236.4269
131.20	222.8601
133.02	270.4563
133.54	287.8487
135.34	229.0266
136.00	232.1025
136.25	278.6277
136.48	278.7264
140.51	248.9515
140.51	0.0000
142.18	303.1177
142.65	282.2792
143.76	240.5697
144.24	237.8609
144.24	237.8609
144.24	237.8609
144.24	237.8609
145.22	256.4535
145.44	256.5350
147.16	293.7778
152.43	265.9141
152.70	253.3933
153.22	256.4939
154.21	241.2818
154.21	241.2818
154.21	241.2818
154.21	241.2818
155.03	229.8710
156.02	252.6214
158.56	259.3821
159.00	0.0000
159.00	261.4945
160.31	258.0399
161.27	244.6230
162.32	243.0024
162.64	243.1055
163.35	253.1909
163.89	253.3739
165.85	252.0610
167.43	223.8619
171.28	239.9238
171.86	217.1906
172.10	217.2571
176.55	231.5287
176.60	231.5452
181.06	216.2151
184.41	229.2603
185.71	211.8829
186.00	211.9595
190.27	206.4324
192.34	208.4783
193.63	196.5156
197.04	239.4398
198.01	216.0498
198.60	206.9316
200.40	215.6184
201.83	263.5109
202.84	226.5722
205.31	210.0929

208.36	213.9413
208.81	226.0284
209.75	226.2668
209.75	226.2668
210.97	227.0979
215.65	200.4622
216.55	200.6604
218.09	182.0562
222.10	194.4724
223.80	175.7671
226.40	204.9212
227.00	196.5512
227.08	192.3180
227.20	192.3419
228.16	179.7722
228.18	179.7757
228.18	179.7757
231.56	0.0000
235.69	173.6790
236.00	181.7783
236.00	181.7783
238.63	165.6004
238.63	165.6004
238.63	165.6004
238.63	165.6004
239.00	165.6615
240.98	165.9952
241.98	166.1628
241.98	166.1628
241.98	166.1628
244.69	159.0406
245.39	136.4167
247.94	135.6761
248.90	147.7553
249.79	162.0214
252.40	133.0019
252.85	145.0574
252.85	145.0574
254.15	0.0000
256.20	160.8478
256.20	160.8478
260.50	161.5140
260.90	173.6644
262.80	139.8442
264.65	130.1596
268.24	141.1133
268.79	147.8300
269.46	146.2603
269.46	146.2603
269.46	146.2603
269.46	146.2603
271.23	169.8060
273.65	130.1420
276.40	155.5610
277.35	157.3685
277.60	157.4058
277.60	157.4058
278.00	147.4124
278.60	142.4648
279.20	132.4783
279.53	122.4546
280.46	124.2359
281.68	137.8170
283.67	145.9220
284.30	142.6347
285.00	120.2466
285.90	141.7141
286.10	152.9862
286.10	152.9862
287.40	165.5515
288.45	0.0000
290.67	130.4521
290.80	130.4662
291.72	145.8336
293.26	0.0000
293.70	134.1949
295.21	136.0718
295.21	136.0718

295.21	136.0718
295.96	163.3945
296.50	163.4707
297.23	163.5732
298.57	163.7607
299.80	140.0266
299.80	140.0266
300.09	140.0616
300.09	140.0616
300.09	140.0616
300.09	140.0616
300.12	140.0667
301.29	135.0773
302.84	140.3920
303.76	128.5080
303.91	123.3831
304.40	130.2910
304.40	130.2910
304.84	120.0497
306.84	115.6716
308.46	141.0601
311.98	108.1195
316.51	111.9885
318.01	122.5301
319.02	118.0039
319.41	122.6703
320.08	116.9477
323.87	125.4397
323.87	125.4397
323.87	125.4397
323.87	125.4397
325.23	136.0430
328.77	153.9194
333.44	150.2807
334.20	136.3163
334.20	136.3163
334.30	136.3281
338.28	123.3609
338.28	123.3609
338.28	123.3609
338.28	123.3609
338.32	123.3652
338.32	123.3652
338.32	123.3652
340.50	100.2719
340.57	100.2771
344.27	127.4766
345.85	131.8870
350.59	0.0000
351.07	113.9043
351.92	113.9785
351.92	113.9785
351.92	113.9785
355.39	0.0000
356.01	91.4648
364.48	98.8751
366.43	111.6201
367.43	117.1063
367.94	0.0000
369.80	107.3844
374.96	117.7510
383.85	106.6525
387.95	117.9337
388.63	122.5621
391.69	125.5757
391.69	125.5757
392.90	128.4344
398.62	140.9185
400.65	105.1442
401.10	100.5642
401.81	101.5355
402.60	109.9029
404.84	121.3544
410.95	108.4841
411.60	104.0703
413.65	86.3486
414.70	96.8383
415.30	104.3284

415.76	102.4973
417.63	0.0000
418.52	86.8157
423.70	92.7339
427.08	92.9394
427.89	92.0500
432.53	78.1962
433.93	88.6385
439.47	74.7605
439.56	74.7641
439.89	74.7797
443.98	94.9051
444.90	90.2120
445.03	90.2207
445.03	90.2207
445.03	90.2207
445.03	90.2207
453.90	73.5340
463.38	122.9570
468.07	73.9852
473.00	83.0960
475.06	76.4276
475.35	71.6028
476.78	79.4112
477.59	85.2634
477.96	85.2822
482.03	77.7173
484.57	76.8615
487.03	78.9223
490.36	0.0000
492.35	83.0791
497.08	80.3684
507.63	0.0000
510.53	0.0000
510.84	88.9082
511.00	88.9165
511.85	88.9584
511.85	88.9584
513.99	76.0031
513.99	76.0031
520.41	69.5236
520.65	69.5343
527.90	72.8062
528.96	0.0000
529.64	88.8506
529.87	0.0000
531.02	81.9249
537.32	85.2153
543.00	67.3762
546.56	0.0000
549.76	79.7353
552.65	66.7170
555.20	75.9178
563.23	72.1744
563.90	71.1813
568.70	68.3025
569.32	68.3250
569.50	68.3311
569.67	69.3572
573.80	83.8168
574.00	83.8243
574.64	81.8066
578.91	62.3104
579.30	0.0000
583.14	65.7324
585.48	55.9390
591.81	56.7389
592.07	56.7456
593.00	70.1914
595.88	80.6303
600.56	79.7846
602.52	0.0000
602.71	94.5983
602.71	94.5983
603.60	83.0176
604.41	68.1024
604.70	68.1124
609.31	82.2113



609.31	82.2113
609.31	82.2113
609.31	82.2113
610.33	78.2958
612.46	85.0490
614.37	48.4065
618.01	77.3378
621.84	70.1529
621.84	70.1529
631.29	77.8369
633.02	72.6387
633.10	78.9574
634.78	55.8418
635.90	60.0876
636.97	67.5020
645.85	54.0163
646.12	51.9055
656.30	45.9791
657.75	59.6436
657.90	0.0000
661.65	83.6517
661.65	83.6517
664.57	0.0000
666.33	61.5902
666.33	61.5902
675.00	57.9699
677.61	49.4407
685.20	63.6310
692.80	73.5864
695.00	60.6604
696.49	61.7836
696.49	61.7836
697.00	57.4609
697.49	60.7271
698.33	66.1733
698.50	73.7732
699.00	79.2155
702.63	48.9098
706.10	58.7807
706.58	0.0000
706.67	53.3515
709.31	69.7637
711.68	62.1976
713.82	48.0565
717.42	77.6671
720.50	59.1498
721.93	0.0000
722.20	73.6620
722.78	63.1547
722.78	63.1547
722.89	63.1582
722.95	71.9322
723.30	71.9422
724.18	68.4595
727.18	60.4181
733.00	63.1388
735.90	59.5404
739.58	65.1542
742.81	50.8684
744.21	73.0274
747.13	65.3613
751.79	84.3589
752.31	87.7081
753.82	55.5466
755.35	54.4700
756.15	58.9360
756.87	58.9538
763.93	60.6870
765.79	62.5198
766.42	64.3236
766.84	67.9083
776.49	66.1571
778.00	53.8564
778.57	56.1127
778.89	56.1203
783.80	52.8578
785.46	40.5143
792.07	73.1175

795.84	53.3391
796.30	58.7745
798.80	92.3205
801.93	63.4358
805.60	49.0074
810.29	69.1014
810.76	57.2922
815.85	51.9387
817.79	51.9777
818.51	51.0795
819.60	59.3141
826.30	54.8936
828.27	0.0000
831.60	58.6734
831.96	57.7644
834.83	68.8422
836.80	0.0000
846.75	35.9607
848.13	56.2761
856.28	0.0000
856.80	58.6189
860.37	59.3156
867.32	60.9142
867.82	62.2678
871.10	66.0650
873.19	50.2849
874.81	50.3152
875.33	0.0000
876.40	57.8026
879.36	56.9328
880.27	54.1513
880.51	49.4869
881.50	44.8348
883.24	45.7975
884.67	52.3674
889.25	52.4549
896.60	53.5335
898.02	51.6820
899.00	48.8808
903.28	43.0379
911.07	46.2593
911.07	46.2593
911.07	46.2593
919.63	41.0344
920.93	44.5272
925.00	34.1543
925.24	30.3617
926.50	41.7667
935.52	48.5633
937.48	59.0786
944.10	50.6191
946.00	53.5186
949.00	60.2714
962.29	56.0604
964.01	41.3487
966.15	41.3791
968.20	41.4074
969.11	41.4211
969.11	41.4211
969.11	41.4211
977.42	39.6046
980.50	36.7448
983.50	52.2690
989.30	34.9137
996.32	48.6035
1001.03	46.7320
1001.68	47.7164
1004.76	56.5373
1021.30	0.0000
1024.50	0.0000
1034.80	26.5768
1036.00	29.5415
1037.82	35.4691
1038.57	35.4779
1038.76	0.0000
1045.16	40.4915
1046.59	37.5454
1048.07	46.4584

1050.47	30.6670
1050.47	30.6670
1062.04	45.6721
1063.62	37.7477
1076.63	40.8919
1077.35	41.8995
1078.86	36.9277
1085.78	45.0088
1099.22	58.2492
1112.02	58.8119
1112.84	55.4673
1115.52	48.7817
1120.29	57.2754
1120.29	57.2754
1120.29	57.2754
1120.29	57.2754
1120.51	57.2782
1121.28	64.0322
1124.00	0.0000
1129.67	57.7737
1131.51	0.0000
1147.95	0.0000
1167.94	59.4500
1173.22	46.1953
1175.09	51.3574
1177.93	44.2031
1189.05	48.4687
1204.90	46.6150
1205.75	0.0000
1213.00	45.6844
1221.42	54.1176
1230.97	57.3901
1235.34	48.7539
1236.41	0.0000
1238.25	55.7630
1246.25	51.3471
1260.41	0.0000
1271.85	31.6553
1274.45	41.1823
1274.54	41.1823
1291.56	39.2493
1298.22	0.0000
1312.09	42.6621
1325.50	28.8984
1325.50	28.8984
1332.49	27.8776
1333.61	28.9591
1360.21	28.0770
1362.66	0.0000
1365.15	25.9500
1368.21	21.6416
1368.53	0.0000
1376.25	18.4327
1384.27	24.8337
1394.10	27.2290
1395.20	30.5047
1407.95	17.4867
1434.06	23.0990
1436.60	22.9299
1457.56	0.0000
1460.81	27.6770
1489.15	20.4334
1509.49	24.2639
1596.49	30.4609
1620.62	26.2489
1678.03	0.0000
1691.02	12.6308
1691.02	12.6308
1706.46	0.0000
1750.46	0.0000
1764.49	9.8653
1764.49	9.8653
1764.49	9.8653
1764.49	9.8653
1770.23	6.7726
1771.40	1.6936
1791.20	0.0000
1808.65	8.9583

1836.01

8.0062

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202012157

Total Uranium Activity	4.7964E+00	ug/g
Total Uranium Counting Unc.	4.7392E+00	ug/g
Total Uranium Tpu	2.4180E-06	ug/g
Total Uranium Mda	2.7490E+00	ug/g

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*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G1202012157
*  ANALYST       : MXR1                             DETECTOR    : GAM16
*  SAMPLE DATE   : 4-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 18:04:18.08          SAMPLE ALQT  : 130.860 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.083E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.363E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.628E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.754E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 19:05:35.95

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012158.CNF;1
Sample date        : 12-JAN-2010 00:00:00 Acquisition date : 20-JAN-2010 18:05:03
Sample ID          : G1202012158 Sample quantity : 1.55440E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00 Elapsed real time: 0 01:00:01.16 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 940268 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	8	57.61	195	412	1.65	115.95	113	13	5.40E-02	18.0	2.22E+00
2	8	59.58	2260	358	1.10	119.90	113	13	6.28E-01	2.6	
3	0	77.42	142	473	0.87	155.55	152	8	3.94E-02	28.2	
4	0	88.11	1345	594	1.14	176.92	170	13	3.74E-01	4.6	
5	0	92.88*	44	256	0.70	186.46	183	7	1.22E-02	65.4	
6	0	122.33	223	356	1.01	245.32	240	11	6.19E-02	17.8	
7	0	185.95*	64	277	1.66	372.49	367	9	1.77E-02	50.0	
8	0	238.71*	354	434	1.22	477.95	472	13	9.83E-02	13.4	
9	0	338.18*	33	208	0.93	676.79	672	11	9.23E-03	86.1	
10	0	352.21*	169	199	1.35	704.83	700	11	4.71E-02	18.0	
11	0	510.95*	31	120	1.70	1022.11	1017	10	8.61E-03	75.0	
12	0	583.75*	112	88	1.96	1167.62	1161	11	3.10E-02	19.1	
13	0	609.58*	151	67	1.71	1219.24	1214	11	4.20E-02	13.5	
14	0	661.96	1935	132	1.53	1323.93	1318	12	5.38E-01	2.6	
15	0	727.64	56	63	1.46	1455.22	1450	12	1.55E-02	31.5	
16	0	911.66*	91	83	2.88	1823.02	1818	10	2.54E-02	21.6	
17	0	1173.51	1480	90	1.81	2346.34	2337	19	4.11E-01	3.0	
18	0	1332.90*	1278	41	1.90	2664.88	2654	20	3.55E-01	3.1	
19	0	1461.40*	15	6	1.37	2921.69	2918	8	4.23E-03	42.2	
20	0	1764.91*	28	0	2.25	3528.21	3522	11	7.76E-03	20.8	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012158.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 12-JAN-2010 00:00:00 Acquisition date : 20-JAN-2010 18:05:03  
 Sample ID : G1202012158 Sample quantity : 155.44 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA1 Detector geometry: CAN  
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.16 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	*	7.286E-01	6.178E-01	6.223E-01	5.532E-02	1.171
CO-57	+	122.06	*	2.124E-01	7.786E-02	6.343E-02	5.583E-03	3.349
		136.48		1.166E-01	3.334E-01	5.737E-01	5.300E-02	0.203
CO-60	+	1173.22		6.269E+00	6.332E-01	1.294E-01	1.047E-02	48.457
	+	1332.49	*	6.063E+00	6.358E-01	9.128E-02	7.781E-03	66.423
CD-109	+	88.03	*	3.375E+01	4.464E+00	2.094E+00	1.981E-01	16.117
SN-126		64.28		-7.481E-01	9.436E-01	1.322E+00	1.946E-01	-0.566
	+	86.94		1.392E+01	5.925E+00	8.746E-01	3.631E-01	15.918
	+	87.57	*	3.349E+00	4.429E-01	2.088E-01	1.967E-02	16.034
BA-137M	+	661.65	*	5.405E+00	5.224E-01	1.233E-01	1.010E-02	43.826
CS-137	+	661.65	*	5.713E+00	5.530E-01	1.304E-01	1.070E-02	43.826
W-181	+	56.28		2.611E+00	9.608E-01	1.491E+00	1.163E-01	1.752
	+	57.53		1.498E+00	5.512E-01	6.859E-01	5.272E-02	2.184
		65.20	*	-7.923E-01	6.319E-01	9.256E-01	7.226E-02	-0.856
TL-208		277.35		6.057E-01	6.617E-01	1.138E+00	1.446E-01	0.532
	+	510.84		2.898E-01	4.359E-01	4.840E-01	5.753E-02	0.599
	+	583.14	*	2.989E-01	1.173E-01	1.127E-01	1.024E-02	2.652
		860.37		4.739E-01	6.572E-01	1.134E+00	1.086E-01	0.418
BI-211		72.87		-1.116E+00	5.940E+00	8.460E+00	6.938E-01	-0.132
	+	351.07	*	1.960E+00	7.278E-01	6.616E-01	6.018E-02	2.963
PB-212		74.81		6.849E-01	7.166E-01	1.070E+00	1.339E-01	0.640
	+	77.11		8.634E-01	4.921E-01	5.752E-01	4.881E-02	1.501
	+	87.30		1.549E+01	2.568E+00	9.689E-01	1.329E-01	15.985
	+	238.63	*	8.808E-01	2.515E-01	1.704E-01	1.726E-02	5.168
		300.09		1.146E+00	1.582E+00	2.683E+00	2.901E-01	0.427
PO-212		74.81		6.849E-01	7.166E-01	1.070E+00	1.339E-01	0.640
	+	77.11		8.634E-01	4.921E-01	5.752E-01	4.881E-02	1.501
	+	87.30		1.549E+01	2.568E+00	9.689E-01	1.329E-01	15.985
		115.19		2.549E+00	5.953E+00	9.659E+00	8.393E-01	0.264
	+	238.63	*	8.808E-01	2.515E-01	1.704E-01	1.726E-02	5.168
		300.09		1.146E+00	1.582E+00	2.683E+00	2.901E-01	0.427
BI-214	+	609.31	*	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701
		1120.29		7.330E-02	6.832E-01	1.117E+00	1.195E-01	0.066
	+	1764.49		1.034E+00	4.398E-01	4.286E-01	3.594E-02	2.413



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216		74.81		6.849E-01	7.166E-01	1.070E+00	1.339E-01	0.640
	+	77.11		8.634E-01	4.921E-01	5.752E-01	4.881E-02	1.501
	+	87.30		1.549E+01	2.568E+00	9.689E-01	1.329E-01	15.985
	+	238.63	*	8.808E-01	2.515E-01	1.704E-01	1.726E-02	5.168
		300.09		1.146E+00	1.582E+00	2.683E+00	2.901E-01	0.427
RA-226	+	609.31	*	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701
		1120.29		7.330E-02	6.832E-01	1.117E+00	1.195E-01	0.066
	+	1764.49		1.034E+00	4.398E-01	4.286E-01	3.594E-02	2.413
TH-228		74.81		6.909E-01	7.200E-01	1.079E+00	9.068E-02	0.640
	+	77.11		8.709E-01	4.964E-01	5.803E-01	4.924E-02	1.501
	+	87.30		1.562E+01	2.066E+00	9.774E-01	9.179E-02	15.985
	+	238.63	*	8.885E-01	2.537E-01	1.719E-01	1.741E-02	5.168
		300.09		1.156E+00	1.732E+00	2.706E+00	1.606E+00	0.427
TH-230	+	609.31	*	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701
		1120.29		7.330E-02	6.831E-01	1.117E+00	1.195E-01	0.066
	+	1764.49		1.034E+00	4.398E-01	4.286E-01	3.594E-02	2.413
U-234	+	609.31	*	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701
		1120.29		7.330E-02	6.831E-01	1.117E+00	1.195E-01	0.066
	+	1764.49		1.034E+00	4.398E-01	4.286E-01	3.594E-02	2.413
AM-241	+	59.54	*	1.331E+01	1.293E+00	5.240E-01	4.318E-02	25.394
ANH-511	+	511.00	*	6.259E-02	9.401E-02	1.080E-01	9.154E-03	0.579

---- 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	*	-9.117E-02	6.850E-01	1.089E+00	9.905E-02	-0.084
NA-22		1274.54	*	3.750E-03	5.727E-02	9.654E-02	8.107E-03	0.039
NA-24		1368.53	*	3.791E-04	5.727E-02	Half-Life too short		
AL-26		1129.67		-8.384E-01	3.510E+00	5.504E+00	4.598E-01	-0.152
		1808.65	*	2.600E-04	4.911E-02	8.004E-02	6.631E-03	0.003
TI-44		67.85		2.808E-02	7.566E-02	1.243E-01	9.859E-03	0.226
	+	78.38	*	1.593E-01	9.079E-02	1.112E-01	9.543E-03	1.432
SC-46		889.25	*	2.745E-02	9.802E-02	1.634E-01	1.477E-02	0.168
		1120.51		2.802E-02	1.099E-01	1.819E-01	1.528E-02	0.154
V-48		944.10		-1.649E+00	1.875E+00	2.842E+00	2.560E-01	-0.580
		983.50	*	-1.150E-01	1.373E-01	2.066E-01	1.845E-02	-0.556
		1312.09		2.875E-02	7.179E-02	1.281E-01	1.086E-02	0.224
CR-51		320.08	*	5.592E-01	6.254E-01	1.072E+00	1.009E-01	0.522
MN-52		744.21		-7.430E-02	2.310E-01	3.721E-01	3.192E-02	-0.200
		848.13		2.048E+00	7.078E+00	1.187E+01	1.061E+00	0.173
		935.52		1.908E-01	3.215E-01	5.442E-01	4.908E-02	0.351
		1246.25		-6.296E+00	3.987E+00	4.797E+00	3.988E-01	-1.312
	+	1333.61		3.538E+02	3.710E+01	4.651E+01	3.965E+00	7.607
		1434.06	*	-8.992E-03	1.458E-01	2.419E-01	2.088E-02	-0.037
MN-54		834.83	*	-3.856E-02	8.008E-02	1.262E-01	1.123E-02	-0.306
CO-56		846.75	*	-1.275E-02	8.514E-02	1.379E-01	1.232E-02	-0.092
		977.42		5.335E+00	7.051E+00	1.211E+01	1.083E+00	0.441
		1037.82		-3.504E-01	7.495E-01	1.164E+00	1.073E-01	-0.301

## ---- Non-Identified Nuclides ----

	Line Energy	Activity	Act error	MDA	MDA error	Act/MDA
Nuclide	Ided (keV) Key	(pCi/GRAM)		(pCi/GRAM)		
	1175.09	2.782E+02	2.728E+01	3.525E+01	2.855E+00	7.893
	1238.25	9.089E-03	1.028E-01	1.739E-01	1.486E-02	0.052
	1360.21	-1.129E+00	1.106E+00	1.380E+00	1.182E-01	-0.818
	1771.40	-4.123E-01	4.478E-01	5.870E-01	4.914E-02	-0.702
CO-58	810.76 *	2.031E-02	8.285E-02	1.388E-01	1.228E-02	0.146
FE-59	142.65	-5.599E-01	3.821E+00	6.404E+00	5.476E-01	-0.087
	192.34	-1.841E+00	1.511E+00	2.359E+00	3.186E-01	-0.781
	1099.22 *	-5.531E-02	2.246E-01	3.548E-01	3.270E-02	-0.156
	1291.56	-1.601E-02	1.205E-01	1.957E-01	1.883E-02	-0.082
ZN-65	1115.52 *	-1.505E-01	2.140E-01	3.231E-01	2.726E-02	-0.466
GE-68	1077.35 *	-4.118E-01	2.888E+00	4.598E+00	3.959E-01	-0.090
AS-73	53.44 *	-4.420E-02	2.287E+00	3.323E+00	2.689E-01	-0.013
AS-74	595.88 *	-1.118E-02	1.426E-01	2.376E-01	2.001E-02	-0.047
	634.78	-5.066E-01	5.581E-01	8.632E-01	7.171E-02	-0.587
SE-75	66.05	-6.519E-01	7.665E+00	1.236E+01	1.212E+00	-0.053
	96.73	1.113E+00	1.303E+00	1.943E+00	2.684E-01	0.573
+	121.11	1.119E+00	4.179E-01	4.857E-01	5.509E-02	2.304
	136.00	5.075E-02	6.094E-02	1.067E-01	9.235E-03	0.476
	198.60	-1.806E+00	3.095E+00	5.025E+00	4.889E-01	-0.359
	264.65 *	-2.954E-02	7.917E-02	1.282E-01	1.178E-02	-0.230
	279.53	-4.052E-02	1.892E-01	3.082E-01	2.912E-02	-0.131
	303.91	-1.658E+00	4.008E+00	6.429E+00	7.595E-01	-0.258
	400.65	4.351E-01	5.469E-01	9.236E-01	9.897E-02	0.471
BR-77	+	87.88	1.144E+03	1.513E+02	1.594E+02	7.175
	200.40	2.156E+01	4.424E+01	7.528E+01	6.507E+00	0.286
+	239.00	2.198E+01	6.198E+00	7.262E+00	6.593E-01	3.026
	249.79	7.717E+00	1.921E+01	3.246E+01	2.960E+00	0.238
	281.68	-1.437E+01	2.528E+01	4.028E+01	3.682E+00	-0.357
	297.23	1.868E+01	1.758E+01	3.017E+01	2.744E+00	0.619
	303.76	-2.409E+01	5.495E+01	8.806E+01	7.984E+00	-0.274
	439.47	-2.016E+00	5.051E+01	8.118E+01	6.730E+00	-0.025
	484.57	2.294E+01	7.466E+01	1.223E+02	1.031E+01	0.188
	520.65 *	2.170E+00	3.286E+00	5.509E+00	4.674E-01	0.394
	574.64	4.356E+00	6.323E+01	1.066E+02	9.026E+00	0.041
	578.91	-3.954E+00	2.806E+01	4.036E+01	3.414E+00	-0.098
	585.48	1.727E+02	6.271E+01	1.101E+02	9.304E+00	1.568
	755.35	1.076E+01	5.292E+01	8.882E+01	7.660E+00	0.121
	817.79	-3.786E+01	4.865E+01	7.478E+01	6.617E+00	-0.506
SR-82	698.33	-1.412E+01	5.491E+01	8.925E+01	7.473E+00	-0.158
	776.49 *	-4.757E-01	7.322E-01	1.146E+00	9.977E-02	-0.415
	1395.20	-2.166E-01	1.065E+01	1.759E+01	1.513E+00	-0.012
RB-83	520.41 *	8.084E-02	1.323E-01	2.211E-01	1.875E-02	0.366
	529.64	1.613E-01	2.044E-01	3.611E-01	3.065E-02	0.447
	552.65	7.670E-02	3.608E-01	6.159E-01	5.227E-02	0.125
RB-84	881.50 *	5.382E-02	1.559E-01	2.614E-01	2.358E-02	0.206
KR-85	513.99 *	2.044E+01	1.706E+01	2.628E+01	2.228E+00	0.778
SR-85	513.99 *	9.801E-02	8.181E-02	1.260E-01	1.068E-02	0.778
RB-86	1076.63 *	-4.307E-03	1.460E+00	2.356E+00	2.029E-01	-0.002
Y-88	898.02	2.706E-02	1.043E-01	1.735E-01	1.579E-02	0.156

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1836.01	*		-1.536E-02	5.234E-02	7.844E-02	6.452E-03	-0.196
ZR-88	392.90	*		3.759E-02	5.946E-02	1.001E-01	8.061E-03	0.375
Y-91	1204.90	*		-1.999E+00	2.463E+01	4.087E+01	3.349E+00	-0.049
NB-94	702.63	*		8.938E-03	6.504E-02	1.090E-01	9.154E-03	0.082
	871.10			2.263E-02	8.250E-02	1.379E-01	1.241E-02	0.164
NB-95	765.79	*		-8.303E-04	8.658E-02	1.428E-01	1.237E-02	-0.006
NB-95M	235.69	*		1.336E-01	2.076E-01	3.163E-01	3.244E-02	0.422
ZR-95	724.18			8.462E-03	1.916E-01	2.766E-01	2.558E-02	0.031
	756.15	*		5.120E-02	1.425E-01	2.417E-01	2.296E-02	0.212
NB-97	657.90	*		3.389E-04	1.425E-01	Half-Life	too short	
	1024.50			-2.444E-02	1.425E-01	Half-Life	too short	
ZR-97	254.15			-3.486E-03	1.425E-01	Half-Life	too short	
	355.39			6.159E-03	1.425E-01	Half-Life	too short	
	507.63	*		4.931E-03	1.425E-01	Half-Life	too short	
	602.52			-7.577E-03	1.425E-01	Half-Life	too short	
	1021.30			3.207E-04	1.425E-01	Half-Life	too short	
	1147.95			-1.437E-03	1.425E-01	Half-Life	too short	
	1362.66			1.062E-02	1.425E-01	Half-Life	too short	
	1750.46			-7.675E-03	1.425E-01	Half-Life	too short	
MO-99	140.51			5.577E+00	8.459E+00	1.438E+01	3.979E+00	0.388
	181.06			-3.172E+00	6.465E+00	9.243E+00	1.691E+00	-0.343
	366.43			-2.501E+01	3.614E+01	5.623E+01	4.755E+00	-0.445
	739.58	*		-6.759E-01	4.911E+00	8.032E+00	1.217E+00	-0.084
	778.00			-3.774E+00	1.560E+01	2.525E+01	2.200E+00	-0.149
TC-99M	140.51	*		8.837E+02	1.560E+01	Half-Life	too short	
RH-101	127.23			2.911E-02	5.508E-02	8.036E-02	6.990E-03	0.362
	198.01	*		-2.960E-02	5.777E-02	9.413E-02	8.283E-03	-0.315
	325.23			-2.823E-01	4.272E-01	6.713E-01	5.991E-02	-0.421
RH-102	418.52			6.985E-01	6.315E-01	1.084E+00	8.887E-02	0.644
	475.06	*		2.932E-02	7.046E-02	1.159E-01	9.745E-03	0.253
	631.29			8.942E-02	1.113E-01	1.961E-01	1.632E-02	0.456
	697.49			-1.172E-01	1.505E-01	2.337E-01	1.956E-02	-0.502
	766.84			-1.033E-01	2.376E-01	3.797E-01	3.291E-02	-0.272
	1046.59			5.015E-02	2.895E-01	4.747E-01	4.146E-02	0.106
	1112.84			1.866E-01	5.360E-01	8.880E-01	7.497E-02	0.210
RU-103	497.08	*		5.437E-02	8.120E-02	1.354E-01	1.904E-02	0.402
	610.33	+		7.377E+00	2.331E+00	3.371E+00	5.585E-01	2.188
RH-106	511.85	+		3.089E-01	4.640E-01	6.718E-01	5.694E-02	0.460
	621.84	*		1.874E-02	6.321E-01	1.058E+00	1.396E-01	0.018
	1050.47			-2.914E-01	5.828E+00	9.381E+00	8.181E-01	-0.031
RU-106	511.85	+		3.089E-01	4.640E-01	6.718E-01	5.694E-02	0.460
	621.84	*		1.874E-02	6.321E-01	1.058E+00	8.841E-02	0.018
	1050.47			-2.914E-01	5.828E+00	9.381E+00	8.181E-01	-0.031
AG-108M	433.93	*		3.635E-02	7.509E-02	1.246E-01	1.074E-02	0.292
	614.37			-1.969E-02	8.443E-02	1.197E-01	1.044E-02	-0.165
	722.95			5.837E-02	8.955E-02	1.381E-01	1.220E-02	0.423
AG-110M	657.75	*		4.643E-02	7.999E-02	1.226E-01	1.040E-02	0.379
	677.61			-1.069E-01	6.150E-01	1.009E+00	8.600E-02	-0.106
	706.67			5.631E-02	3.919E-01	6.573E-01	5.690E-02	0.086

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	763.93			6.422E-02	3.407E-01	5.702E-01	5.075E-02	0.113
	884.67			2.830E-02	1.273E-01	2.116E-01	1.966E-02	0.134
	937.48			2.500E-01	3.036E-01	5.211E-01	4.854E-02	0.480
	1384.27			-9.762E-03	2.102E-01	3.458E-01	3.055E-02	-0.028
IN-111	171.28			3.154E-01	3.411E-01	5.960E-01	5.102E-02	0.529
	245.39	*		-5.147E-01	4.593E-01	6.550E-01	5.963E-02	-0.786
IN-113M	391.69	*		2.936E-02	8.793E-02	1.455E-01	1.212E-02	0.202
SN-113	391.69	*		2.936E-02	8.793E-02	1.455E-01	1.212E-02	0.202
IN-114M	190.27	*		2.320E-01	3.119E-01	4.813E-01	4.202E-02	0.482
CD-115	260.90			1.123E+01	3.431E+01	5.767E+01	5.273E+00	0.195
	492.35			5.911E+00	1.141E+01	1.888E+01	1.595E+00	0.313
	527.90	*		2.343E+00	2.946E+00	5.214E+00	4.426E-01	0.449
SN-117M	156.02			-9.446E-01	2.637E+00	4.385E+00	3.734E-01	-0.215
	158.56	*		5.772E-02	6.360E-02	1.113E-01	9.473E-03	0.519
SB-122	563.90	*		2.689E-01	7.587E-01	1.306E+00	1.107E-01	0.206
	692.80			2.367E+00	1.689E+01	2.834E+01	2.366E+00	0.084
I-123	159.00	*		1.033E-03	1.689E+01	Half-Life	too short	
	528.96			3.036E-01	1.689E+01	Half-Life	too short	
TE-123M	159.00	*		1.602E-02	4.391E-02	7.527E-02	6.448E-03	0.213
I-124	602.71	*		-3.127E-01	4.551E-01	6.746E-01	5.673E-02	-0.464
	722.78			2.139E+00	3.247E+00	5.012E+00	4.254E-01	0.427
	1325.50			7.366E+00	1.995E+01	3.099E+01	2.637E+00	0.238
	1376.25			2.298E+01	1.489E+01	3.022E+01	2.594E+00	0.760
	1509.49			-5.800E+00	7.856E+00	1.092E+01	9.452E-01	-0.531
	1691.02			-9.276E-01	1.573E+00	2.040E+00	1.738E-01	-0.455
SB-124	602.71			-4.868E-02	7.085E-02	1.050E-01	8.832E-03	-0.464
	645.85			4.165E-01	9.373E-01	1.613E+00	1.420E-01	0.258
	709.31			-1.236E+00	4.892E+00	7.940E+00	6.689E-01	-0.156
	713.82			3.939E-01	2.789E+00	4.678E+00	5.574E-01	0.084
	722.78			4.826E-01	7.327E-01	1.131E+00	9.812E-02	0.427
	968.20			5.357E+00	6.475E+00	1.106E+01	9.909E-01	0.484
	1045.16			-4.980E+00	6.201E+00	9.354E+00	8.176E-01	-0.532
	1325.50			1.775E+00	4.809E+00	7.468E+00	6.354E-01	0.238
	1368.21			1.470E+00	1.919E+00	3.657E+00	4.916E-01	0.402
	1436.60			2.316E+00	4.786E+00	8.645E+00	7.465E-01	0.268
	1691.02	*		-4.937E-02	8.374E-02	1.086E-01	9.624E-03	-0.455
SB-125	427.89	*		5.657E-02	2.045E-01	3.356E-01	2.824E-02	0.169
	463.38			6.590E-01	6.492E-01	1.101E+00	9.990E-02	0.598
	600.56			-1.333E-01	3.464E-01	5.595E-01	5.071E-02	-0.238
	635.90			-4.132E-01	5.307E-01	8.288E-01	7.479E-02	-0.499
TE-125M	109.28	*		7.208E+00	1.394E+01	2.275E+01	2.355E+00	0.317
I-126	388.63			-1.288E-01	2.958E-01	4.661E-01	3.775E-02	-0.276
	666.33	*		-7.529E-02	2.971E-01	4.176E-01	3.431E-02	-0.180
	753.82			8.344E-01	2.161E+00	3.677E+00	3.169E-01	0.227
SB-126	223.80			2.695E+00	5.214E+00	8.877E+00	7.986E-01	0.304
	278.60			4.294E-01	3.115E+00	5.175E+00	4.733E-01	0.083
	296.50			3.935E+00	2.103E+00	3.686E+00	3.354E-01	1.068
	414.70			-7.338E-02	1.177E-01	1.827E-01	1.494E-02	-0.402
	415.30			-2.900E+00	9.785E+00	1.552E+01	1.270E+00	-0.187

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		555.20		-3.813E+00	5.317E+00	8.451E+00	7.171E-01	-0.451
		573.80		1.087E-01	1.418E+00	2.393E+00	2.026E-01	0.045
		593.00		-4.520E-01	1.275E+00	2.079E+00	1.753E-01	-0.217
		656.30		4.964E+00	4.971E+00	7.978E+00	6.555E-01	0.622
		666.33		-3.101E-02	1.224E-01	1.720E-01	1.413E-02	-0.180
		675.00		9.111E-01	2.796E+00	4.763E+00	3.934E-01	0.191
		695.00		1.531E-02	1.061E-01	1.782E-01	1.489E-02	0.086
		697.00		-1.643E-01	3.550E-01	5.664E-01	4.739E-02	-0.290
		720.50	*	1.697E-01	2.013E-01	3.391E-01	2.874E-02	0.500
		856.80		-4.580E-01	7.659E-01	1.194E+00	1.070E-01	-0.384
		989.30		-7.754E-01	2.347E+00	3.708E+00	3.305E-01	-0.209
		1034.80		-9.298E-02	1.564E+01	2.538E+01	2.228E+00	-0.004
		1213.00		-1.518E+00	3.568E+00	5.566E+00	4.574E-01	-0.273
		61.10		8.168E+02	9.200E+01	1.202E+02	1.040E+01	6.796
		252.40		-1.450E+00	2.677E+00	4.199E+00	1.753E+00	-0.345
		290.80		6.948E+00	1.262E+01	2.136E+01	2.136E+00	0.325
		411.60		-1.138E+00	8.422E+00	1.350E+01	1.939E+00	-0.084
		444.90		-3.557E-01	7.054E+00	1.132E+01	1.232E+00	-0.031
		473.00		4.508E-01	1.316E+00	2.154E+00	2.440E-01	0.209
		543.00		1.640E-01	1.112E+01	1.873E+01	2.453E+00	0.009
		603.60		-4.907E+00	7.851E+00	1.063E+01	1.161E+00	-0.462
		685.20	*	-2.820E-01	8.054E-01	1.297E+00	1.237E-01	-0.217
		698.50		-2.939E+00	9.268E+00	1.498E+01	2.184E+00	-0.196
		722.20		1.875E+01	2.010E+01	3.188E+01	3.004E+00	0.588
		783.80		-7.530E-01	2.390E+00	3.835E+00	4.249E-01	-0.196
XE-127	+	57.60		4.189E+01	1.541E+01	3.310E+01	2.542E+00	1.265
		145.22		9.877E-02	9.376E-01	1.587E+00	1.355E-01	0.062
		172.10		-1.602E-02	1.740E-01	2.916E-01	2.498E-02	-0.055
		202.84	*	-1.971E-02	7.186E-02	1.187E-01	1.049E-02	-0.166
I-131		374.96		4.185E-02	3.711E-01	6.072E-01	5.057E-02	0.069
		80.18		1.647E+00	4.795E+00	7.005E+00	6.126E-01	0.235
		284.30		9.977E-01	1.575E+00	2.682E+00	2.555E-01	0.372
		364.48	*	1.415E-01	1.390E-01	2.389E-01	2.132E-02	0.592
TE-132		636.97		-3.102E-01	1.742E+00	2.866E+00	2.511E-01	-0.108
		722.89		5.708E+00	8.701E+00	1.343E+01	1.142E+00	0.425
		49.72		1.316E+01	1.259E+01	2.123E+01	1.975E+00	0.620
		111.76		-7.441E+00	1.300E+01	2.003E+01	1.897E+00	-0.372
BA-133		116.30		3.624E+00	1.277E+01	1.959E+01	1.861E+00	0.185
		228.16	*	-1.190E-01	3.268E-01	5.339E-01	8.010E-02	-0.223
		53.15		4.738E+00	9.628E+00	1.522E+01	1.237E+00	0.311
		79.62		2.337E+00	2.332E+00	3.494E+00	5.332E-01	0.669
I-133		81.00		-9.915E-02	1.831E-01	2.534E-01	4.047E-02	-0.391
		276.40		8.626E-02	6.690E-01	1.111E+00	1.641E-01	0.078
		302.84		1.985E-02	2.873E-01	4.737E-01	6.435E-02	0.042
		356.01	*	2.484E-03	9.473E-02	1.354E-01	1.786E-02	0.018
I-133	+	383.85		6.164E-01	6.070E-01	1.040E+00	1.280E-01	0.593
		510.53		3.859E-03	6.070E-01	Half-Life	too short	
		529.87	*	5.644E-05	6.070E-01	Half-Life	too short	
		706.58		6.865E-04	6.070E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	856.28			-5.963E-03	6.070E-01	Half-Life	too short	
	875.33			-1.276E-04	6.070E-01	Half-Life	too short	
	1236.41			3.556E-03	6.070E-01	Half-Life	too short	
	1298.22			3.152E-04	6.070E-01	Half-Life	too short	
	475.35			9.068E-02	4.613E+00	7.408E+00	6.230E-01	0.012
	563.23			5.500E-01	6.734E-01	1.193E+00	1.022E-01	0.461
	569.32			1.263E-01	3.671E-01	6.312E-01	5.423E-02	0.200
	604.70			-2.172E-02	6.731E-02	9.441E-02	7.955E-03	-0.230
	795.84	*		1.952E-02	9.679E-02	1.619E-01	1.430E-02	0.121
	801.93			-2.223E-02	8.150E-01	1.338E+00	1.183E-01	-0.017
	1038.57			3.358E+00	9.783E+00	1.626E+01	1.425E+00	0.206
	1167.94			-1.703E+00	5.292E+00	7.316E+00	5.946E-01	-0.233
	1365.15			-4.531E-01	1.551E+00	2.422E+00	2.171E-01	-0.187
	268.24	*		-3.013E-02	2.932E-01	4.818E-01	5.024E-02	-0.063
I-135	288.45			6.625E+02	2.932E-01	Half-Life	too short	
	417.63			8.055E+03	2.932E-01	Half-Life	too short	
	546.56			2.164E+03	2.932E-01	Half-Life	too short	
	836.80			1.662E+03	2.932E-01	Half-Life	too short	
	1038.76			3.640E+03	2.932E-01	Half-Life	too short	
	1124.00			-5.815E+03	2.932E-01	Half-Life	too short	
	1131.51			-1.286E+03	2.932E-01	Half-Life	too short	
	1260.41	*		5.621E+01	2.932E-01	Half-Life	too short	
	1457.56			7.935E+02	2.932E-01	Half-Life	too short	
	1678.03			-1.111E+03	2.932E-01	Half-Life	too short	
	1706.46			3.926E+03	2.932E-01	Half-Life	too short	
	1791.20			-1.880E+03	2.932E-01	Half-Life	too short	
	66.91			-2.011E-02	9.207E-01	1.489E+00	2.238E-01	-0.014
	86.29			1.228E+01	2.397E+00	3.195E+00	4.251E-01	3.842
CS-136	153.22			4.128E-02	7.596E-01	1.287E+00	1.228E-01	0.032
	163.89			-4.819E-01	1.214E+00	1.993E+00	1.905E-01	-0.242
	176.55			3.919E-01	4.457E-01	7.753E-01	7.055E-02	0.505
	273.65			-7.861E-01	5.989E-01	9.119E-01	8.829E-02	-0.862
	340.57			8.403E-02	2.115E-01	3.112E-01	2.807E-02	0.270
	818.51			-1.095E-01	1.276E-01	1.950E-01	1.727E-02	-0.562
	1048.07	*		2.305E-01	1.962E-01	3.450E-01	3.135E-02	0.668
	1235.34			1.236E-01	4.776E-01	8.269E-01	9.594E-02	0.150
	165.85	*		2.810E-02	4.598E-02	7.950E-02	6.771E-03	0.353
	162.64			-1.113E-01	8.481E-01	1.410E+00	1.272E-01	-0.079
	304.84			-1.691E+00	1.824E+00	2.735E+00	7.704E-01	-0.618
	423.70			-3.287E+00	3.130E+00	4.403E+00	1.423E+00	-0.747
	537.32	*		-2.359E-02	3.644E-01	6.111E-01	2.023E-01	-0.039
	328.77			2.250E-01	4.105E-01	6.909E-01	6.469E-02	0.326
LA-140	432.53			2.024E+00	3.340E+00	5.579E+00	4.853E-01	0.363
	487.03			2.735E-02	2.124E-01	3.433E-01	3.083E-02	0.080
	751.79			-1.806E+00	2.484E+00	3.843E+00	3.663E-01	-0.470
	815.85			-1.440E-01	5.290E-01	8.505E-01	8.346E-02	-0.169
	867.82			-1.791E+00	2.249E+00	3.420E+00	3.225E-01	-0.524
	919.63			8.564E-01	5.462E+00	9.007E+00	9.898E-01	0.095
	925.24			-1.598E+00	2.227E+00	3.431E+00	3.277E-01	-0.466
CE-139								
BA-140								

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1596.49	*		-2.740E-02	9.244E-02	1.425E-01	1.230E-02	-0.192
CE-141	145.44	*		-2.132E-04	8.341E-02	1.405E-01	1.222E-02	-0.002
CE-143	57.37		+	3.281E+02	1.220E+02	2.269E+02	2.129E+01	1.446
	231.56			4.632E+01	1.808E+02	3.034E+02	9.645E+01	0.153
	293.26	*		-7.821E+00	1.054E+01	1.646E+01	3.586E+00	-0.475
	350.59			4.895E+02	2.264E+02	2.851E+02	8.874E+01	1.717
	490.36			2.331E+01	2.647E+02	4.262E+02	1.348E+02	0.055
	664.57			2.691E+03	9.024E+02	5.177E+02	1.672E+02	5.198
	721.93			1.272E+02	1.249E+02	1.920E+02	5.613E+01	0.662
CE-144	80.11			1.425E+00	3.774E+00	5.524E+00	4.817E-01	0.258
	133.54	*		8.694E-02	3.355E-01	5.370E-01	8.359E-02	0.162
PM-144	476.78			-9.786E-02	1.610E-01	2.476E-01	2.287E-02	-0.395
	618.01			5.923E-02	6.230E-02	1.108E-01	9.541E-03	0.534
	696.49	*		-4.603E-02	6.643E-02	1.040E-01	8.698E-03	-0.443
	778.57			7.872E-01	5.049E+00	8.422E+00	7.339E-01	0.093
PR-144	696.49	*		-3.109E+00	4.487E+00	7.021E+00	5.873E-01	-0.443
	1489.15			5.804E+00	1.825E+01	3.189E+01	2.760E+00	0.182
PM-146	453.90	*		2.736E-02	1.044E-01	1.705E-01	1.791E-02	0.160
	633.02			7.352E-01	2.752E+00	4.662E+00	1.739E+00	0.158
	735.90			-1.047E-02	3.091E-01	5.100E-01	1.458E-01	-0.021
	747.13			-2.703E-02	1.849E-01	3.018E-01	4.231E-02	-0.090
ND-147	91.11			4.673E-01	3.704E-01	4.607E-01	4.554E-02	1.014
	319.41			5.371E+00	4.382E+00	7.624E+00	6.839E-01	0.704
	439.89			-7.261E-01	8.793E+00	1.409E+01	1.169E+00	-0.052
	531.02	*		-4.292E-01	7.633E-01	1.234E+00	1.835E-01	-0.348
PM-149	285.90	*		6.184E-01	2.343E+01	3.865E+01	6.113E+00	0.016
EU-152	121.78		+	6.262E-01	2.316E-01	2.749E-01	2.770E-02	2.278
	244.69			-2.042E-01	6.998E-01	1.000E+00	9.103E-02	-0.204
	344.27	*		8.747E-02	2.177E-01	3.376E-01	3.121E-02	0.259
	443.98			-3.660E-01	2.220E+00	3.538E+00	2.939E-01	-0.103
	778.89			1.252E-01	5.852E-01	9.803E-01	8.543E-02	0.128
	867.32			-1.497E+00	1.867E+00	2.836E+00	2.550E-01	-0.528
	964.01			-6.970E-01	8.178E-01	1.253E+00	1.124E-01	-0.556
	1085.78			4.646E-02	9.545E-01	1.546E+00	1.325E-01	0.030
	1112.02			1.561E-01	7.797E-01	1.276E+00	1.078E-01	0.122
	1407.95			1.810E-02	2.419E-01	4.068E-01	3.503E-02	0.044
GD-153	69.67			-1.023E+00	2.712E+00	4.311E+00	3.458E-01	-0.237
	83.37			-7.269E+00	2.741E+01	3.865E+01	3.480E+00	-0.188
	97.43	*		7.026E-02	1.291E-01	2.018E-01	1.792E-02	0.348
	103.18			-1.089E-02	1.621E-01	2.577E-01	2.248E-02	-0.042
EU-154	123.07		+	4.394E-01	1.643E-01	1.909E-01	2.192E-02	2.302
	247.94			-2.224E-01	6.700E-01	1.091E+00	1.293E-01	-0.204
	591.81			-2.517E-01	1.179E+00	1.943E+00	2.241E-01	-0.130
	723.30			1.816E-01	3.778E-01	5.723E-01	5.386E-02	0.317
	756.87			-8.108E-02	1.666E+00	2.740E+00	3.284E-01	-0.030
	873.19			4.214E-01	7.482E-01	1.273E+00	1.593E-01	0.331
	996.32			-9.146E-02	8.811E-01	1.417E+00	2.536E-01	-0.065
	1004.76			6.188E-01	5.173E-01	9.112E-01	1.078E-01	0.679
	1274.45	*		-1.361E-02	1.641E-01	2.705E-01	3.013E-02	-0.050

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		48.70		6.339E-01	6.146E+00	1.007E+01	8.619E-01	0.063
	+	60.01		4.318E+02	3.939E+01	4.398E+01	3.324E+00	9.818
		86.54		2.392E+00	3.335E-01	4.714E-01	4.428E-02	5.075
		105.31	*	-4.633E-02	1.688E-01	2.651E-01	2.332E-02	-0.175
TB-160	+	86.79		1.013E+01	1.340E+00	1.308E+00	1.221E-01	7.749
		197.04		5.662E-01	9.197E-01	1.578E+00	1.388E-01	0.359
		215.65		4.400E-01	1.293E+00	2.188E+00	1.956E-01	0.201
		298.57		-3.398E-01	2.368E-01	3.599E-01	3.272E-02	-0.944
		879.36	*	-8.825E-02	3.376E-01	5.412E-01	4.880E-02	-0.163
		962.29		-1.720E-01	1.339E+00	2.158E+00	1.936E-01	-0.080
		966.15		5.553E-02	5.097E-01	8.344E-01	7.482E-02	0.067
		1177.93		1.031E+00	6.867E-01	1.188E+00	9.634E-02	0.868
		1271.85		-4.443E-01	9.244E-01	1.432E+00	1.200E-01	-0.310
HO-166M		80.57		2.152E-01	4.859E-01	7.136E-01	6.250E-02	0.302
		184.41		8.165E-02	6.462E-02	1.021E-01	8.863E-03	0.799
		280.46		-5.125E-02	1.543E-01	2.496E-01	2.282E-02	-0.205
		410.95		-1.188E-01	5.411E-01	8.634E-01	7.042E-02	-0.138
		711.68	*	-1.294E-02	1.130E-01	1.855E-01	1.565E-02	-0.070
		752.31		-1.552E-01	5.629E-01	9.087E-01	7.826E-02	-0.171
		810.29		4.662E-02	1.322E-01	2.233E-01	1.971E-02	0.209
		51.35		-5.675E+01	8.017E+01	1.272E+02	1.058E+01	-0.446
TM-171		52.39		1.911E+01	4.037E+01	6.682E+01	5.485E+00	0.286
	+	59.40		2.262E+03	2.064E+02	2.436E+02	1.836E+01	9.285
		66.72	*	1.310E+00	4.645E+01	7.528E+01	5.929E+00	0.017
LU-176	+	88.36		7.942E+00	1.051E+00	1.094E+00	1.032E-01	7.258
		201.83		9.939E-03	4.981E-02	8.404E-02	7.423E-03	0.118
		306.84	*	-3.533E-02	4.762E-02	7.464E-02	6.755E-03	-0.473
LU-177		401.10		1.334E+01	1.475E+01	2.508E+01	2.032E+00	0.532
		112.95		-5.168E-01	1.410E+00	2.196E+00	1.904E-01	-0.235
		208.36	*	9.506E-01	9.778E-01	1.695E+00	1.506E-01	0.561
LU-177M		52.97		2.019E+00	4.251E+00	6.717E+00	5.471E-01	0.301
		54.07		6.605E-02	2.400E+00	3.492E+00	2.803E-01	0.019
		61.30		4.474E+01	5.403E+00	8.239E+00	6.284E-01	5.431
	+	121.62		3.127E+00	1.146E+00	1.371E+00	1.205E-01	2.280
		147.16		-3.470E-01	9.704E-01	1.616E+00	1.379E-01	-0.215
		171.86		-7.184E-03	7.732E-01	1.301E+00	1.114E-01	-0.006
		218.09		6.155E-01	1.527E+00	2.590E+00	2.320E-01	0.238
		268.79		-2.039E-03	1.443E+00	2.384E+00	2.181E-01	-0.001
		319.02		4.183E-01	5.009E-01	8.565E-01	7.685E-02	0.488
		367.43		-1.094E+00	1.855E+00	2.906E+00	2.453E-01	-0.376
		413.65	*	-2.587E-01	3.797E-01	5.869E-01	4.795E-02	-0.441
	+	56.28		6.233E+00	2.293E+00	3.778E+00	2.947E-01	1.650
	+	57.53		3.573E+00	1.315E+00	2.727E+00	2.096E-01	1.310
		65.20		-1.905E+00	1.519E+00	2.225E+00	1.737E-01	-0.856
		133.02		-2.997E-02	9.854E-02	1.532E-01	1.321E-02	-0.196
HF-181		136.25		2.989E-01	6.719E-01	1.160E+00	9.972E-02	0.258
		345.85		-9.895E-02	3.672E-01	5.685E-01	4.958E-02	-0.174
		482.03	*	-6.730E-02	8.406E-02	1.266E-01	1.067E-02	-0.532
		67.75		4.229E-02	1.749E-01	2.859E-01	2.266E-02	0.148
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---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		100.10		-1.575E-01	2.729E-01	4.224E-01	3.714E-02	-0.373
		152.43		3.521E-01	5.109E-01	8.878E-01	7.564E-02	0.397
		222.10		-4.644E-01	6.101E-01	9.782E-01	8.790E-02	-0.475
		1001.68		3.553E-01	4.774E+00	7.874E+00	6.992E-01	0.045
		1121.28		1.899E-01	3.019E-01	5.147E-01	4.322E-02	0.369
		1189.05		-2.028E-01	4.347E-01	6.875E-01	5.599E-02	-0.295
		1221.42	*	2.057E-01	2.654E-01	4.828E-01	3.979E-02	0.426
		1230.97		-4.170E-01	5.275E-01	7.678E-01	6.350E-02	-0.543
RE-183	+	57.98		1.481E+00	5.450E-01	1.407E+00	1.076E-01	1.052
	+	59.32		8.757E+00	7.989E-01	9.502E-01	7.167E-02	9.216
		67.20		7.235E-02	3.074E-01	5.024E-01	3.968E-02	0.144
		162.32	*	-3.321E-02	1.616E-01	2.701E-01	2.300E-02	-0.123
		208.81		1.710E+00	1.610E+00	2.799E+00	2.488E-01	0.611
		291.72		-3.428E+00	1.832E+00	2.679E+00	2.443E-01	-1.279
RE-184	+	57.98		5.663E+00	2.084E+00	5.382E+00	4.116E-01	1.052
	+	59.32		3.346E+01	3.052E+00	3.630E+00	2.738E-01	9.216
		67.20		2.766E-01	1.175E+00	1.920E+00	1.517E-01	0.144
		161.27		-7.976E-02	5.464E-01	9.159E-01	7.797E-02	-0.087
		216.55		-1.670E-01	4.758E-01	7.807E-01	6.986E-02	-0.214
		252.85	*	-2.969E-01	4.294E-01	6.850E-01	6.252E-02	-0.433
		318.01		-2.435E-01	8.855E-01	1.428E+00	1.283E-01	-0.170
		792.07		-5.226E-01	1.996E+00	3.215E+00	2.818E-01	-0.163
		903.28		-9.673E-02	2.743E+00	4.469E+00	4.047E-01	-0.022
		920.93		2.208E-01	1.207E+00	1.994E+00	1.802E-01	0.111
OS-185	+	59.72		2.427E+01	2.214E+00	2.540E+00	1.916E-01	9.558
		61.14		6.561E+00	7.030E-01	1.003E+00	7.641E-02	6.543
		69.30		-2.083E-01	4.749E-01	7.530E-01	6.025E-02	-0.277
		592.07		-2.691E+00	4.700E+00	7.531E+00	6.351E-01	-0.357
		646.12	*	1.023E-02	8.496E-02	1.429E-01	1.180E-02	0.072
		717.42		-1.374E+00	1.654E+00	2.538E+00	2.148E-01	-0.541
		874.81		5.932E-01	1.362E+00	2.302E+00	2.073E-01	0.258
		880.27		-6.918E-01	1.885E+00	2.994E+00	2.701E-01	-0.231
RE-188	*	155.03		-1.171E-01	2.569E-01	4.252E-01	3.621E-02	-0.275
		477.96		-5.554E-01	6.627E+00	1.057E+01	8.894E-01	-0.053
		633.10		-2.748E-02	5.273E+00	8.797E+00	7.314E-01	-0.003
W-188		63.58		-7.653E+01	9.242E+01	1.299E+02	1.005E+01	-0.589
		227.08		-1.262E+01	2.228E+01	3.606E+01	3.252E+00	-0.350
		290.67	*	7.863E+00	1.298E+01	2.203E+01	2.009E+00	0.357
IR-192		295.96		4.117E-01	2.124E-01	3.735E-01	3.421E-02	1.102
		308.46		1.081E-01	1.686E-01	2.865E-01	2.602E-02	0.377
		316.51	*	-1.198E-02	6.587E-02	1.069E-01	9.629E-03	-0.112
		468.07		-8.359E-02	1.499E-01	2.319E-01	2.093E-02	-0.361
		604.41		-3.194E-01	8.773E-01	1.224E+00	1.577E-01	-0.261
		612.46		8.333E-01	1.506E+00	2.304E+00	2.233E-01	0.362
AU-195		65.12		-3.655E-01	2.968E-01	4.354E-01	3.397E-02	-0.840
		66.83		-4.291E-03	1.512E-01	2.444E-01	1.926E-02	-0.018
		75.70		9.952E-01	3.775E-01	5.935E-01	4.977E-02	1.677
		98.88	*	5.606E-02	3.521E-01	5.653E-01	4.991E-02	0.099
		129.76		2.660E-01	4.443E+00	7.052E+00	6.108E-01	0.038

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-200	367.94	*	-8.349E-06	4.443E+00	Half-Life	too short		
	579.30		-3.862E-05	4.443E+00	Half-Life	too short		
	828.27		1.275E-04	4.443E+00	Half-Life	too short		
	1205.75		-8.710E-07	4.443E+00	Half-Life	too short		
TL-201	68.90		-5.931E-01	1.870E+00	2.982E+00	2.380E-01	-0.199	
	70.82		-3.524E-02	1.073E+00	1.732E+00	1.400E-01	-0.020	
	80.30		8.868E-01	2.100E+00	3.081E+00	2.691E-01	0.288	
	135.34		7.232E+00	1.008E+01	1.648E+01	1.418E+00	0.439	
	167.43	*	3.414E-01	2.618E+00	4.436E+00	3.783E-01	0.077	
TL-202	68.90		-1.589E-01	5.012E-01	7.991E-01	6.378E-02	-0.199	
	70.82		-9.417E-03	2.869E-01	4.628E-01	3.741E-02	-0.020	
	80.30		2.371E-01	5.614E-01	8.236E-01	7.195E-02	0.288	
	439.56	*	-6.108E-03	1.095E-01	1.758E-01	1.457E-02	-0.035	
HG-203	70.83		-5.830E-02	1.623E+00	2.618E+00	3.475E-01	-0.022	
	72.87		-2.019E-01	1.075E+00	1.530E+00	1.979E-01	-0.132	
	82.60		3.116E-01	1.843E+00	2.663E+00	3.713E-01	0.117	
	279.20	*	1.628E-04	6.650E-02	1.097E-01	1.028E-02	0.001	
BI-207	72.80		-9.912E-02	3.458E-01	4.898E-01	4.015E-02	-0.202	
	74.97		2.297E-01	2.080E-01	3.135E-01	2.613E-02	0.733	
	84.90		3.540E-01	3.476E-01	5.226E-01	4.782E-02	0.677	
	569.67		2.670E-02	5.781E-02	1.002E-01	8.485E-03	0.267	
	1063.62	*	5.470E-02	1.219E-01	2.045E-01	1.773E-02	0.267	
	1770.23		-1.713E+00	1.107E+00	1.261E+00	1.056E-01	-1.359	
TL-207	81.07		-3.365E-01	4.089E-01	5.574E-01	4.906E-02	-0.604	
	83.78		-3.898E-02	2.374E-01	3.367E-01	3.045E-02	-0.116	
	94.90		4.467E-02	4.073E-01	5.840E-01	5.250E-02	0.076	
+	122.32		1.493E+01	5.493E+00	6.576E+00	6.188E-01	2.270	
	144.24		-6.204E-01	1.061E+00	1.740E+00	1.666E-01	-0.357	
	154.21		-4.429E-01	6.377E-01	1.043E+00	9.791E-02	-0.425	
	269.46		2.464E-01	3.517E-01	5.997E-01	5.589E-02	0.411	
	323.87	*	-1.019E+00	1.297E+00	2.005E+00	3.582E-01	-0.508	
+	338.28		1.766E+00	3.049E+00	3.485E+00	4.336E-01	0.507	
	445.03		-6.531E-01	5.184E+00	8.279E+00	9.828E-01	-0.079	
PO-209	260.50		4.933E+00	1.854E+01	3.107E+01	2.841E+00	0.159	
	262.80		-2.023E+01	5.096E+01	8.250E+01	7.546E+00	-0.245	
	896.60	*	-2.836E+00	1.960E+01	3.167E+01	2.868E+00	-0.090	
BI-210	46.50	*	-4.568E+00	8.491E+00	1.356E+01	1.280E+00	-0.337	
PB-210	46.50	*	-4.568E+00	8.491E+00	1.356E+01	1.280E+00	-0.337	
PO-210	46.50	*	-4.568E+00	8.489E+00	1.356E+01	1.162E+00	-0.337	
PB-211	404.84	*	-2.951E-01	2.091E+00	3.342E+00	2.092E+00	-0.088	
	427.08		9.925E-01	4.671E+00	7.573E+00	4.702E+00	0.131	
	831.96		-1.699E+00	2.992E+00	4.372E+00	2.741E+00	-0.389	
BI-212	727.18	*	1.287E+00	8.216E-01	1.095E+00	1.085E-01	1.176	
	785.46		-1.735E+00	3.613E+00	5.710E+00	4.990E-01	-0.304	
	1620.62		2.609E+00	1.769E+00	3.740E+00	3.218E-01	0.698	
PB-214	74.81		1.180E+00	1.233E+00	1.844E+00	2.055E-01	0.640	
+	77.11		1.480E+00	8.511E-01	1.127E+00	1.285E-01	1.314	
+	87.30		2.653E+01	4.062E+00	3.696E+00	4.490E-01	7.179	
	241.98		7.146E-01	7.739E-01	1.185E+00	1.265E-01	0.603	

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214		295.21		4.962E-01	2.926E-01	5.090E-01	5.621E-02	0.975
	+	351.92	*	6.819E-01	2.557E-01	3.394E-01	3.556E-02	2.009
		74.81		1.180E+00	1.233E+00	1.844E+00	2.055E-01	0.640
	+	77.11		1.480E+00	8.511E-01	1.127E+00	1.285E-01	1.314
	+	87.30		2.653E+01	4.062E+00	3.696E+00	4.490E-01	7.179
		241.98		7.146E-01	7.739E-01	1.185E+00	1.265E-01	0.603
PO-215		295.21		4.962E-01	2.926E-01	5.090E-01	5.621E-02	0.975
	+	351.92	*	6.819E-01	2.557E-01	3.394E-01	3.556E-02	2.009
		81.07		-3.365E-01	4.089E-01	5.574E-01	4.906E-02	-0.604
		83.78		-3.898E-02	2.374E-01	3.367E-01	3.045E-02	-0.116
		94.90		4.467E-02	4.073E-01	5.840E-01	5.250E-02	0.076
	+	122.32		1.493E+01	5.493E+00	6.576E+00	6.188E-01	2.270
PO-218		144.24		-6.204E-01	1.061E+00	1.740E+00	1.666E-01	-0.357
		154.21		-4.429E-01	6.377E-01	1.043E+00	9.791E-02	-0.425
		269.46		2.464E-01	3.517E-01	5.997E-01	5.589E-02	0.411
		323.87	*	-1.019E+00	1.297E+00	2.005E+00	3.582E-01	-0.508
	+	338.28		1.766E+00	3.049E+00	3.485E+00	4.336E-01	0.507
		445.03		-6.531E-01	5.184E+00	8.279E+00	9.828E-01	-0.079
RN-219		74.81		1.180E+00	1.233E+00	1.844E+00	2.055E-01	0.640
	+	77.11		1.480E+00	8.511E-01	1.127E+00	1.285E-01	1.314
	+	87.30		2.653E+01	4.062E+00	3.696E+00	4.490E-01	7.179
		241.98		7.146E-01	7.739E-01	1.185E+00	1.265E-01	0.603
		295.21		4.962E-01	2.926E-01	5.090E-01	5.621E-02	0.975
	+	351.92	*	6.819E-01	2.557E-01	3.394E-01	3.556E-02	2.009
RA-223		271.23		6.071E-01	4.483E-01	7.820E-01	8.414E-02	0.776
		401.81	*	3.177E-01	9.236E-01	1.524E+00	2.245E-01	0.209
		549.76	*	1.634E+00	5.203E+01	8.772E+01	7.446E+00	0.019
		81.07		-3.365E-01	4.089E-01	5.574E-01	4.906E-02	-0.604
		83.78		-3.898E-02	2.374E-01	3.367E-01	3.045E-02	-0.116
		94.90		4.467E-02	4.073E-01	5.840E-01	5.250E-02	0.076
RA-224	+	122.32		1.493E+01	5.493E+00	6.576E+00	6.188E-01	2.270
		144.24		-6.204E-01	1.061E+00	1.740E+00	1.666E-01	-0.357
		154.21		-4.429E-01	6.377E-01	1.043E+00	9.791E-02	-0.425
		269.46		2.464E-01	3.517E-01	5.997E-01	5.589E-02	0.411
		323.87	*	-1.019E+00	1.297E+00	2.005E+00	3.582E-01	-0.508
	+	338.28		1.766E+00	3.049E+00	3.485E+00	4.336E-01	0.507
AC-227		445.03		-6.531E-01	5.184E+00	8.279E+00	9.828E-01	-0.079
		240.98	*	6.464E+00	1.744E+00	2.853E+00	2.593E-01	2.265
		79.80		1.692E+00	3.012E+00	4.423E+00	9.524E-01	0.383
		236.00		4.315E-01	4.109E-01	6.390E-01	8.027E-02	0.675
		256.20	*	1.398E-01	7.295E-01	1.219E+00	1.906E-01	0.115
		286.10		-1.192E+00	2.951E+00	4.747E+00	6.428E-01	-0.251
TH-227		299.80		-4.327E-01	3.040E+00	4.961E+00	8.793E-01	-0.087
		304.40		-2.317E+00	3.710E+00	5.843E+00	1.090E+00	-0.397
		334.20		-1.779E+00	5.114E+00	7.099E+00	1.385E+00	-0.251
		79.80		1.692E+00	3.013E+00	4.423E+00	9.646E-01	0.383
	+	94.00		2.754E+00	3.652E+00	5.320E+00	1.168E+00	0.518
		236.00		4.315E-01	4.103E-01	6.390E-01	7.301E-02	0.675
		256.20	*	1.398E-01	7.296E-01	1.219E+00	2.232E-01	0.115

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	+	286.10		-1.192E+00	3.180E+00	4.747E+00	4.767E+00	-0.251
		299.80		-4.327E-01	3.040E+00	4.961E+00	8.793E-01	-0.087
		304.40		-2.317E+00	3.710E+00	5.843E+00	1.090E+00	-0.397
		334.20		-1.779E+00	5.114E+00	7.099E+00	1.385E+00	-0.251
		338.32		4.228E-01	7.488E-01	8.348E-01	3.448E-01	0.506
RA-228	+	911.07	*	1.103E+00	4.939E-01	7.660E-01	8.867E-02	1.440
		969.11		6.005E-01	6.843E-01	1.152E+00	2.702E-01	0.521
		338.32		4.228E-01	7.488E-01	8.348E-01	3.448E-01	0.506
TH-229	+	911.07	*	1.103E+00	4.939E-01	7.660E-01	8.867E-02	1.440
		969.11		6.005E-01	6.843E-01	1.152E+00	2.702E-01	0.521
		85.43		4.834E-01	3.584E-01	5.442E-01	5.007E-02	0.888
		88.47		4.572E+00	6.047E-01	6.281E-01	5.919E-02	7.279
PA-231	+	100.00		-1.611E-03	2.864E-01	4.574E-01	4.023E-02	-0.004
		193.63	*	-6.773E-01	8.720E-01	1.406E+00	1.232E-01	-0.482
		210.97		-4.054E-01	1.360E+00	2.242E+00	1.996E-01	-0.181
		283.67	*	6.715E-01	2.830E+00	4.722E+00	7.311E-01	0.142
		301.29		1.094E+00	1.147E+00	1.961E+00	2.465E-01	0.558
TH-231	+	81.07		-3.365E-01	4.089E-01	5.574E-01	4.906E-02	-0.604
		83.78		-3.898E-02	2.374E-01	3.367E-01	3.045E-02	-0.116
		94.90		4.467E-02	4.073E-01	5.840E-01	5.250E-02	0.076
		122.32		1.493E+01	5.493E+00	6.576E+00	6.188E-01	2.270
		144.24		-6.204E-01	1.061E+00	1.740E+00	1.666E-01	-0.357
U-231	+	154.21		-4.429E-01	6.377E-01	1.043E+00	9.791E-02	-0.425
		269.46		2.464E-01	3.517E-01	5.997E-01	5.589E-02	0.411
		323.87	*	-1.019E+00	1.297E+00	2.005E+00	3.582E-01	-0.508
		338.28		1.766E+00	3.049E+00	3.485E+00	4.336E-01	0.507
		445.03		-6.531E-01	5.184E+00	8.279E+00	9.828E-01	-0.079
TH-232	+	84.21		-4.486E-01	3.565E+00	5.066E+00	4.602E-01	-0.089
		92.29		9.482E-01	1.243E+00	1.872E+00	1.710E-01	0.507
		95.87	*	-1.648E-01	6.665E-01	9.331E-01	8.347E-02	-0.177
		108.00		1.819E-01	1.150E+00	1.847E+00	1.601E-01	0.098
PA-233	+	338.32		4.228E-01	7.291E-01	8.348E-01	7.348E-02	0.506
		911.07	*	1.103E+00	4.939E-01	7.660E-01	8.867E-02	1.440
		969.11		6.005E-01	6.843E-01	1.152E+00	2.702E-01	0.521
		75.28		9.494E+00	6.212E+00	9.326E+00	1.418E+00	1.018
		86.59		4.159E+01	1.197E+01	7.858E+00	2.126E+00	5.293
PA-234	+	300.12		5.968E-01	8.200E-01	1.387E+00	2.101E-01	0.430
		311.98	*	-9.742E-02	1.243E-01	1.939E-01	1.795E-02	-0.502
		340.50		5.478E-01	1.440E+00	2.108E+00	5.038E-01	0.260
		398.62		1.823E+00	4.595E+00	7.578E+00	2.005E+00	0.240
		415.76		-1.387E+00	3.763E+00	5.927E+00	1.267E+00	-0.234
PA-234	+	63.00		-2.076E+00	2.941E+00	4.151E+00	6.232E-01	-0.500
		94.67		2.807E-01	2.830E-01	4.252E-01	5.388E-02	0.660
		98.44		-2.205E-02	1.505E-01	2.373E-01	1.325E-01	-0.093
		99.86		5.290E-02	7.278E-01	1.167E+00	1.027E-01	0.045
		111.00		2.715E-02	3.069E-01	4.906E-01	5.945E-02	0.055
		131.20		-2.326E-01	1.734E-01	2.522E-01	2.180E-02	-0.922
		152.70		2.673E-01	5.134E-01	8.841E-01	1.502E-01	0.302
		186.00		2.988E+00	3.133E+00	4.027E+00	1.258E+00	0.742

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		226.40	8.006E-02	7.410E-01	1.240E+00	1.669E-01	0.065
		227.20	-5.355E-01	7.986E-01	1.285E+00	1.159E-01	-0.417
		248.90	8.286E-02	1.510E+00	2.510E+00	5.675E-01	0.033
		293.70	6.880E-01	1.336E+00	2.243E+00	3.937E-01	0.307
		369.80	9.549E-01	1.757E+00	2.932E+00	6.361E-01	0.326
		568.70	-7.134E-02	1.895E+00	3.174E+00	2.689E-01	-0.022
		569.50	2.029E-01	5.104E-01	8.808E-01	7.461E-02	0.230
		574.00	-1.202E-01	2.928E+00	4.901E+00	4.149E-01	-0.025
		699.00	-3.520E-01	1.377E+00	2.236E+00	4.242E-01	-0.157
		706.10	-1.282E-01	2.023E+00	3.337E+00	1.487E+00	-0.038
		733.00	-3.604E-01	8.801E-01	1.197E+00	2.652E-01	-0.301
		742.81	1.737E+00	3.103E+00	4.975E+00	3.344E+00	0.349
		796.30	2.947E-01	1.924E+00	3.202E+00	8.678E-01	0.092
		805.60	-1.155E+00	2.118E+00	3.263E+00	1.002E+00	-0.354
		819.60	-2.533E+00	3.135E+00	4.577E+00	1.743E+00	-0.553
		826.30	-1.913E+00	2.246E+00	3.175E+00	1.422E+00	-0.602
		831.60	-6.332E-01	1.445E+00	2.270E+00	6.792E-01	-0.279
		876.40	-1.267E+00	2.519E+00	3.370E+00	3.466E+00	-0.376
		880.51	-3.929E-01	7.214E-01	1.129E+00	1.019E-01	-0.348
		883.24	7.050E-02	7.490E-01	1.231E+00	8.281E-01	0.057
		899.00	4.750E-01	2.242E+00	3.702E+00	1.622E+00	0.128
		925.00	-2.184E+00	3.280E+00	5.078E+00	4.587E-01	-0.430
		926.50	-3.471E-01	4.936E-01	7.501E-01	1.907E-01	-0.463
		946.00 *	-3.660E-02	8.120E-01	1.318E+00	2.496E-01	-0.028
		949.00	-9.890E-02	1.221E+00	1.975E+00	1.777E-01	-0.050
		980.50	-7.048E-01	1.824E+00	2.865E+00	2.560E-01	-0.246
PA-234M		1394.10	5.394E-01	1.268E+00	2.234E+00	1.454E+00	0.241
		766.42	-8.130E+00	2.511E+01	3.991E+01	2.025E+01	-0.204
TH-234		1001.03 *	-2.859E+00	1.119E+01	1.797E+01	1.832E+00	-0.159
		63.29 *	-1.916E+00	2.493E+00	3.491E+00	6.136E-01	-0.549
U-235	+	92.38	7.126E-01	9.412E-01	1.406E+00	2.578E-01	0.507
		89.95	1.558E+01	5.478E+00	4.115E+00	1.278E+00	3.786
	+	93.35	8.567E-01	1.146E+00	1.686E+00	4.750E-01	0.508
		105.00	-1.458E-01	1.665E+00	2.642E+00	7.892E-01	-0.055
		143.76 *	-2.290E-01	3.288E-01	5.335E-01	9.320E-02	-0.429
		163.35	-4.365E-01	7.646E-01	1.239E+00	2.357E-01	-0.352
	+	185.71	1.107E-01	1.112E-01	1.482E-01	1.288E-02	0.747
		205.31	-4.492E-01	9.040E-01	1.464E+00	2.810E-01	-0.307
NP-236		94.67	2.136E-01	2.139E-01	3.226E-01	2.904E-02	0.662
		98.44	-1.665E-02	1.134E-01	1.794E-01	1.587E-02	-0.093
		111.00	2.054E-02	2.321E-01	3.711E-01	3.215E-02	0.055
		160.31 *	-8.067E-02	1.292E-01	2.118E-01	1.803E-02	-0.381
NP-237		86.50 *	5.531E+00	1.386E+00	1.130E+00	2.558E-01	4.894
		95.87	-4.170E-01	1.690E+00	2.362E+00	5.845E-01	-0.177
U-238		63.29 *	-1.916E+00	2.493E+00	3.491E+00	6.136E-01	-0.549
	+	92.38	7.126E-01	9.344E-01	1.406E+00	1.284E-01	0.507
NP-239		99.55	-1.770E-02	2.494E-01	3.971E-01	3.498E-02	-0.045
		117.00 *	3.649E-02	3.656E-01	5.195E-01	4.525E-02	0.070
		209.75	1.084E+00	1.344E+00	2.317E+00	2.061E-01	0.468

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243		228.18		-1.494E-01	4.154E-01	6.794E-01	6.130E-02	-0.220
		277.60		3.351E-01	3.182E-01	5.520E-01	5.049E-02	0.607
		334.30		-1.050E+00	2.891E+00	4.015E+00	3.550E-01	-0.262
		74.67	*	1.043E-01	1.158E-01	1.733E-01	1.441E-02	0.602
	+	86.72		3.687E+02	4.877E+01	4.669E+01	4.356E+00	7.899
CM-243		117.66		-5.285E+00	7.627E+00	1.025E+01	8.934E-01	-0.516
		142.18		1.226E+01	2.702E+01	4.666E+01	3.990E+00	0.263
		99.55		-1.821E-02	2.565E-01	4.084E-01	3.598E-02	-0.045
		103.76	*	-5.883E-02	1.513E-01	2.363E-01	2.059E-02	-0.249
		117.00		3.752E-02	3.760E-01	5.343E-01	4.653E-02	0.070
AM-246		209.75		1.068E+00	1.324E+00	2.283E+00	2.031E-01	0.468
		228.18		-1.509E-01	4.196E-01	6.862E-01	6.192E-02	-0.220
		277.60		3.377E-01	3.206E-01	5.562E-01	5.088E-02	0.607
		798.80		2.152E-02	2.975E-01	4.925E-01	4.327E-02	0.044
		1036.00		-2.079E-01	7.609E-01	1.202E+00	1.055E-01	-0.173
CM-247		1062.04		1.759E-01	5.397E-01	8.965E-01	7.777E-02	0.196
		1078.86	*	4.000E-02	3.265E-01	5.327E-01	4.584E-02	0.075
		278.00		1.077E+00	1.329E+00	2.281E+00	2.086E-01	0.472
		287.40		-3.226E-01	2.374E+00	3.881E+00	3.543E-01	-0.083
		402.60	*	-2.266E-02	8.299E-02	1.322E-01	1.072E-02	-0.171
CF-249		252.85		-1.143E+00	1.654E+00	2.638E+00	2.408E-01	-0.433
		333.44		-1.957E-01	3.838E-01	5.260E-01	4.656E-02	-0.372
		387.95	*	-4.395E-02	7.990E-02	1.248E-01	1.012E-02	-0.352
CF-251		176.60	*	1.917E-01	2.152E-01	3.746E-01	3.224E-02	0.512
		227.00		-2.010E-01	7.048E-01	1.157E+00	1.043E-01	-0.174
		285.00		1.352E+00	3.291E+00	5.538E+00	5.059E-01	0.244

# 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]G1202012158      *
* Acquisition date   : 20-JAN-2010 18:05:03 Detector SN#                   *
* Detector ID        : GAM01 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 01:00:01.16 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID         *
* Sample ID           : G1202012158 Analyst initials: MXR1                *
* Batch Number        : 940268 Sample Quantity : 1.5544E+02 GRAM          *
* Recovery             : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                                *
*                                     *                                       *
* Standard Weight     : 0.00000                                             *
* CALIB. DATE/TIME    : 12-JAN-2010 15:15:52 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	7.286E-01	6.055E-01	6.276E-01	0.000E+00
CO-57	2.124E-01	7.630E-02	6.831E-02	0.000E+00
CO-60	6.063E+00	6.231E-01	9.230E-02	0.000E+00
CD-109	3.375E+01	4.374E+00	2.273E+00	0.000E+00
SN-126	3.349E+00	4.341E-01	2.268E-01	0.000E+00
BA-137M	5.405E+00	5.119E-01	1.271E-01	0.000E+00
CS-137	5.713E+00	5.420E-01	1.344E-01	0.000E+00
W-181	-7.923E-01	6.193E-01	1.012E+00	0.000E+00
TL-208	2.989E-01	1.150E-01	1.166E-01	0.000E+00
BI-211	1.960E+00	7.133E-01	6.936E-01	0.000E+00
PB-212	8.808E-01	2.465E-01	1.805E-01	0.000E+00
PO-212	8.808E-01	2.465E-01	1.805E-01	0.000E+00
BI-214	7.644E-01	2.147E-01	2.134E-01	0.000E+00
PO-216	8.808E-01	2.465E-01	1.805E-01	0.000E+00
RA-226	7.644E-01	2.147E-01	2.134E-01	0.000E+00
TH-228	8.885E-01	2.487E-01	1.821E-01	0.000E+00
TH-230	7.644E-01	2.147E-01	2.134E-01	0.000E+00
U-234	7.644E-01	2.147E-01	2.134E-01	0.000E+00
AM-241	1.331E+01	1.267E+00	5.743E-01	0.000E+00
ANH-511	6.259E-02	9.213E-02	1.121E-01	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-9.117E-02	6.713E-01	1.132E+00	0.000E+00 NOT IDENT.
NA-22	3.750E-03	5.612E-02	9.774E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.090E+02	0.000E+00	0.000E+00 SHORT HLIF
AL-26	2.600E-04	4.813E-02	8.023E-02	0.000E+00 NOT IDENT.
TI-44	0.000E+00	8.898E-02	1.211E-01	0.000E+00 FAIL ABUN
SC-46	2.745E-02	9.606E-02	1.671E-01	0.000E+00 NOT IDENT.
V-48	-1.150E-01	1.345E-01	2.107E-01	0.000E+00 NOT IDENT.

CR-51	5.592E-01	6.129E-01	1.127E+00	0.000E+00	NOT IDENT.
MN-52	-8.992E-03	1.429E-01	2.441E-01	0.000E+00	FAIL ABUN
MN-54	-3.856E-02	7.848E-02	1.293E-01	0.000E+00	NOT IDENT.
CO-56	-1.275E-02	8.344E-02	1.412E-01	0.000E+00	NOT IDENT.
CO-58	2.031E-02	8.119E-02	1.423E-01	0.000E+00	NOT IDENT.
FE-59	-5.531E-02	2.201E-01	3.607E-01	0.000E+00	NOT IDENT.
ZN-65	-1.505E-01	2.097E-01	3.283E-01	0.000E+00	NOT IDENT.
GE-68	-4.118E-01	2.830E+00	4.677E+00	0.000E+00	NOT IDENT.
AS-73	-4.420E-02	2.242E+00	3.651E+00	0.000E+00	NOT IDENT.
AS-74	-1.118E-02	1.398E-01	2.456E-01	0.000E+00	NOT IDENT.
SE-75	-2.954E-02	7.759E-02	1.354E-01	0.000E+00	FAIL ABUN
BR-77	2.170E+00	3.221E+00	5.716E+00	0.000E+00	FAIL ABUN
SR-82	-4.757E-01	7.176E-01	1.176E+00	0.000E+00	NOT IDENT.
RB-83	8.084E-02	1.296E-01	2.294E-01	0.000E+00	NOT IDENT.
RB-84	5.382E-02	1.528E-01	2.673E-01	0.000E+00	NOT IDENT.
KR-85	2.044E+01	1.672E+01	2.728E+01	0.000E+00	NOT IDENT.
SR-85	9.801E-02	8.017E-02	1.308E-01	0.000E+00	NOT IDENT.
RB-86	-4.307E-03	1.431E+00	2.396E+00	0.000E+00	NOT IDENT.
Y-88	-1.536E-02	5.130E-02	7.860E-02	0.000E+00	NOT IDENT.
ZR-88	3.759E-02	5.827E-02	1.046E-01	0.000E+00	NOT IDENT.
Y-91	-1.999E+00	2.414E+01	4.145E+01	0.000E+00	NOT IDENT.
NB-94	8.938E-03	6.374E-02	1.122E-01	0.000E+00	NOT IDENT.
NB-95	-8.303E-04	8.485E-02	1.466E-01	0.000E+00	NOT IDENT.
NB-95M	1.336E-01	2.034E-01	3.351E-01	0.000E+00	NOT IDENT.
ZR-95	5.120E-02	1.396E-01	2.482E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	4.216E+02	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.283E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-6.759E-01	4.813E+00	8.255E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.301E+09	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.960E-02	5.661E-02	1.002E-01	0.000E+00	NOT IDENT.
RH-102	2.932E-02	6.905E-02	1.205E-01	0.000E+00	NOT IDENT.
RU-103	5.437E-02	7.958E-02	1.407E-01	0.000E+00	FAIL ABUN
RH-106	1.874E-02	6.195E-01	1.093E+00	0.000E+00	FAIL ABUN
RU-106	1.874E-02	6.195E-01	1.093E+00	0.000E+00	FAIL ABUN
AG-108M	3.635E-02	7.359E-02	1.299E-01	0.000E+00	NOT IDENT.
AG-110M	4.643E-02	7.839E-02	1.264E-01	0.000E+00	NOT IDENT.
IN-111	-5.147E-01	4.501E-01	6.931E-01	0.000E+00	NOT IDENT.
IN-113M	2.936E-02	8.617E-02	1.521E-01	0.000E+00	NOT IDENT.
SN-113	2.936E-02	8.617E-02	1.521E-01	0.000E+00	NOT IDENT.
IN-114M	2.320E-01	3.057E-01	5.126E-01	0.000E+00	NOT IDENT.
CD-115	2.343E+00	2.887E+00	5.408E+00	0.000E+00	NOT IDENT.
SN-117M	5.772E-02	6.233E-02	1.191E-01	0.000E+00	NOT IDENT.
SB-122	2.689E-01	7.435E-01	1.352E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.775E+03	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.602E-02	4.303E-02	8.054E-02	0.000E+00	NOT IDENT.
I-124	-3.127E-01	4.460E-01	6.972E-01	0.000E+00	NOT IDENT.
SB-124	-4.937E-02	8.207E-02	1.090E-01	0.000E+00	NOT IDENT.
SB-125	5.657E-02	2.004E-01	3.501E-01	0.000E+00	NOT IDENT.
TE-125M	7.208E+00	1.366E+01	2.457E+01	0.000E+00	NOT IDENT.
I-126	-7.529E-02	2.912E-01	4.304E-01	0.000E+00	NOT IDENT.
SB-126	1.697E-01	1.972E-01	3.487E-01	0.000E+00	NOT IDENT.
SB-127	-2.820E-01	7.893E-01	1.336E+00	0.000E+00	NOT IDENT.
XE-127	-1.971E-02	7.042E-02	1.262E-01	0.000E+00	FAIL ABUN
I-131	1.415E-01	1.362E-01	2.502E-01	0.000E+00	NOT IDENT.
TE-132	-1.190E-01	3.203E-01	5.660E-01	0.000E+00	NOT IDENT.
BA-133	2.484E-03	9.283E-02	1.419E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.308E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.952E-02	9.485E-02	1.660E-01	0.000E+00	NOT IDENT.
CS-135	-3.013E-02	2.873E-01	5.087E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.008E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.305E-01	1.923E-01	3.512E-01	0.000E+00	NOT IDENT.
CE-139	2.810E-02	4.507E-02	8.498E-02	0.000E+00	NOT IDENT.
BA-140	-2.359E-02	3.571E-01	6.335E-01	0.000E+00	NOT IDENT.
LA-140	-2.740E-02	9.059E-02	1.434E-01	0.000E+00	NOT IDENT.
CE-141	-2.132E-04	8.174E-02	1.507E-01	0.000E+00	NOT IDENT.
CE-143	-7.821E+00	1.033E+01	1.734E+01	0.000E+00	FAIL ABUN
CE-144	8.694E-02	3.288E-01	5.771E-01	0.000E+00	NOT IDENT.
PM-144	-4.603E-02	6.510E-02	1.070E-01	0.000E+00	NOT IDENT.
PR-144	-3.109E+00	4.397E+00	7.228E+00	0.000E+00	NOT IDENT.
PM-146	2.736E-02	1.023E-01	1.776E-01	0.000E+00	NOT IDENT.
ND-147	-4.292E-01	7.480E-01	1.279E+00	0.000E+00	NOT IDENT.
PM-149	6.184E-01	2.296E+01	4.074E+01	0.000E+00	NOT IDENT.
EU-152	8.747E-02	2.133E-01	3.541E-01	0.000E+00	FAIL ABUN
GD-153	7.026E-02	1.265E-01	2.185E-01	0.000E+00	NOT IDENT.
EU-154	-1.361E-02	1.608E-01	2.739E-01	0.000E+00	FAIL ABUN
EU-155	-4.633E-02	1.654E-01	2.866E-01	0.000E+00	FAIL ABUN
TB-160	-8.825E-02	3.308E-01	5.536E-01	0.000E+00	FAIL ABUN
HO-166M	-1.294E-02	1.108E-01	1.909E-01	0.000E+00	NOT IDENT.



TM-171	1.310E+00	4.553E+01	8.228E+01	0.000E+00	FAIL ABUN
LU-176	-3.533E-02	4.667E-02	7.853E-02	0.000E+00	FAIL ABUN
LU-177	9.506E-01	9.582E-01	1.801E+00	0.000E+00	NOT IDENT.
LU-177M	-2.587E-01	3.721E-01	6.127E-01	0.000E+00	FAIL ABUN
HF-181	-6.730E-02	8.238E-02	1.316E-01	0.000E+00	FAIL ABUN
TA-182	2.057E-01	2.601E-01	4.893E-01	0.000E+00	NOT IDENT.
RE-183	-3.321E-02	1.584E-01	2.889E-01	0.000E+00	FAIL ABUN
RE-184	-2.969E-01	4.208E-01	7.243E-01	0.000E+00	FAIL ABUN
OS-185	1.023E-02	8.326E-02	1.474E-01	0.000E+00	FAIL ABUN
RE-188	-1.171E-01	2.517E-01	4.552E-01	0.000E+00	NOT IDENT.
W-188	7.863E+00	1.272E+01	2.321E+01	0.000E+00	NOT IDENT.
IR-192	-1.198E-02	6.455E-02	1.124E-01	0.000E+00	NOT IDENT.
AU-195	5.606E-02	3.450E-01	6.120E-01	0.000E+00	NOT IDENT.
TL-200	0.000E+00	1.624E+01	0.000E+00	0.000E+00	SHORT HLIF
TL-201	3.414E-01	2.565E+00	4.740E+00	0.000E+00	NOT IDENT.
TL-202	-6.108E-03	1.073E-01	1.832E-01	0.000E+00	NOT IDENT.
HG-203	1.628E-04	6.517E-02	1.157E-01	0.000E+00	NOT IDENT.
BI-207	5.470E-02	1.194E-01	2.081E-01	0.000E+00	NOT IDENT.
TL-207	-1.019E+00	1.271E+00	2.107E+00	0.000E+00	FAIL ABUN
PO-209	-2.836E+00	1.921E+01	3.238E+01	0.000E+00	NOT IDENT.
BI-210	-4.568E+00	8.321E+00	1.495E+01	0.000E+00	NOT IDENT.
PB-210	-4.568E+00	8.321E+00	1.495E+01	0.000E+00	NOT IDENT.
PO-210	-4.568E+00	8.319E+00	1.495E+01	0.000E+00	NOT IDENT.
PB-211	-2.951E-01	2.049E+00	3.491E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.051E-01	1.126E+00	0.000E+00	FAIL ABUN
PB-214	0.000E+00	2.506E-01	3.558E-01	0.000E+00	FAIL ABUN
PO-214	0.000E+00	2.506E-01	3.558E-01	0.000E+00	FAIL ABUN
PO-215	-1.019E+00	1.271E+00	2.107E+00	0.000E+00	FAIL ABUN
PO-218	0.000E+00	2.506E-01	3.558E-01	0.000E+00	FAIL ABUN
RN-219	3.177E-01	9.051E-01	1.592E+00	0.000E+00	NOT IDENT.
RN-220	1.634E+00	5.099E+01	9.088E+01	0.000E+00	NOT IDENT.
RA-223	-1.019E+00	1.271E+00	2.107E+00	0.000E+00	FAIL ABUN
RA-224	0.000E+00	1.709E+00	3.021E+00	0.000E+00	NOT IDENT.
AC-227	1.398E-01	7.149E-01	1.288E+00	0.000E+00	NOT IDENT.
TH-227	1.398E-01	7.150E-01	1.288E+00	0.000E+00	FAIL ABUN
AC-228	0.000E+00	4.840E-01	7.828E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	4.840E-01	7.828E-01	0.000E+00	FAIL ABUN
TH-229	-6.773E-01	8.545E-01	1.497E+00	0.000E+00	FAIL ABUN
PA-231	6.715E-01	2.774E+00	4.978E+00	0.000E+00	NOT IDENT.
TH-231	-1.019E+00	1.271E+00	2.107E+00	0.000E+00	FAIL ABUN
U-231	-1.648E-01	6.531E-01	1.011E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	4.840E-01	7.828E-01	0.000E+00	FAIL ABUN
PA-233	-9.742E-02	1.218E-01	2.040E-01	0.000E+00	NOT IDENT.
PA-234	-3.660E-02	7.958E-01	1.345E+00	0.000E+00	FAIL ABUN
PA-234M	-2.859E+00	1.097E+01	1.832E+01	0.000E+00	NOT IDENT.
TH-234	-1.916E+00	2.443E+00	3.821E+00	0.000E+00	FAIL ABUN
U-235	-2.290E-01	3.223E-01	5.722E-01	0.000E+00	FAIL ABUN
NP-236	-8.067E-02	1.266E-01	2.266E-01	0.000E+00	NOT IDENT.
NP-237	0.000E+00	1.358E+00	1.228E+00	0.000E+00	NOT IDENT.
U-238	-1.916E+00	2.443E+00	3.821E+00	0.000E+00	FAIL ABUN
NP-239	3.649E-02	3.583E-01	5.602E-01	0.000E+00	NOT IDENT.
AM-243	1.043E-01	1.135E-01	1.889E-01	0.000E+00	FAIL ABUN
CM-243	-5.883E-02	1.483E-01	2.555E-01	0.000E+00	NOT IDENT.
AM-246	4.000E-02	3.200E-01	5.419E-01	0.000E+00	NOT IDENT.
CM-247	-2.266E-02	8.133E-02	1.381E-01	0.000E+00	NOT IDENT.
CF-249	-4.395E-02	7.830E-02	1.305E-01	0.000E+00	NOT IDENT.
CF-251	1.917E-01	2.109E-01	3.997E-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]G1202012158.CNF;1
Sample date     : 12-JAN-2010 00:00:00 Acquisition date : 20-JAN-2010 18:05:03
Sample ID       : G1202012158 Sample quantity : 1.55440E+02 GRAM
Detector name   : GAM01 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.16 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID        : 940268 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	15	10.67*	9.453E-01	7.286E-01	7.286E-01	84.80
CO-57	122.06	223	85.51*	6.056E+00	2.077E-01	2.124E-01	36.65
	136.48	-----	10.60	5.957E+00	-----	Line Not Found	-----
CO-60	1173.22	1480	100.00	1.144E+00	6.249E+00	6.269E+00	10.10
	1332.49	1278	100.00*	1.021E+00	6.044E+00	6.063E+00	10.49
CD-109	88.03	1345	3.72*	5.244E+00	3.331E+01	3.375E+01	13.23
SN-126	64.28	-----	9.60	2.906E+00	-----	Line Not Found	-----
	86.94	1345	8.90	5.244E+00	1.392E+01	1.392E+01	42.56
	87.57	1345	37.00*	5.244E+00	3.349E+00	3.349E+00	13.23
BA-137M	661.65	1935	89.98*	1.923E+00	5.402E+00	5.405E+00	9.66
CS-137	661.65	1935	85.12*	1.923E+00	5.710E+00	5.713E+00	9.68
W-181	56.28	195	18.70	2.023E+00	2.483E+00	2.611E+00	36.80
	57.53	195	32.60	2.023E+00	1.424E+00	1.498E+00	36.80
	65.20	-----	13.80*	3.025E+00	-----	Line Not Found	-----
TL-208	277.35	-----	6.80	3.885E+00	-----	Line Not Found	-----
	510.84	31	21.60	2.393E+00	2.898E-01	2.898E-01	150.42
	583.14	112	84.20*	2.142E+00	2.989E-01	2.989E-01	39.25
	860.37	-----	12.46	1.522E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.944E+00	-----	Line Not Found	-----
	351.07	169	12.94*	3.226E+00	1.960E+00	1.960E+00	37.13
PB-212	74.81	-----	10.70	4.150E+00	-----	Line Not Found	-----
	77.11	142	18.00	4.410E+00	8.634E-01	8.634E-01	57.00
	87.30	1345	8.00	5.244E+00	1.549E+01	1.549E+01	16.58
	238.63	354	44.60*	4.349E+00	8.808E-01	8.808E-01	28.56
	300.09	-----	3.41	3.656E+00	-----	Line Not Found	-----
PO-212	74.81	-----	10.70	4.150E+00	-----	Line Not Found	-----
	77.11	142	18.00	4.410E+00	8.634E-01	8.634E-01	57.00
	87.30	1345	8.00	5.244E+00	1.549E+01	1.549E+01	16.58
	115.19	-----	0.60	6.043E+00	-----	Line Not Found	-----
	238.63	354	44.60*	4.349E+00	8.808E-01	8.808E-01	28.56
	300.09	-----	3.41	3.656E+00	-----	Line Not Found	-----
BI-214	609.31	151	46.30*	2.064E+00	7.644E-01	7.644E-01	28.65

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	-----	15.10	1.193E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.256E-01	1.034E+00	1.034E+00	42.53
PO-216	74.81	-----	10.70	4.150E+00	-----	Line Not Found	-----
	77.11	142	18.00	4.410E+00	8.634E-01	8.634E-01	57.00
	87.30	1345	8.00	5.244E+00	1.549E+01	1.549E+01	16.58
	238.63	354	44.60*	4.349E+00	8.808E-01	8.808E-01	28.56
	300.09	-----	3.41	3.656E+00	-----	Line Not Found	-----
RA-226	609.31	151	46.30*	2.064E+00	7.644E-01	7.644E-01	28.65
	1120.29	-----	15.10	1.193E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.256E-01	1.034E+00	1.034E+00	42.53
TH-228	74.81	-----	10.70	4.150E+00	-----	Line Not Found	-----
	77.11	142	18.00	4.410E+00	8.634E-01	8.709E-01	57.00
	87.30	1345	8.00	5.244E+00	1.549E+01	1.562E+01	13.23
	238.63	354	44.60*	4.349E+00	8.808E-01	8.885E-01	28.56
	300.09	-----	3.41	3.656E+00	-----	Line Not Found	-----
TH-230	609.31	151	46.30*	2.064E+00	7.644E-01	7.644E-01	28.65
	1120.29	-----	15.10	1.193E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.256E-01	1.034E+00	1.034E+00	42.53
U-234	609.31	151	46.30*	2.064E+00	7.644E-01	7.644E-01	28.65
	1120.29	-----	15.10	1.193E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.256E-01	1.034E+00	1.034E+00	42.53
AM-241	59.54	2260	35.90*	2.285E+00	1.331E+01	1.331E+01	9.72
ANH-511	511.00	31	100.00*	2.393E+00	6.259E-02	6.259E-02	150.19

Flag: "\*" = Keyline

Total number of lines in spectrum 20  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 20 100.00%

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	7.286E-01	7.286E-01	6.178E-01	84.80	
CO-57	270.90D	1.02	2.077E-01	2.124E-01	0.779E-01	36.65	
CO-60	5.27Y	1.00	6.044E+00	6.063E+00	0.636E+00	10.49	
CD-109	464.00D	1.01	3.331E+01	3.375E+01	0.446E+01	13.23	
SN-126	1.00E+05Y	1.00	3.349E+00	3.349E+00	0.443E+00	13.23	
BA-137M	30.17Y	1.00	5.402E+00	5.405E+00	0.522E+00	9.66	
CS-137	30.17Y	1.00	5.710E+00	5.713E+00	0.553E+00	9.68	
W-181	120.95D	1.05	1.424E+00	1.498E+00	0.551E+00	36.80	K
TL-208	1.41E+10Y	1.00	2.989E-01	2.989E-01	1.173E-01	39.25	
BI-211	7.04E+08Y	1.00	1.960E+00	1.960E+00	0.728E+00	37.13	
PB-212	1.41E+10Y	1.00	8.808E-01	8.808E-01	2.515E-01	28.56	
PO-212	1.41E+10Y	1.00	8.808E-01	8.808E-01	2.515E-01	28.56	
BI-214	1600.00Y	1.00	7.644E-01	7.644E-01	2.190E-01	28.65	
PO-216	1.41E+10Y	1.00	8.808E-01	8.808E-01	2.515E-01	28.56	
RA-226	1600.00Y	1.00	7.644E-01	7.644E-01	2.190E-01	28.65	
TH-228	1.91Y	1.01	8.808E-01	8.885E-01	2.537E-01	28.56	
TH-230	4.47E+09Y	1.00	7.644E-01	7.644E-01	2.190E-01	28.65	
U-234	4.47E+09Y	1.00	7.644E-01	7.644E-01	2.190E-01	28.65	
AM-241	432.20Y	1.00	1.331E+01	1.331E+01	0.129E+01	9.72	
ANH-511	1.00E+09Y	1.00	6.259E-02	6.259E-02	9.401E-02	150.19	
Total Activity :			7.838E+01	7.893E+01			

Grand Total Activity : 7.838E+01 7.893E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G1202012158

Page : 4  
Acquisition date : 20-JAN-2010 18:05:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.88	44	256	0.70	186.46	183	7	1.22E-02	****	5.50E+00	T
0	185.95	64	277	1.66	372.49	367	9	1.77E-02	****	5.16E+00	T
0	338.18	33	208	0.93	676.79	672	11	9.23E-03	****	3.33E+00	T
0	727.64	56	63	1.46	1455.22	1450	12	1.55E-02	63.0	1.77E+00	T
0	911.66	91	83	2.88	1823.02	1818	10	2.54E-02	43.3	1.44E+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]G1202012158.CNF;1
* Acquisition date   : 20-JAN-2010 18:05:03  Detector SN#      :
* Detector ID        : GAM01                  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 01:00:01.16          Half life ratio    : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00  Nuclide Library   : SOLID
* Sample ID          : G1202012158           Analyst initials: MXR1
* Batch Number       : 940268                Sample Quantity  : 1.55440E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS 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	7.286E-01	6.178E-01	6.223E-01	5.532E-02	1.171
CO-57	2.124E-01	7.786E-02	6.343E-02	5.583E-03	3.349
CO-60	6.063E+00	6.358E-01	9.128E-02	7.781E-03	66.423
CD-109	3.375E+01	4.464E+00	2.094E+00	1.981E-01	16.117
SN-126	3.349E+00	4.429E-01	2.088E-01	1.967E-02	16.034
BA-137M	5.405E+00	5.224E-01	1.233E-01	1.010E-02	43.826
CS-137	5.713E+00	5.530E-01	1.304E-01	1.070E-02	43.826
W-181	1.498E+00	5.512E-01	9.256E-01	7.226E-02	1.618
TL-208	2.989E-01	1.173E-01	1.127E-01	1.024E-02	2.652
BI-211	1.960E+00	7.278E-01	6.616E-01	6.018E-02	2.963
PB-212	8.808E-01	2.515E-01	1.704E-01	1.726E-02	5.168
PO-212	8.808E-01	2.515E-01	1.704E-01	1.726E-02	5.168
BI-214	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701
PO-216	8.808E-01	2.515E-01	1.704E-01	1.726E-02	5.168
RA-226	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701
TH-228	8.885E-01	2.537E-01	1.719E-01	1.741E-02	5.168
TH-230	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701
U-234	7.644E-01	2.190E-01	2.065E-01	2.037E-02	3.701

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-241	1.331E+01	1.293E+00	5.240E-01	4.318E-02	25.394
ANH-511	6.259E-02	9.401E-02	1.080E-01	9.154E-03	0.579

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-9.117E-02		6.850E-01	1.089E+00	9.905E-02	-0.084
NA-22	3.750E-03		5.727E-02	9.654E-02	8.107E-03	0.039
NA-24	3.791E-04		3.617E-04	Half-Life	too short	
AL-26	2.600E-04		4.911E-02	8.004E-02	6.631E-03	0.003
TI-44	1.593E-01	+	9.079E-02	1.112E-01	9.543E-03	1.432
SC-46	2.745E-02		9.802E-02	1.634E-01	1.477E-02	0.168
V-48	-1.150E-01		1.373E-01	2.066E-01	1.845E-02	-0.556
CR-51	5.592E-01		6.254E-01	1.072E+00	1.009E-01	0.522
MN-52	-8.992E-03		1.458E-01	2.419E-01	2.088E-02	-0.037
MN-54	-3.856E-02		8.008E-02	1.262E-01	1.123E-02	-0.306
CO-56	-1.275E-02		8.514E-02	1.379E-01	1.232E-02	-0.092
CO-58	2.031E-02		8.285E-02	1.388E-01	1.228E-02	0.146
FE-59	-5.531E-02		2.246E-01	3.548E-01	3.270E-02	-0.156
ZN-65	-1.505E-01		2.140E-01	3.231E-01	2.726E-02	-0.466
GE-68	-4.118E-01		2.888E+00	4.598E+00	3.959E-01	-0.090
AS-73	-4.420E-02		2.287E+00	3.323E+00	2.689E-01	-0.013
AS-74	-1.118E-02		1.426E-01	2.376E-01	2.001E-02	-0.047
SE-75	-2.954E-02		7.917E-02	1.282E-01	1.178E-02	-0.230
BR-77	2.170E+00		3.286E+00	5.509E+00	4.674E-01	0.394
SR-82	-4.757E-01		7.322E-01	1.146E+00	9.977E-02	-0.415
RB-83	8.084E-02		1.323E-01	2.211E-01	1.875E-02	0.366
RB-84	5.382E-02		1.559E-01	2.614E-01	2.358E-02	0.206
KR-85	2.044E+01		1.706E+01	2.628E+01	2.228E+00	0.778
SR-85	9.801E-02		8.181E-02	1.260E-01	1.068E-02	0.778
RB-86	-4.307E-03		1.460E+00	2.356E+00	2.029E-01	-0.002
Y-88	-1.536E-02		5.234E-02	7.844E-02	6.452E-03	-0.196
ZR-88	3.759E-02		5.946E-02	1.001E-01	8.061E-03	0.375
Y-91	-1.999E+00		2.463E+01	4.087E+01	3.349E+00	-0.049
NB-94	8.938E-03		6.504E-02	1.090E-01	9.154E-03	0.082
NB-95	-8.303E-04		8.658E-02	1.428E-01	1.237E-02	-0.006
NB-95M	1.336E-01		2.076E-01	3.163E-01	3.244E-02	0.422
ZR-95	5.120E-02		1.425E-01	2.417E-01	2.296E-02	0.212
NB-97	3.389E-04		2.151E-04	Half-Life	too short	
ZR-97	4.931E-03		3.716E-03	Half-Life	too short	
MO-99	-6.759E-01		4.911E+00	8.032E+00	1.217E+00	-0.084
TC-99M	8.837E+02		6.638E+02	Half-Life	too short	
RH-101	-2.960E-02		5.777E-02	9.413E-02	8.283E-03	-0.315
RH-102	2.932E-02		7.046E-02	1.159E-01	9.745E-03	0.253
RU-103	5.437E-02		8.120E-02	1.354E-01	1.904E-02	0.402
RH-106	1.874E-02		6.321E-01	1.058E+00	1.396E-01	0.018
RU-106	1.874E-02		6.321E-01	1.058E+00	8.841E-02	0.018

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AG-108M	3.635E-02		7.509E-02	1.246E-01	1.074E-02	0.292
AG-110M	4.643E-02		7.999E-02	1.226E-01	1.040E-02	0.379
IN-111	-5.147E-01		4.593E-01	6.550E-01	5.963E-02	-0.786
IN-113M	2.936E-02		8.793E-02	1.455E-01	1.212E-02	0.202
SN-113	2.936E-02		8.793E-02	1.455E-01	1.212E-02	0.202
IN-114M	2.320E-01		3.119E-01	4.813E-01	4.202E-02	0.482
CD-115	2.343E+00		2.946E+00	5.214E+00	4.426E-01	0.449
SN-117M	5.772E-02		6.360E-02	1.113E-01	9.473E-03	0.519
SB-122	2.689E-01		7.587E-01	1.306E+00	1.107E-01	0.206
I-123	1.033E-03		1.416E-03	Half-Life	too short	
TE-123M	1.602E-02		4.391E-02	7.527E-02	6.448E-03	0.213
I-124	-3.127E-01		4.551E-01	6.746E-01	5.673E-02	-0.464
SB-124	-4.937E-02		8.374E-02	1.086E-01	9.624E-03	-0.455
SB-125	5.657E-02		2.045E-01	3.356E-01	2.824E-02	0.169
TE-125M	7.208E+00		1.394E+01	2.275E+01	2.355E+00	0.317
I-126	-7.529E-02		2.971E-01	4.176E-01	3.431E-02	-0.180
SB-126	1.697E-01		2.013E-01	3.391E-01	2.874E-02	0.500
SB-127	-2.820E-01		8.054E-01	1.297E+00	1.237E-01	-0.217
XE-127	-1.971E-02		7.186E-02	1.187E-01	1.049E-02	-0.166
I-131	1.415E-01		1.390E-01	2.389E-01	2.132E-02	0.592
TE-132	-1.190E-01		3.268E-01	5.339E-01	8.010E-02	-0.223
BA-133	2.484E-03		9.473E-02	1.354E-01	1.786E-02	0.018
I-133	5.644E-05		3.729E-05	Half-Life	too short	
CS-134	1.952E-02		9.679E-02	1.619E-01	1.430E-02	0.121
CS-135	-3.013E-02		2.932E-01	4.818E-01	5.024E-02	-0.063
I-135	5.621E+01		4.086E+02	Half-Life	too short	
CS-136	2.305E-01		1.962E-01	3.450E-01	3.135E-02	0.668
CE-139	2.810E-02		4.598E-02	7.950E-02	6.771E-03	0.353
BA-140	-2.359E-02		3.644E-01	6.111E-01	2.023E-01	-0.039
LA-140	-2.740E-02		9.244E-02	1.425E-01	1.230E-02	-0.192
CE-141	-2.132E-04		8.341E-02	1.405E-01	1.222E-02	-0.002
CE-143	-7.821E+00		1.054E+01	1.646E+01	3.586E+00	-0.475
CE-144	8.694E-02		3.355E-01	5.370E-01	8.359E-02	0.162
PM-144	-4.603E-02		6.643E-02	1.040E-01	8.698E-03	-0.443
PR-144	-3.109E+00		4.487E+00	7.021E+00	5.873E-01	-0.443
PM-146	2.736E-02		1.044E-01	1.705E-01	1.791E-02	0.160
ND-147	-4.292E-01		7.633E-01	1.234E+00	1.835E-01	-0.348
PM-149	6.184E-01		2.343E+01	3.865E+01	6.113E+00	0.016
EU-152	8.747E-02		2.177E-01	3.376E-01	3.121E-02	0.259
GD-153	7.026E-02		1.291E-01	2.018E-01	1.792E-02	0.348
EU-154	-1.361E-02		1.641E-01	2.705E-01	3.013E-02	-0.050
EU-155	-4.633E-02		1.688E-01	2.651E-01	2.332E-02	-0.175
TB-160	-8.825E-02		3.376E-01	5.412E-01	4.880E-02	-0.163
HO-166M	-1.294E-02		1.130E-01	1.855E-01	1.565E-02	-0.070
TM-171	1.310E+00		4.645E+01	7.528E+01	5.929E+00	0.017
LU-176	-3.533E-02		4.762E-02	7.464E-02	6.755E-03	-0.473
LU-177	9.506E-01		9.778E-01	1.695E+00	1.506E-01	0.561
LU-177M	-2.587E-01		3.797E-01	5.869E-01	4.795E-02	-0.441



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HF-181	-6.730E-02		8.406E-02	1.266E-01	1.067E-02	-0.532
TA-182	2.057E-01		2.654E-01	4.828E-01	3.979E-02	0.426
RE-183	-3.321E-02		1.616E-01	2.701E-01	2.300E-02	-0.123
RE-184	-2.969E-01		4.294E-01	6.850E-01	6.252E-02	-0.433
OS-185	1.023E-02		8.496E-02	1.429E-01	1.180E-02	0.072
RE-188	-1.171E-01		2.569E-01	4.252E-01	3.621E-02	-0.275
W-188	7.863E+00		1.298E+01	2.203E+01	2.009E+00	0.357
IR-192	-1.198E-02		6.587E-02	1.069E-01	9.629E-03	-0.112
AU-195	5.606E-02		3.521E-01	5.653E-01	4.991E-02	0.099
TL-200	-8.349E-06		8.286E-06	Half-Life	too short	
TL-201	3.414E-01		2.618E+00	4.436E+00	3.783E-01	0.077
TL-202	-6.108E-03		1.095E-01	1.758E-01	1.457E-02	-0.035
HG-203	1.628E-04		6.650E-02	1.097E-01	1.028E-02	0.001
BI-207	5.470E-02		1.219E-01	2.045E-01	1.773E-02	0.267
TL-207	-1.019E+00		1.297E+00	2.005E+00	3.582E-01	-0.508
PO-209	-2.836E+00		1.960E+01	3.167E+01	2.868E+00	-0.090
BI-210	-4.568E+00		8.491E+00	1.356E+01	1.280E+00	-0.337
PB-210	-4.568E+00		8.491E+00	1.356E+01	1.280E+00	-0.337
PO-210	-4.568E+00		8.489E+00	1.356E+01	1.162E+00	-0.337
PB-211	-2.951E-01		2.091E+00	3.342E+00	2.092E+00	-0.088
BI-212	1.287E+00	+	8.216E-01	1.095E+00	1.085E-01	1.176
PB-214	6.819E-01	+	2.557E-01	3.394E-01	3.556E-02	2.009
PO-214	6.819E-01	+	2.557E-01	3.394E-01	3.556E-02	2.009
PO-215	-1.019E+00		1.297E+00	2.005E+00	3.582E-01	-0.508
PO-218	6.819E-01	+	2.557E-01	3.394E-01	3.556E-02	2.009
RN-219	3.177E-01		9.236E-01	1.524E+00	2.245E-01	0.209
RN-220	1.634E+00		5.203E+01	8.772E+01	7.446E+00	0.019
RA-223	-1.019E+00		1.297E+00	2.005E+00	3.582E-01	-0.508
RA-224	6.464E+00		1.744E+00	2.853E+00	2.593E-01	2.265
AC-227	1.398E-01		7.295E-01	1.219E+00	1.906E-01	0.115
TH-227	1.398E-01		7.296E-01	1.219E+00	2.232E-01	0.115
AC-228	1.103E+00	+	4.939E-01	7.660E-01	8.867E-02	1.440
RA-228	1.103E+00	+	4.939E-01	7.660E-01	8.867E-02	1.440
TH-229	-6.773E-01		8.720E-01	1.406E+00	1.232E-01	-0.482
PA-231	6.715E-01		2.830E+00	4.722E+00	7.311E-01	0.142
TH-231	-1.019E+00		1.297E+00	2.005E+00	3.582E-01	-0.508
U-231	-1.648E-01		6.665E-01	9.331E-01	8.347E-02	-0.177
TH-232	1.103E+00	+	4.939E-01	7.660E-01	8.867E-02	1.440
PA-233	-9.742E-02		1.243E-01	1.939E-01	1.795E-02	-0.502
PA-234	-3.660E-02		8.120E-01	1.318E+00	2.496E-01	-0.028
PA-234M	-2.859E+00		1.119E+01	1.797E+01	1.832E+00	-0.159
TH-234	-1.916E+00		2.493E+00	3.491E+00	6.136E-01	-0.549
U-235	-2.290E-01		3.288E-01	5.335E-01	9.320E-02	-0.429
NP-236	-8.067E-02		1.292E-01	2.118E-01	1.803E-02	-0.381
NP-237	5.531E+00		1.386E+00	1.130E+00	2.558E-01	4.894
U-238	-1.916E+00		2.493E+00	3.491E+00	6.136E-01	-0.549
NP-239	3.649E-02		3.656E-01	5.195E-01	4.525E-02	0.070
AM-243	1.043E-01		1.158E-01	1.733E-01	1.441E-02	0.602

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-5.883E-02		1.513E-01	2.363E-01	2.059E-02	-0.249
AM-246	4.000E-02		3.265E-01	5.327E-01	4.584E-02	0.075
CM-247	-2.266E-02		8.299E-02	1.322E-01	1.072E-02	-0.171
CF-249	-4.395E-02		7.990E-02	1.248E-01	1.012E-02	-0.352
CF-251	1.917E-01		2.152E-01	3.746E-01	3.224E-02	0.512

# 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]G1202012158          *
* Acquisition date   : 20-JAN-2010 18:05:03 Detector SN# :                  *
* Detector ID        : GAM01 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 01:00:01.16 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202012158 Analyst initials: MXR1                *
* Batch Number       : 940268 Sample Quantity : 1.5544E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 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	7.286E-01	6.055E-01	3.140E-01	3.089E-01
CO-57	2.124E-01	7.630E-02	3.418E-02	3.893E-02
CO-60	6.063E+00	6.231E-01	4.618E-02	3.179E-01
CD-109	3.375E+01	4.374E+00	1.137E+00	2.232E+00
SN-126	3.349E+00	4.341E-01	1.135E-01	2.215E-01
BA-137M	5.405E+00	5.119E-01	6.360E-02	2.612E-01
CS-137	5.713E+00	5.420E-01	6.723E-02	2.765E-01
W-181	-7.923E-01	6.193E-01	5.064E-01	3.160E-01
TL-208	2.989E-01	1.150E-01	5.834E-02	5.866E-02
BI-211	1.960E+00	7.133E-01	3.470E-01	3.639E-01
PB-212	8.808E-01	2.465E-01	9.030E-02	1.258E-01
PO-212	8.808E-01	2.465E-01	9.030E-02	1.258E-01
BI-214	7.644E-01	2.147E-01	1.068E-01	1.095E-01
PO-216	8.808E-01	2.465E-01	9.030E-02	1.258E-01
RA-226	7.644E-01	2.147E-01	1.068E-01	1.095E-01
TH-228	8.885E-01	2.487E-01	9.109E-02	1.269E-01
TH-230	7.644E-01	2.147E-01	1.068E-01	1.095E-01
U-234	7.644E-01	2.147E-01	1.068E-01	1.095E-01
AM-241	1.331E+01	1.267E+00	2.873E-01	6.464E-01
ANH-511	6.259E-02	9.213E-02	5.610E-02	4.700E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-9.117E-02	6.713E-01	5.665E-01	3.425E-01 NOT IDENT.
NA-22	3.750E-03	5.612E-02	4.890E-02	2.863E-02 NOT IDENT.
NA-24	3.791E+02	7.090E+02	0.000E+00	3.617E+02 SHORT HLIF
AL-26	2.600E-04	4.813E-02	4.014E-02	2.456E-02 NOT IDENT.
TI-44	1.593E-01	8.898E-02	6.058E-02	4.540E-02 FAIL ABUN
SC-46	2.745E-02	9.606E-02	8.361E-02	4.901E-02 NOT IDENT.
V-48	-1.150E-01	1.345E-01	1.054E-01	6.863E-02 NOT IDENT.

CR-51	5.592E-01	6.129E-01	5.638E-01	3.127E-01	NOT IDENT.
MN-52	-8.992E-03	1.429E-01	1.221E-01	7.290E-02	FAIL ABUN
MN-54	-3.856E-02	7.848E-02	6.468E-02	4.004E-02	NOT IDENT.
CO-56	-1.275E-02	8.344E-02	7.066E-02	4.257E-02	NOT IDENT.
CO-58	2.031E-02	8.119E-02	7.121E-02	4.143E-02	NOT IDENT.
FE-59	-5.531E-02	2.201E-01	1.805E-01	1.123E-01	NOT IDENT.
ZN-65	-1.505E-01	2.097E-01	1.643E-01	1.070E-01	NOT IDENT.
GE-68	-4.118E-01	2.830E+00	2.340E+00	1.444E+00	NOT IDENT.
AS-73	-4.420E-02	2.242E+00	1.827E+00	1.144E+00	NOT IDENT.
AS-74	-1.118E-02	1.398E-01	1.229E-01	7.131E-02	NOT IDENT.
SE-75	-2.954E-02	7.759E-02	6.776E-02	3.959E-02	FAIL ABUN
BR-77	2.170E+00	3.221E+00	2.859E+00	1.643E+00	FAIL ABUN
SR-82	-4.757E-01	7.176E-01	5.885E-01	3.661E-01	NOT IDENT.
RB-83	8.084E-02	1.296E-01	1.147E-01	6.615E-02	NOT IDENT.
RB-84	5.382E-02	1.528E-01	1.338E-01	7.793E-02	NOT IDENT.
KR-85	2.044E+01	1.672E+01	1.365E+01	8.532E+00	NOT IDENT.
SR-85	9.801E-02	8.017E-02	6.543E-02	4.091E-02	NOT IDENT.
RB-86	-4.307E-03	1.431E+00	1.199E+00	7.302E-01	NOT IDENT.
Y-88	-1.536E-02	5.130E-02	3.932E-02	2.617E-02	NOT IDENT.
ZR-88	3.759E-02	5.827E-02	5.235E-02	2.973E-02	NOT IDENT.
Y-91	-1.999E+00	2.414E+01	2.074E+01	1.232E+01	NOT IDENT.
NB-94	8.938E-03	6.374E-02	5.615E-02	3.252E-02	NOT IDENT.
NB-95	-8.303E-04	8.485E-02	7.335E-02	4.329E-02	NOT IDENT.
NB-95M	1.336E-01	2.034E-01	1.676E-01	1.038E-01	NOT IDENT.
ZR-95	5.120E-02	1.396E-01	1.242E-01	7.125E-02	NOT IDENT.
NB-97	3.389E+02	4.216E+02	0.000E+00	2.151E+02	SHORT HLIF
ZR-97	4.931E+03	7.283E+03	0.000E+00	3.716E+03	SHORT HLIF
MO-99	-6.759E-01	4.813E+00	4.130E+00	2.456E+00	NOT IDENT.
TC-99M	8.837E+08	1.301E+09	0.000E+00	6.638E+08	SHORT HLIF
RH-101	-2.960E-02	5.661E-02	5.011E-02	2.888E-02	NOT IDENT.
RH-102	2.932E-02	6.905E-02	6.030E-02	3.523E-02	NOT IDENT.
RU-103	5.437E-02	7.958E-02	7.037E-02	4.060E-02	FAIL ABUN
RH-106	1.874E-02	6.195E-01	5.468E-01	3.160E-01	FAIL ABUN
RU-106	1.874E-02	6.195E-01	5.468E-01	3.160E-01	FAIL ABUN
AG-108M	3.635E-02	7.359E-02	6.498E-02	3.754E-02	NOT IDENT.
AG-110M	4.643E-02	7.839E-02	6.325E-02	3.999E-02	NOT IDENT.
IN-111	-5.147E-01	4.501E-01	3.467E-01	2.296E-01	NOT IDENT.
IN-113M	2.936E-02	8.617E-02	7.610E-02	4.396E-02	NOT IDENT.
SN-113	2.936E-02	8.617E-02	7.610E-02	4.396E-02	NOT IDENT.
IN-114M	2.320E-01	3.057E-01	2.565E-01	1.560E-01	NOT IDENT.
CD-115	2.343E+00	2.887E+00	2.706E+00	1.473E+00	NOT IDENT.
SN-117M	5.772E-02	6.233E-02	5.956E-02	3.180E-02	NOT IDENT.
SB-122	2.689E-01	7.435E-01	6.764E-01	3.794E-01	NOT IDENT.
I-123	1.033E+03	2.775E+03	0.000E+00	1.416E+03	SHORT HLIF
TE-123M	1.602E-02	4.303E-02	4.029E-02	2.195E-02	NOT IDENT.
I-124	-3.127E-01	4.460E-01	3.488E-01	2.276E-01	NOT IDENT.
SB-124	-4.937E-02	8.207E-02	5.455E-02	4.187E-02	NOT IDENT.
SB-125	5.657E-02	2.004E-01	1.751E-01	1.023E-01	NOT IDENT.
TE-125M	7.208E+00	1.366E+01	1.229E+01	6.970E+00	NOT IDENT.
I-126	-7.529E-02	2.912E-01	2.153E-01	1.486E-01	NOT IDENT.
SB-126	1.697E-01	1.972E-01	1.745E-01	1.006E-01	NOT IDENT.
SB-127	-2.820E-01	7.893E-01	6.685E-01	4.027E-01	NOT IDENT.
XE-127	-1.971E-02	7.042E-02	6.313E-02	3.593E-02	FAIL ABUN
I-131	1.415E-01	1.362E-01	1.252E-01	6.950E-02	NOT IDENT.
TE-132	-1.190E-01	3.203E-01	2.832E-01	1.634E-01	NOT IDENT.
BA-133	2.484E-03	9.283E-02	7.101E-02	4.736E-02	NOT IDENT.
I-133	5.644E+01	7.308E+01	0.000E+00	3.729E+01	SHORT HLIF
CS-134	1.952E-02	9.485E-02	8.306E-02	4.840E-02	NOT IDENT.
CS-135	-3.013E-02	2.873E-01	2.545E-01	1.466E-01	NOT IDENT.
I-135	5.621E+07	8.008E+08	0.000E+00	4.086E+08	SHORT HLIF
CS-136	2.305E-01	1.923E-01	1.757E-01	9.811E-02	NOT IDENT.
CE-139	2.810E-02	4.507E-02	4.251E-02	2.299E-02	NOT IDENT.
BA-140	-2.359E-02	3.571E-01	3.169E-01	1.822E-01	NOT IDENT.
LA-140	-2.740E-02	9.059E-02	7.173E-02	4.622E-02	NOT IDENT.
CE-141	-2.132E-04	8.174E-02	7.539E-02	4.171E-02	NOT IDENT.
CE-143	-7.821E+00	1.033E+01	8.675E+00	5.269E+00	FAIL ABUN
CE-144	8.694E-02	3.288E-01	2.887E-01	1.677E-01	NOT IDENT.
PM-144	-4.603E-02	6.510E-02	5.354E-02	3.322E-02	NOT IDENT.
PR-144	-3.109E+00	4.397E+00	3.616E+00	2.243E+00	NOT IDENT.
PM-146	2.736E-02	1.023E-01	8.883E-02	5.219E-02	NOT IDENT.
ND-147	-4.292E-01	7.480E-01	6.400E-01	3.817E-01	NOT IDENT.
PM-149	6.184E-01	2.296E+01	2.038E+01	1.171E+01	NOT IDENT.
EU-152	8.747E-02	2.133E-01	1.771E-01	1.088E-01	FAIL ABUN
GD-153	7.026E-02	1.265E-01	1.093E-01	6.456E-02	NOT IDENT.
EU-154	-1.361E-02	1.608E-01	1.370E-01	8.204E-02	FAIL ABUN
EU-155	-4.633E-02	1.654E-01	1.434E-01	8.438E-02	FAIL ABUN
TB-160	-8.825E-02	3.308E-01	2.769E-01	1.688E-01	FAIL ABUN
HO-166M	-1.294E-02	1.108E-01	9.549E-02	5.651E-02	NOT IDENT.

TM-171	1.310E+00	4.553E+01	4.117E+01	2.323E+01	FAIL ABUN
LU-176	-3.533E-02	4.667E-02	3.929E-02	2.381E-02	FAIL ABUN
LU-177	9.506E-01	9.582E-01	9.012E-01	4.889E-01	NOT IDENT.
LU-177M	-2.587E-01	3.721E-01	3.065E-01	1.898E-01	FAIL ABUN
HF-181	-6.730E-02	8.238E-02	6.584E-02	4.203E-02	FAIL ABUN
TA-182	2.057E-01	2.601E-01	2.448E-01	1.327E-01	NOT IDENT.
RE-183	-3.321E-02	1.584E-01	1.445E-01	8.082E-02	FAIL ABUN
RE-184	-2.969E-01	4.208E-01	3.624E-01	2.147E-01	FAIL ABUN
OS-185	1.023E-02	8.326E-02	7.373E-02	4.248E-02	FAIL ABUN
RE-188	-1.171E-01	2.517E-01	2.277E-01	1.284E-01	NOT IDENT.
W-188	7.863E+00	1.272E+01	1.161E+01	6.492E+00	NOT IDENT.
IR-192	-1.198E-02	6.455E-02	5.621E-02	3.294E-02	NOT IDENT.
AU-195	5.606E-02	3.450E-01	3.062E-01	1.760E-01	NOT IDENT.
TL-200	-8.349E+00	1.624E+01	0.000E+00	8.286E+00	SHORT HLIF
TL-201	3.414E-01	2.565E+00	2.372E+00	1.309E+00	NOT IDENT.
TL-202	-6.108E-03	1.073E-01	9.166E-02	5.474E-02	NOT IDENT.
HG-203	1.628E-04	6.517E-02	5.787E-02	3.725E-02	NOT IDENT.
BI-207	5.470E-02	1.194E-01	1.041E-01	6.093E-02	NOT IDENT.
TL-207	-1.019E+00	1.271E+00	1.054E+00	6.486E-01	FAIL ABUN
PO-209	-2.836E+00	1.921E+01	1.620E+01	9.799E+00	NOT IDENT.
BI-210	-4.568E+00	8.321E+00	7.479E+00	4.245E+00	NOT IDENT.
PB-210	-4.568E+00	8.321E+00	7.479E+00	4.245E+00	NOT IDENT.
PO-210	-4.568E+00	8.319E+00	7.479E+00	4.244E+00	NOT IDENT.
PB-211	-2.951E-01	2.049E+00	1.747E+00	1.045E+00	NOT IDENT.
BI-212	1.287E+00	8.051E-01	5.631E-01	4.108E-01	FAIL ABUN
PB-214	6.819E-01	2.506E-01	1.780E-01	1.278E-01	FAIL ABUN
PO-214	6.819E-01	2.506E-01	1.780E-01	1.278E-01	FAIL ABUN
PO-215	-1.019E+00	1.271E+00	1.054E+00	6.486E-01	FAIL ABUN
PO-218	6.819E-01	2.506E-01	1.780E-01	1.278E-01	FAIL ABUN
RN-219	3.177E-01	9.051E-01	7.964E-01	4.618E-01	NOT IDENT.
RN-220	1.634E+00	5.099E+01	4.547E+01	2.601E+01	NOT IDENT.
RA-223	-1.019E+00	1.271E+00	1.054E+00	6.486E-01	FAIL ABUN
RA-224	6.464E+00	1.709E+00	1.511E+00	8.720E-01	NOT IDENT.
AC-227	1.398E-01	7.149E-01	6.445E-01	3.647E-01	NOT IDENT.
TH-227	1.398E-01	7.150E-01	6.445E-01	3.648E-01	FAIL ABUN
AC-228	1.103E+00	4.840E-01	3.916E-01	2.470E-01	FAIL ABUN
RA-228	1.103E+00	4.840E-01	3.916E-01	2.470E-01	FAIL ABUN
TH-229	-6.773E-01	8.545E-01	7.490E-01	4.360E-01	FAIL ABUN
PA-231	6.715E-01	2.774E+00	2.490E+00	1.415E+00	NOT IDENT.
TH-231	-1.019E+00	1.271E+00	1.054E+00	6.486E-01	FAIL ABUN
U-231	-1.648E-01	6.531E-01	5.058E-01	3.332E-01	FAIL ABUN
TH-232	1.103E+00	4.840E-01	3.916E-01	2.470E-01	FAIL ABUN
PA-233	-9.742E-02	1.218E-01	1.020E-01	6.214E-02	NOT IDENT.
PA-234	-3.660E-02	7.958E-01	6.729E-01	4.060E-01	FAIL ABUN
PA-234M	-2.859E+00	1.097E+01	9.163E+00	5.596E+00	NOT IDENT.
TH-234	-1.916E+00	2.443E+00	1.911E+00	1.246E+00	FAIL ABUN
U-235	-2.290E-01	3.223E-01	2.863E-01	1.644E-01	FAIL ABUN
NP-236	-8.067E-02	1.266E-01	1.133E-01	6.461E-02	NOT IDENT.
NP-237	5.531E+00	1.358E+00	6.142E-01	6.931E-01	NOT IDENT.
U-238	-1.916E+00	2.443E+00	1.911E+00	1.246E+00	FAIL ABUN
NP-239	3.649E-02	3.583E-01	2.802E-01	1.828E-01	NOT IDENT.
AM-243	1.043E-01	1.135E-01	9.451E-02	5.792E-02	FAIL ABUN
CM-243	-5.883E-02	1.483E-01	1.278E-01	7.567E-02	NOT IDENT.
AM-246	4.000E-02	3.200E-01	2.711E-01	1.633E-01	NOT IDENT.
CM-247	-2.266E-02	8.133E-02	6.907E-02	4.149E-02	NOT IDENT.
CF-249	-4.395E-02	7.830E-02	6.529E-02	3.995E-02	NOT IDENT.
CF-251	1.917E-01	2.109E-01	2.000E-01	1.076E-01	NOT IDENT.

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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON , SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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ENERGY          MDA COUNTS

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46.50	339.8446
46.50	339.8446
46.50	339.8446
48.70	368.1505
49.72	346.2496
51.35	445.6120
52.39	406.1282
52.97	410.7416
53.15	410.8857
53.44	442.2647
54.07	442.8064
56.28	475.9973
56.28	475.9996
57.37	453.4422
57.53	363.0710
57.53	363.0724
57.60	363.1183
57.98	363.3750
57.98	363.3750
59.32	364.2751
59.32	364.2751
59.40	364.3281
59.54	364.4217
59.72	364.5417
60.01	364.7340
61.10	285.9389
61.14	285.9593
61.30	286.0418
63.00	275.8127
63.29	275.9538
63.29	275.9538
63.58	279.2683
64.28	278.0221
65.12	297.8383
65.20	297.8798
65.20	297.8798
66.05	283.6549
66.72	283.9795
66.83	287.2252
66.91	287.2636
67.20	277.8249
67.20	277.8249
67.75	280.2147
67.85	273.8690
68.90	311.7159
68.90	311.7159
69.30	318.3332
69.67	315.3236
70.82	327.7024
70.82	327.7024
70.83	327.7071
72.80	367.4385
72.87	367.4802
72.87	367.4802
74.67	384.7054
74.81	384.7926
74.81	384.7926
74.81	384.7926
74.81	384.7926
74.81	384.7926
74.81	384.7926
74.97	384.8888
75.28	378.6075
75.70	365.9051
77.11	407.8222
77.11	407.8222

77.11	407.8222
77.11	407.8222
77.11	407.8222
77.11	407.8222
77.11	407.8222
78.38	318.6645
79.62	276.9193
79.80	299.8072
79.80	299.8072
80.11	299.9490
80.18	299.9799
80.30	293.5121
80.30	293.5121
80.57	293.6330
81.00	341.1621
81.07	355.8916
81.07	355.8916
81.07	355.8916
81.07	355.8916
82.60	312.5309
83.37	345.6519
83.78	345.8628
83.78	345.8628
83.78	345.8628
83.78	345.8628
84.21	349.3637
84.90	303.7457
85.43	326.9869
86.29	320.8160
86.50	320.9142
86.54	320.9320
86.59	320.9558
86.72	321.0168
86.79	321.0481
86.94	321.1180
87.30	321.2861
87.30	321.2861
87.30	321.2861
87.30	321.2861
87.30	321.2861
87.30	321.2861
87.30	321.2861
87.57	321.4111
87.88	321.5539
88.03	321.6238
88.36	321.7756
88.47	321.8262
89.95	234.8506
91.11	235.2352
92.29	228.9857
92.38	229.0152
92.38	229.0152
93.35	214.3678
94.00	222.8760
94.67	224.7453
94.67	224.7463
94.90	259.7889
94.90	259.7889
94.90	259.7889
94.90	259.7889
95.87	250.1278
95.87	250.1278
96.73	207.0145
97.43	215.2304
98.44	239.8410
98.44	239.8421
98.88	222.1240
99.55	227.9083
99.55	227.9083
99.86	213.4722
100.00	213.5120
100.10	237.0195
103.18	215.5264
103.76	219.0596
105.00	217.1594
105.31	219.4970
108.00	221.3793
109.28	216.0787

111.00	235.8165
111.00	235.8165
111.76	258.7335
112.95	245.4752
115.19	225.6343
116.30	236.8919
117.00	236.4052
117.00	236.4052
117.66	270.8814
121.11	235.8388
121.62	204.4010
121.78	204.4395
122.06	204.5061
122.32	204.5685
122.32	204.5685
122.32	204.5685
122.32	204.5685
123.07	204.7469
127.23	188.9691
129.76	216.7476
131.20	248.4433
133.02	231.4946
133.54	217.6607
135.34	215.7581
136.00	218.8301
136.25	233.7747
136.48	233.8328
140.51	217.2576
140.51	0.0000
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142.65	224.8040
143.76	234.7754
144.24	232.2439
144.24	232.2439
144.24	232.2439
144.24	232.2439
145.22	206.8477
145.44	206.8941
147.16	224.9785
152.43	209.2736
152.70	213.7848
153.22	235.2861
154.21	248.0116
154.21	248.0116
154.21	248.0116
154.21	248.0116
155.03	238.3937
156.02	238.6280
158.56	200.7014
159.00	0.0000
159.00	212.4415
160.31	238.7429
161.27	216.5069
162.32	214.9290
162.64	214.9964
163.35	228.6469
163.89	217.9573
165.85	200.3220
167.43	210.5643
171.28	191.3765
171.86	218.7041
172.10	218.7538
176.55	209.6307
176.60	209.6395
181.06	238.6800
184.41	220.3052
185.71	255.8492
186.00	255.9151
190.27	200.7776
192.34	259.7436
193.63	241.5254
197.04	221.8142
198.01	244.2911
198.60	252.7775
200.40	212.2105
201.83	224.5787
202.84	232.2312
205.31	238.3174



208.36	216.4303
208.81	217.4487
209.75	219.4910
209.75	219.4910
210.97	252.5733
215.65	227.1400
216.55	240.5099
218.09	221.9189
222.10	238.7302
223.80	213.4352
226.40	219.5709
227.00	226.3299
227.08	236.8057
227.20	236.8285
228.16	226.5332
228.18	226.5369
228.18	226.5369
231.56	197.5432
235.69	170.0189
236.00	160.8671
236.00	160.8671
238.63	216.8322
238.63	216.8322
238.63	216.8322
238.63	216.8322
239.00	216.8925
240.98	241.4335
241.98	241.6136
241.98	241.6136
241.98	241.6136
244.69	215.8840
245.39	235.2804
247.94	196.1126
248.90	184.6480
249.79	180.8980
252.40	203.5320
252.85	205.5367
252.85	205.5367
254.15	0.0000
256.20	191.4540
256.20	191.4540
260.50	188.1408
260.90	184.2935
262.80	194.3025
264.65	184.7780
268.24	191.1200
268.79	191.1944
269.46	180.4933
269.46	180.4933
269.46	180.4933
269.46	180.4933
271.23	160.0875
273.65	212.4932
276.40	171.4937
277.35	145.9630
277.60	143.0286
277.60	143.0286
278.00	149.9729
278.60	166.8158
279.20	163.9204
279.53	168.8943
280.46	169.9896
281.68	169.1396
283.67	156.4884
284.30	144.6633
285.00	157.6171
285.90	166.6388
286.10	179.5583
286.10	179.5583
287.40	175.7387
288.45	0.0000
290.67	158.2066
290.80	158.2212
291.72	244.9415
293.26	219.2749
293.70	199.3988
295.21	182.6286
295.21	182.6286

295.21	182.6286
295.96	181.7167
296.50	191.7686
297.23	207.8477
298.57	279.0383
299.80	227.2078
299.80	227.2078
300.09	192.2139
300.09	192.2139
300.09	192.2139
300.09	192.2139
300.12	192.2168
301.29	176.3303
302.84	182.5221
303.76	184.6345
303.91	184.6542
304.40	184.7103
304.40	184.7103
304.84	186.7691
306.84	168.9100
308.46	133.8564
311.98	167.4362
316.51	168.9214
318.01	170.0892
319.02	143.8547
319.41	133.7563
320.08	139.8930
323.87	170.6993
323.87	170.6993
323.87	170.6993
323.87	170.6993
325.23	168.8065
328.77	157.9564
333.44	166.7785
334.20	163.5840
334.20	163.5840
334.30	163.5938
338.28	158.8551
338.28	158.8551
338.28	158.8551
338.28	158.8551
338.32	158.8575
338.32	158.8575
338.32	158.8575
340.50	178.9692
340.57	178.9771
344.27	154.9566
345.85	162.3541
350.59	143.6881
351.07	151.9864
351.92	145.6558
351.92	145.6558
351.92	145.6558
355.39	0.0000
356.01	132.5352
364.48	126.9276
366.43	162.4794
367.43	156.3171
367.94	0.0000
369.80	129.3925
374.96	145.4562
383.85	113.5651
387.95	138.0521
388.63	141.2668
391.69	128.8245
391.69	128.8245
392.90	121.5119
398.62	143.0750
400.65	140.0446
401.10	136.8952
401.81	151.8066
402.60	163.5522
404.84	160.5527
410.95	158.9264
411.60	151.5120
413.65	161.2831
414.70	160.3020
415.30	153.9360

415.76	159.3197
417.63	0.0000
418.52	123.1368
423.70	155.6666
427.08	139.7992
427.89	135.5534
432.53	133.7102
433.93	135.9591
439.47	140.6601
439.56	140.6660
439.89	139.6057
443.98	146.3914
444.90	138.8633
445.03	139.9560
445.03	139.9560
445.03	139.9560
445.03	139.9560
453.90	147.0939
463.38	134.6232
468.07	157.9548
473.00	146.2257
475.06	138.6623
475.35	146.3840
476.78	154.1910
477.59	134.4167
477.96	131.1331
482.03	128.0662
484.57	101.6891
487.03	111.7618
490.36	124.1218
492.35	115.3591
497.08	105.6008
507.63	0.0000
510.53	0.0000
510.84	124.1425
511.00	132.4277
511.85	118.1547
511.85	118.1547
513.99	102.1380
513.99	102.1380
520.41	81.9846
520.65	81.9936
527.90	83.8271
528.96	0.0000
529.64	89.3030
529.87	0.0000
531.02	107.4051
537.32	95.9305
543.00	106.1398
546.56	0.0000
549.76	92.7936
552.65	82.8864
555.20	93.9146
563.23	74.1004
563.90	81.4406
568.70	87.1003
569.32	79.7868
569.50	78.8760
569.67	78.8802
573.80	88.2000
574.00	90.9635
574.64	88.2305
578.91	82.8589
579.30	0.0000
583.14	82.0751
585.48	69.2303
591.81	83.2852
592.07	91.6233
593.00	89.8031
595.88	91.7587
600.56	90.0707
602.52	0.0000
602.71	92.9346
602.71	92.9346
603.60	92.9663
604.41	83.6960
604.70	80.6068
609.31	77.3343

609.31	77.3343
609.31	77.3343
609.31	77.3343
610.33	69.9078
612.46	90.1766
614.37	87.1309
618.01	71.0496
621.84	84.2596
621.84	84.2596
631.29	74.2264
633.02	76.1550
633.10	81.7983
634.78	93.1388
635.90	87.5326
636.97	79.0925
645.85	74.6315
646.12	85.0320
656.30	58.4810
657.75	77.4876
657.90	0.0000
661.65	90.2686
661.65	90.2686
664.57	93.5343
666.33	87.2489
666.33	87.2489
675.00	74.4732
677.61	82.1871
685.20	70.9106
692.80	78.7869
695.00	75.9642
696.49	86.5854
696.49	86.5854
697.00	78.9030
697.49	89.5034
698.33	79.9037
698.50	80.8705
699.00	79.9220
702.63	75.2026
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706.58	0.0000
706.67	71.4454
709.31	73.4432
711.68	67.7014
713.82	61.9438
717.42	79.4635
720.50	58.2056
721.93	58.2334
722.20	58.2393
722.78	63.1052
722.78	63.1052
722.89	63.1068
722.95	63.1084
723.30	66.3531
724.18	74.4674
727.18	82.6447
733.00	79.5612
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744.21	84.0978
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752.31	77.4609
753.82	70.6324
755.35	71.6491
756.15	76.5756
756.87	82.4865
763.93	82.6772
765.79	95.5317
766.42	101.4610
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792.07	79.4570

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805.60	73.8139
810.29	73.9223
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815.85	85.0581
817.79	93.1181
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834.83	86.5627
836.80	0.0000
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860.37	73.0336
867.32	82.3329
867.82	84.3779
871.10	78.3535
873.19	80.4388
874.81	77.4213
875.33	0.0000
876.40	100.8997
879.36	95.8864
880.27	94.8913
880.51	98.9798
881.50	85.7391
883.24	92.9329
884.67	91.9490
889.25	92.0720
896.60	98.4211
898.02	92.3071
899.00	96.4372
903.28	115.0461
911.07	110.1557
911.07	110.1557
911.07	110.1557
919.63	101.1367
920.93	98.0754
925.00	112.6590
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926.50	112.7070
935.52	100.5546
937.48	94.3858
944.10	113.2658
946.00	97.7292
949.00	101.9741
962.29	123.2345
964.01	149.4134
966.15	124.4096
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969.11	106.7240
969.11	106.7240
969.11	106.7240
977.42	72.3590
980.50	83.9648
983.50	93.4869
989.30	93.6325
996.32	76.9441
1001.03	79.1510
1001.68	75.9990
1004.76	61.2710
1021.30	0.0000
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1038.57	75.6732
1038.76	0.0000
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1046.59	77.9653
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1050.47	82.3201
1062.04	65.4052
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1078.86	63.5316
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1120.29	73.9766
1120.29	73.9766
1120.29	73.9766
1120.51	70.7192
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1129.67	57.7902
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1147.95	0.0000
1167.94	51.8779
1173.22	43.1541
1175.09	43.1732
1177.93	31.5151
1189.05	35.9420
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1205.75	0.0000
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1271.85	25.3542
1274.45	21.6112
1274.54	19.7319
1291.56	13.2042
1298.22	0.0000
1312.09	11.3682
1325.50	16.2870
1325.50	16.2870
1332.49	17.1270
1333.61	17.1313
1360.21	15.3138
1362.66	0.0000
1365.15	13.4132
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1368.53	0.0000
1376.25	7.6826
1384.27	13.4668
1394.10	5.7832
1395.20	9.6407
1407.95	12.5657
1434.06	11.6611
1436.60	9.7225
1457.56	0.0000
1460.81	7.8154
1489.15	11.7891
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1596.49	14.0370
1620.62	3.0214
1678.03	0.0000
1691.02	7.1396
1691.02	7.1396
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1750.46	0.0000
1764.49	6.1980
1764.49	6.1980
1764.49	6.1980
1764.49	6.1980
1770.23	29.9865
1771.40	19.6502
1791.20	0.0000
1808.65	8.3262

1836.01

9.4094

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202012158

Total Uranium Activity	-5.8048E+00	ug/g
Total Uranium Counting Unc.	7.2685E+00	ug/g
Total Uranium Tpu	3.7084E-06	ug/g
Total Uranium Mda	5.6880E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940268                          SAMPLE ID   : G1202012158
*  ANALYST       : MXR1                             DETECTOR    : GAM01
*  SAMPLE DATE   : 12-JAN-2010 00:00:00.00          COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 20-JAN-2010 18:05:03.59          SAMPLE ALQT  : 155.440 GRAM
*
*****

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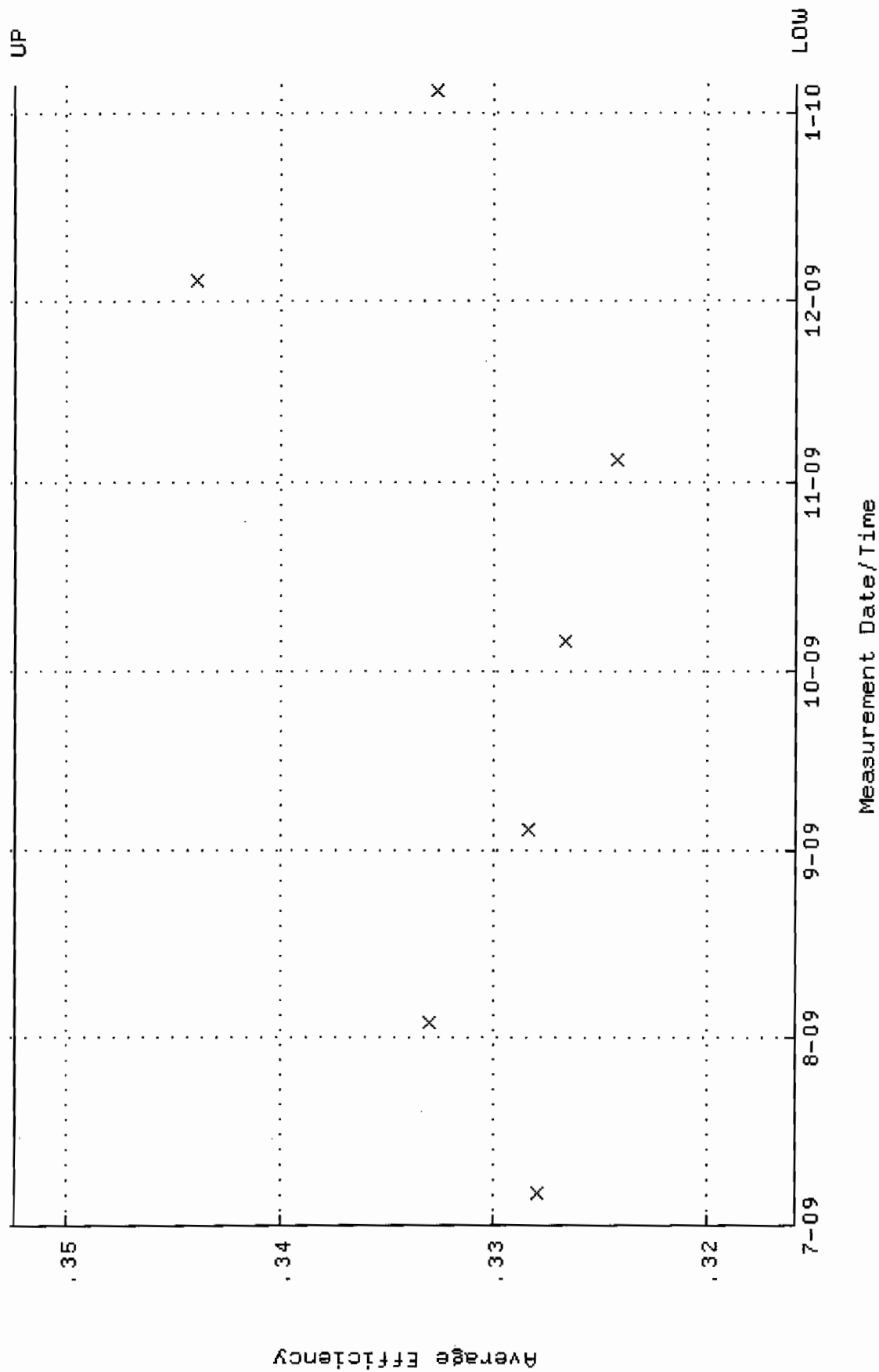
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.613E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 3.112E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.538E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.205E+00

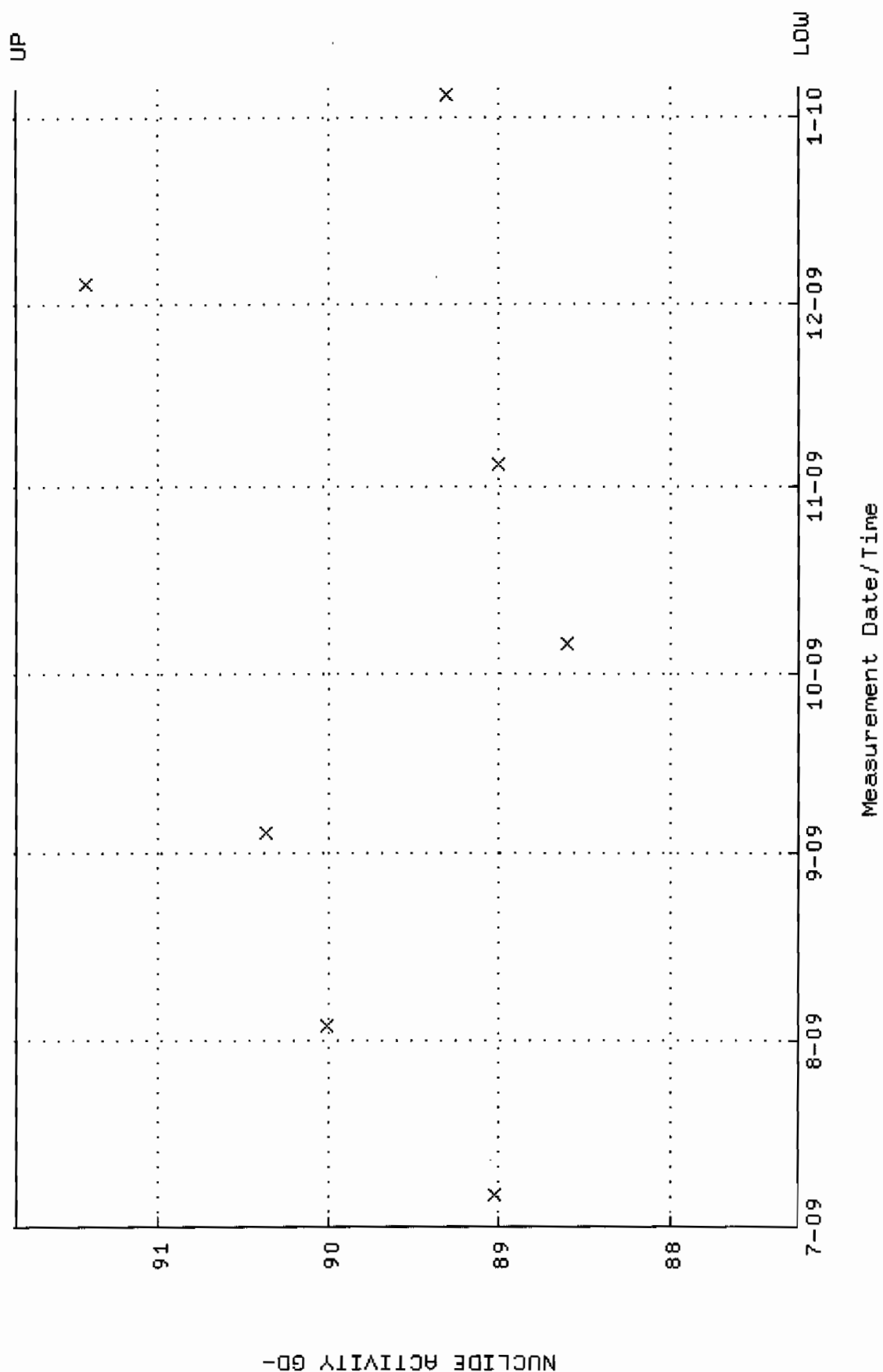
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# BACKGROUND AND EFFICIENCY DATA

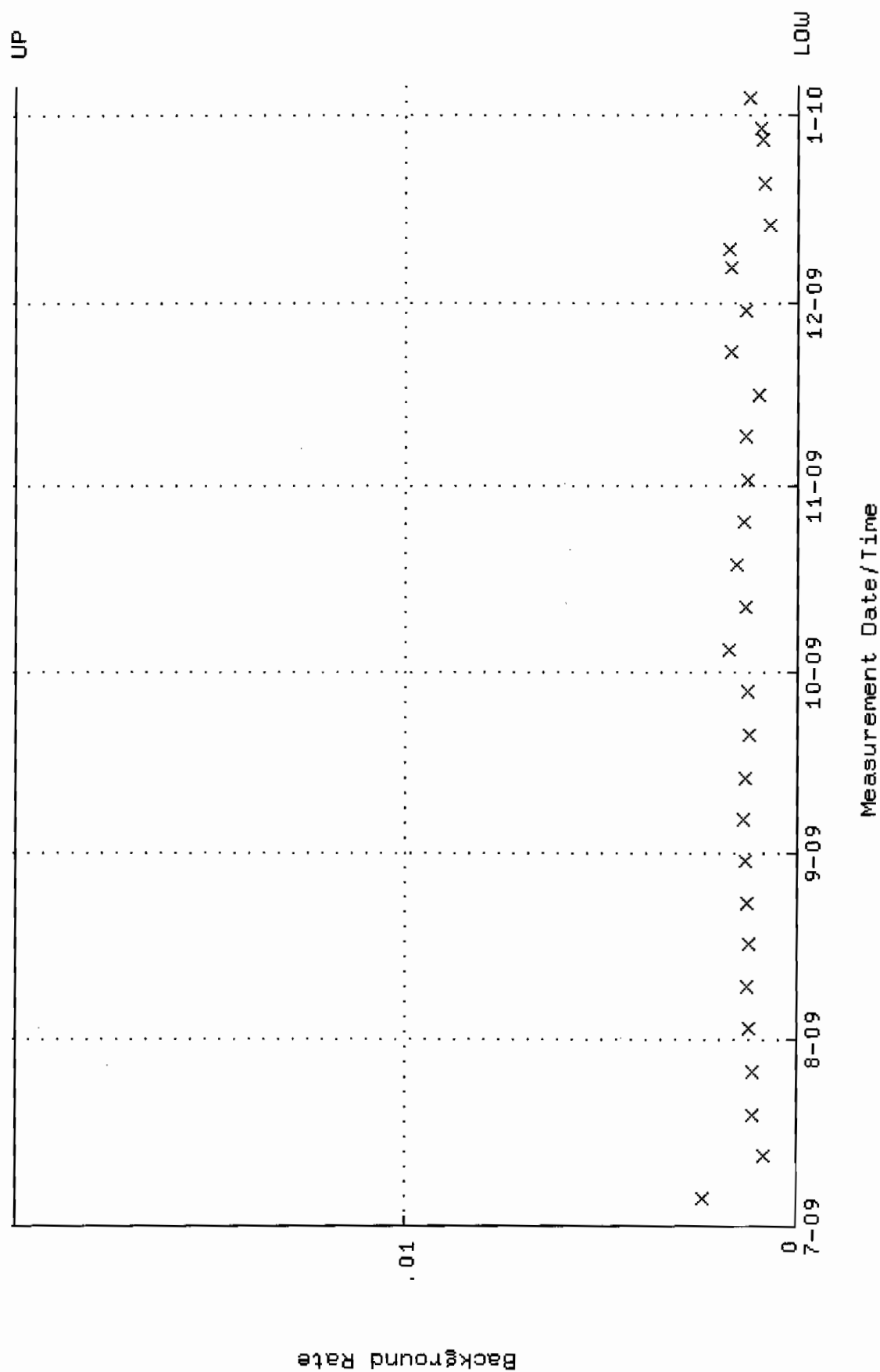
QA filename : DKA100:[ENV\_ALPHA.QA.W]W024.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.315820 through 0.352494



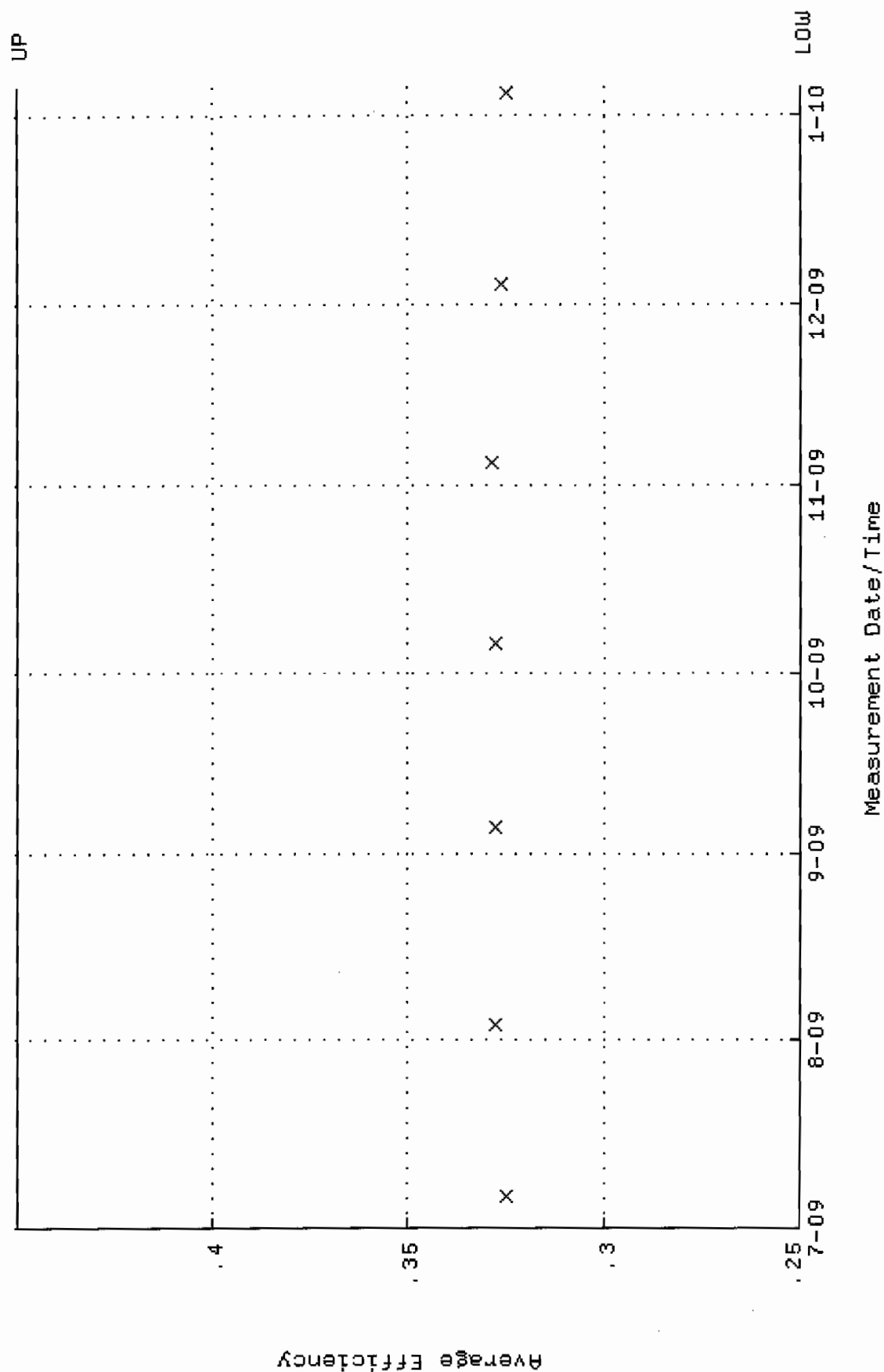
QA filename : DKA100:[ENV\_ALPHA.QA.W]W024.QAF;2  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.2434 through 91.8289



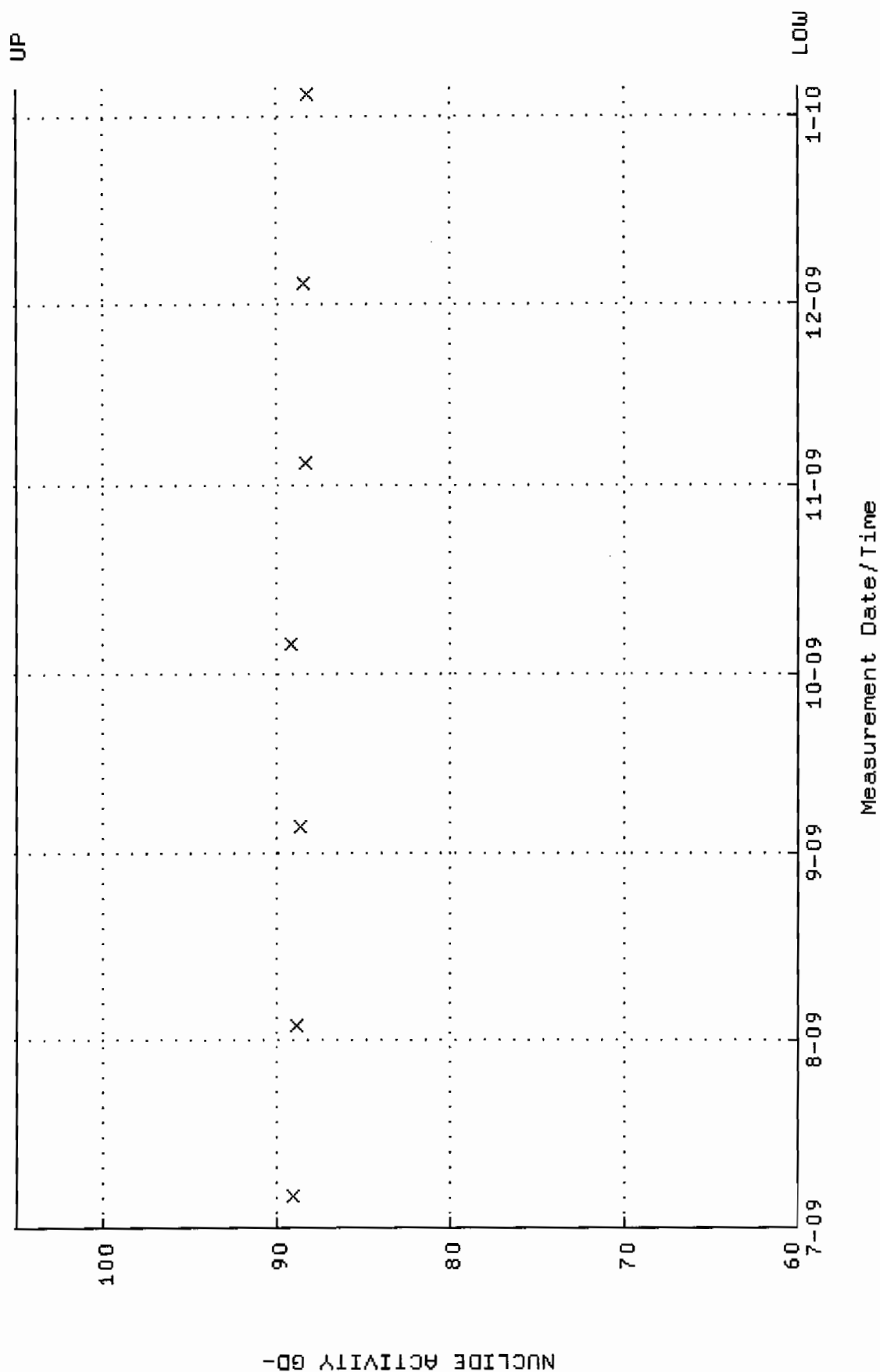
QA filename : DKA100:[ENV\_ALPHA.QA.B]B024.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



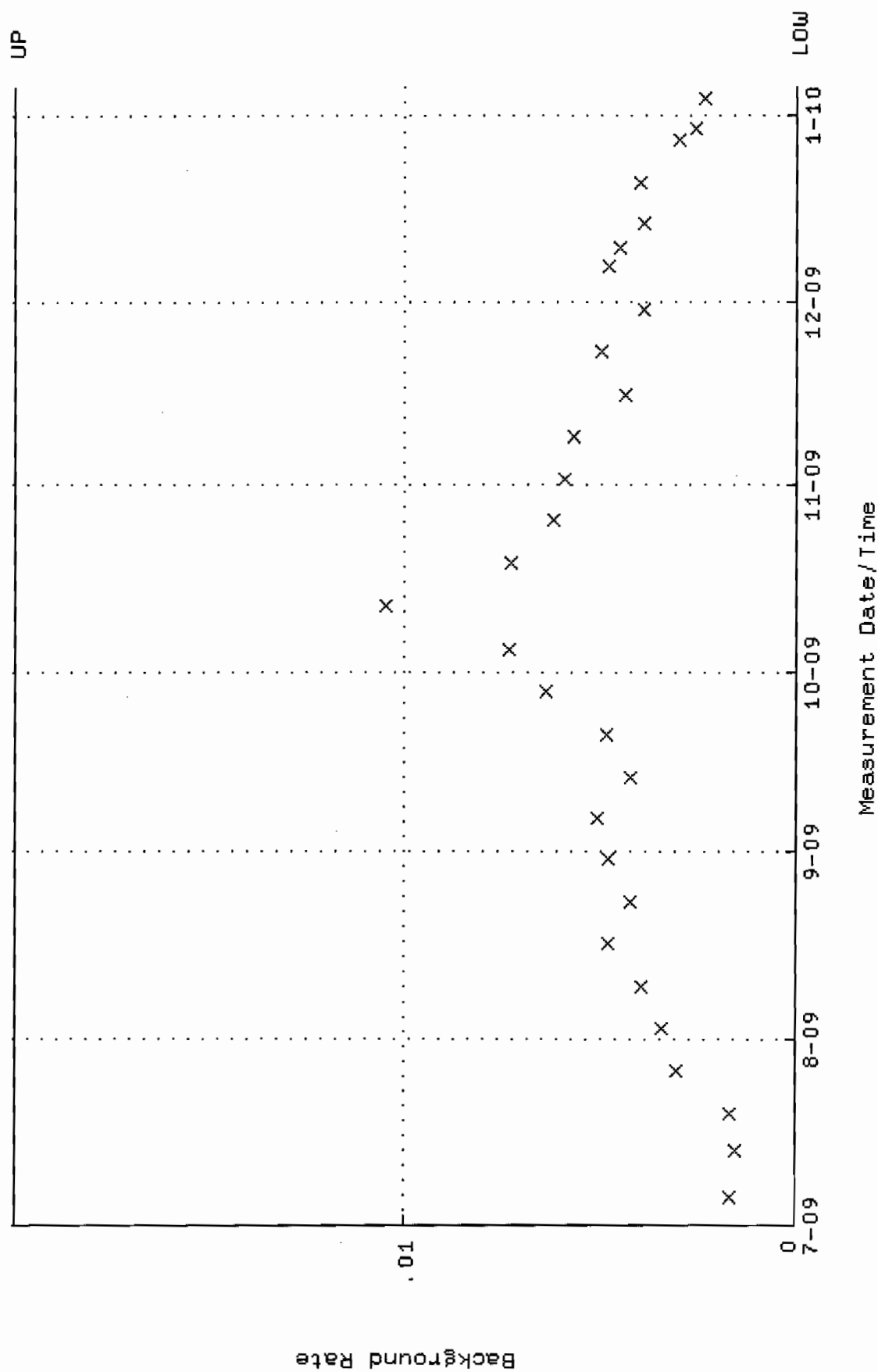
QA filename : DKA100:[ENV\_ALPHA.QA.W]W025.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W025.QAF;4  
 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

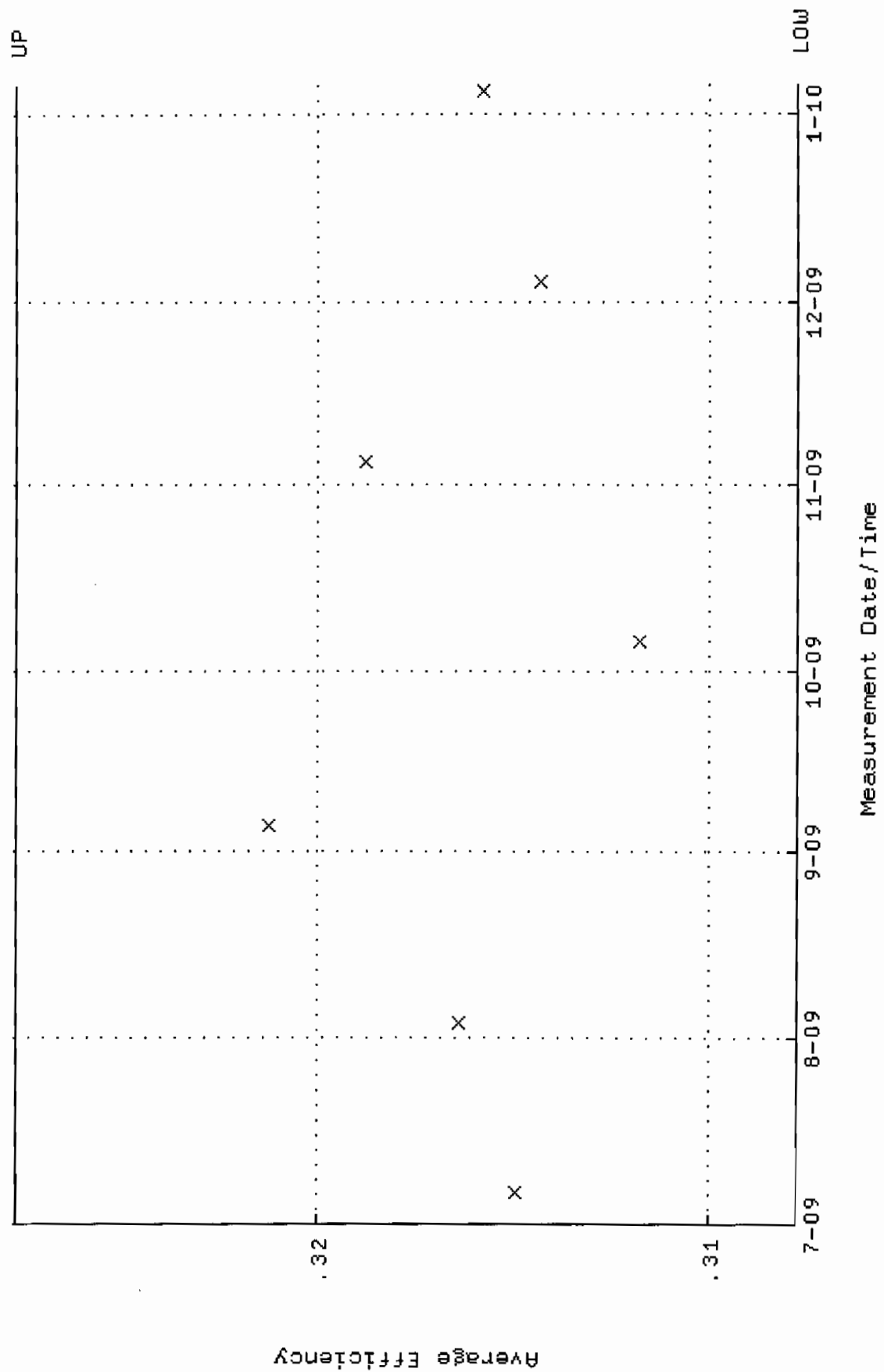


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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

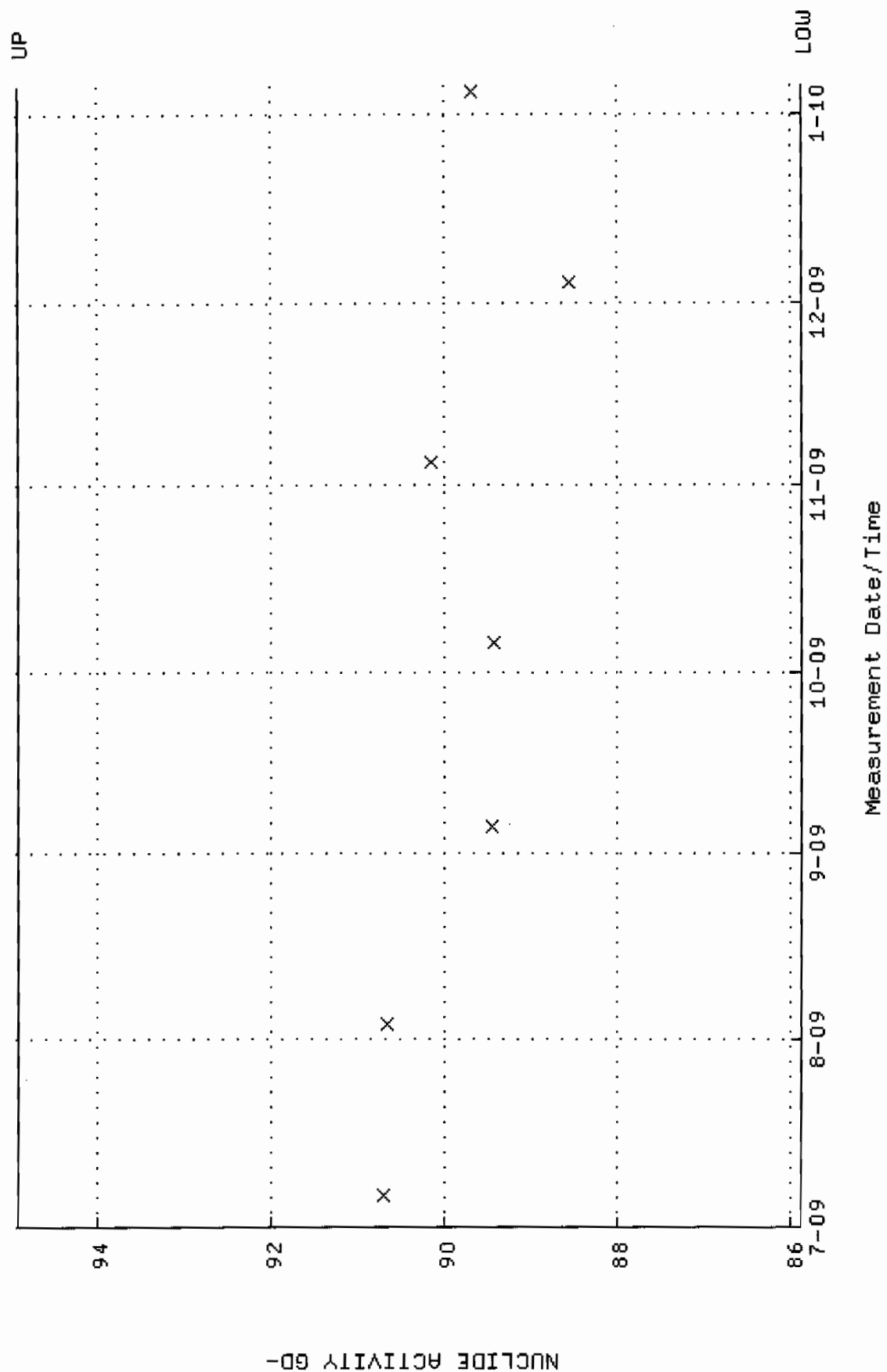




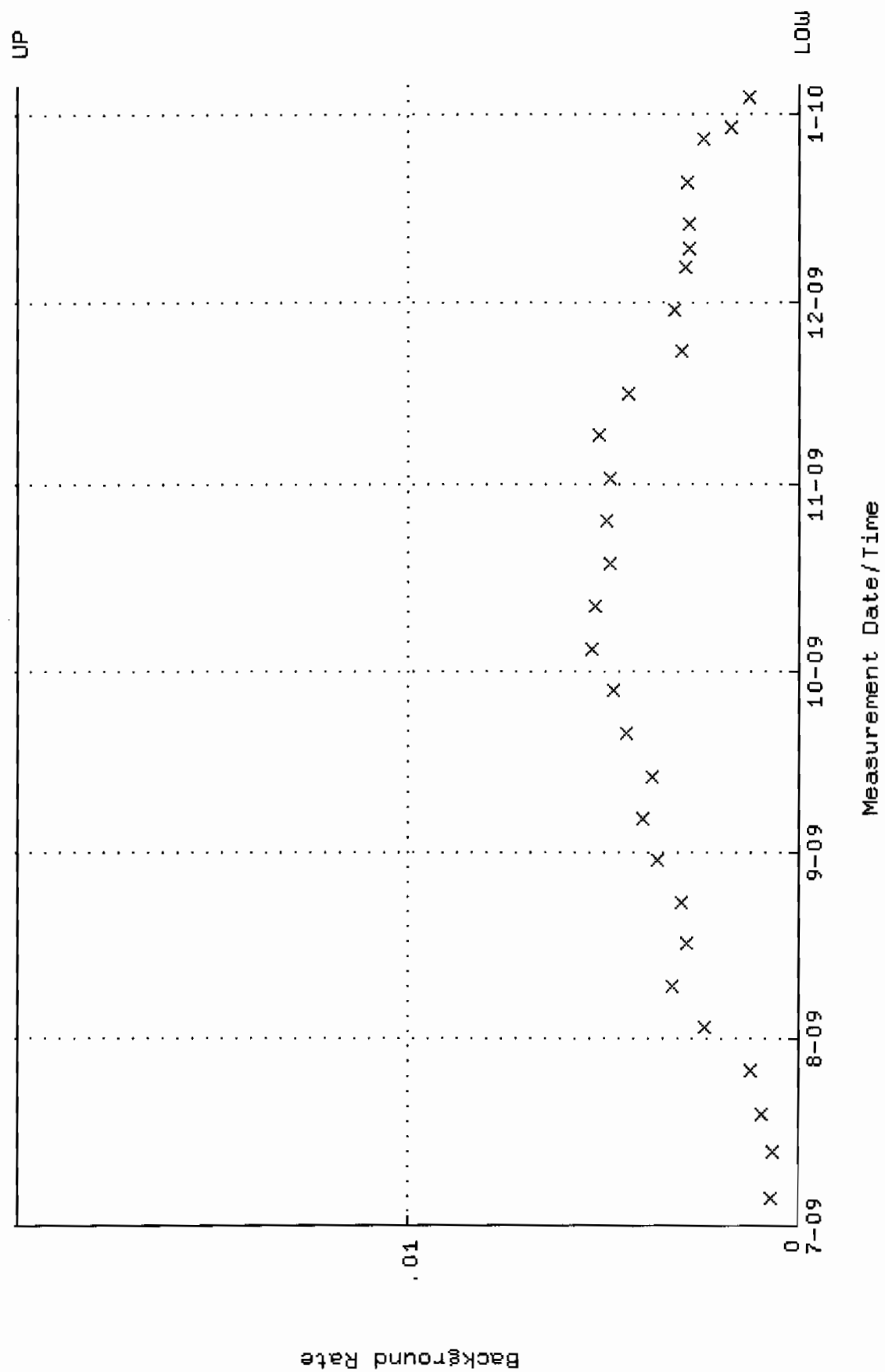
QA filename : DKA100:[ENV\_ALPHA.QA.W]W026.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.307728 through 0.327728



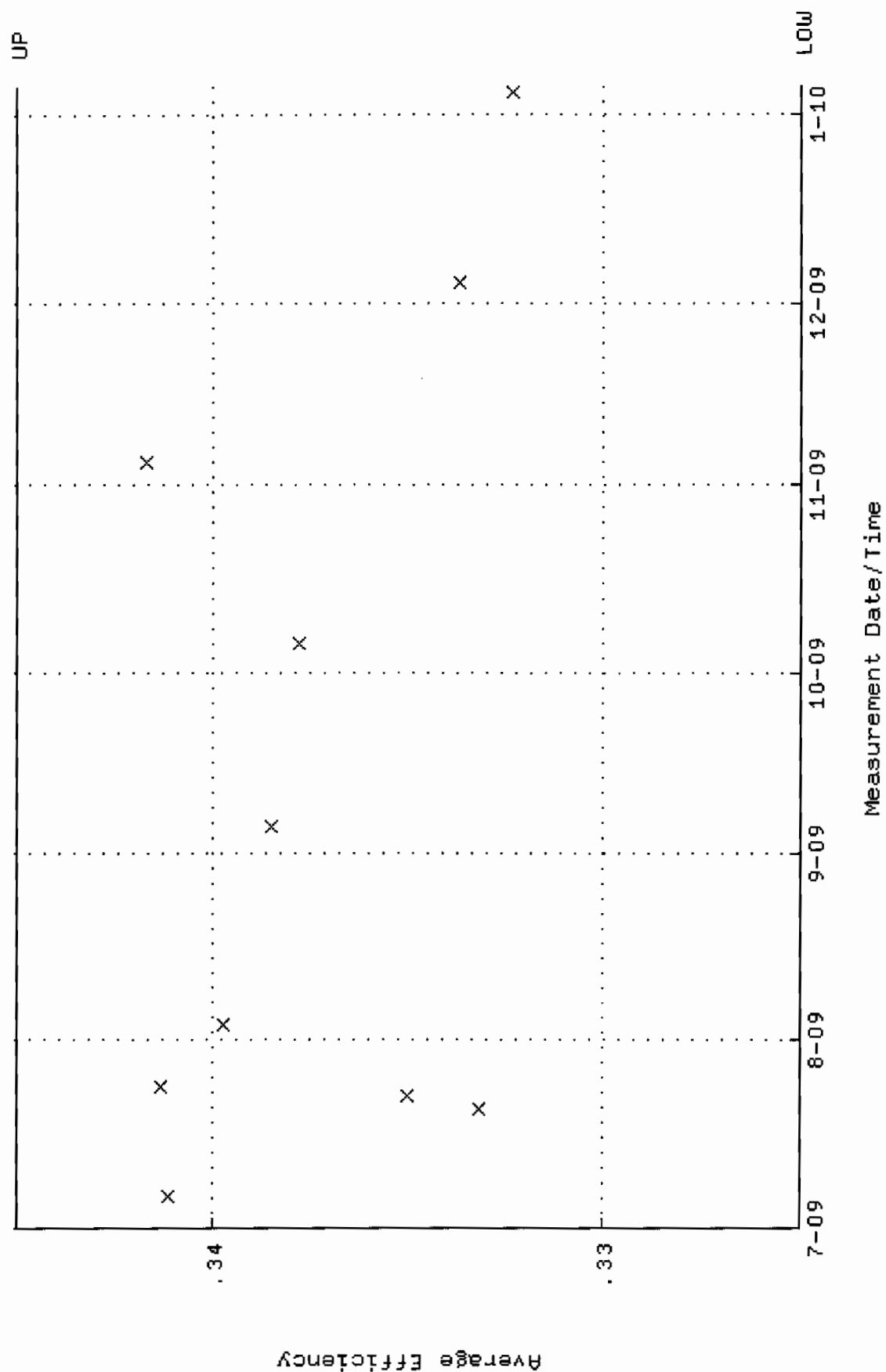
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 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.8763 through 94.9159



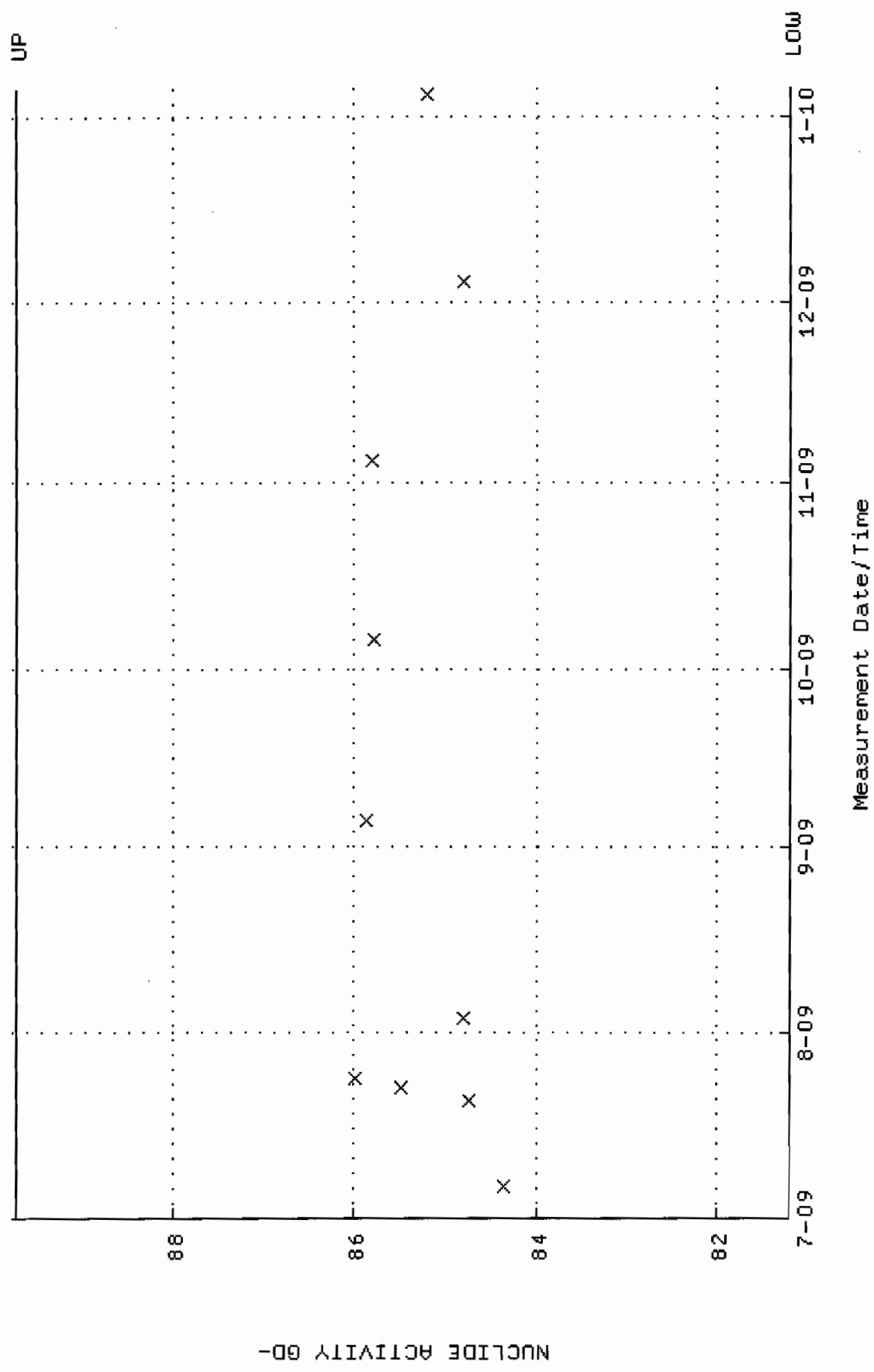
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



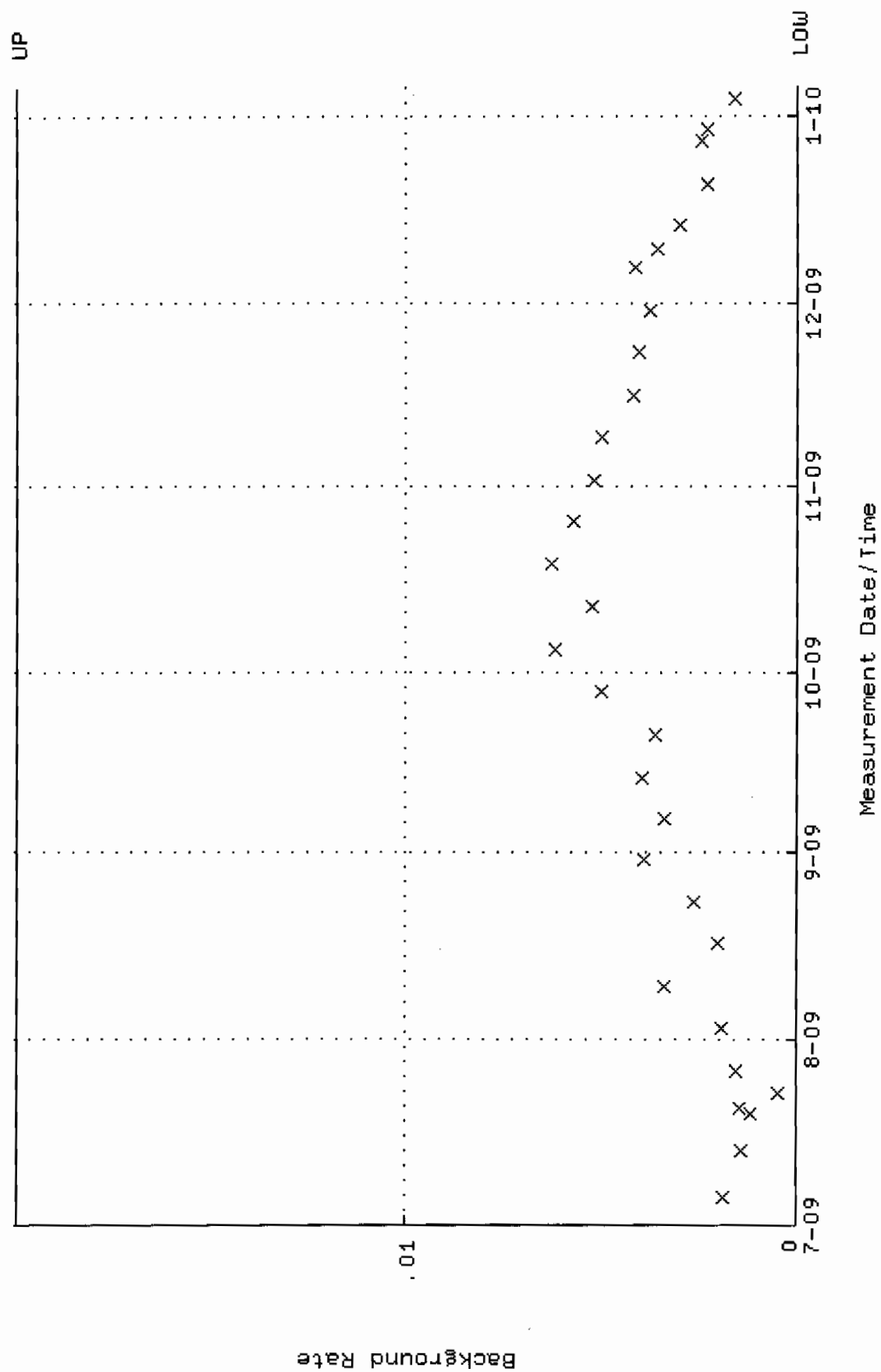
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 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.324980 through 0.344980



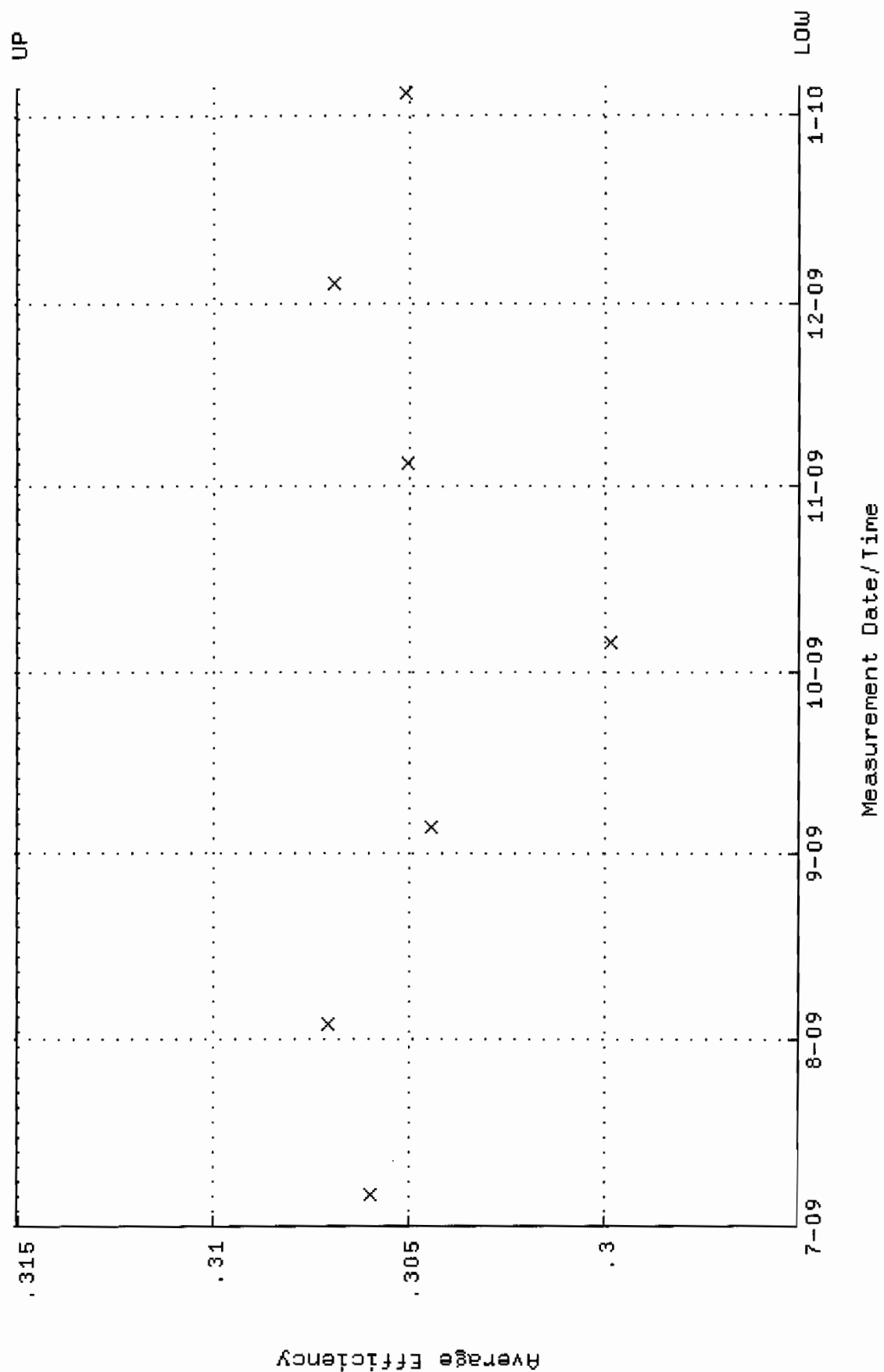
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
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 Lower/Upper Lmts: 81.2030 through 89.7506



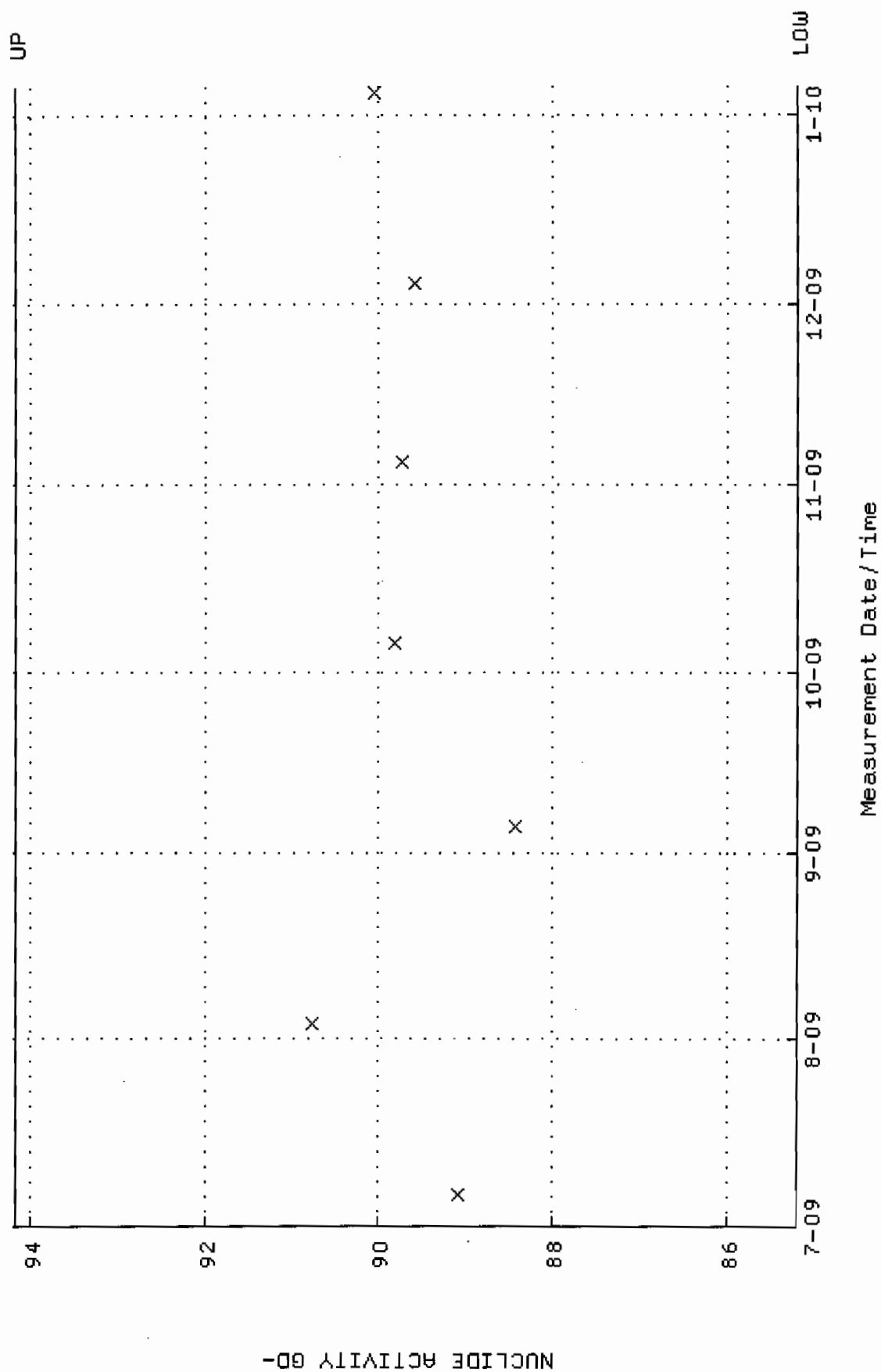
QA filename : DKA100:[ENV\_ALPHA.QA.B]B027.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W028.QAF;4  
 Parameter Name : AVRG5EFF (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

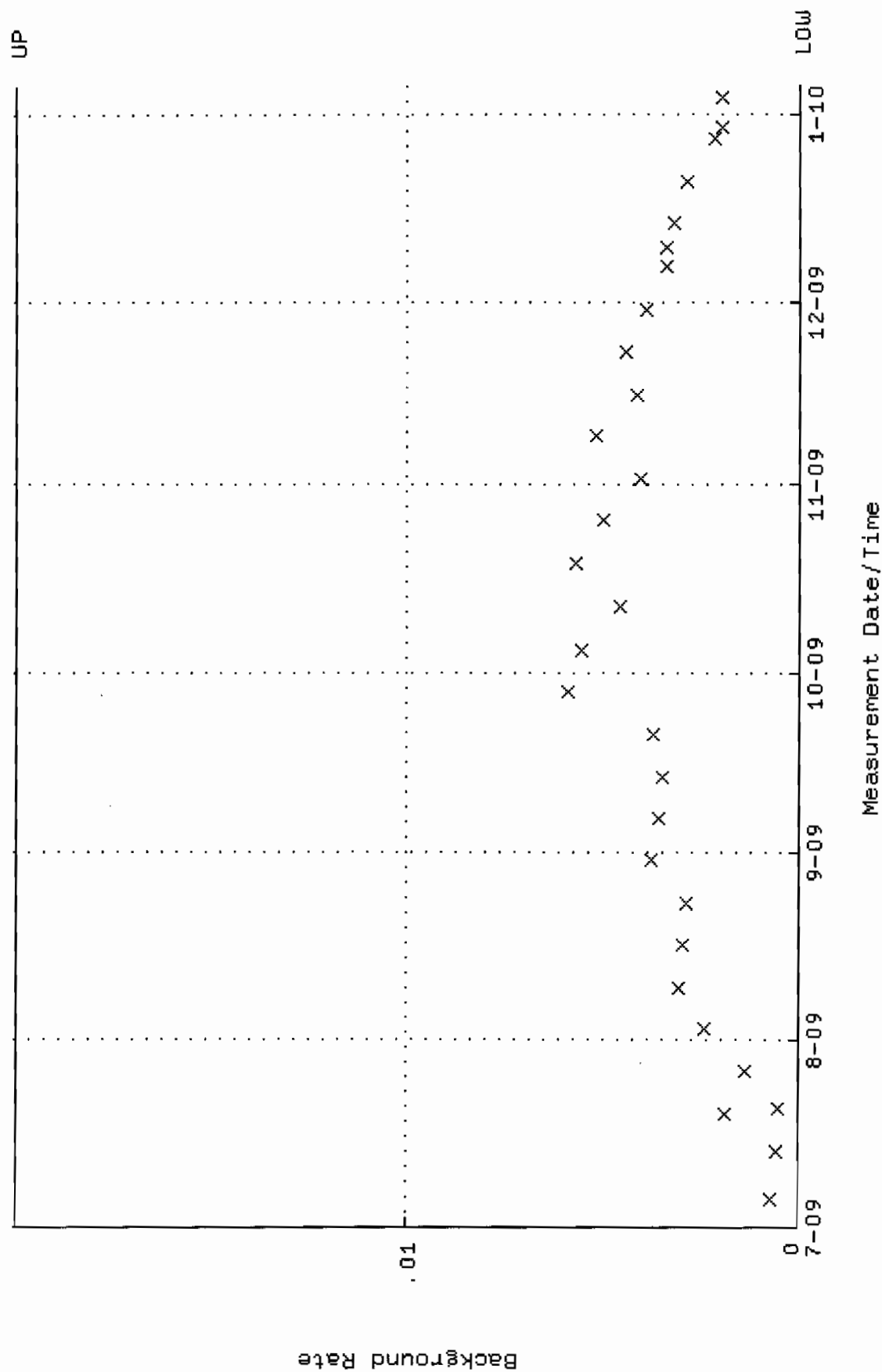


QA filename : DKA100:[ENV\_ALPHA.QA.W]W028.QAF;4  
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.1965 through 94.1645

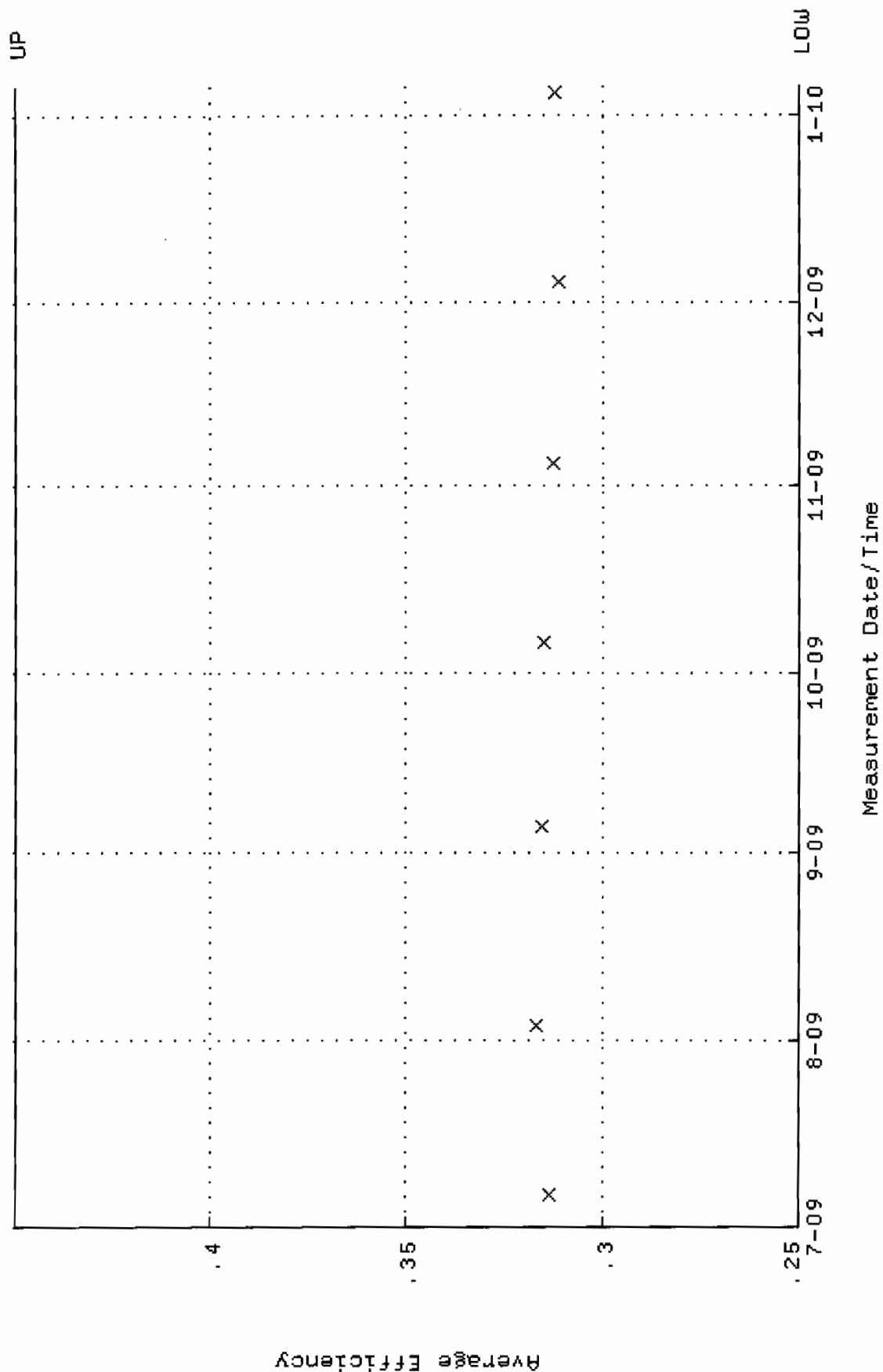




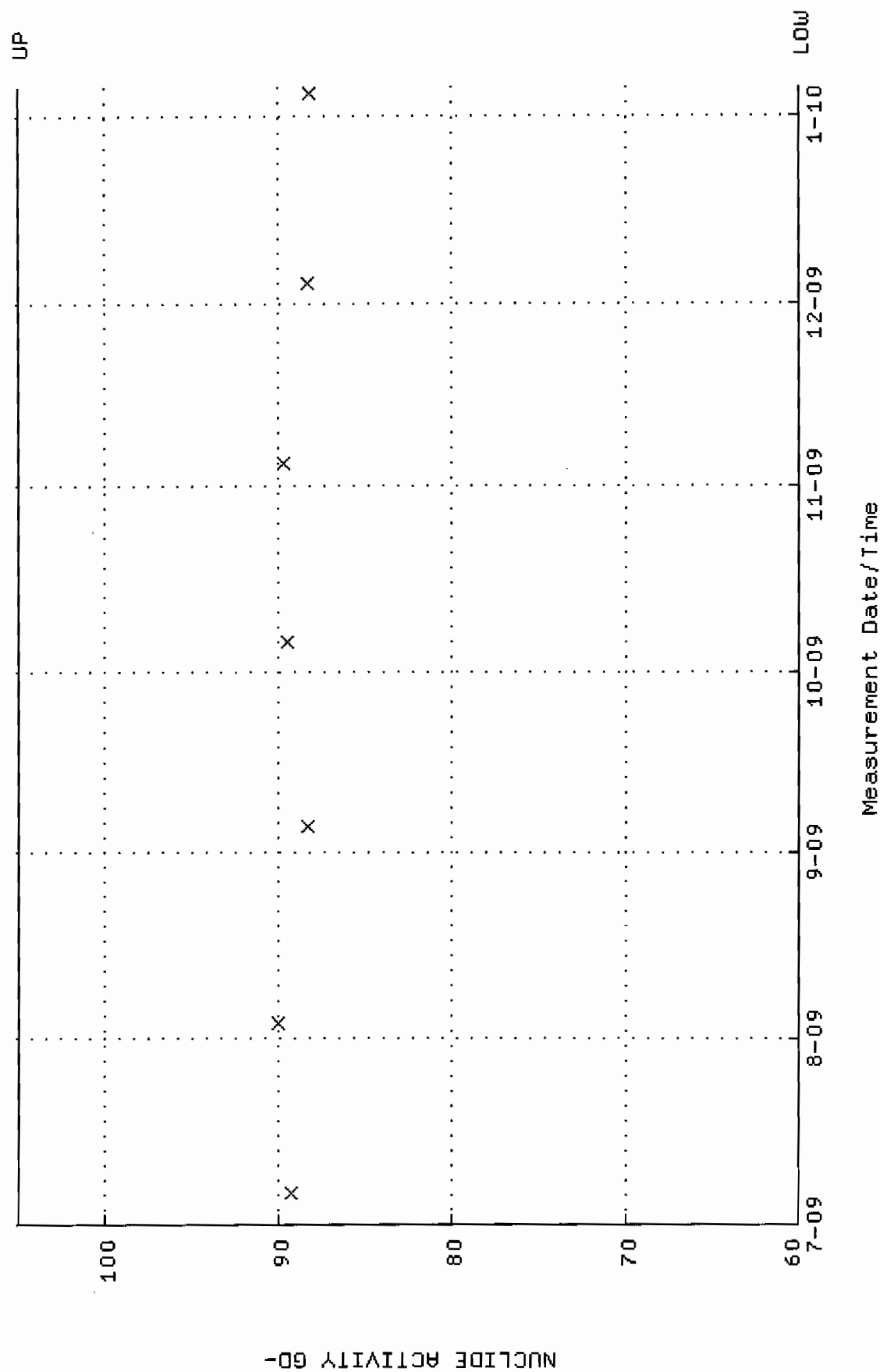
QA filename : DKA100:[ENV\_ALPHA.QA.B]B028.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



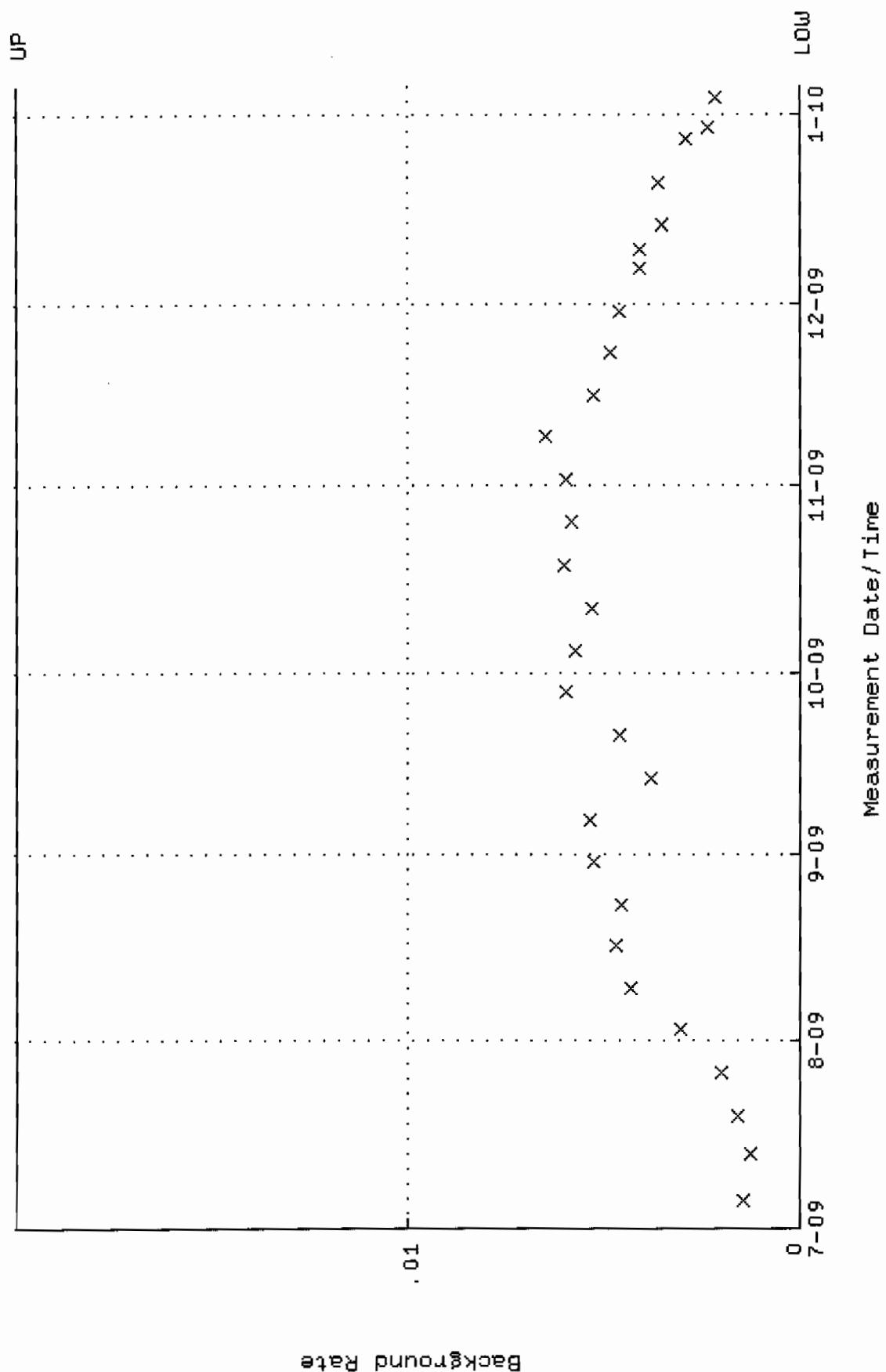
QA filename : DKA100:[ENV\_ALPHA.QA.W]W029.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



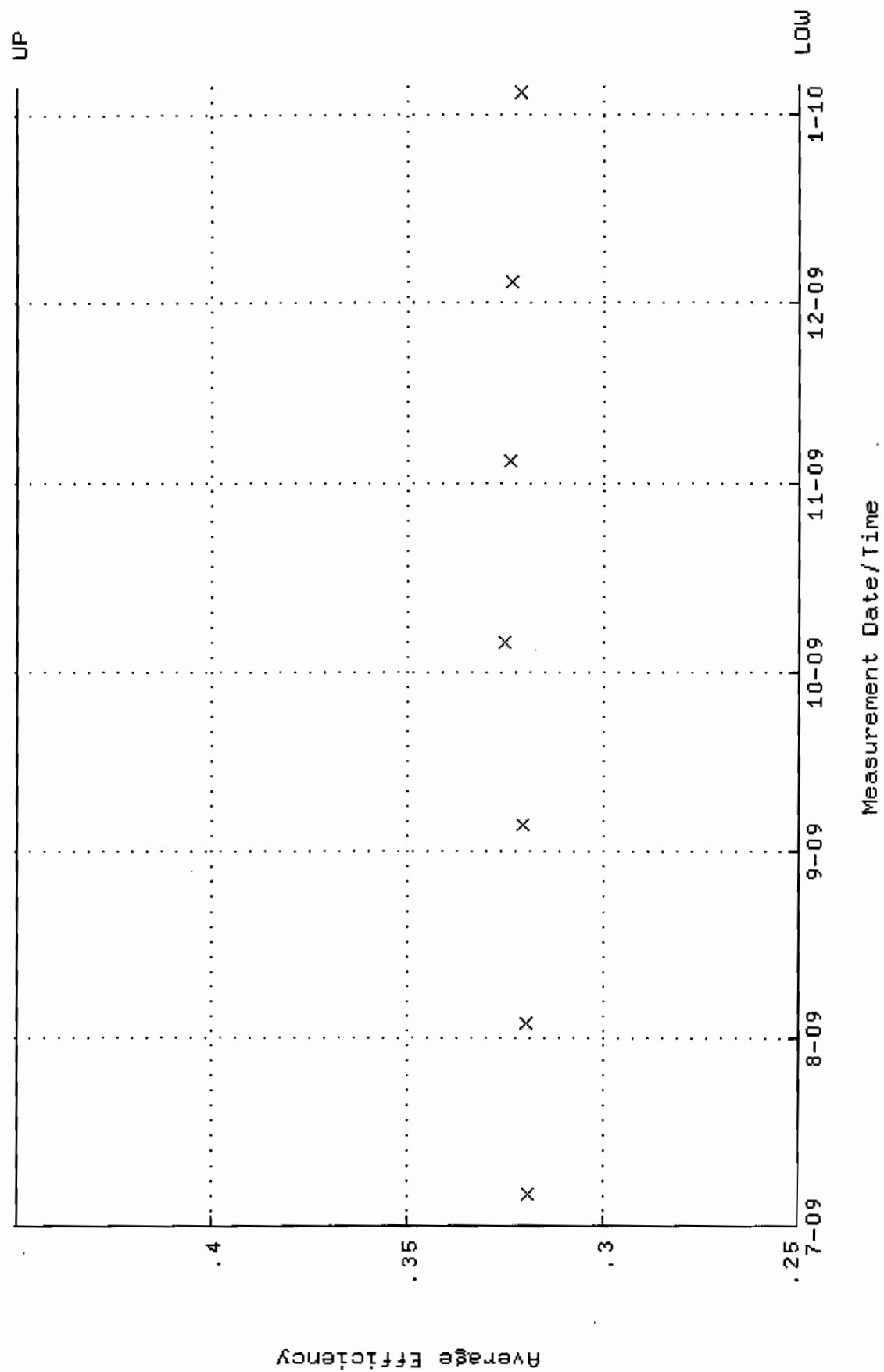
QA filename : DKA100:[ENV\_ALPHA.QA.W]W029.QAF;6  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.000



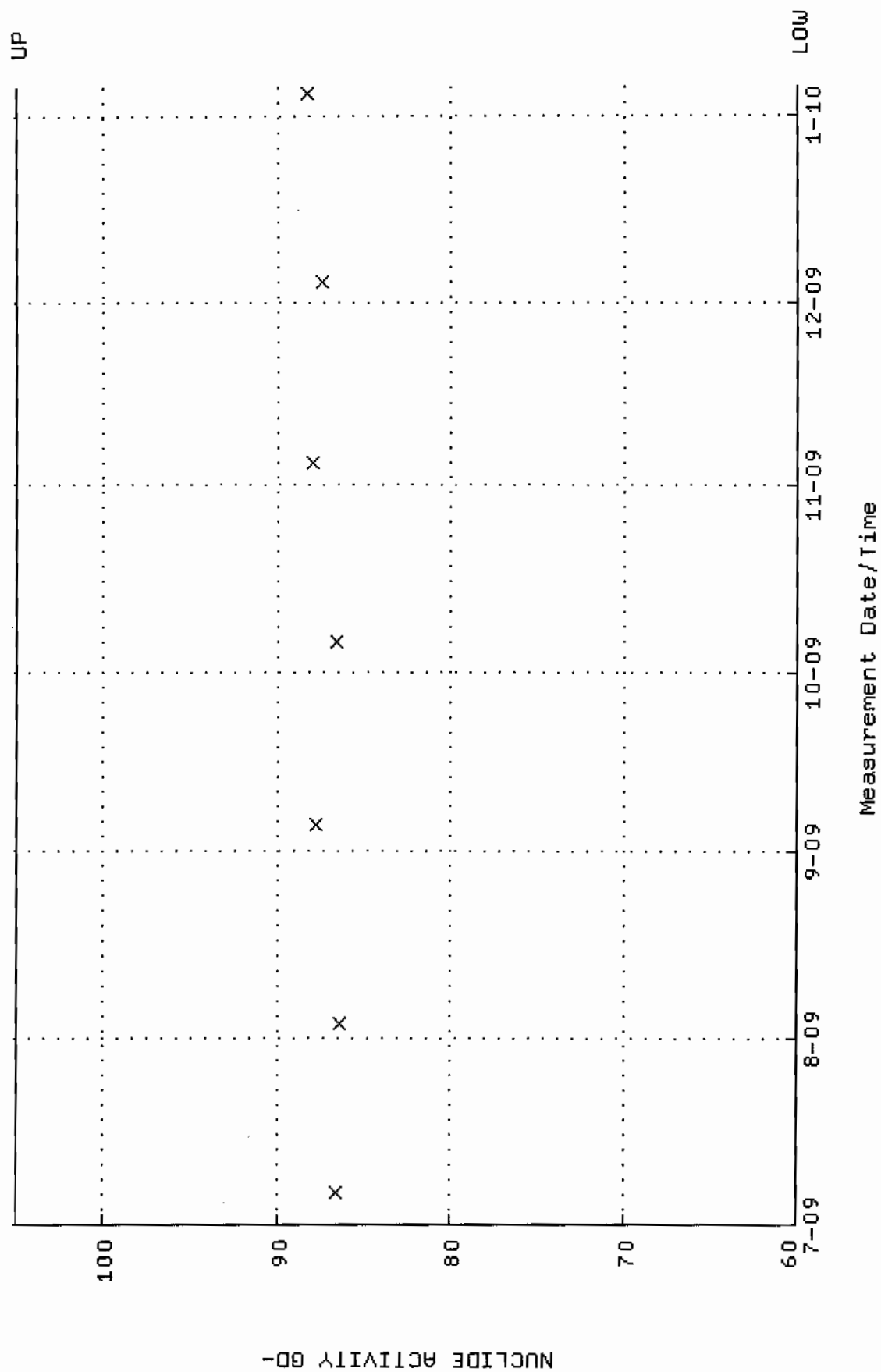
QA filename : DKA100:[ENV\_ALPHA.QA.B]B029.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



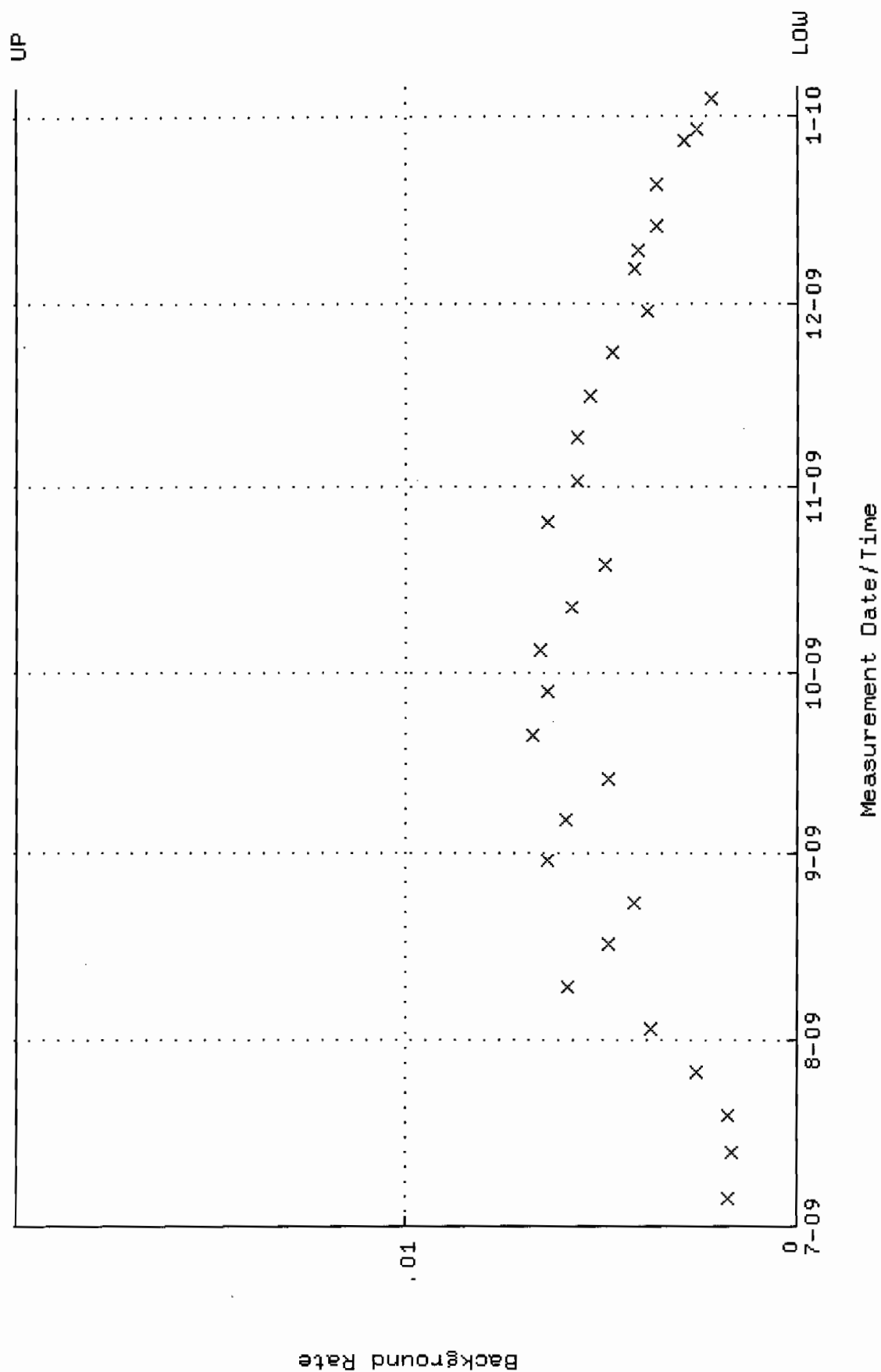
QA filename : DKA100:[ENV\_ALPHA.QA.W]W030.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



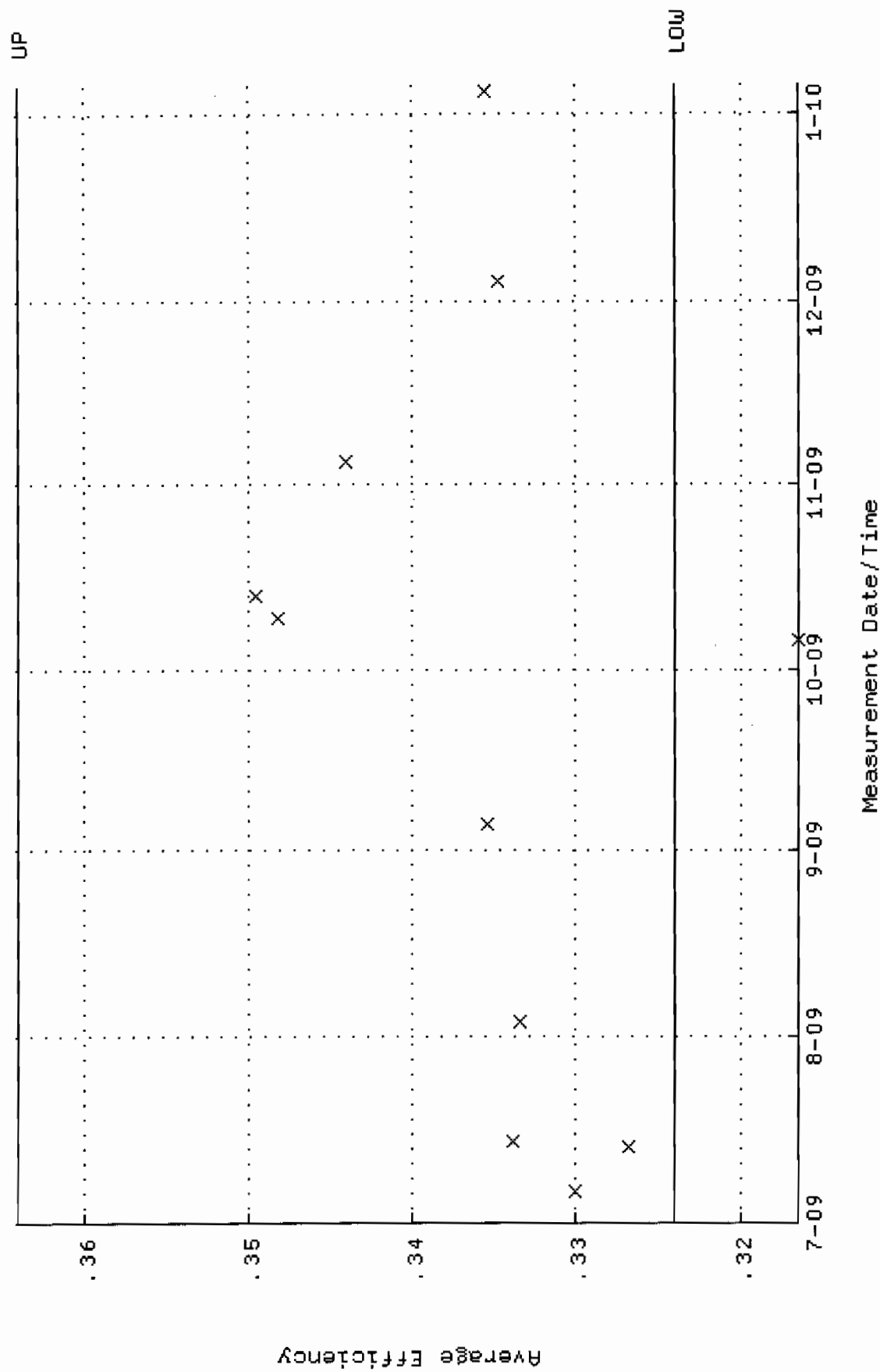
QA filename : DKA100:[ENV\_ALPHA.QA.W]W030.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000



QA filename : DKA100:[ENV\_ALPHA.QA.B]B030.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

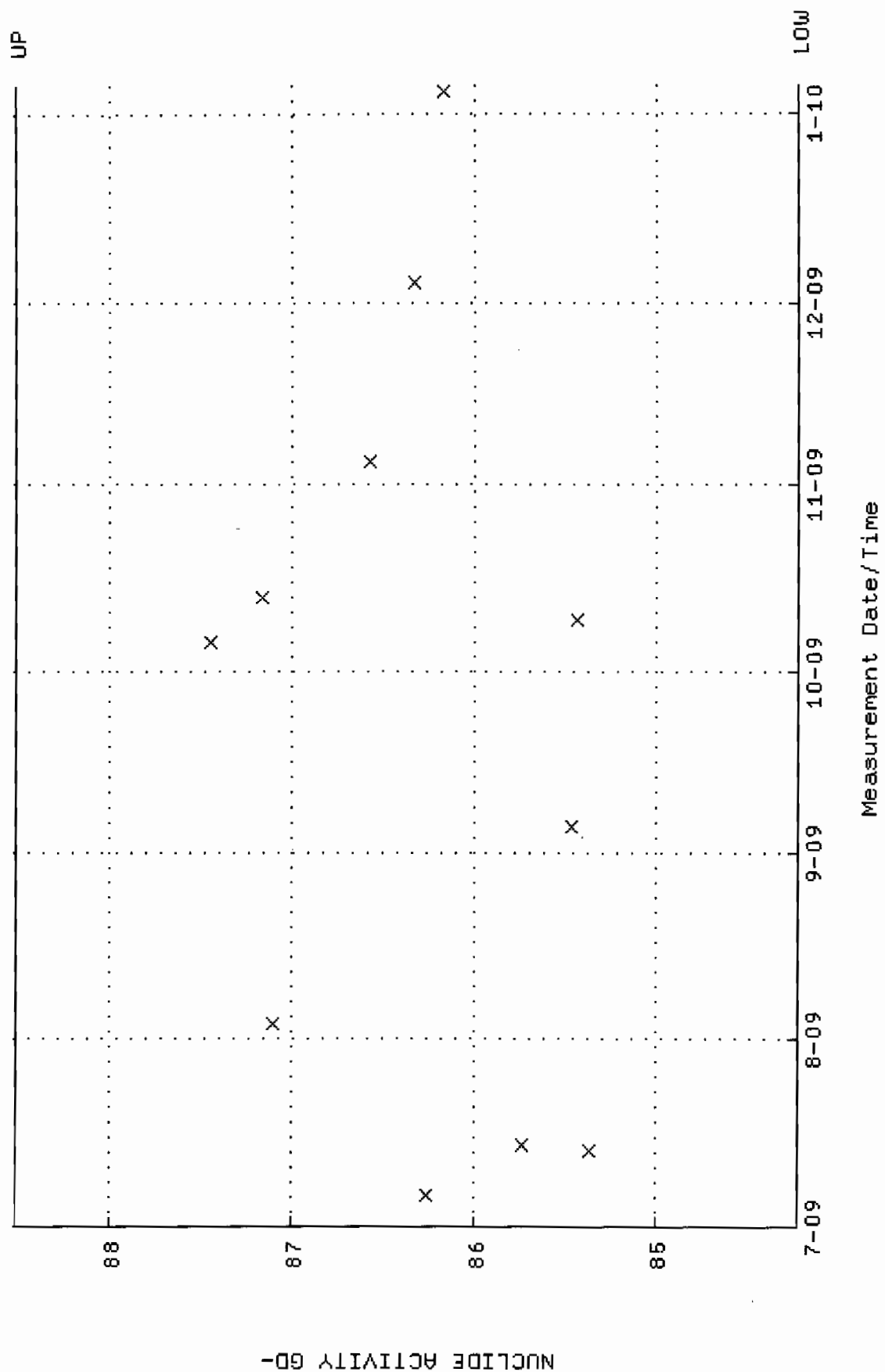


QA filename : DKA100:[ENV\_ALPHA.QA.W]W031.QAF;4  
 Parameter Name : AVREFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.324029 through 0.364065

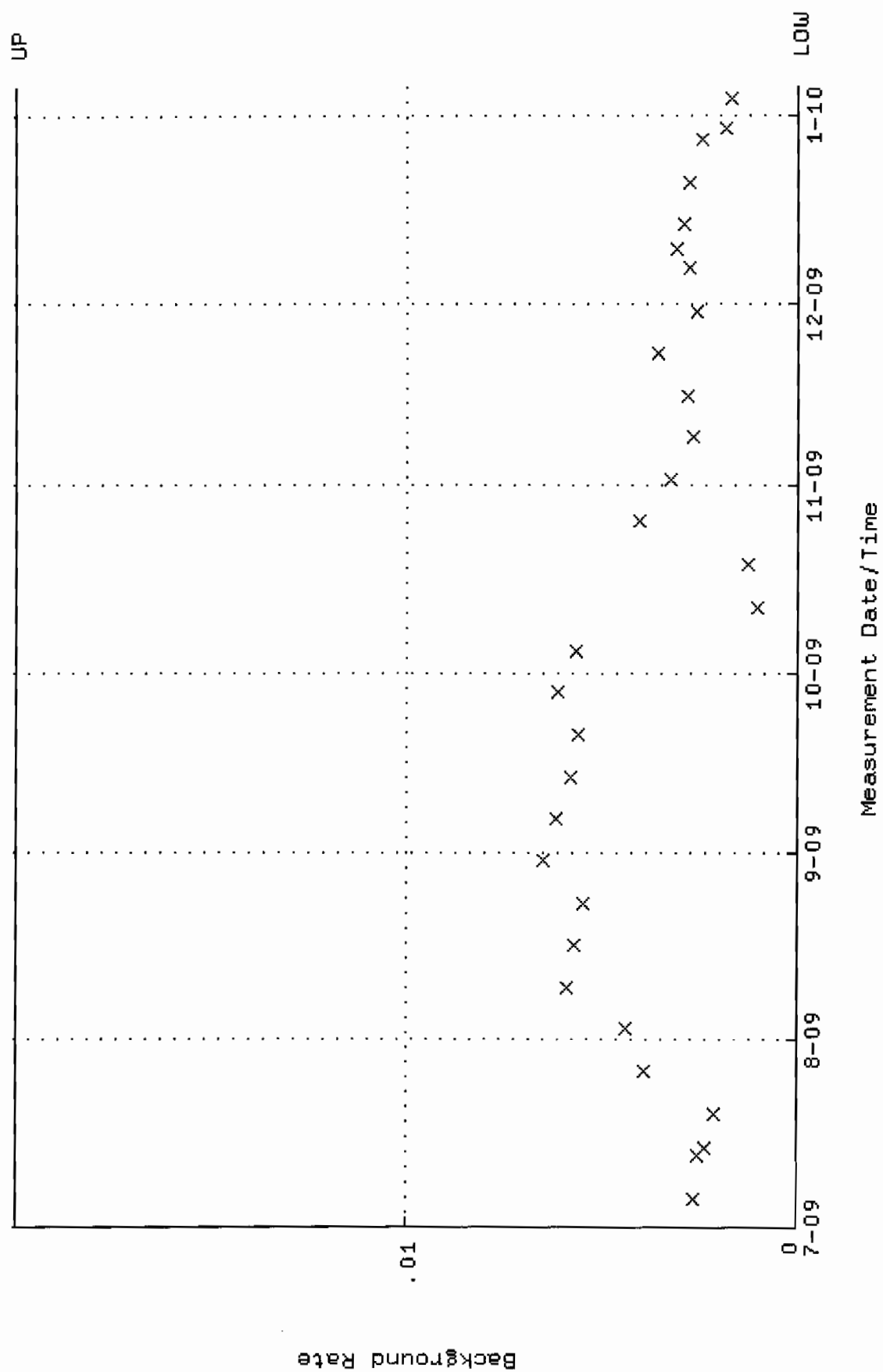




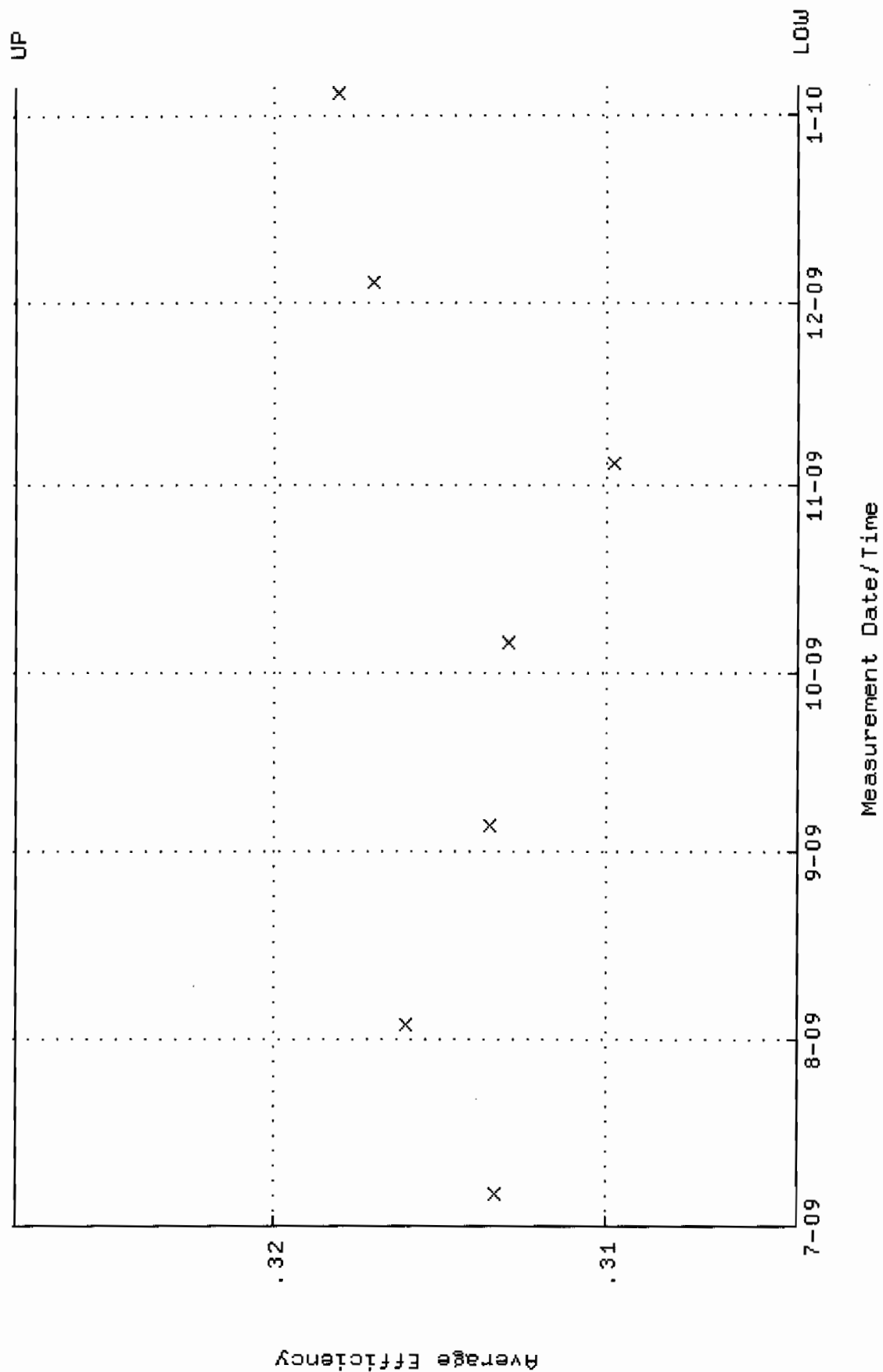
QA filename : DKA100:[ENV\_ALPHA.QA.W]W031.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.2165 through 88.5165



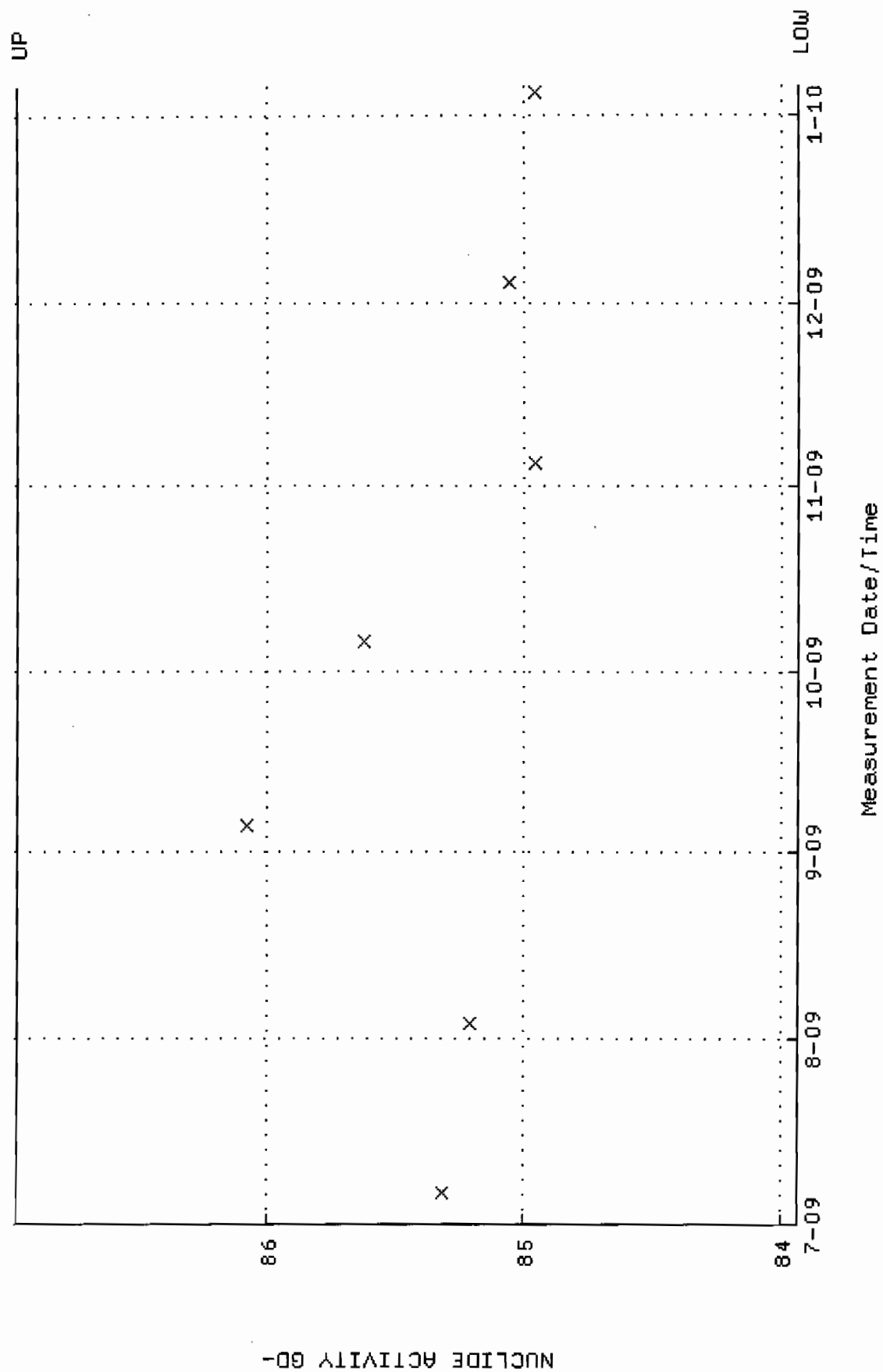
QA filename : DKA100:[ENV\_ALPHA.QA.B]B031.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



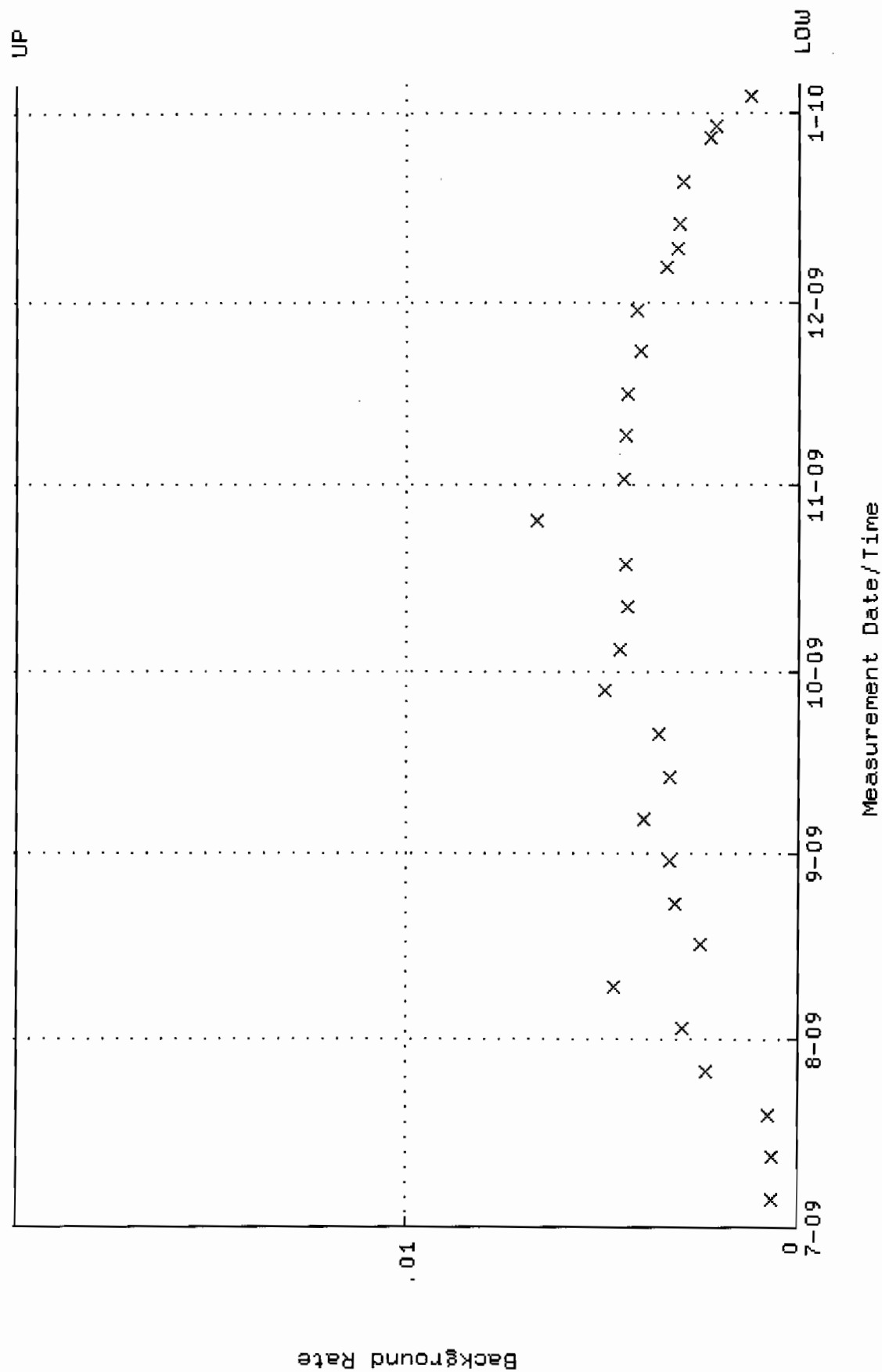
QA filename : DKA100:[ENVY\_ALPHA.QA.W]W033.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.304222 through 0.327748



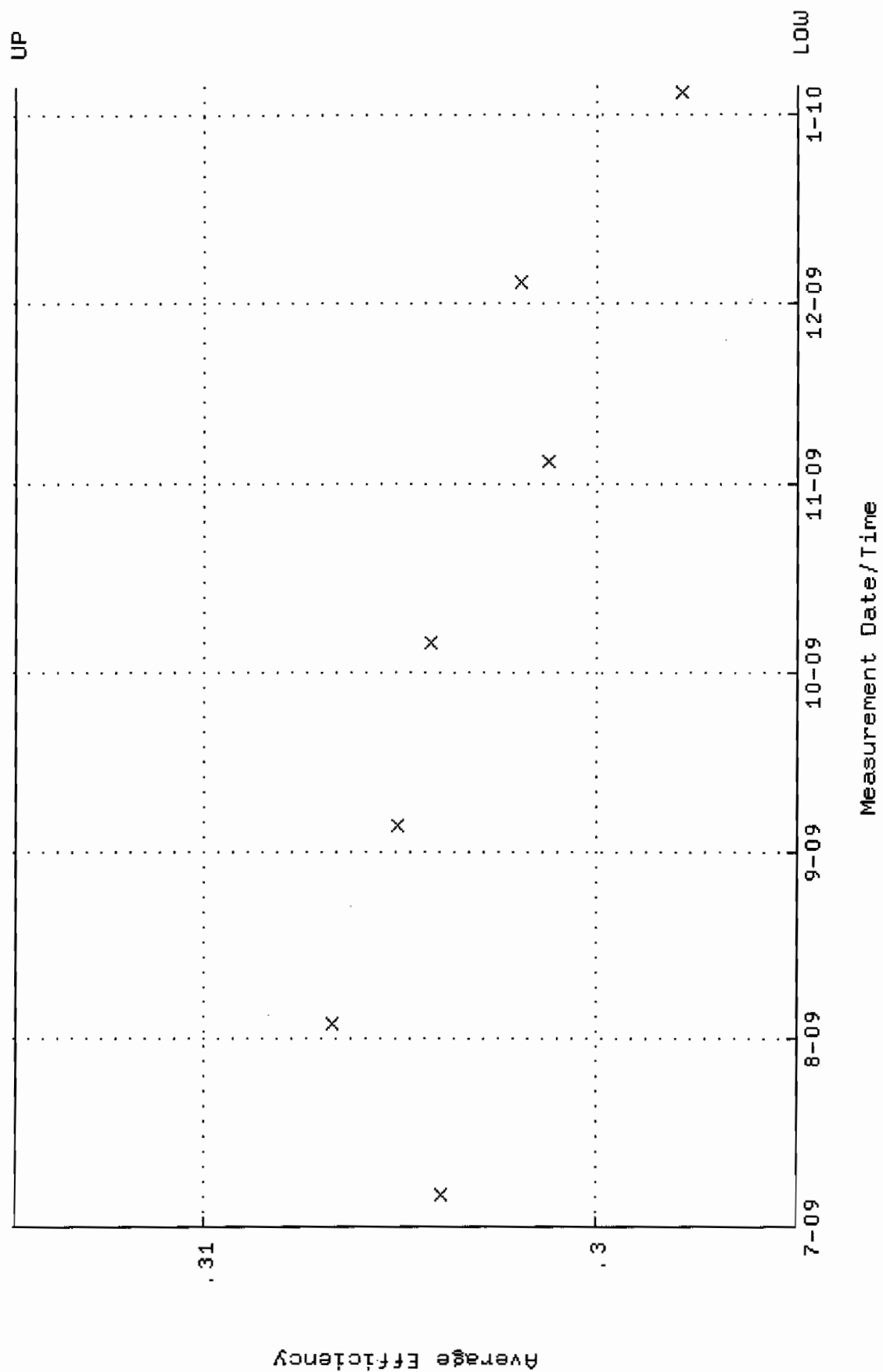
QA filename : DKA100:[ENV\_ALPHA.QA.W]W033.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.9373 through 86.9661



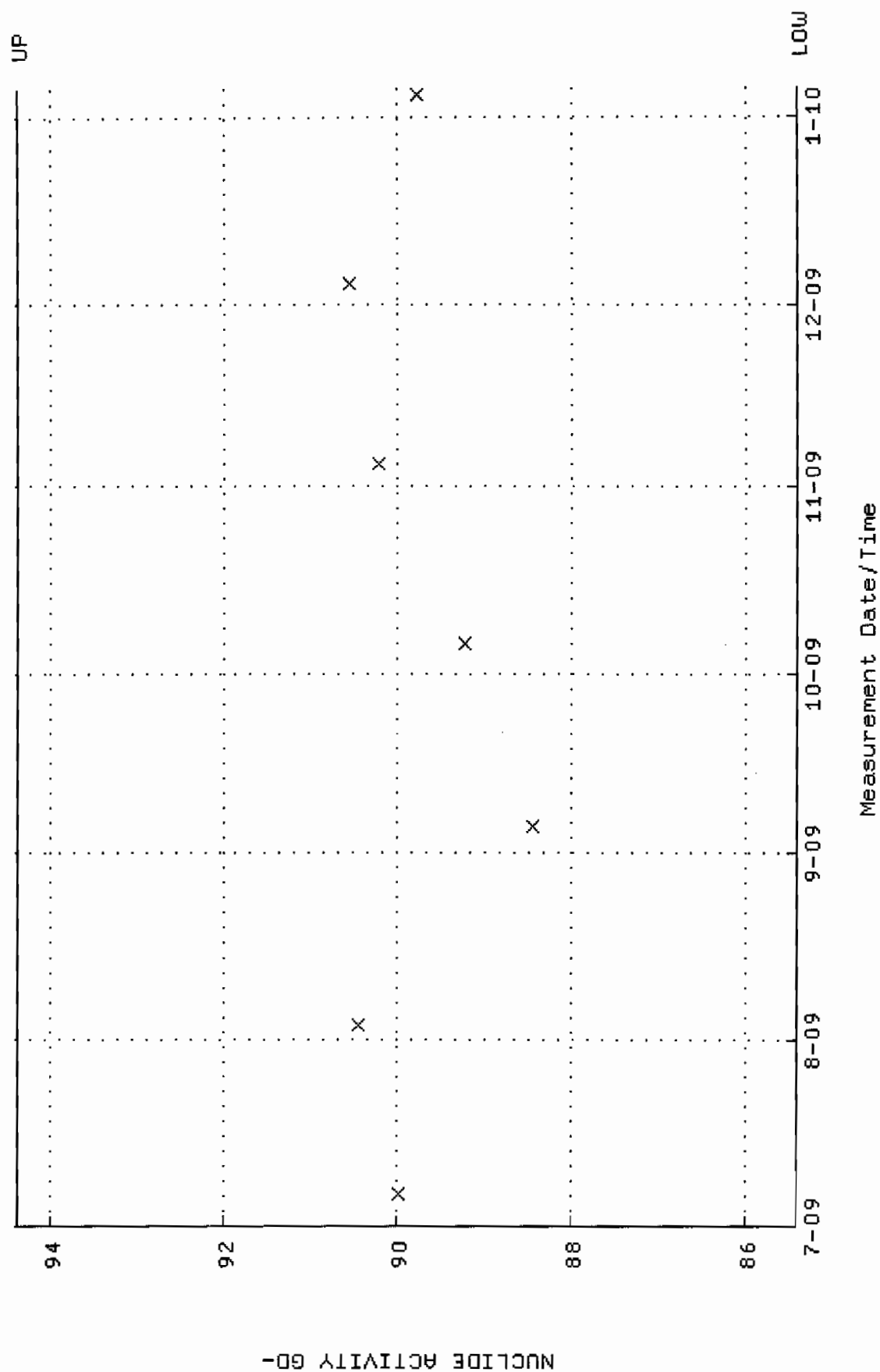
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 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



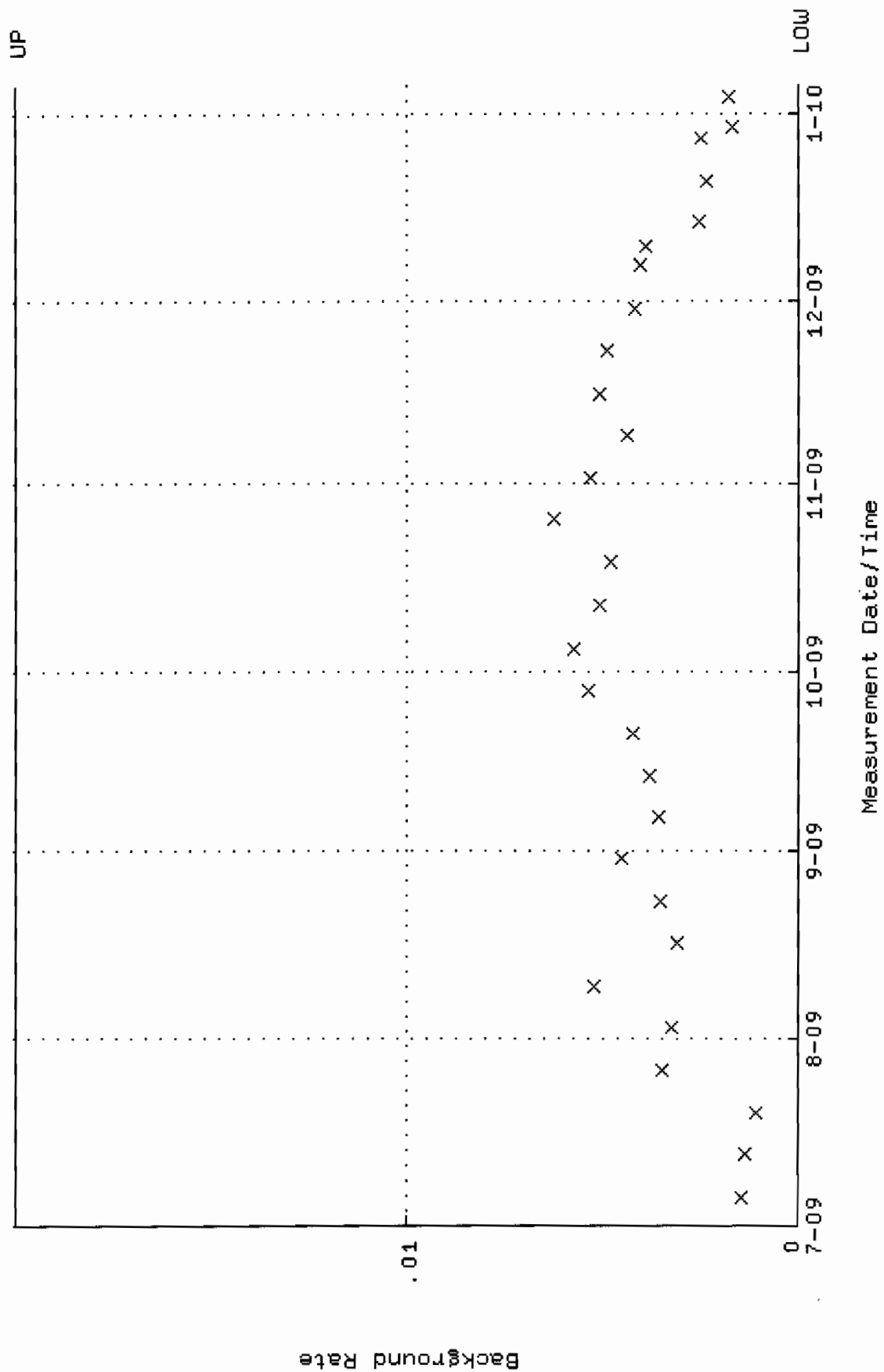
QA filename : DKA100:[ENV\_ALPHA.QA.W]W035.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.294859 through 0.314859



QA filename : DKA100:[ENV\_ALPHA.QA.W]W035.QAF;3  
 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: 85.3984 through 94.3878

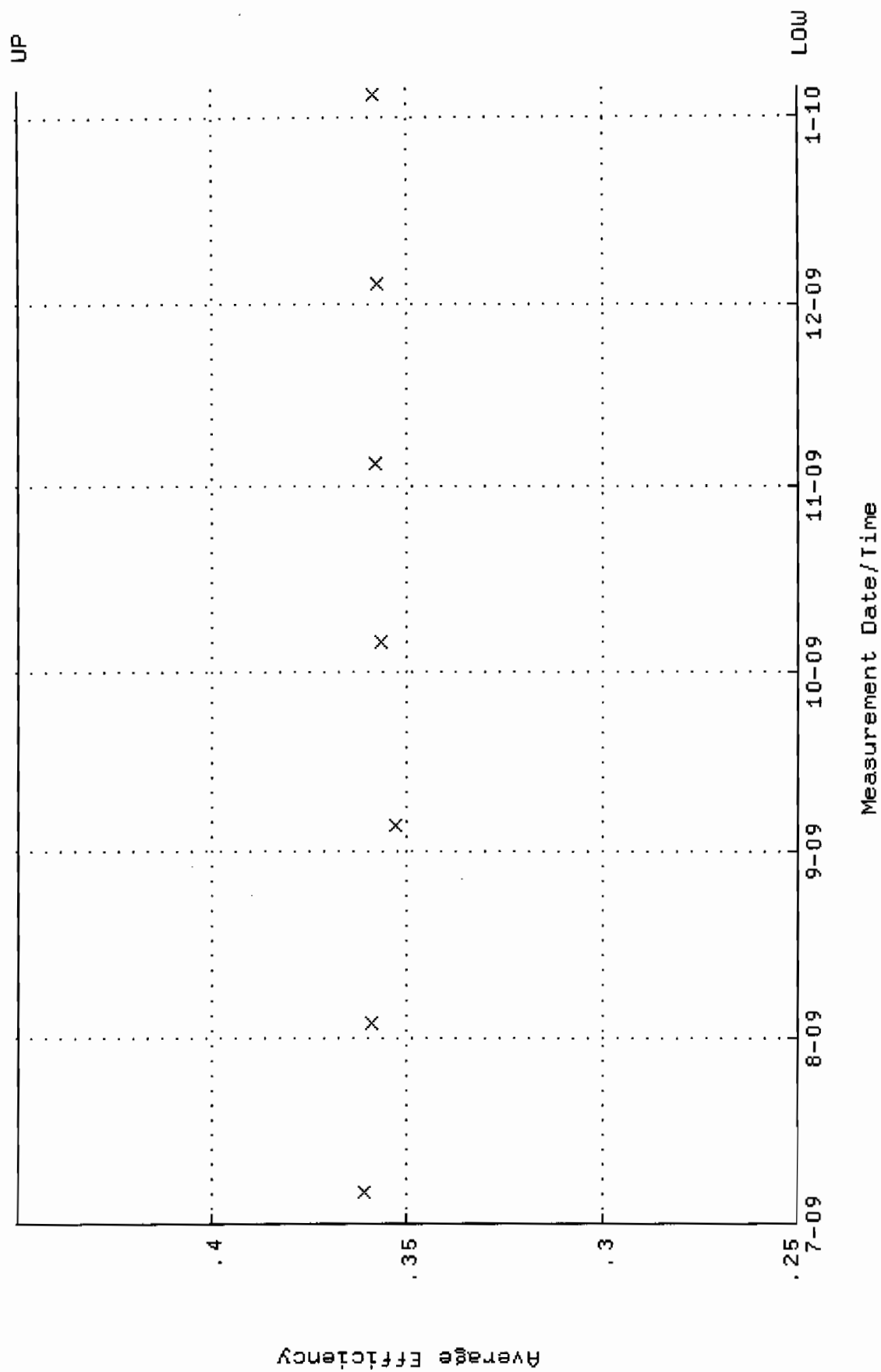


QA filename : DKA100:[ENV\_ALPHA.QA.B]B035.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

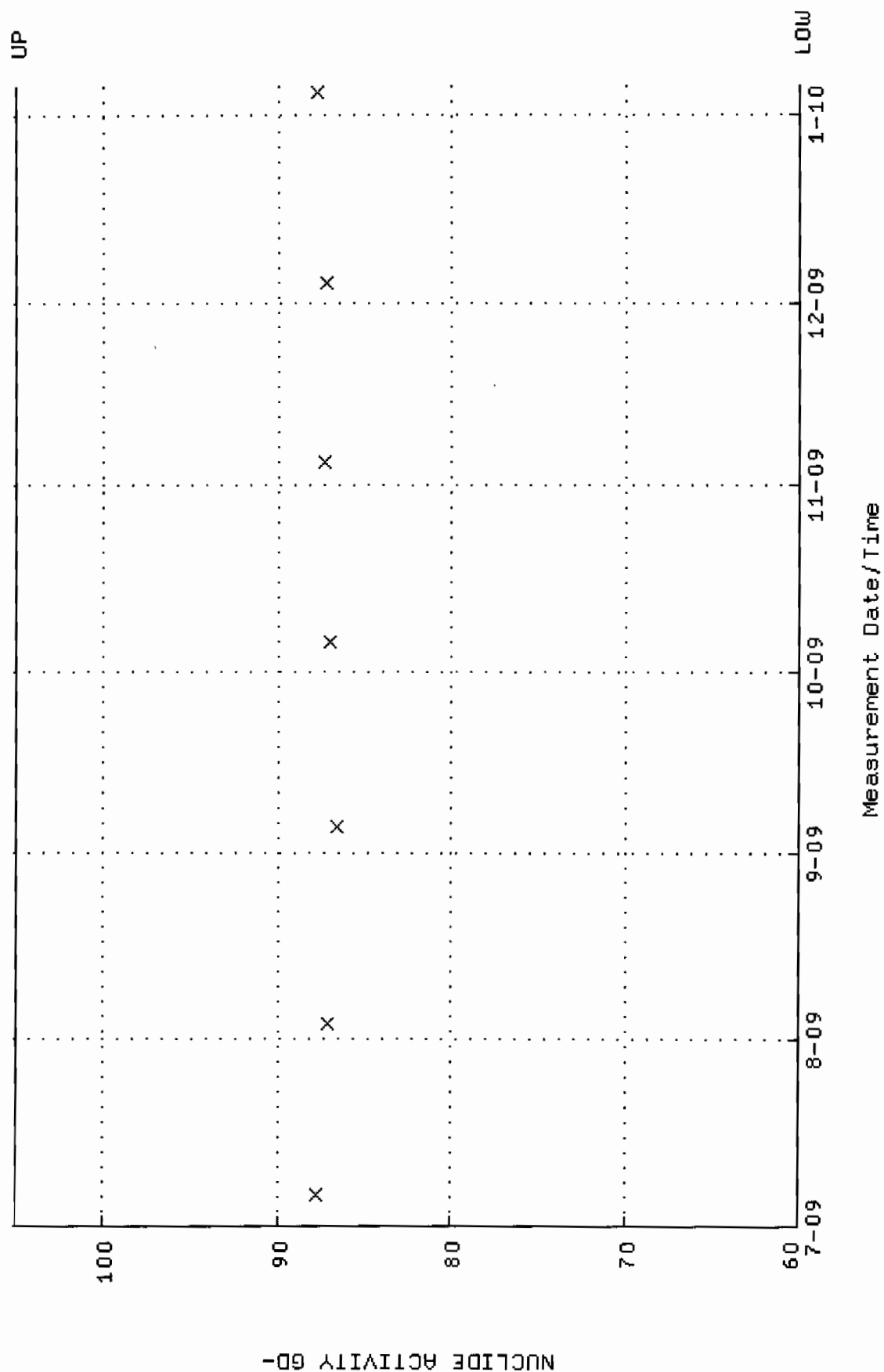




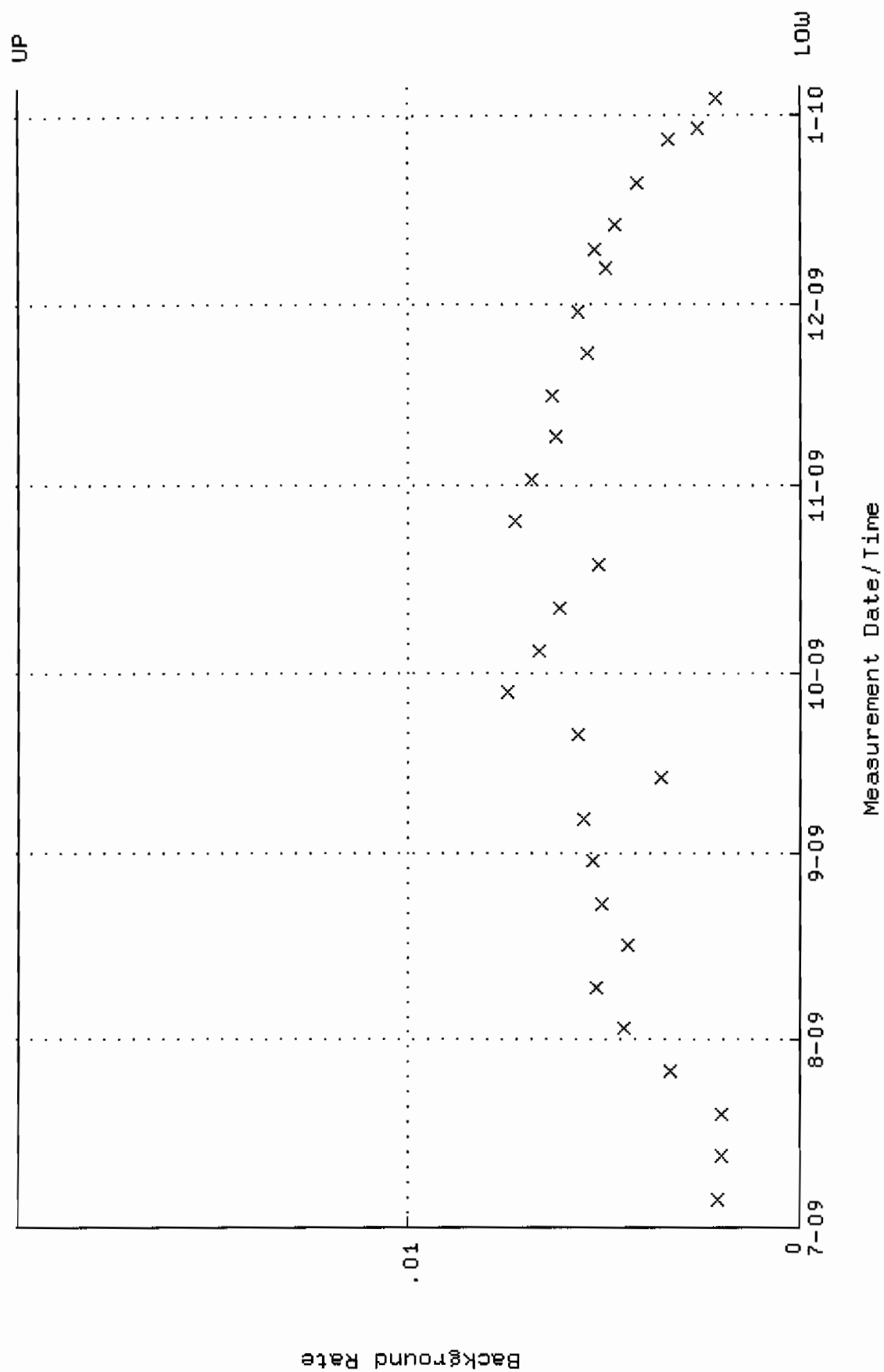
QA filename : DKA100:[ENV\_ALPHA.QA.w]W037.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



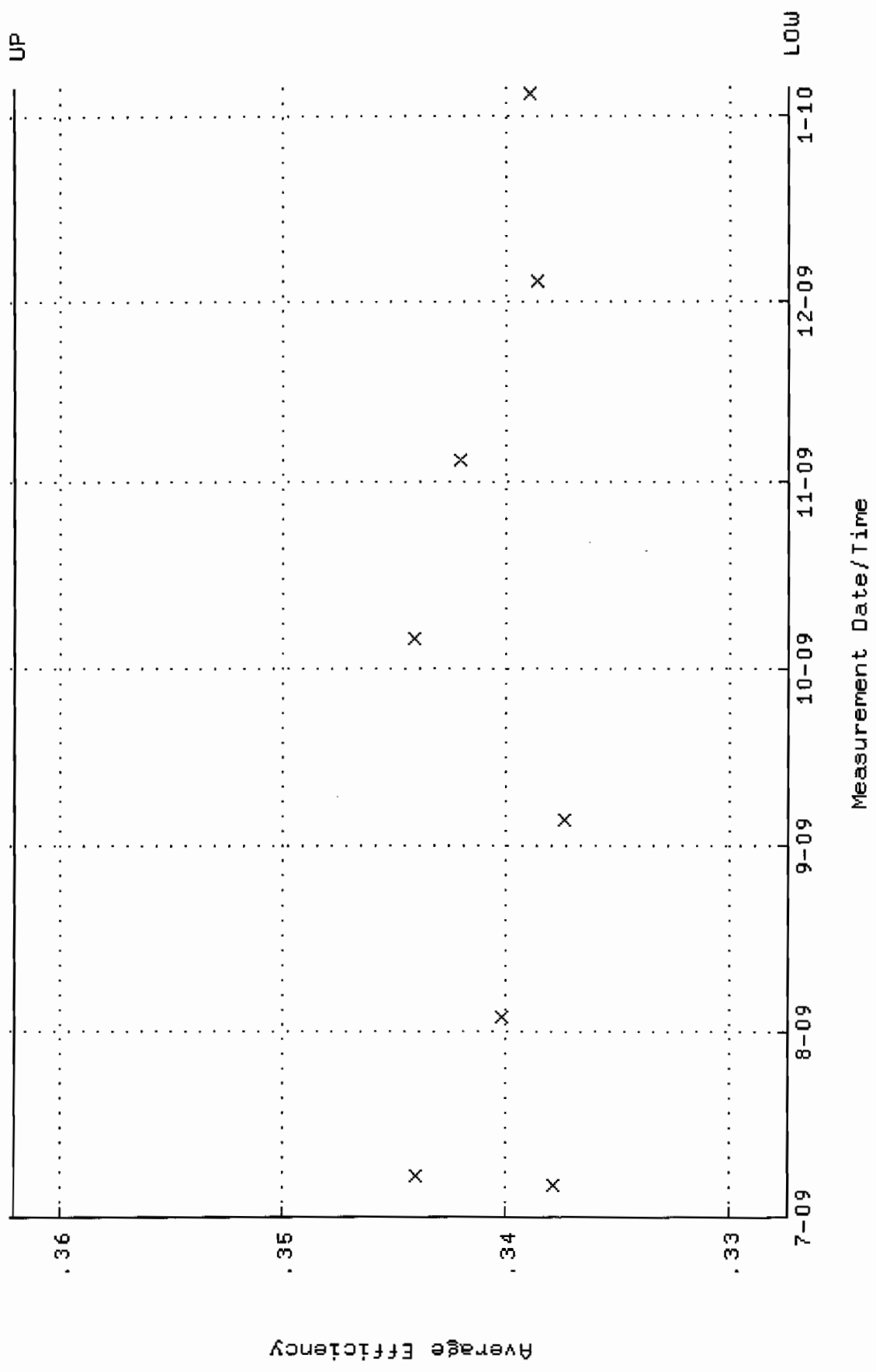
QA filename : DKA100:[ENV\_ALPHA.QA.W]W037.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000



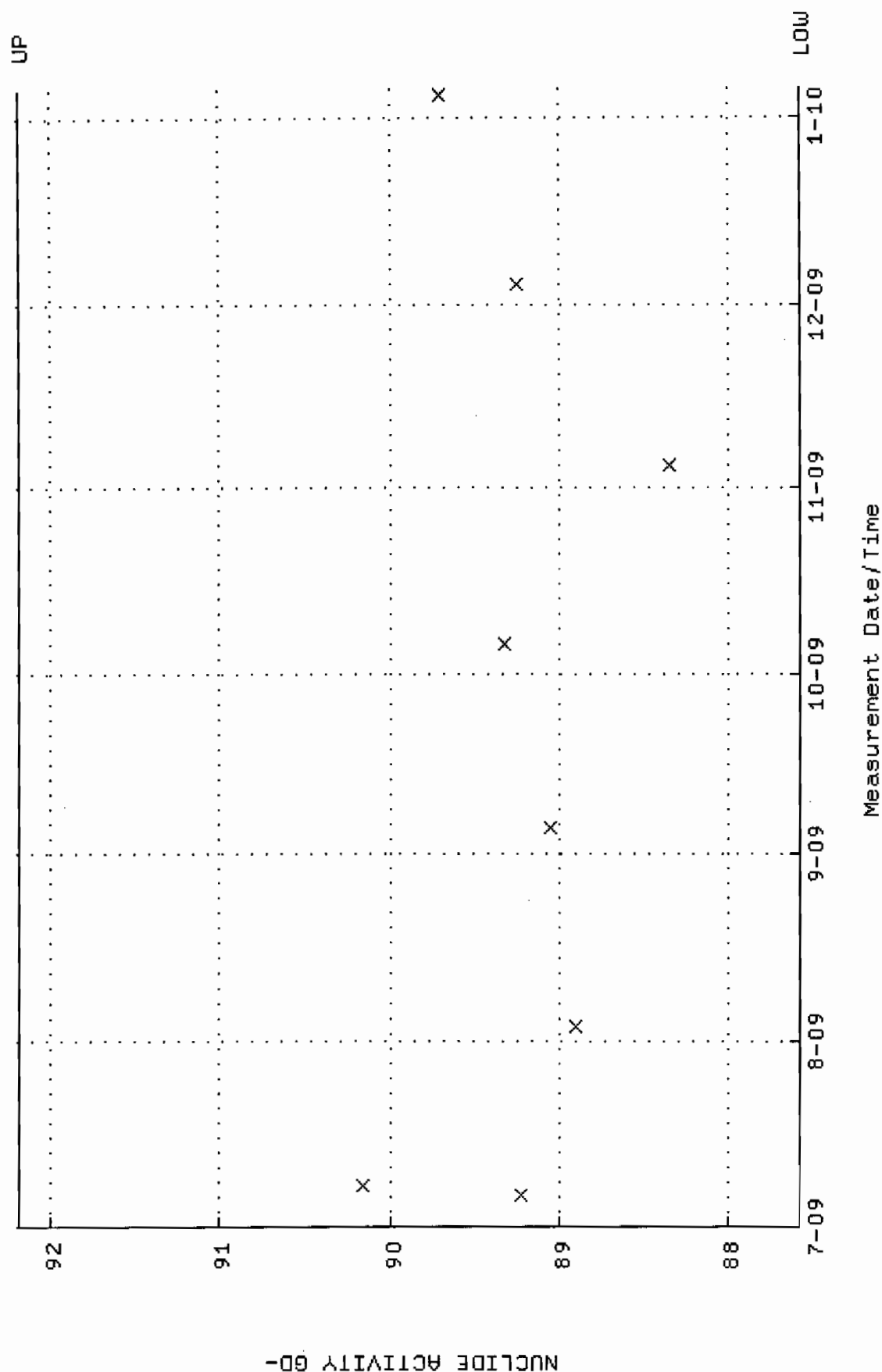
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QA filename      : DKA100:[ENV_ALPHA.QA.B]B037.QAF;1
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 5-JUL-2009 15:12:00 through 5-JAN-
Lower/Upper Lmts: 0.000000E+00 through 2.000000E+02
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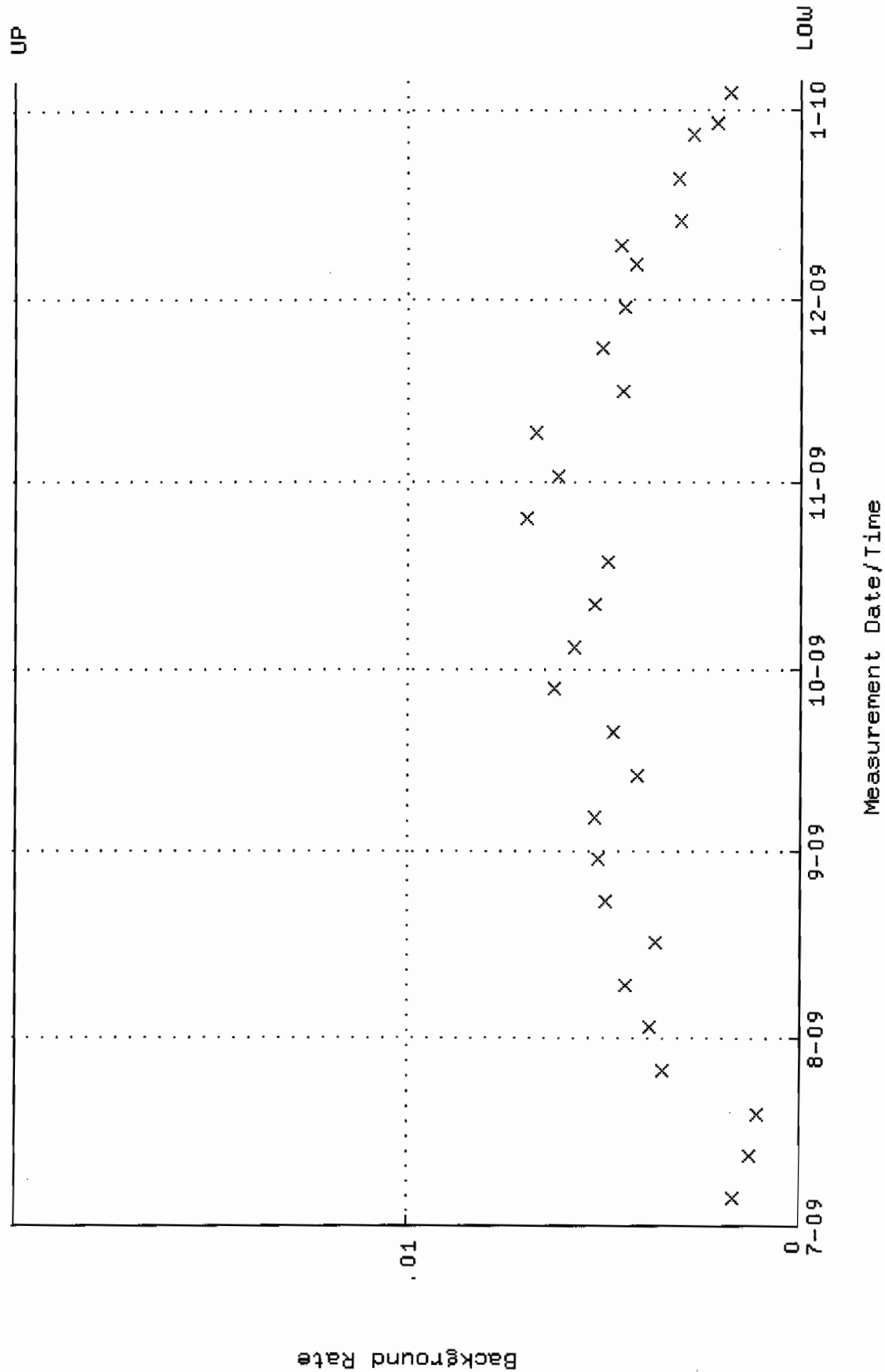
QA filename : DKA100:[ENV\_ALPHA.QA.W]W038.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.327380 through 0.362086



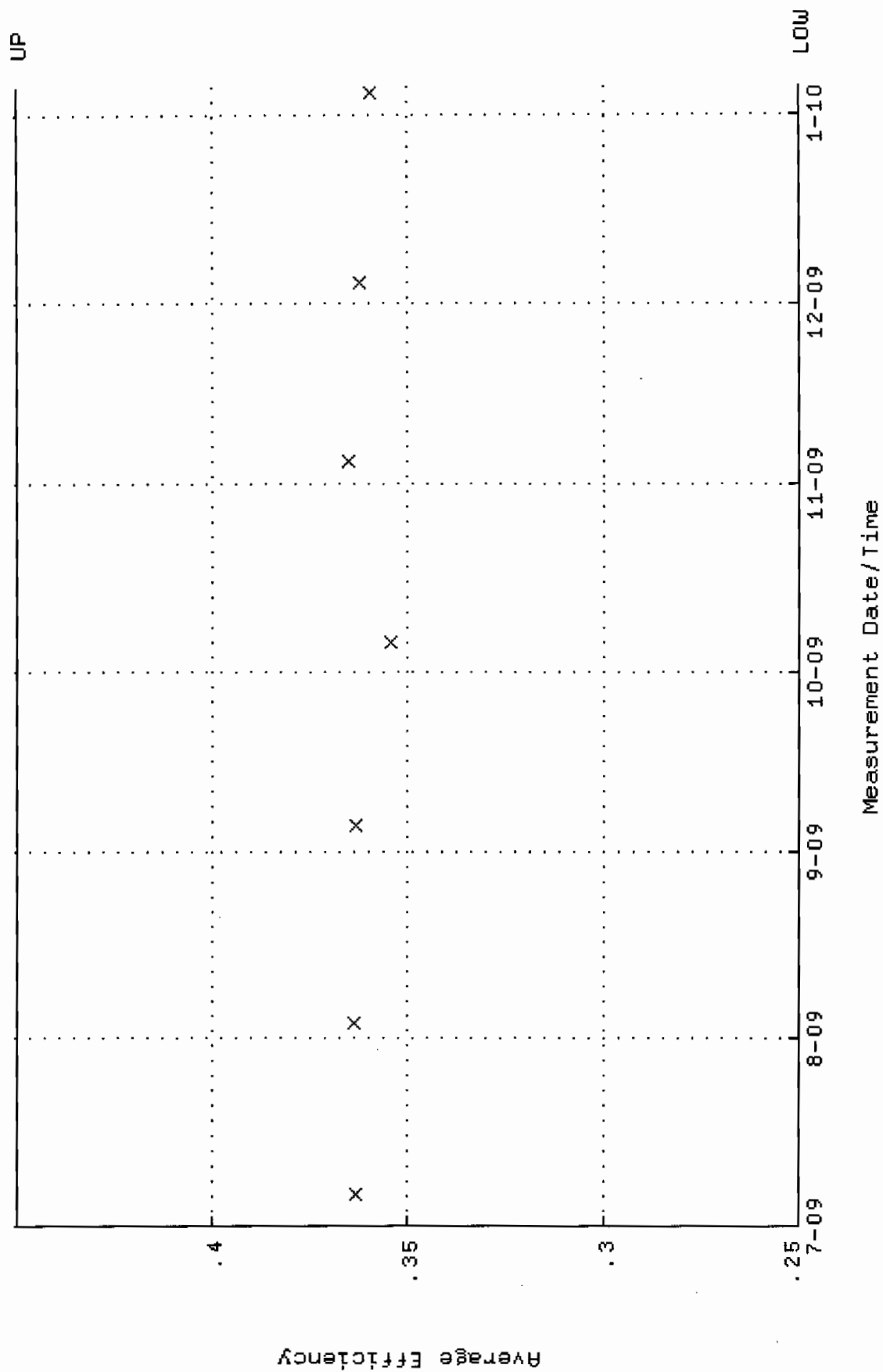
QA filename : DKA100:[ENV\_ALPHA.QA.W]W038.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.5715 through 92.1899



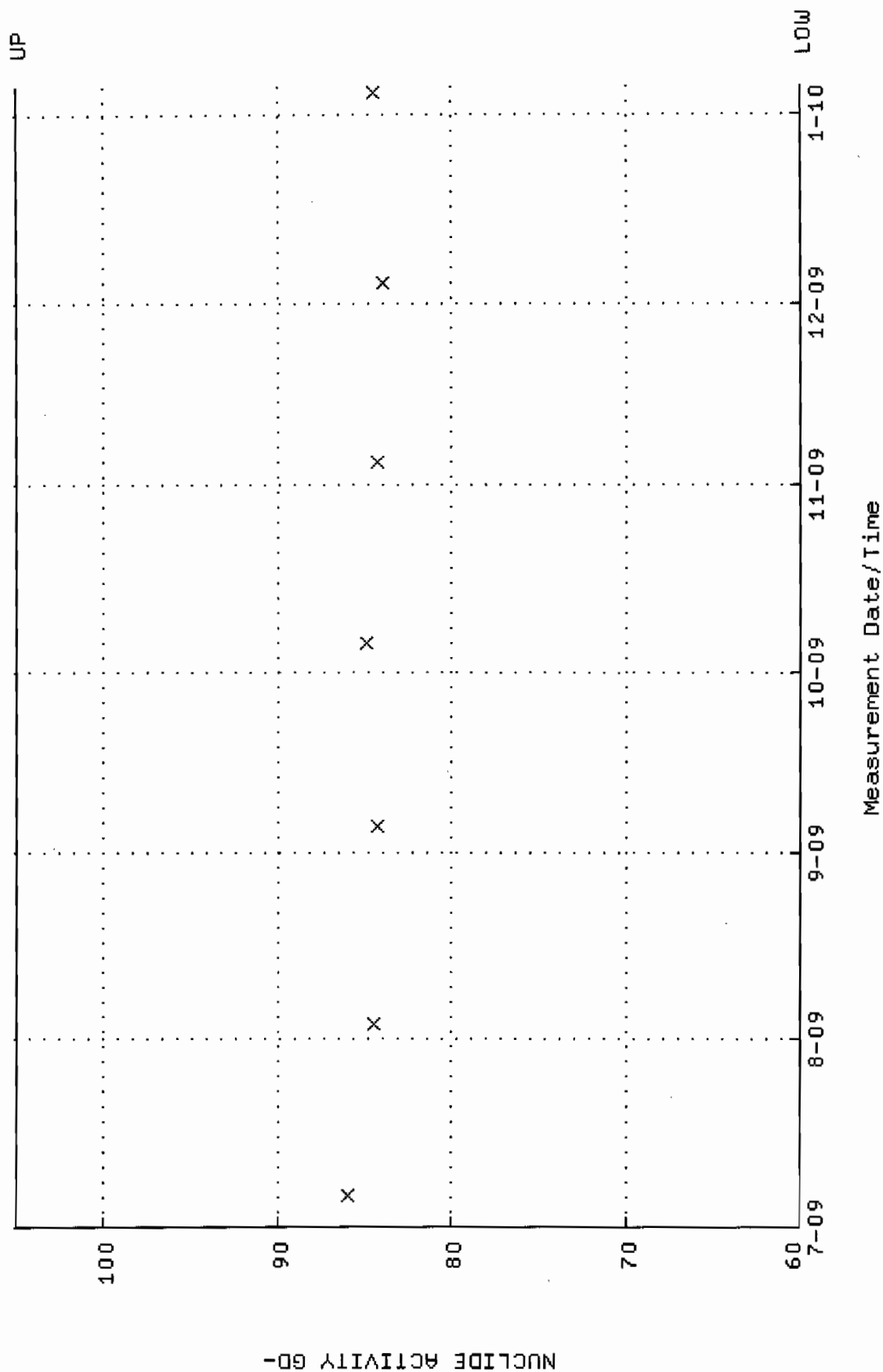
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 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W039.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000

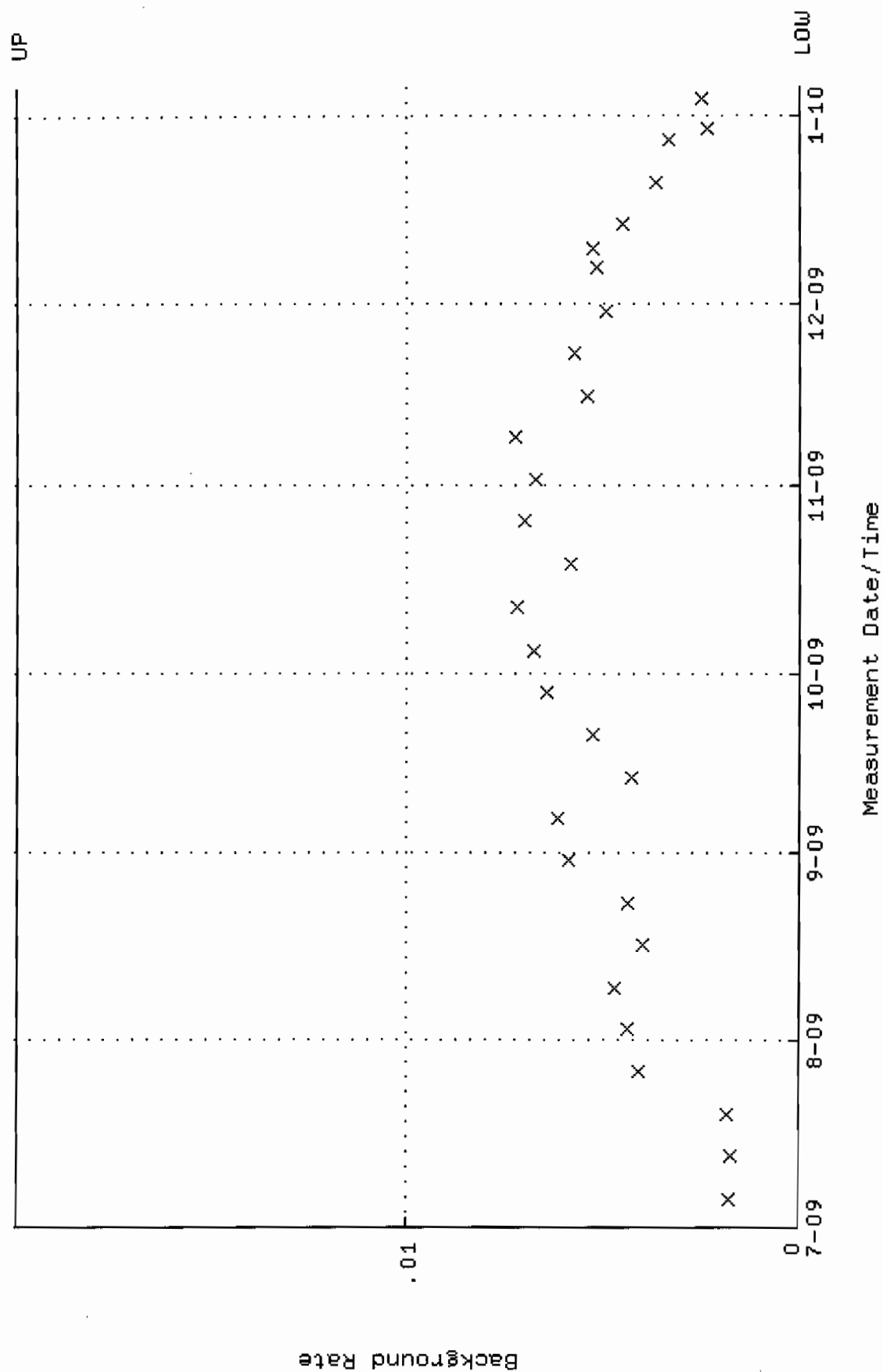


QA filename : DKA100:[ENV\_ALPHA.QA.W]W039.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000

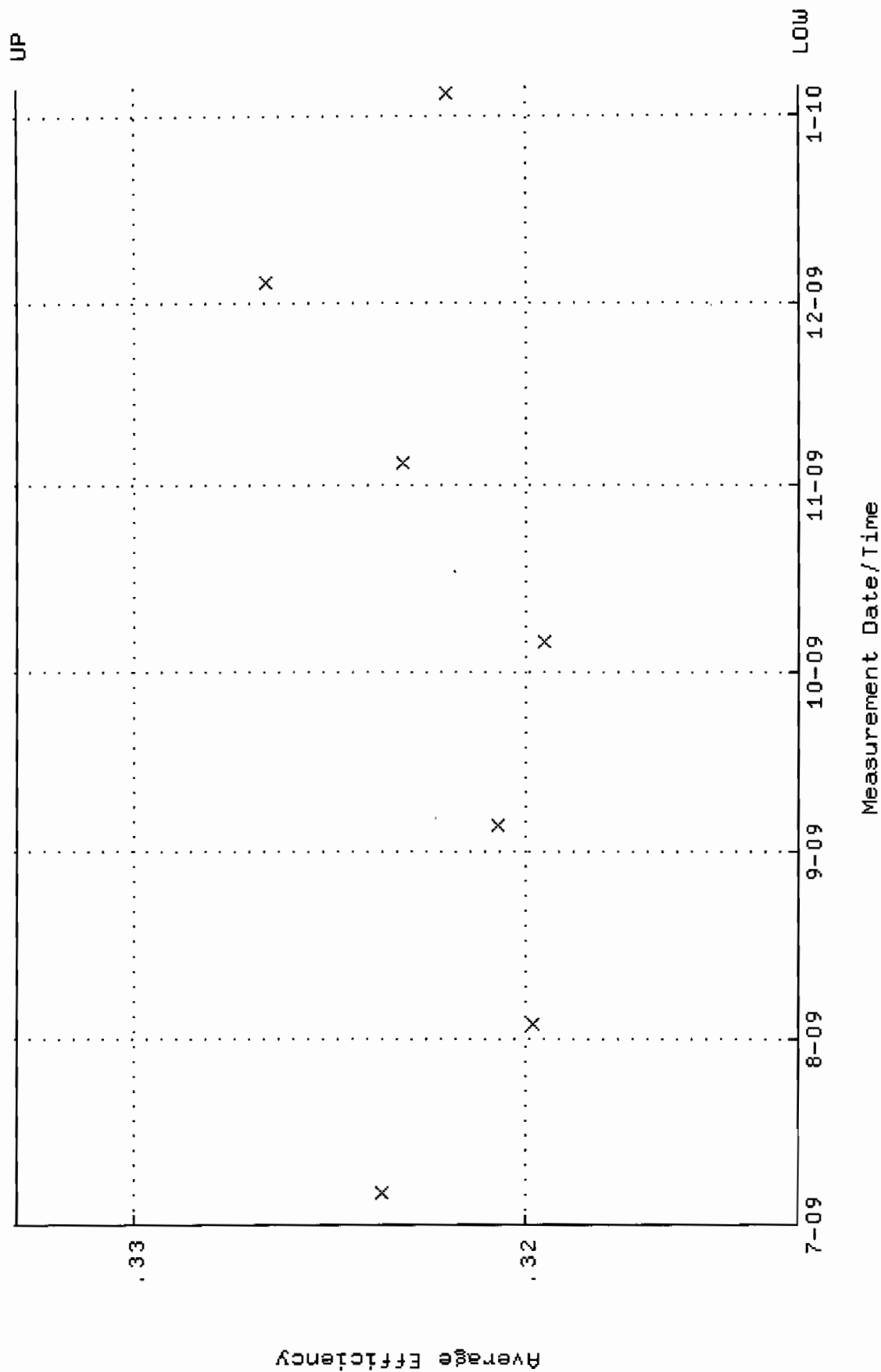




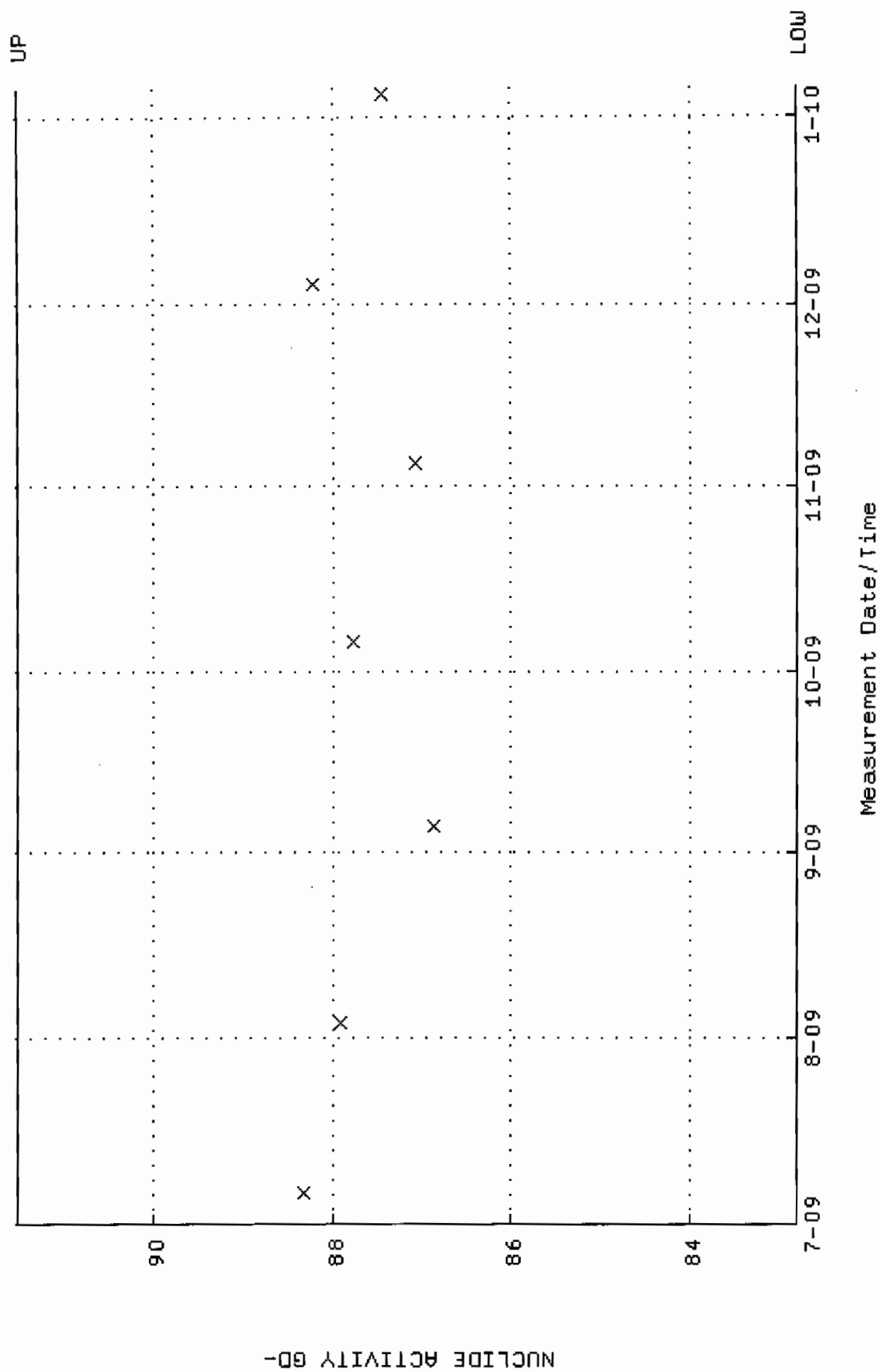
QA filename : DKA100:[ENV\_ALPHA.QA.B]B039.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



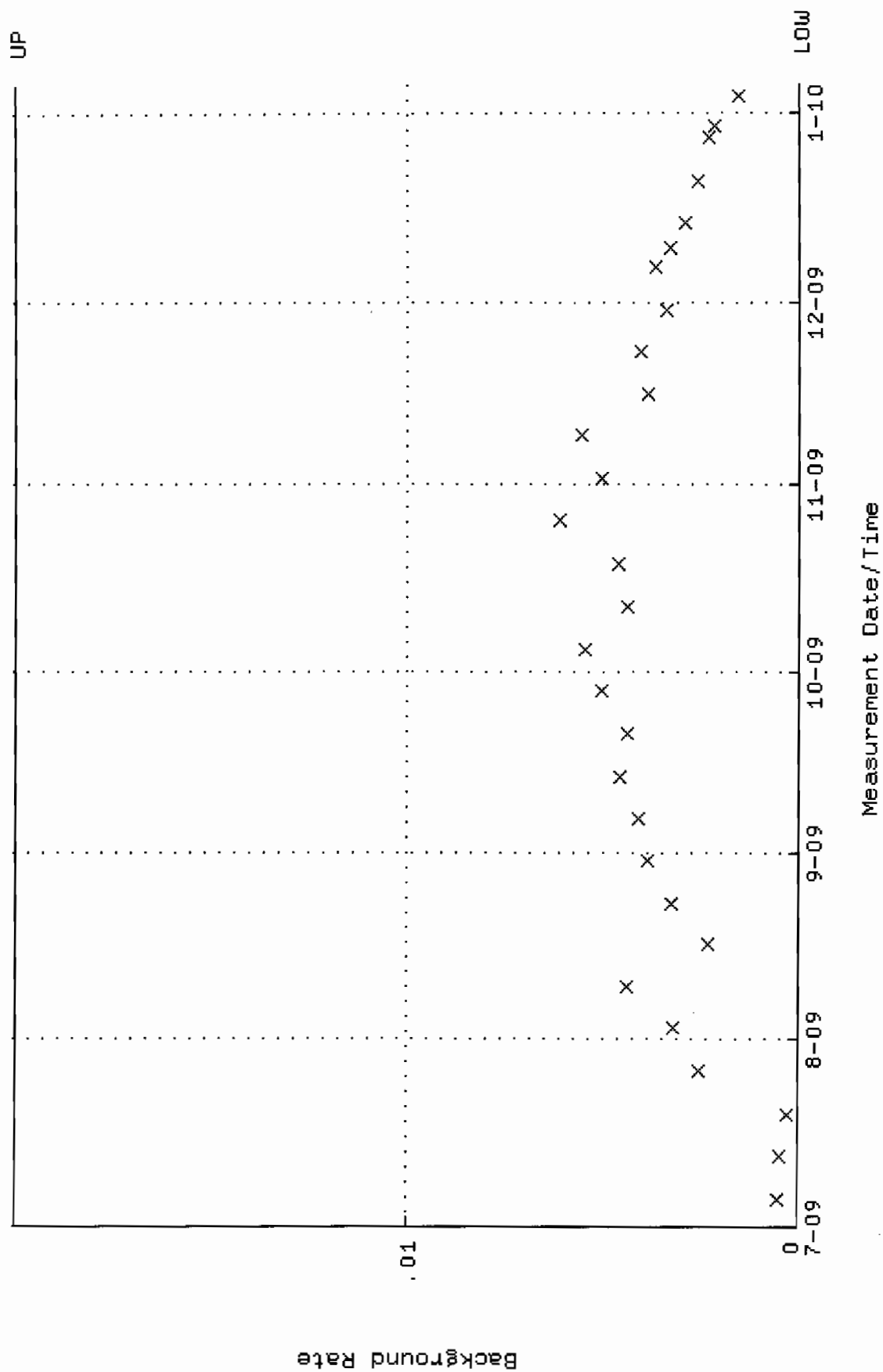
QA filename : DKA100:[ENV\_ALPHA.QA.W]W040.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.313016 through 0.333016



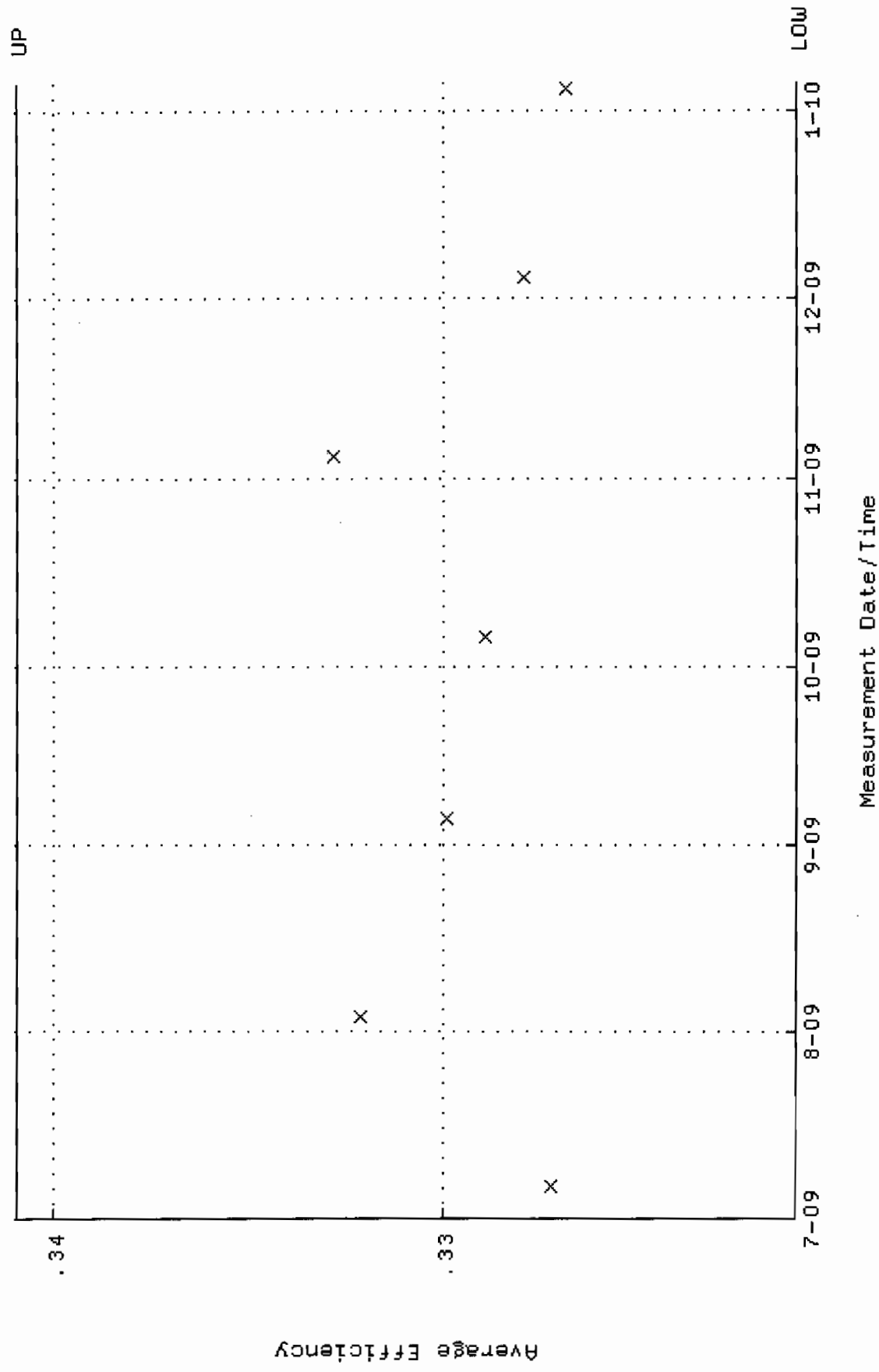
QA filename : DKA100:[ENV\_ALPHA.QA.W]W040.QAF;3  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 82.8065 through 91.5229



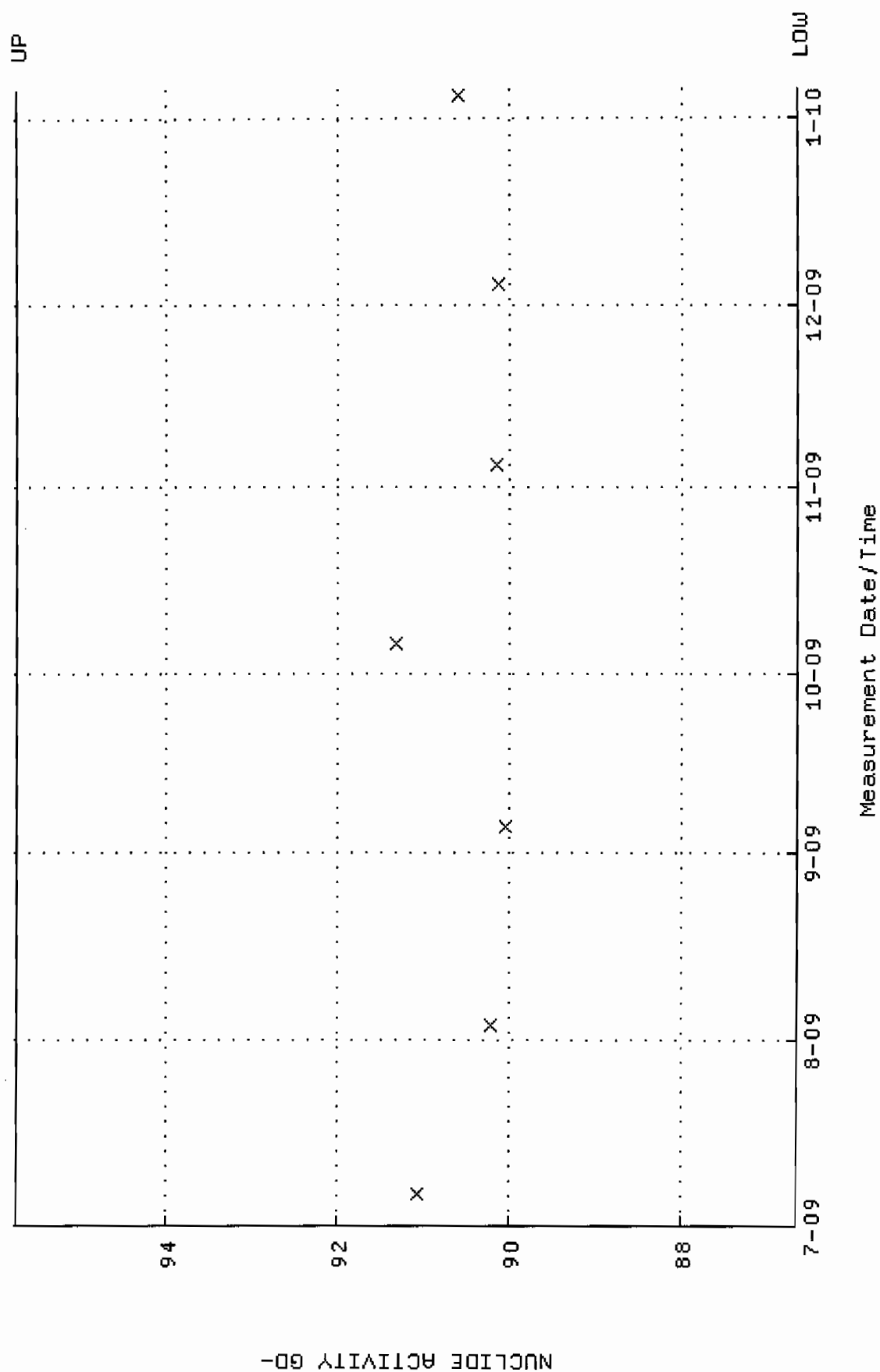
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 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



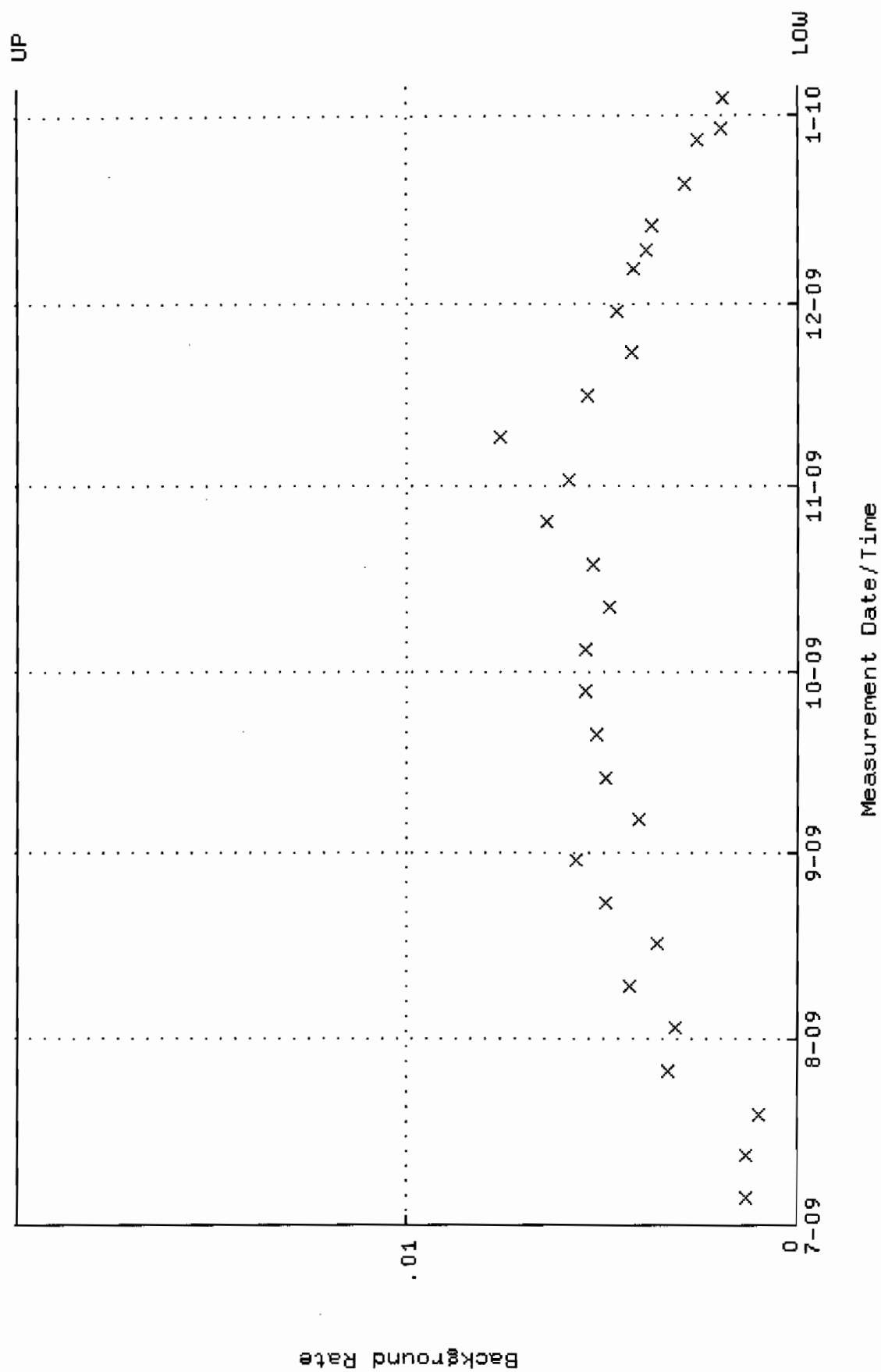
QA filename : DKA100:[ENV\_ALPHA.QA.W]W041.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.320943 through 0.340943



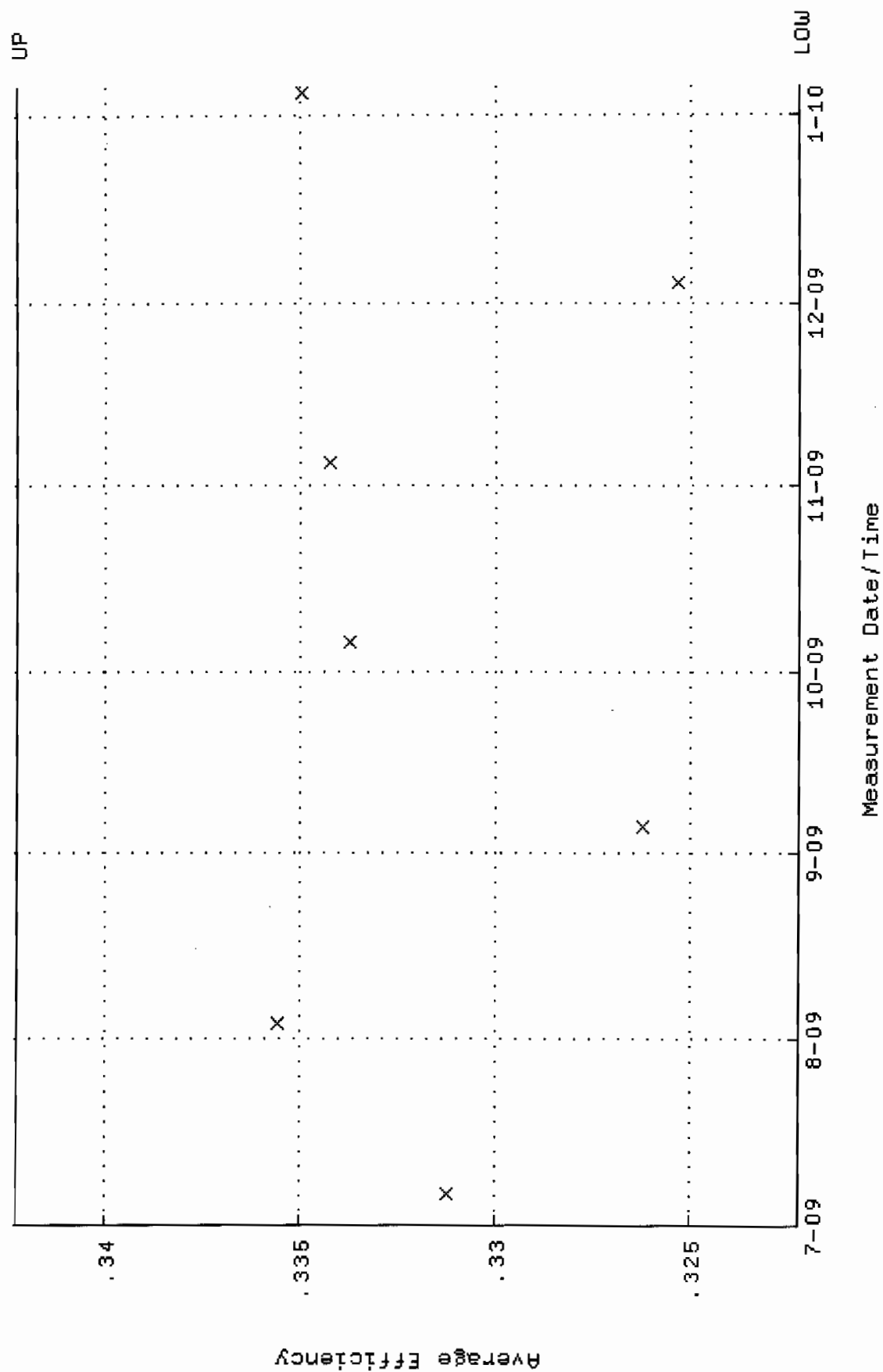
QA filename : DKA100:[ENV\_ALPHA.QA.W]W041.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.6435 through 95.7639



QA filename : DKA100:[ENV\_ALPHA.QA.B]B041.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

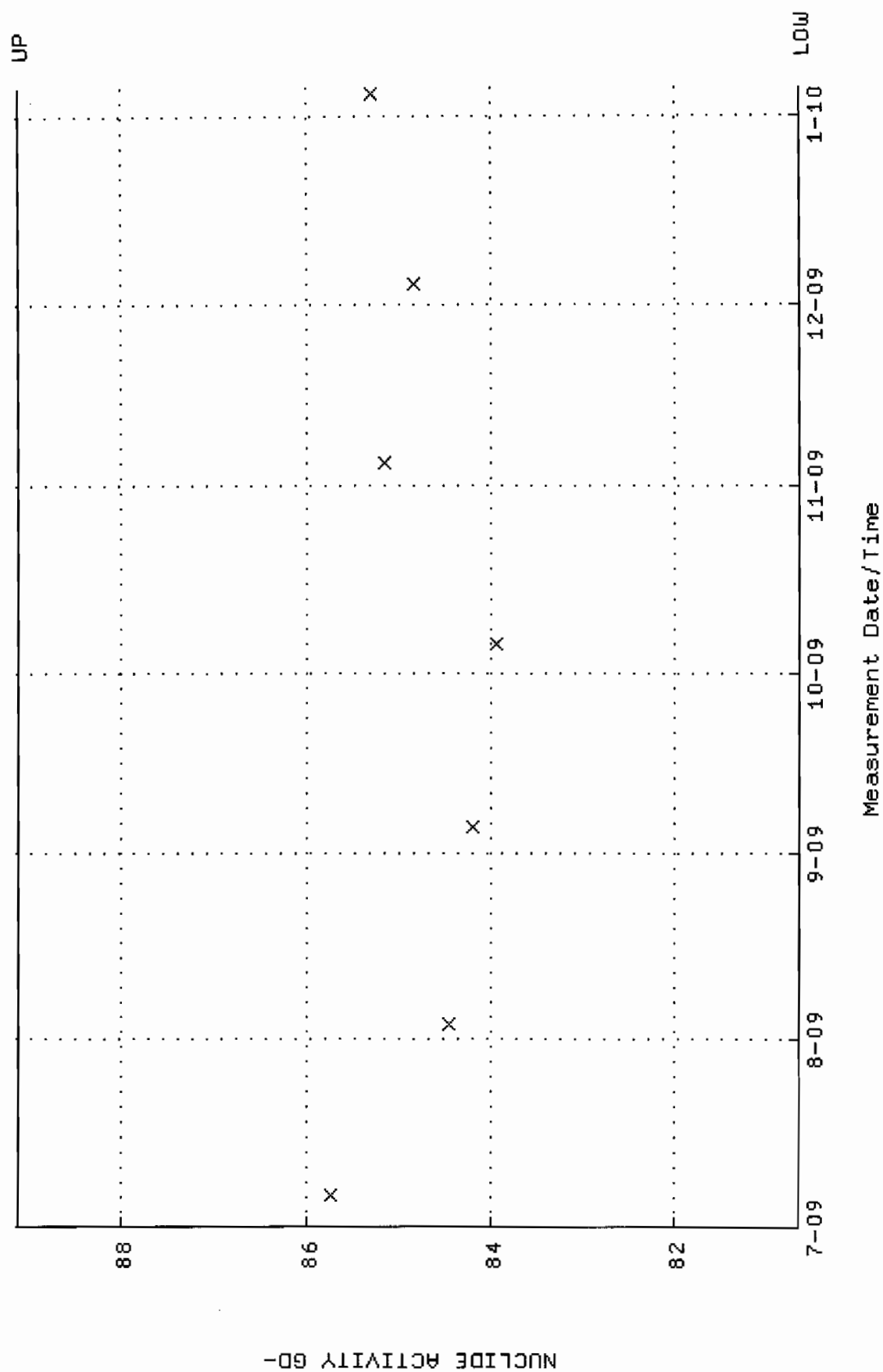


QA filename : DKA100:[ENV\_ALPHA.QA.W]W042.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.322243 through 0.342243

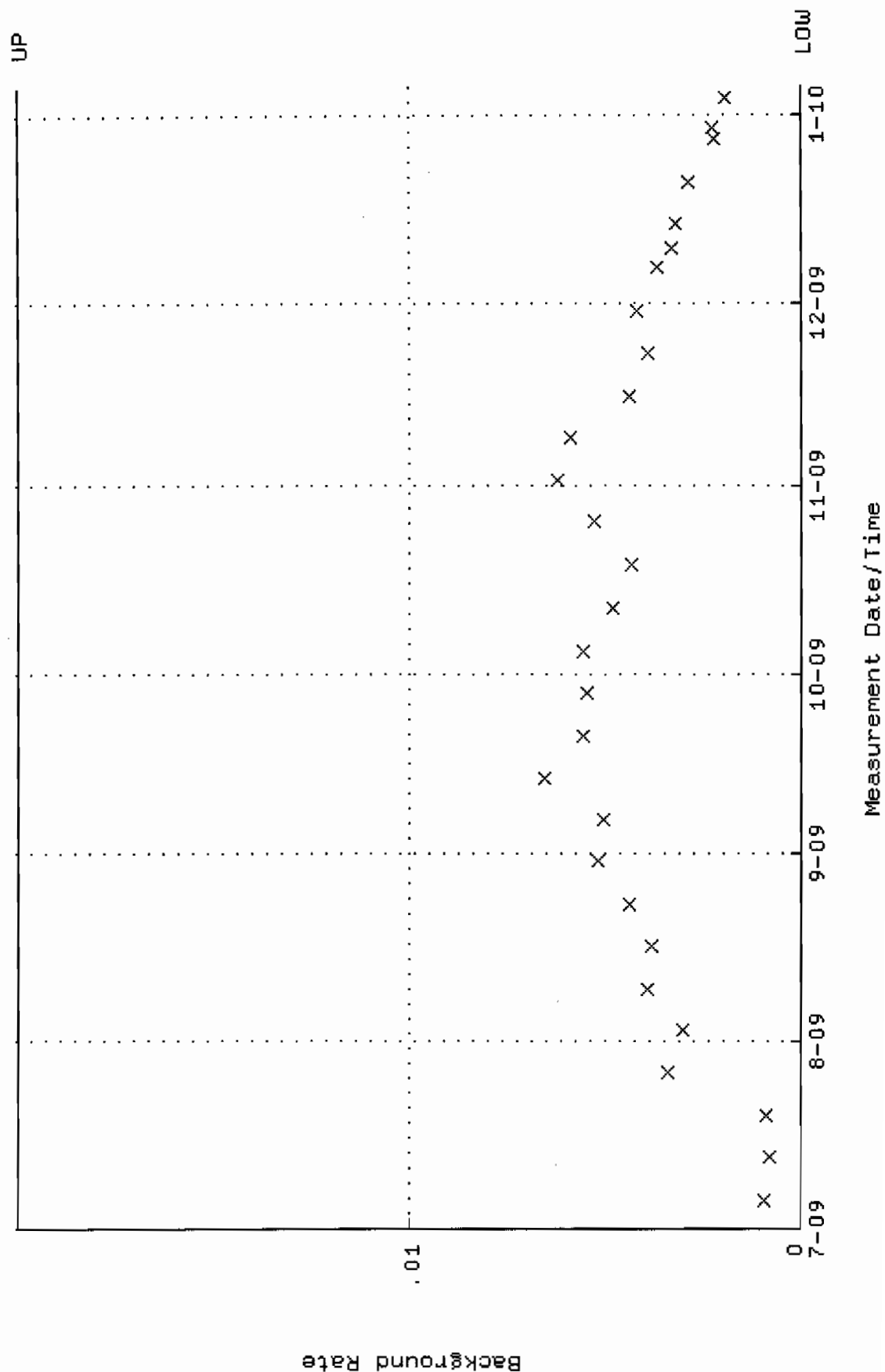




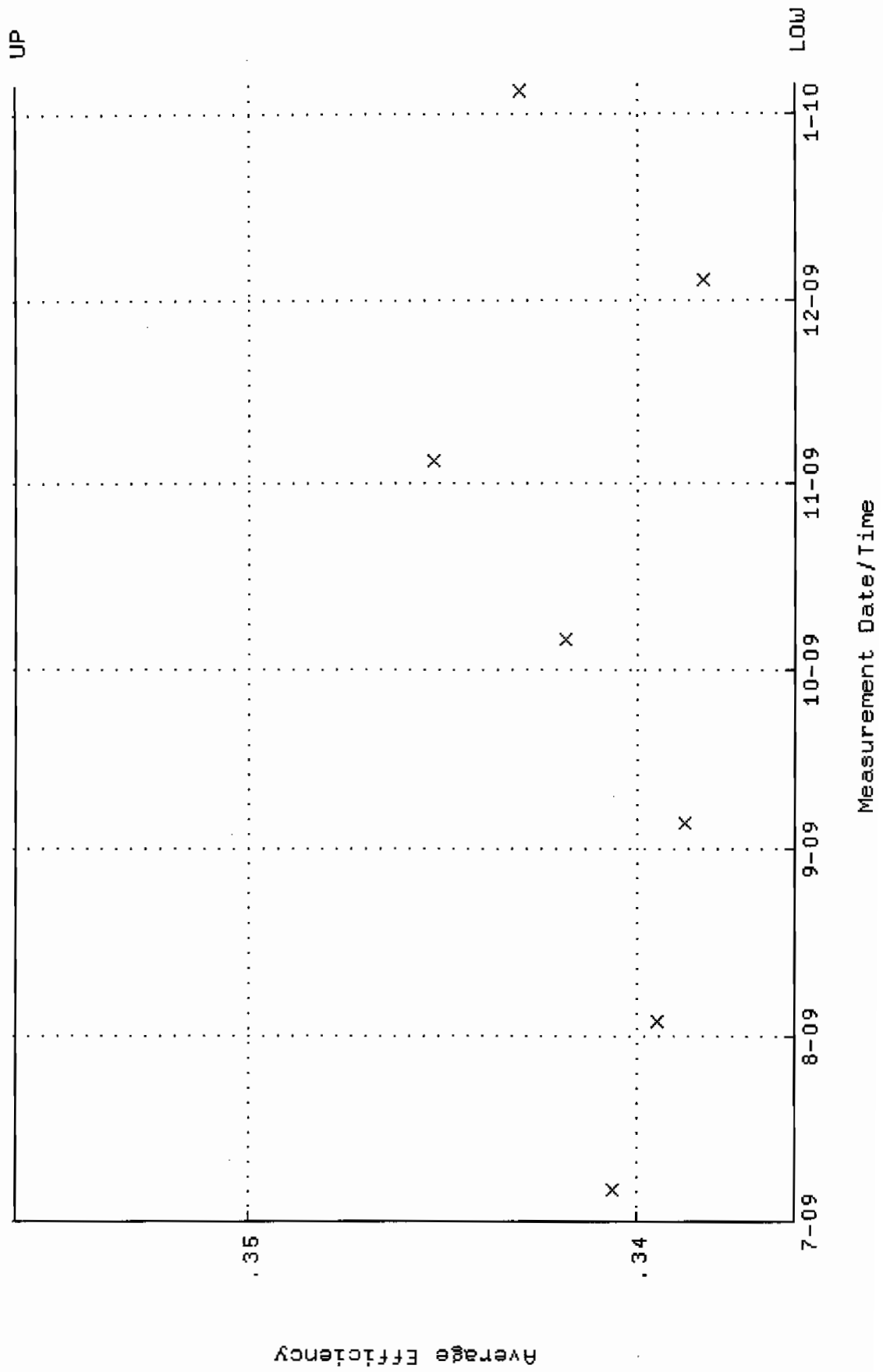
QA filename : DKA100:[ENV\_ALPHA.QA.W]W042.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 80.6389 through 89.1273



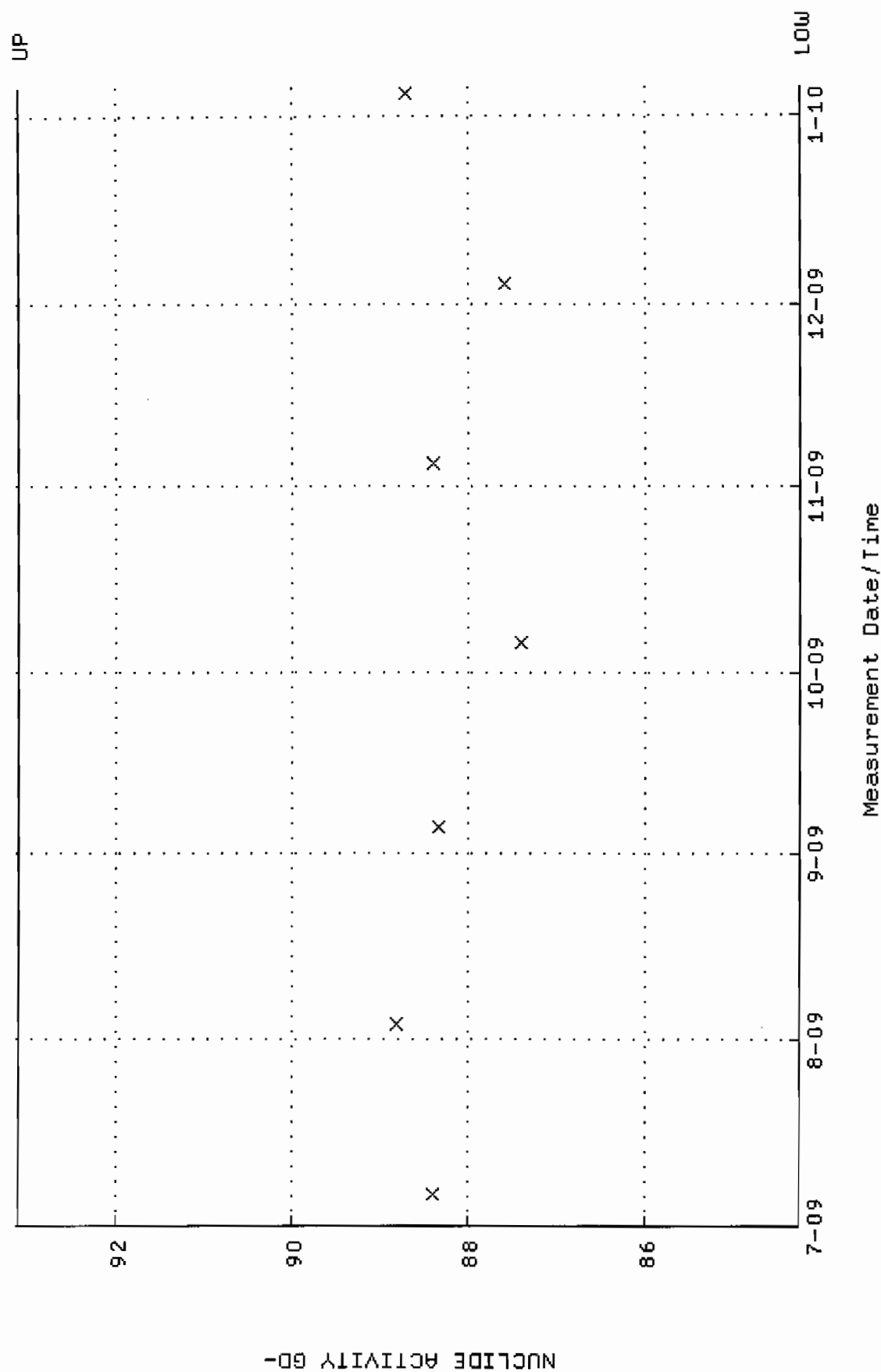
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 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



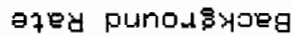
QA filename : DKA100:[ENV-ALPHA.QA.W]W043.QAF;102  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.335973 through 0.355973



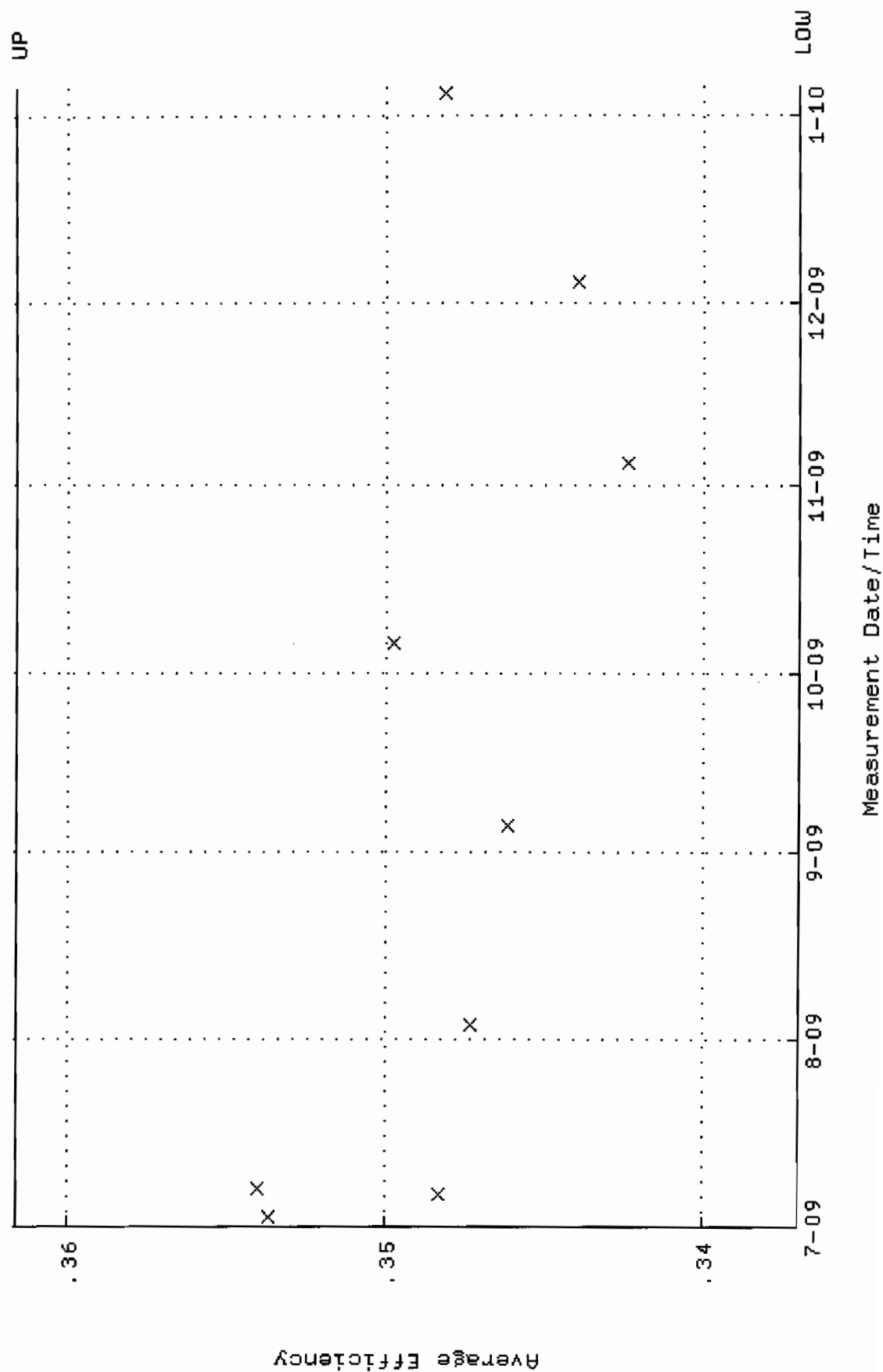
QA filename : DKA100:[ENV\_ALPHA.QA.W]W043.QAF;102  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.2440 through 93.1118



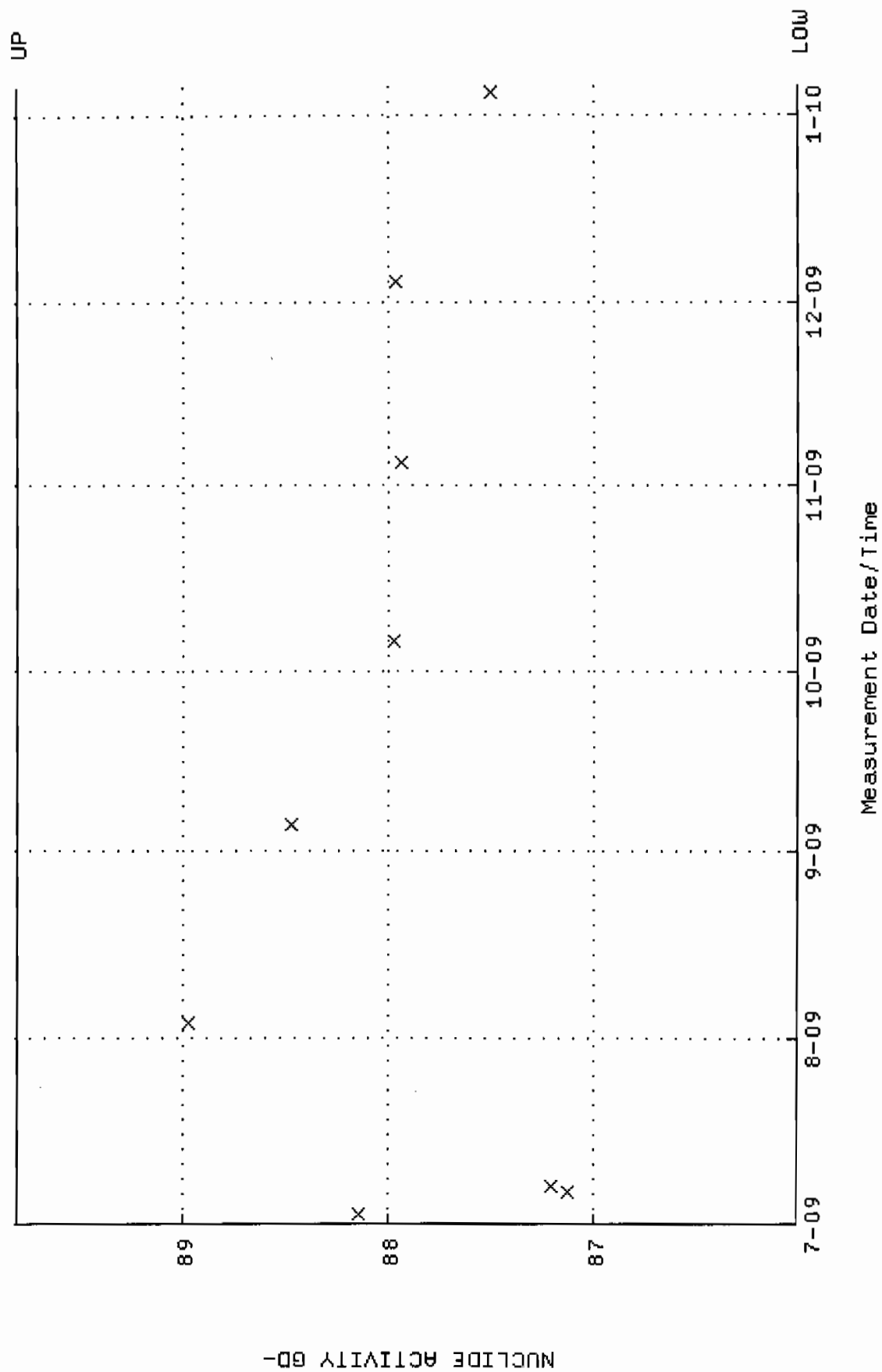
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



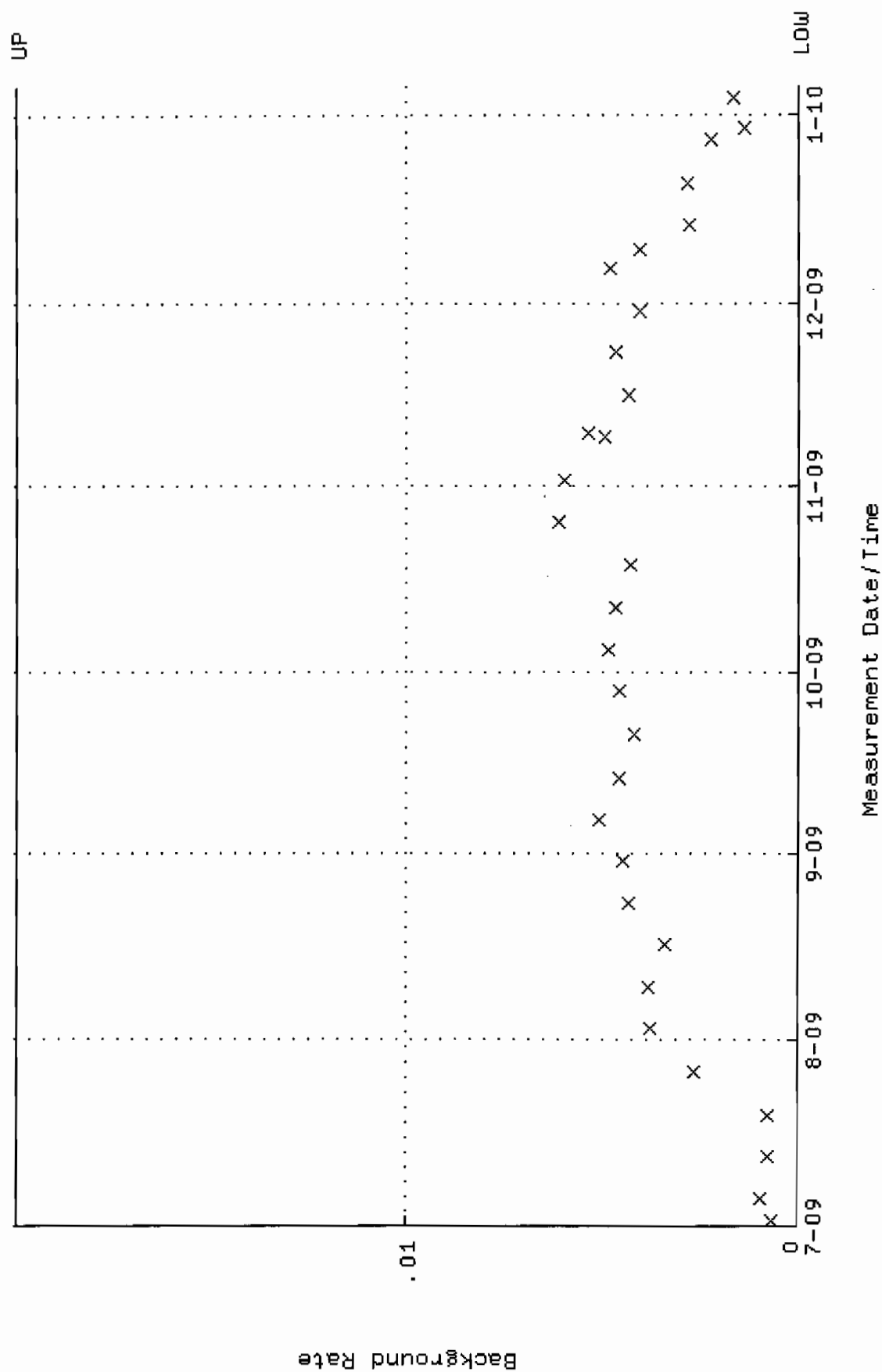
QA filename : DKA100:[ENV\_ALPHA.QA.W]W044.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUL-2009 15:04:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.336958 through 0.361648



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

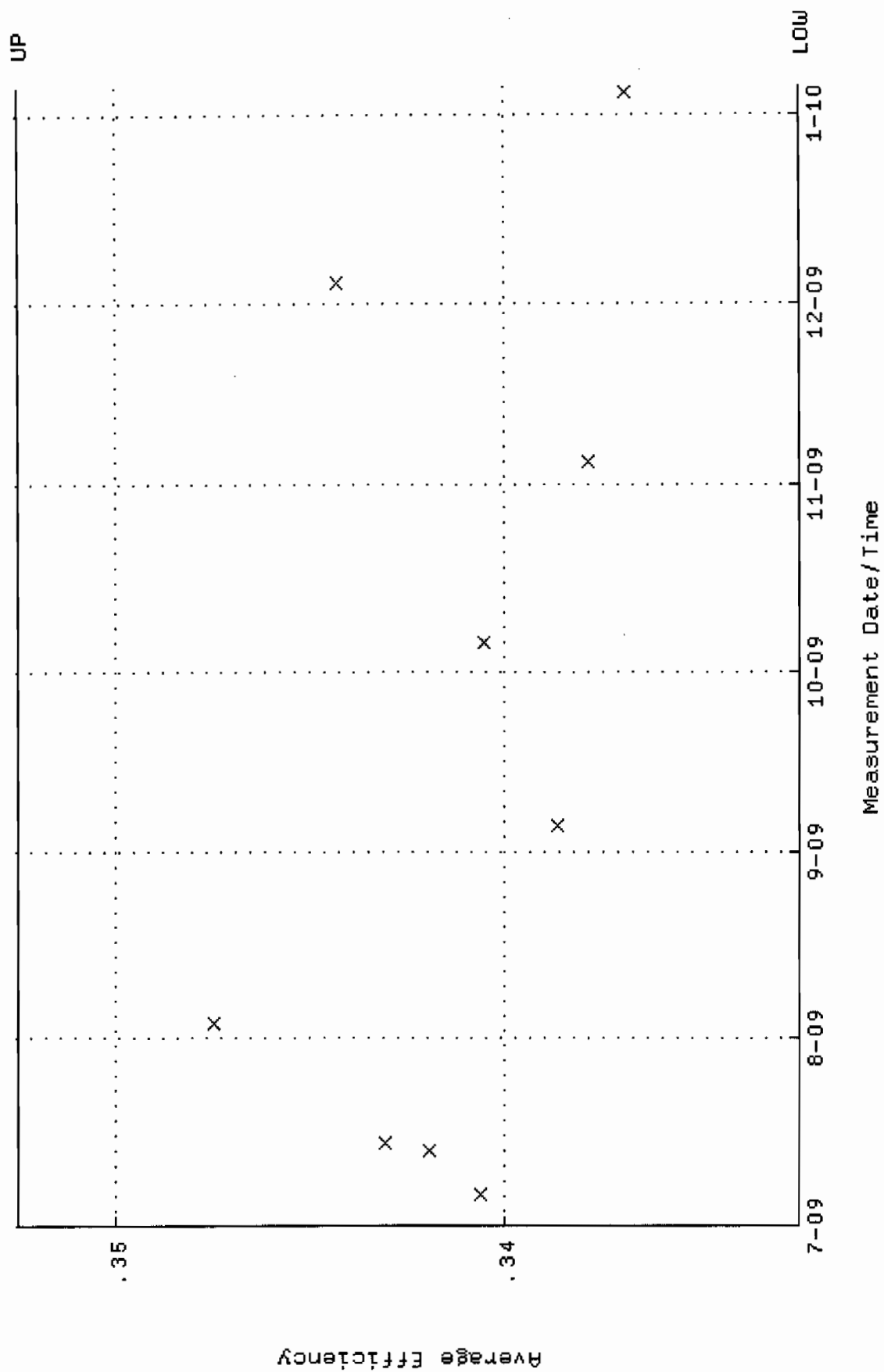


QA filename : DKA100:[ENV\_ALPHA.QA.B]B044.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUL-2009 21:39:56 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

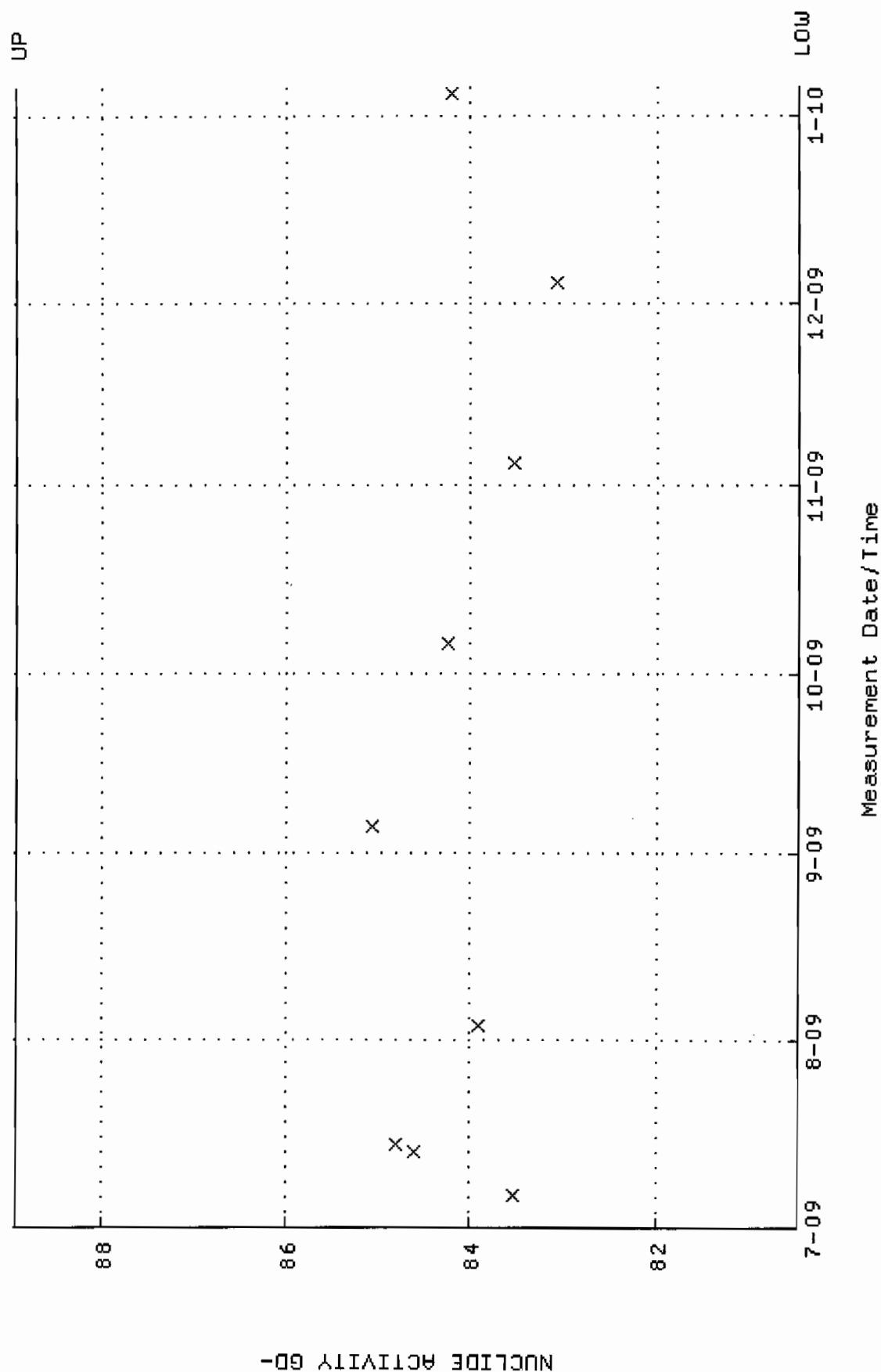




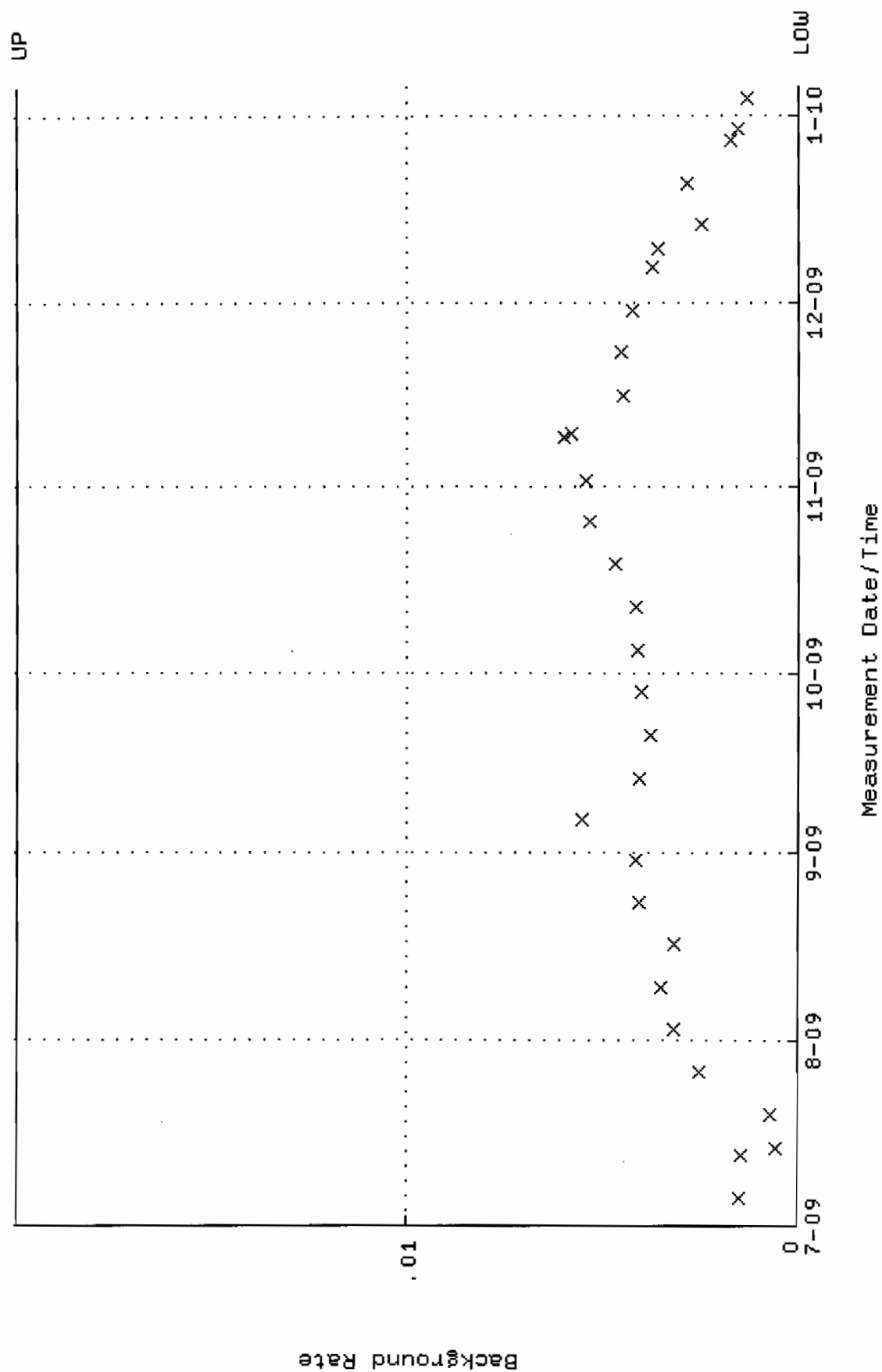
QA filename : DKA100:[ENV\_ALPHA.QA.W]W045.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.332472 through 0.352472



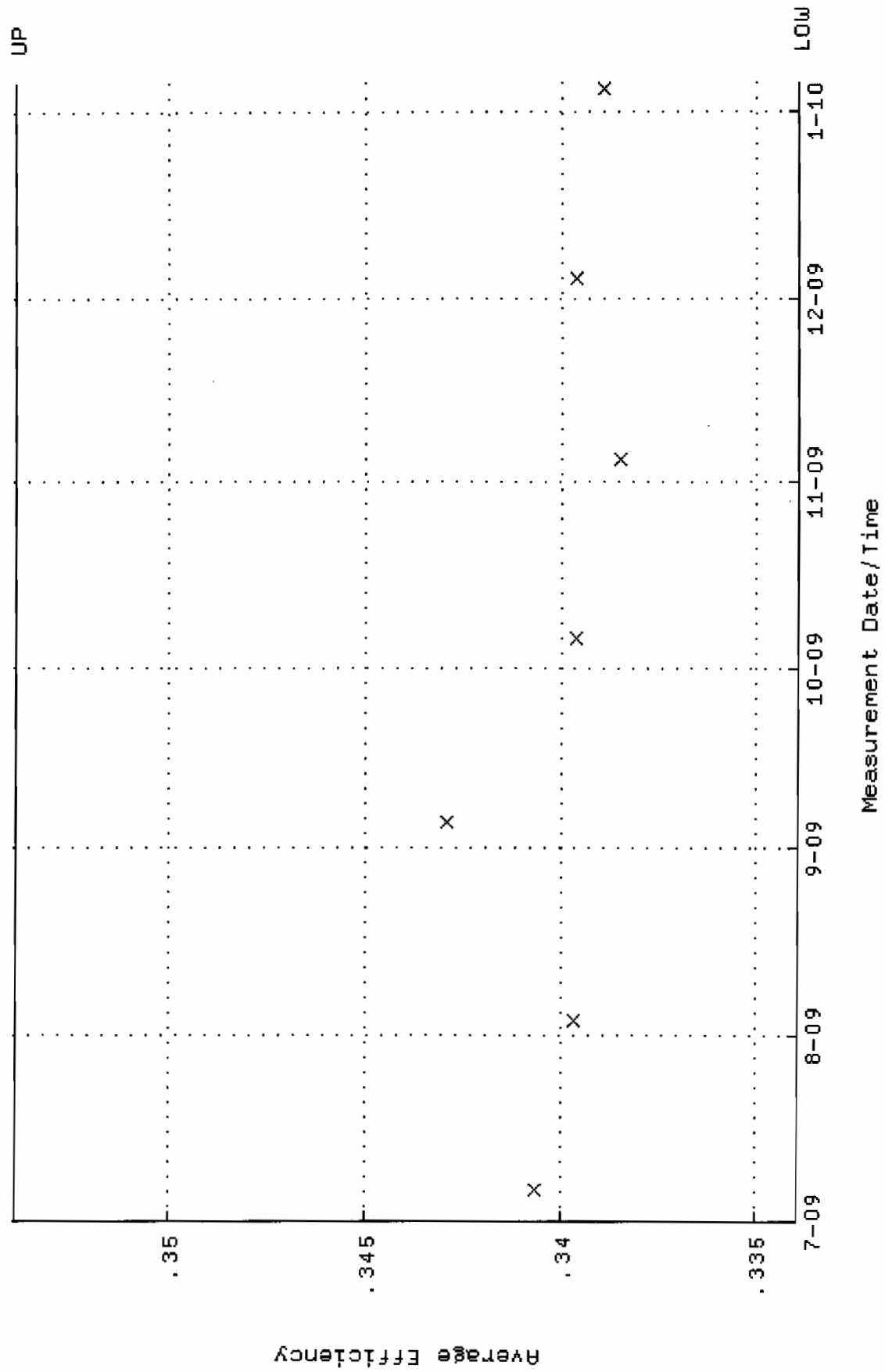
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 80.4622 through 88.9320



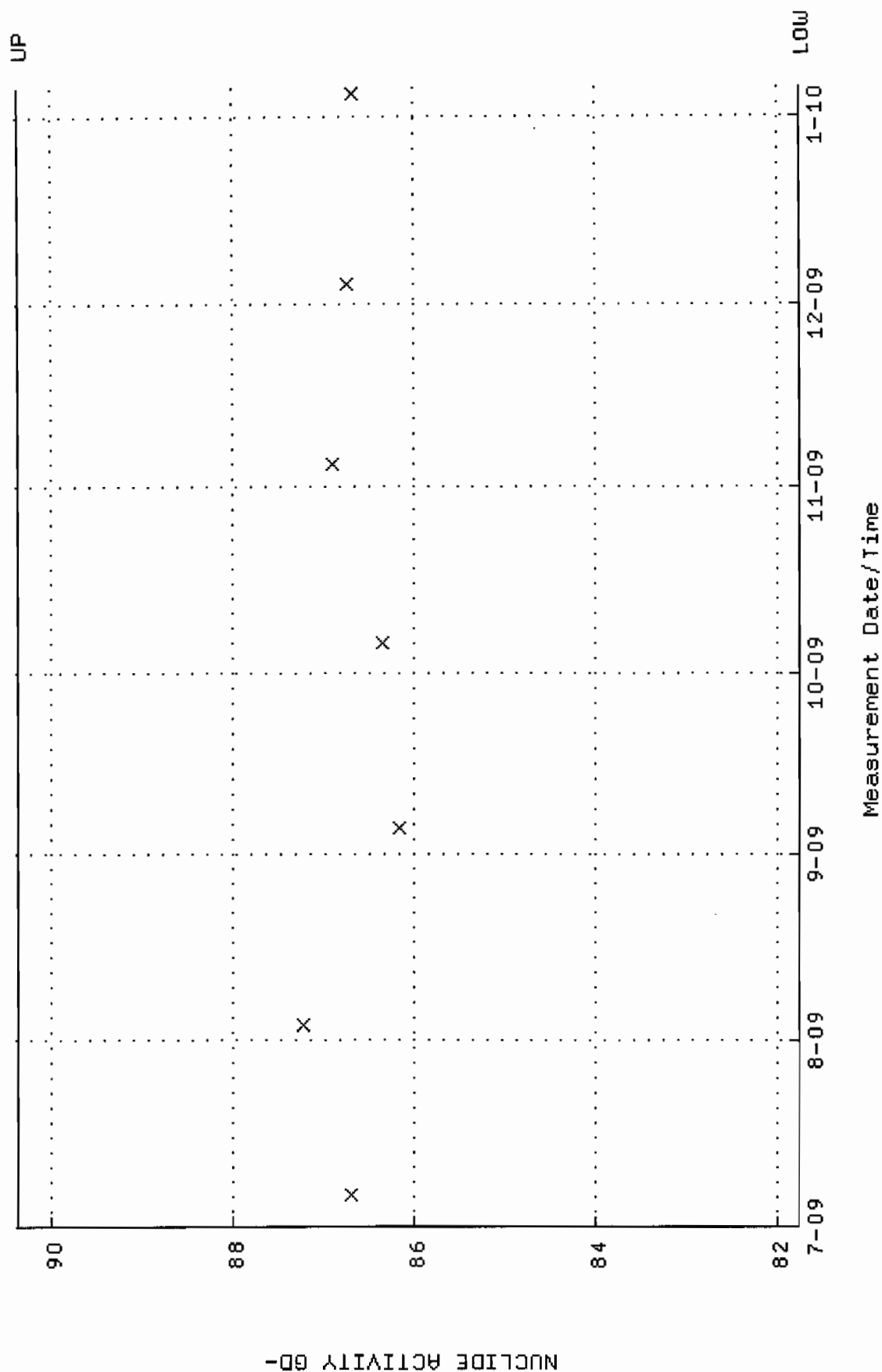
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 Parameter Name : BACKRATE (Background Rate)  
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



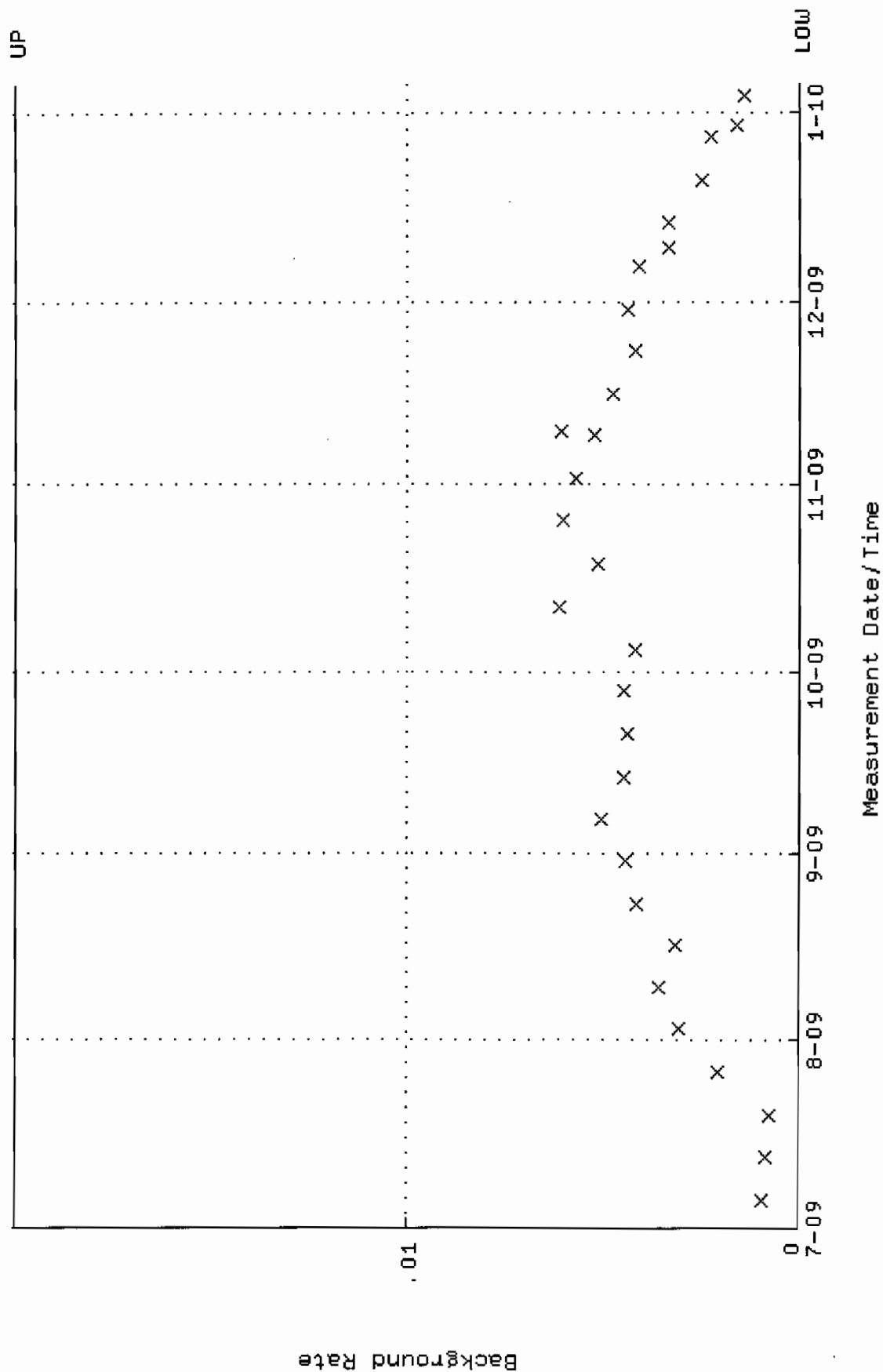
QA filename : DKA100:[ENV\_ALPHA.QA.W]W046.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.333927 through 0.353927



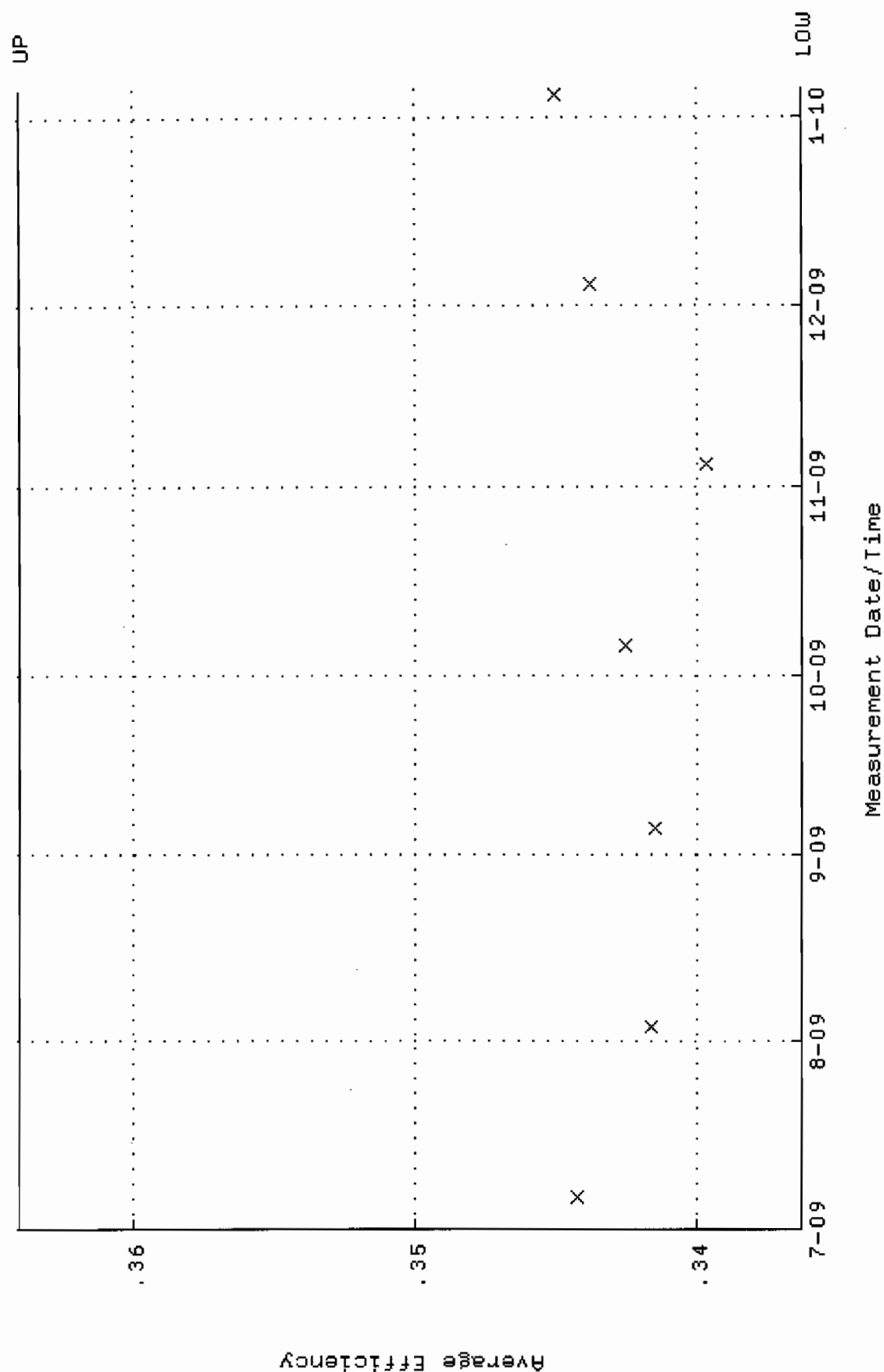
QA filename : DKA100:[ENV\_ALPHA.QA.W]W046.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 81.7568 through 90.3628



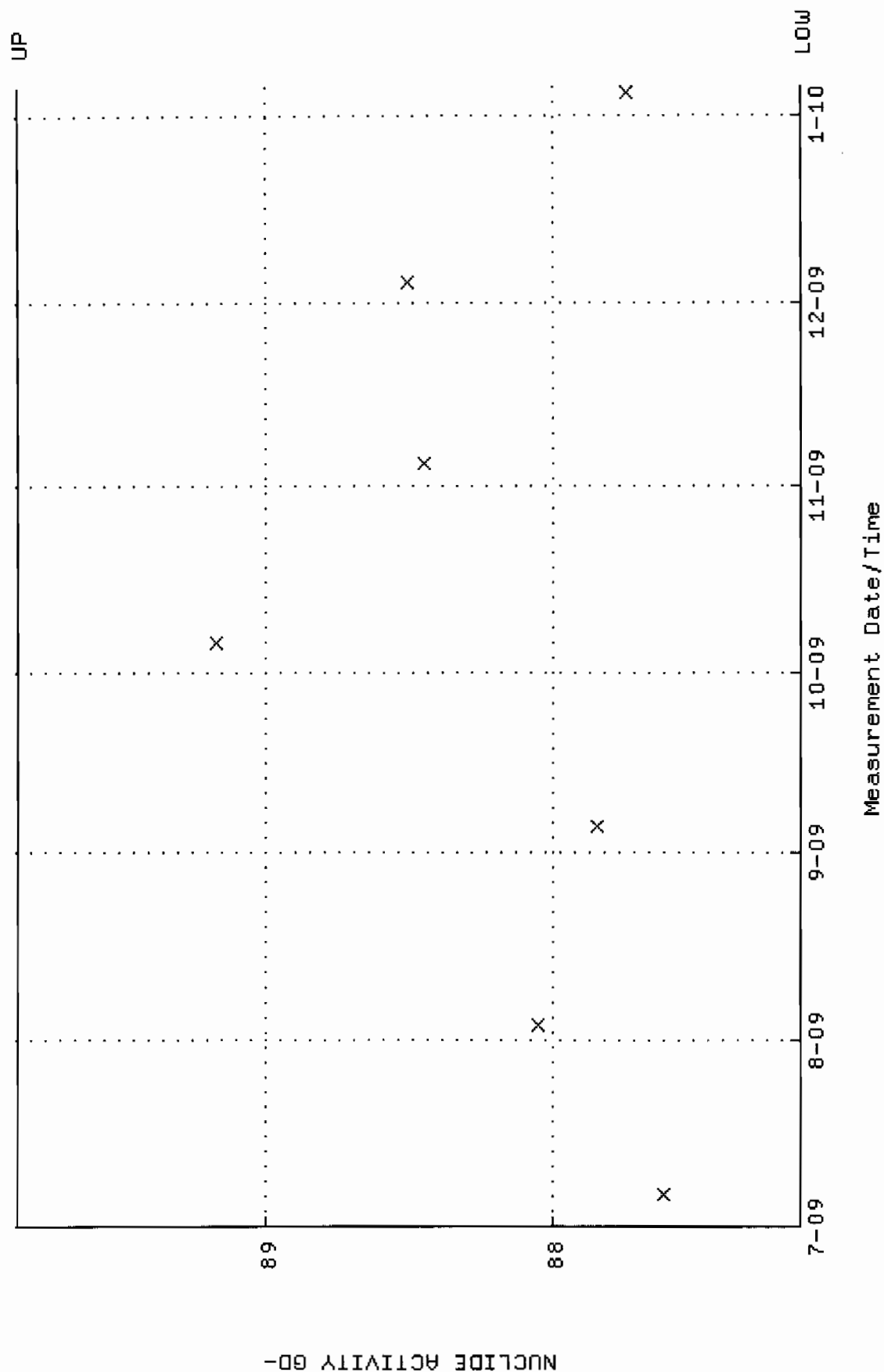
QA filename : DKA100:[ENV\_ALPHA.QA.B]B046.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



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

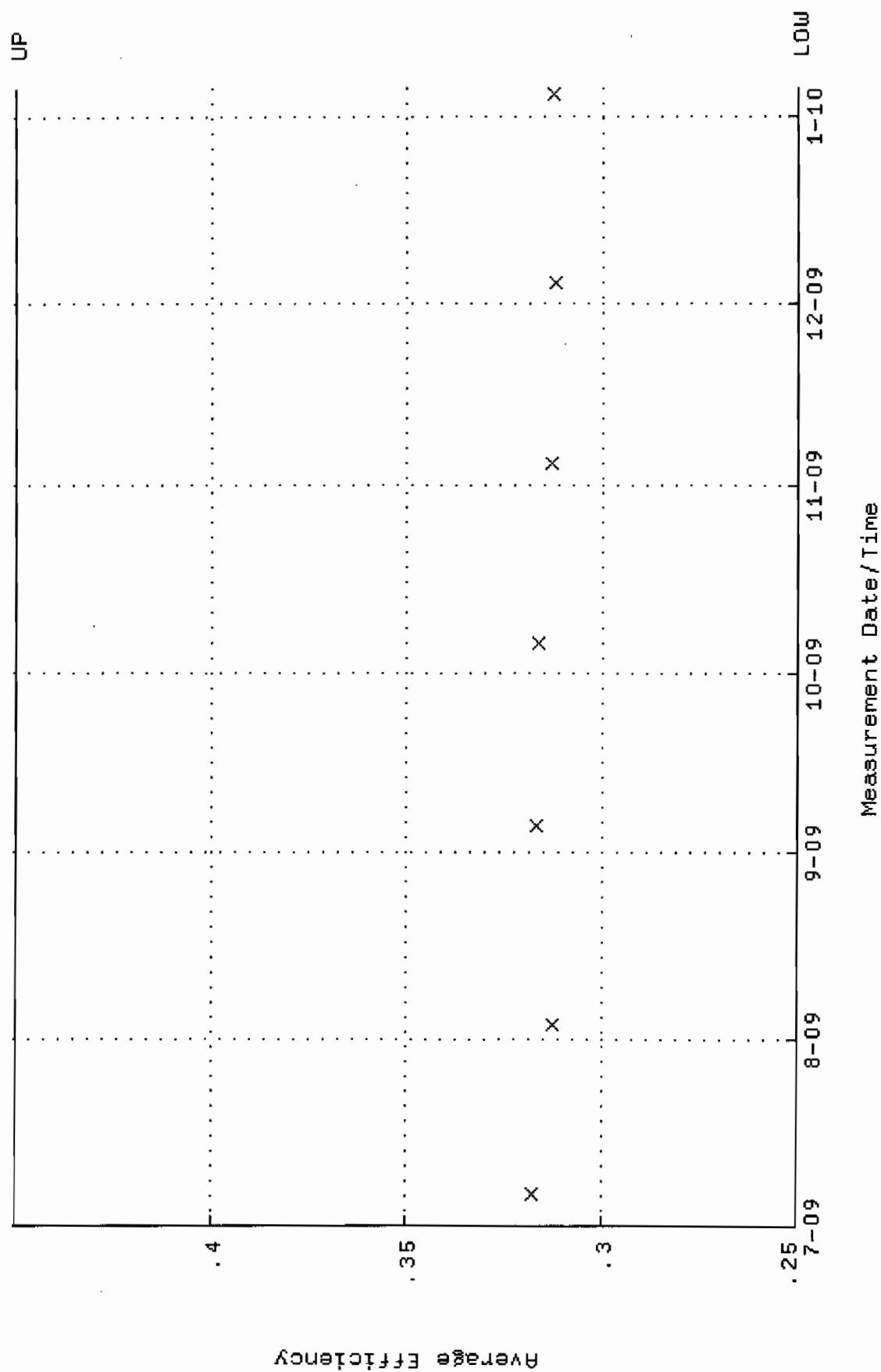




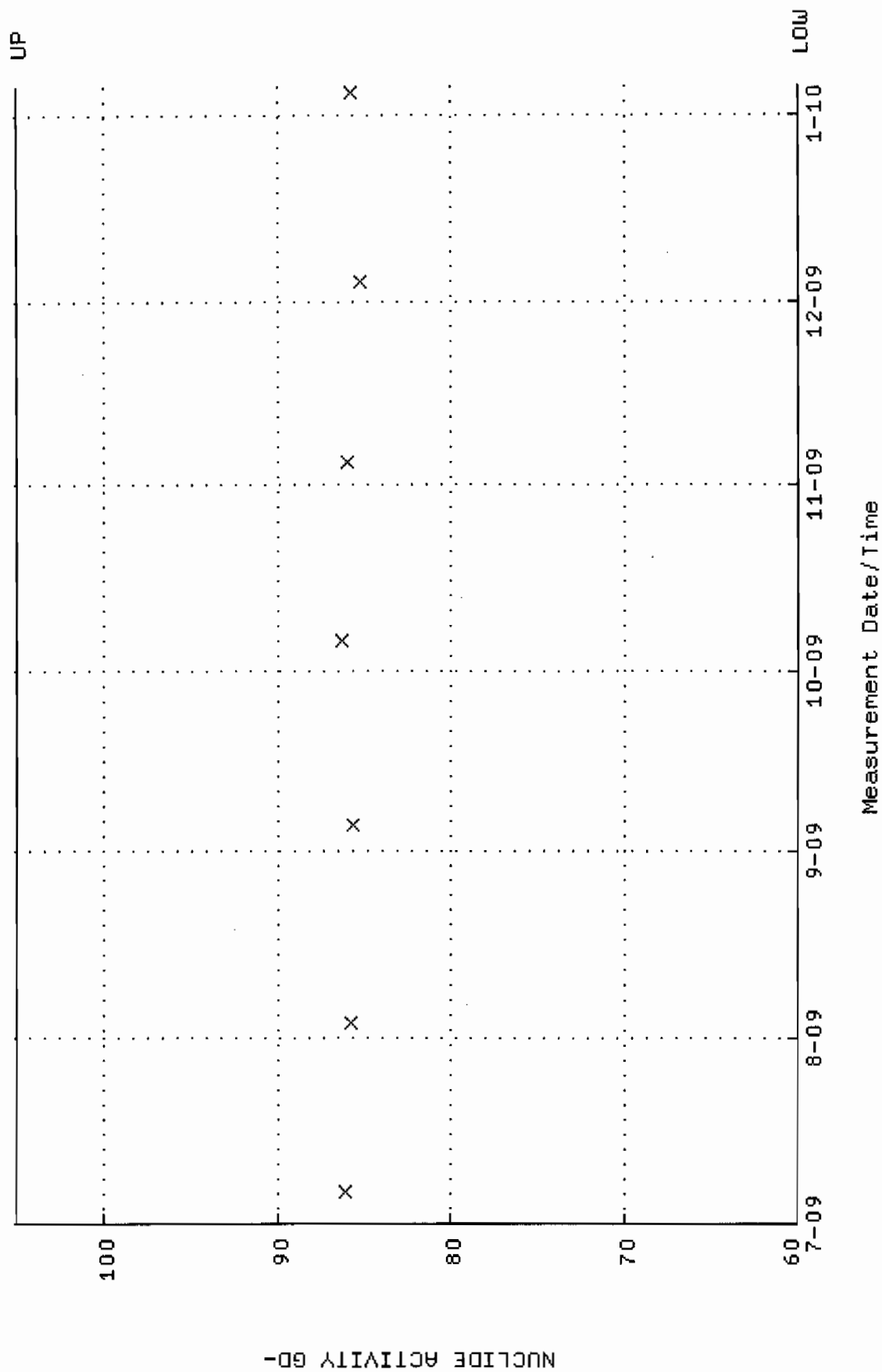
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



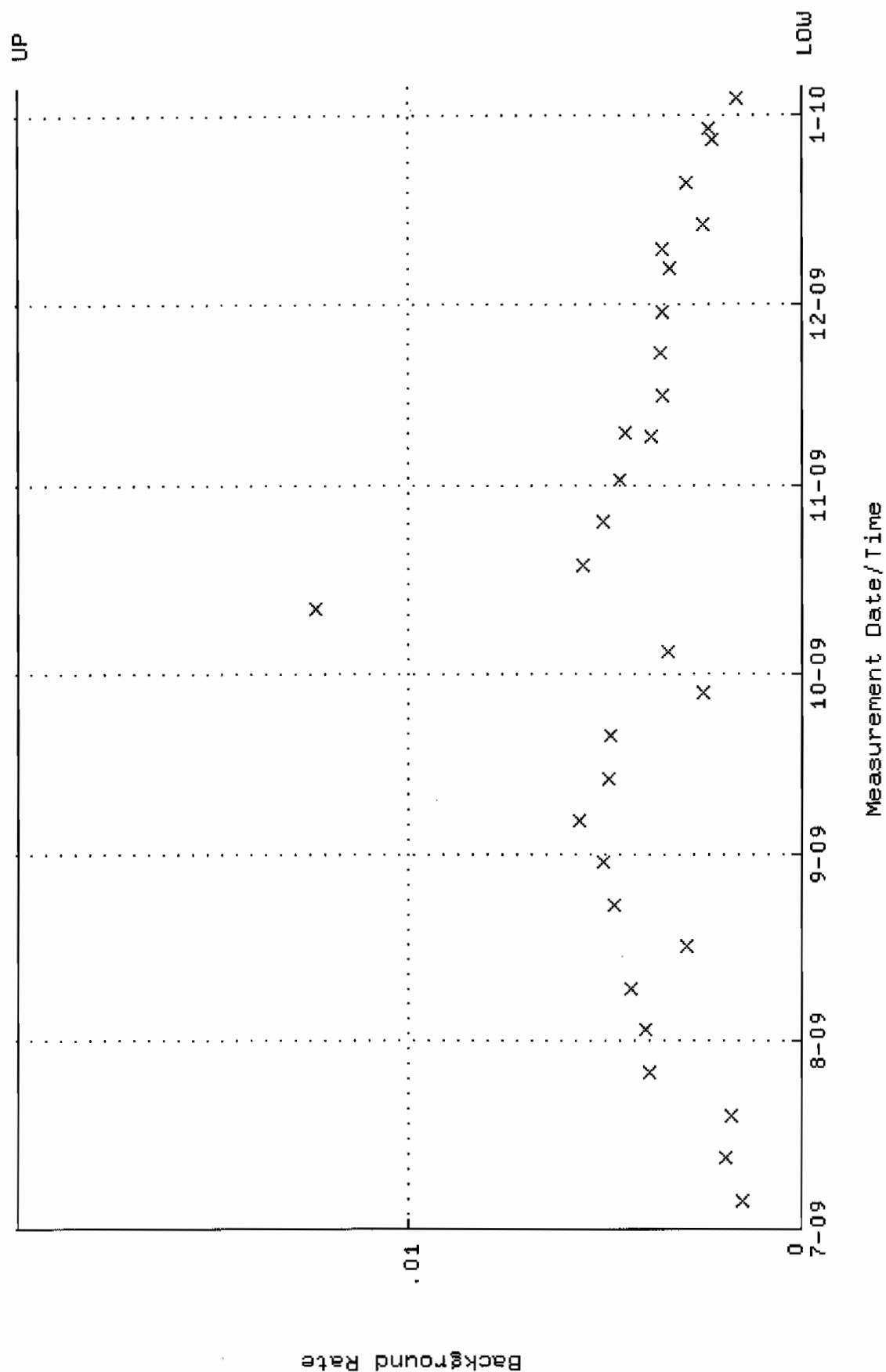
QA filename : DKA100:[ENV\_ALPHA.QA.W]W048.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



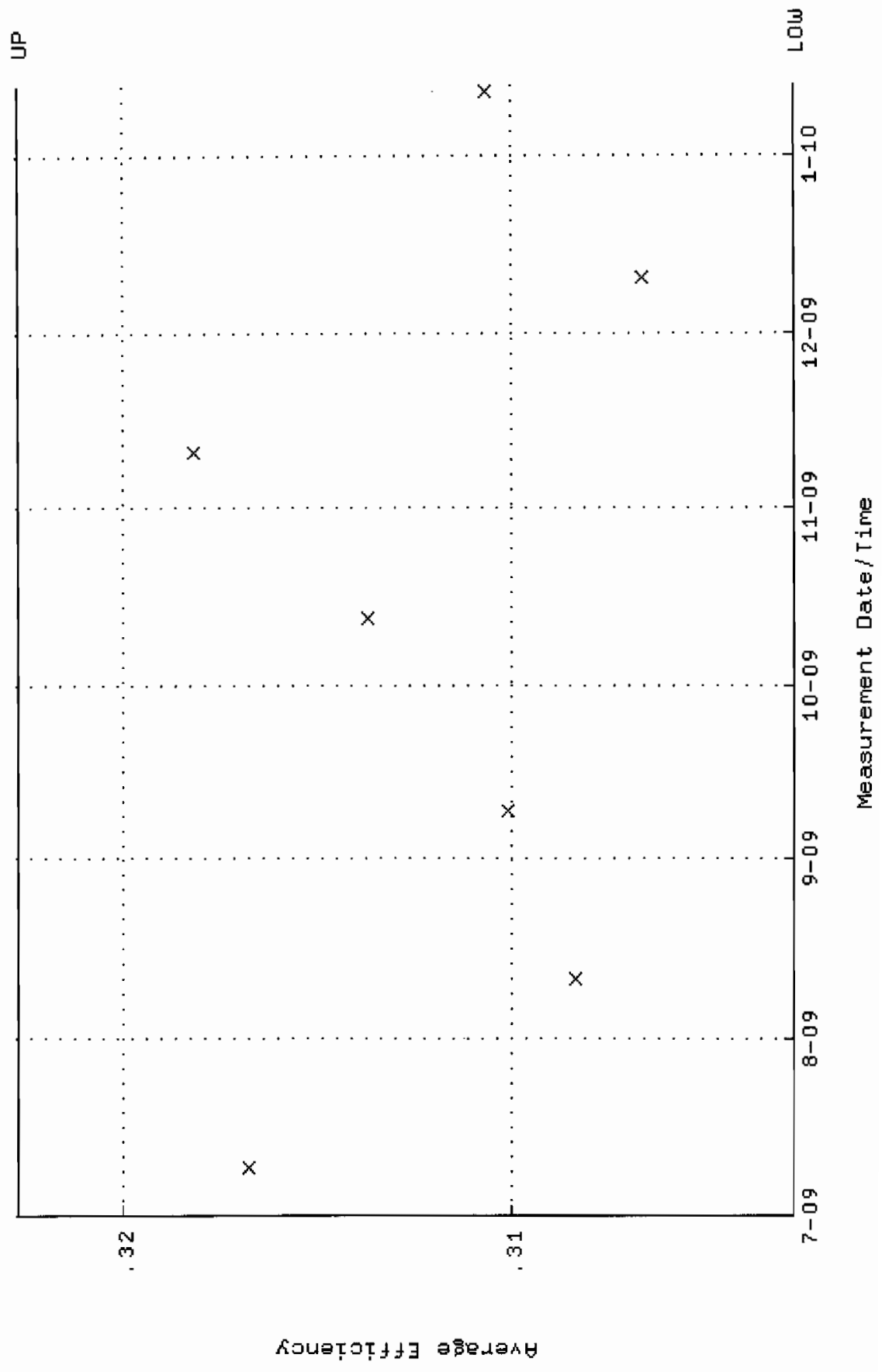
QA filename : DKA100:[ENV\_ALPHA.QA.W]W048.QAF;6  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000



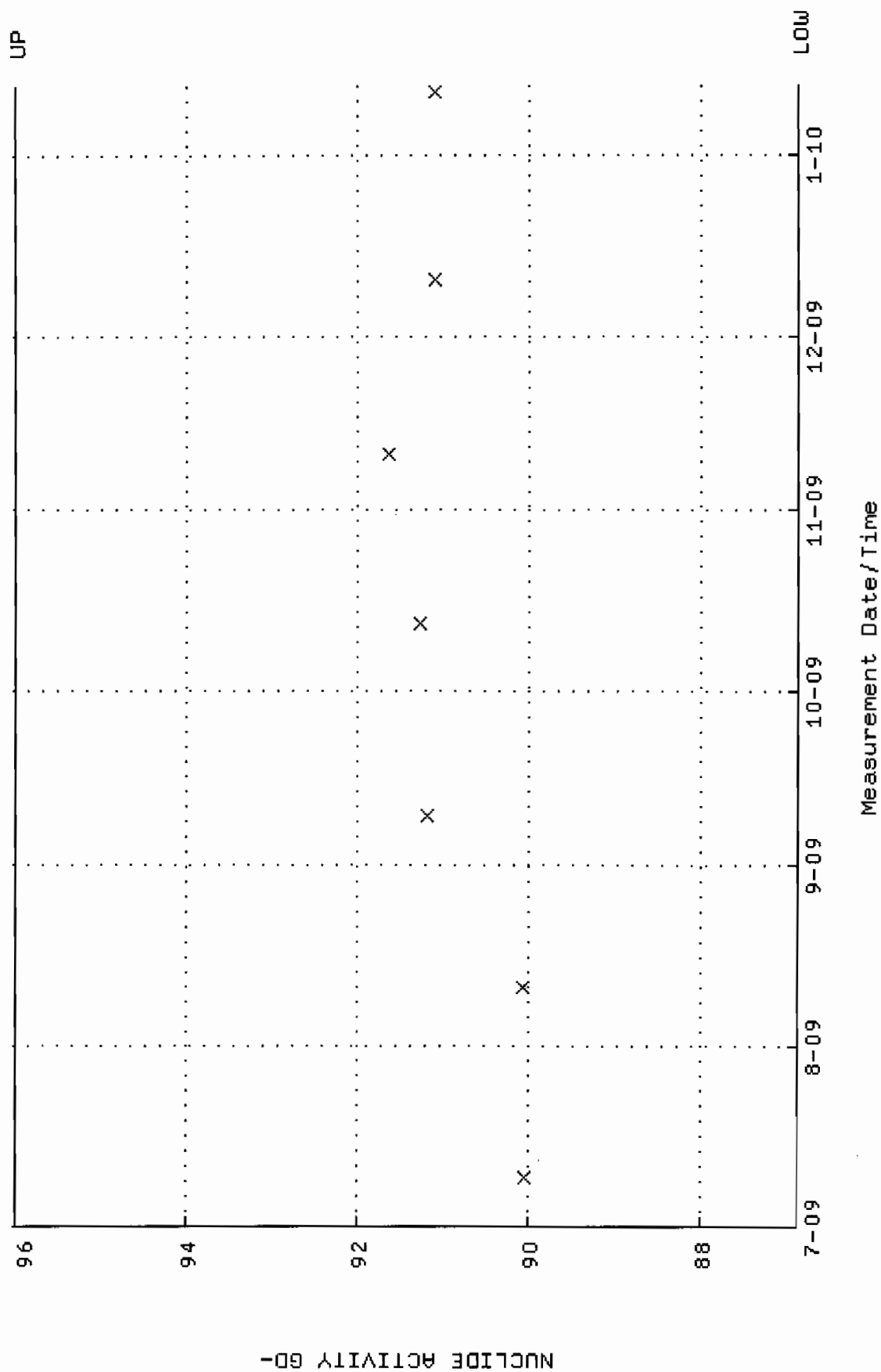
QA filename : DKA100:[ENV\_ALPHA.QA.B]B048.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



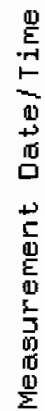
QA filename : DKA100:[ENV\_ALPHA.QA.W]W065.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.302750 through 0.322750



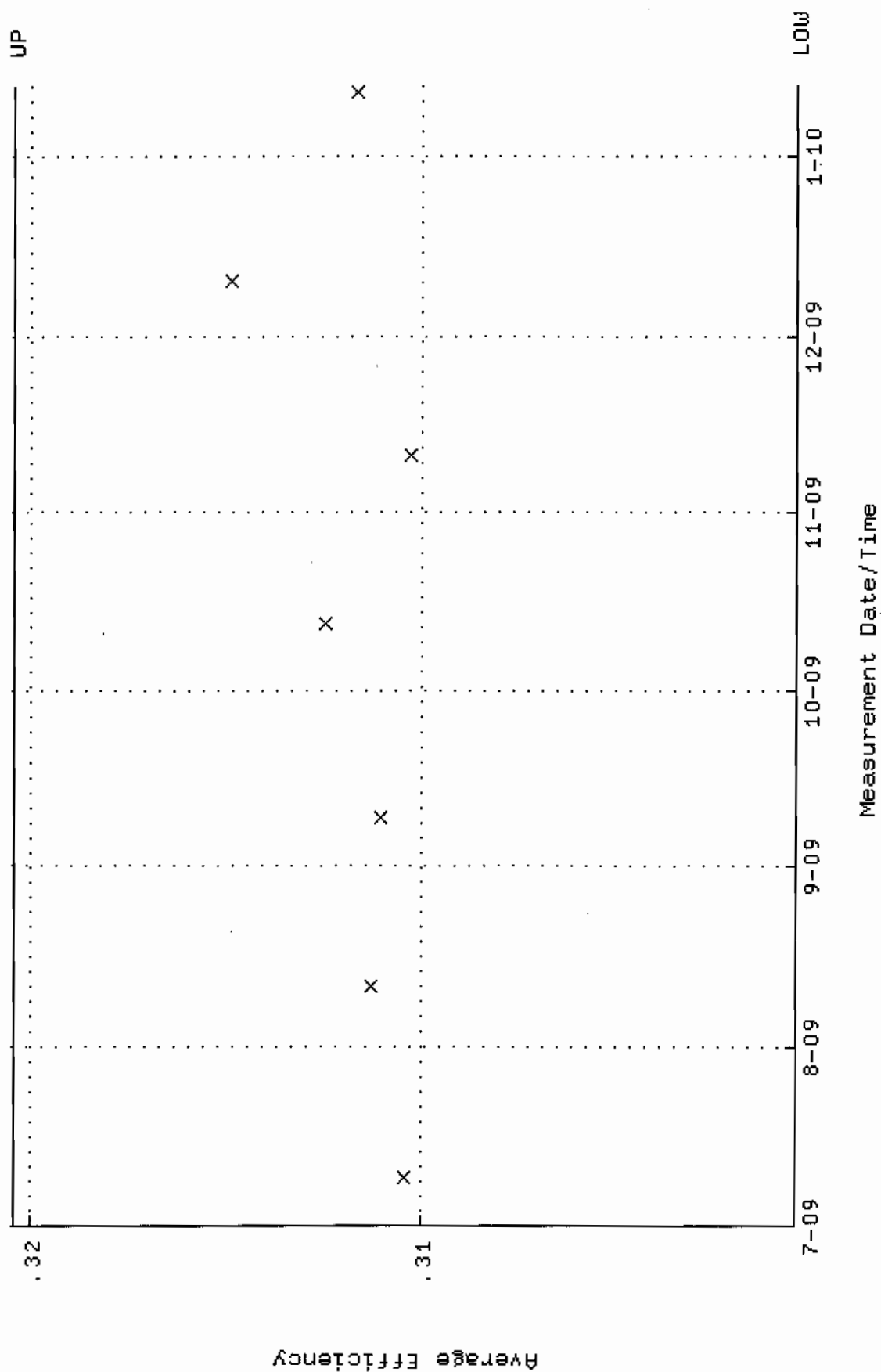
QA filename : DKA100:[ENV\_ALPHA.QA.W]U065.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.8638 through 96.0074



Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

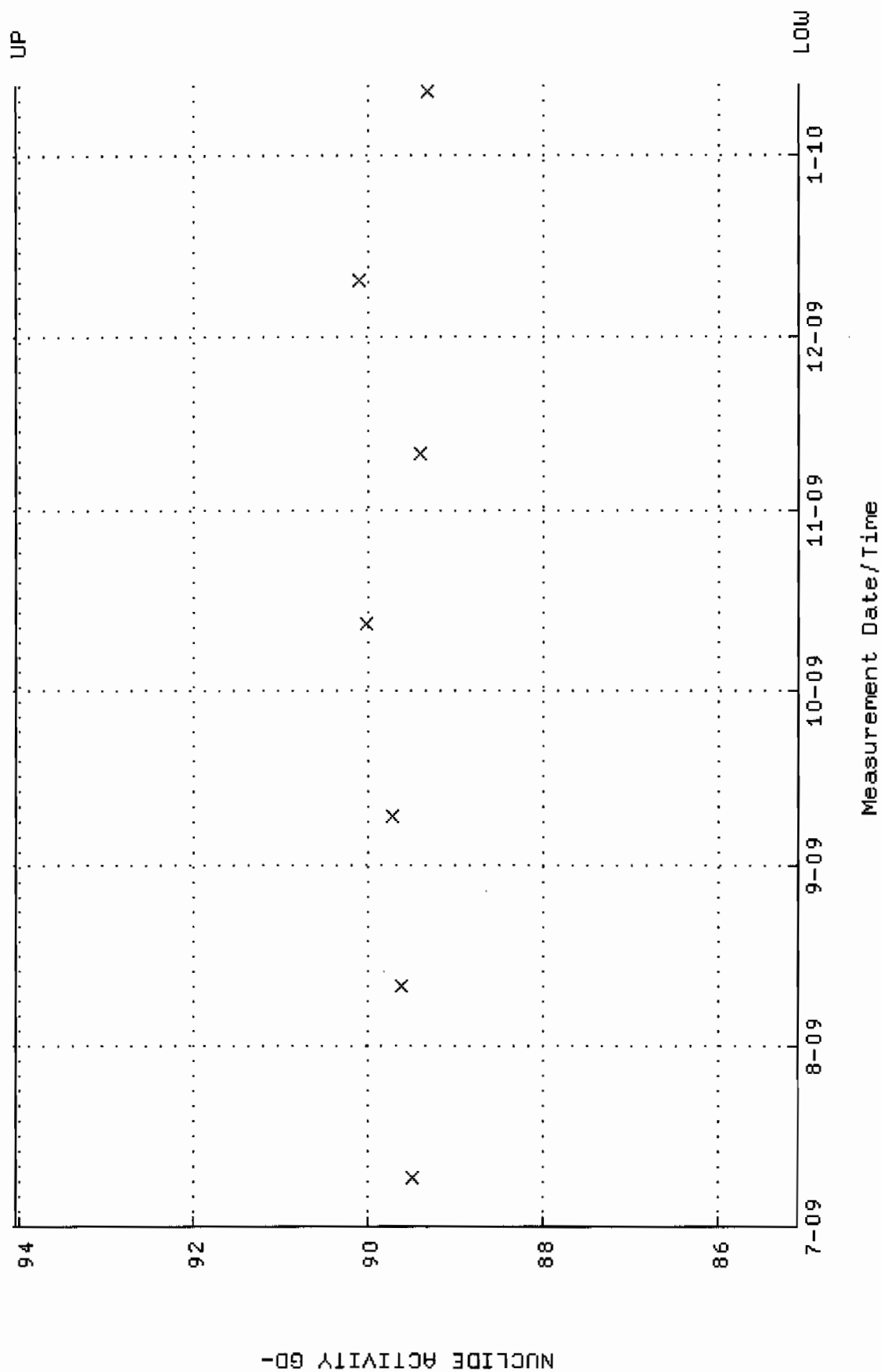


QA filename : DKA100:[ENV\_ALPHA.QA.W]W066.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.300416 through 0.320416

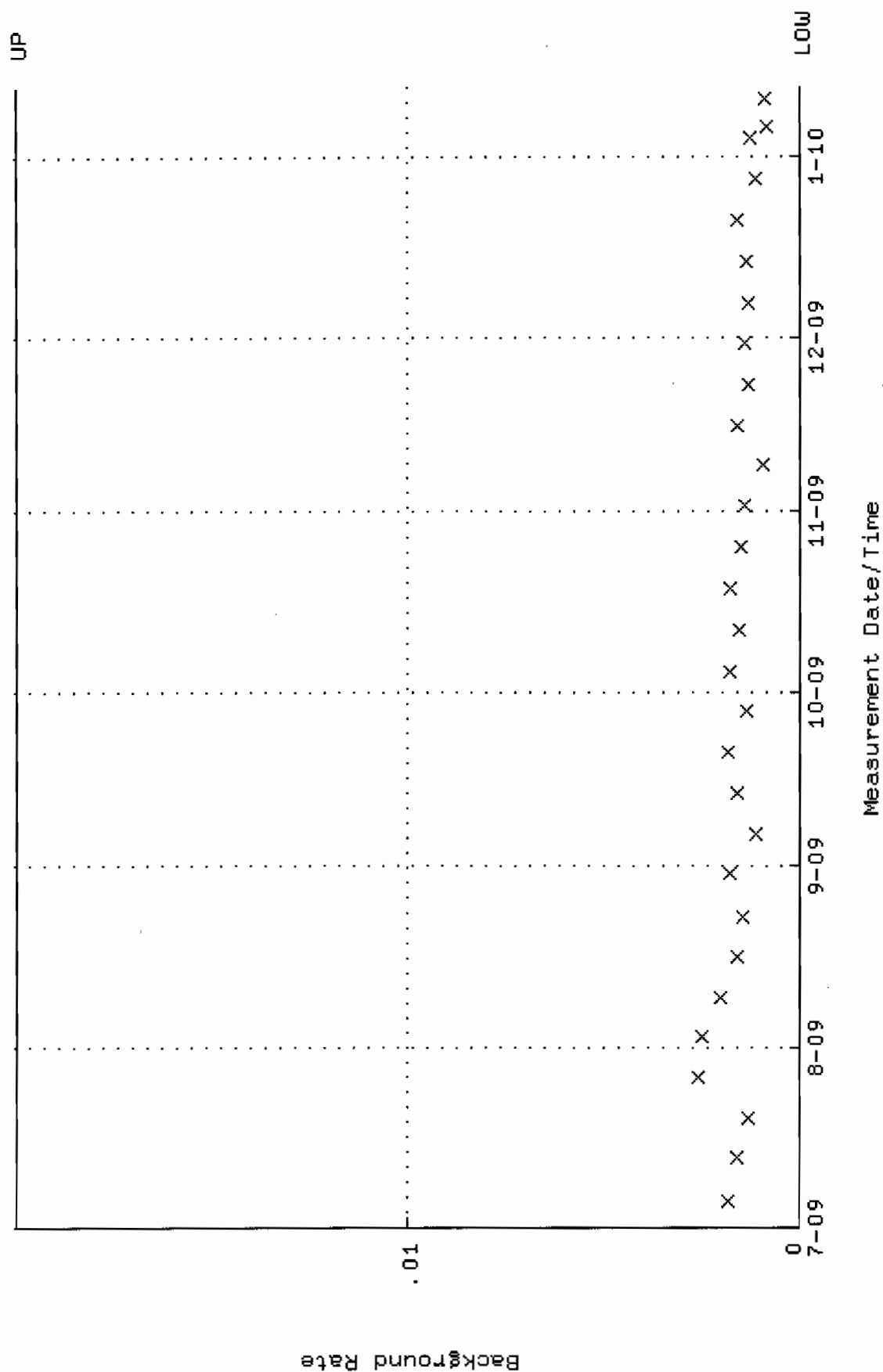




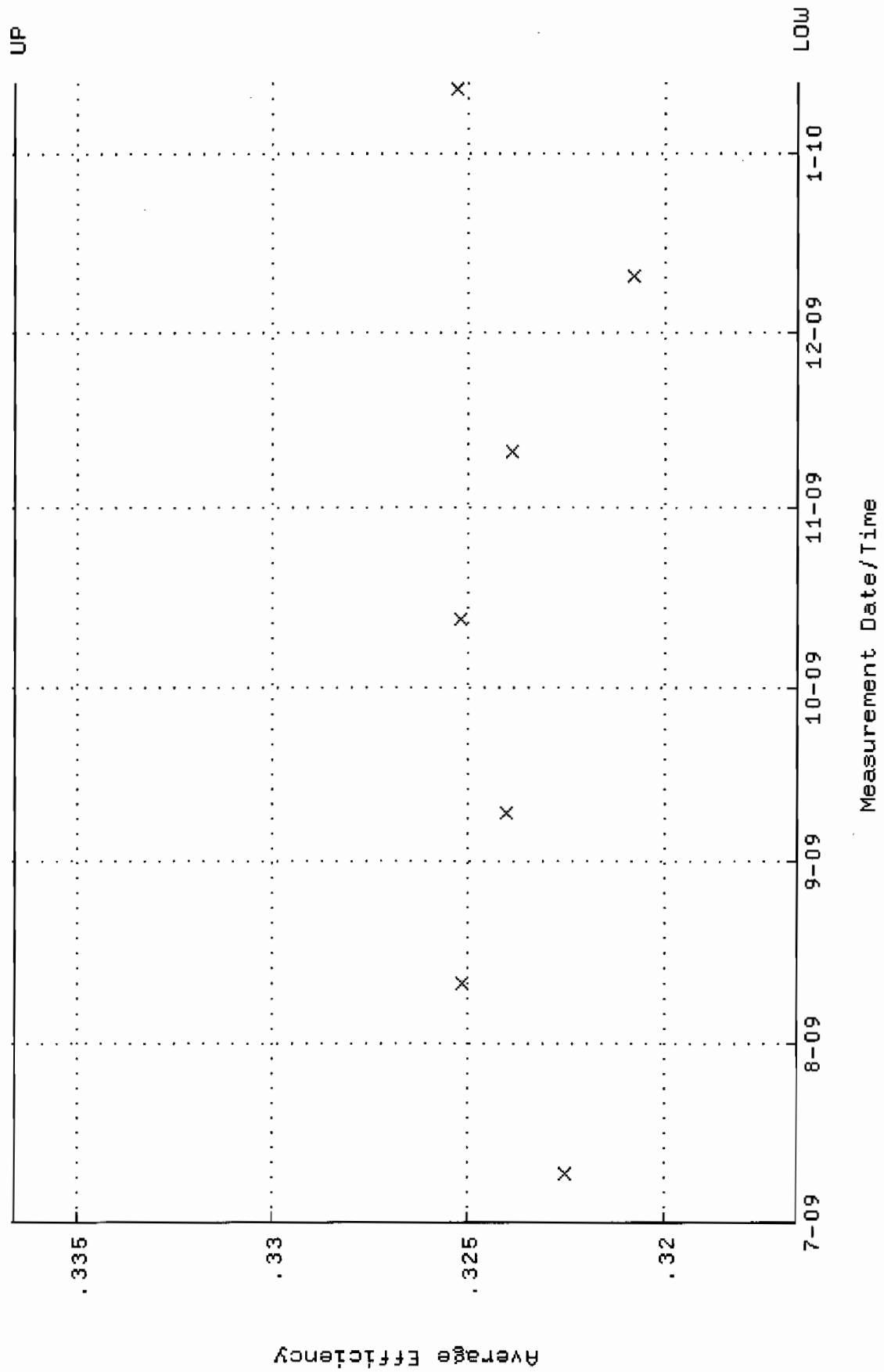
QA filename : DKA100:[ENV\_ALPHA.QA.W]W066.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.0864 through 94.0428



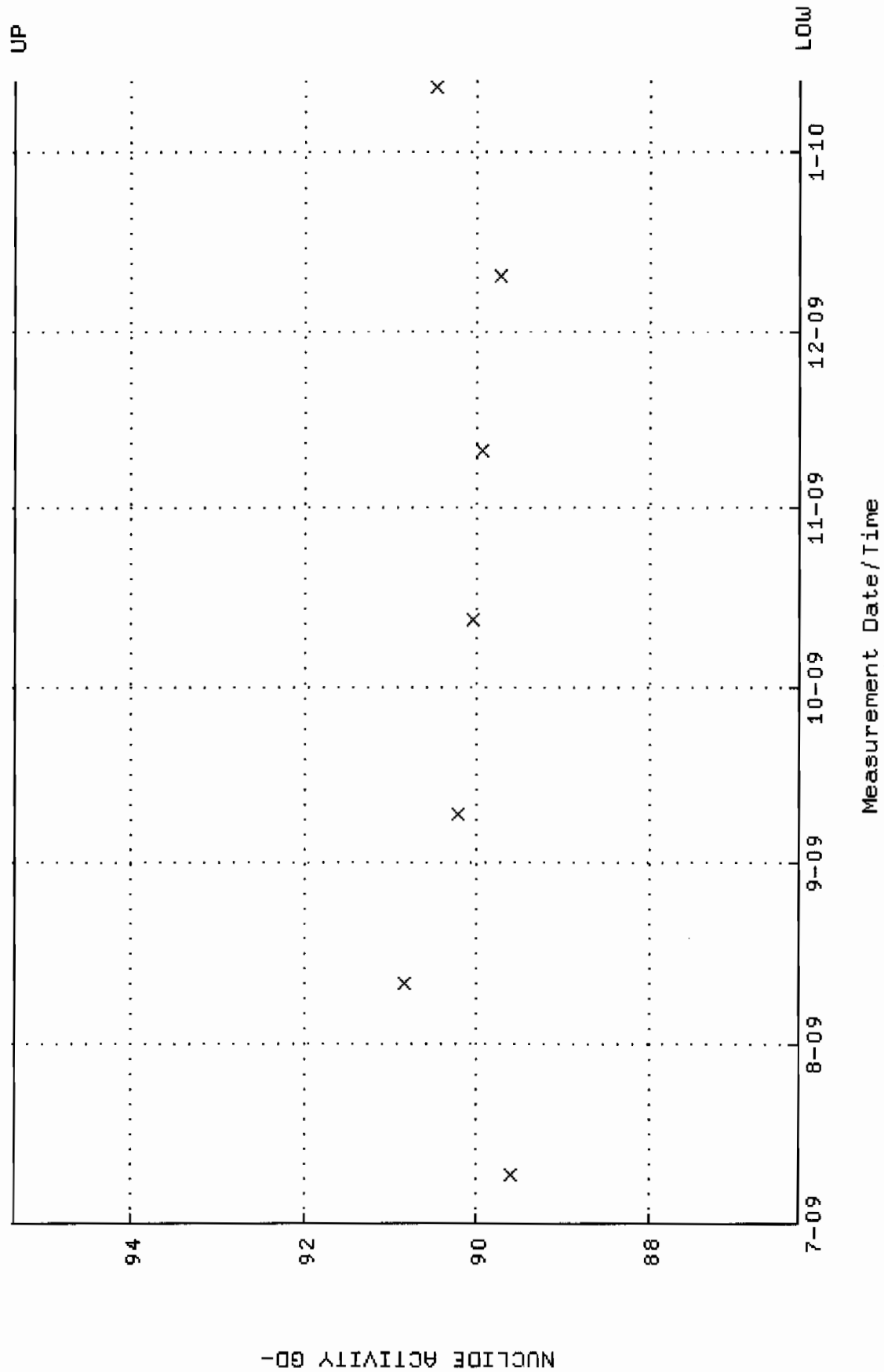
QA filename : DKA100:[ENV\_ALPHA.QA.B]B066.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:01 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



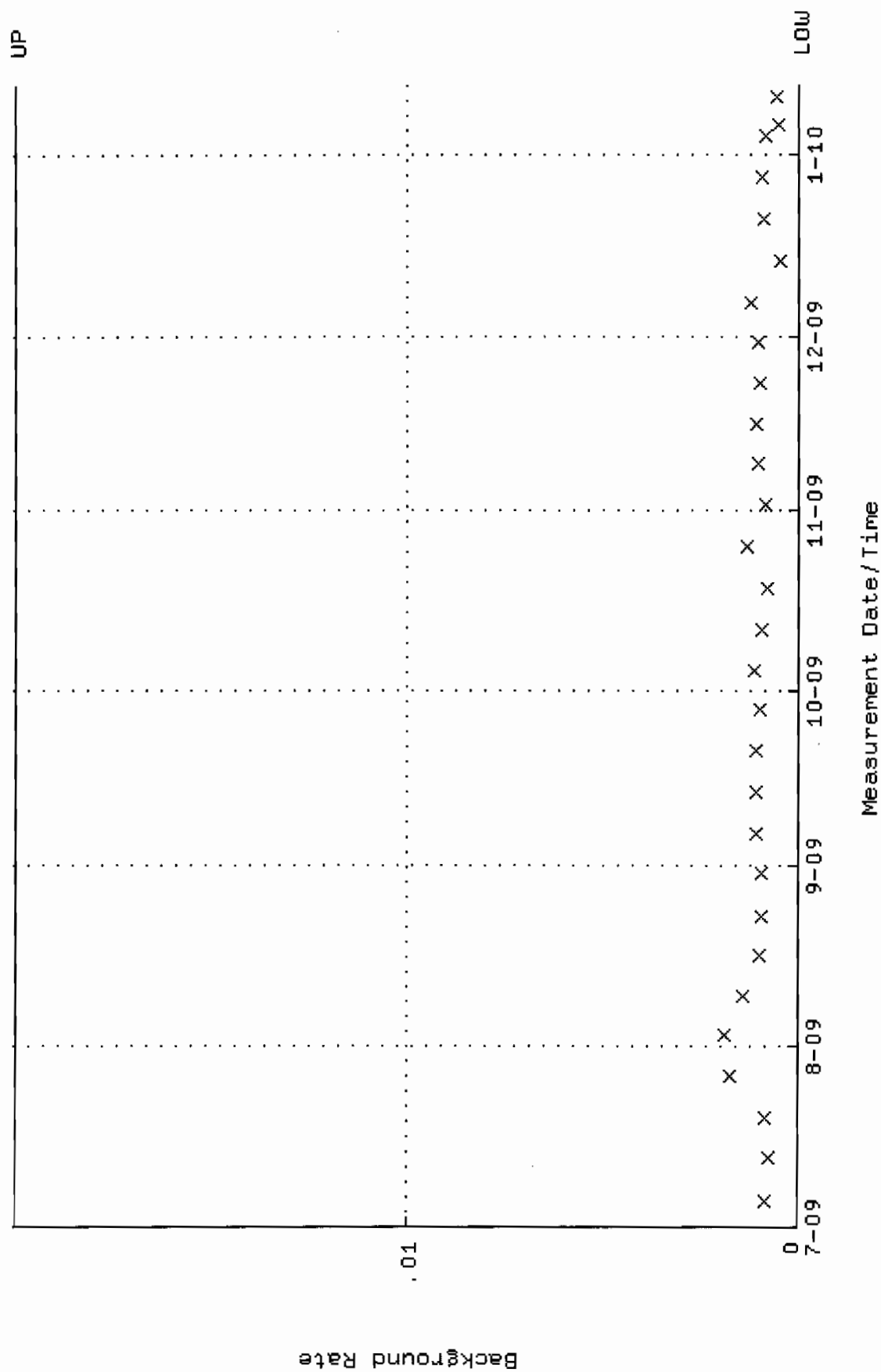
QA filename : DKA100:[ENV\_ALPHA.QA.W]W067.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.316597 through 0.336597



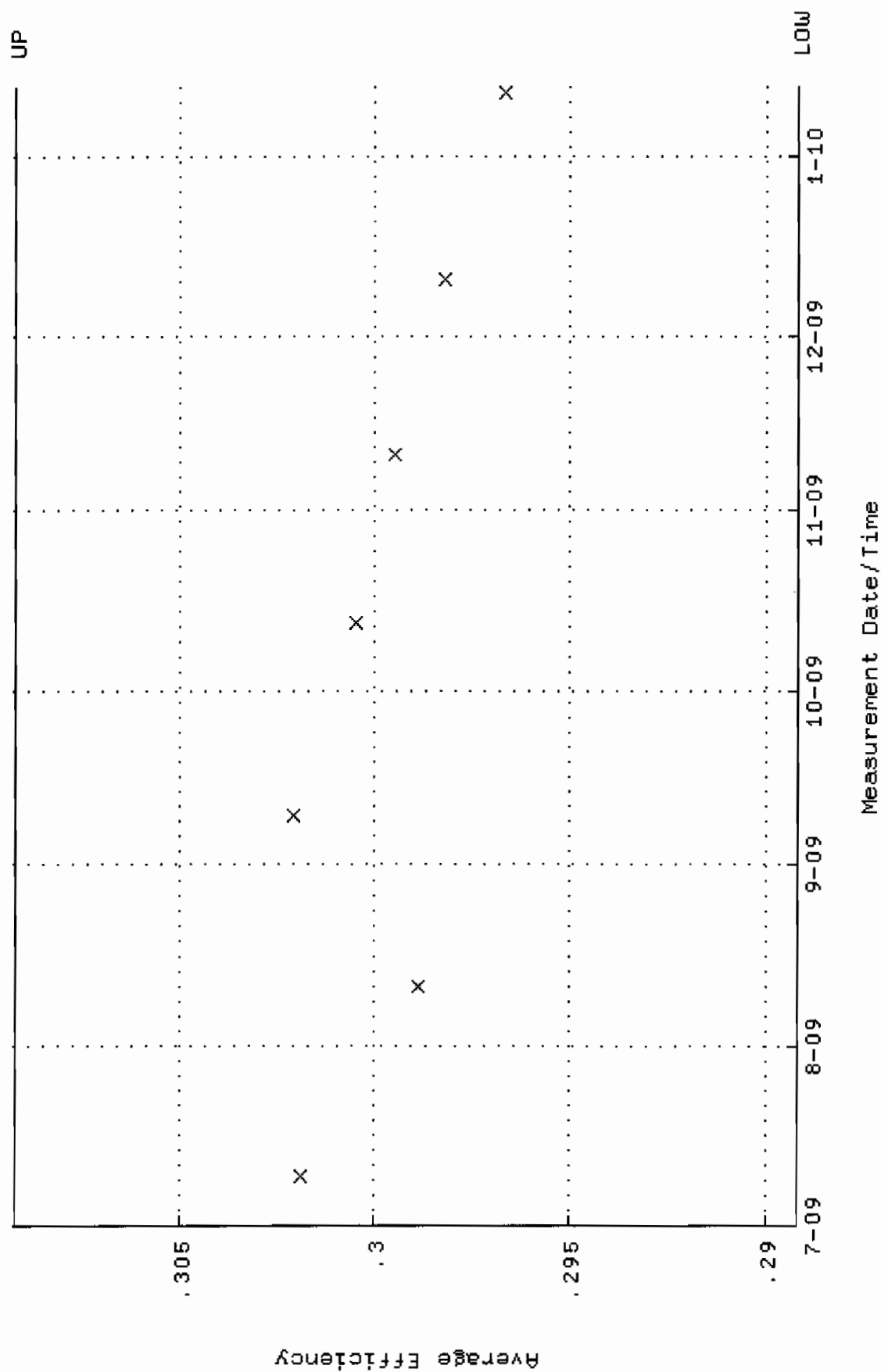
QA filename : DKA100:[ENV\_ALPHA.QA.W]W067.QAF;2  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.2683 through 95.3491



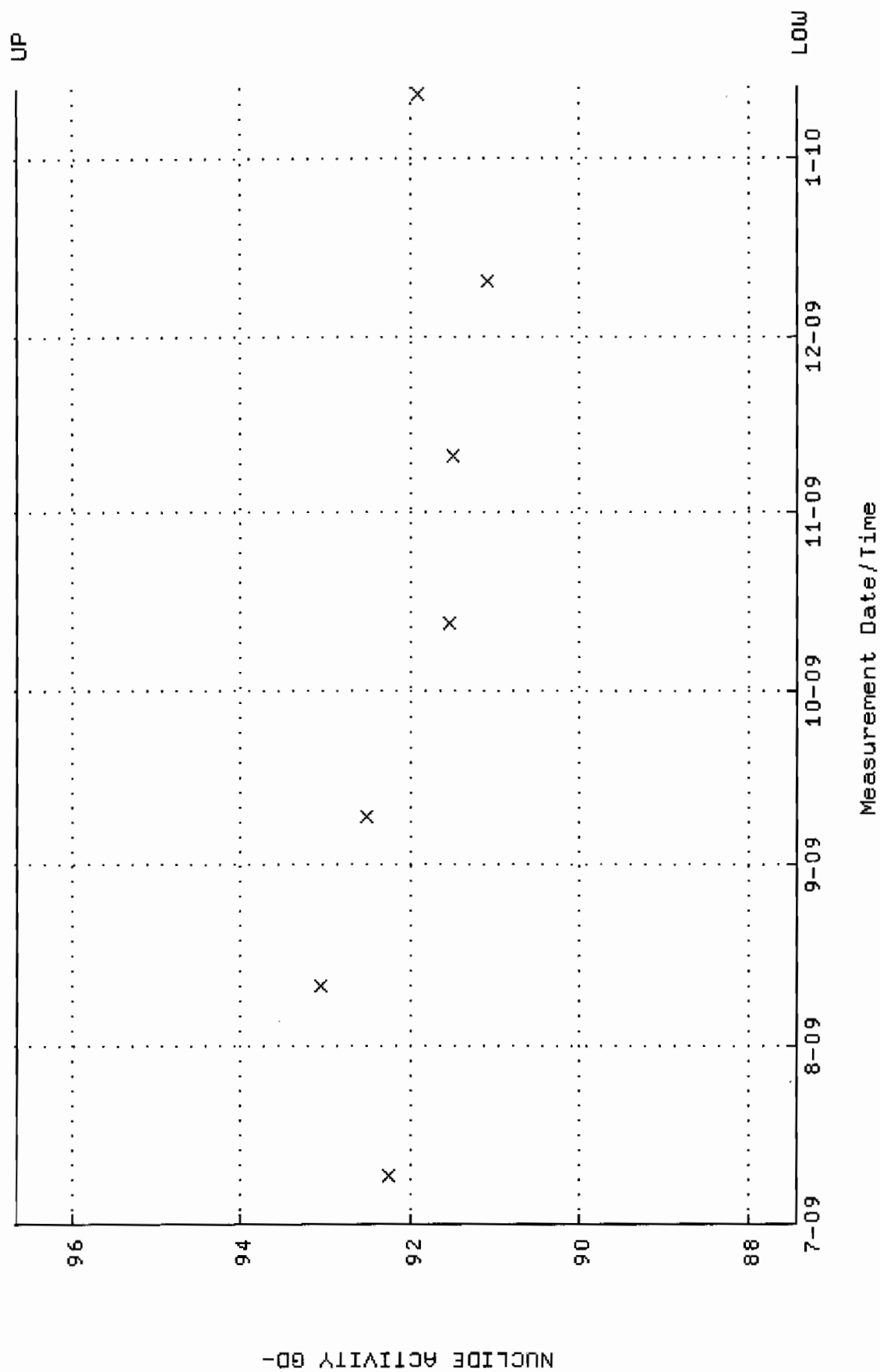
QA filename : DKA100:[ENV\_ALPHA.QA.B]B067.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:01 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



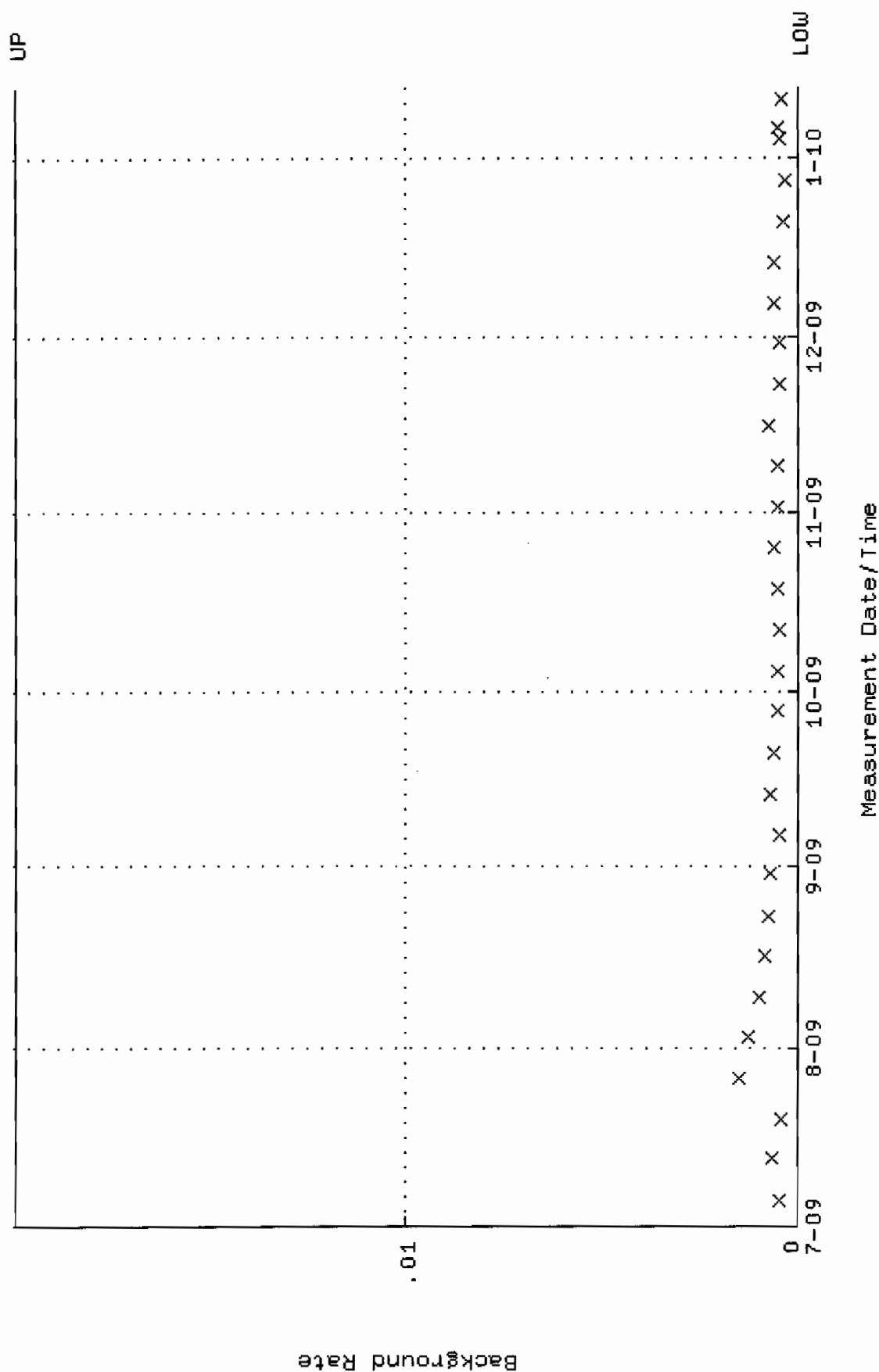
QA filename : DKA100:[ENV\_ALPHA.QA.W]W068.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.289178 through 0.309178



QA filename : DKA100:[ENV\_ALPHA.QA.W]W068.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.4419 through 96.6463

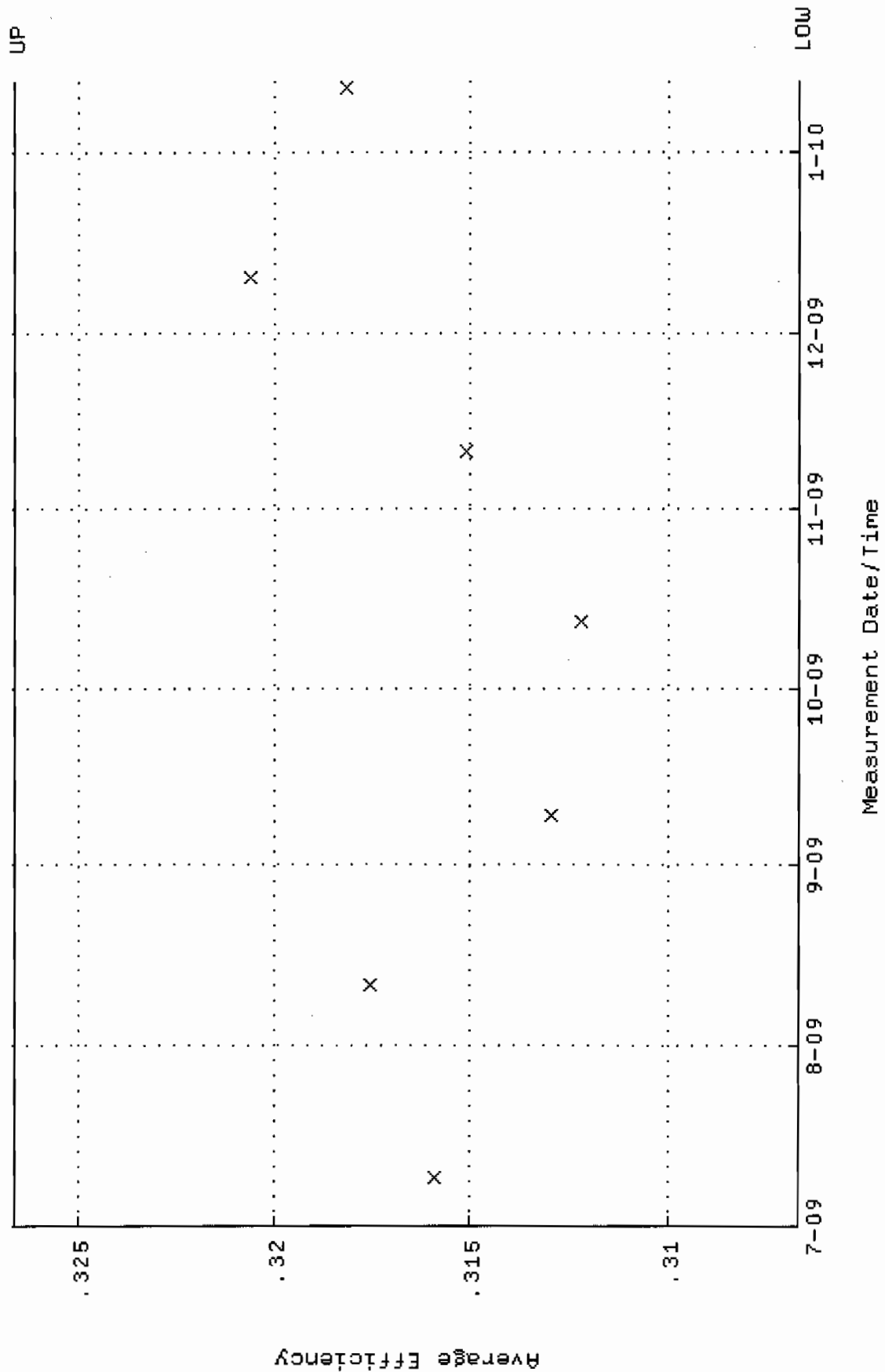


QA filename : DKA100:[ENV\_ALPHA.QA.B]B068.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:01 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

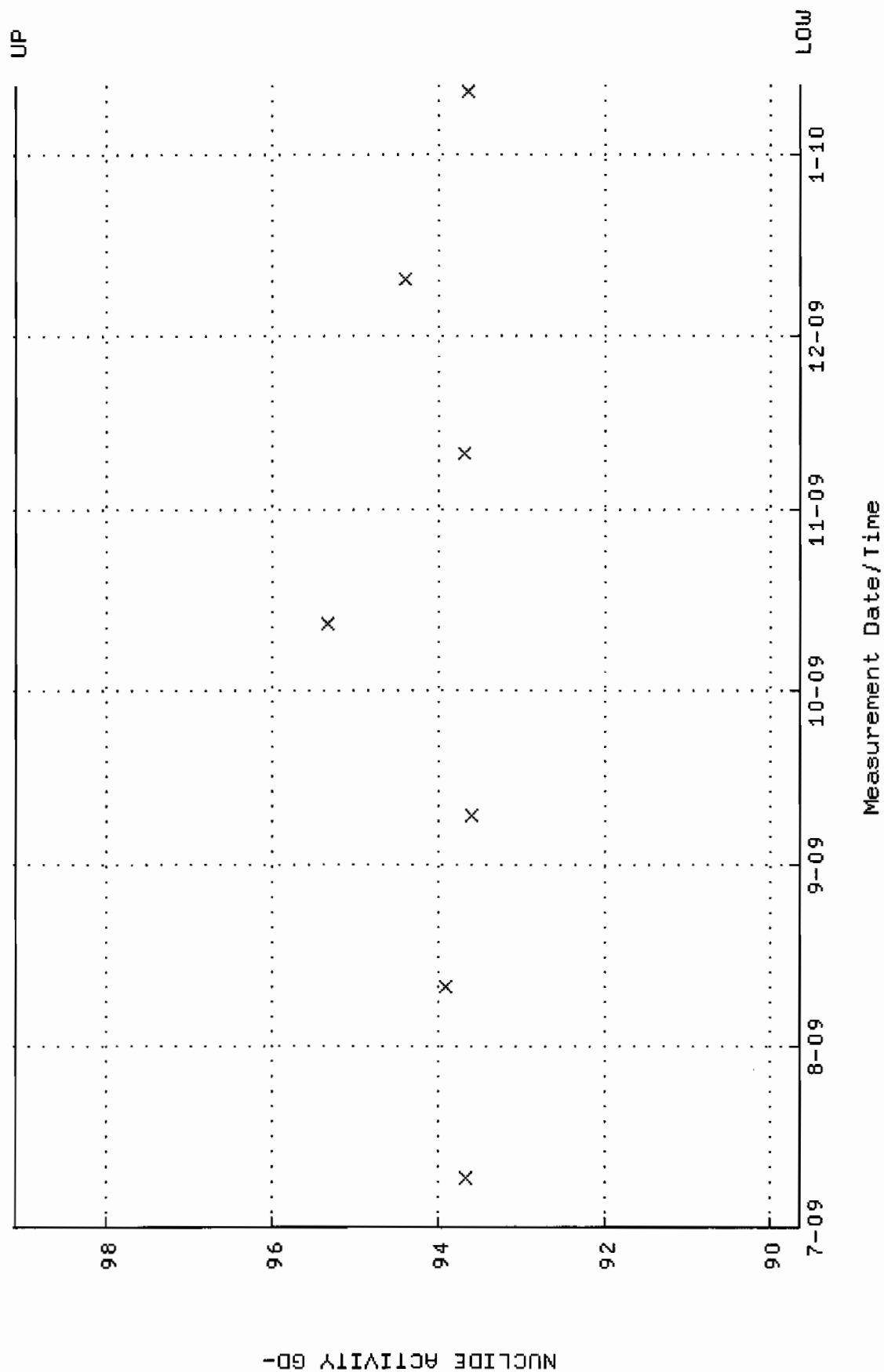




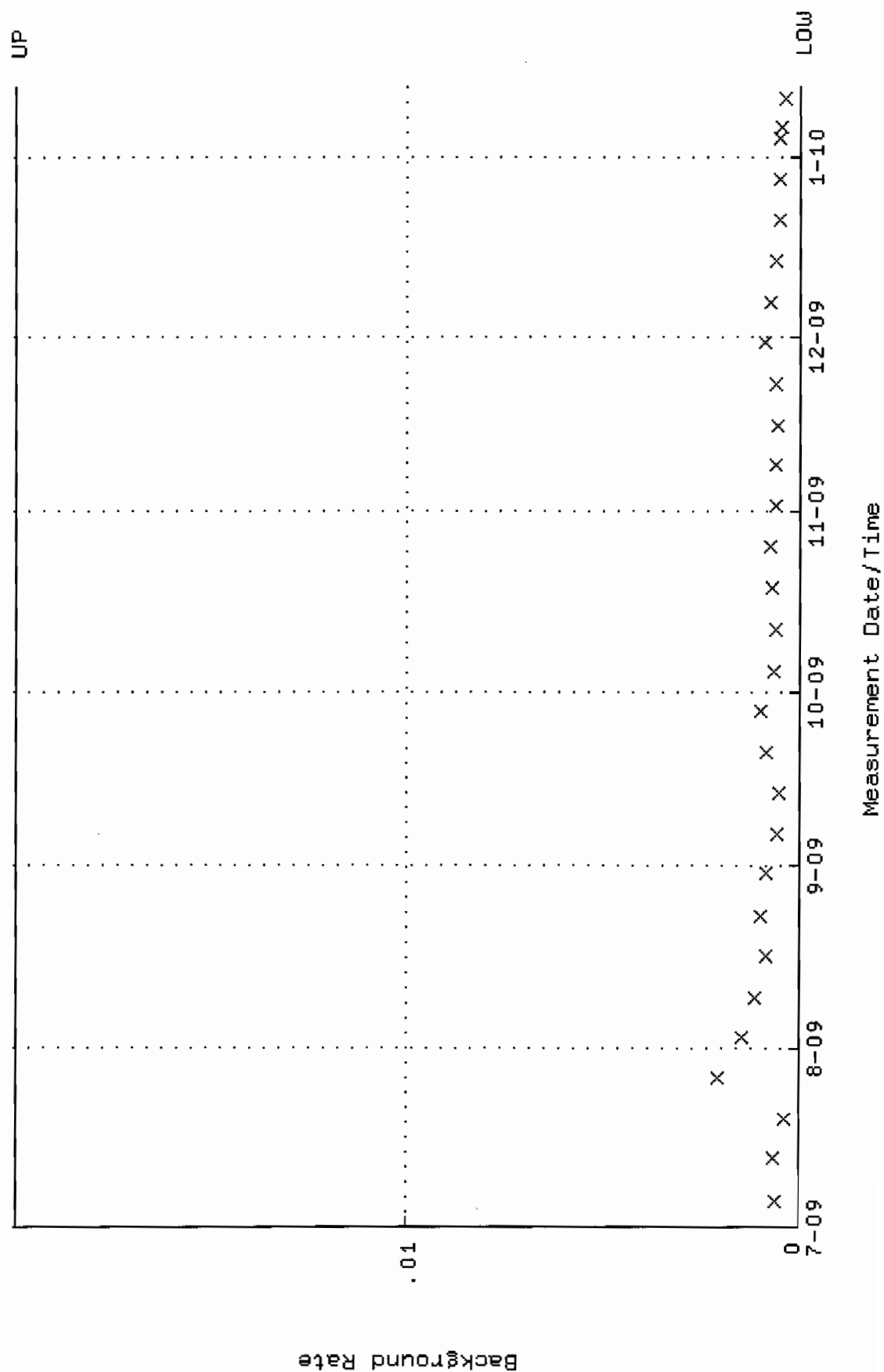
QA filename : DKA100:[ENV\_ALPHA.QA.W]W069.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.306636 through 0.326636



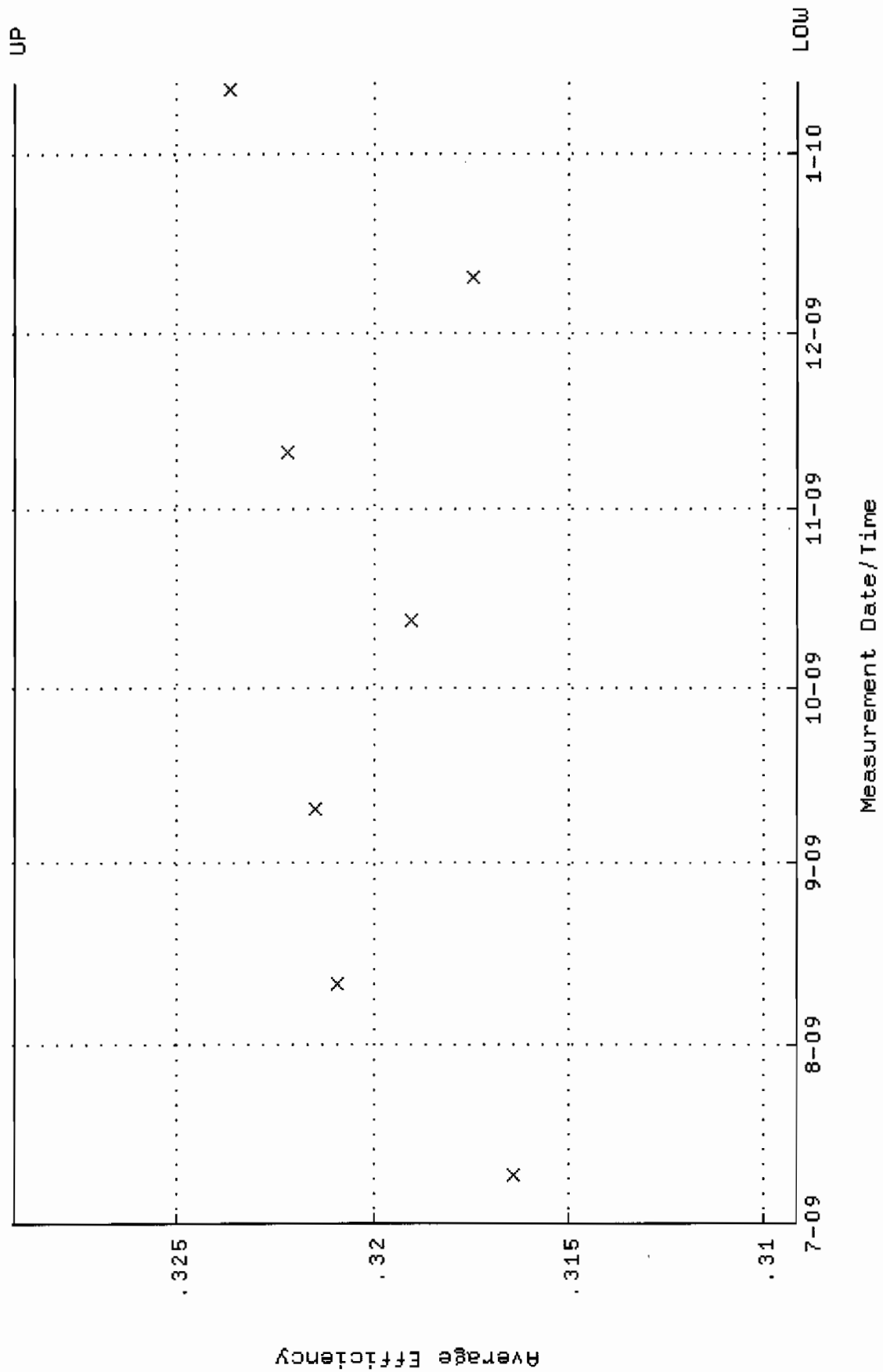
QA filename : DKA100:[ENV\_ALPHA.QA.W]W069.QAF;3  
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:10 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.6479 through 99.0845



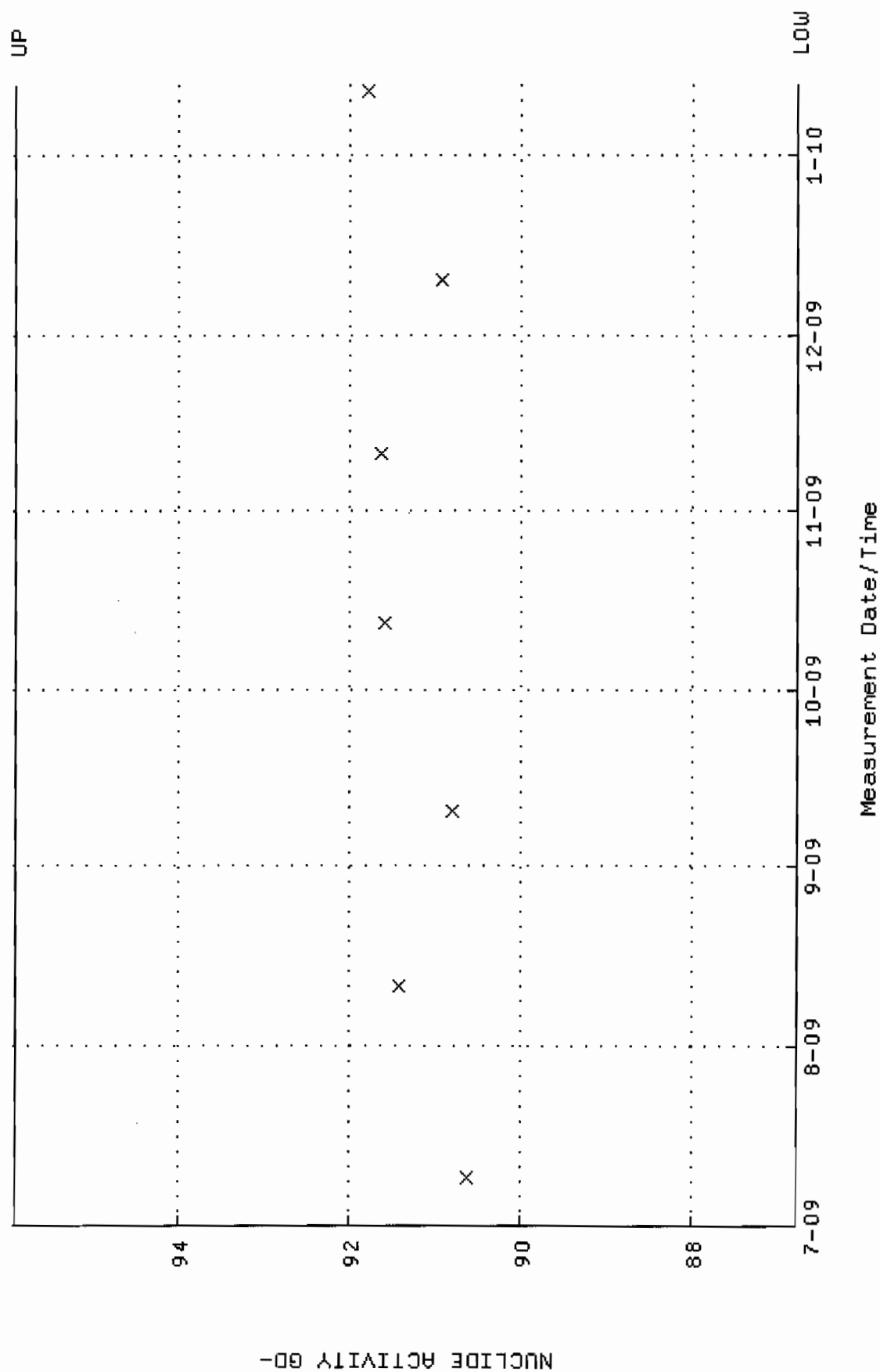
QA filename : DKA100:[ENV\_ALPHA.QA.B]B069.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:01 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



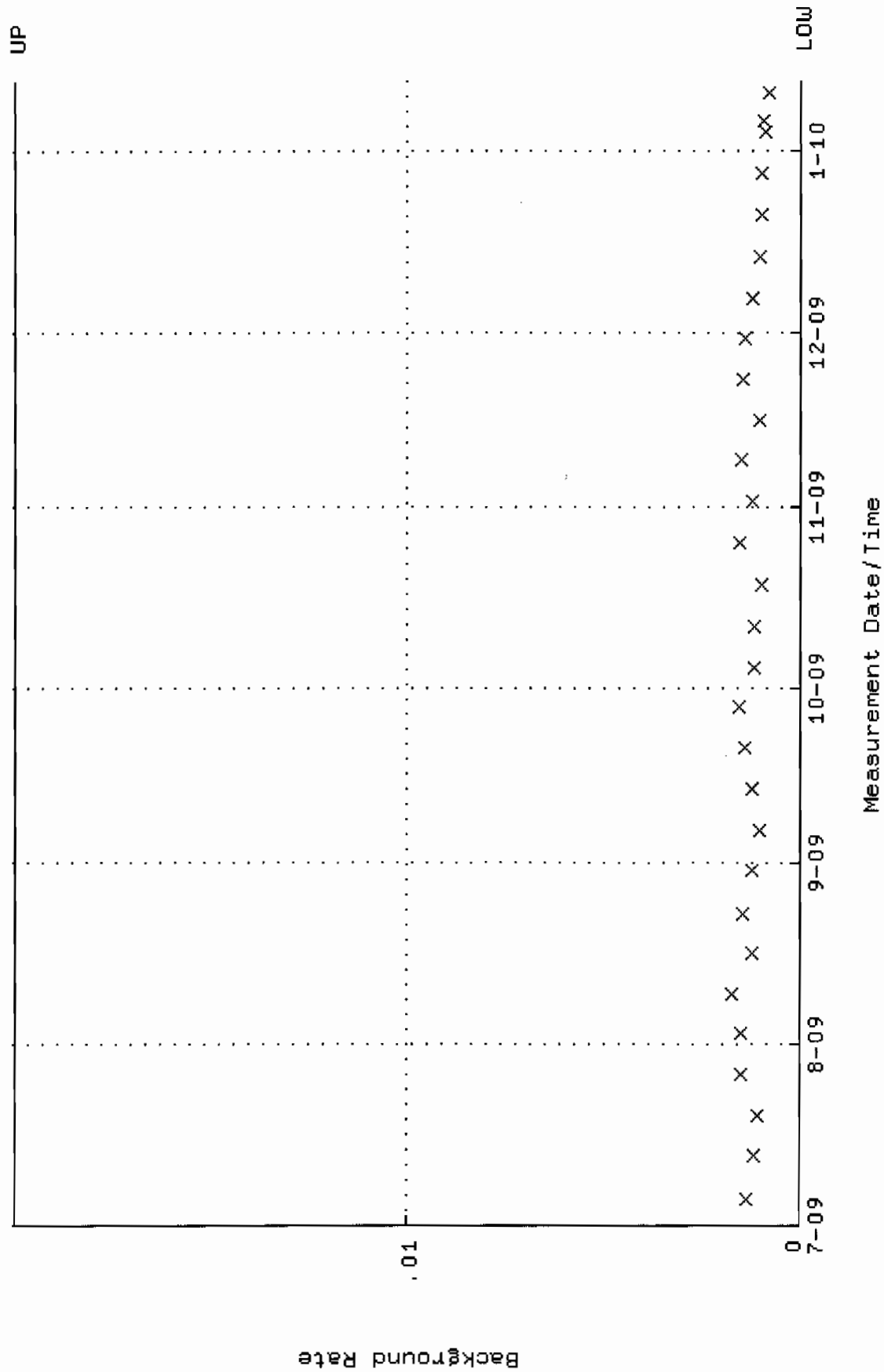
QA filename : DKA100:[ENV\_ALPHA.QA.W]W071.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.309161 through 0.329161



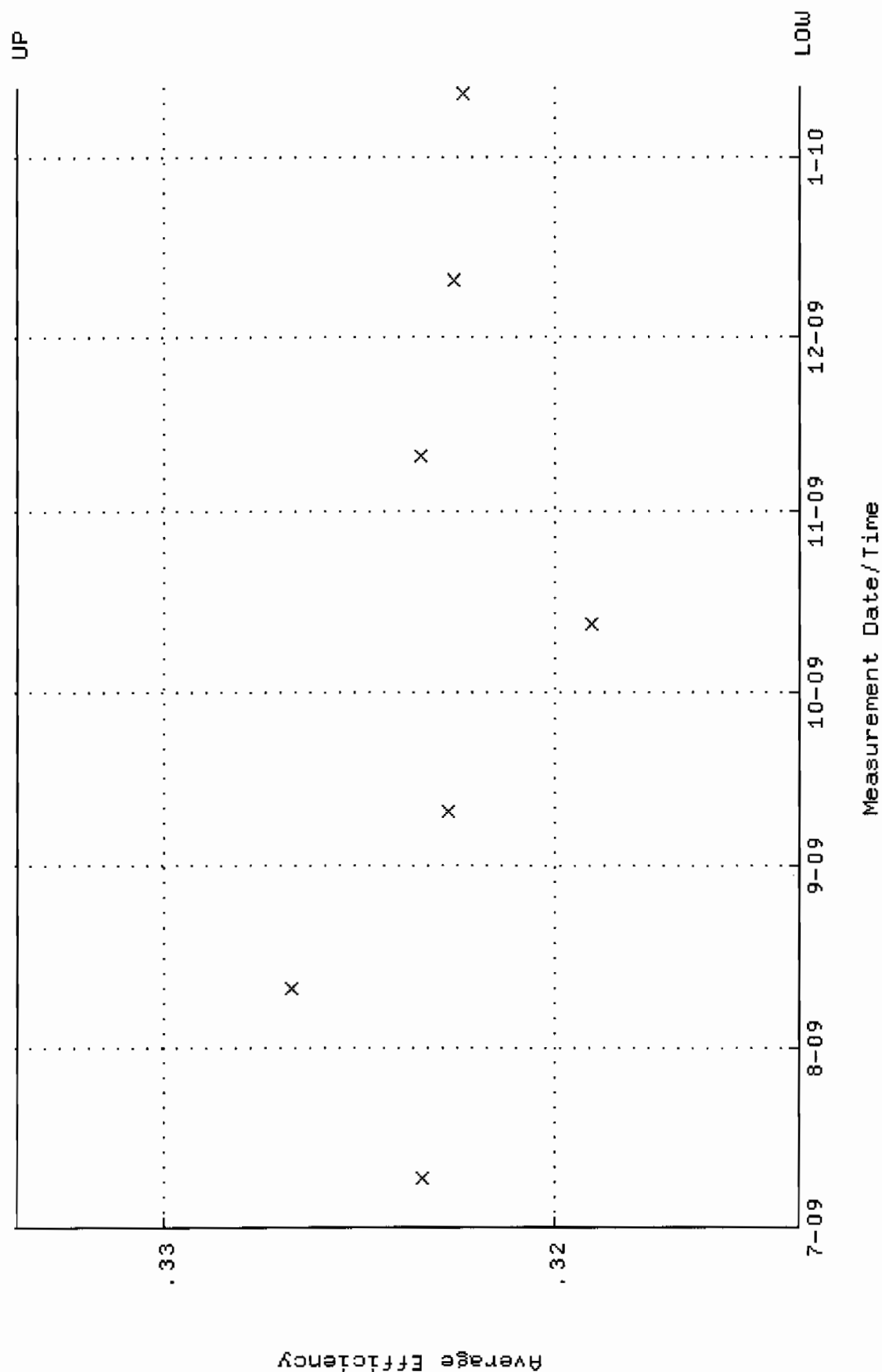
QA filename : DKA100:[ENV\_ALPHA.QA.W]W071.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.7769 through 95.9113



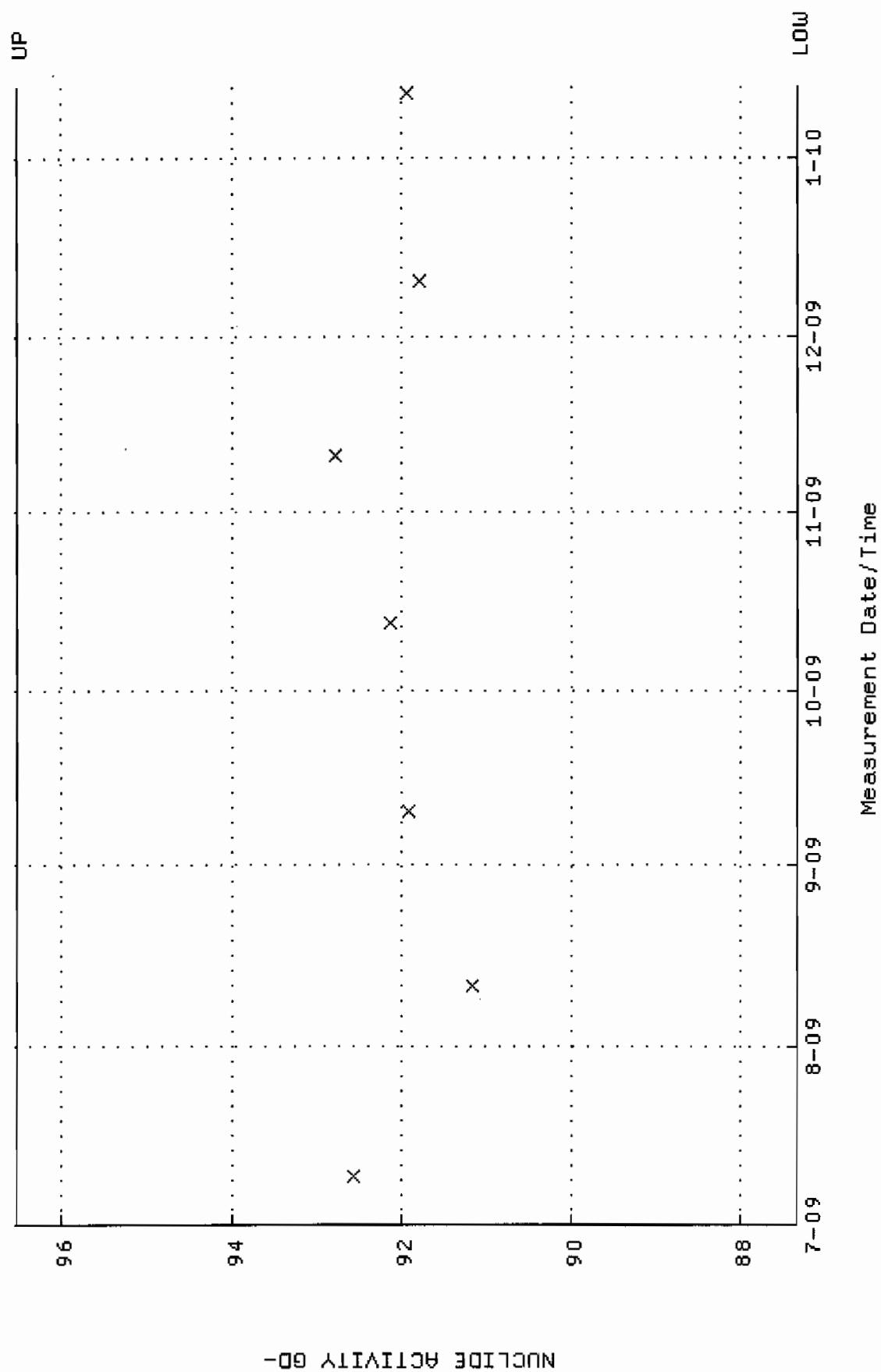
QA filename : DKA100:[ENV\_ALPHA.QA,B]B071.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:02 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W072.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.313761 through 0.333761

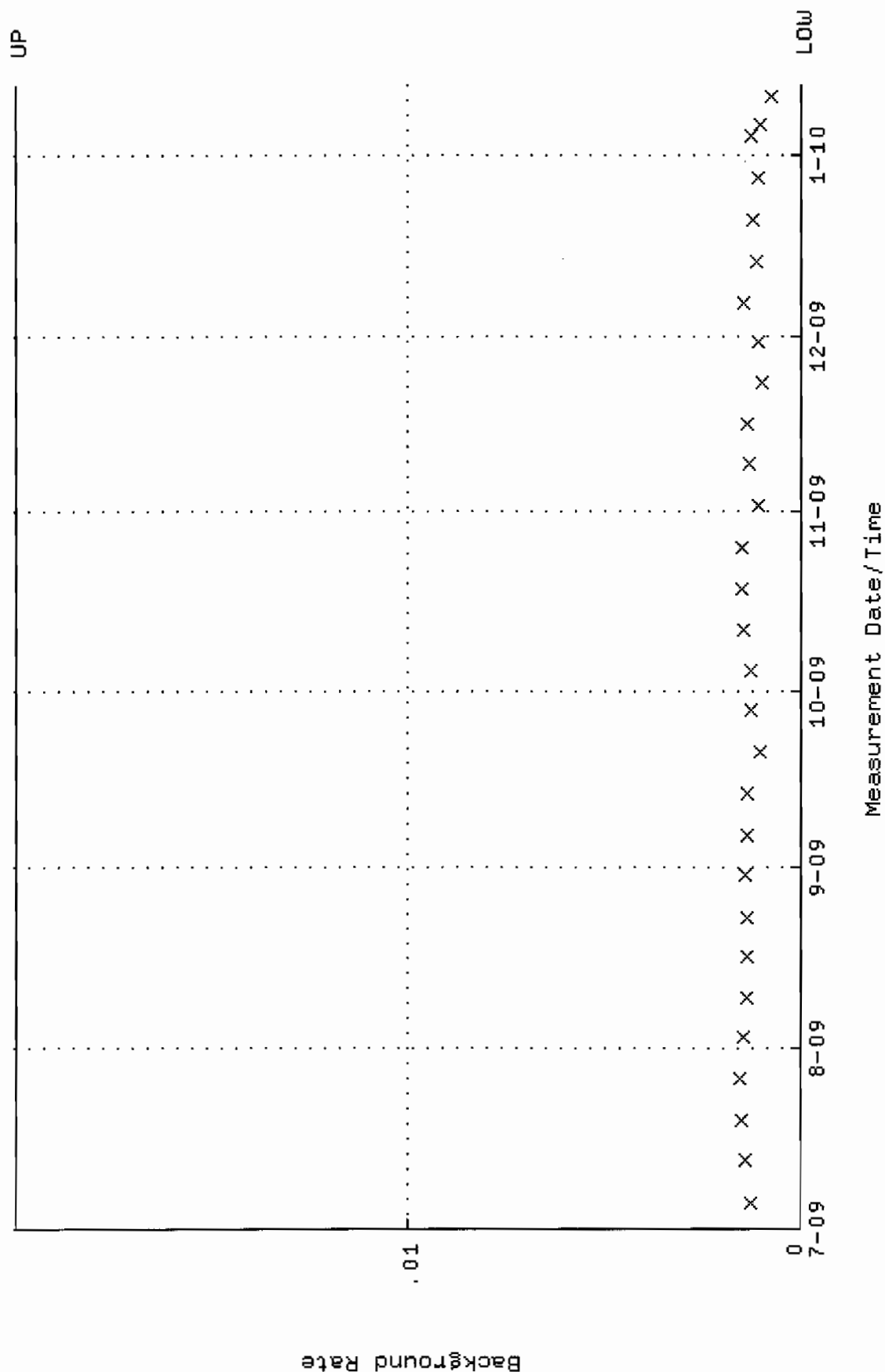


QA filename : DKA100:[ENV\_ALPHA.QA.W]W072.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.3348 through 96.5280

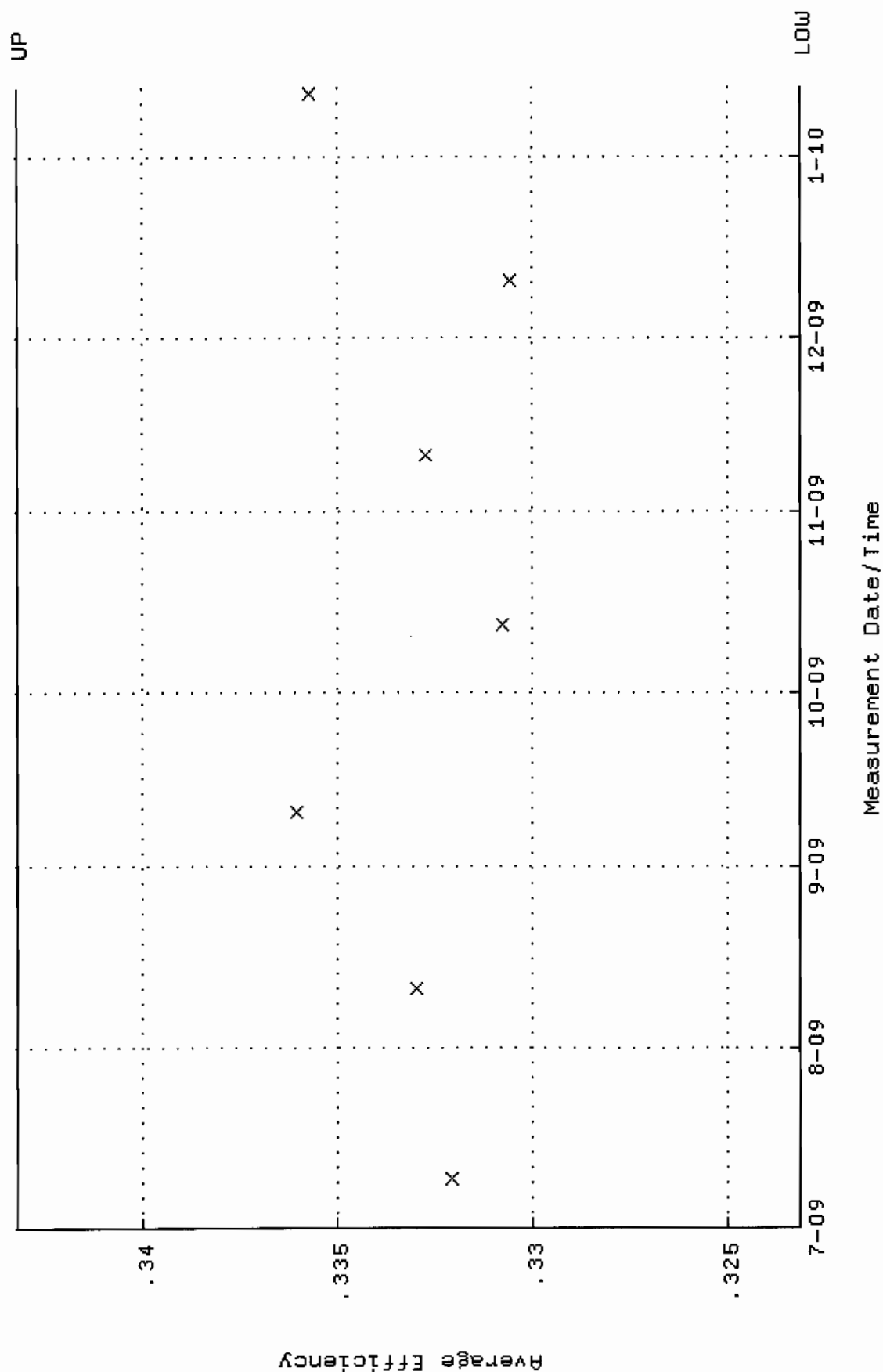




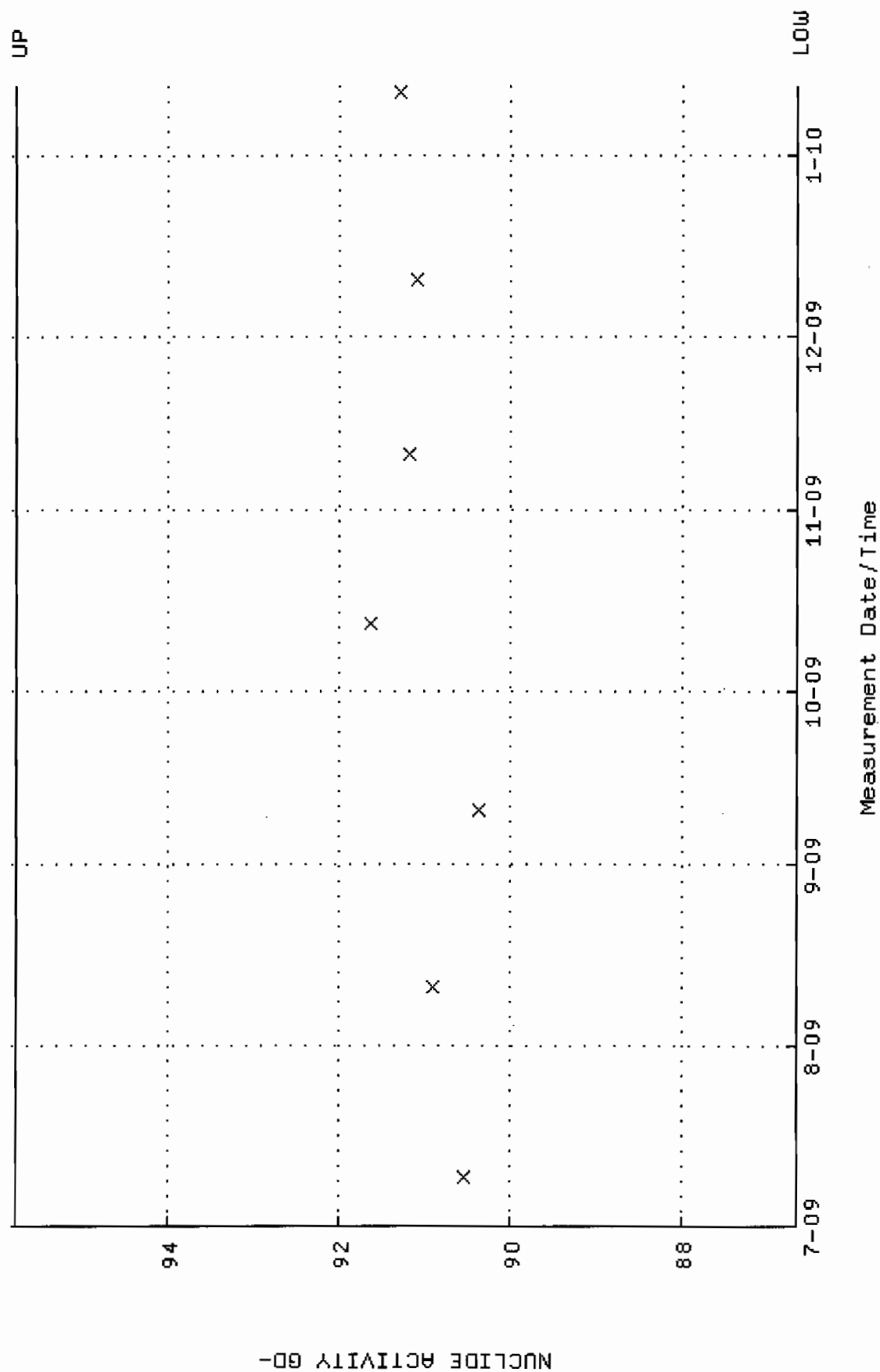
QA filename : DKA100:[ENV\_ALPHA.QA.B]B072.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:02 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



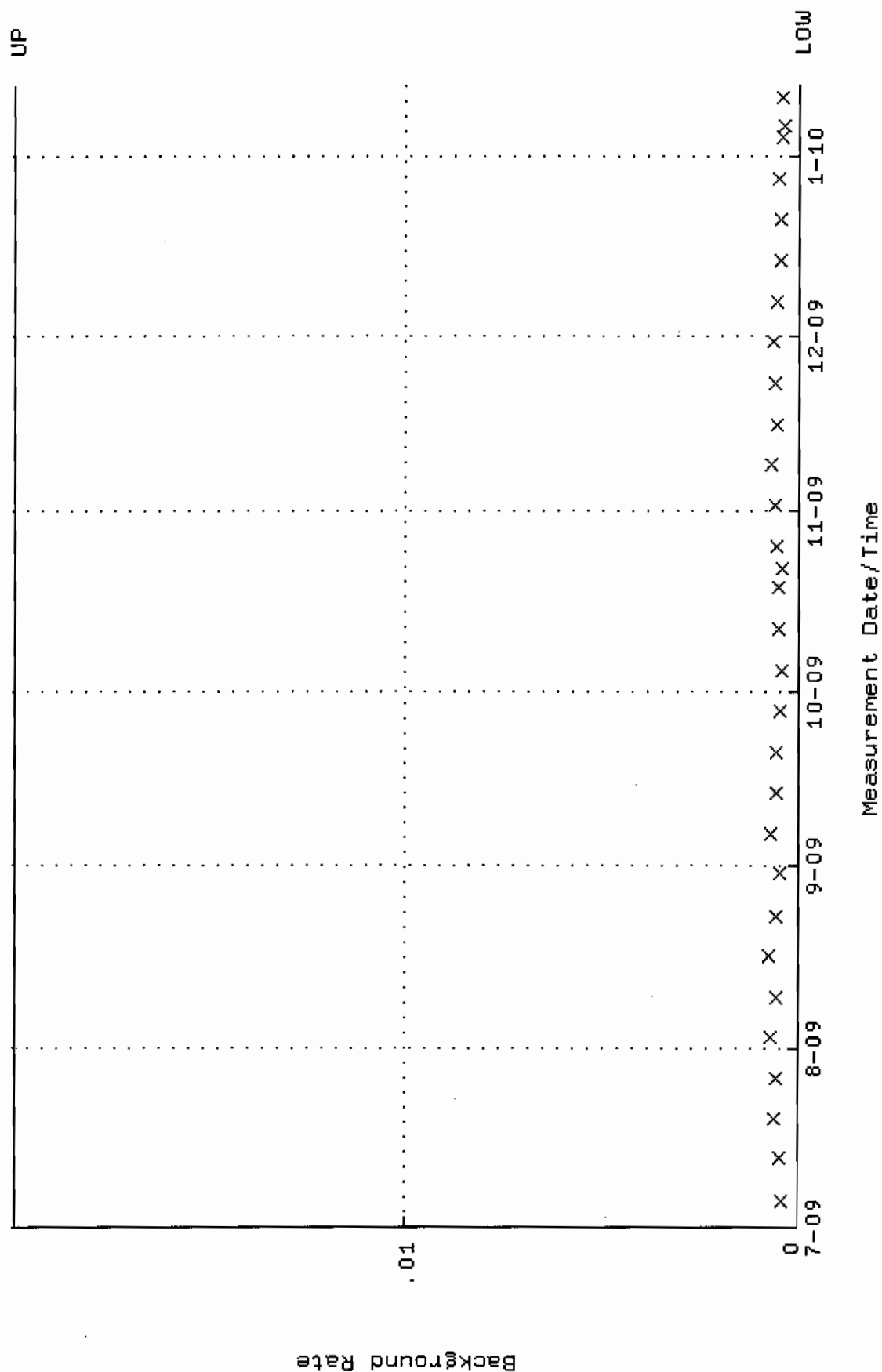
QA filename : DKA100:[ENV\_ALPHA.QA.W]W073.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.323184 through 0.343184



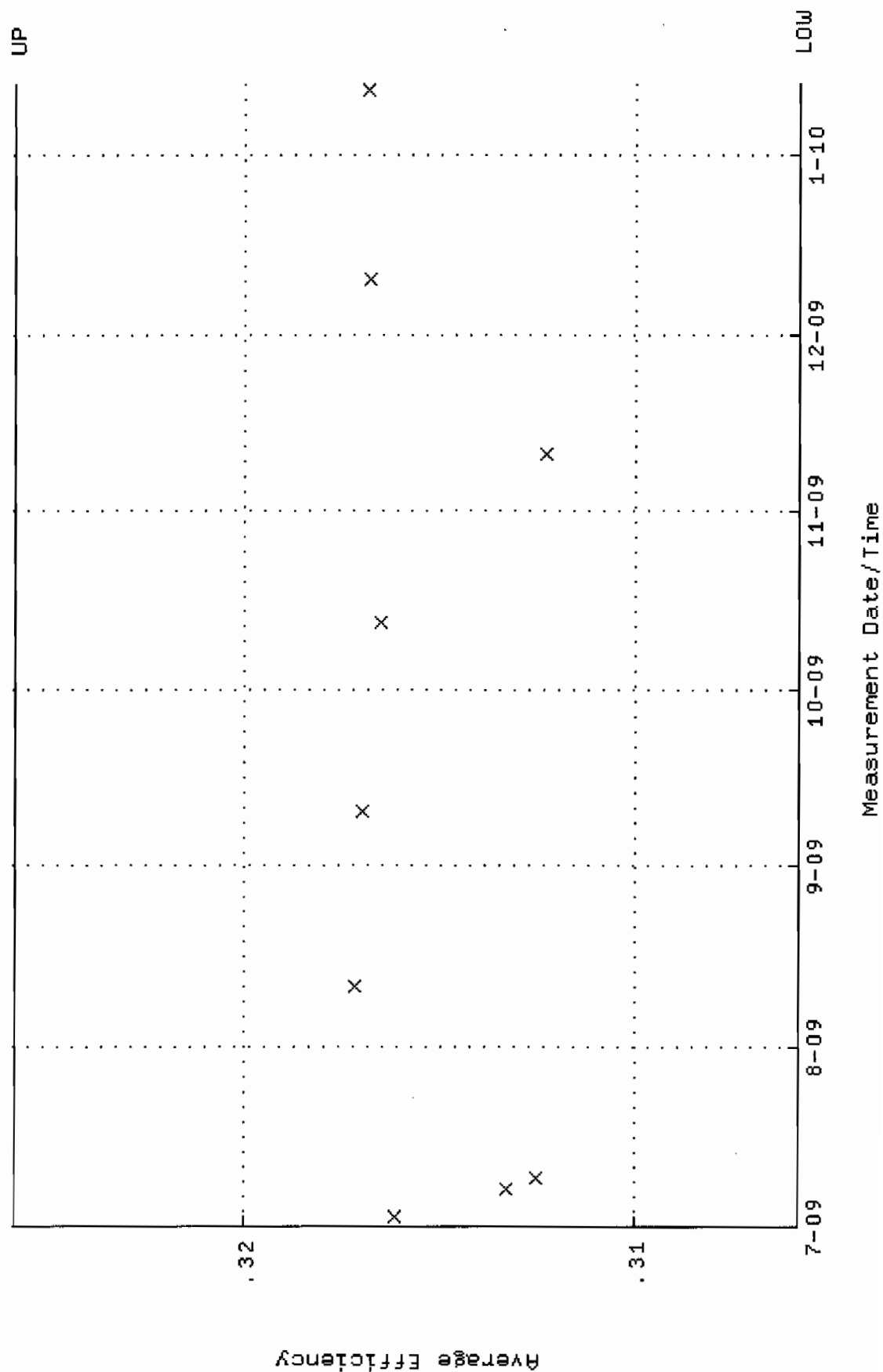
QA filename : DKA100:[ENV\_ALPHA.QA.W]W073.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.6734 through 95.7970



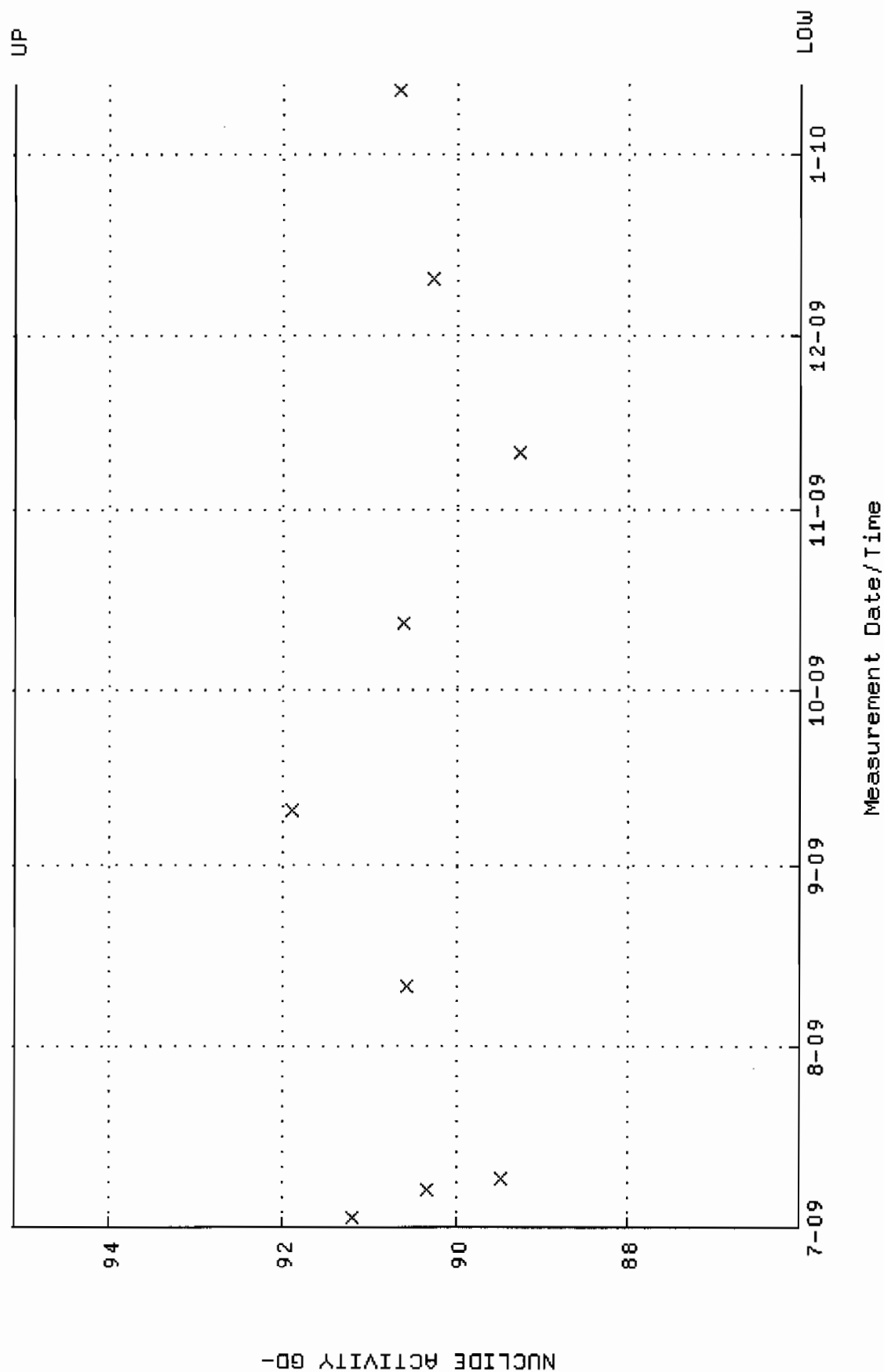
QA filename : DKA100:[ENV-ALPHA.QA.B]B073.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:02 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



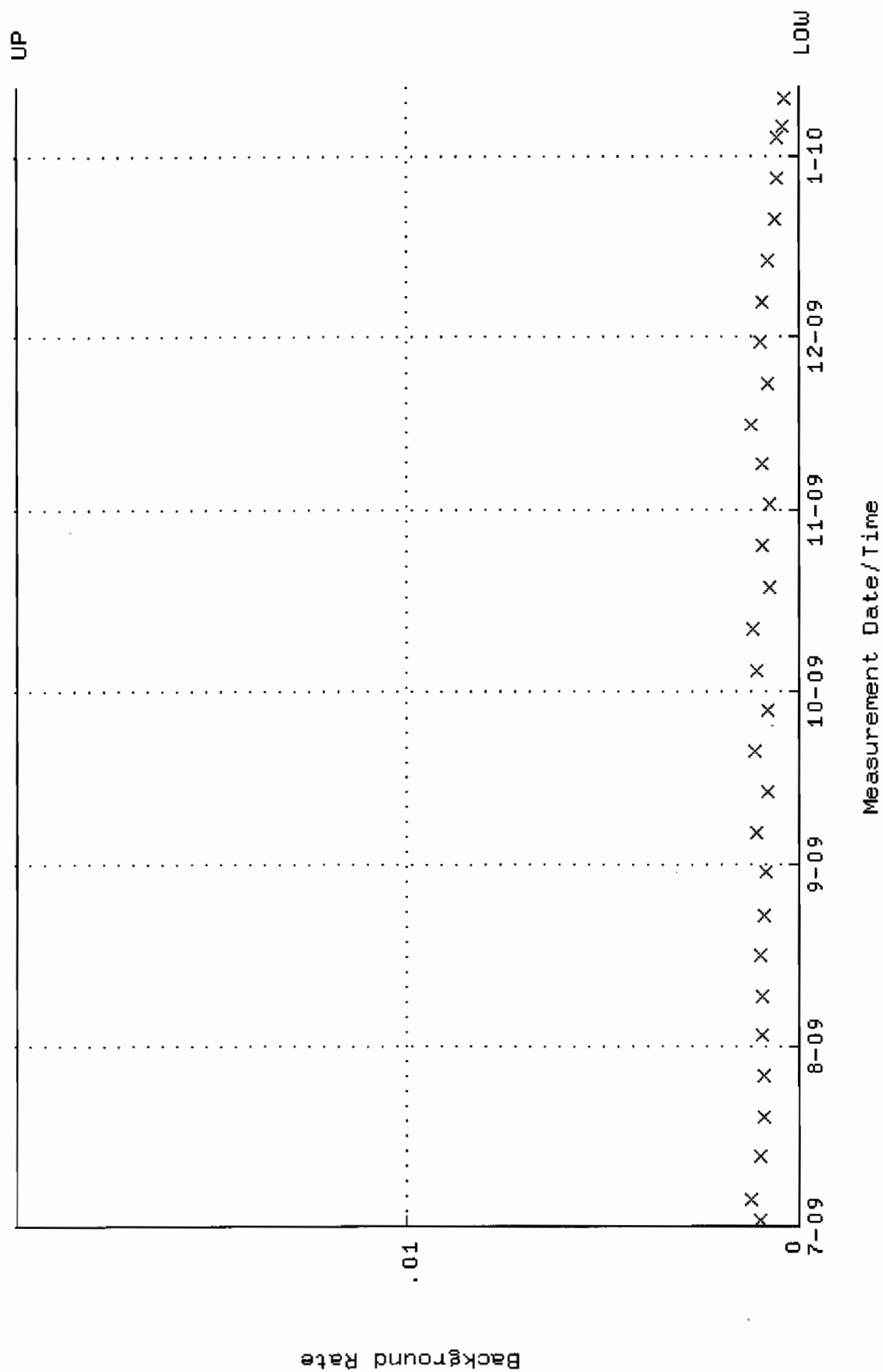
QA filename : DKA100:[ENV\_ALPHA.QA.W]W074.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUL-2009 15:04:13 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.305830 through 0.325830



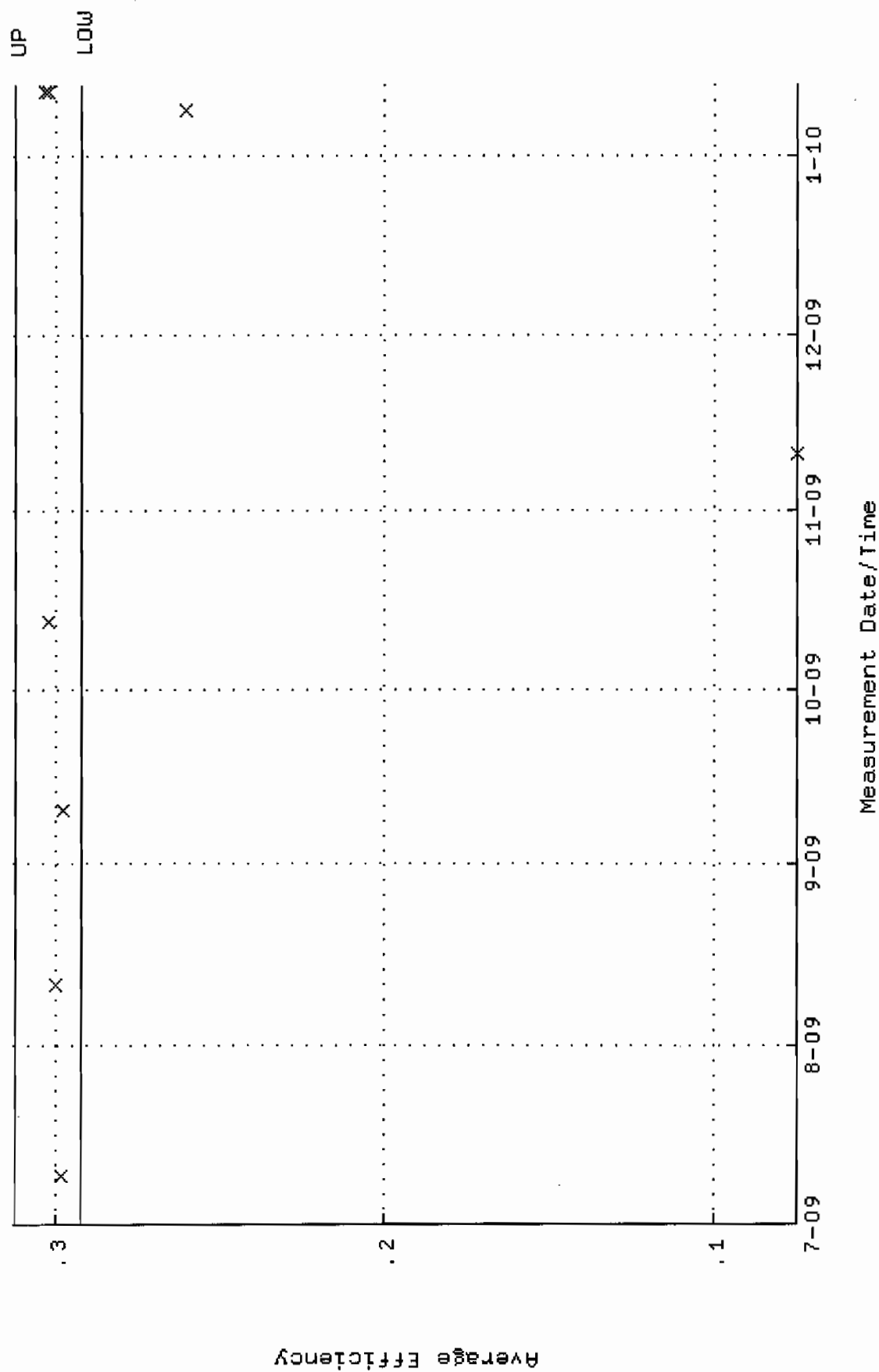
QA filename : DKA100:[ENVY\_ALPHA.QA.W]W074.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUL-2009 15:04:13 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.0289 through 95.0845



QA filename : DKA100:[ENV\_ALPHA.QA.B]B074.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUL-2009 21:39:57 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

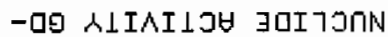


QA filename : DKA100:[ENV\_ALPHA.QA.W]W075.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.292134 through 0.312134





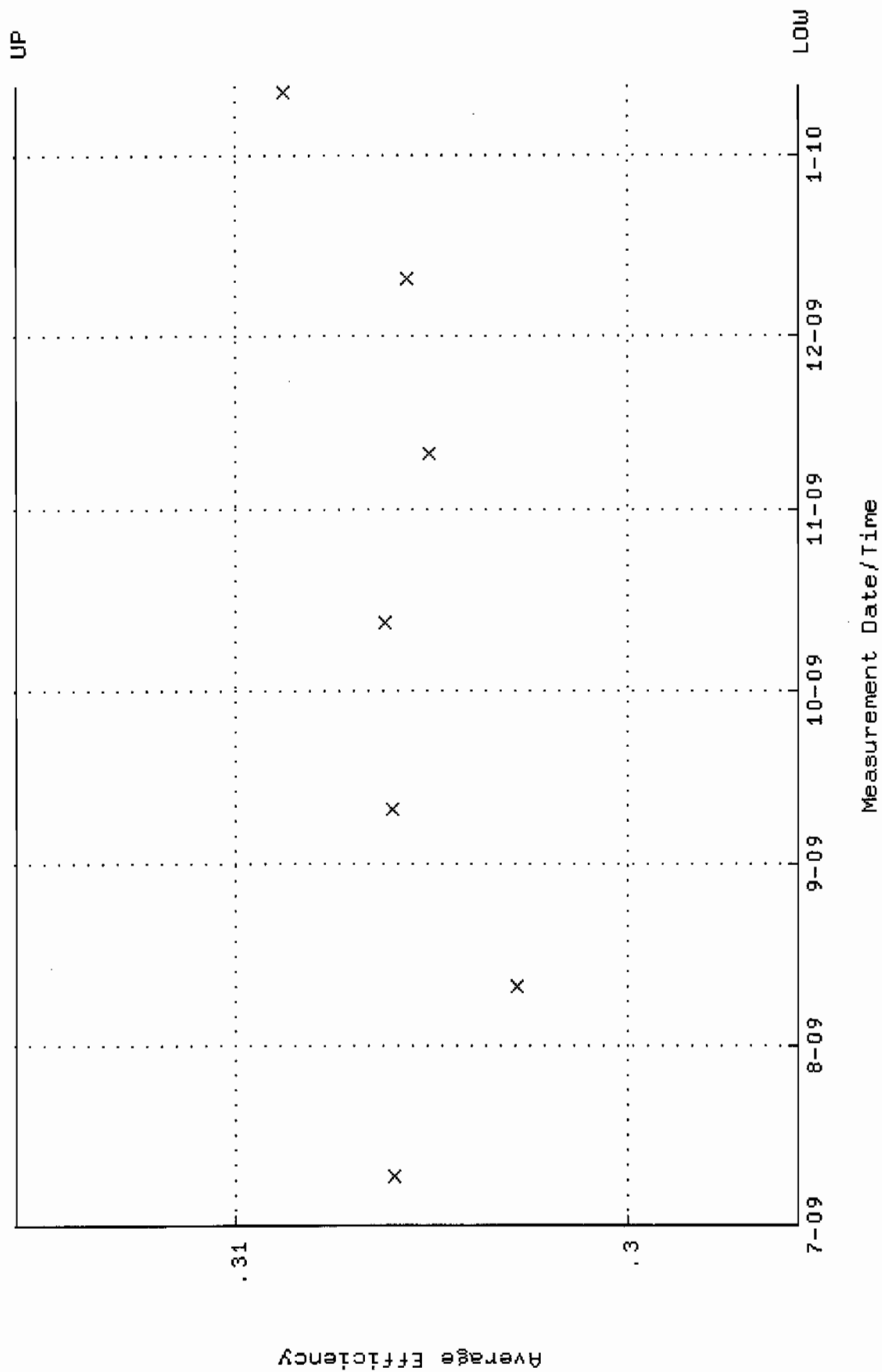
Lower/Upper Lmts: 91.1212 through 100.713



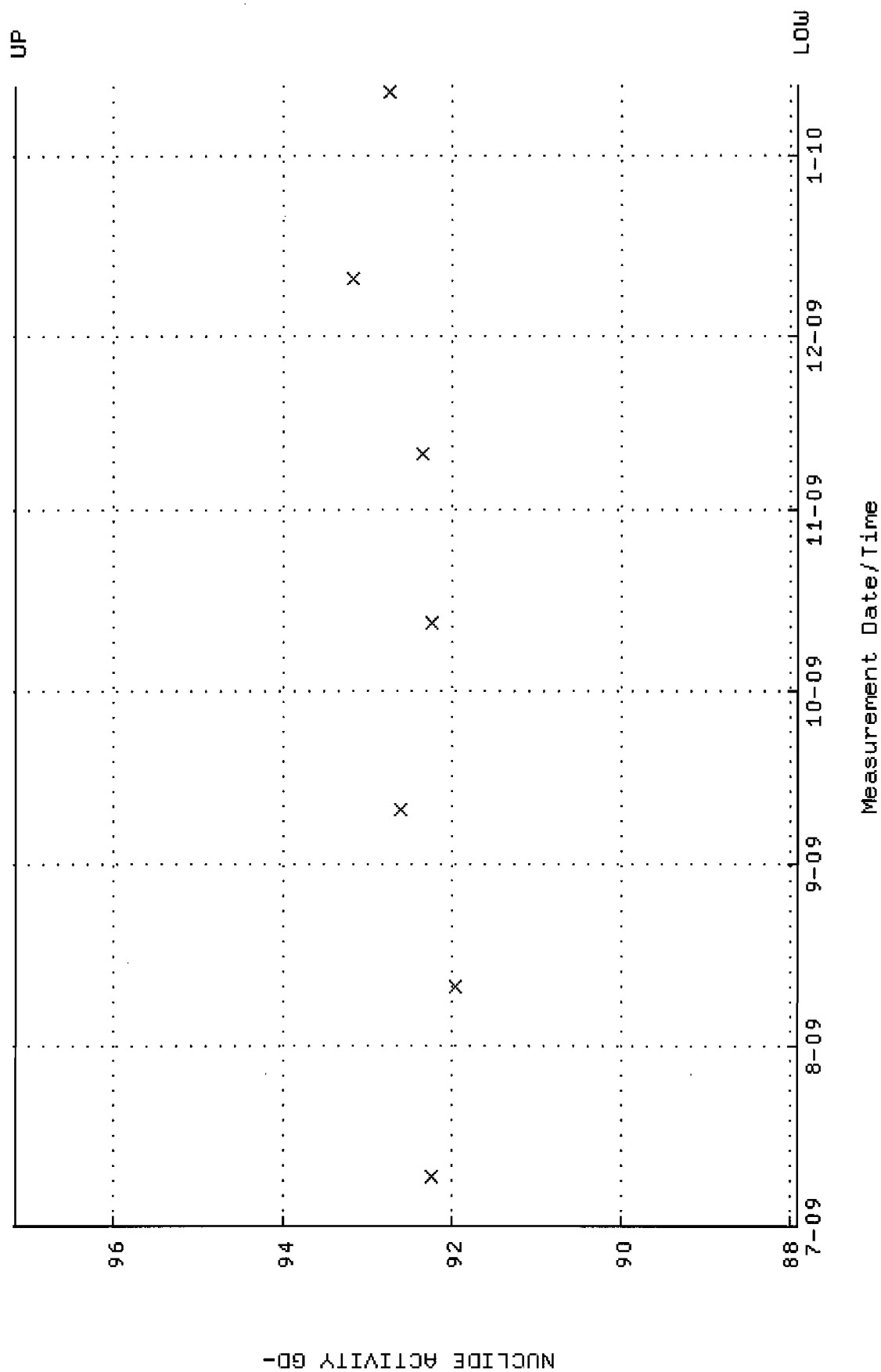
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



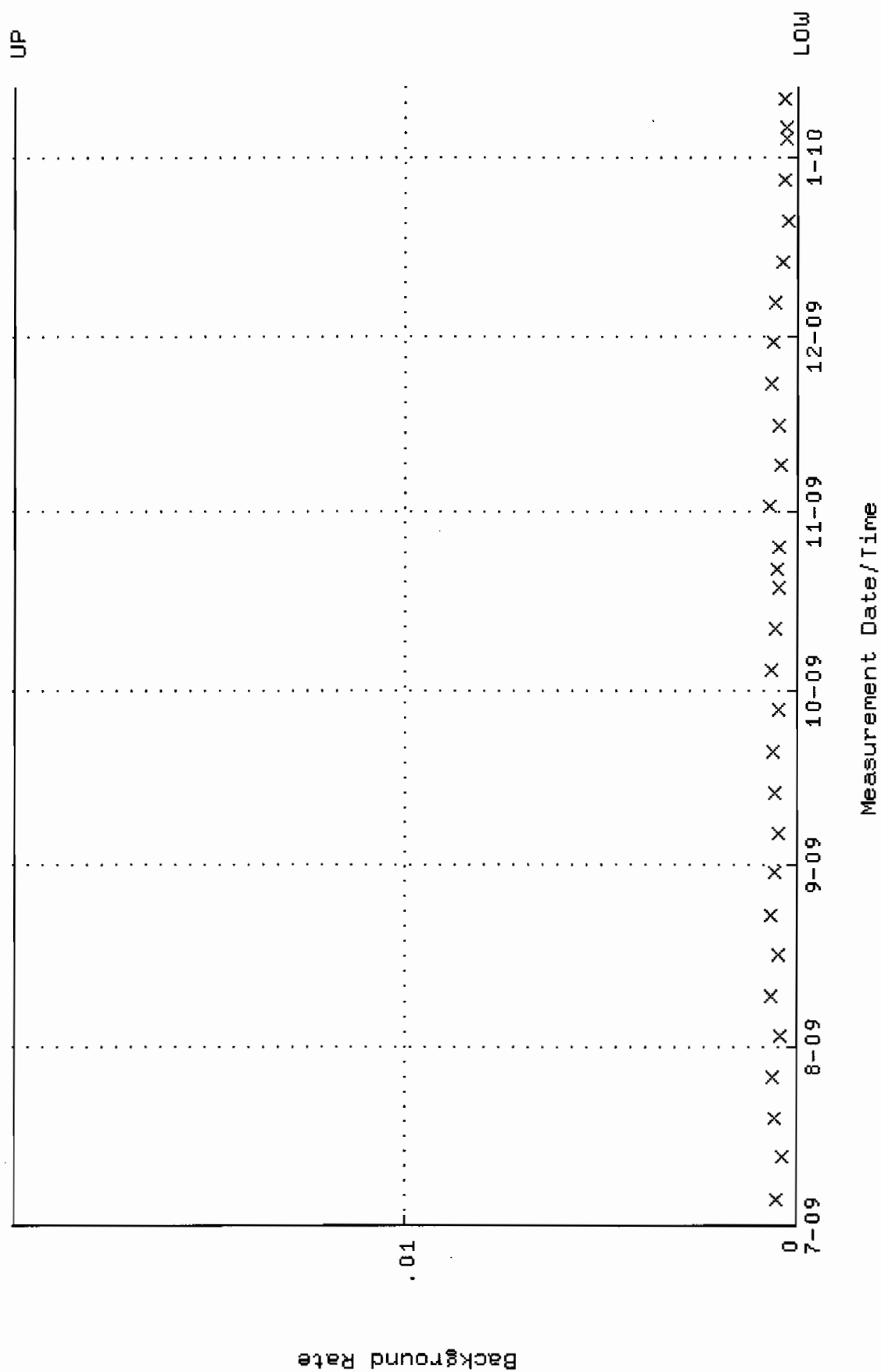
QA filename : DKA100:[ENV\_ALPHA.QA.W]W076.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.295613 through 0.315613



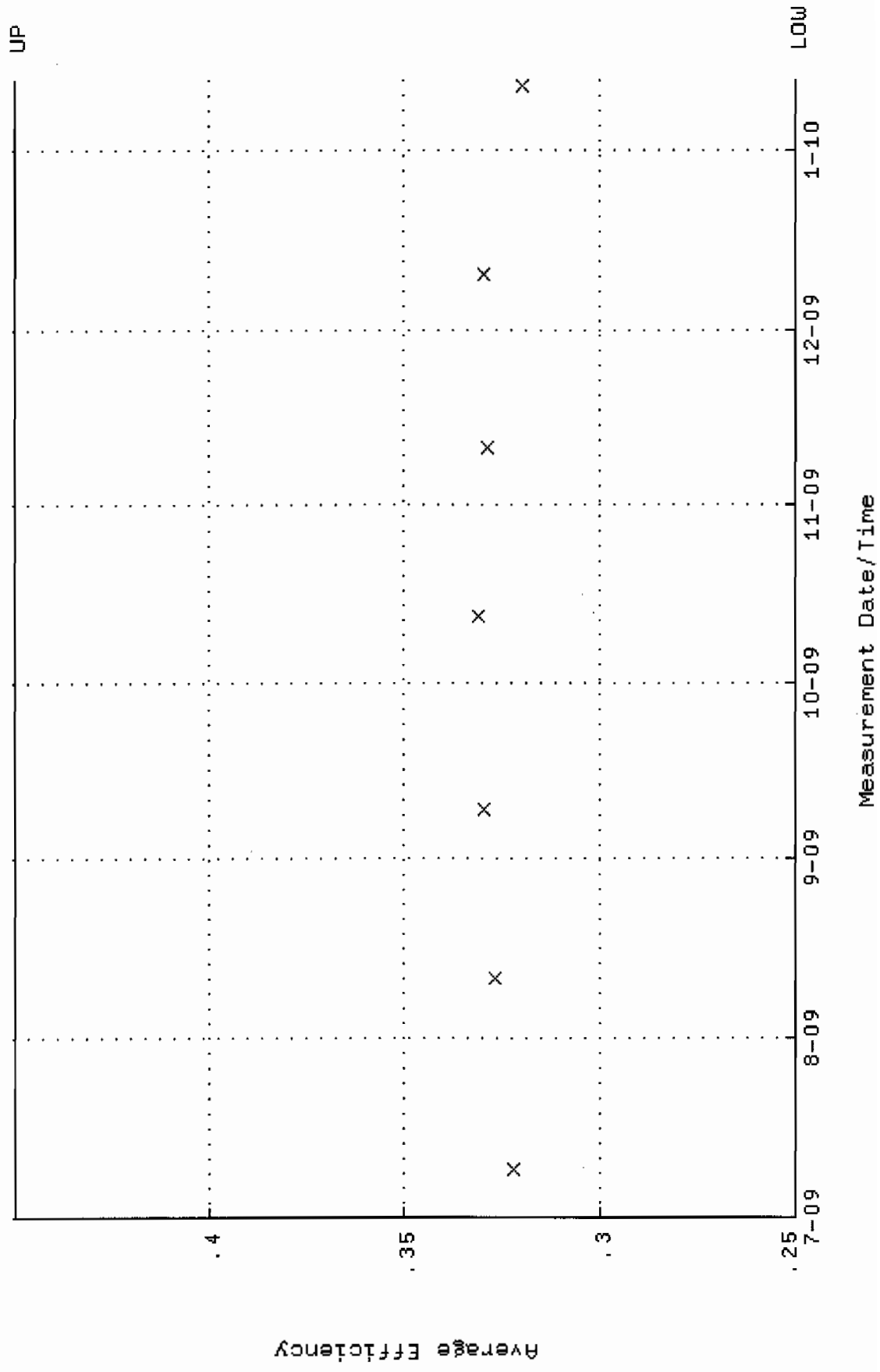
QA filename : DKA100:[ENV-ALPHA.QA.W]W076.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.9031 through 97.1561



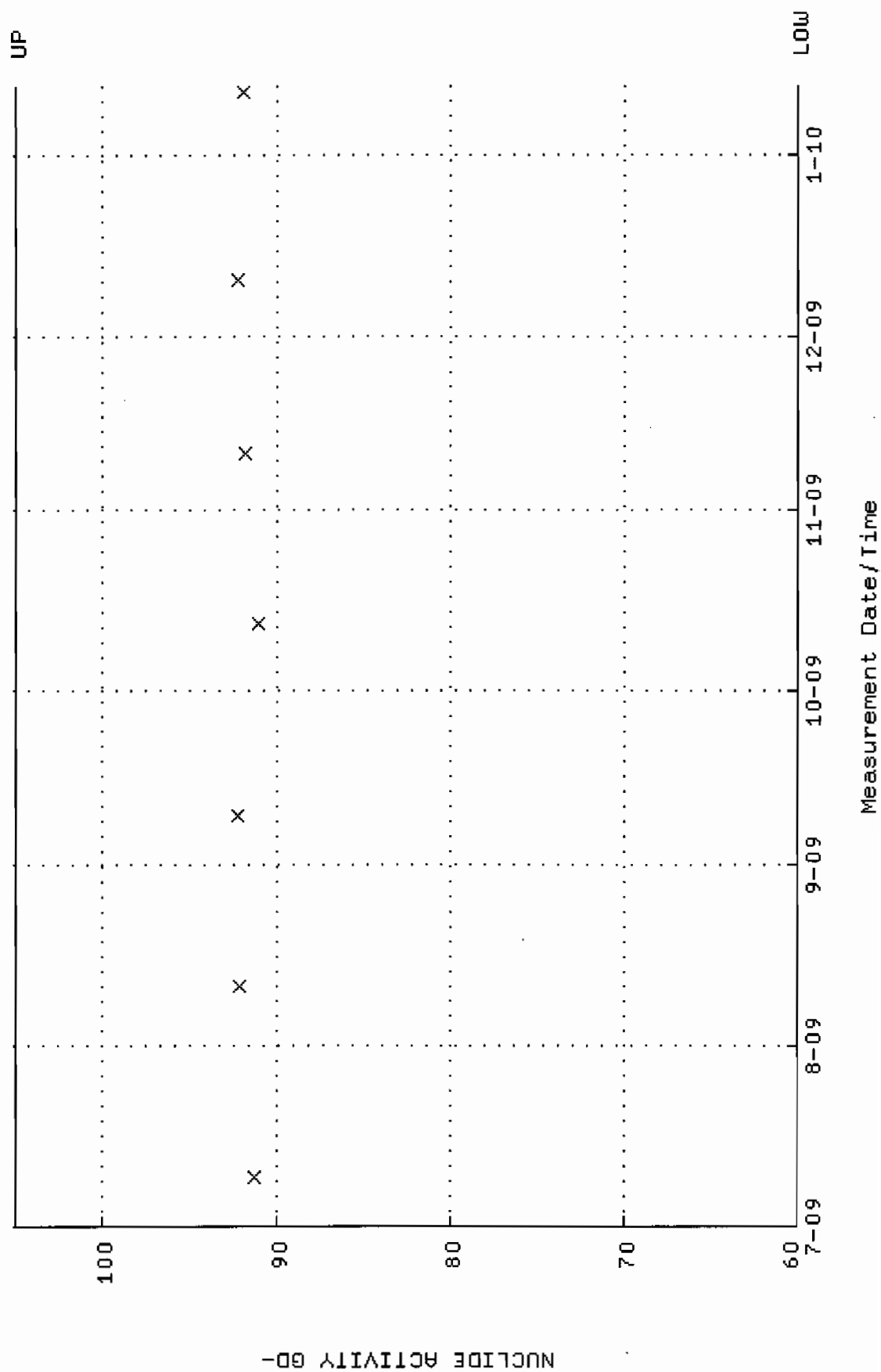
QA filename : DKA100:[ENV\_ALPHA.QA.B]B076.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:02 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



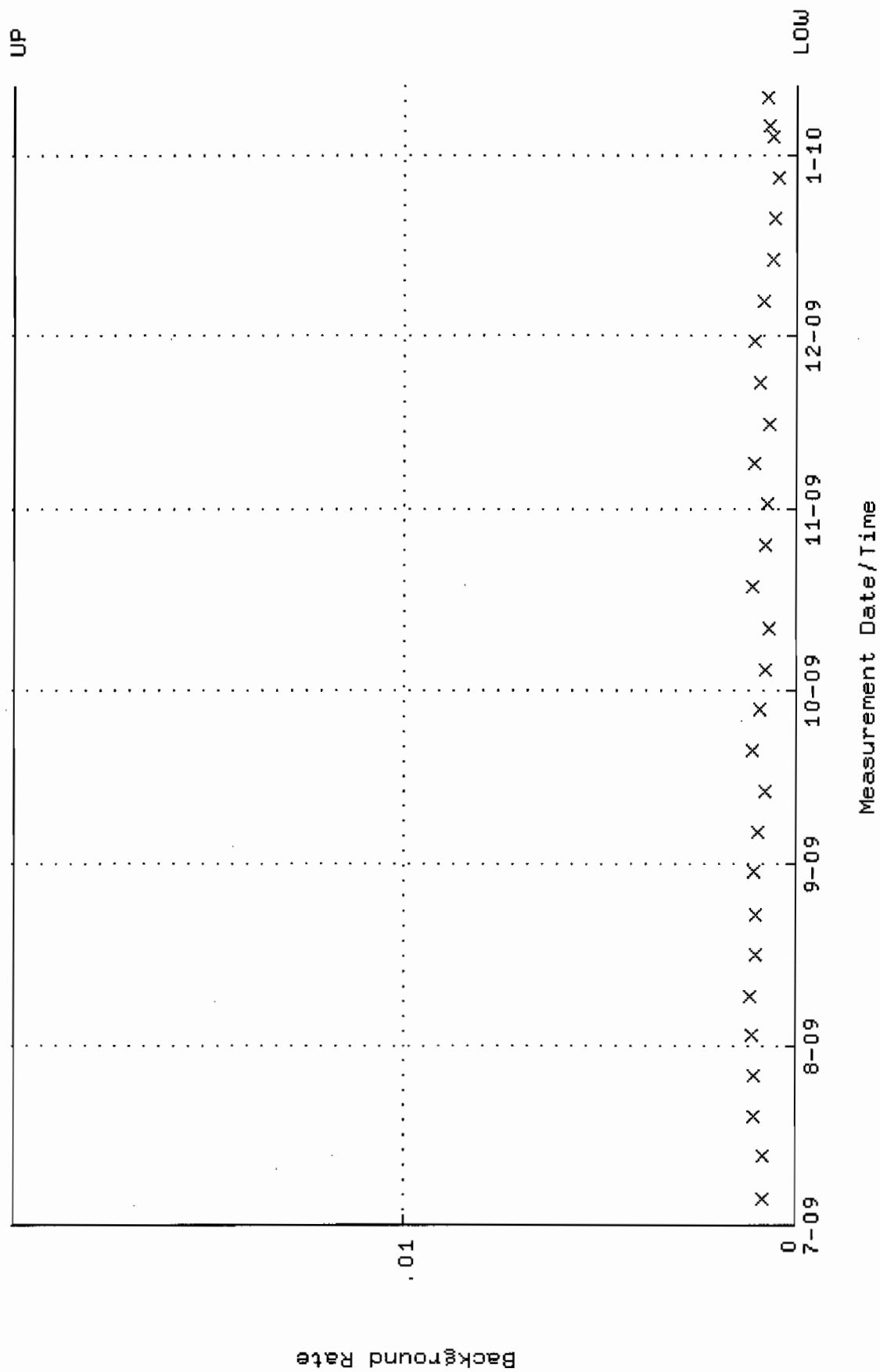
QA filename : DKA100:[ENV\_ALPHA.QA.W]W077.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W077.QAF;5  
 Parameter Name : 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: 60.0000 through 105.0000

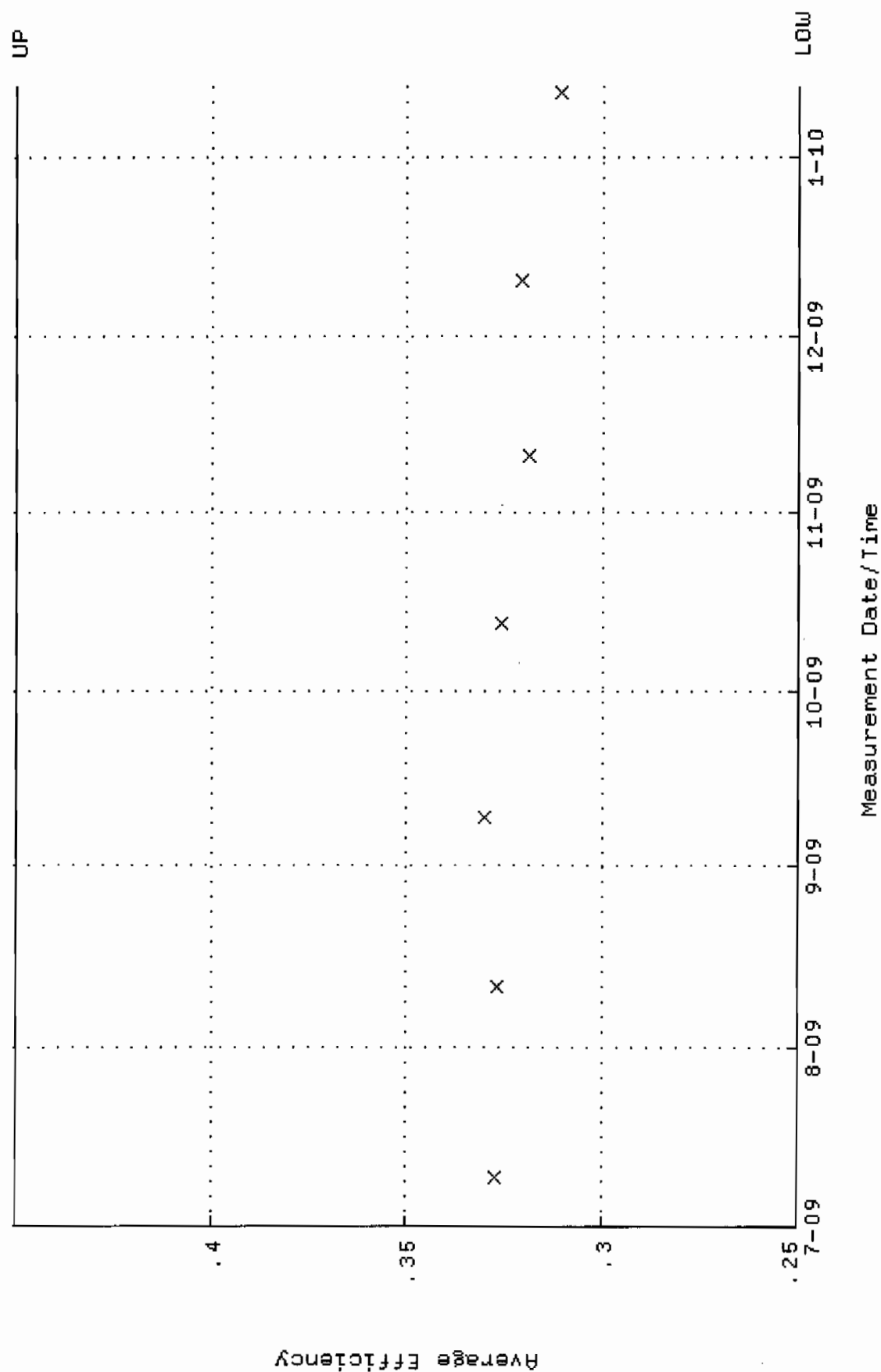


QA filename : DKA100:[ENV\_ALPHA.QA.B]B077.QAF;3  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:03 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

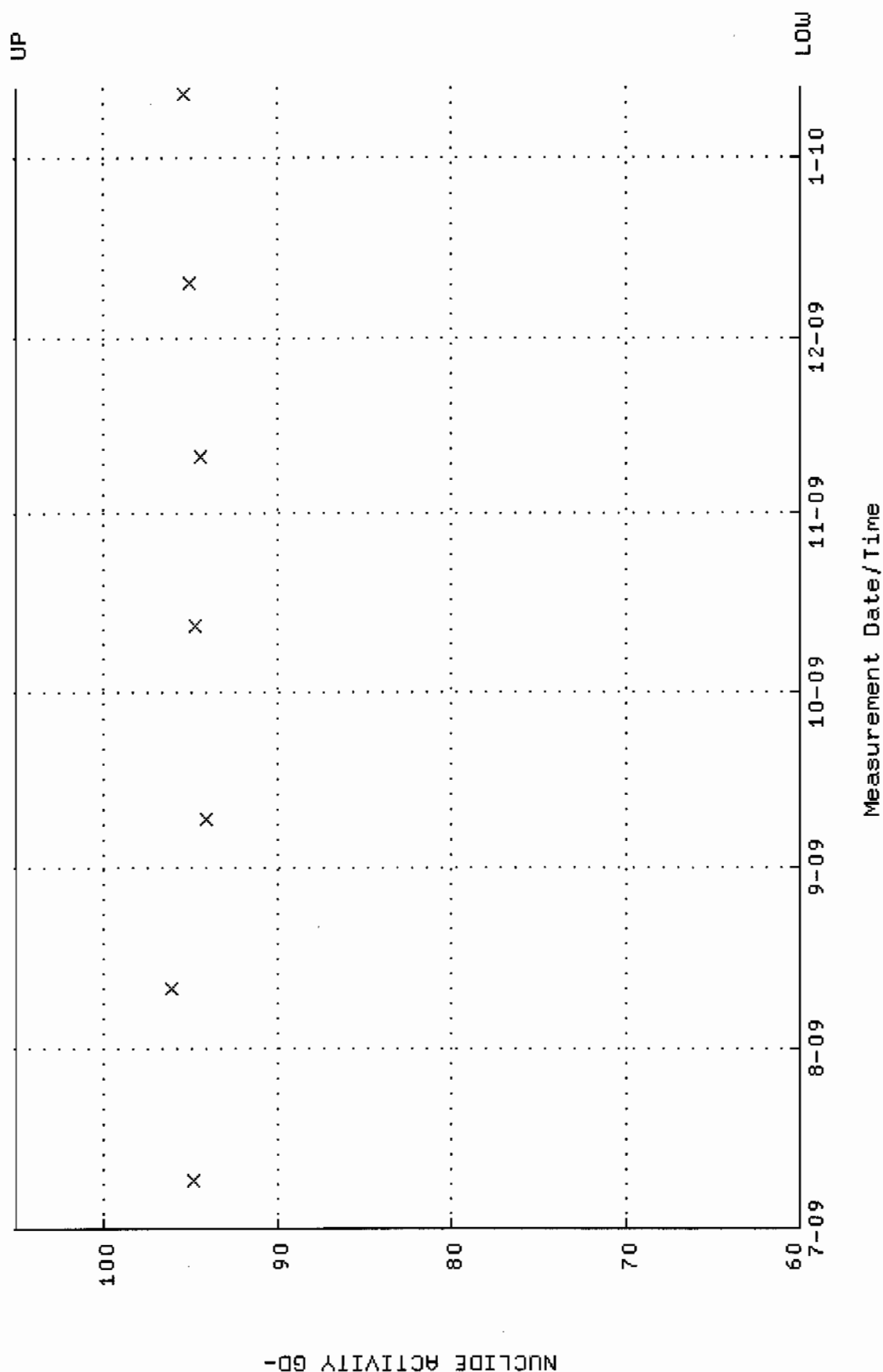




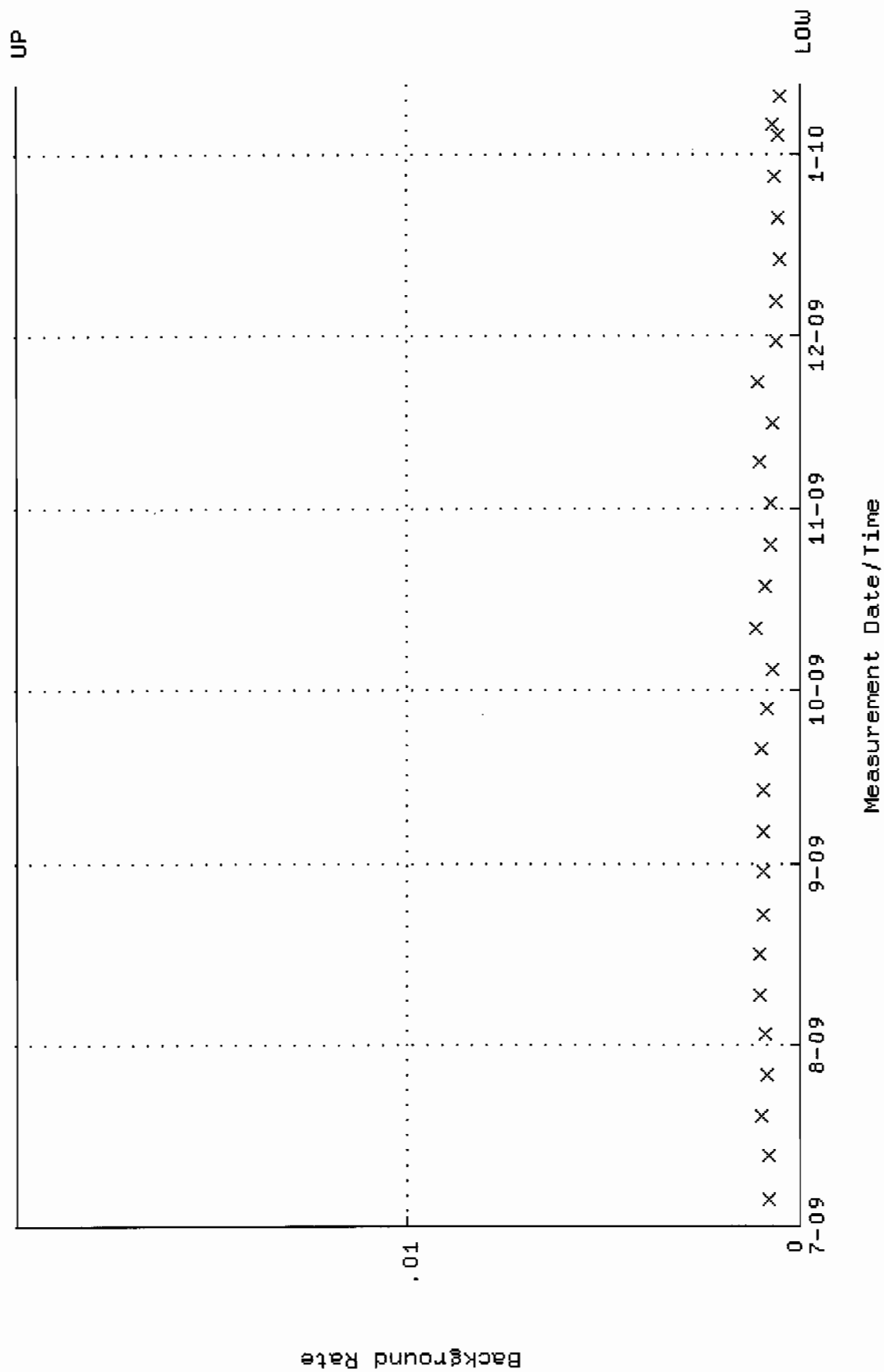
QA filename : DKA100:[ENV\_ALPHA.QA.W]W078.QAF;6  
 Parameter Name : AVR6EFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



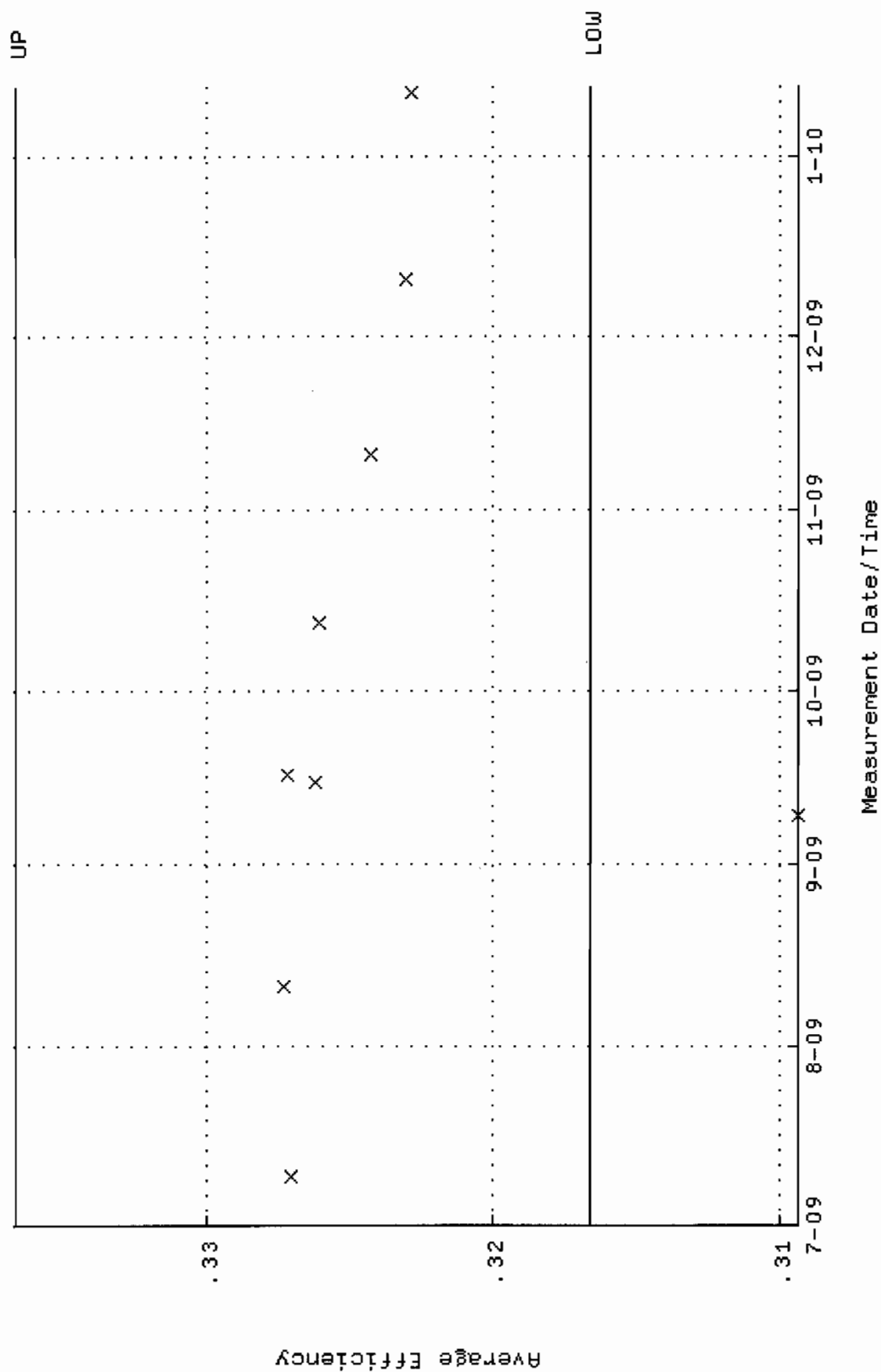
QA filename : DKA100:[ENV\_ALPHA.QA.W]W078.QAF;6  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000



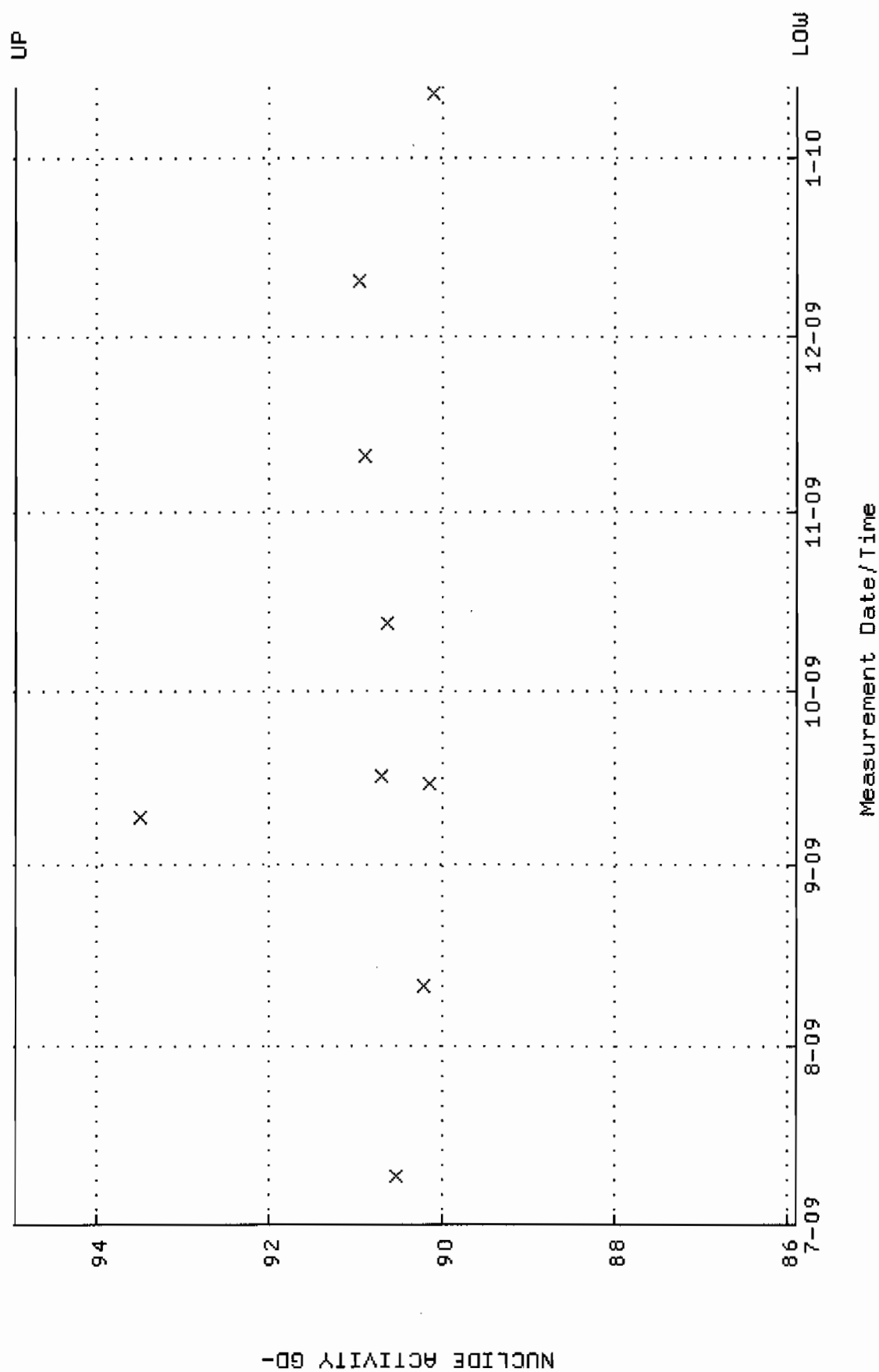
QA filename : DKA100:[ENV\_ALPHA.QA.B]B078.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:03 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



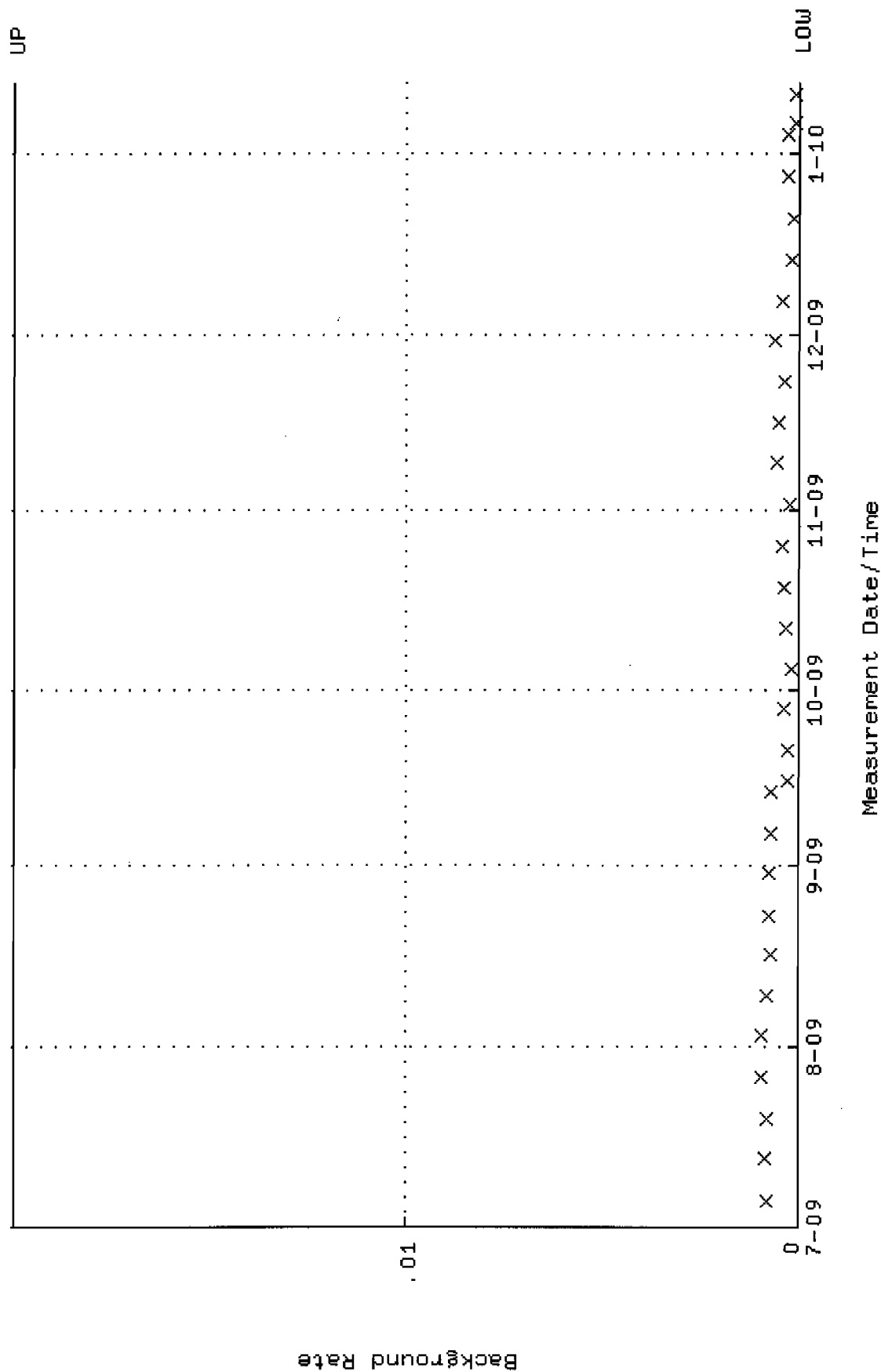
QA filename : DKA100:[ENV-ALPHA.QA.W]W079.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.316654 through 0.336654



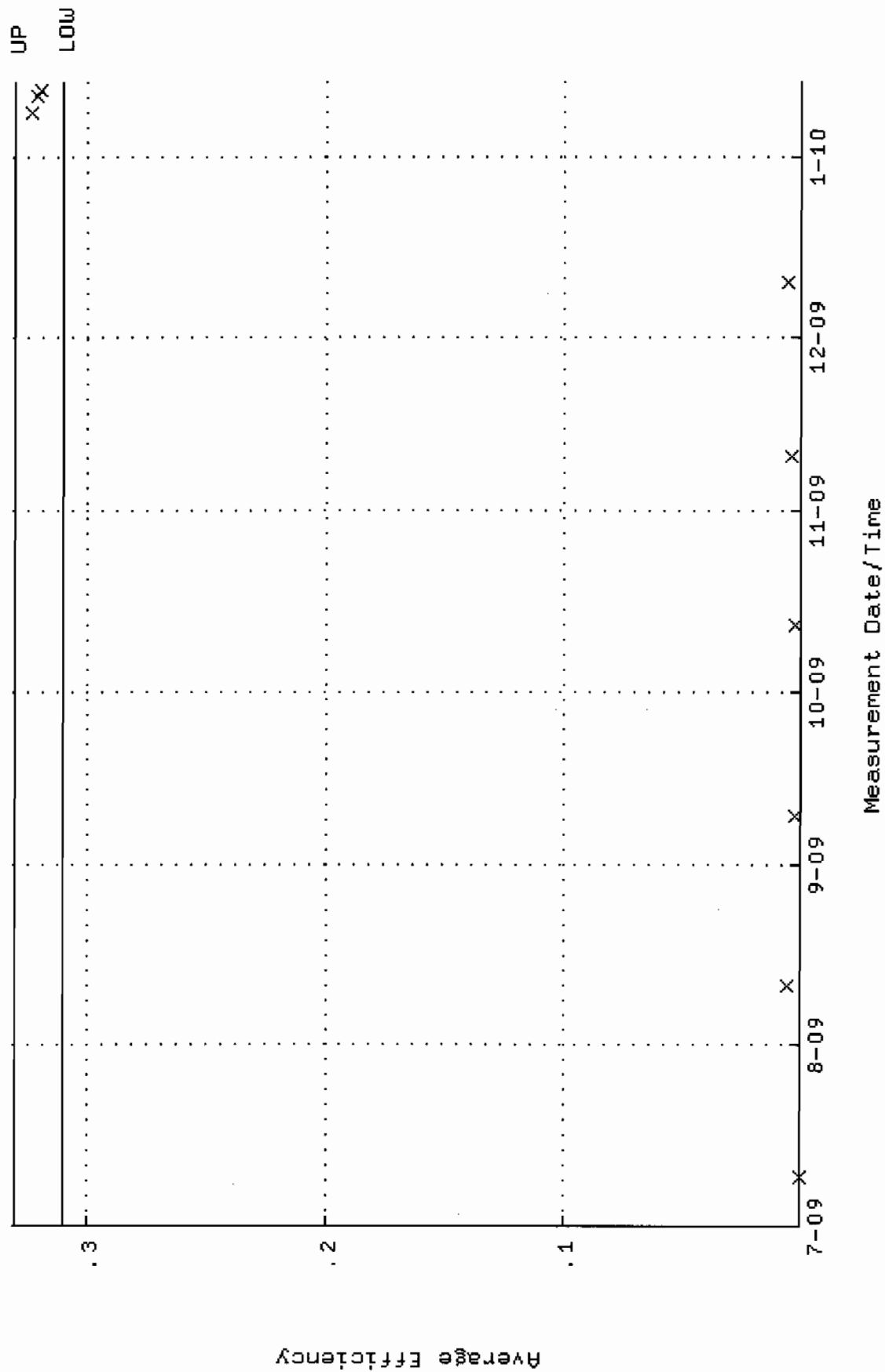
QA filename : DKA100:[ENV\_ALPHA.QA.w]w079.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.8913 through 94.9325



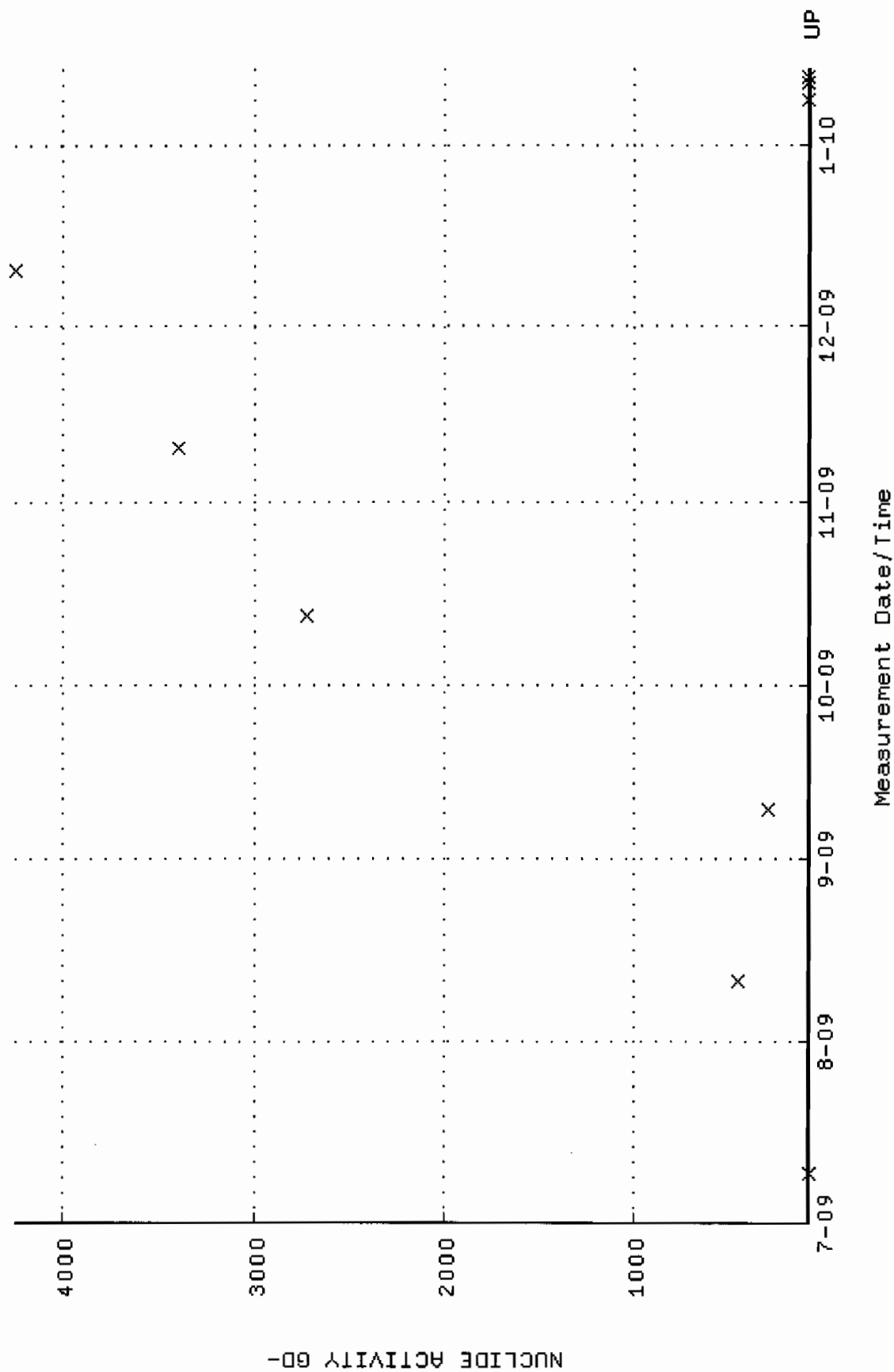
QA filename : DKA100:[ENV\_ALPHA.QA.B]B079.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:03 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W081.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 13-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.310202 through 0.330202



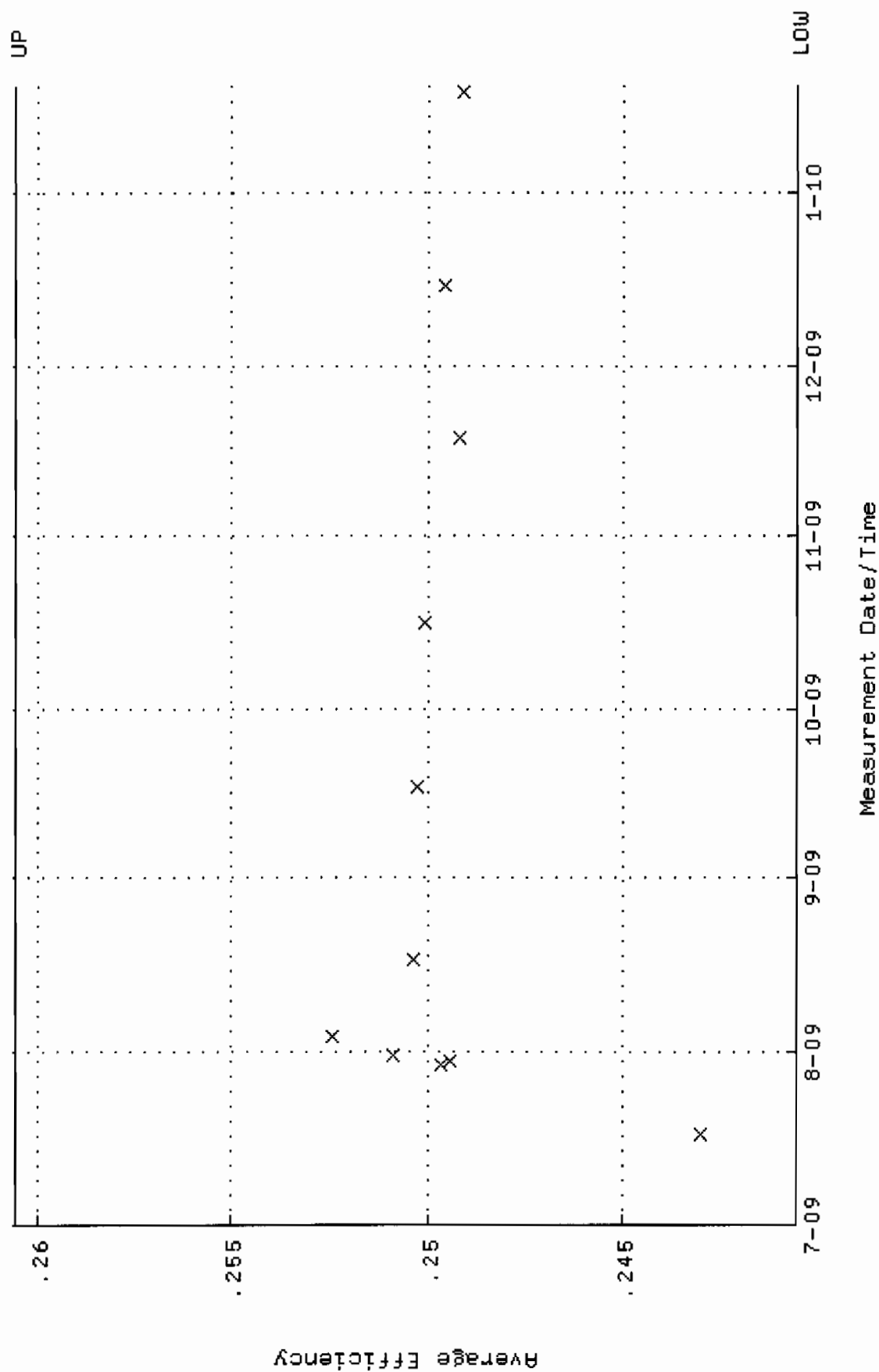
QA filename : DKA100:[ENV\_ALPHA.QA.W]W081.QAF;5  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 13-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.2016 through 98.5912



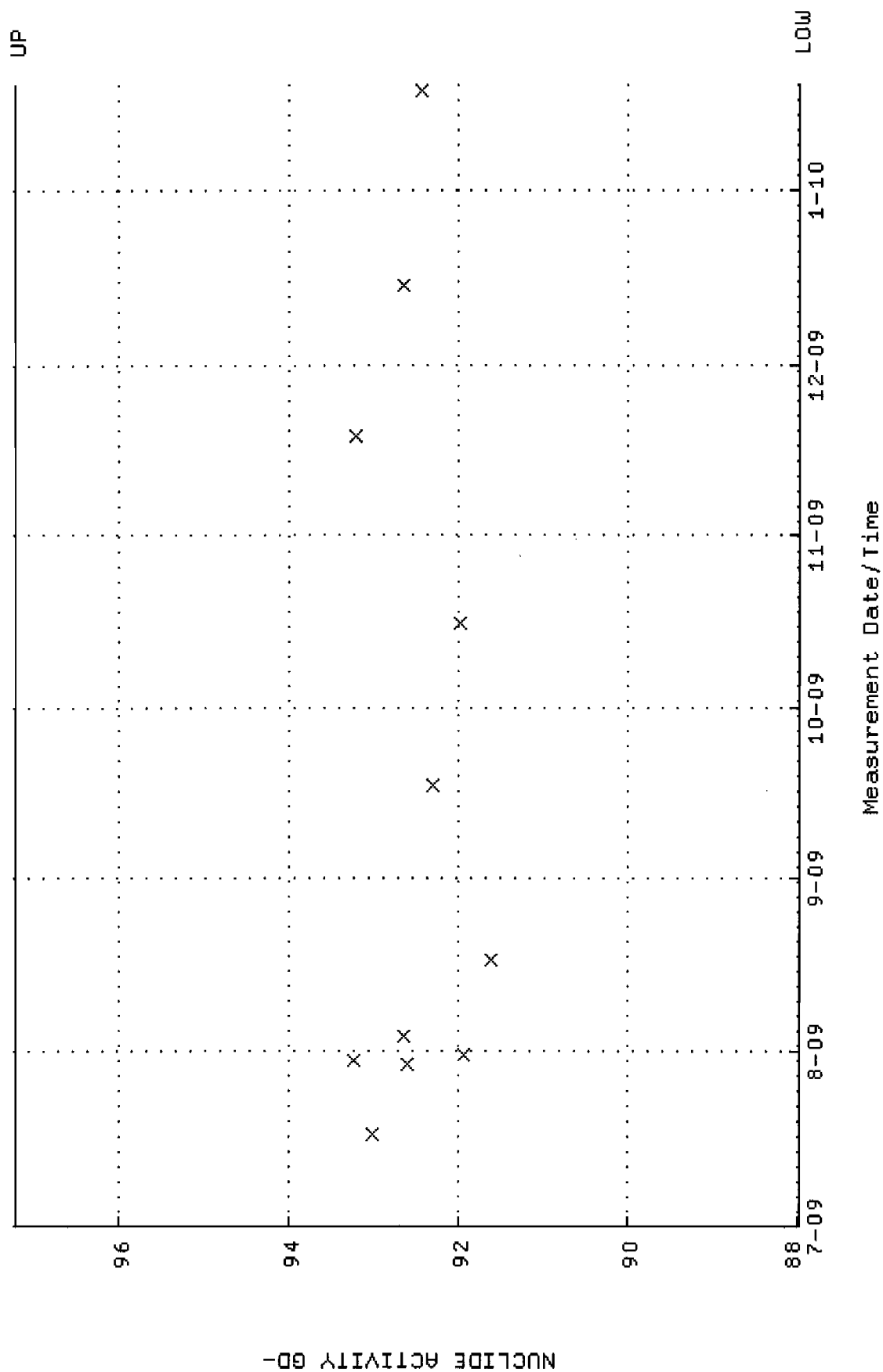




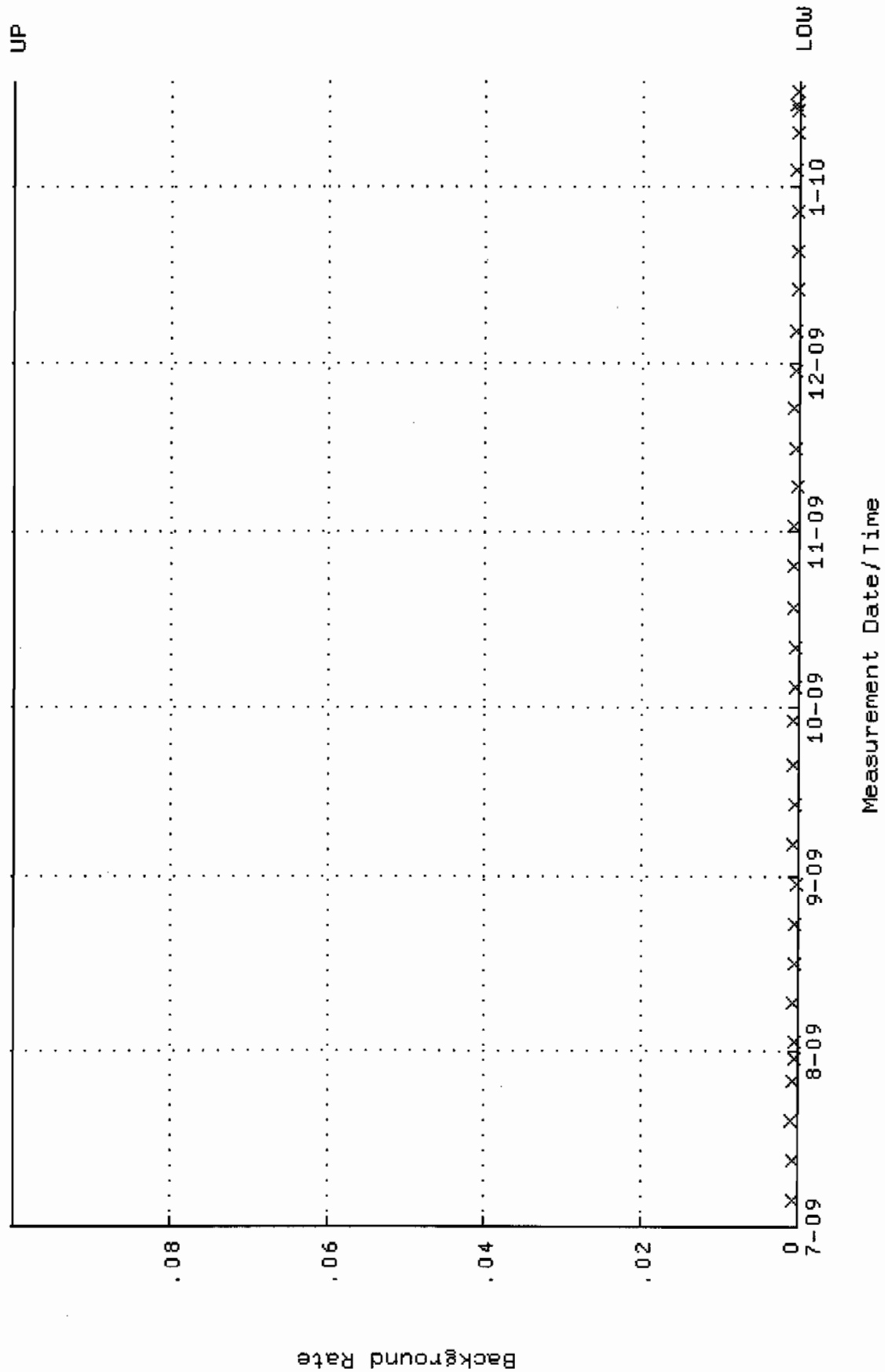
QA filename : DKA100:[ENV\_ALPHA.QA.W]W132.QAF;1  
 Parameter Name : AVR5EFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:12:16 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.240573 through 0.260573



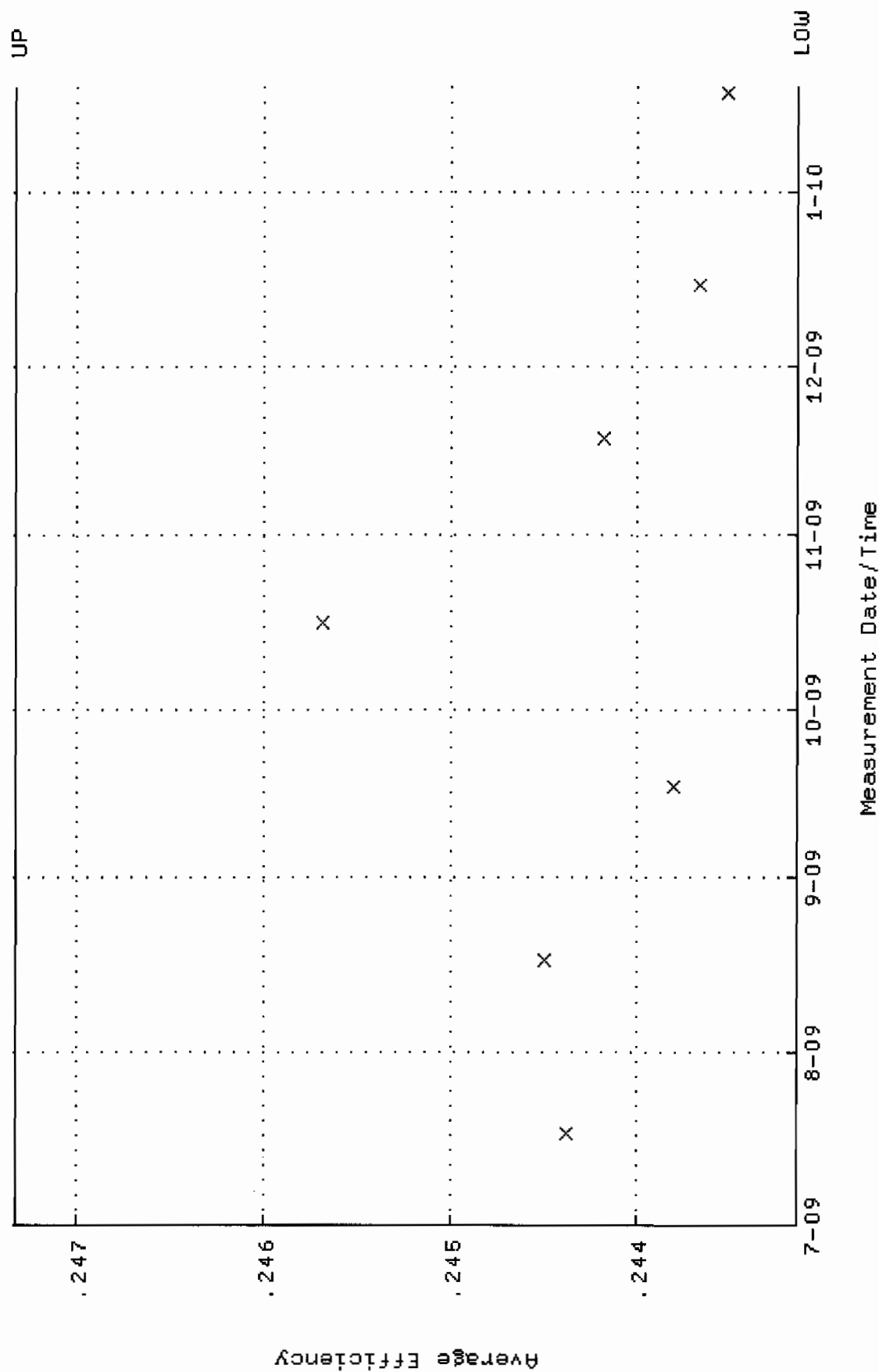
QA filename : DKA100:[ENV\_ALPHA:QA.W]W132.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:12:16 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.9674 through 97.2272



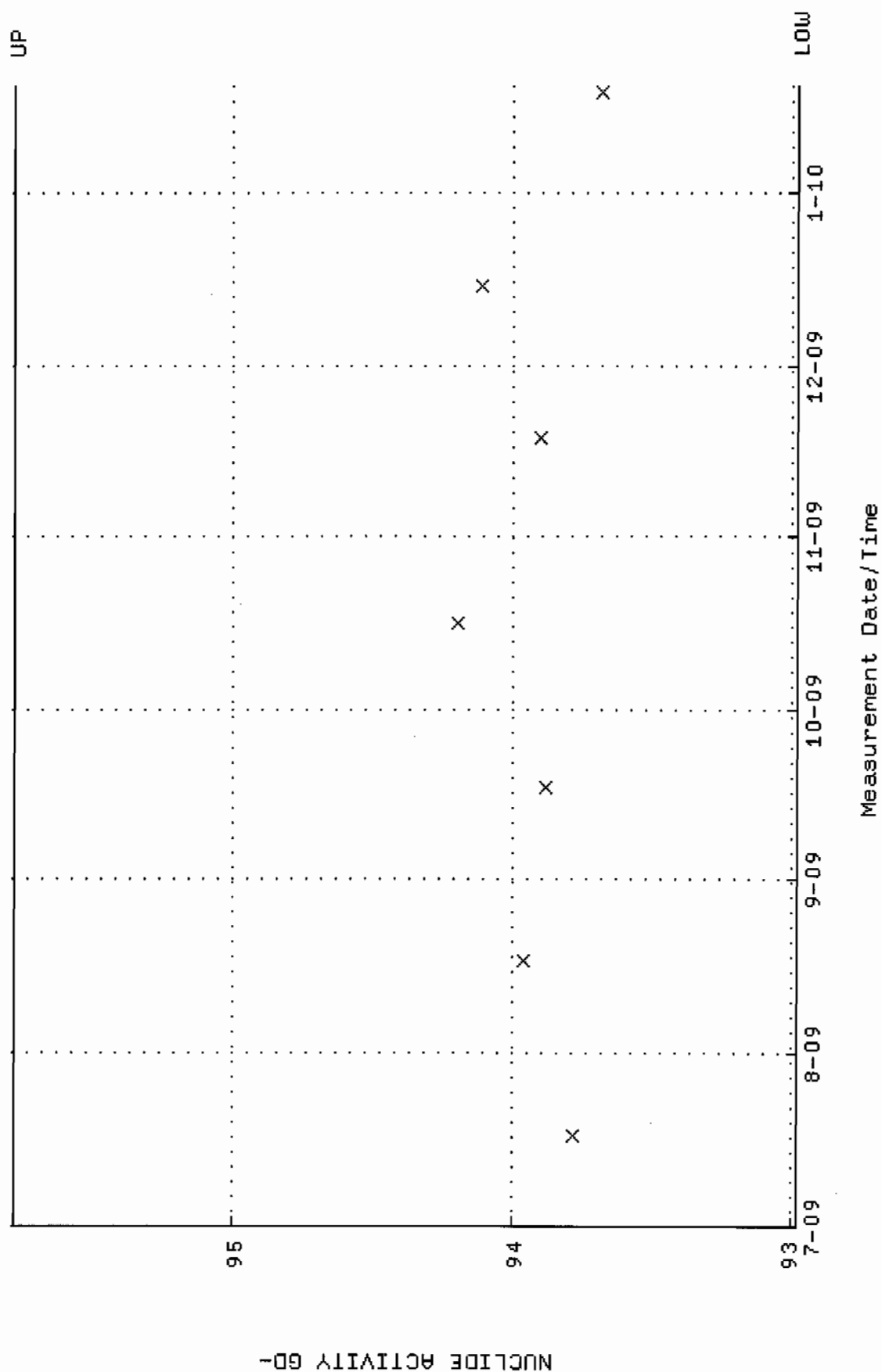
QA filename : DKA100:[ENV\_ALPHA.QA.B]B132.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:56:21 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



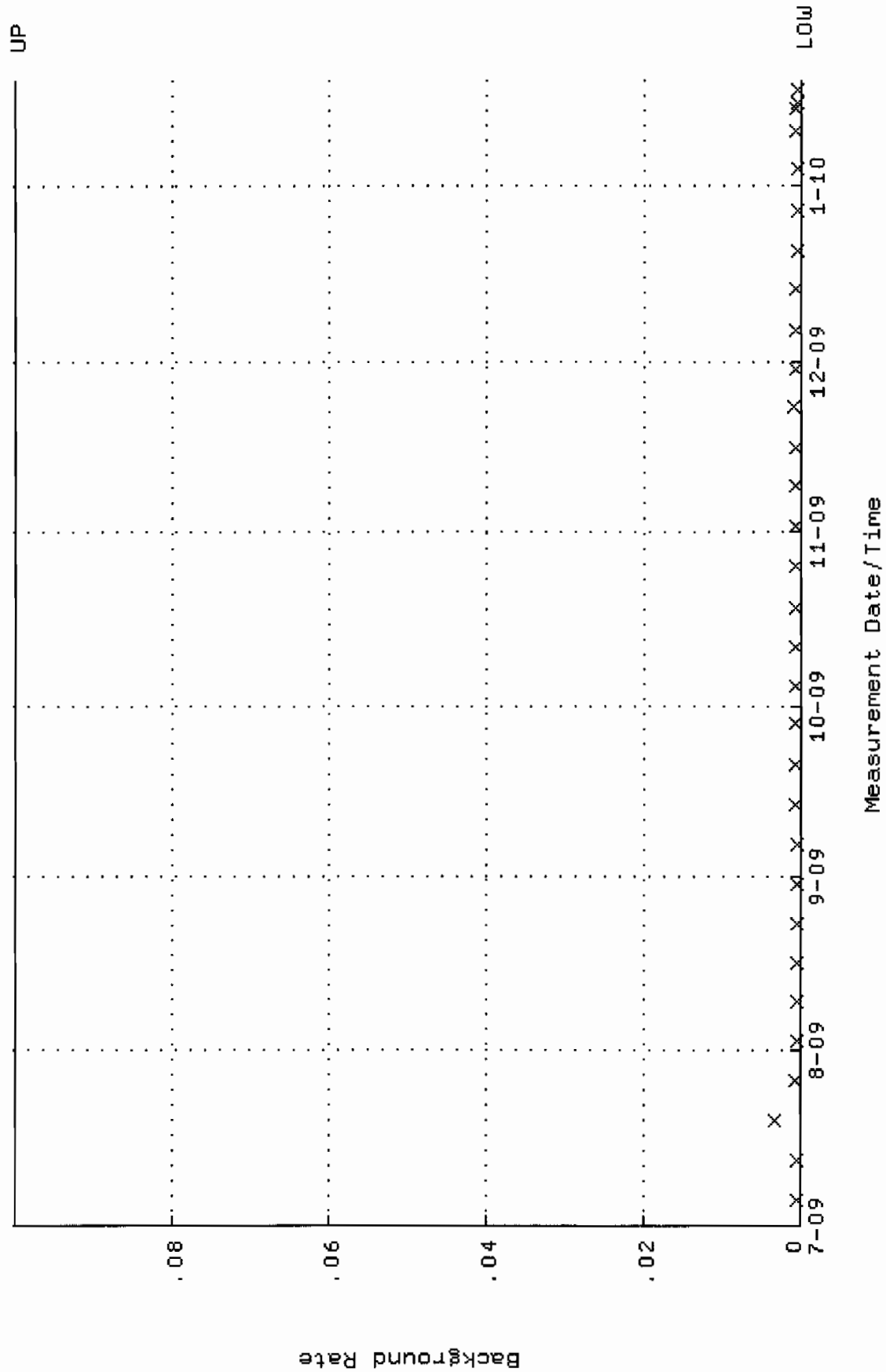
QA filename : DKA100:[ENV\_ALPHA.QA.W]W133.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:12:20 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.243148 through 0.247324



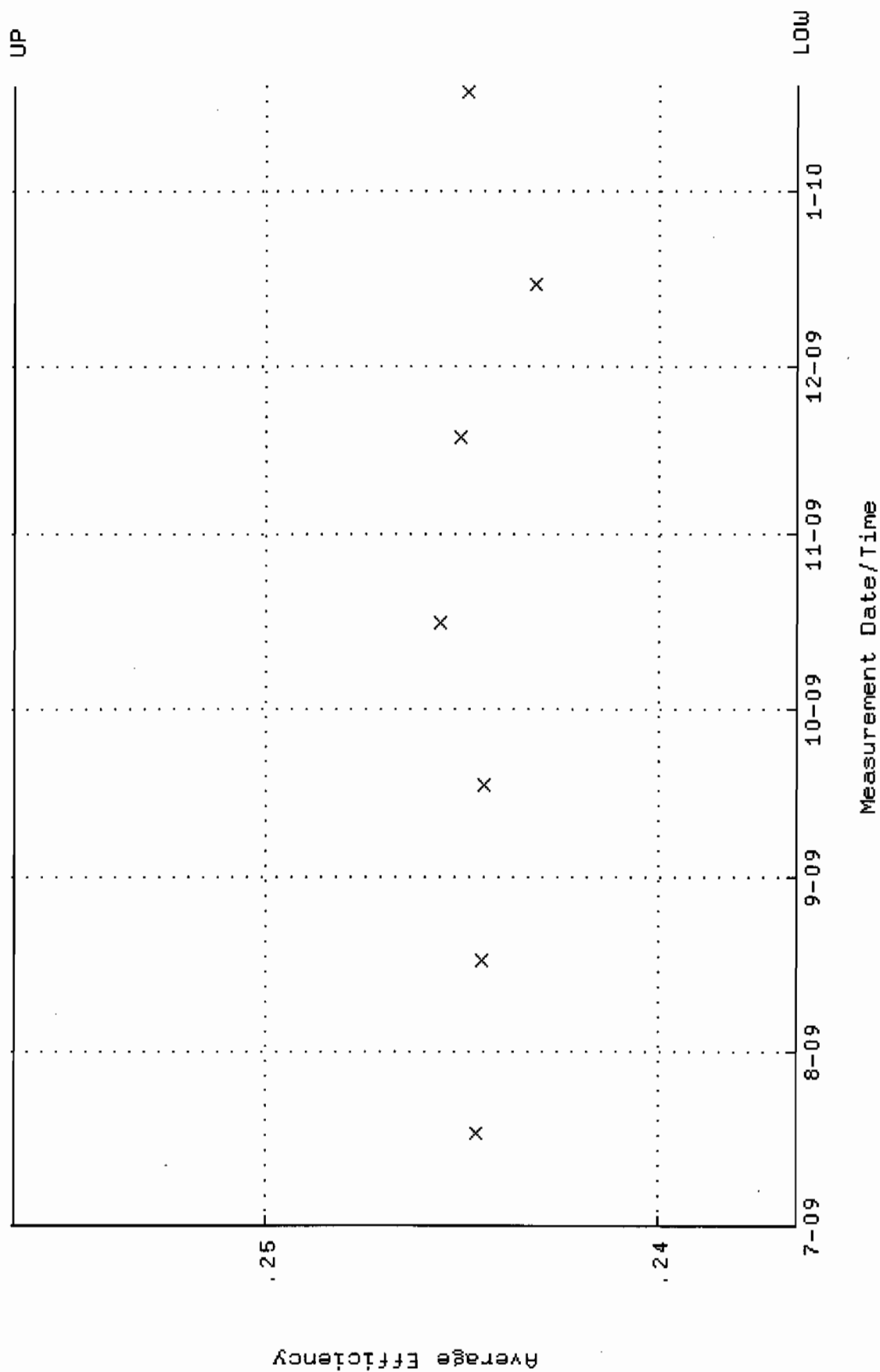
QA filename : DKA100:[ENV\_ALPHA.QA.W]w133.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:12:20 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 92.9792 through 95.7898



QA filename : DKA100:[ENV\_ALPHA.QA.B]B133.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:56:25 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

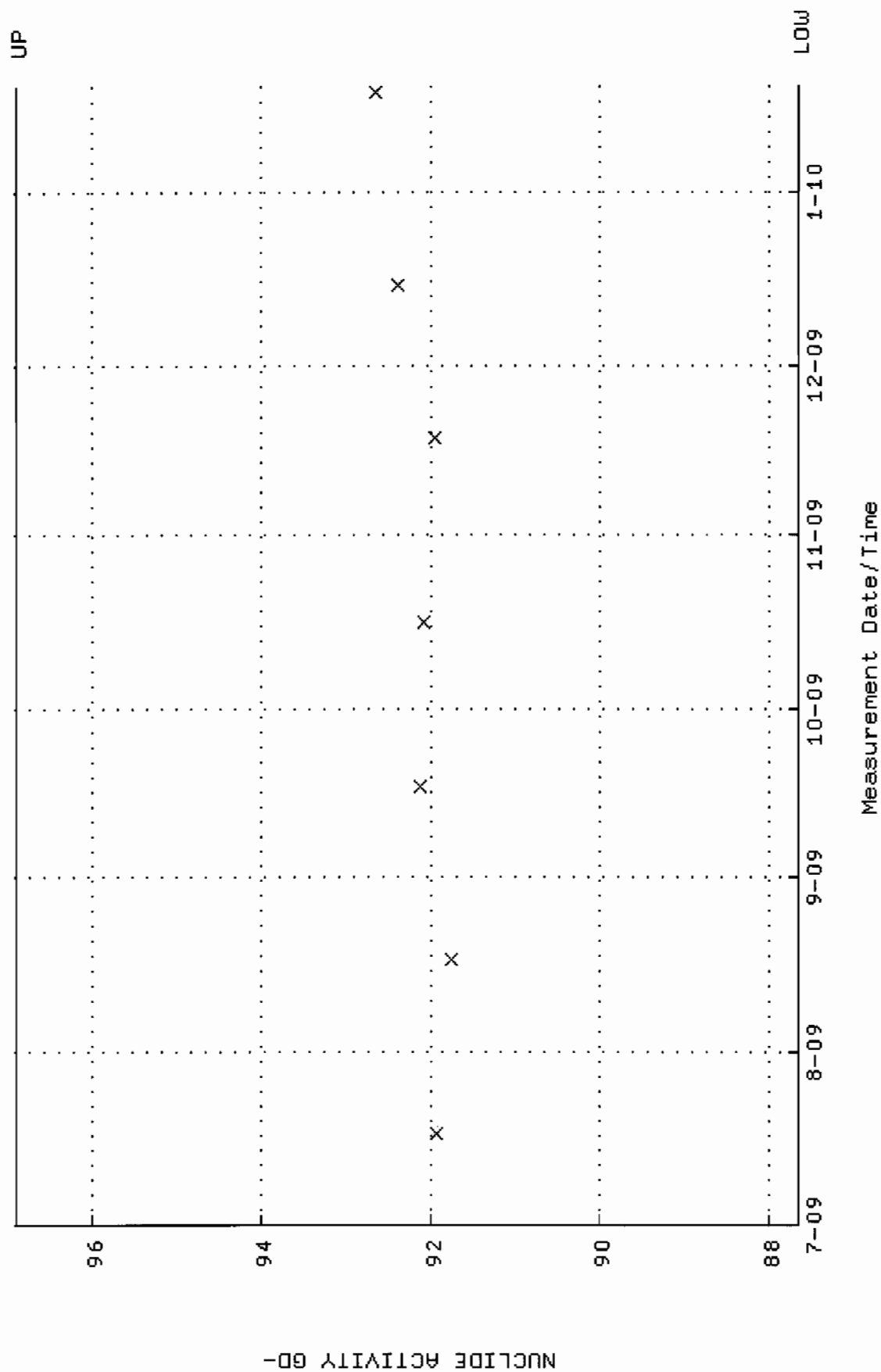


QA filename : DKA100:[ENV\_ALPHA.QA.W]W134.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:12:25 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.236455 through 0.256455

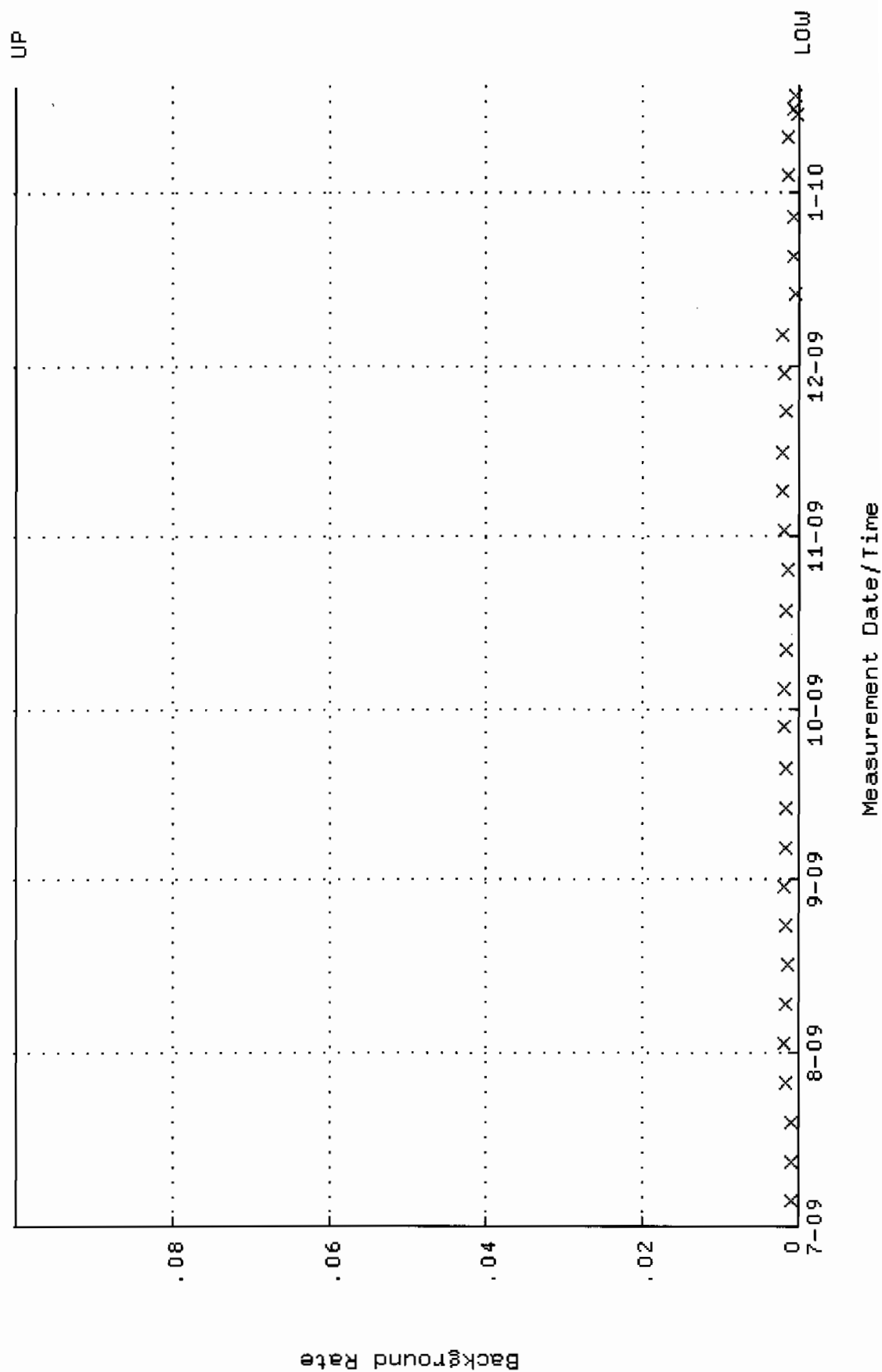




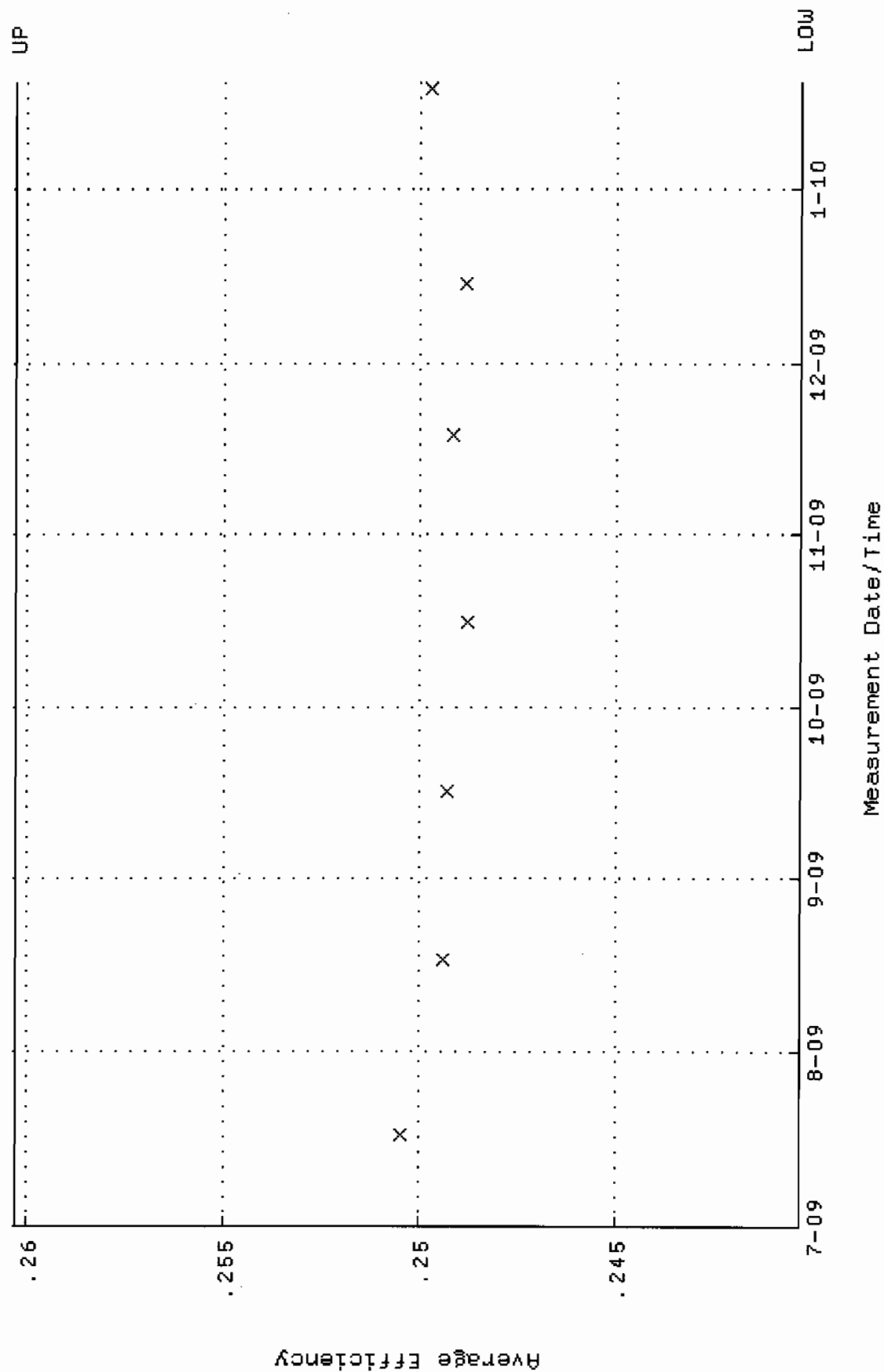
QA filename : DKA100:[ENV\_ALPHA.QA.W]W134.QAF;1  
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:12:25 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.6576 through 96.8848



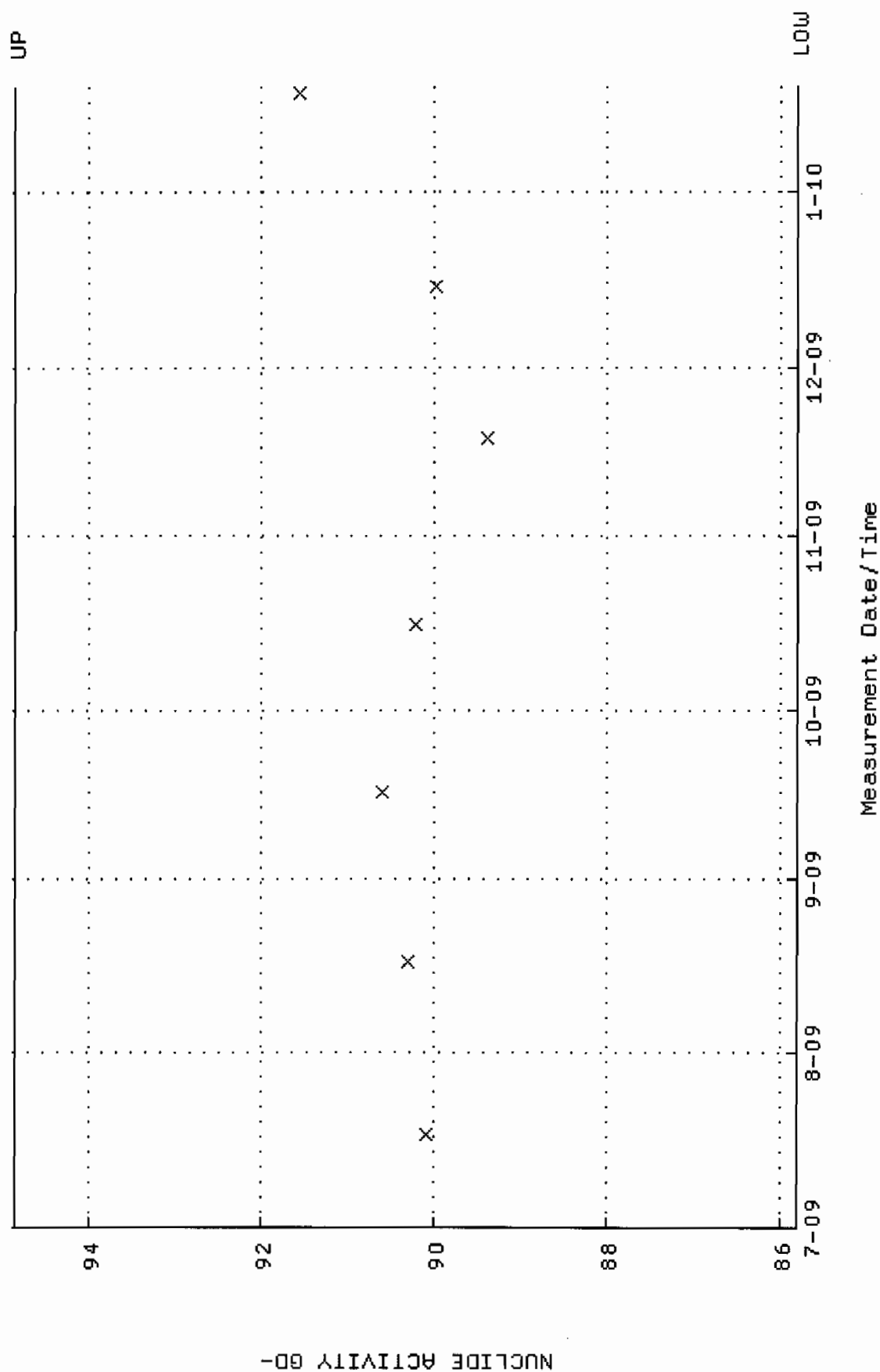
QA filename : DKA100:[ENV\_ALPHA.QA.B]B134.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:56:30 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.w]w139.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:12:48 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.240299 through 0.260299

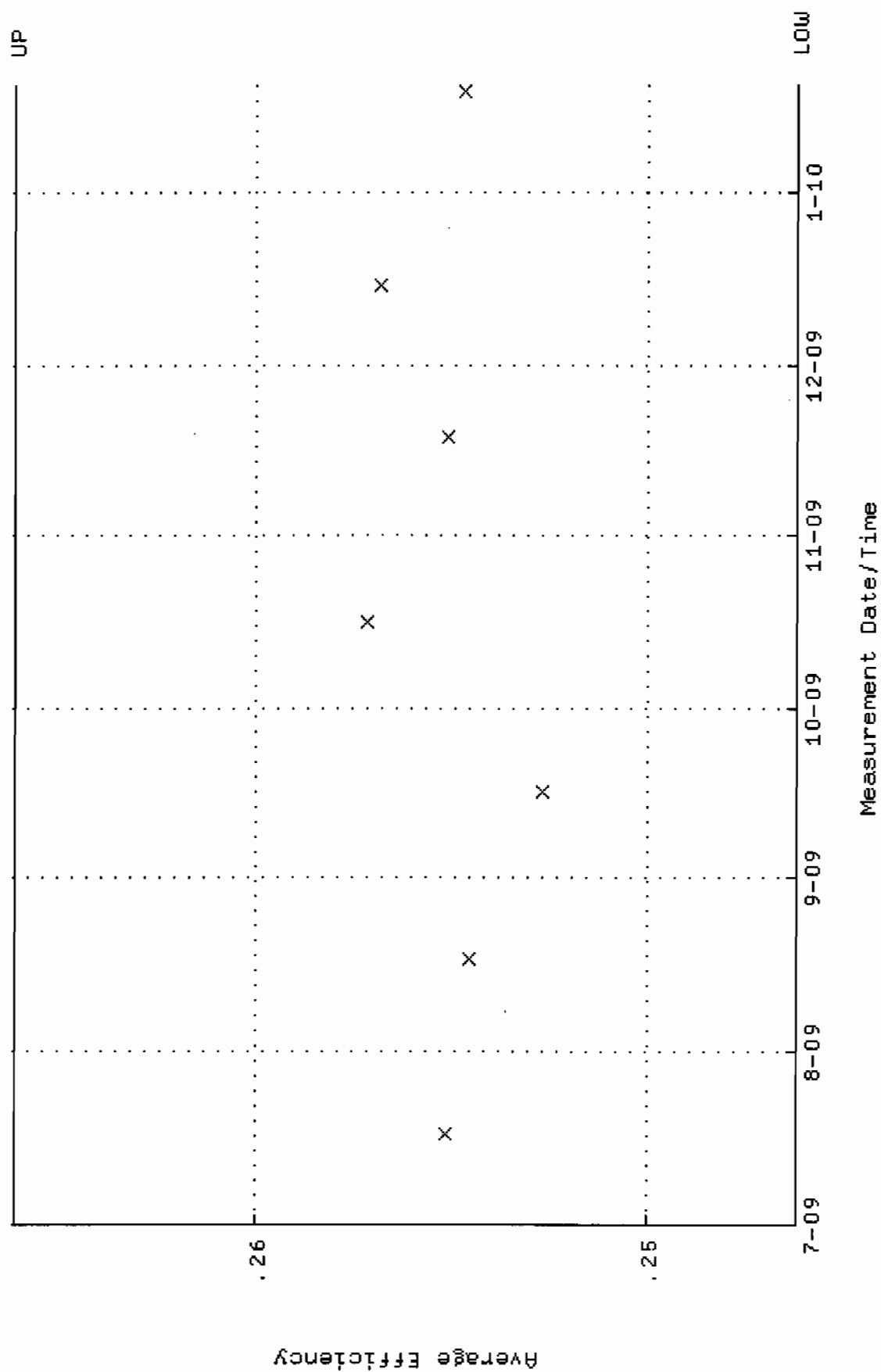


QA filename : DKA100:[ENV\_ALPHA.QA.W]w139.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:12:48 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.8145 through 94.8477

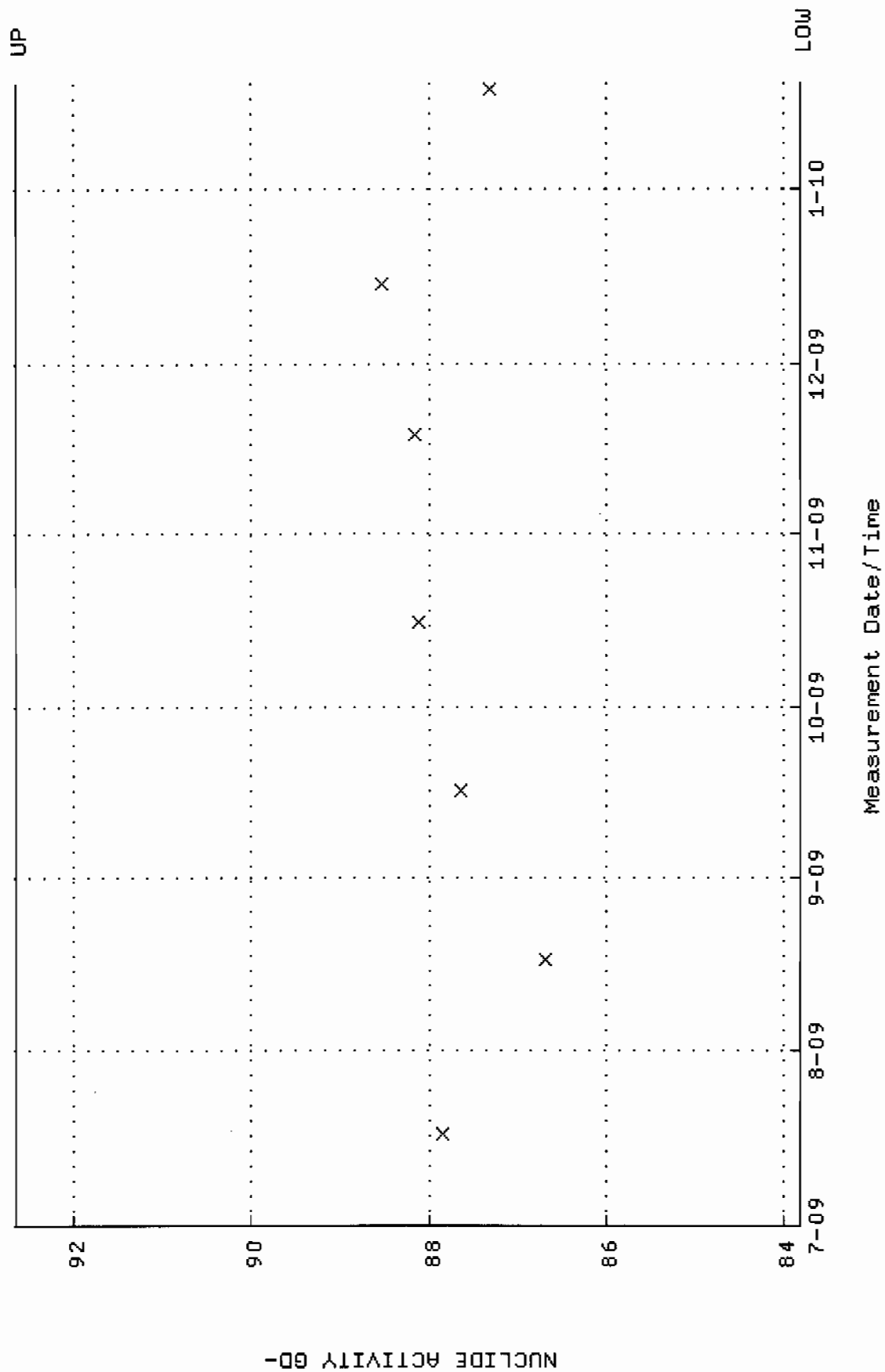




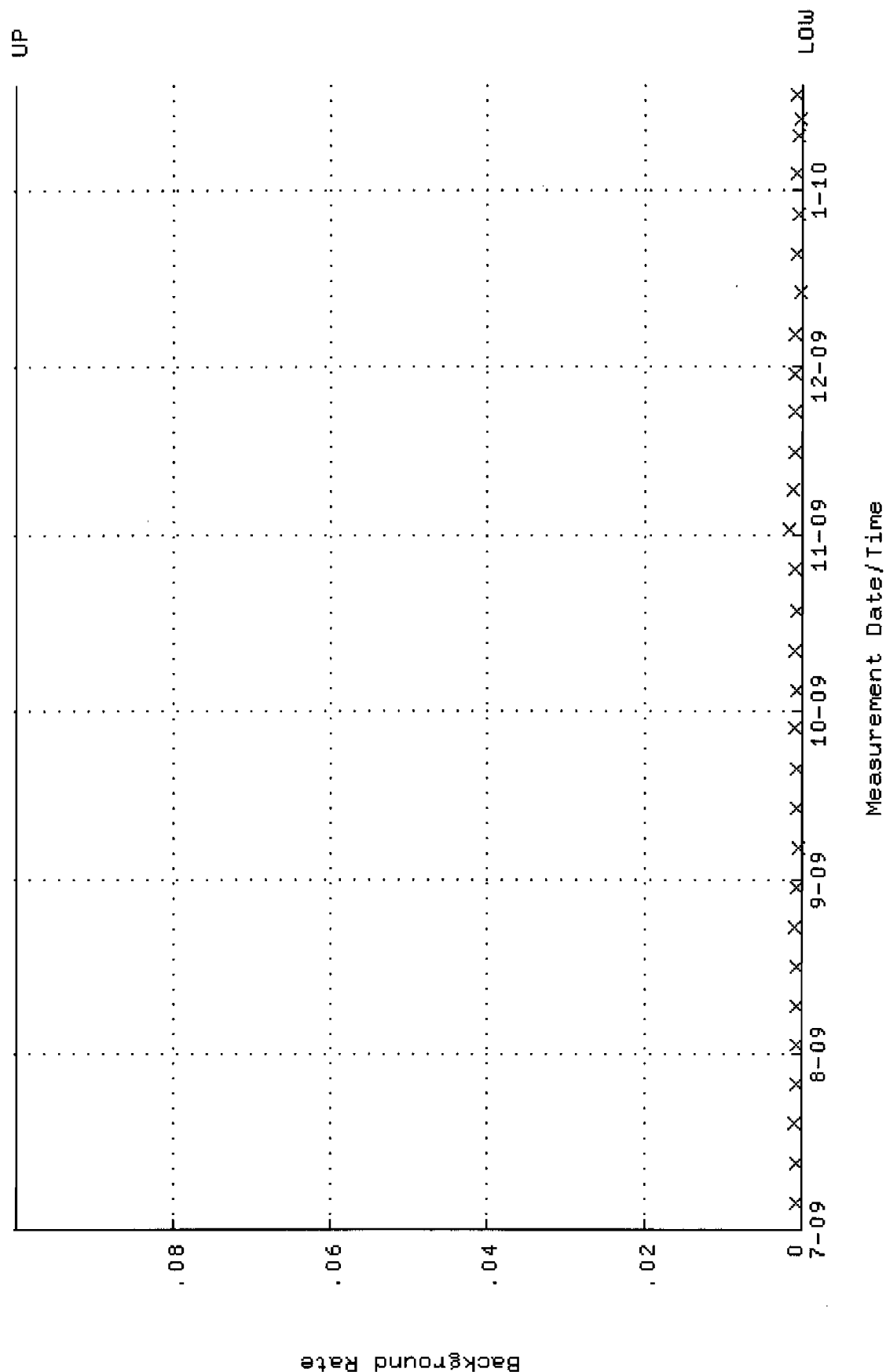
QA filename : DKA100:[ENV\_ALPHA.QA.W]W140.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:12:53 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.246178 through 0.266178



QA filename : DKA100:[ENV\_ALPHA.QA.W]W140.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:12:53 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.8171 through 92.6399

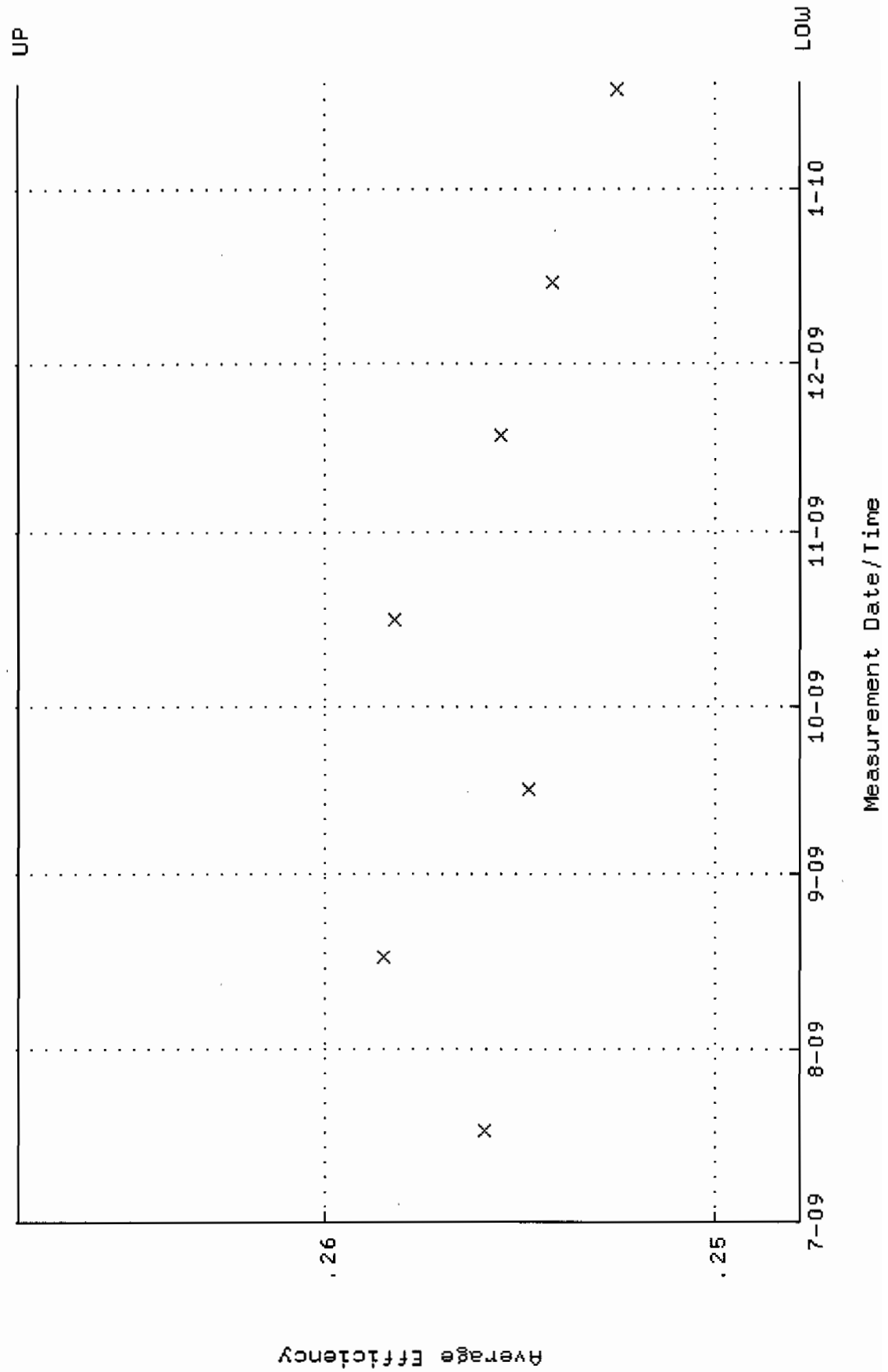


QA filename : DKA100:[ENV-ALPHA.QA.B]B140.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:56:59 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

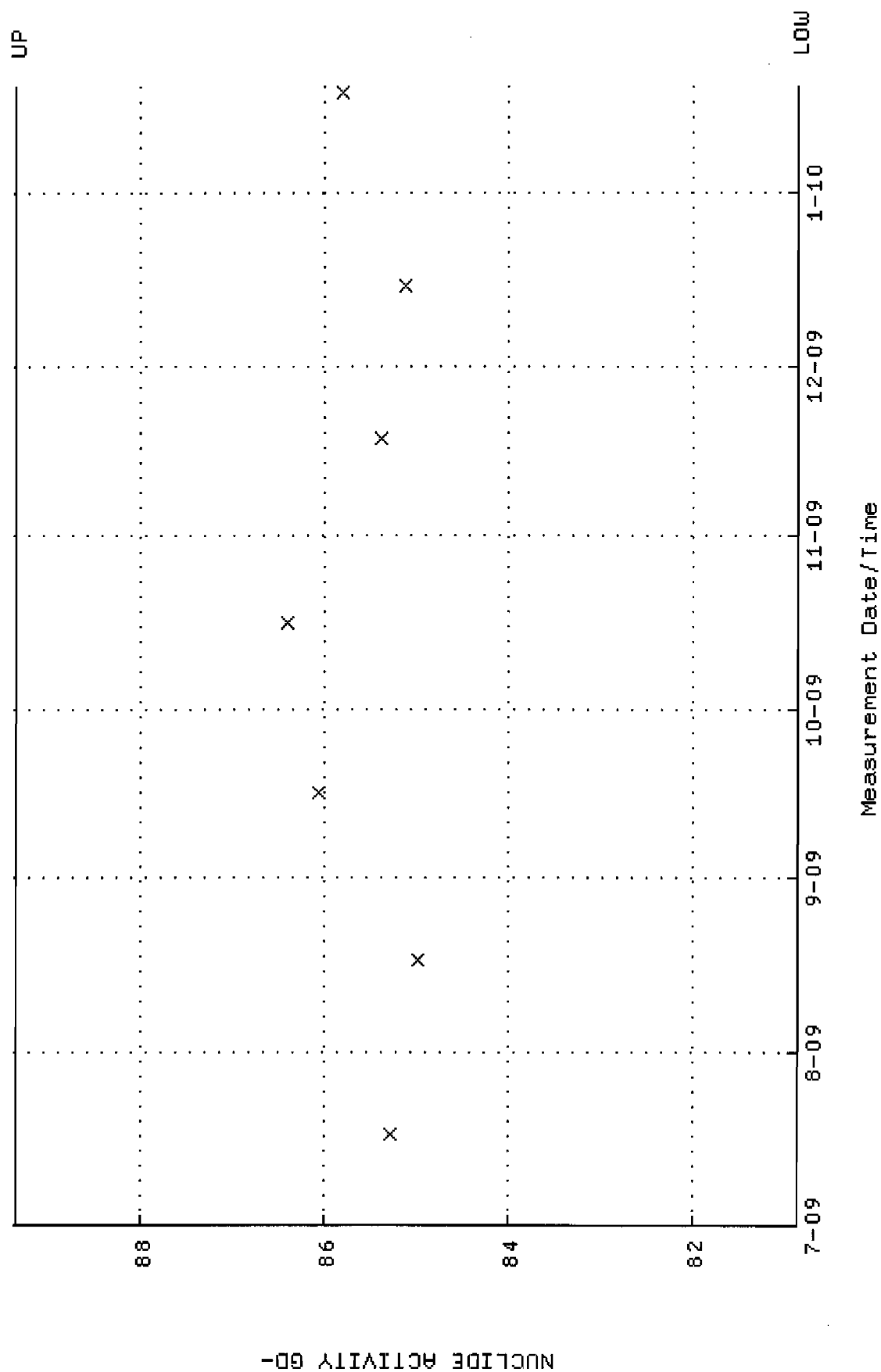




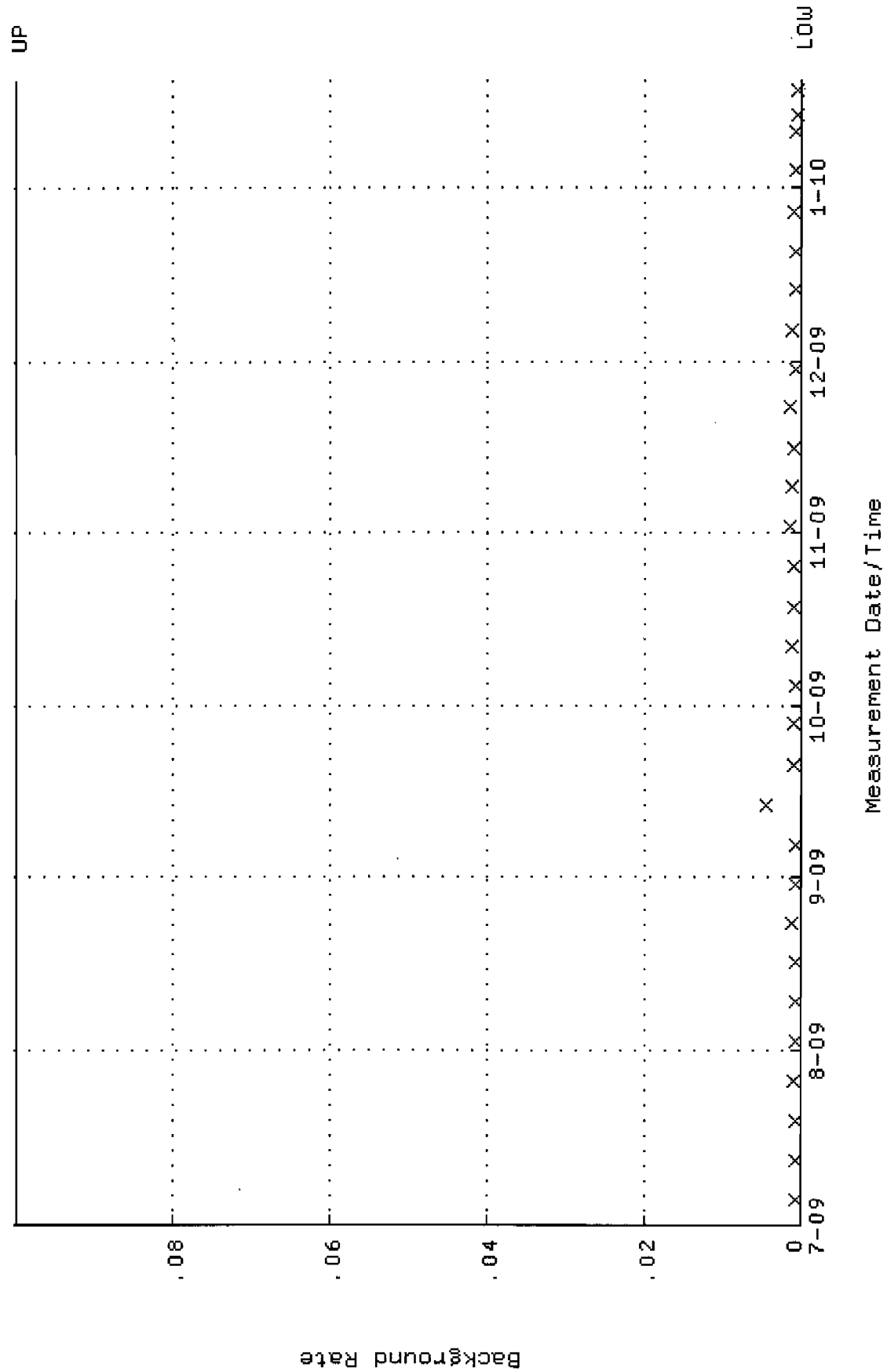
QA filename : DKA100:[ENV\_ALPHA.QA.W]W141.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:12:58 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.247845 through 0.267845



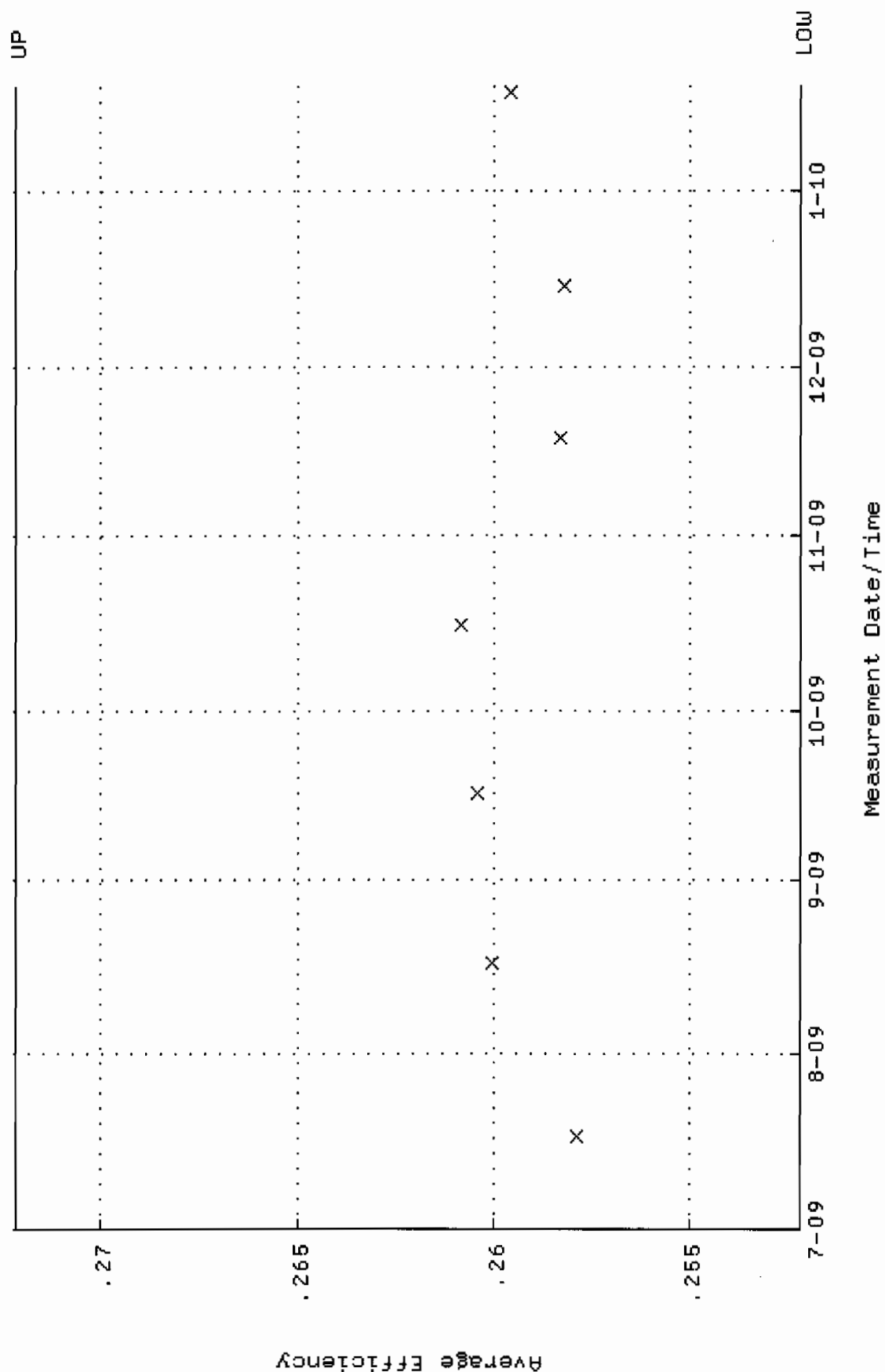
QA filename : DKA100:[ENV\_ALPHA.QA.W]W141.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:12:58 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 80.8595 through 89.3711



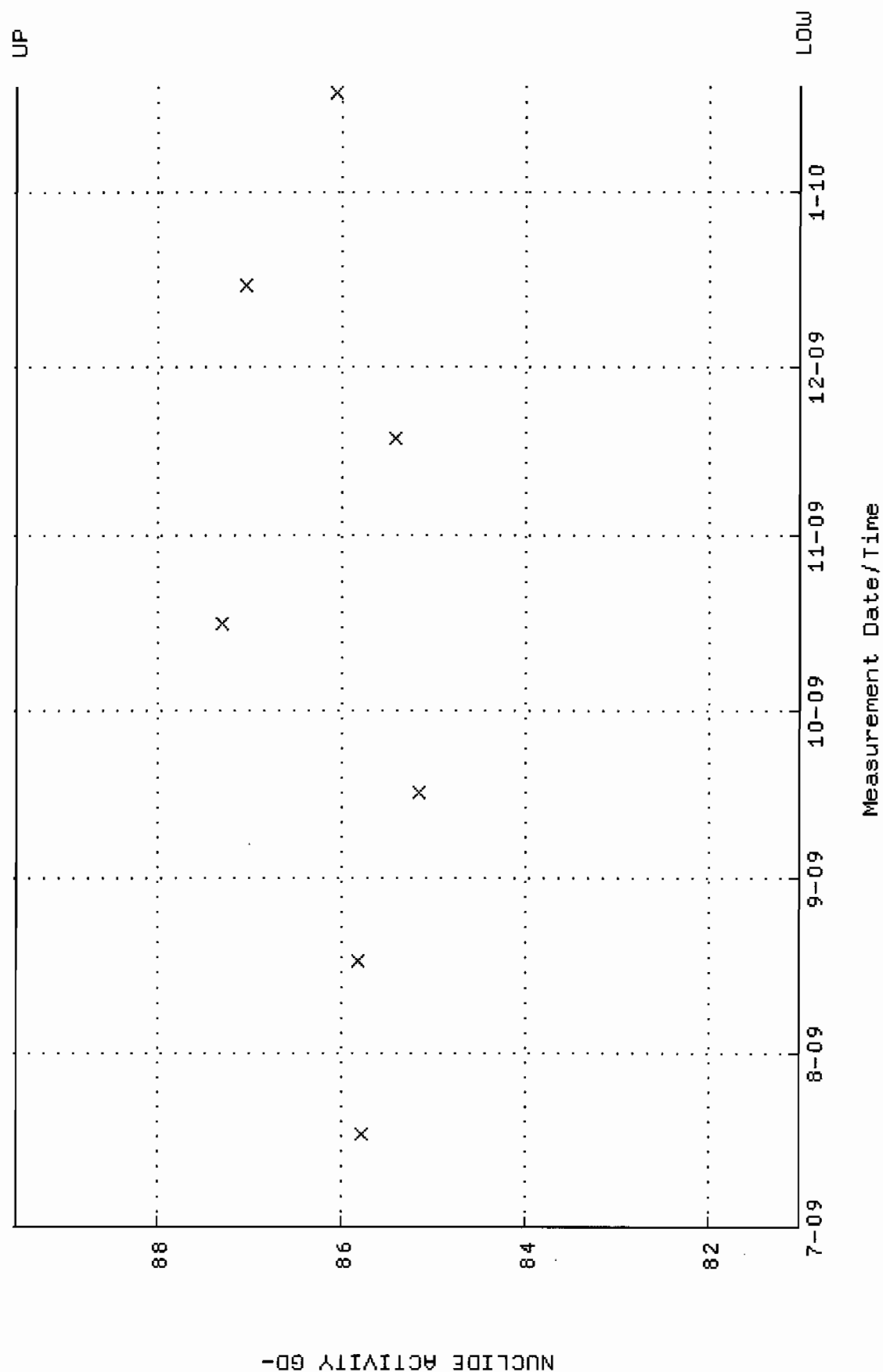
QA filename : DKA100:[ENV-ALPHA.QA.B]B141.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:04 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



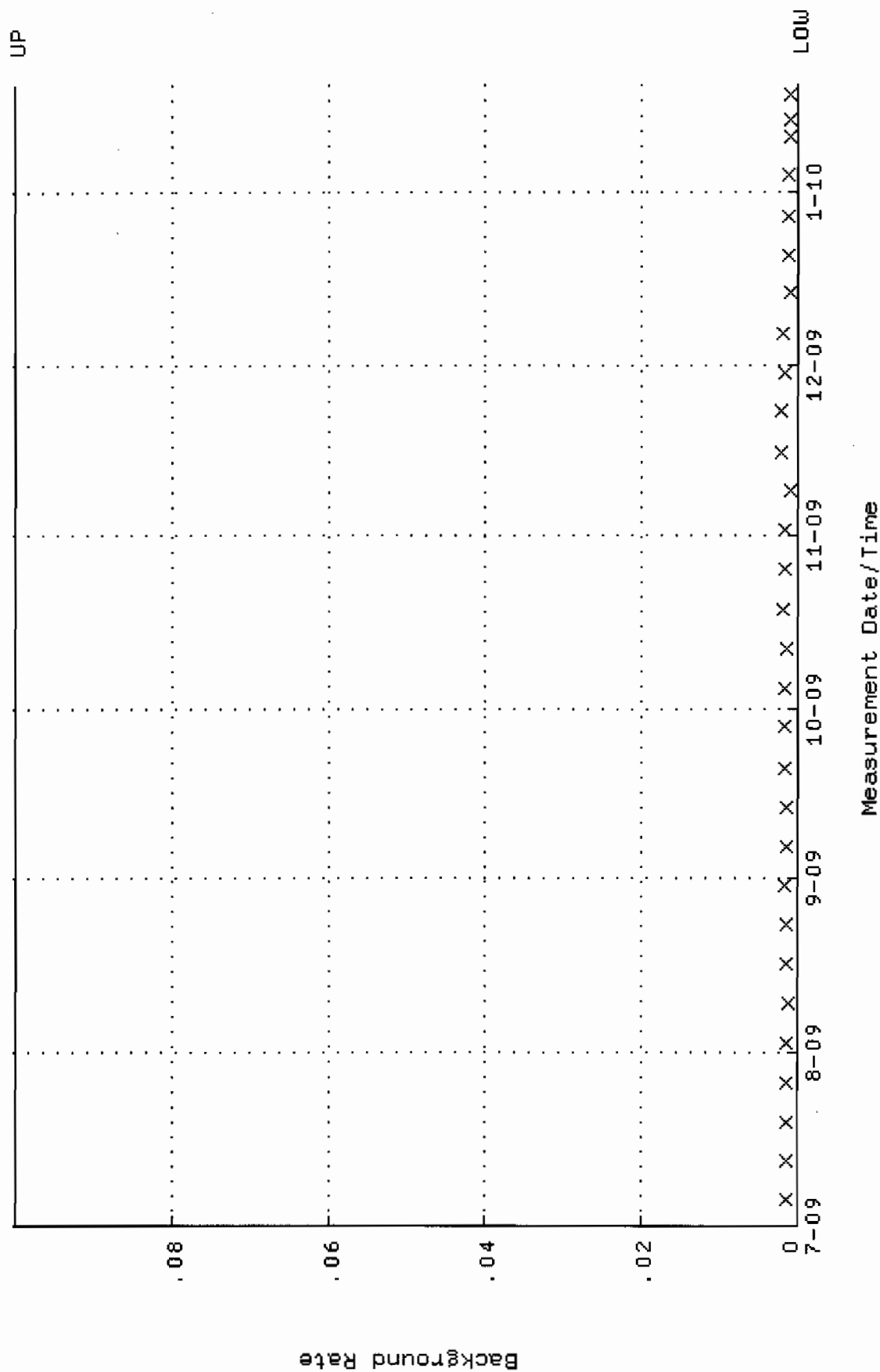
QA filename : DKA100:[ENV\_ALPHA.QA.W]w142.QAF;2  
 Parameter Name : AVREFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:03 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.252182 through 0.272182



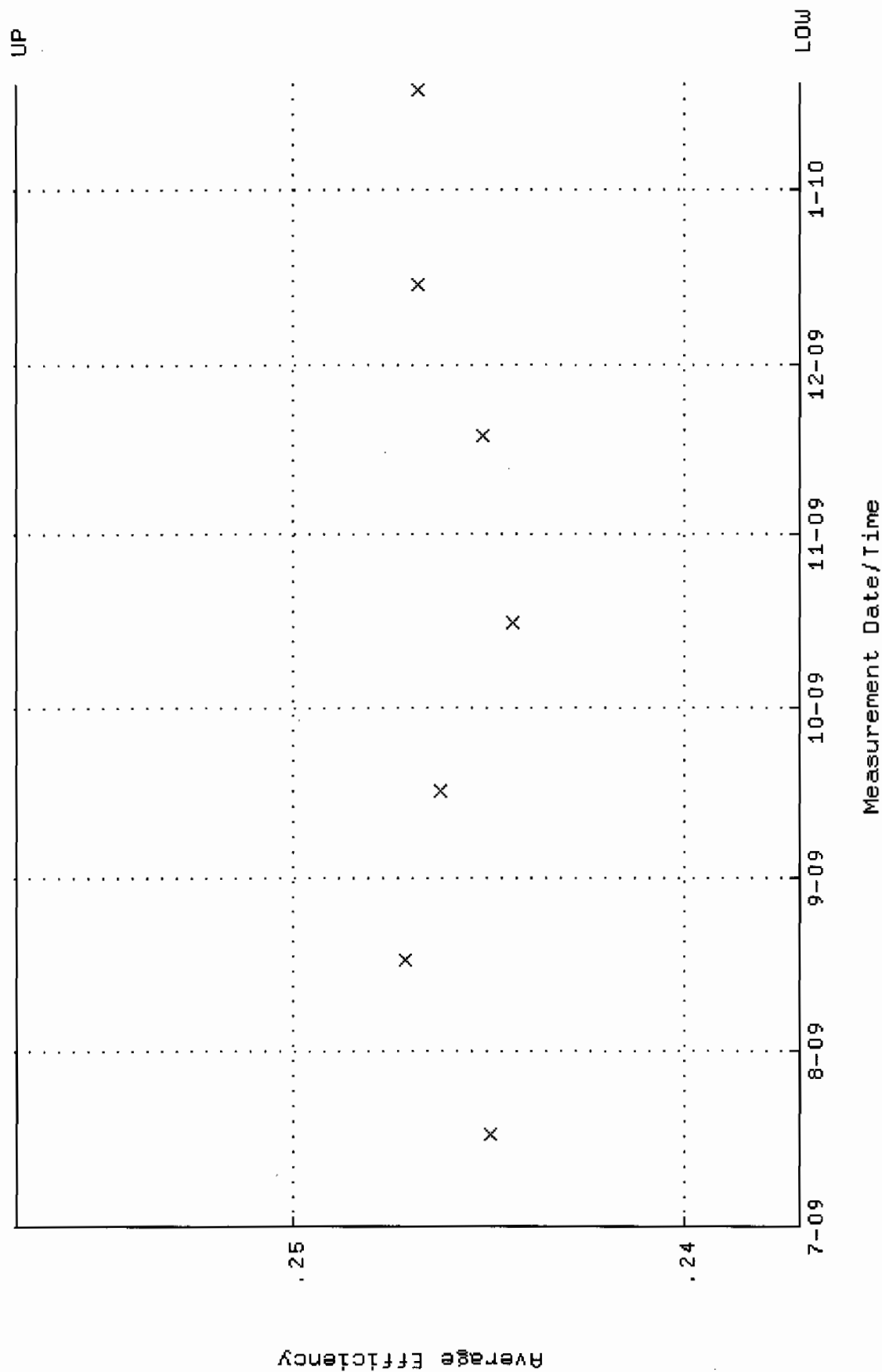
QA filename : DKA100:[ENV\_ALPHA.QA.W]w142.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:03 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 81.0245 through 89.5533



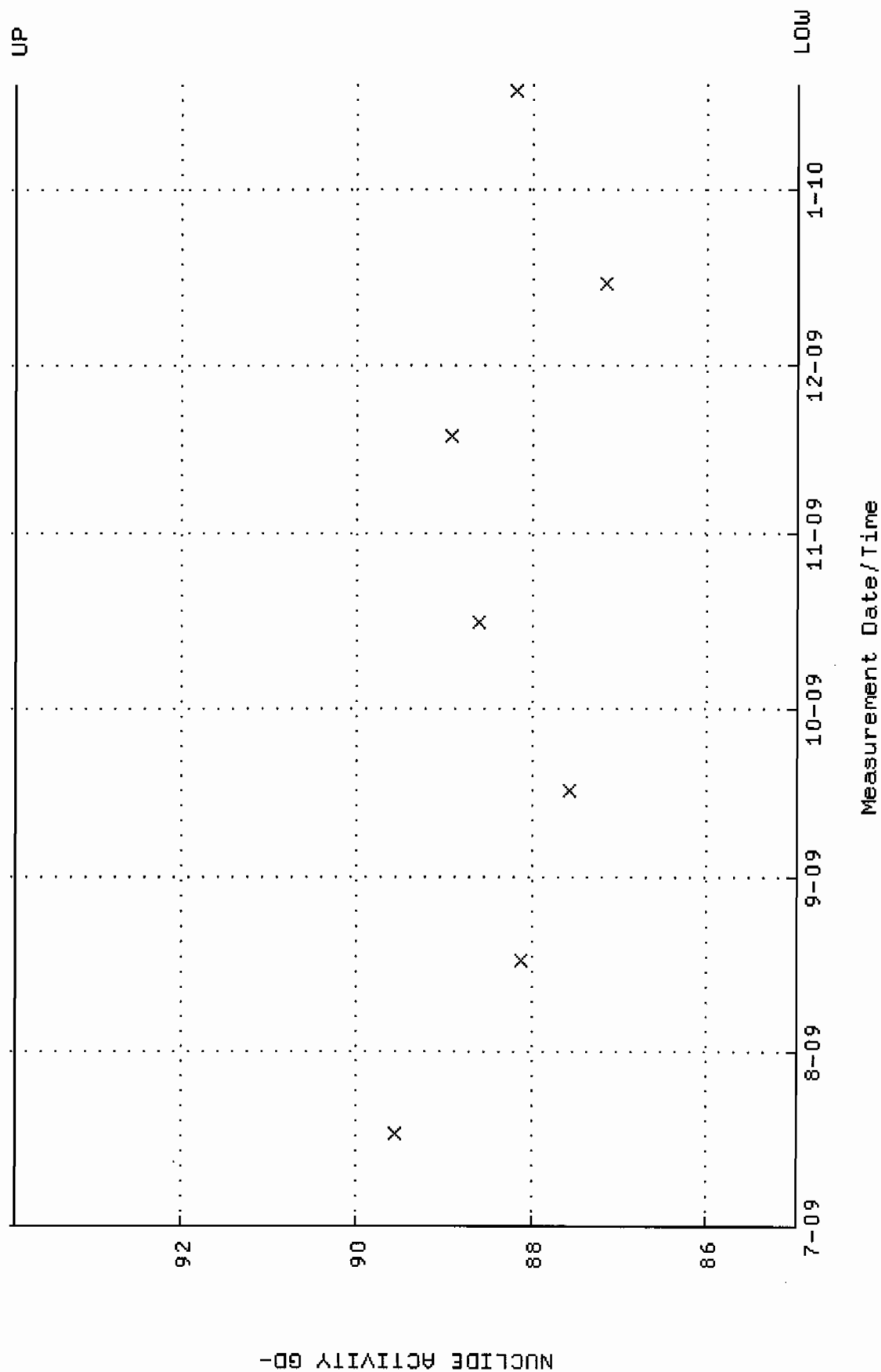
QA filename : DKA100:[ENV\_ALPHA.QA.B]B142.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:09 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]U147.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:29 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.237046 through 0.257046

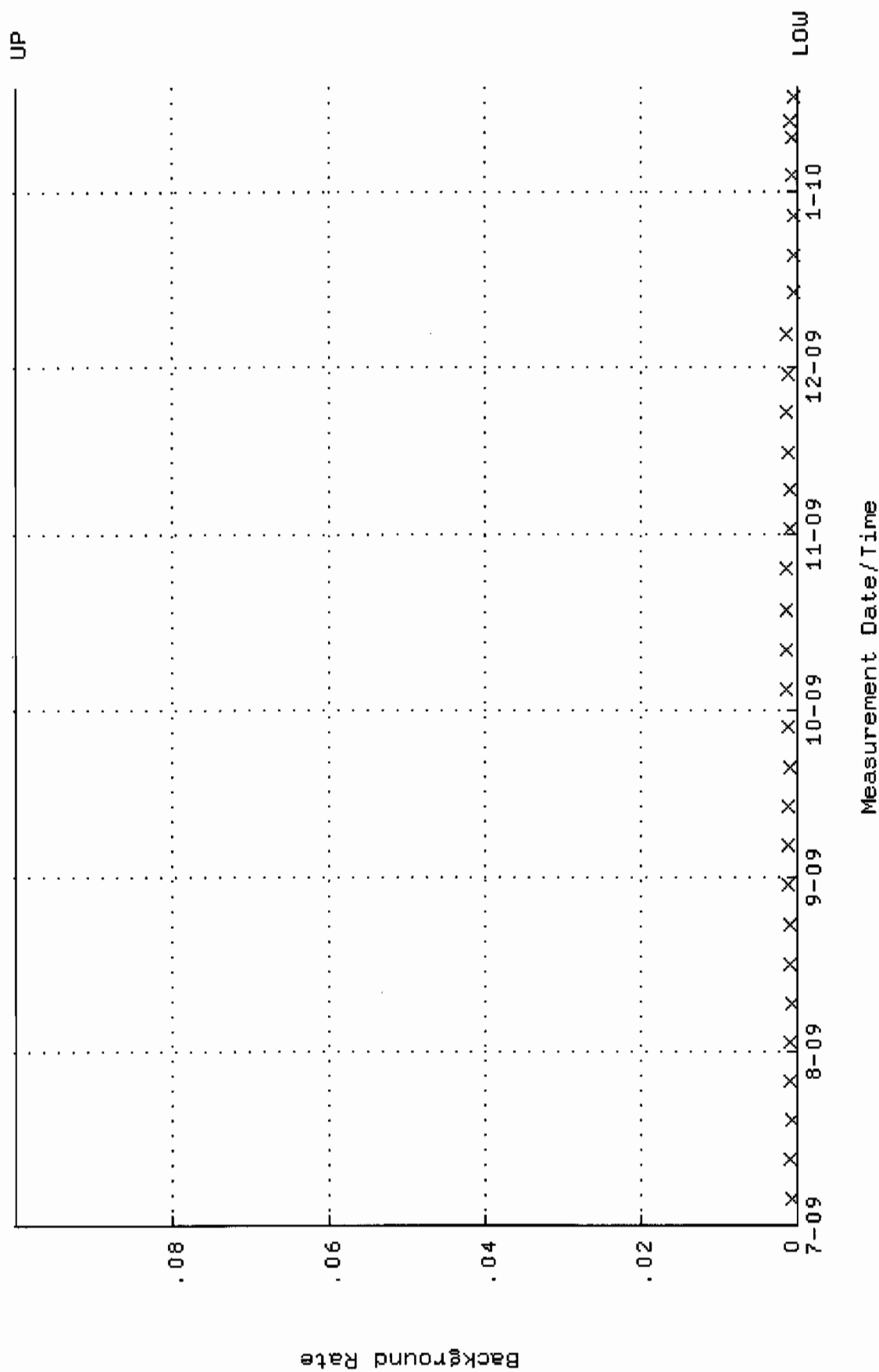


QA filename : DKA100:[ENV\_ALPHA.QA.W]W147.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:29 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.9777 through 93.9227

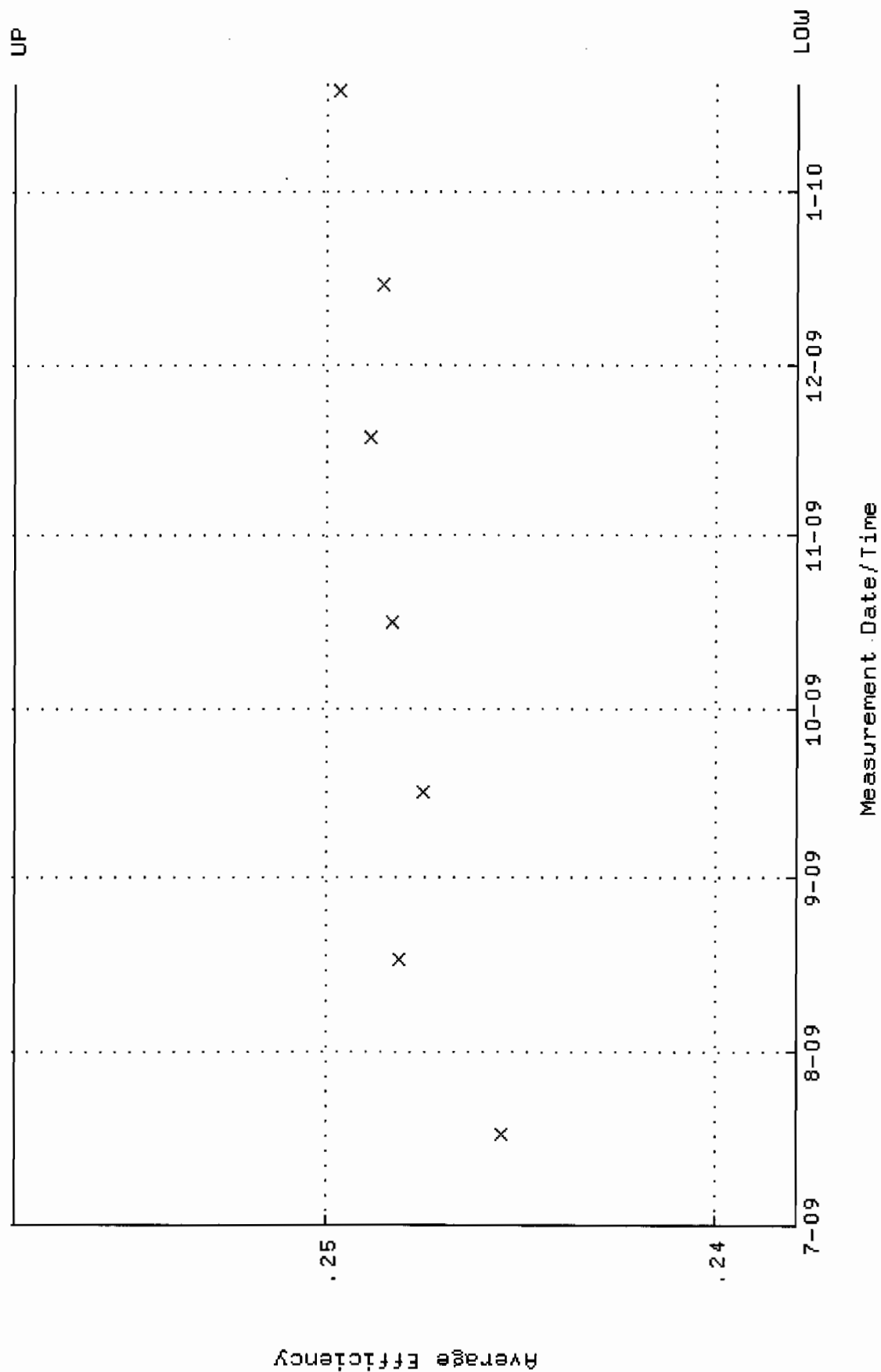




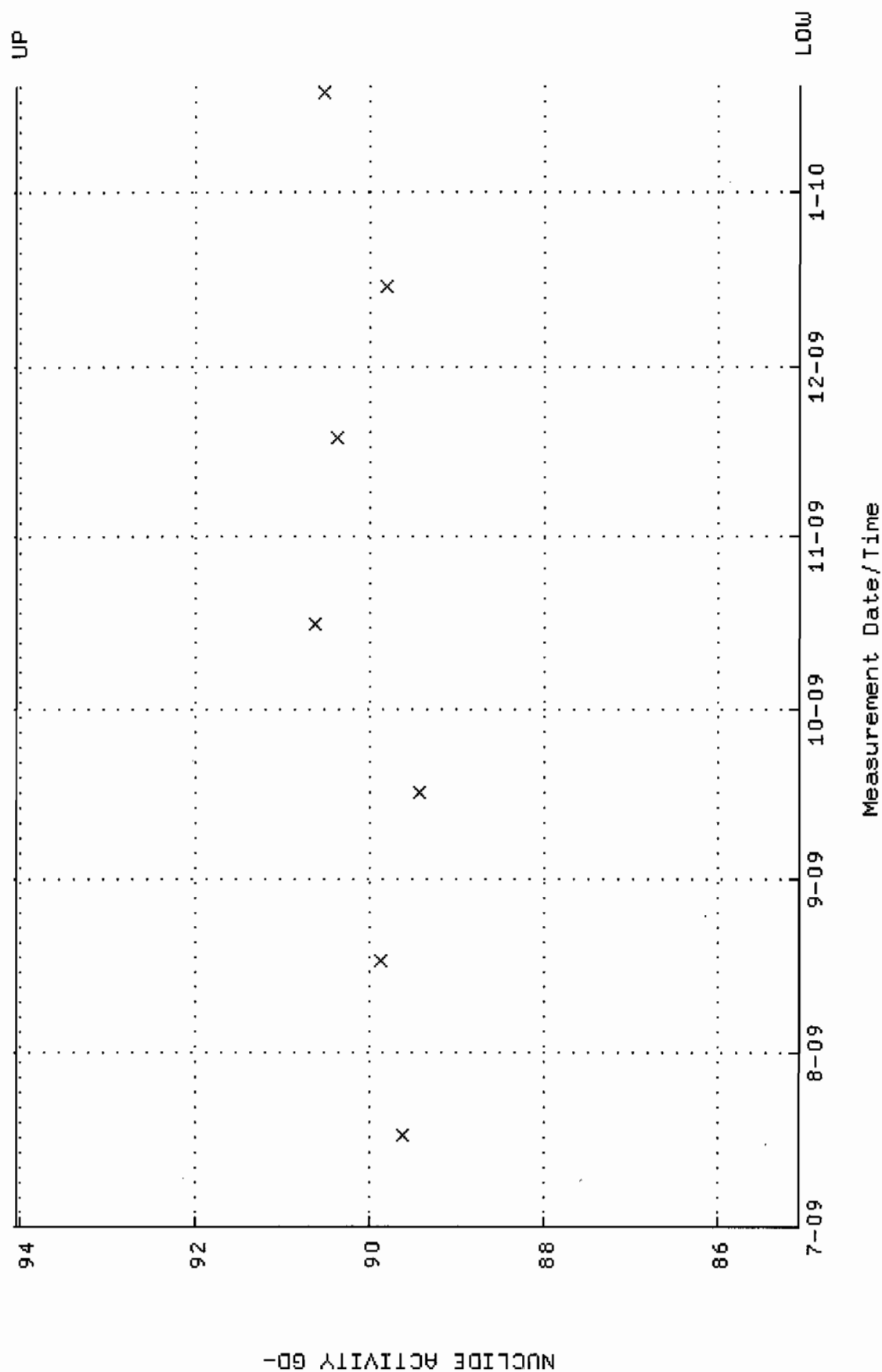
QA filename : DKA100:[ENV\_ALPHA.QA.B]B147.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:33 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



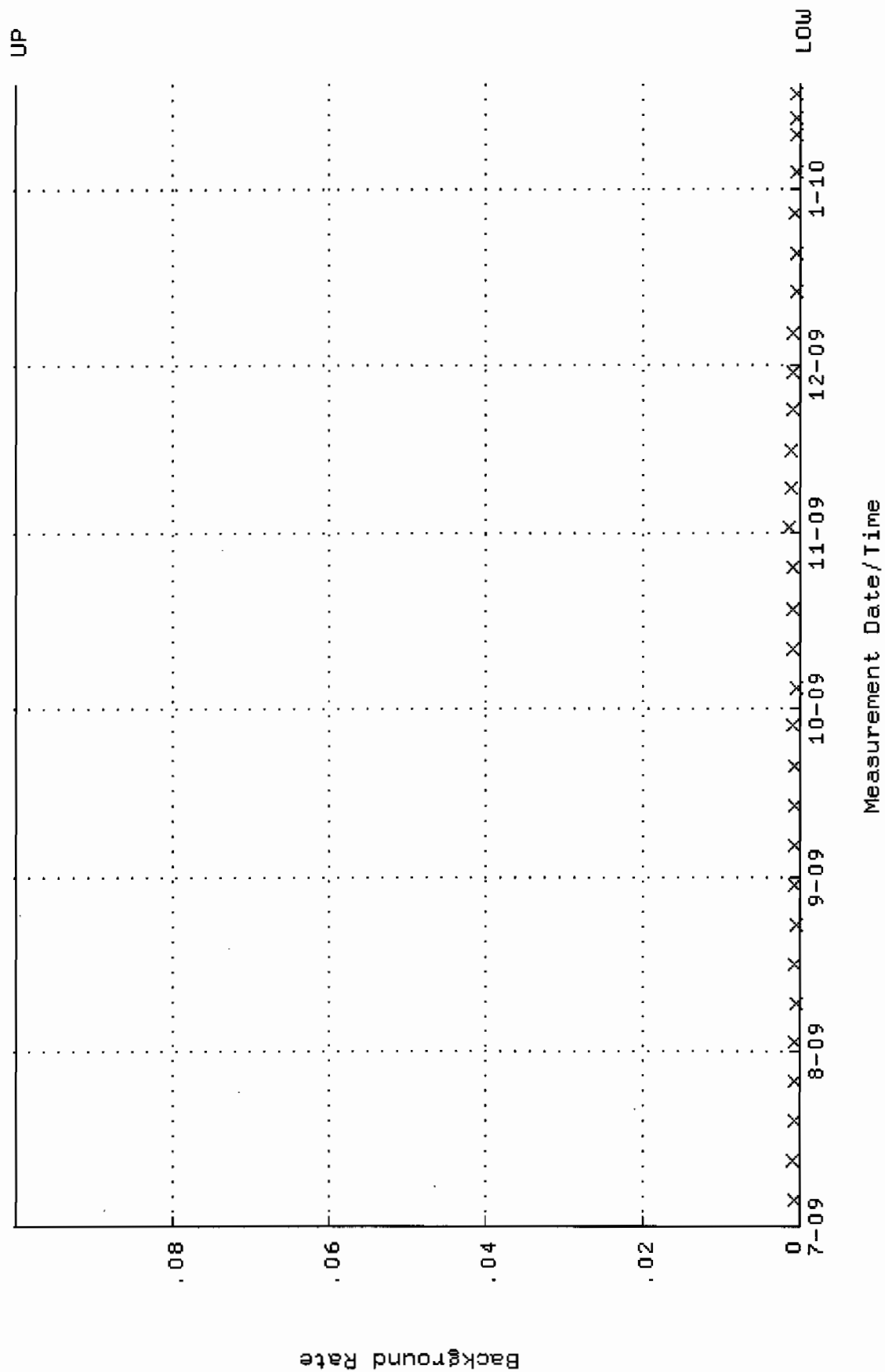
QA filename : DKA100:[ENV\_ALPHA.QA.W]W148.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:34 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.237934 through 0.257934



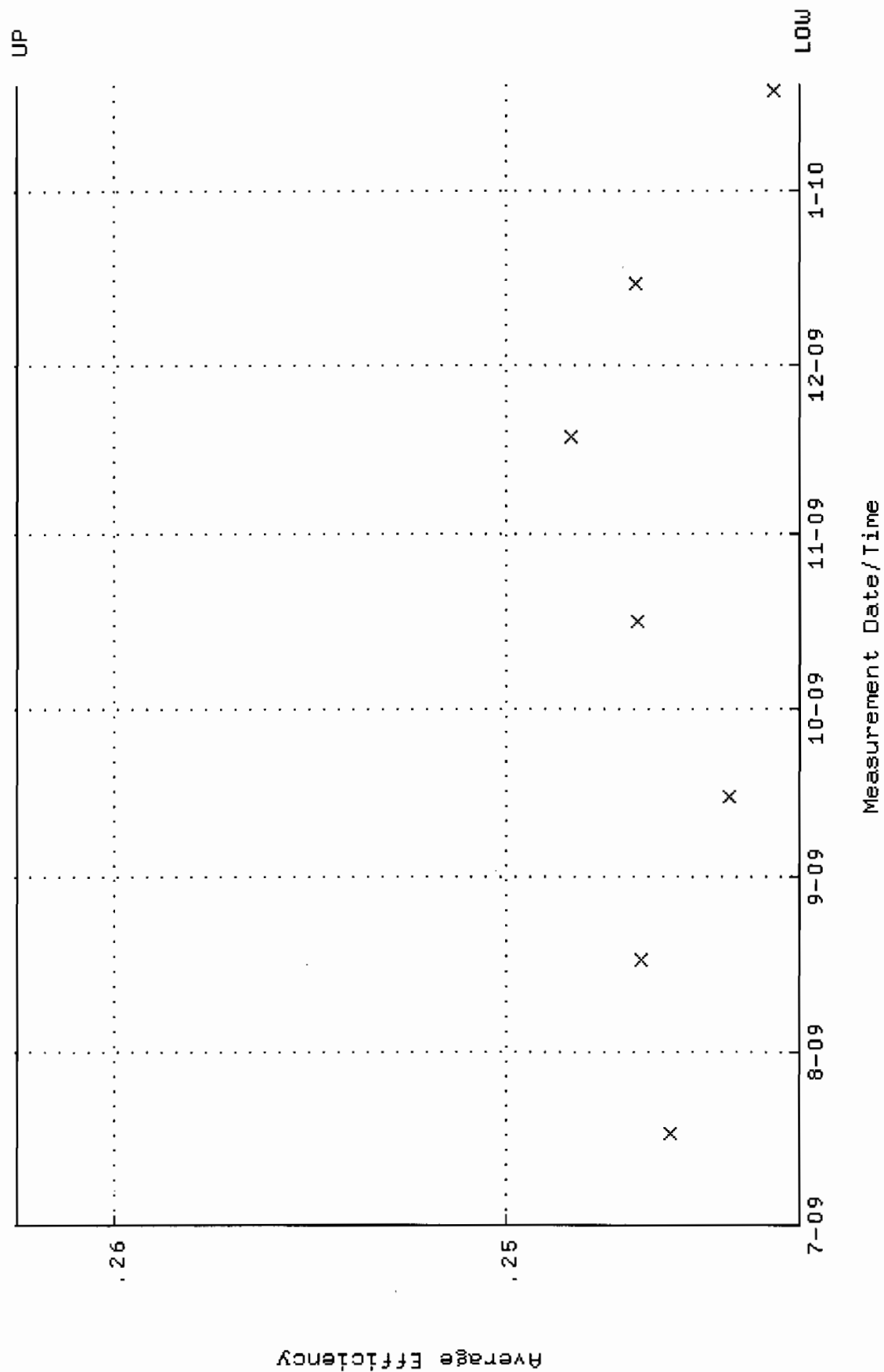
QA filename : DKA100:[ENV\_ALPHA.QA.W]W148.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:34 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.0831 through 94.0393



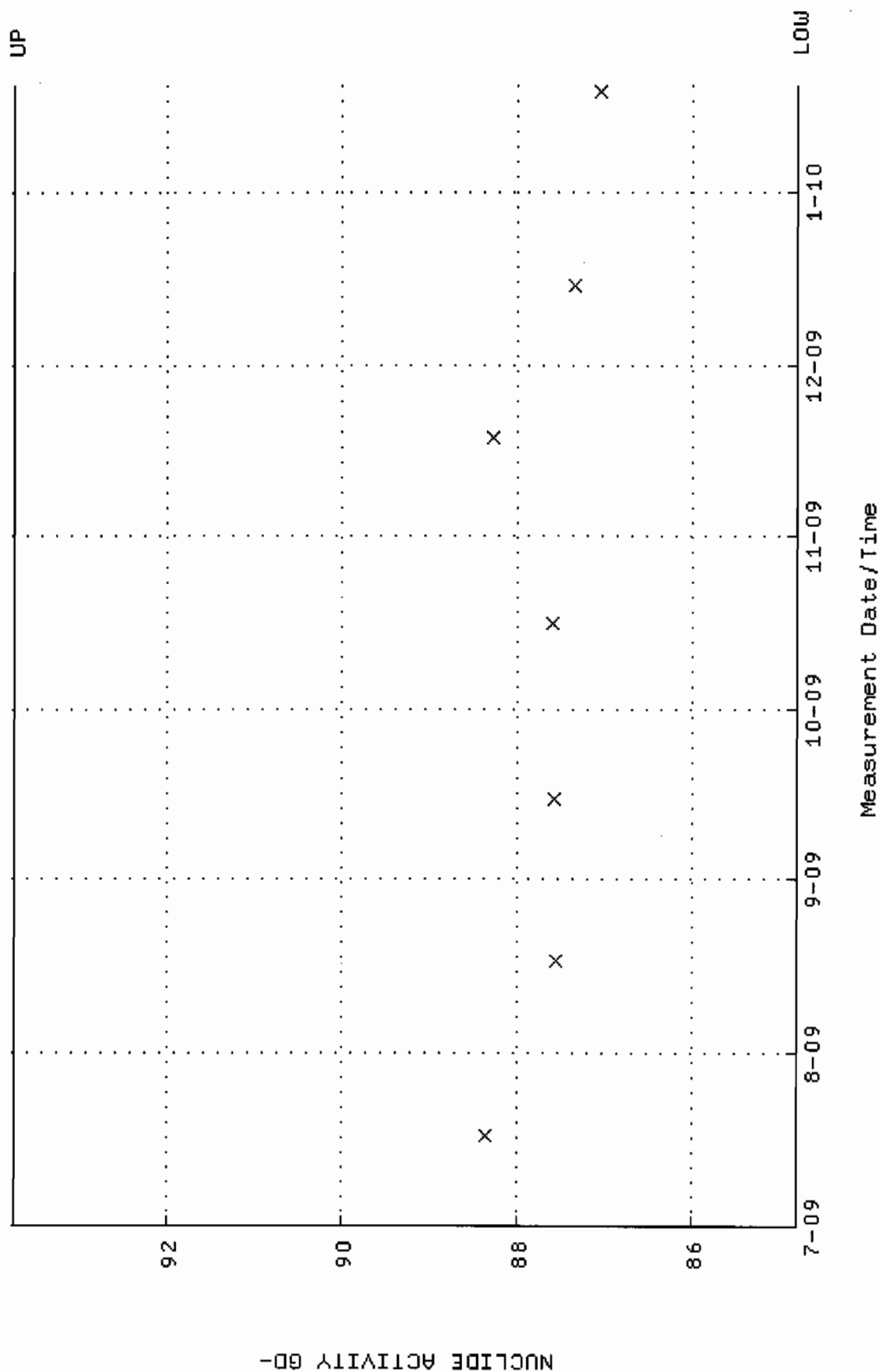
QA filename : DKA100:[ENV\_ALPHA.QA.B]B148.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:38 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



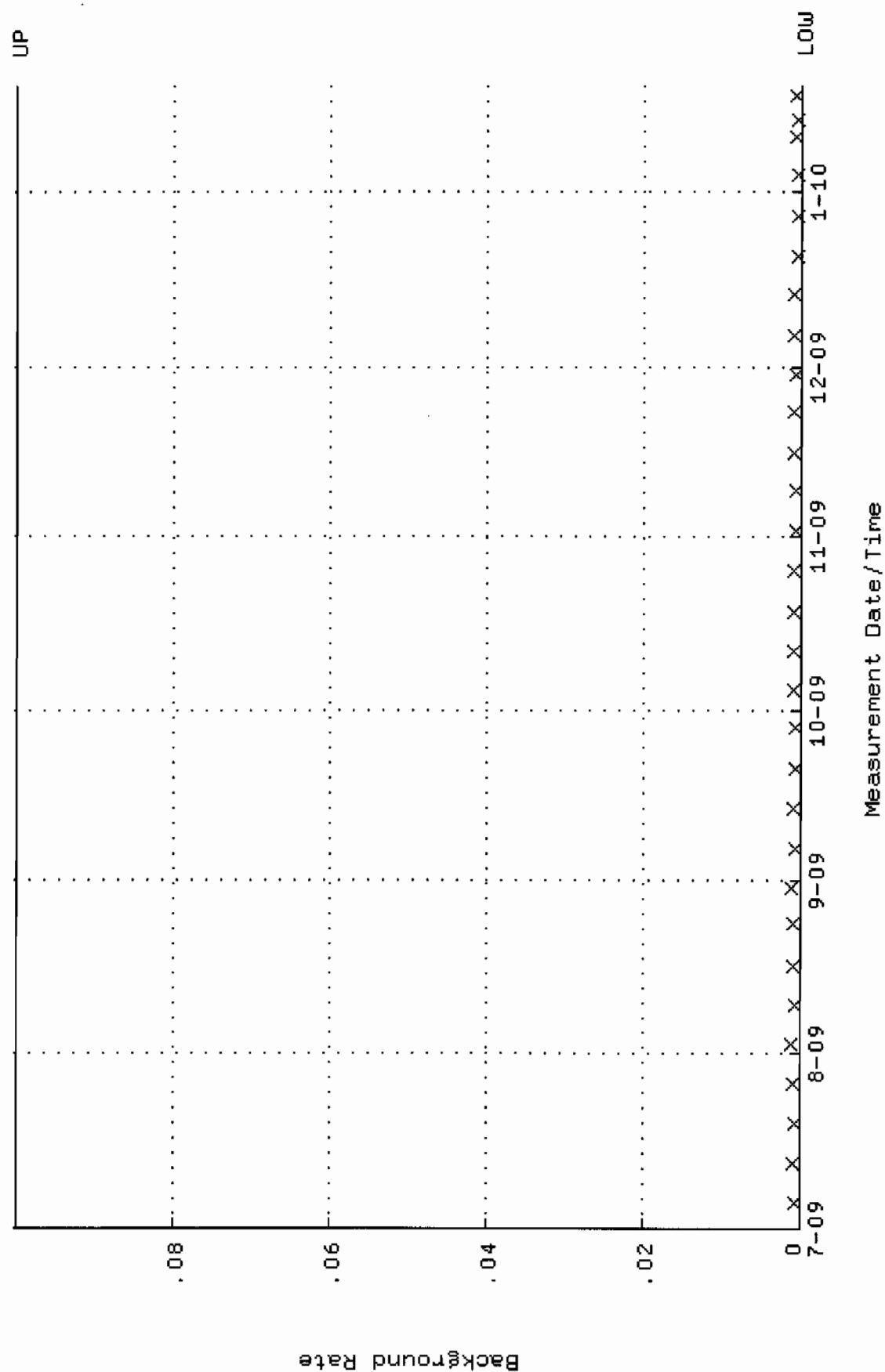
QA filename : DKA100:[ENV\_ALPHA.QA.W]W149.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:39 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.242495 through 0.262495



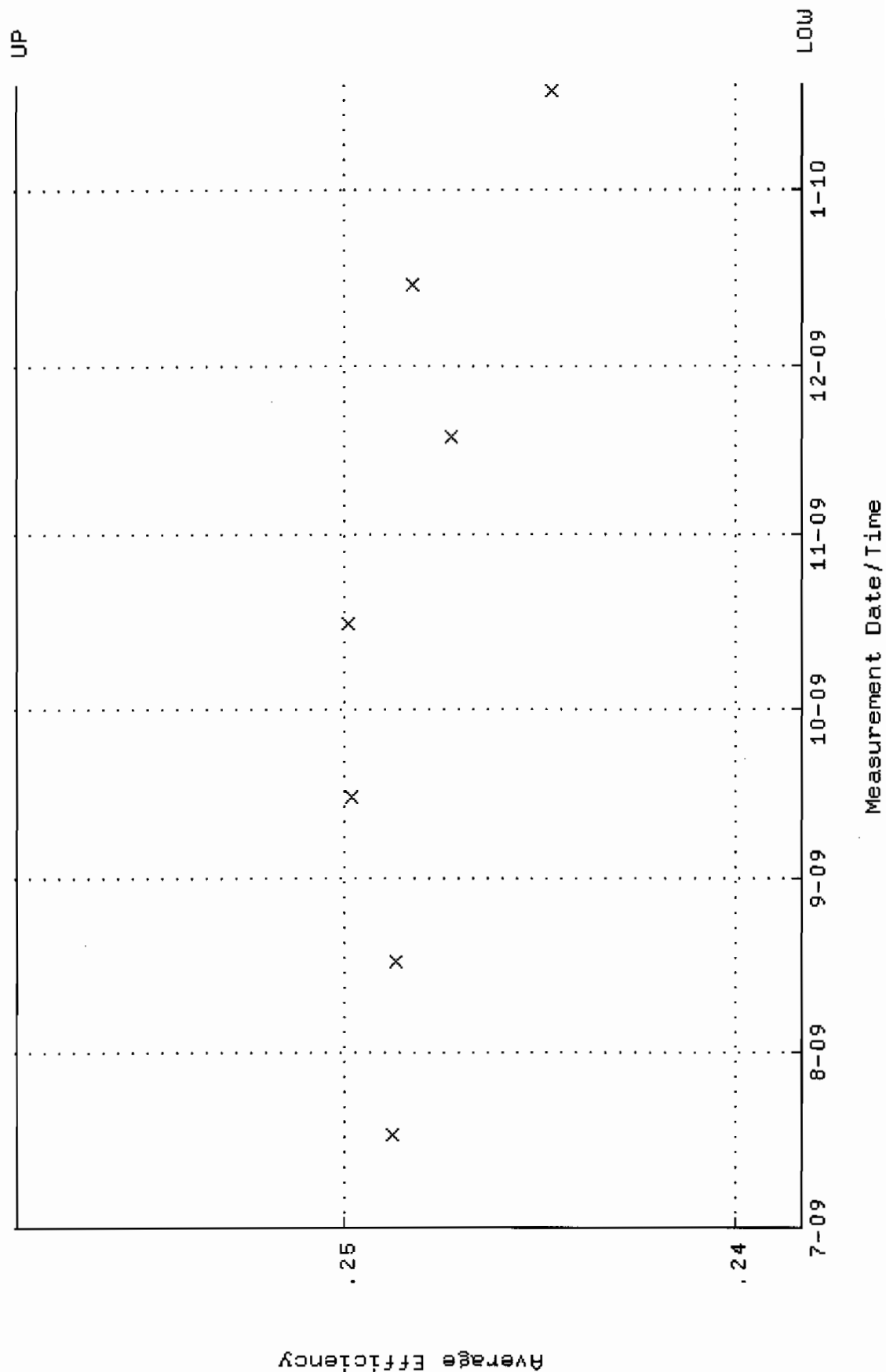
QA filename : DKA100:[ENV\_ALPHA.QA.W]w149.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:39 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.8126 through 93.7402



QA filename : DKA100:[ENV\_ALPHA.QA.B]B149.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:43 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

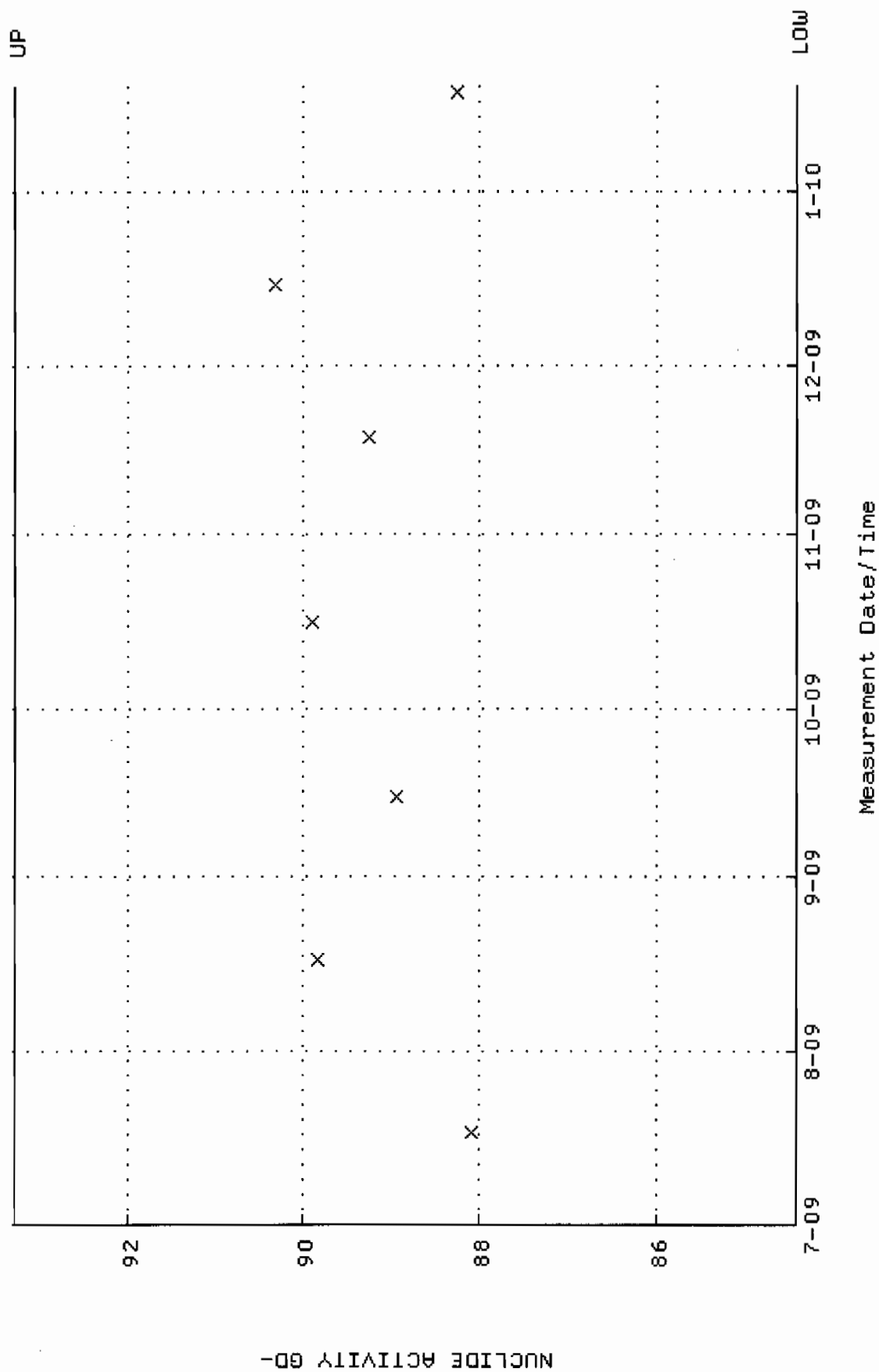


QA filename : DKA100:[ENV\_ALPHA.QA.W]W150.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:44 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.238314 through 0.258314

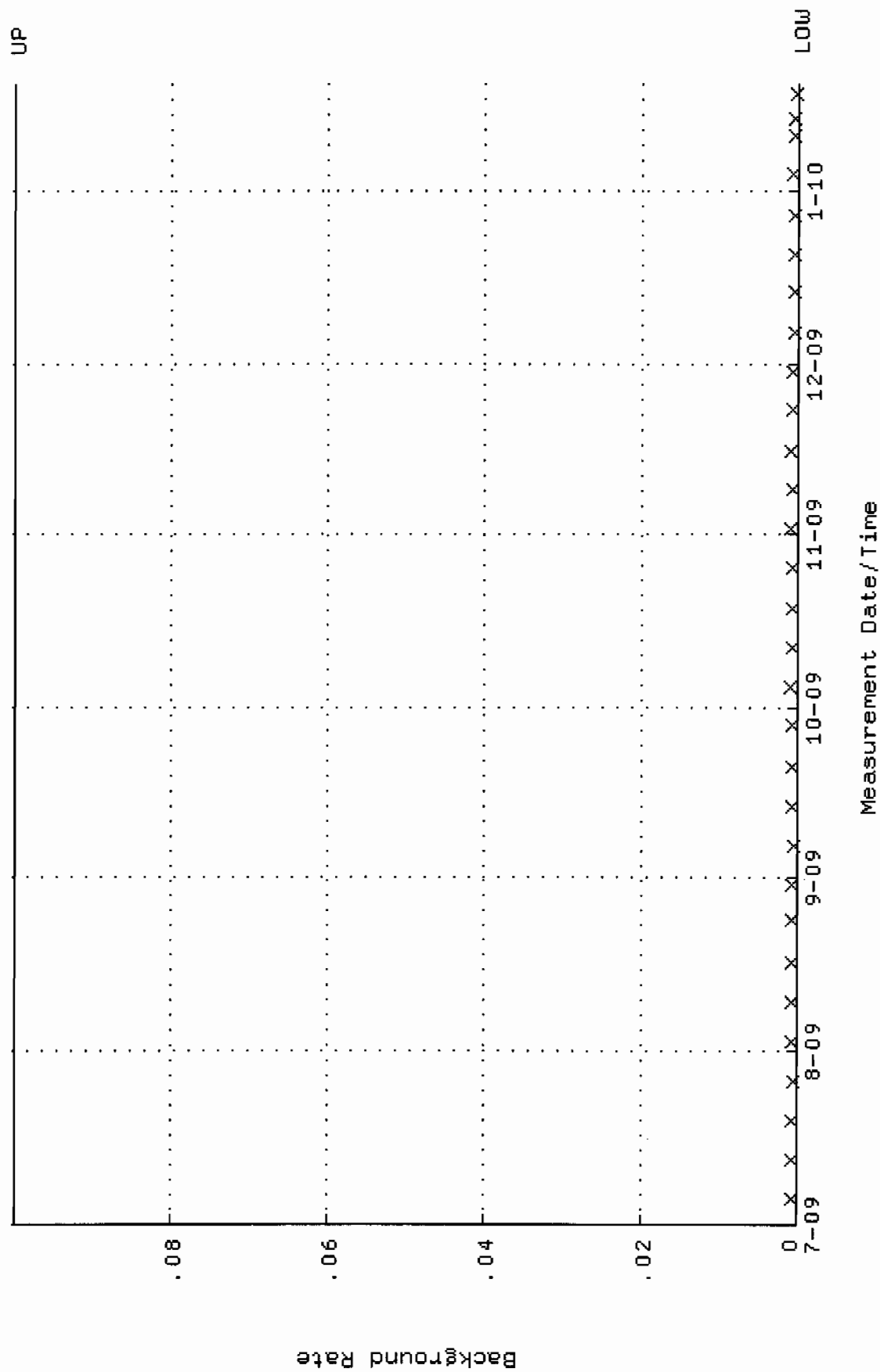




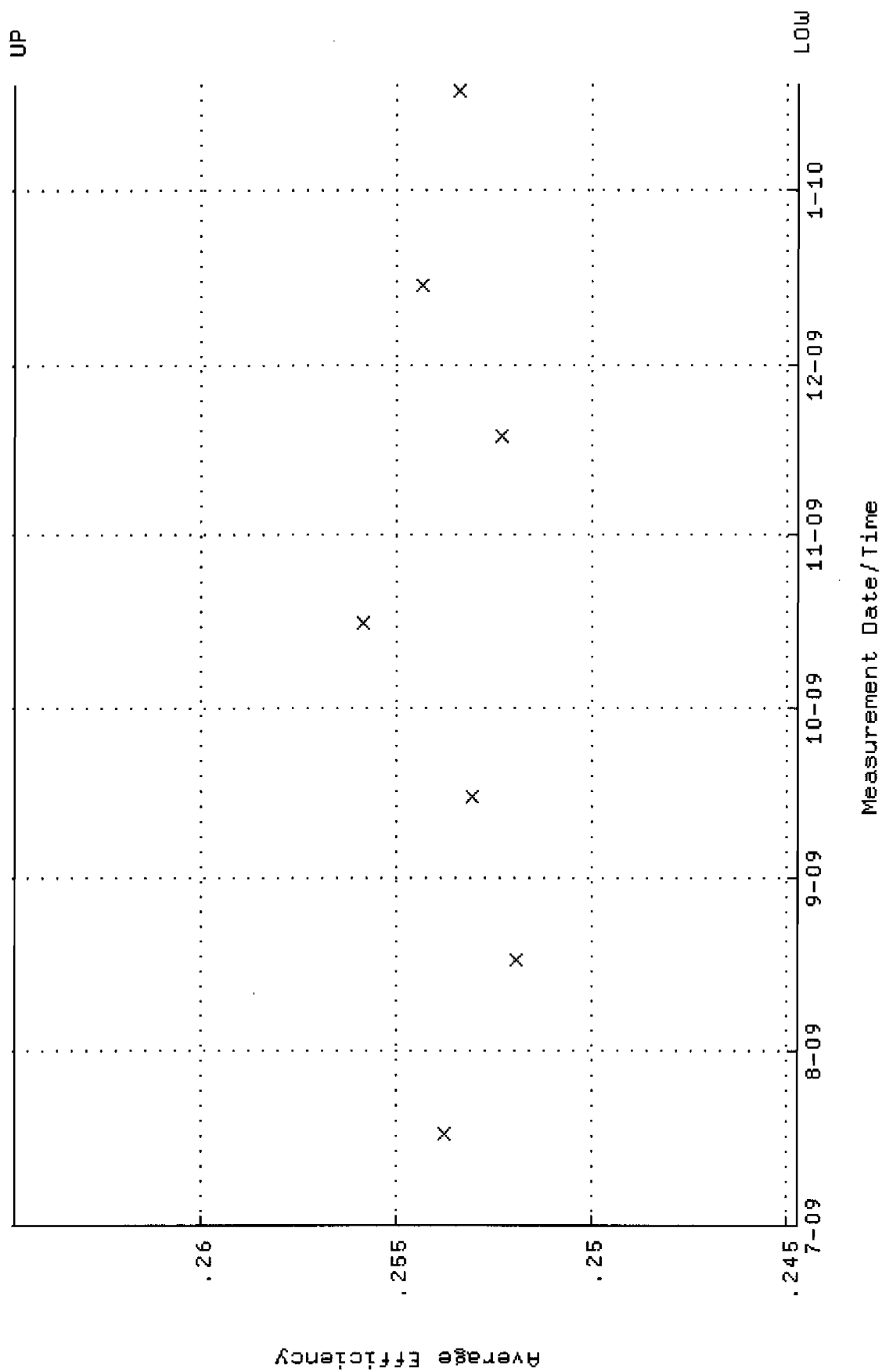
QA filename : DKA100:[ENV-ALPHA.QA.W]W150.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:44 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.4039 through 93.2885



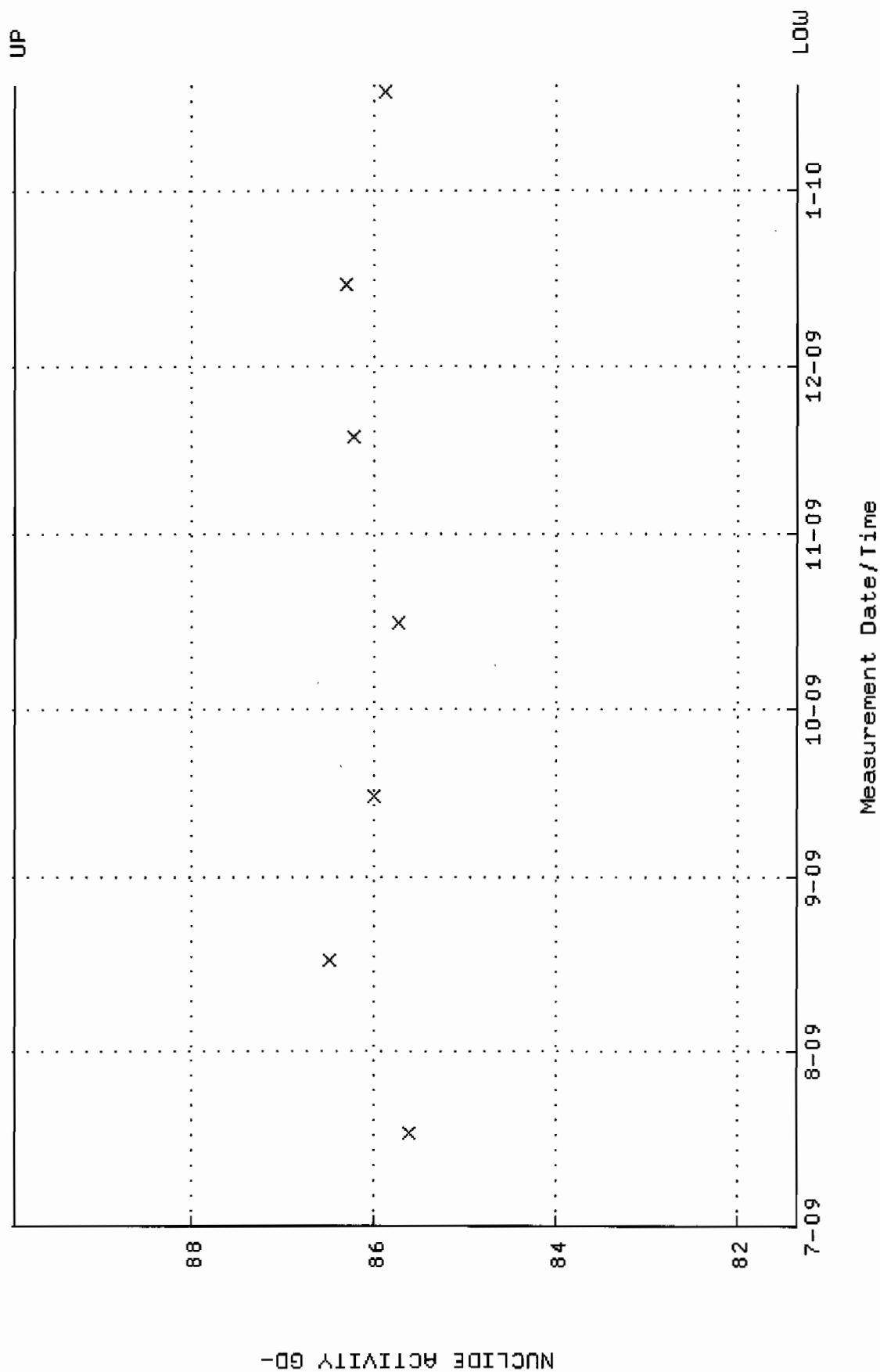
QA filename : DKA100:[ENV\_ALPHA.QA.B]B150.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:48 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



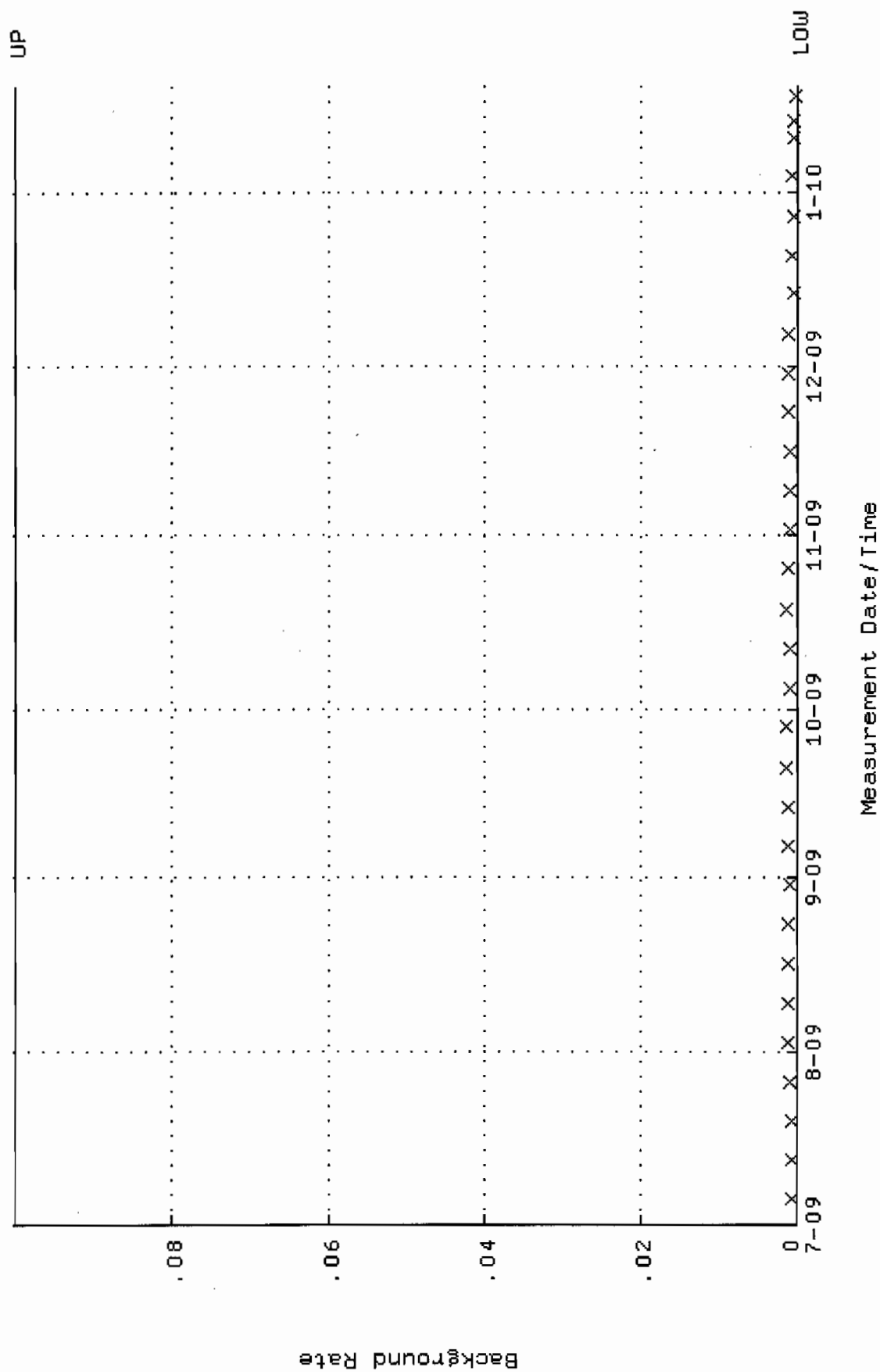
QA filename : DKA100:[ENV\_ALPHA.QA.W]W153.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:59 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.244738 through 0.264738



QA filename : DKA100:[ENV\_ALPHA.QA.W]W153.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:59 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 81.3634 through 89.9280



QA filename : DKA100:[ENV\_ALPHA.QA.B]B153.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:02 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

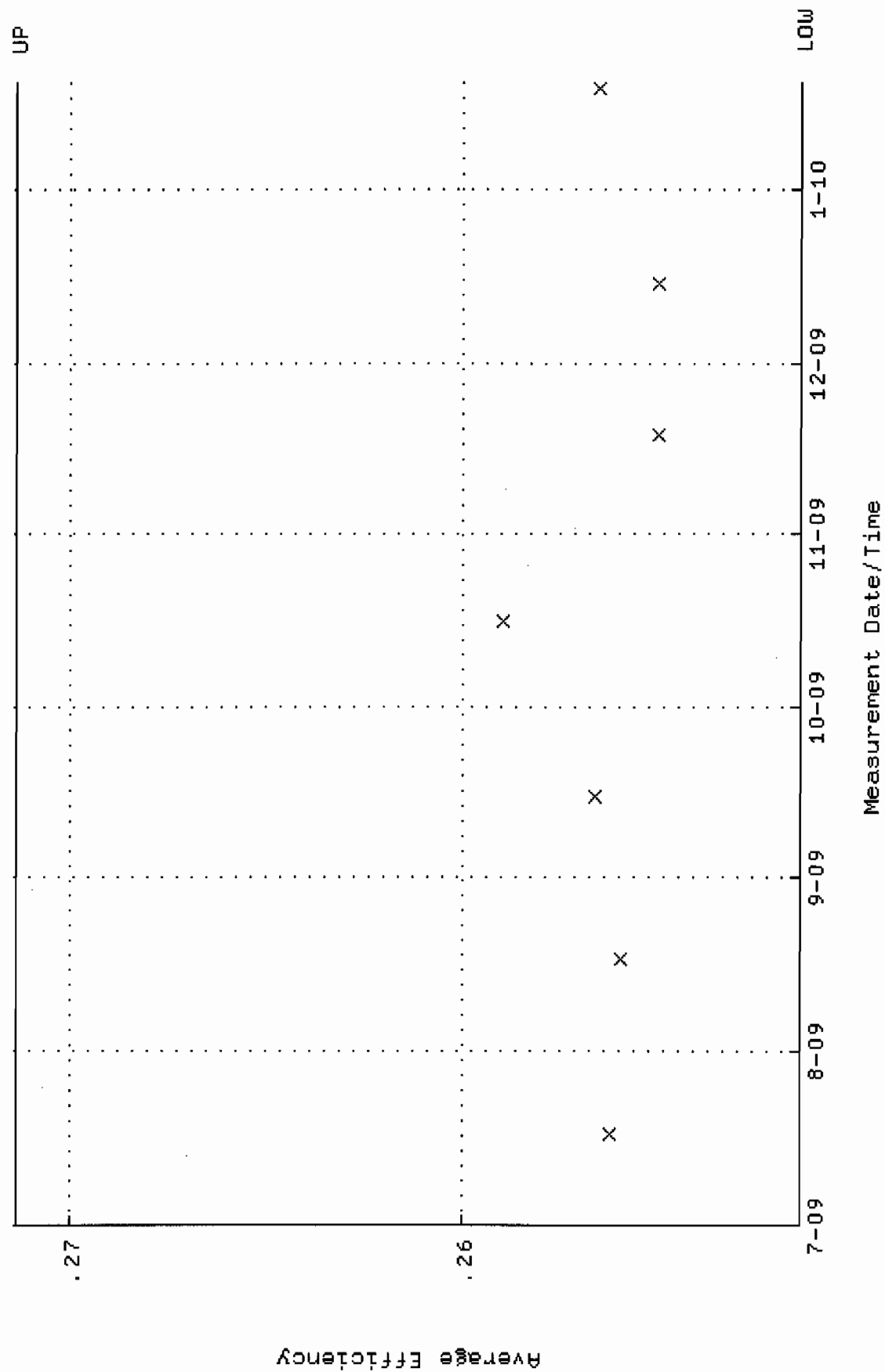


QA filename : DKA100:[ENV\_ALPHA.QA.W]W154.QAF;1

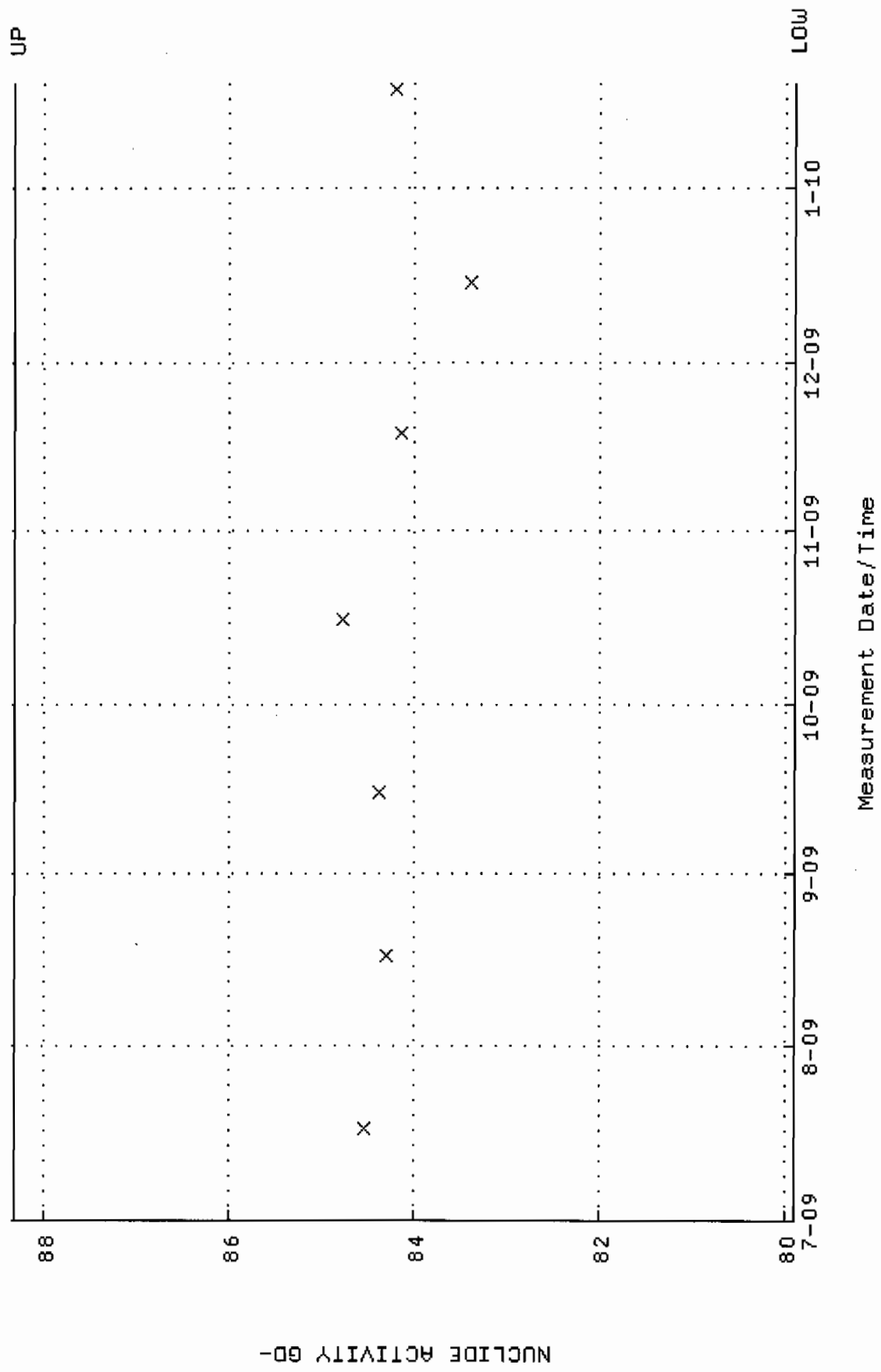
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-JUL-2009 09:14:04 through 19-JAN-2010 12:00:00

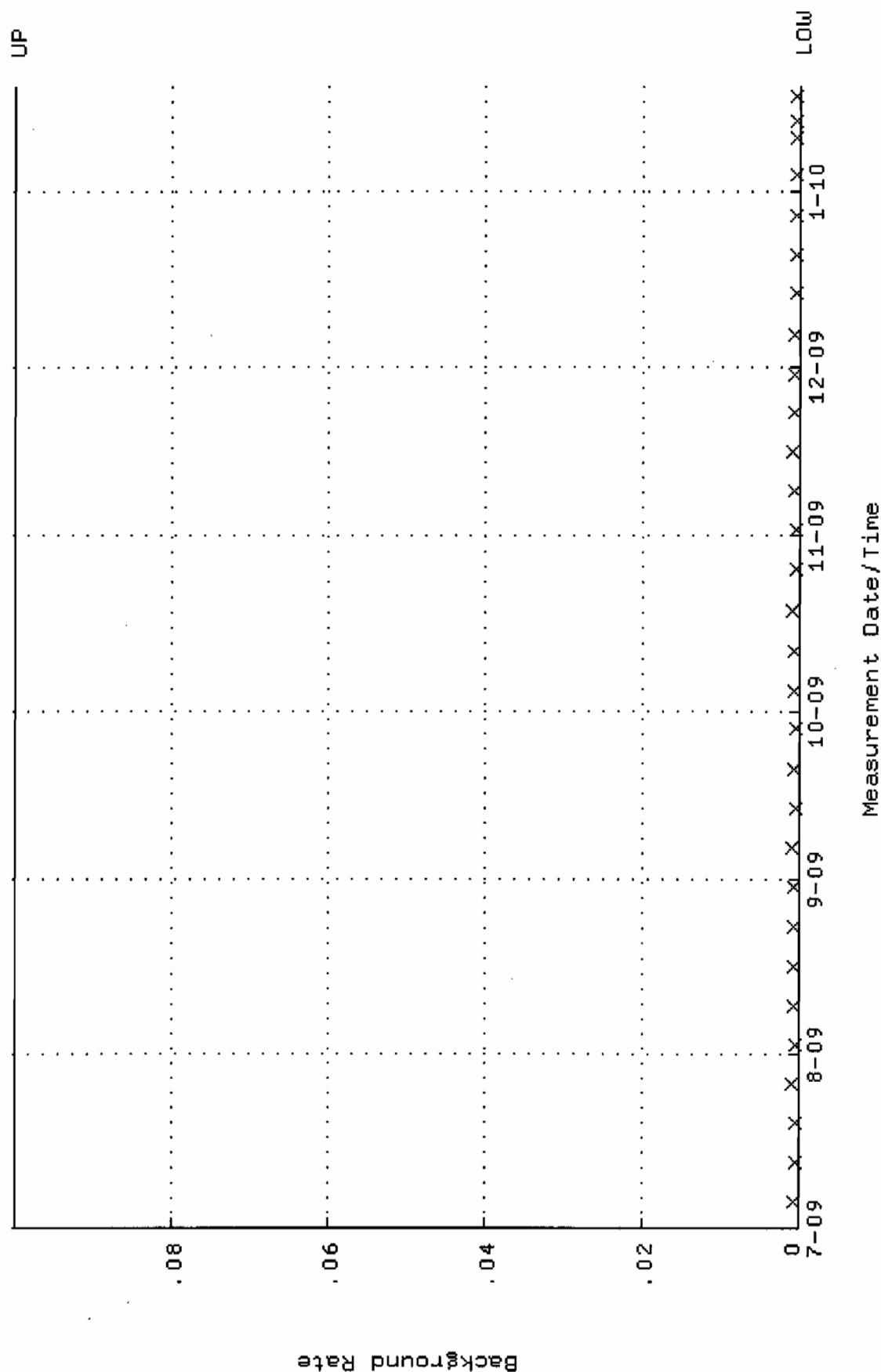
Lower/Upper Lmts: 0.251386 through 0.271386



QA filename : DKA100:[ENV\_ALPHA.QA.W]W154.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:04 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 79.9003 through 88.3109

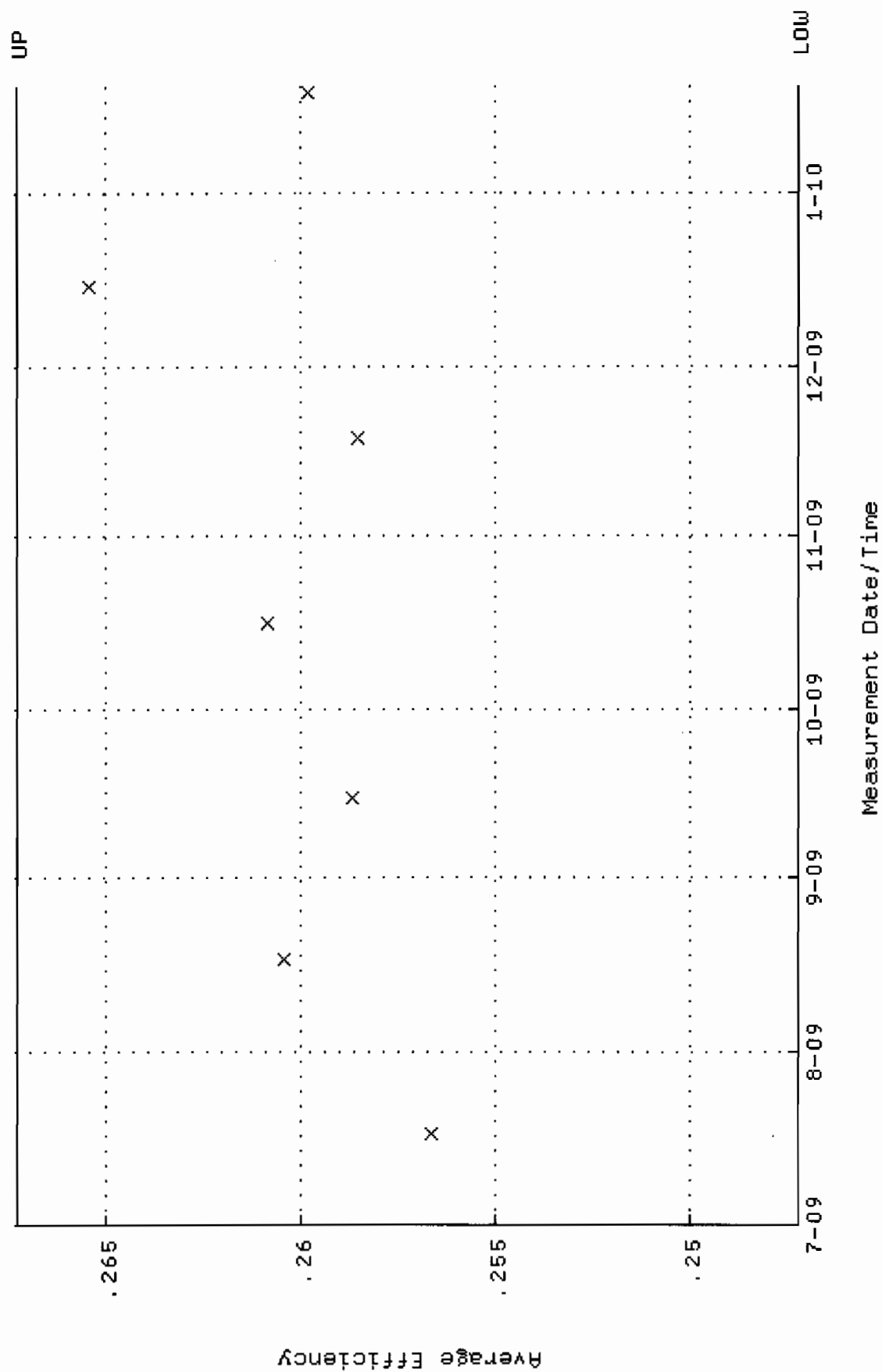


QA filename : DKA100:[ENV\_ALPHA.QA.B]B154.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:07 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

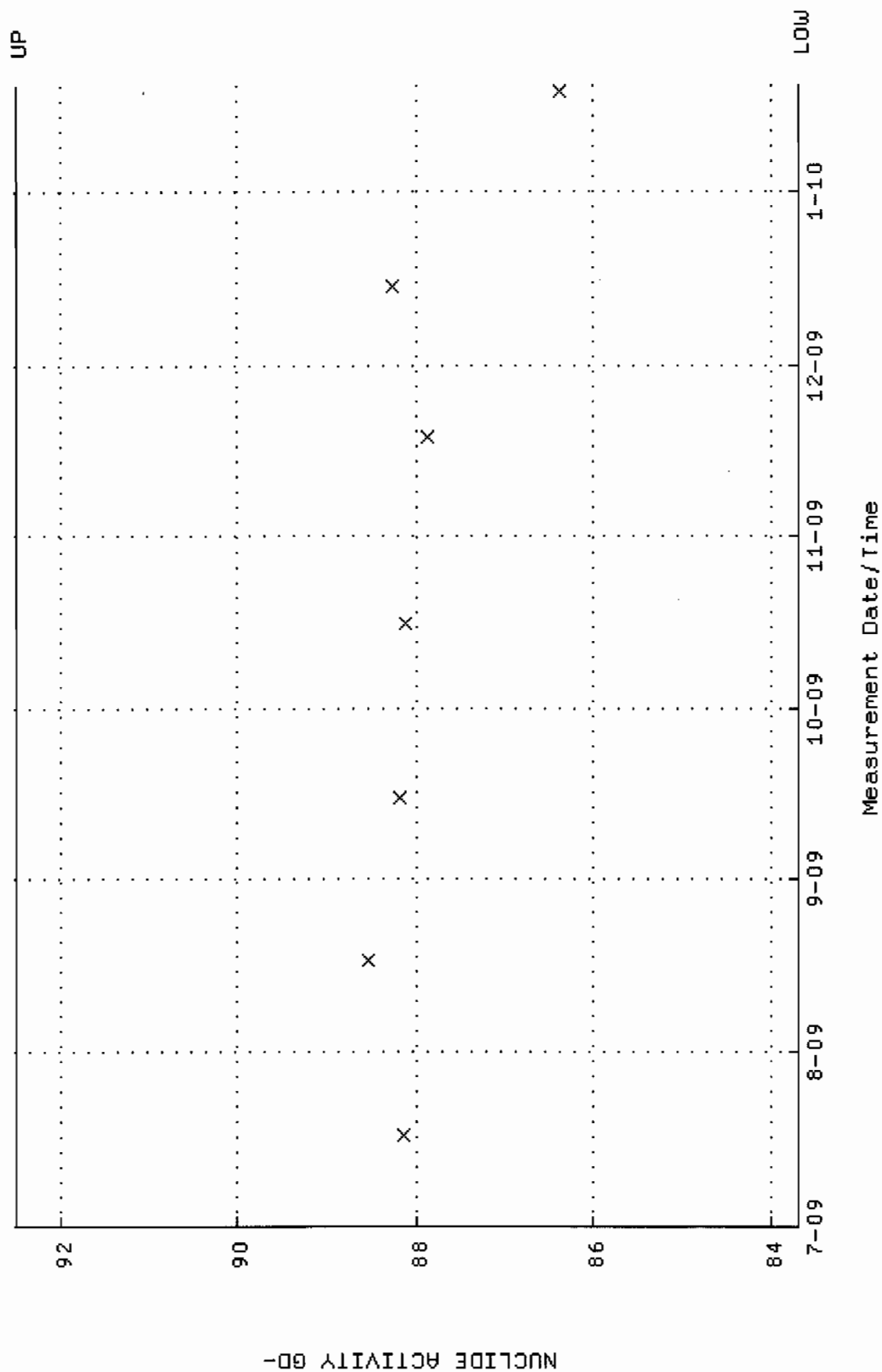




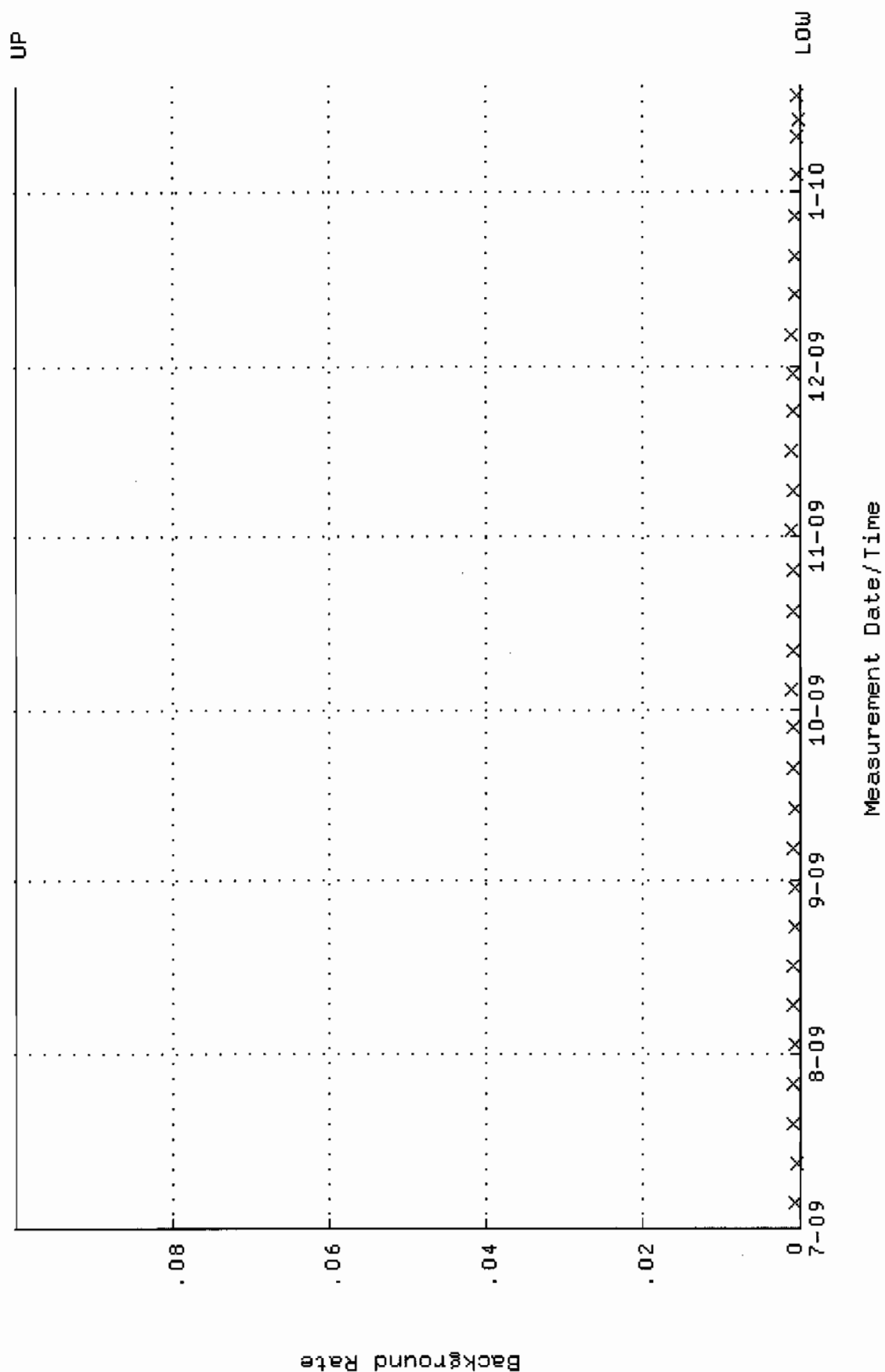
QA filename : DKA100:[ENV\_ALPHA.QA.W]W155.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:09 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.247241 through 0.267241



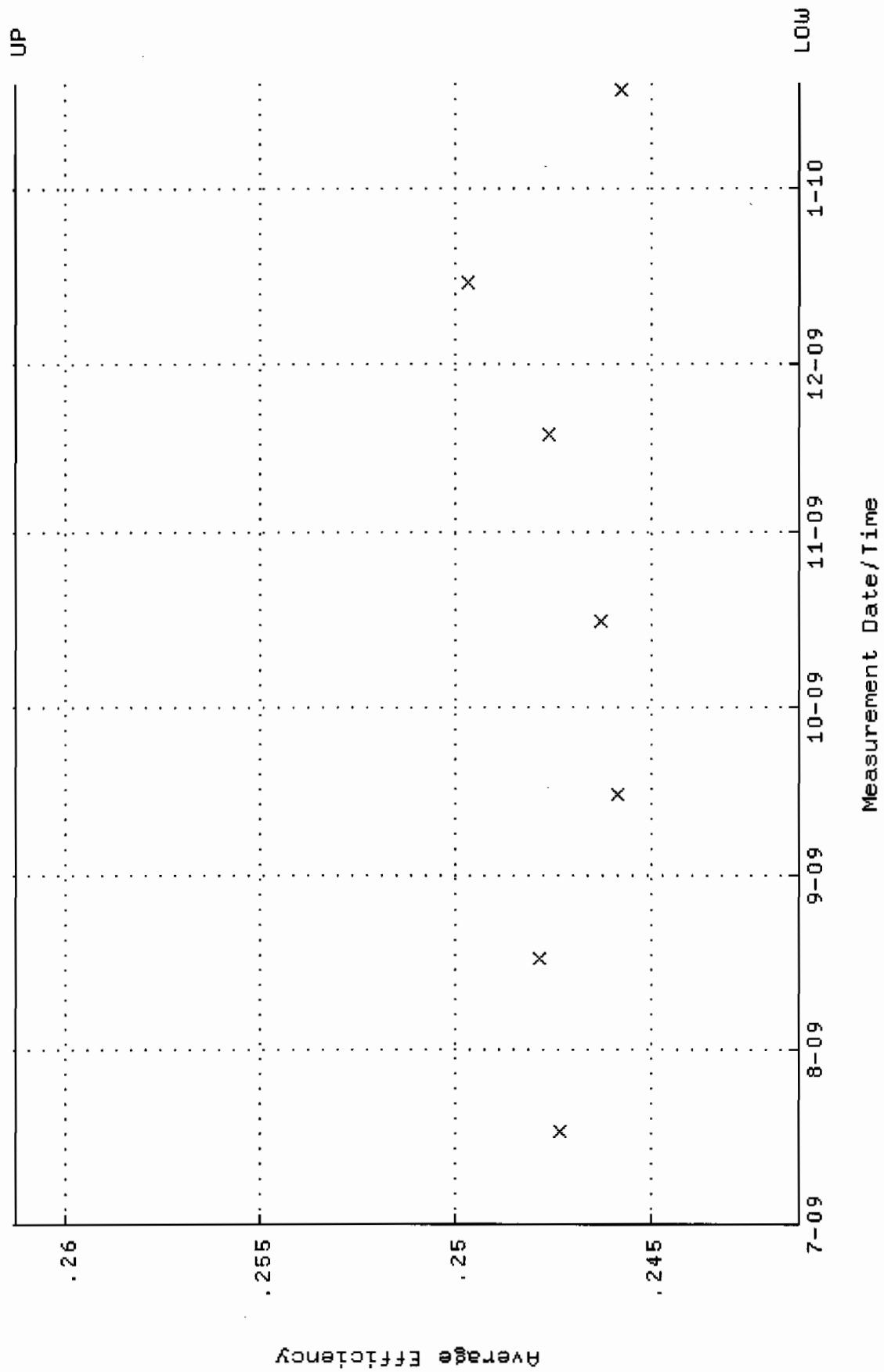
QA filename : DKA100:[ENV\_ALPHA.QA.W]W155.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:09 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.6873 through 92.4965



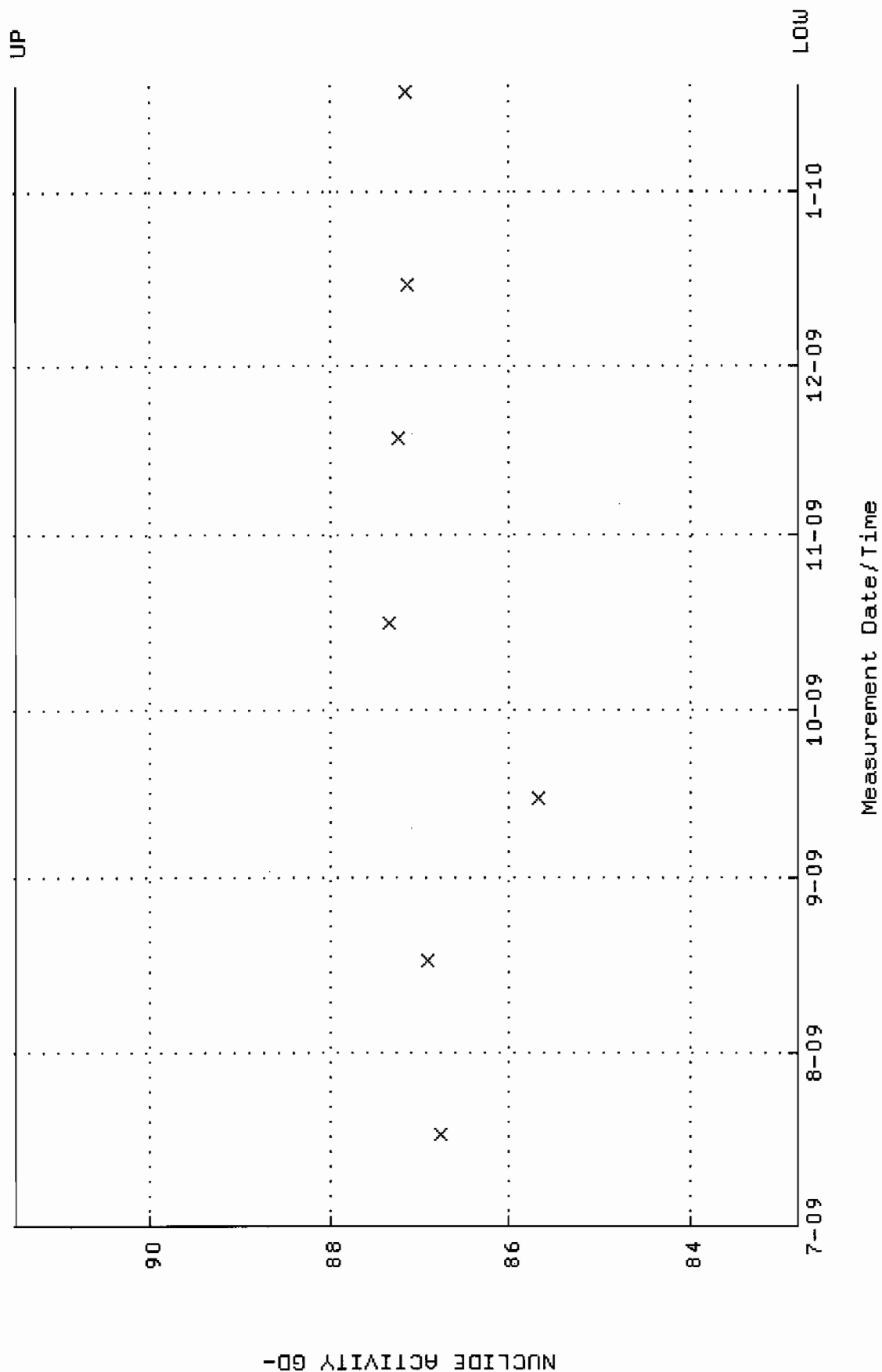
QA filename : DKA100:[ENV\_ALPHA.QA.B]B155.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:11 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



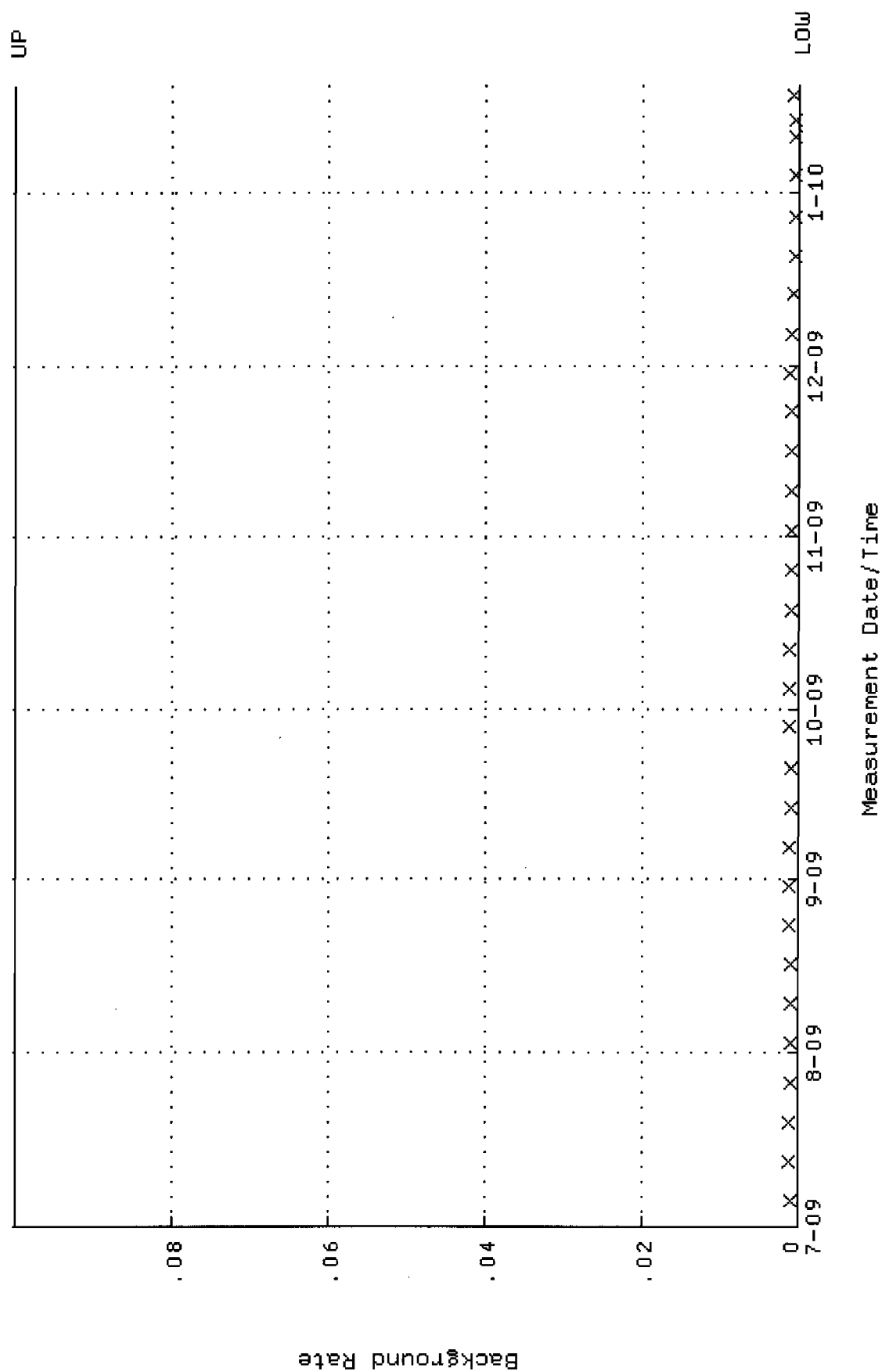
QA filename : DKA100:[ENV\_ALPHA.QA.W]w156.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:14 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.241250 through 0.261250



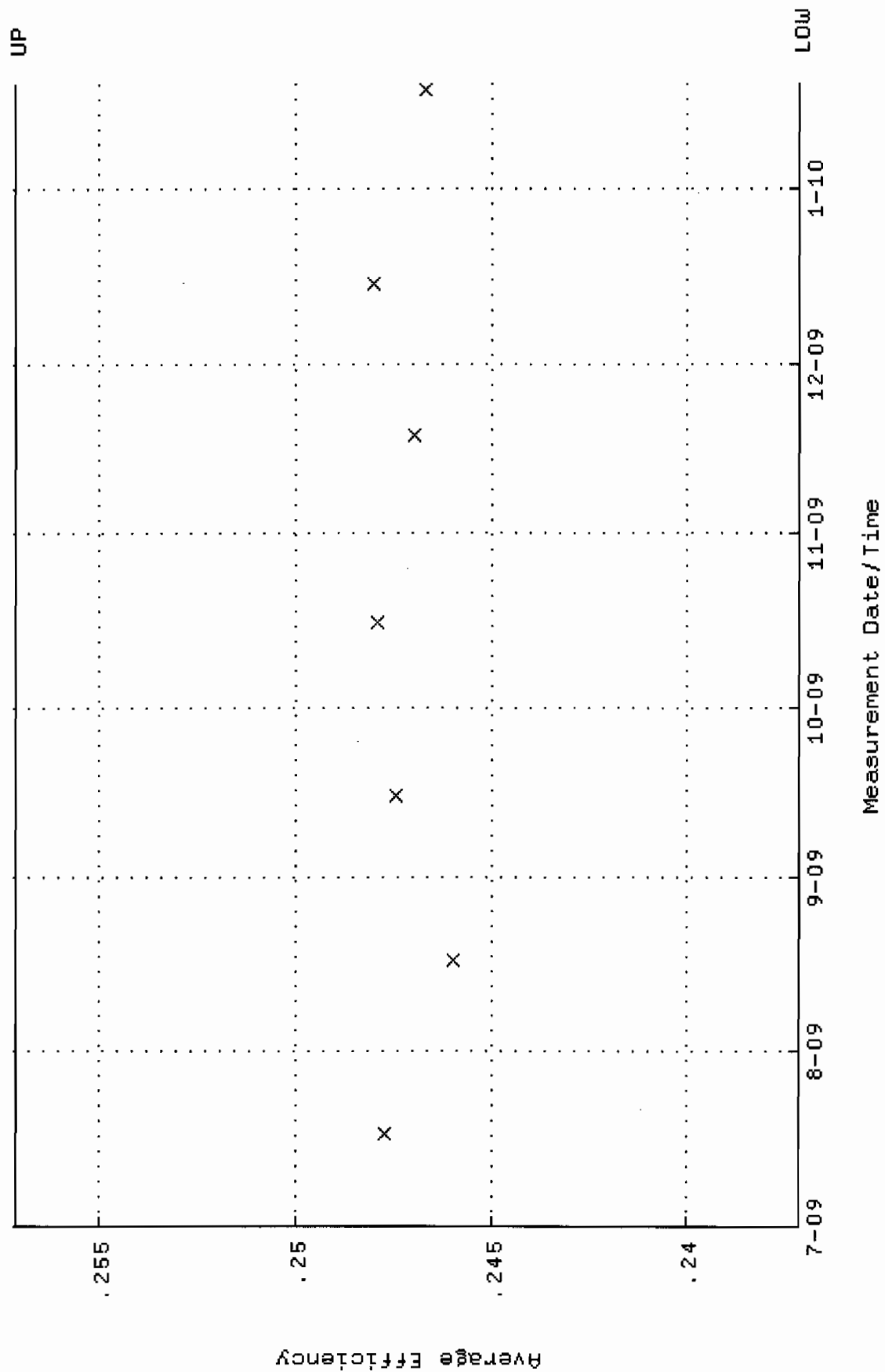
QA filename : DKA100:[ENV\_ALPHA.QA.W]W156.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:14 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 82.7847 through 91.4989



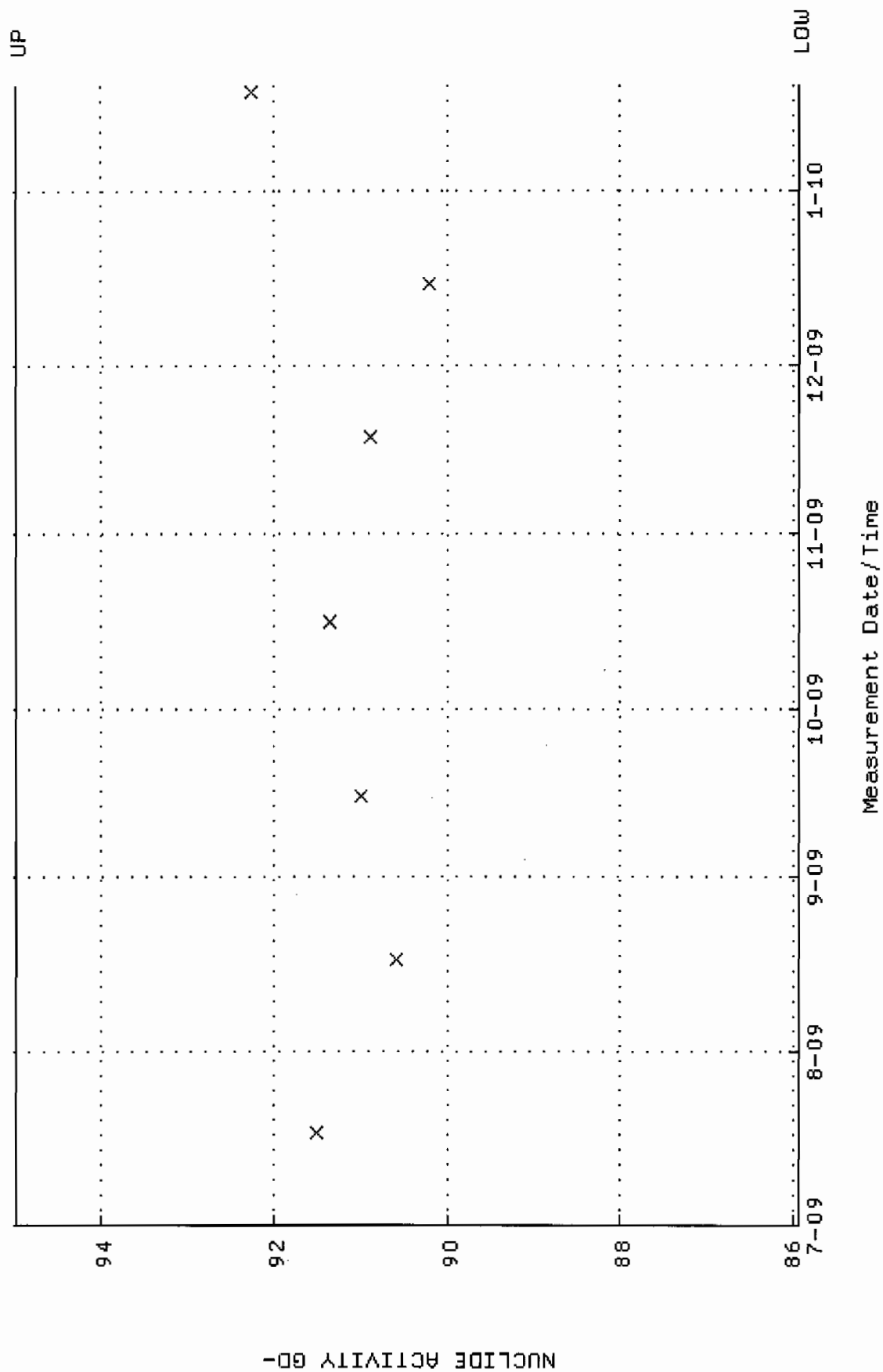
QA filename : DKA100:[ENV\_ALPHA.QA.B]B156.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:16 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W157.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:19 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.237137 through 0.257137

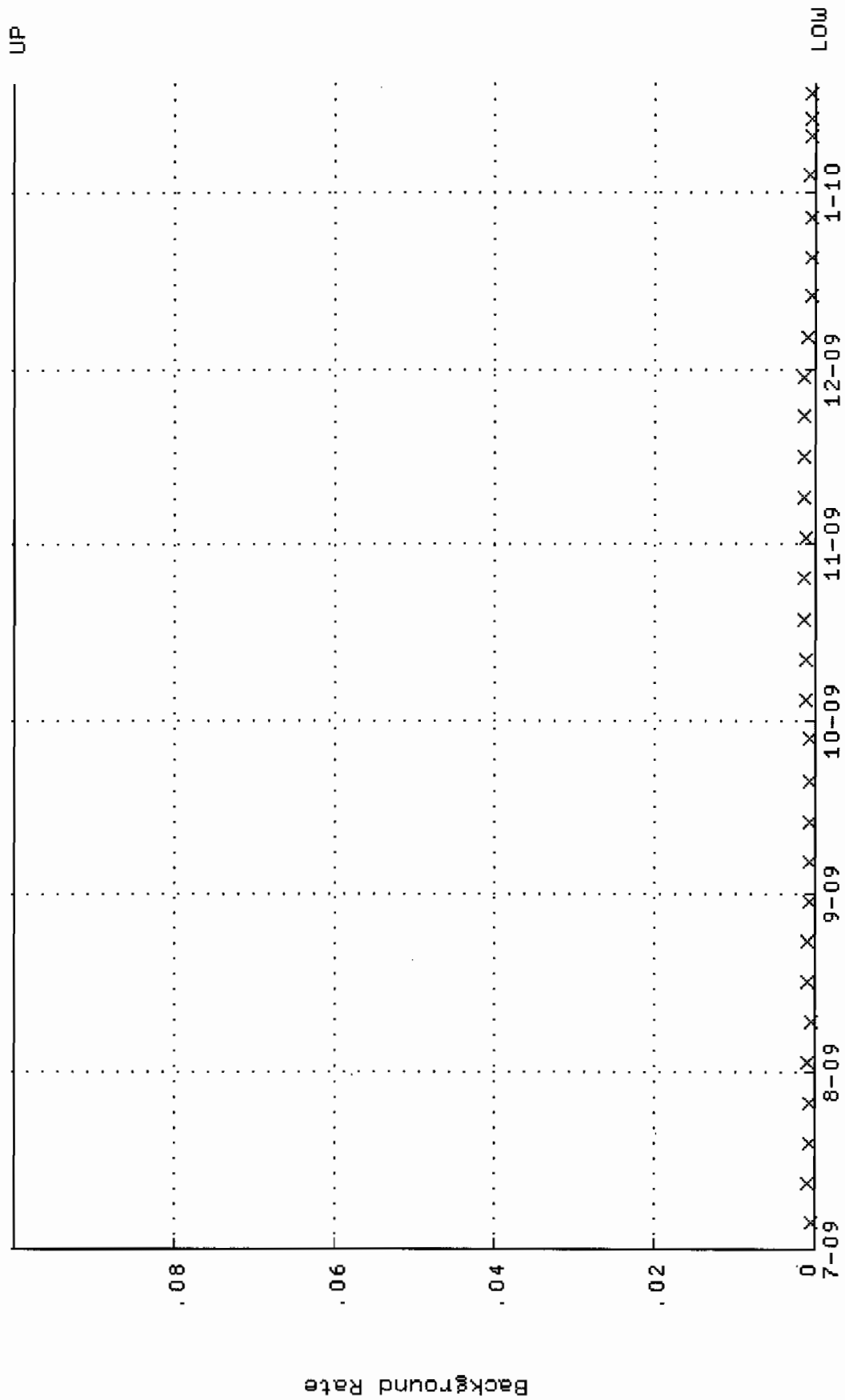


QA filename : DKA100:[ENV\_ALPHA.QA.w]w157.QAF;1  
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:19 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.9292 through 94.9744

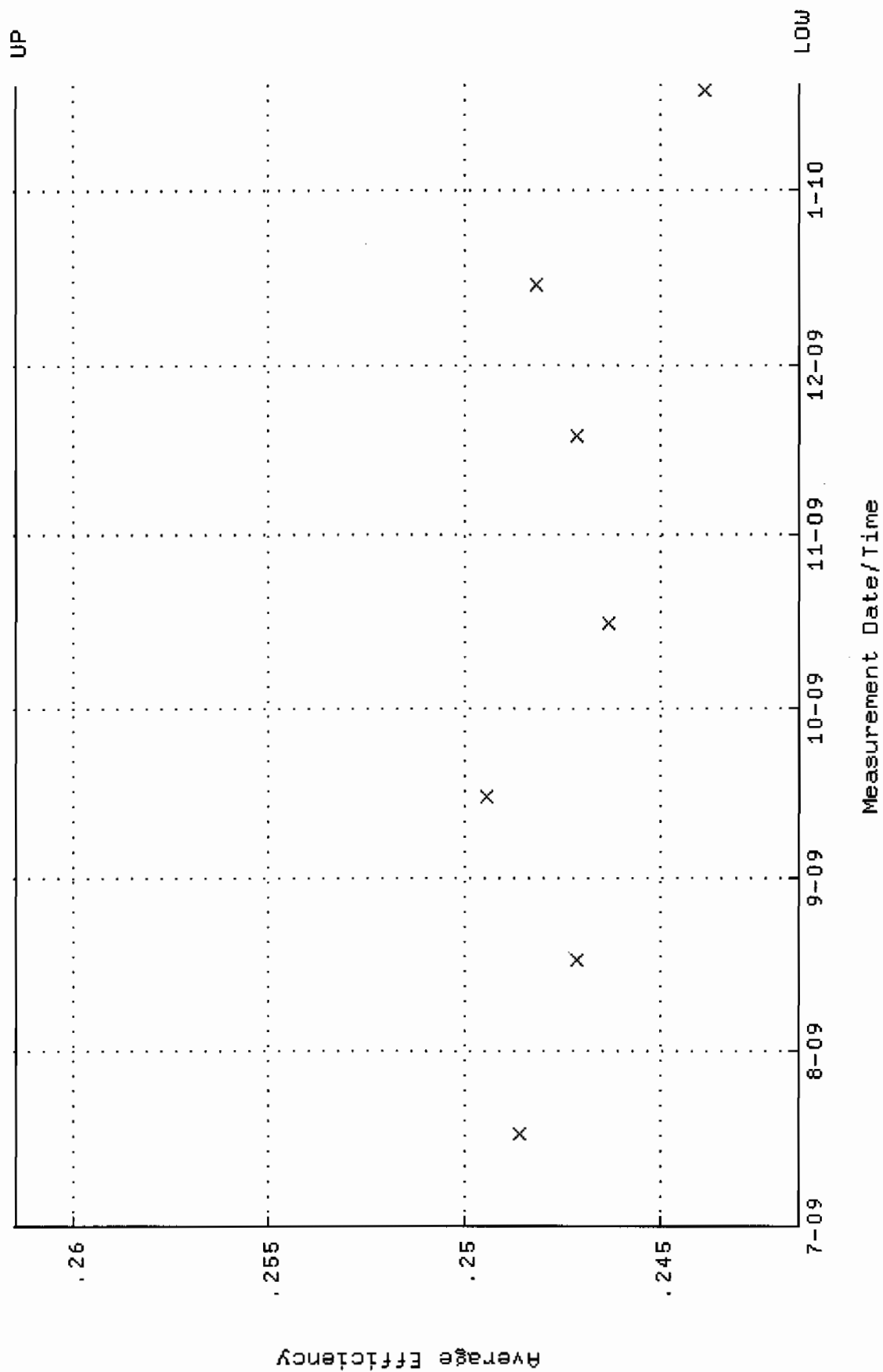




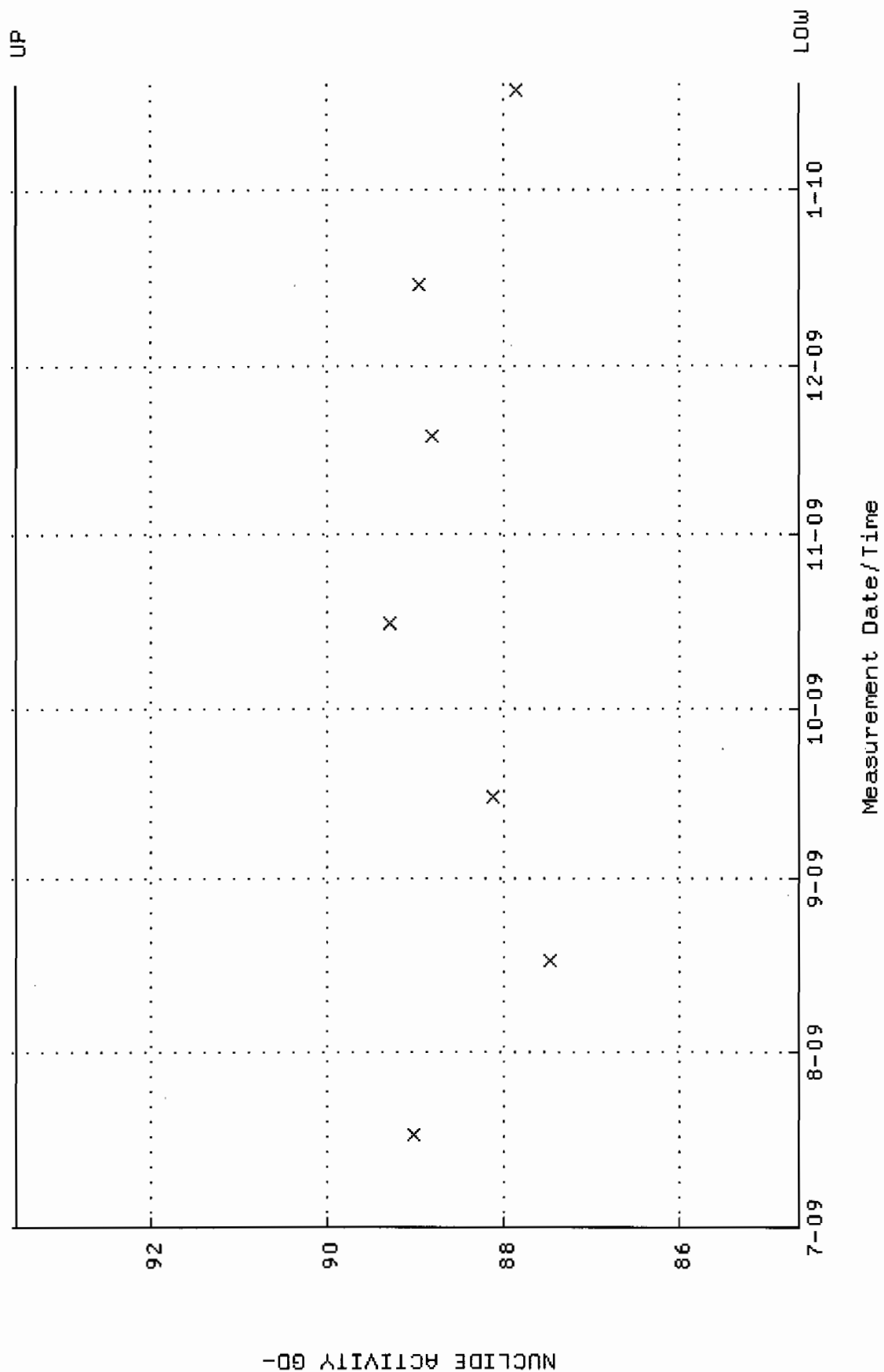
QA filename : DKA100:[ENV\_ALPHA.QA.B]B157.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:21 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



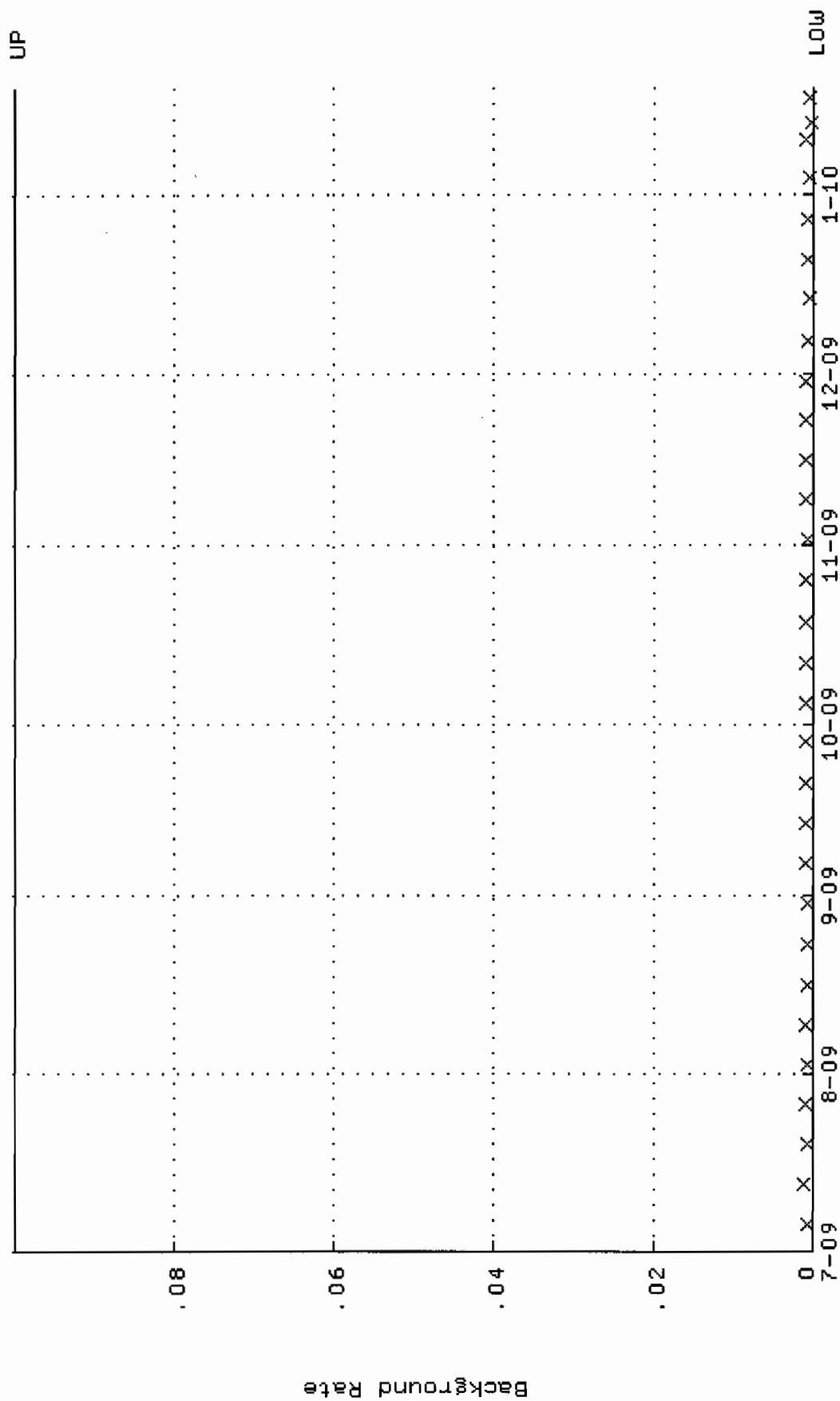
QA filename : DKA100:[ENV\_ALPHA.QA.W]W158.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:24 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.241466 through 0.261466



QA filename : DKA100:[ENV\_ALPHA.QA.W]w158.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:24 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.6414 through 93.5510

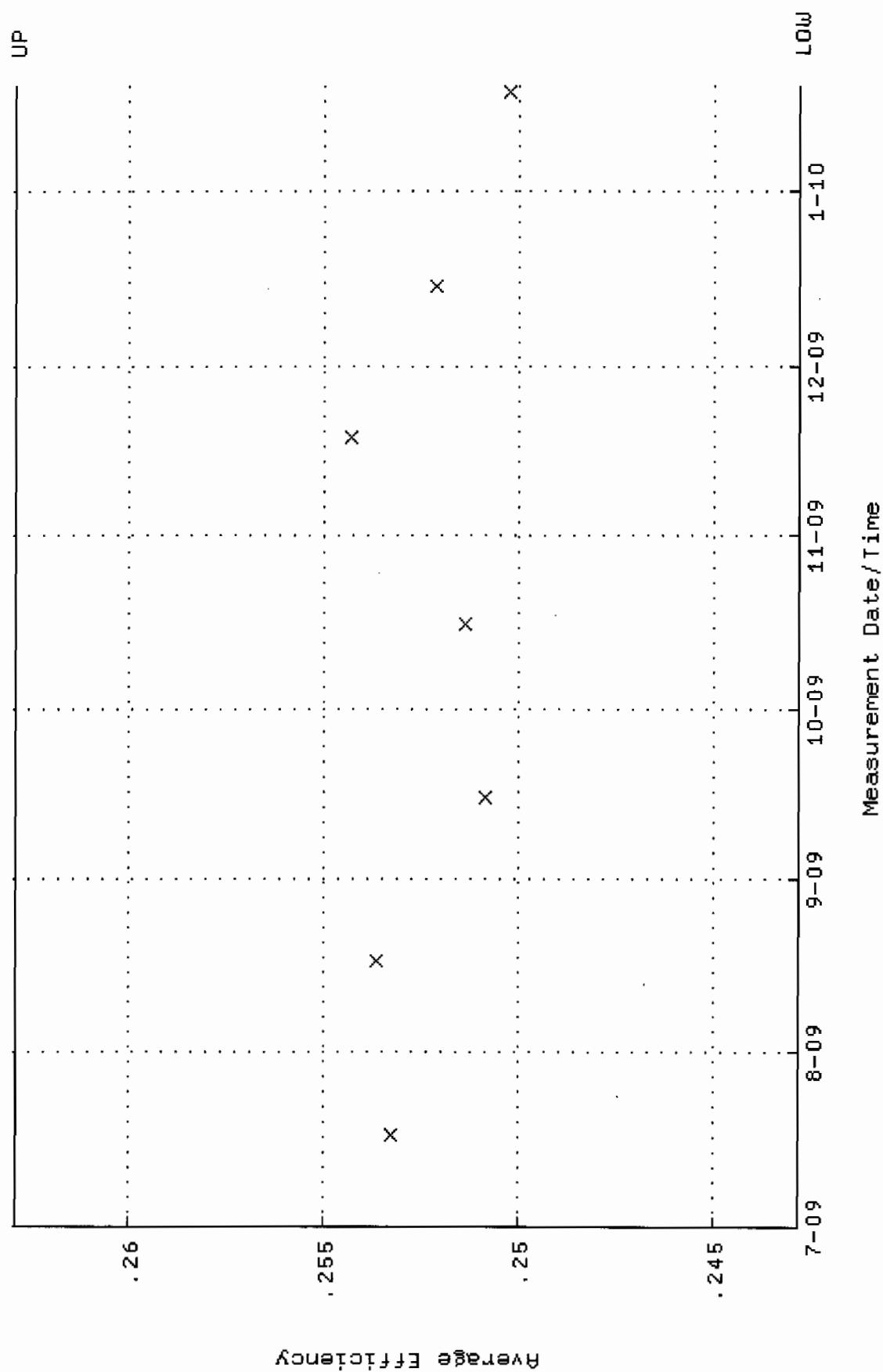


Lower/Upper Lmts: 0.000000E+00 through 0.100000

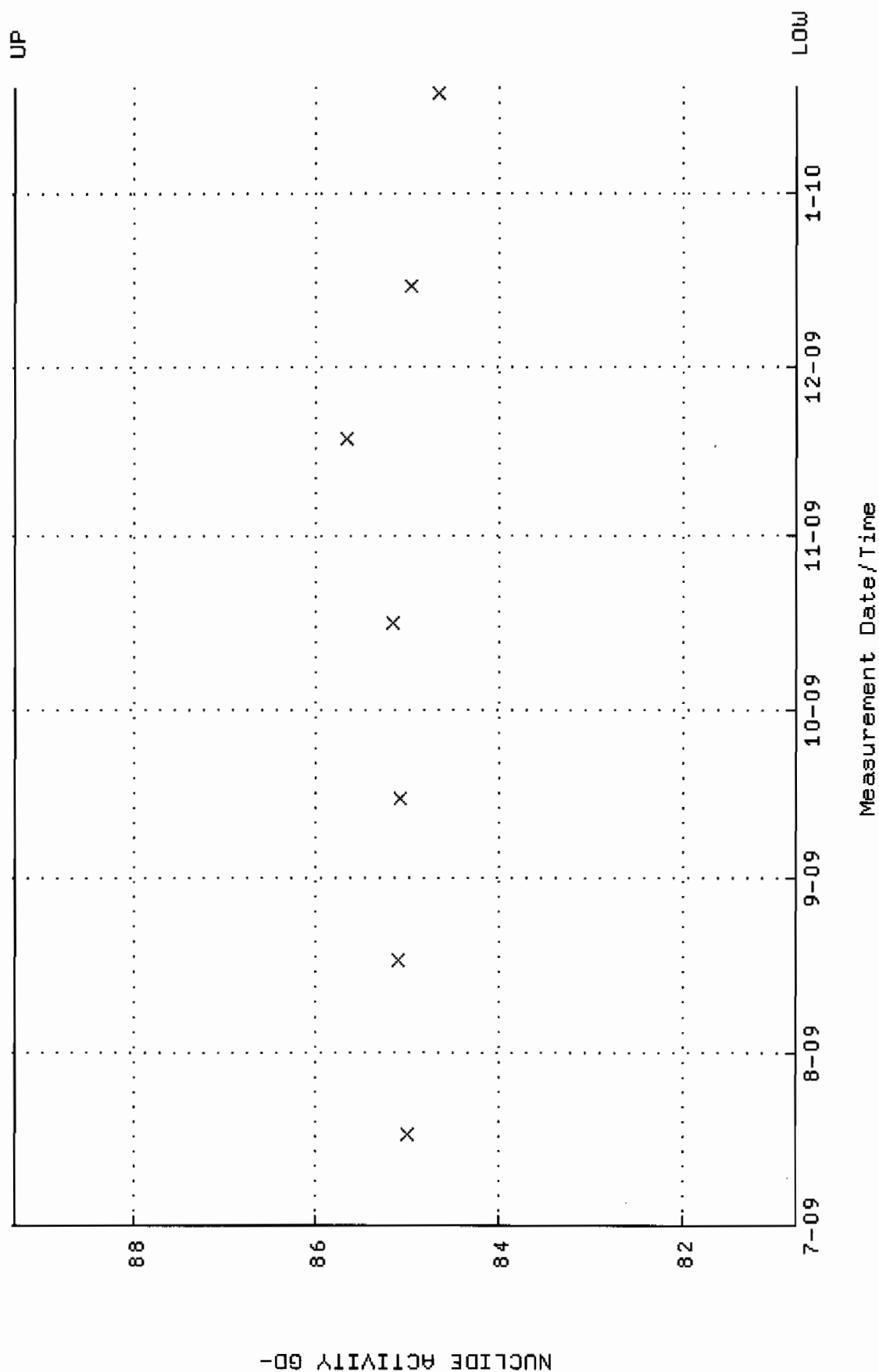


Measurement Date/Time

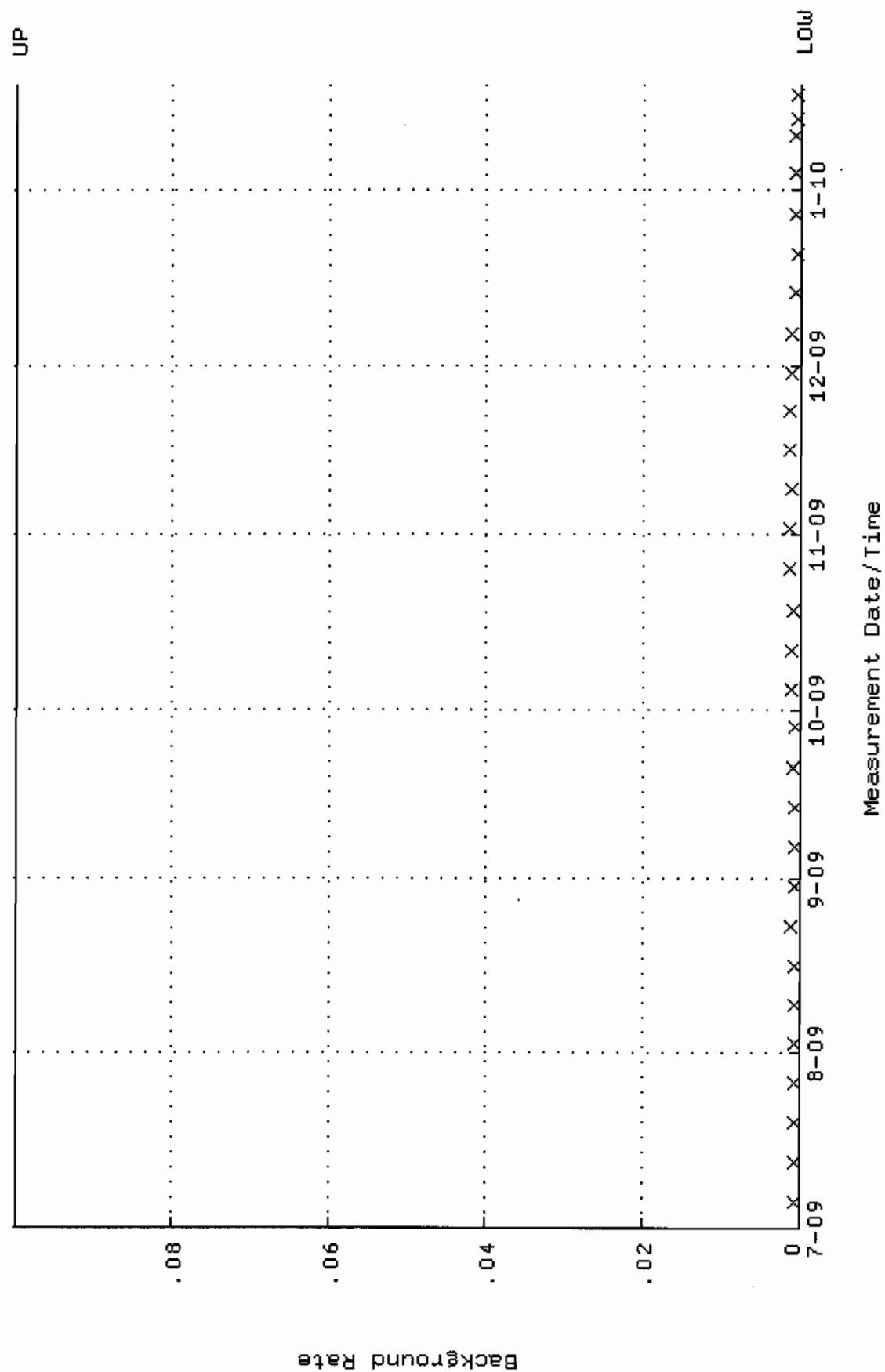
QA filename : DKA100:[ENV\_ALPHA.QA.W]W159.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:28 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.242851 through 0.262851



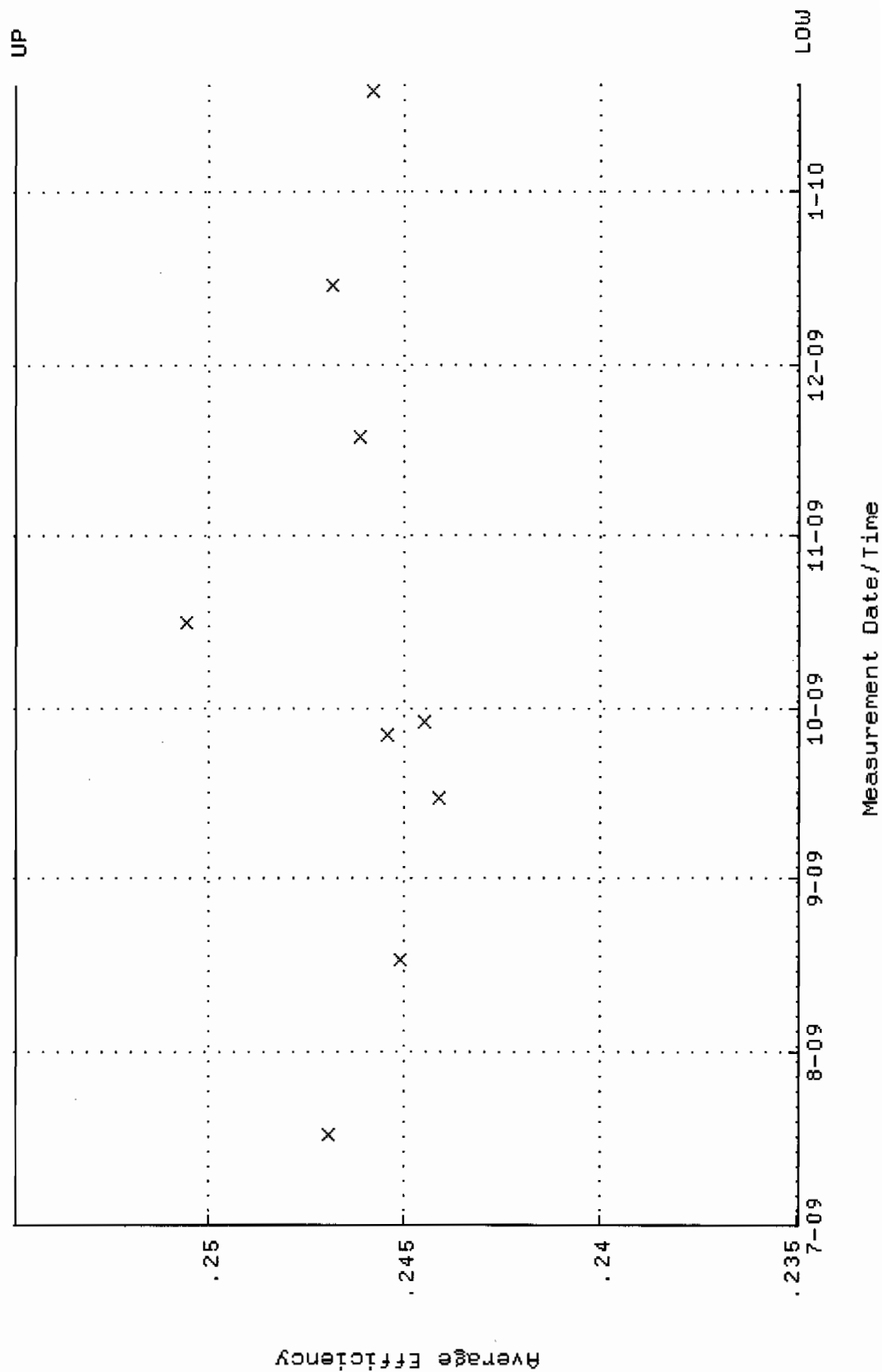
QA filename : DKA100:[ENV\_ALPHA.QA.w]w159.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:28 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 80.7870 through 89.2909



QA filename : DKA100:[ENV\_ALPHA.QA.B]B159.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:31 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

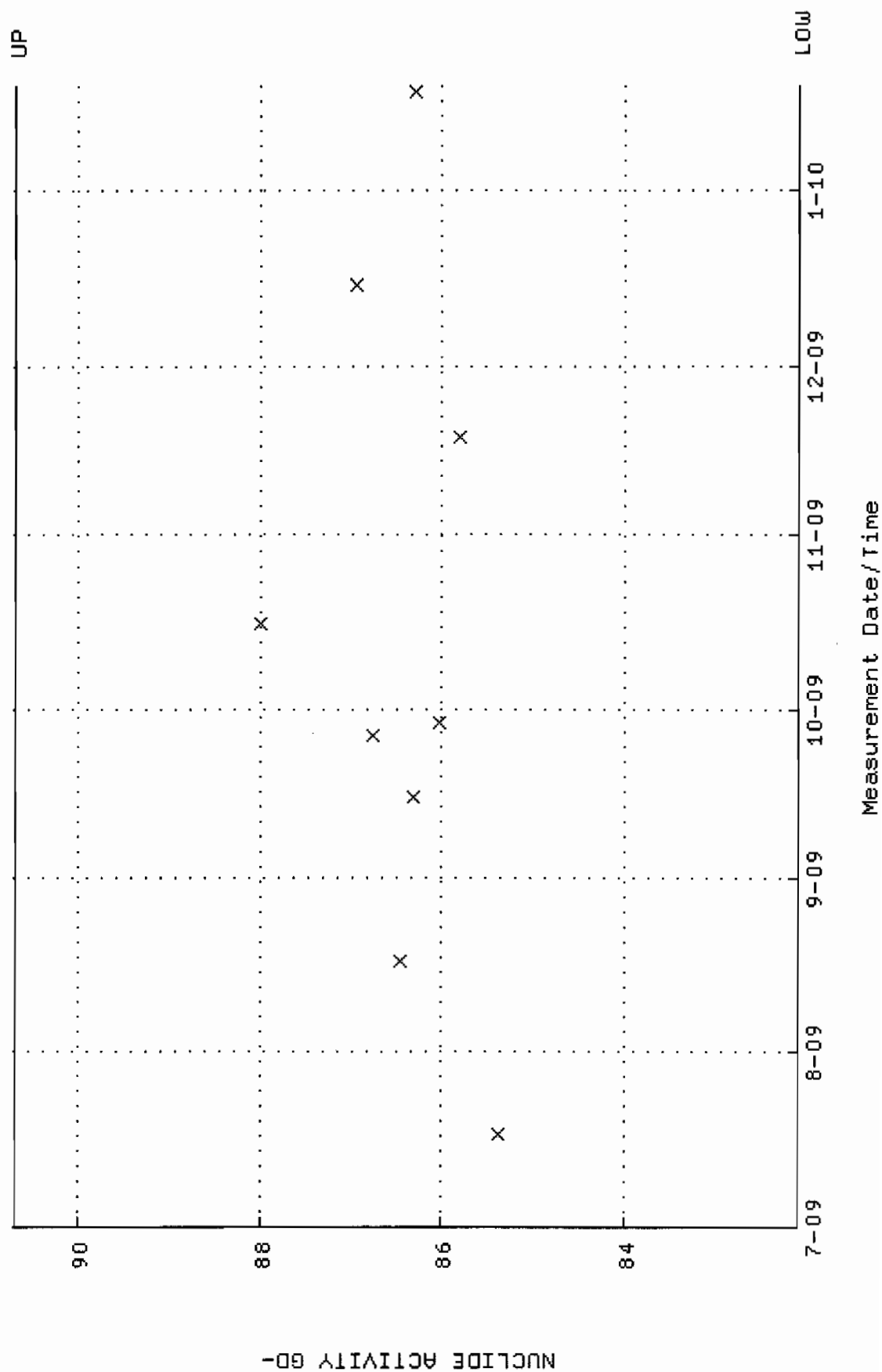


QA filename : DKA100:[ENV\_ALPHA.QA.W]W160.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:34 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.234941 through 0.254941

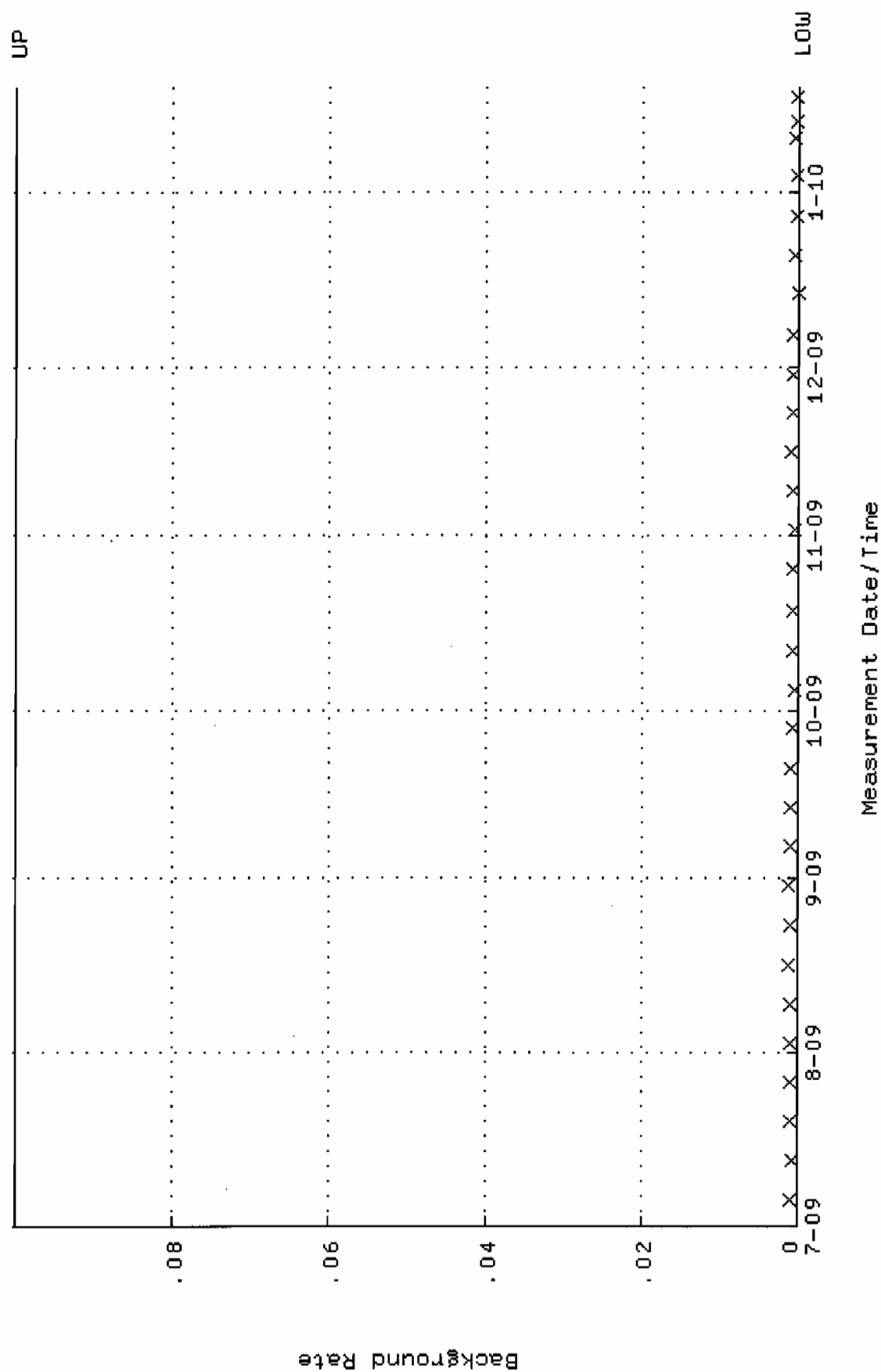




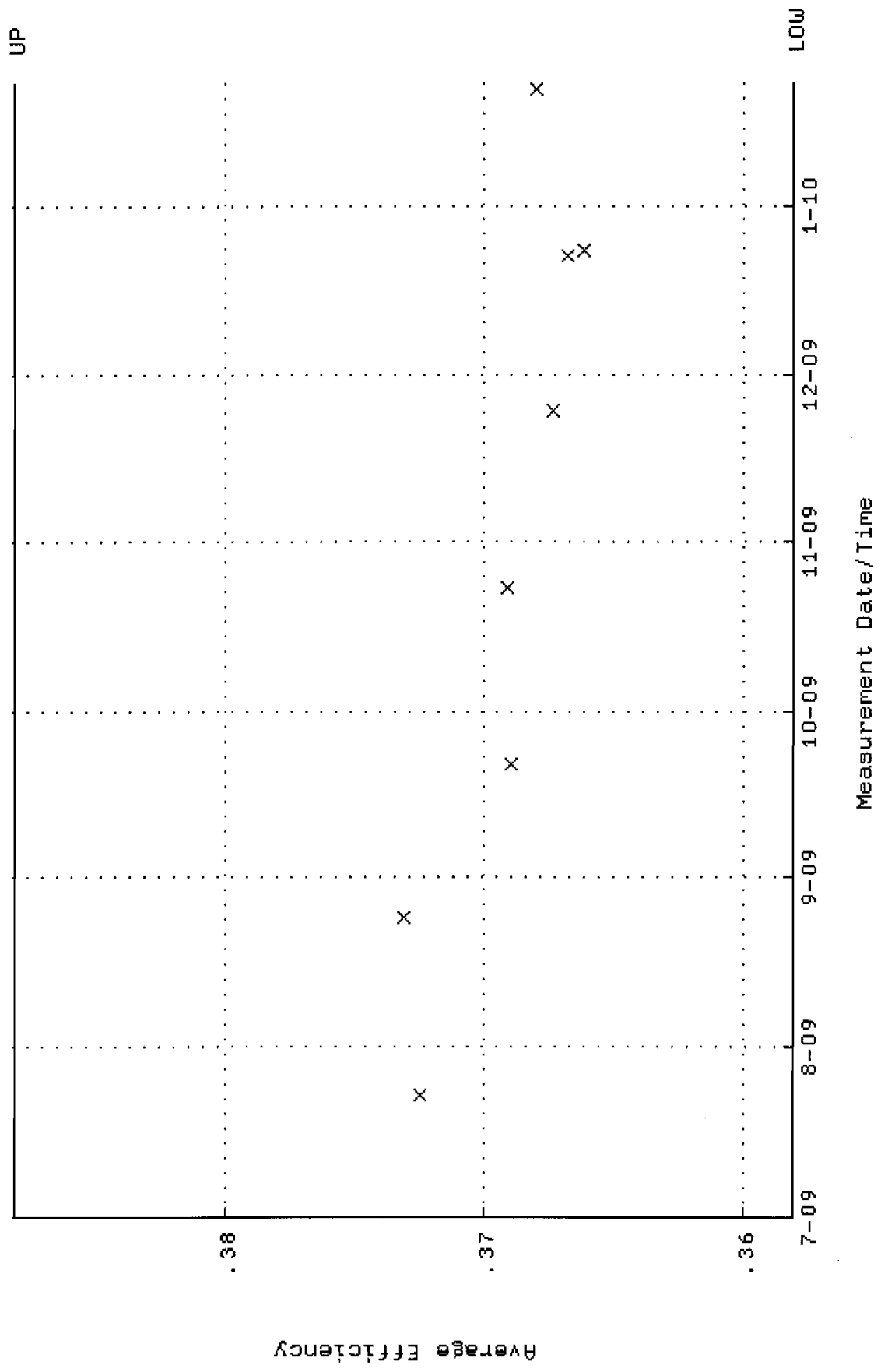
QA filename : DKA100:[ENV\_ALPHA.QA.W]W160.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:34 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 82.0594 through 90.6972



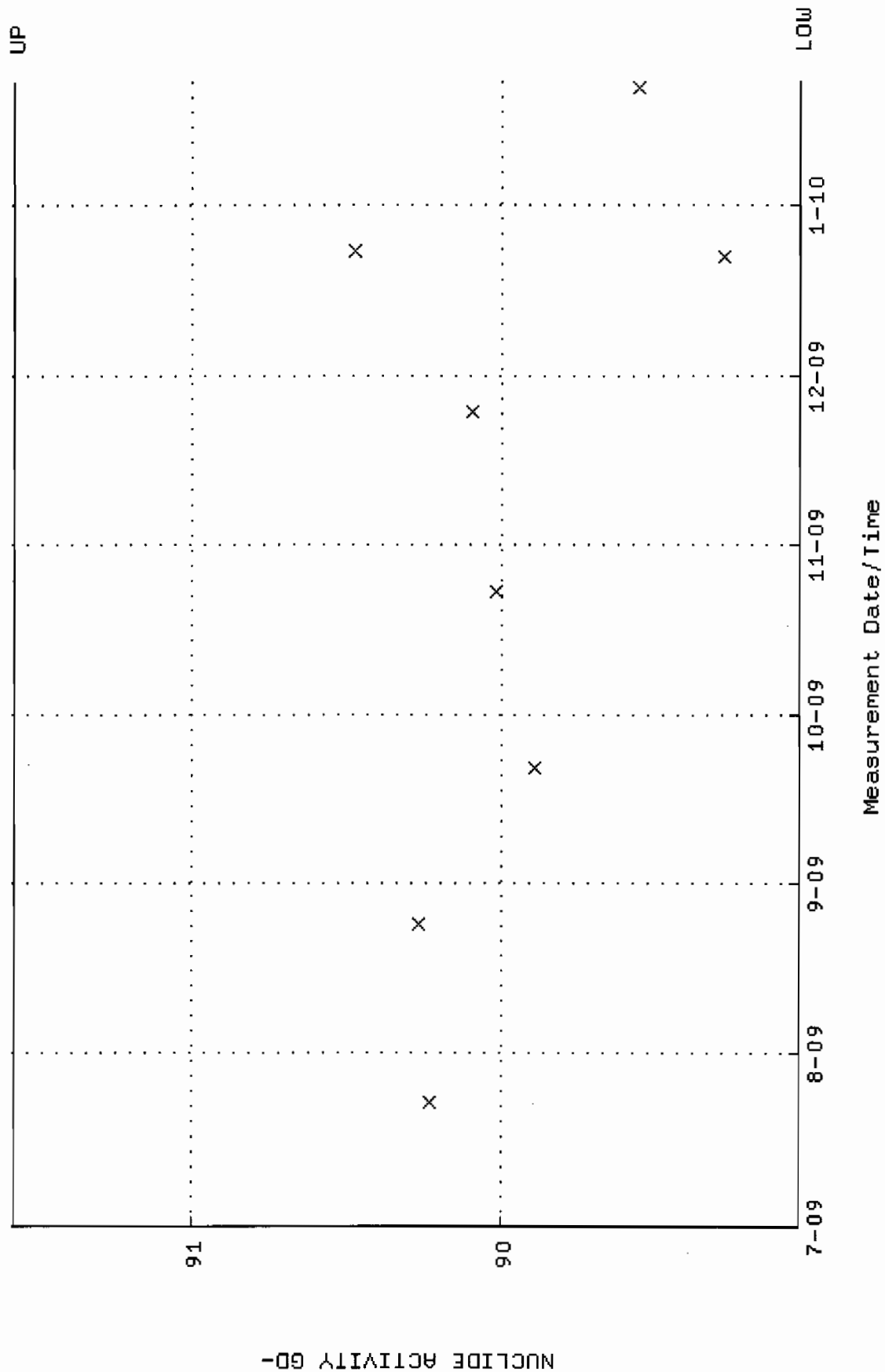
QA filename : DKA100:[ENV\_ALPHA.QA.B]B160.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:36 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



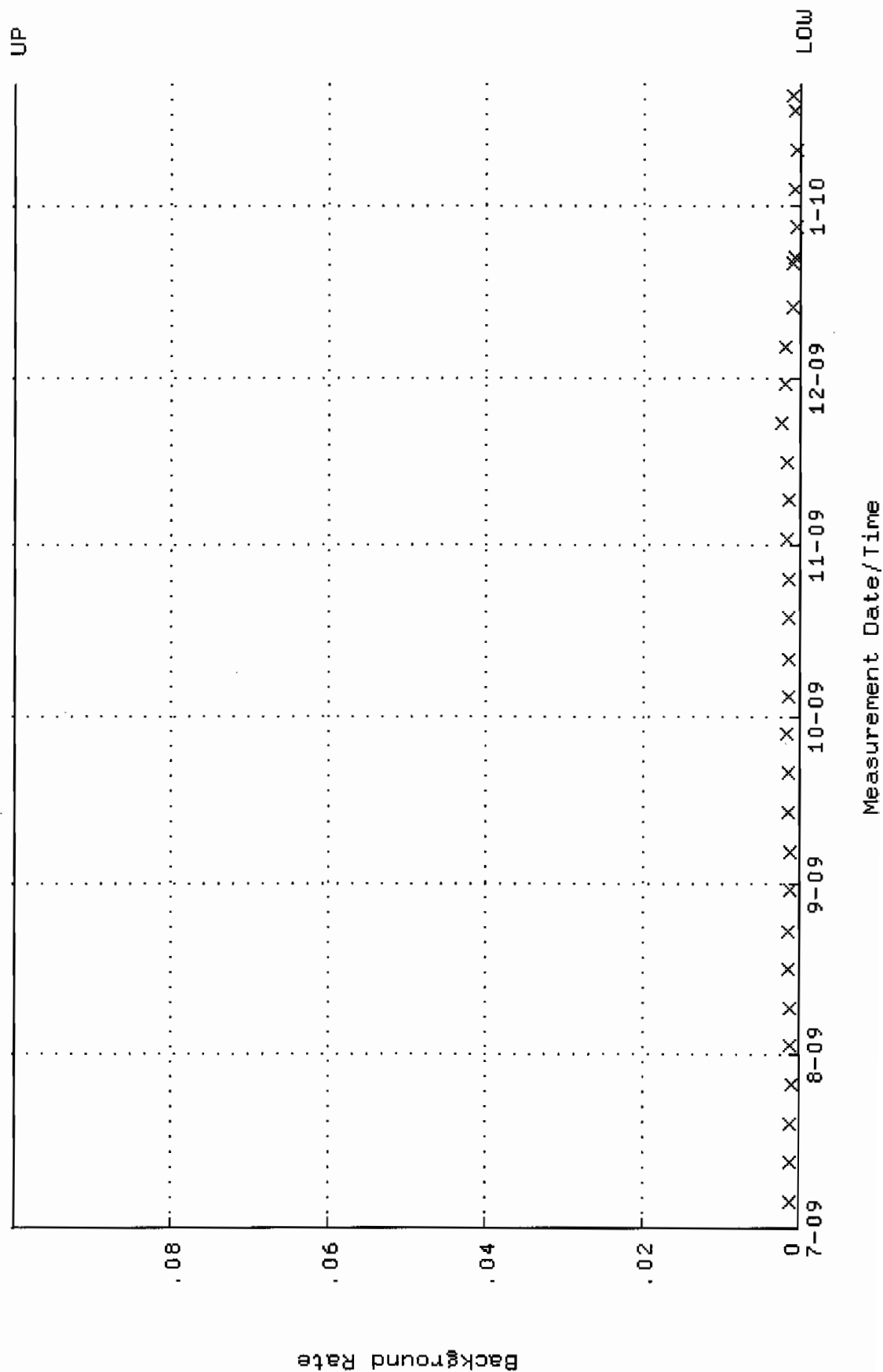
QA filename : DKA100:[ENV-ALPHA.QA.W]W161.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:06:57 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.358070 through 0.388144



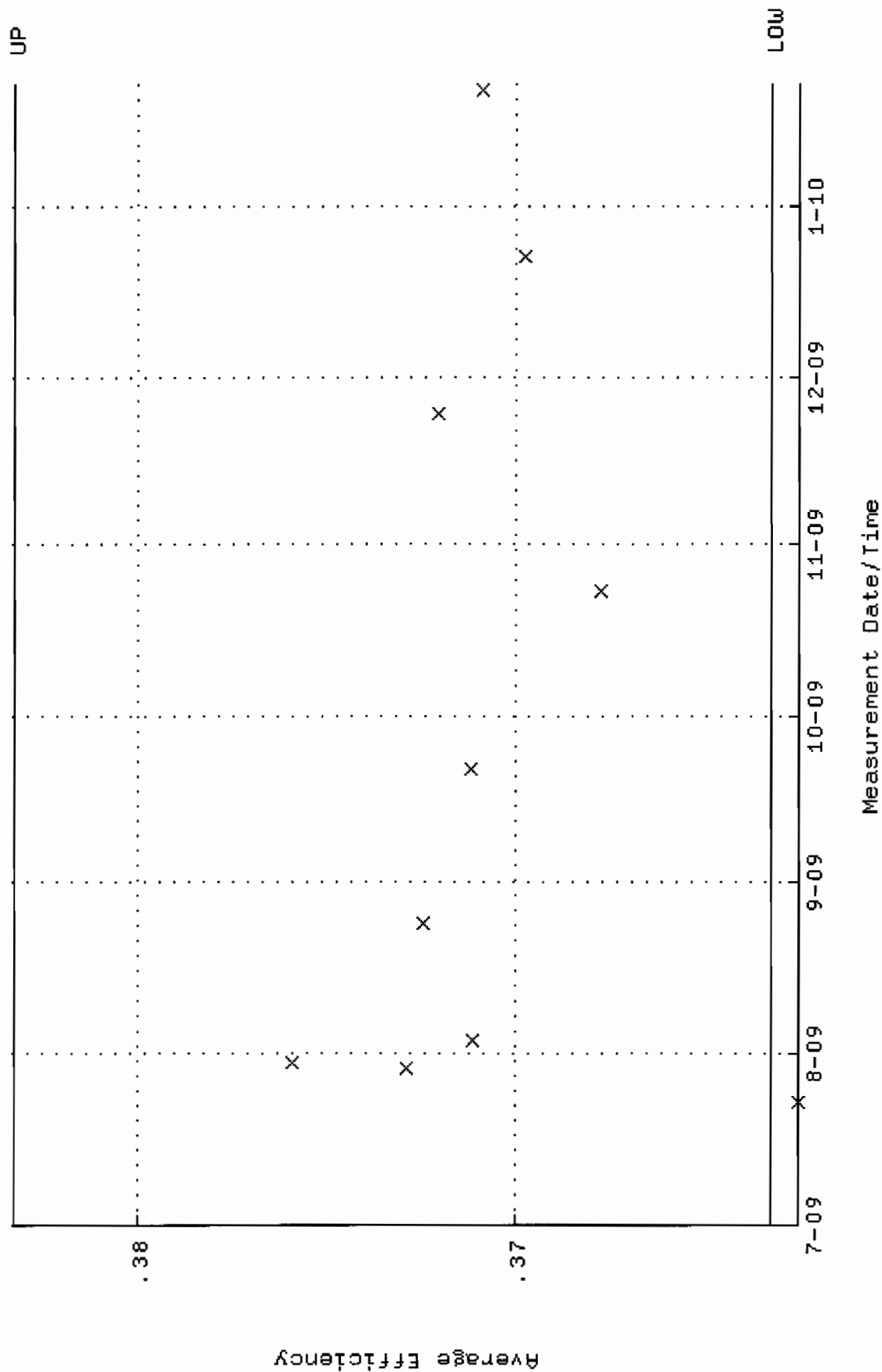
QA filename : DKA100:[ENV\_ALPHA.QA.W]W161.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:06:57 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.0418 through 91.5702



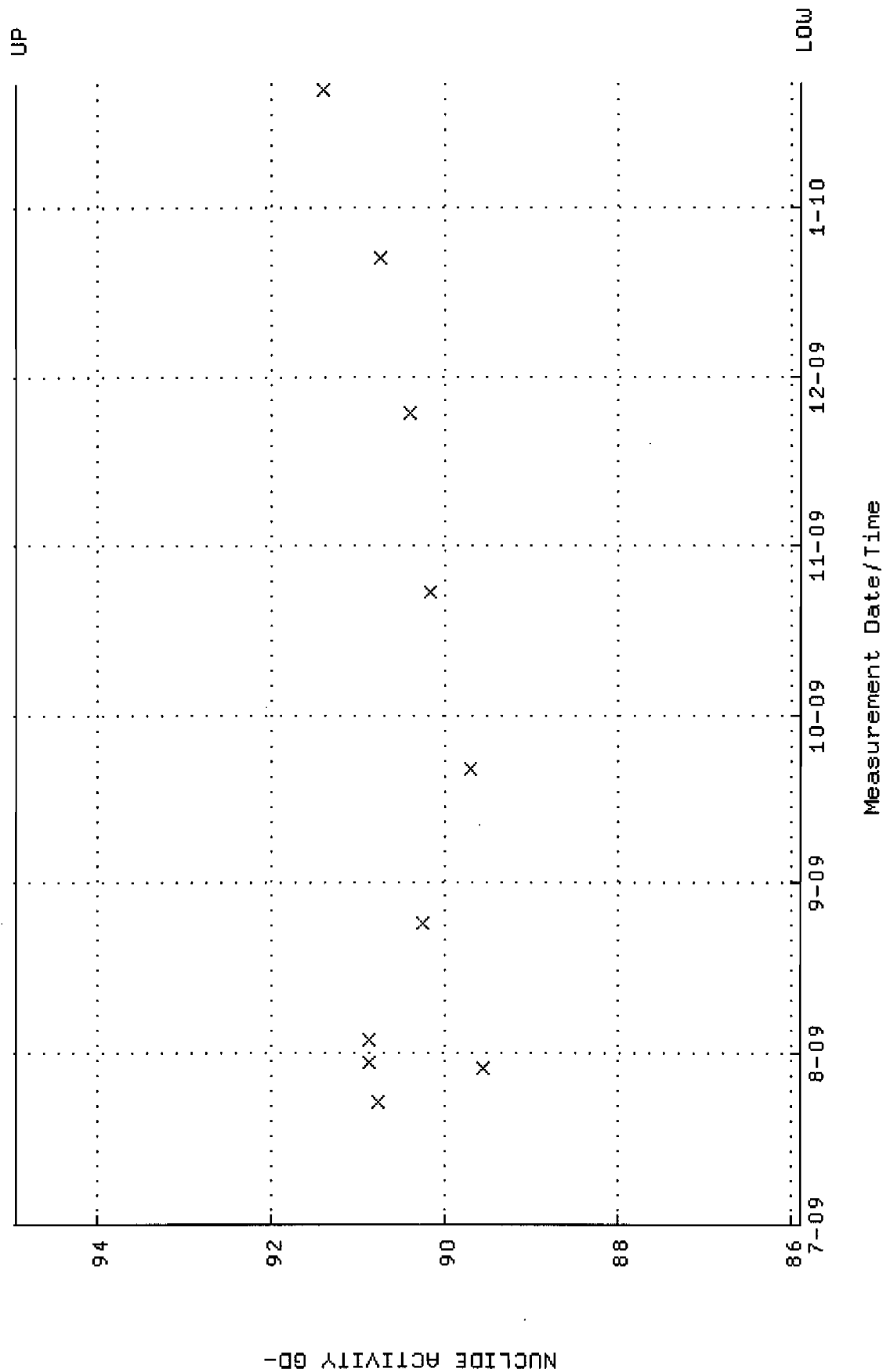
QA filename : DKA100:[ENV\_ALPHA.QA.B]B161.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:59:28 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



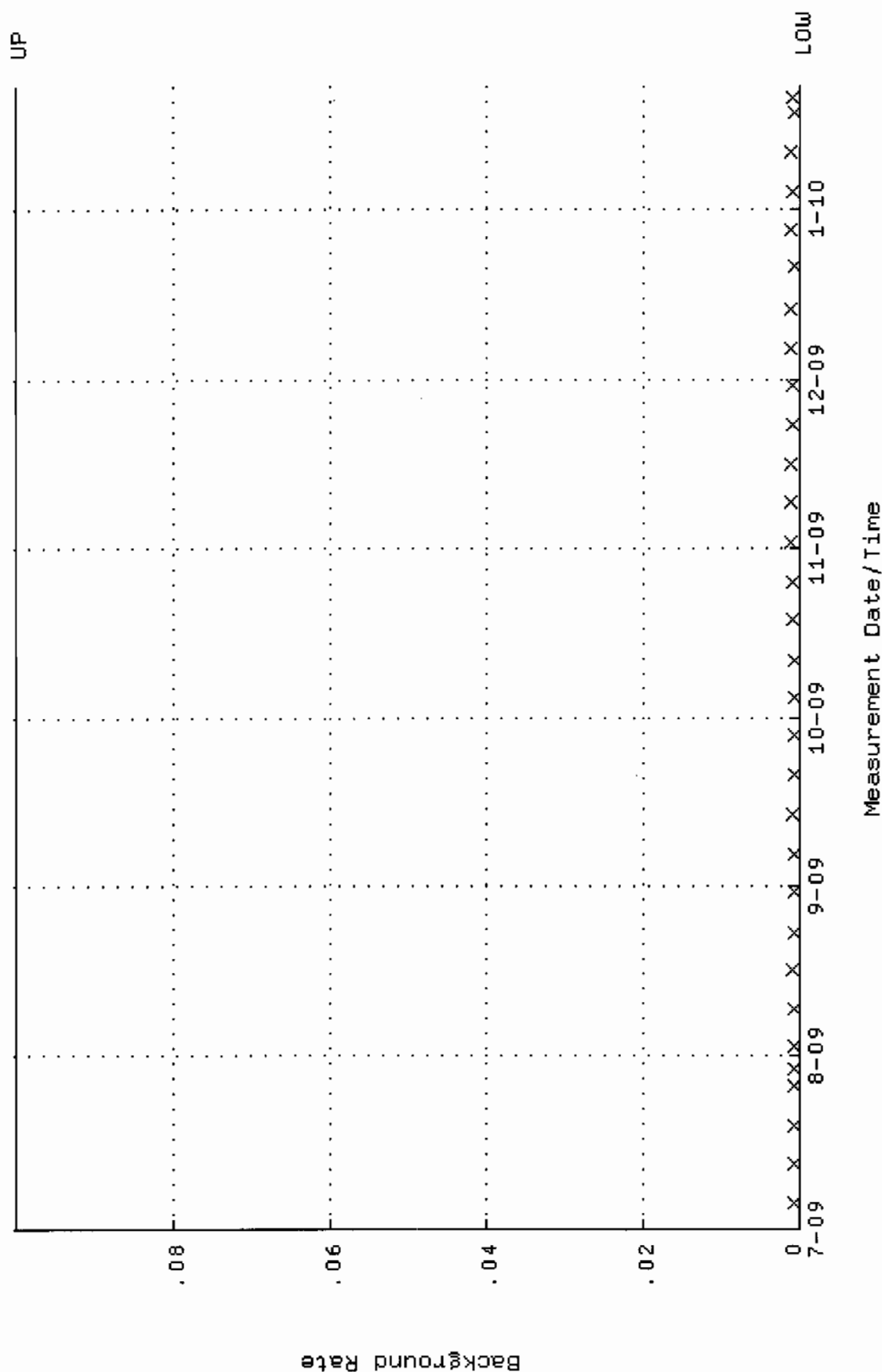
QA filename : DKA100:[ENV\_ALPHA.QA.W]W162.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:02 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.363287 through 0.383287



QA filename : DKA100:[ENV\_ALPHA.QA.W]W162.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:02 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.8969 through 94.9387

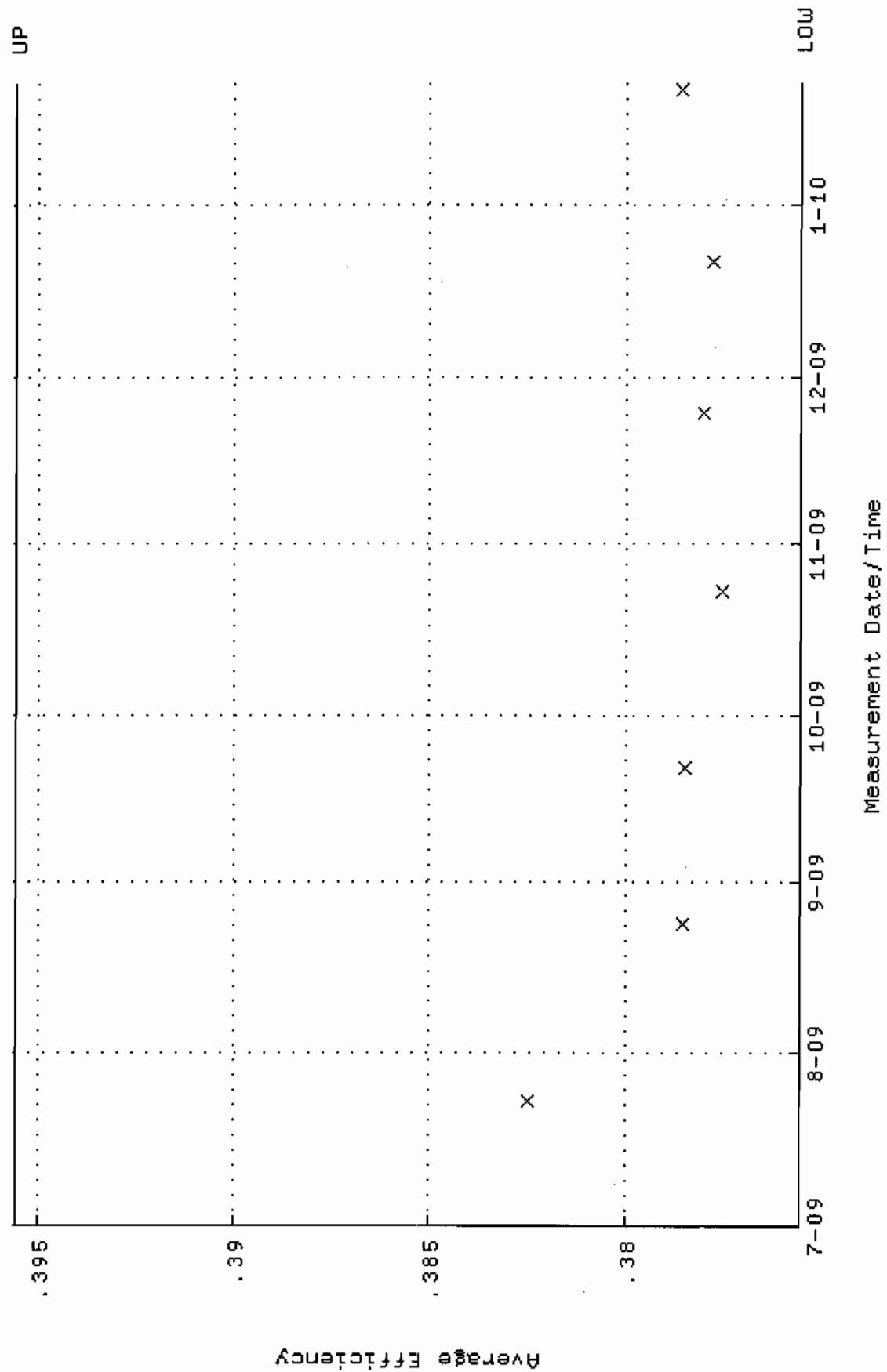


QA filename : DKA100:[ENV\_ALPHA.QA.B]B162.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:59:33 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

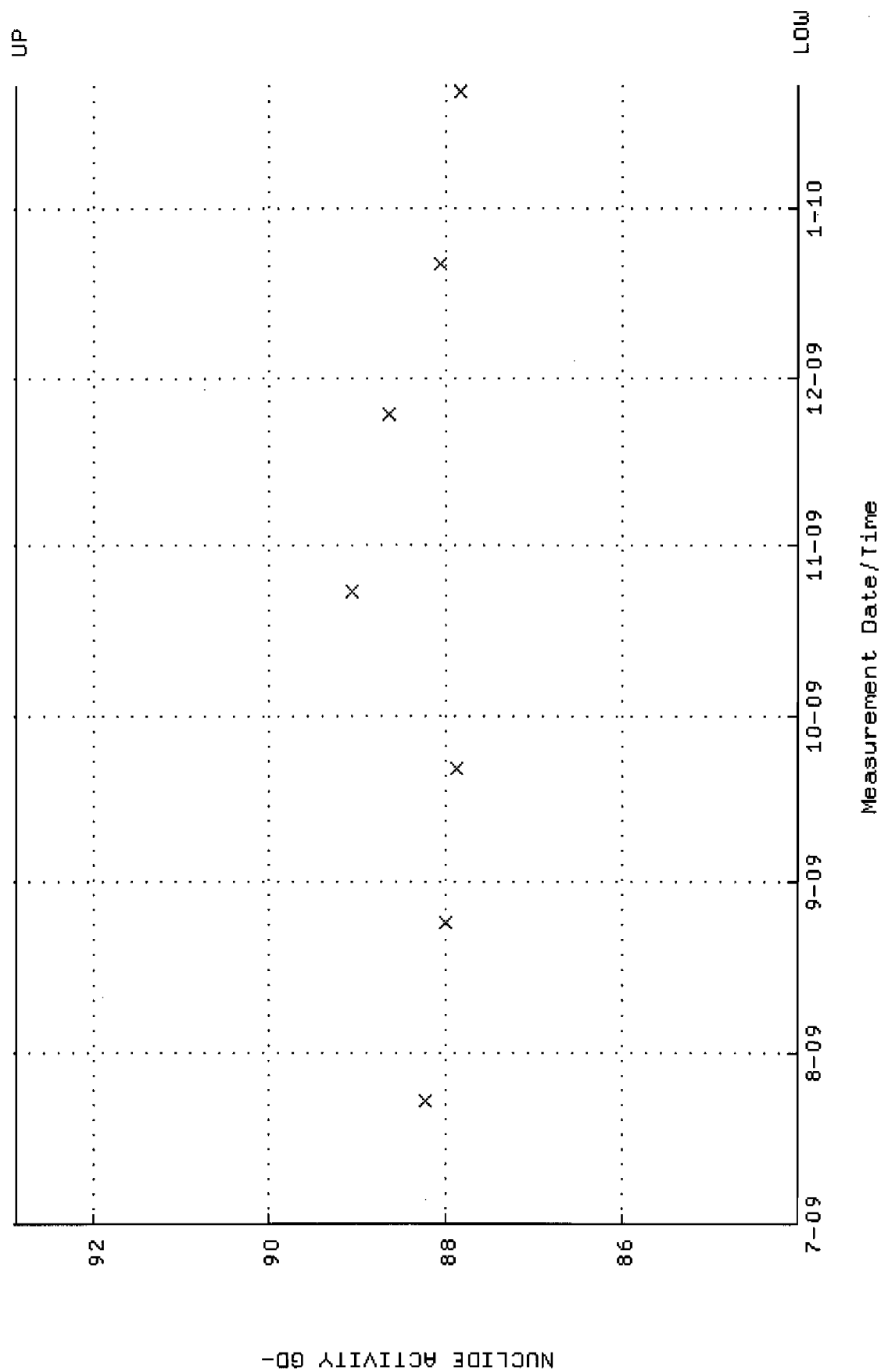




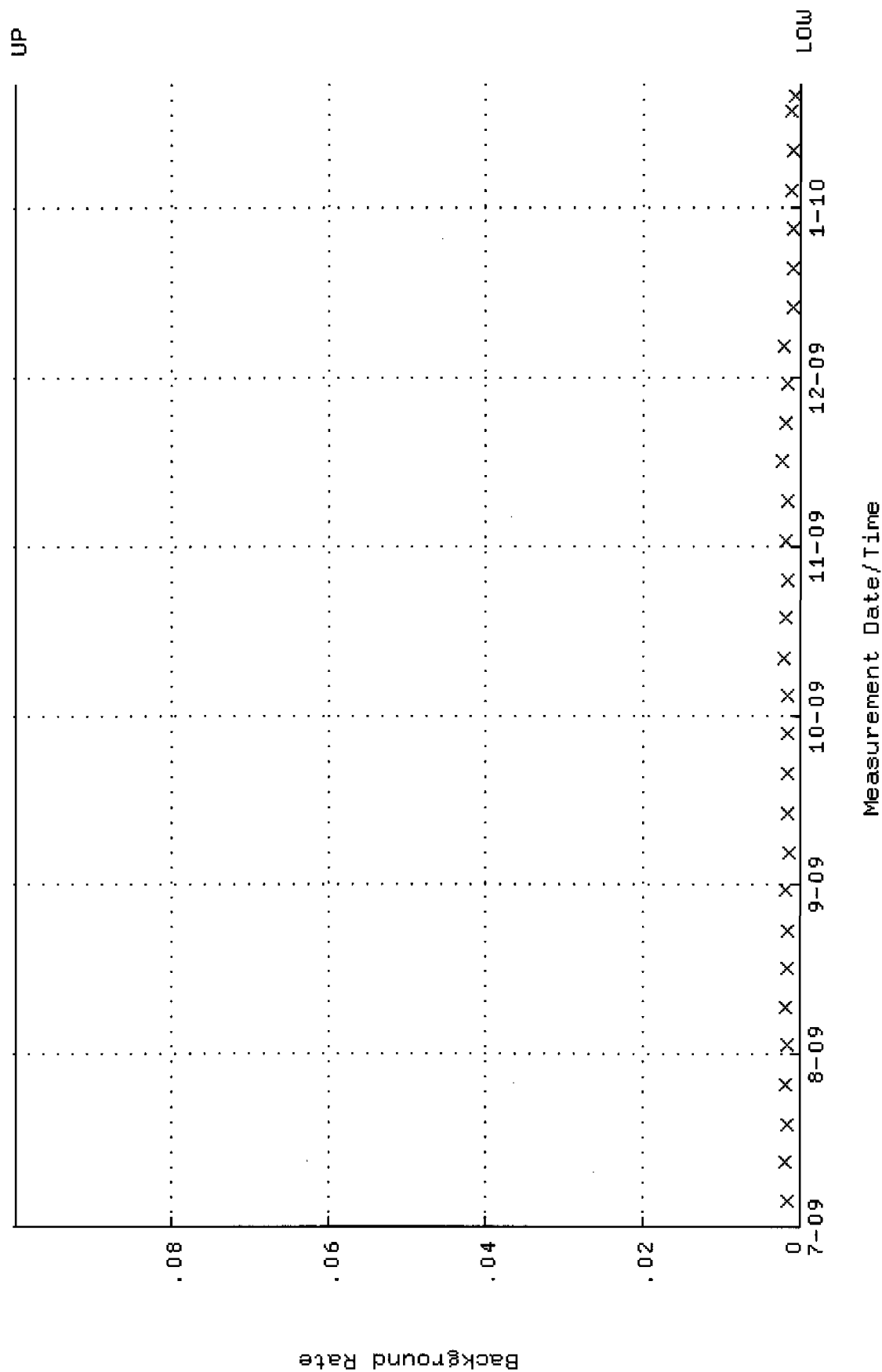
QA filename : OKA100:[ENV\_ALPHA.QA.w]w163.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:06 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.375557 through 0.395557



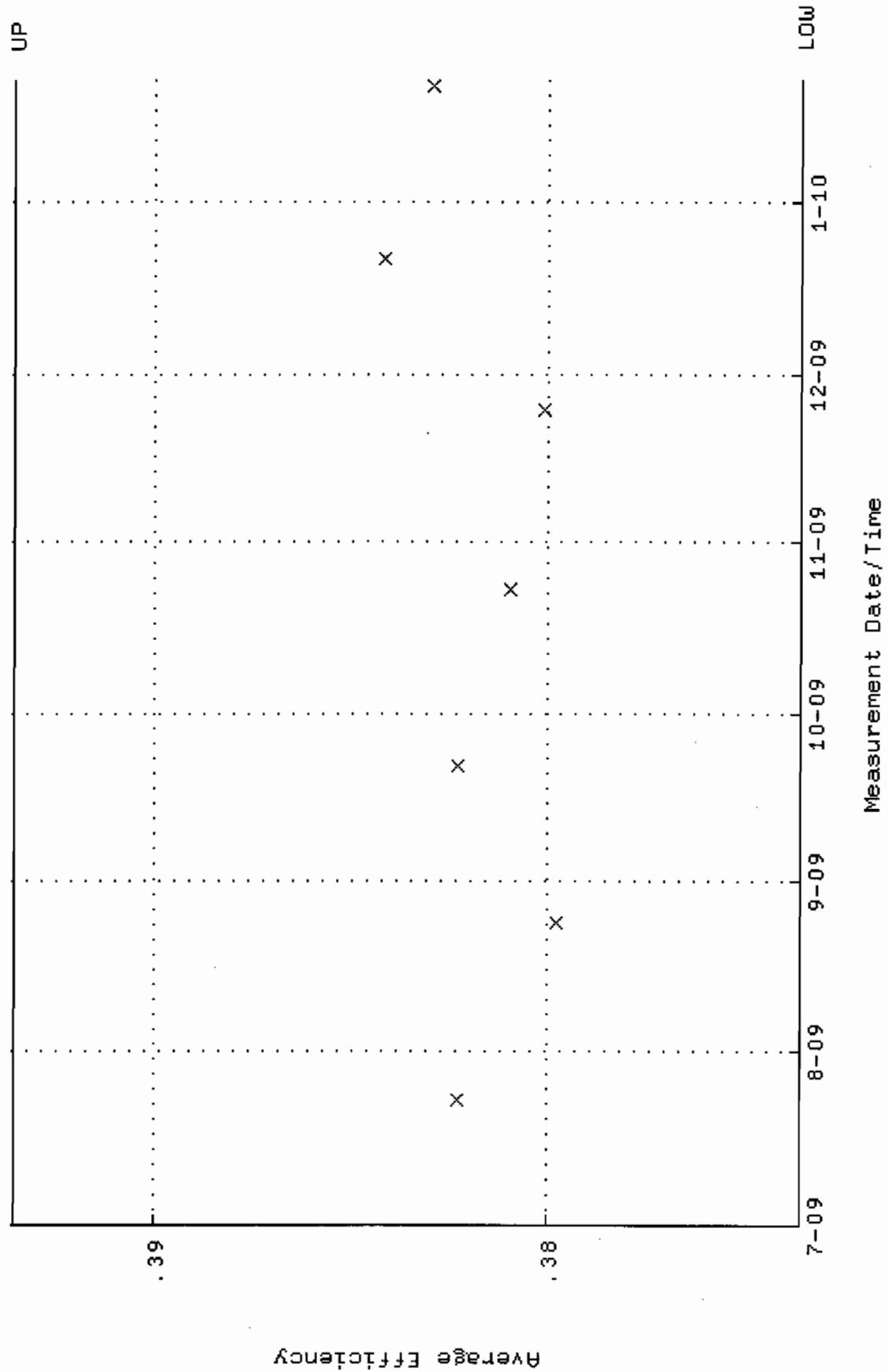
QA filename : DKA100:[ENV-ALPHA.QA.W]W163.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:06 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.0322 through 92.8777



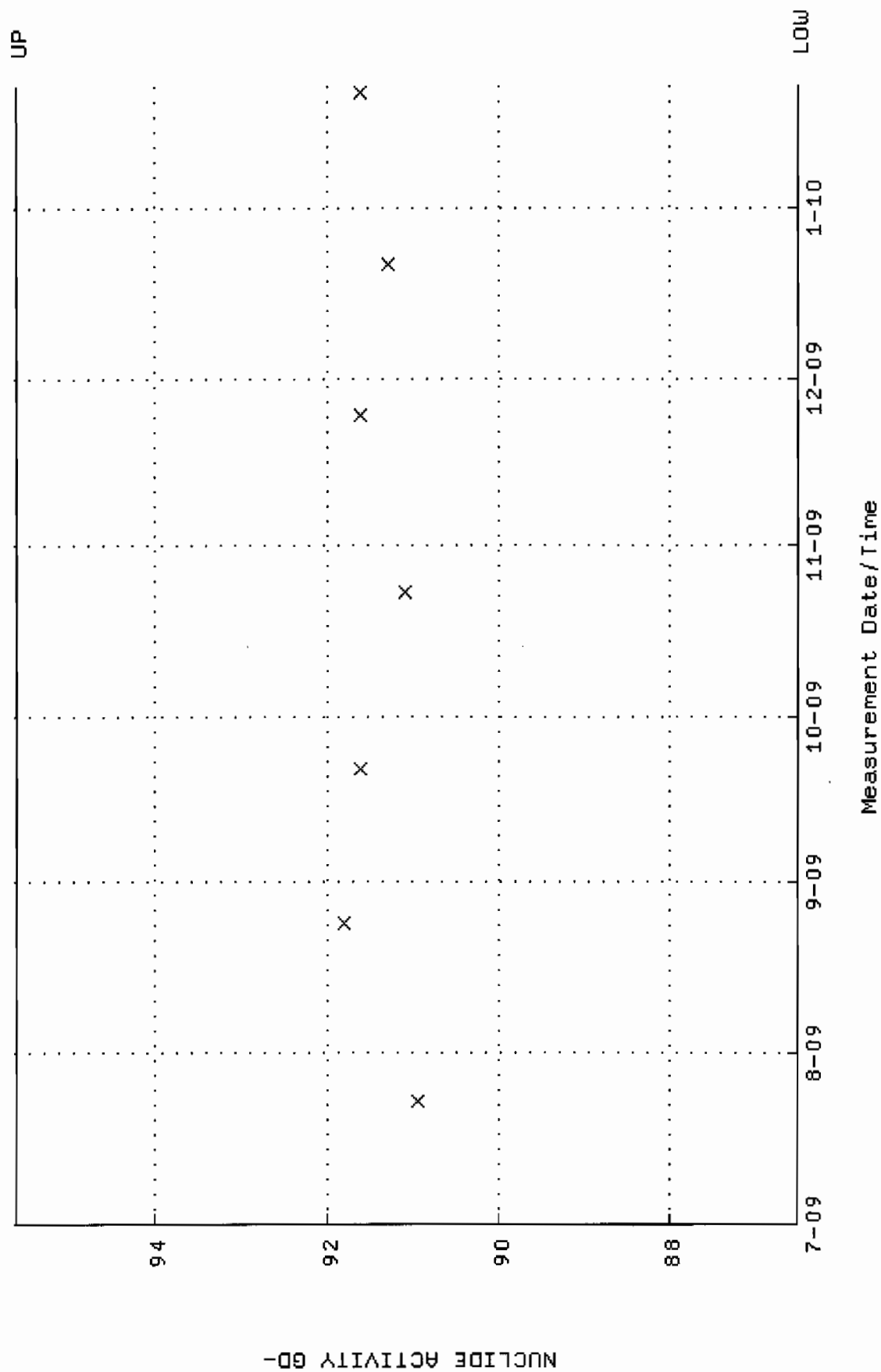
QA filename : DKA100:[ENV\_ALPHA.QA.B]B163.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:59:38 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



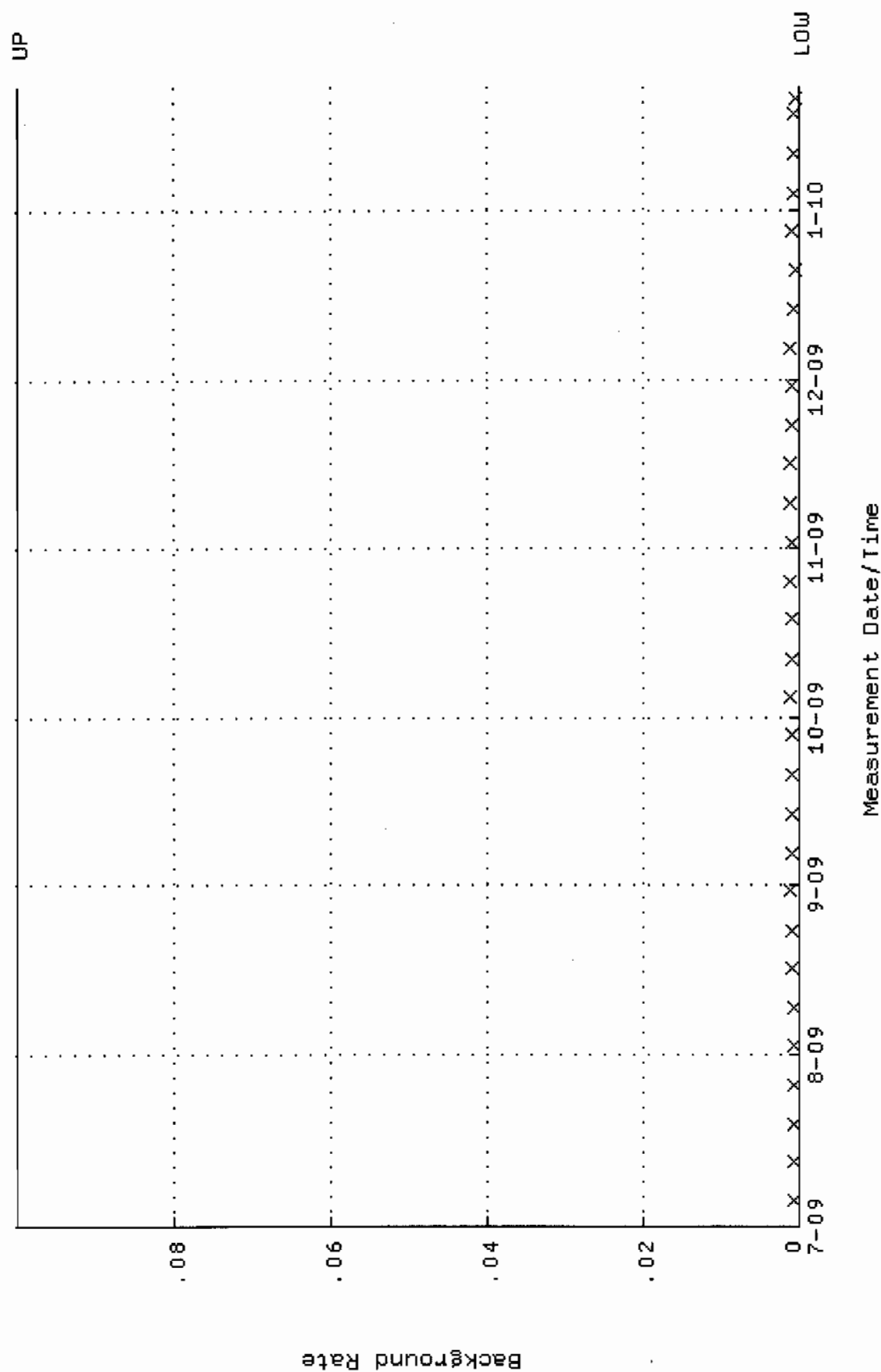
QA filename : DKA100:[ENV\_ALPHA.QA.W]W172.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 23-JUL-2009 08:07:46 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.373575 through 0.393575



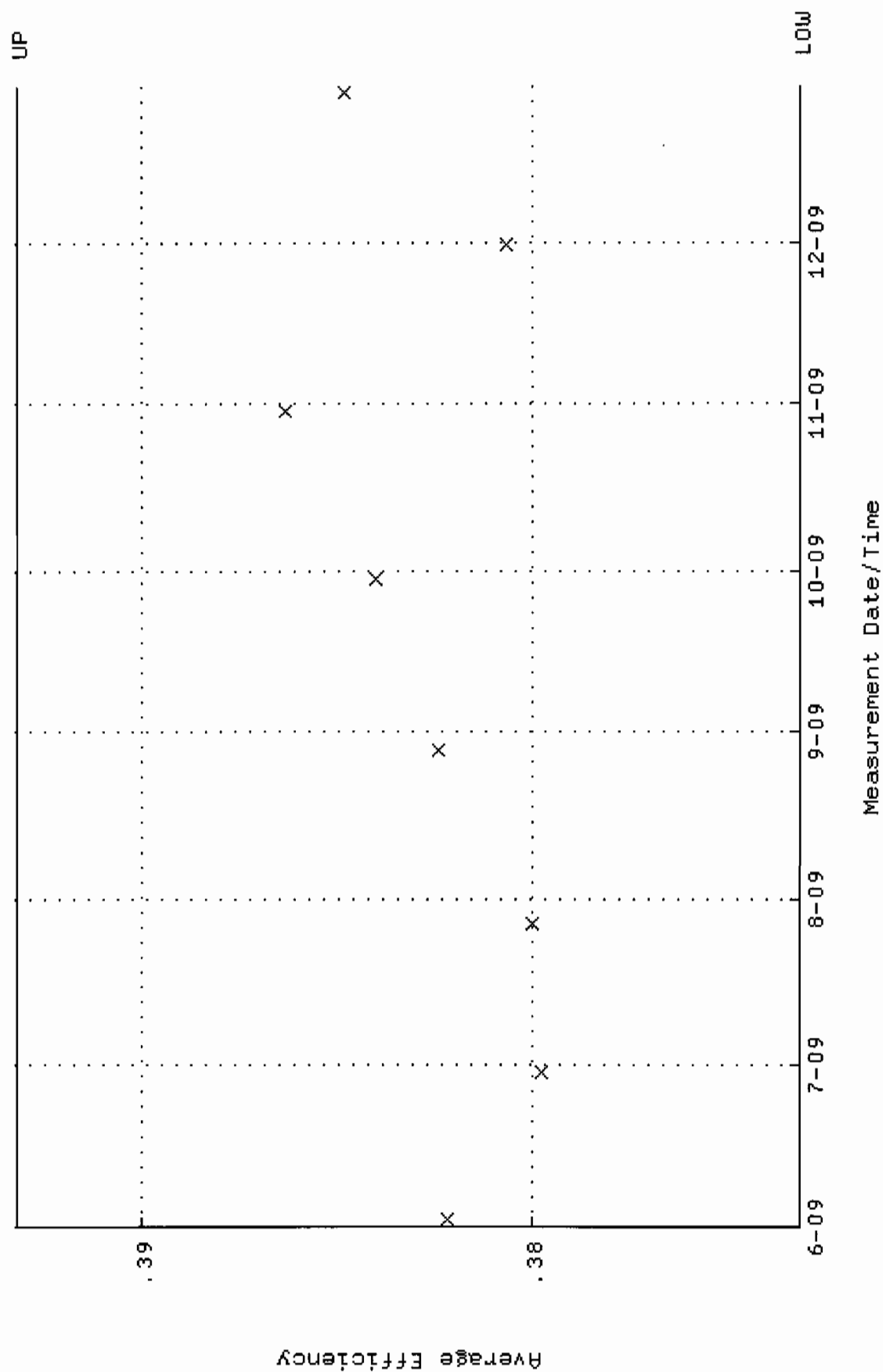
QA filename : DKA100:[ENV\_ALPHA.QA.w]w172.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 23-JUL-2009 08:07:46 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.5089 through 95.6151



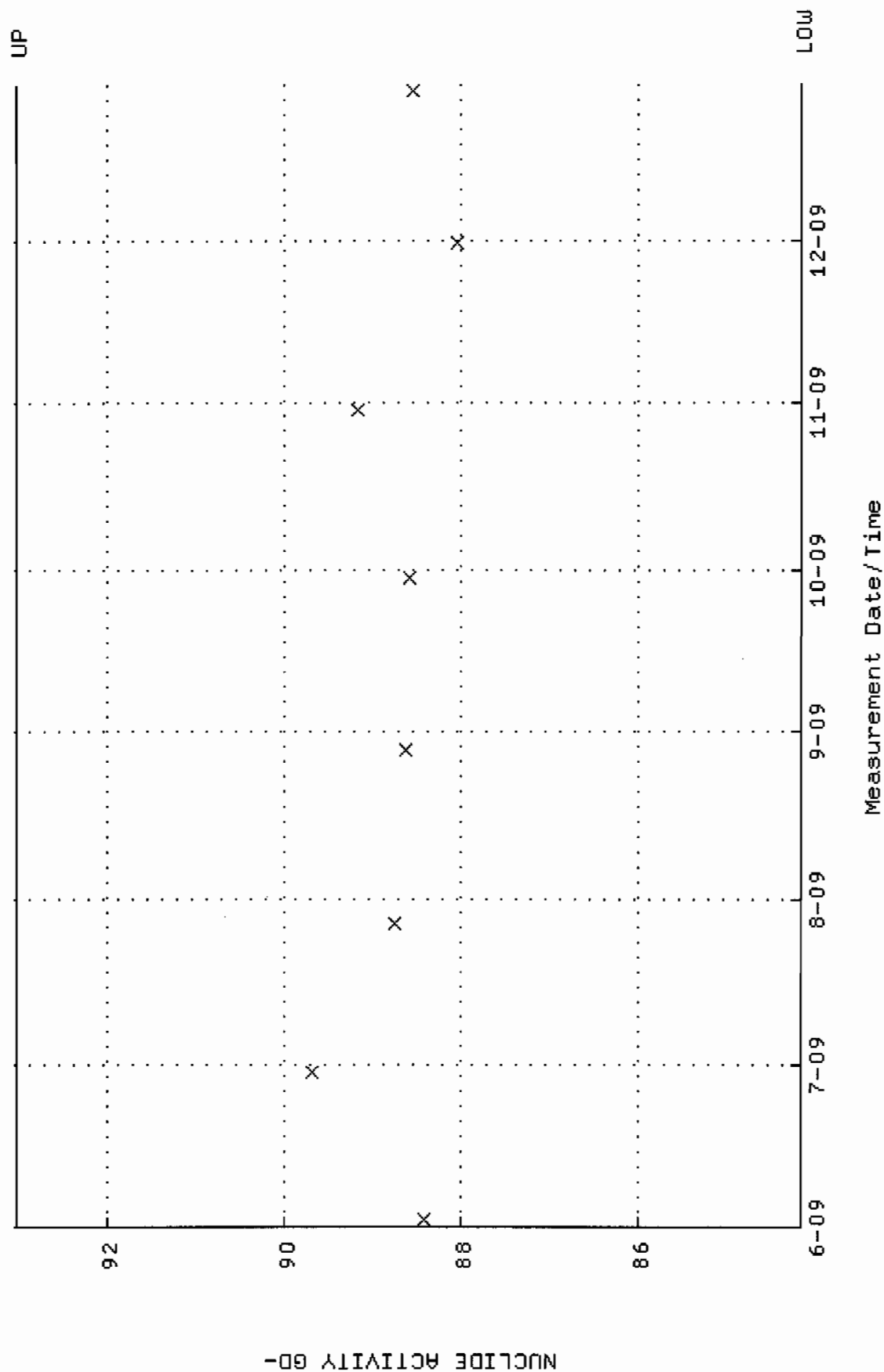
QA filename : DKA100:[ENV\_ALPHA.QA.B]B172.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:00:24 through 22-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W211.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:17:17 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.373189 through 0.393189

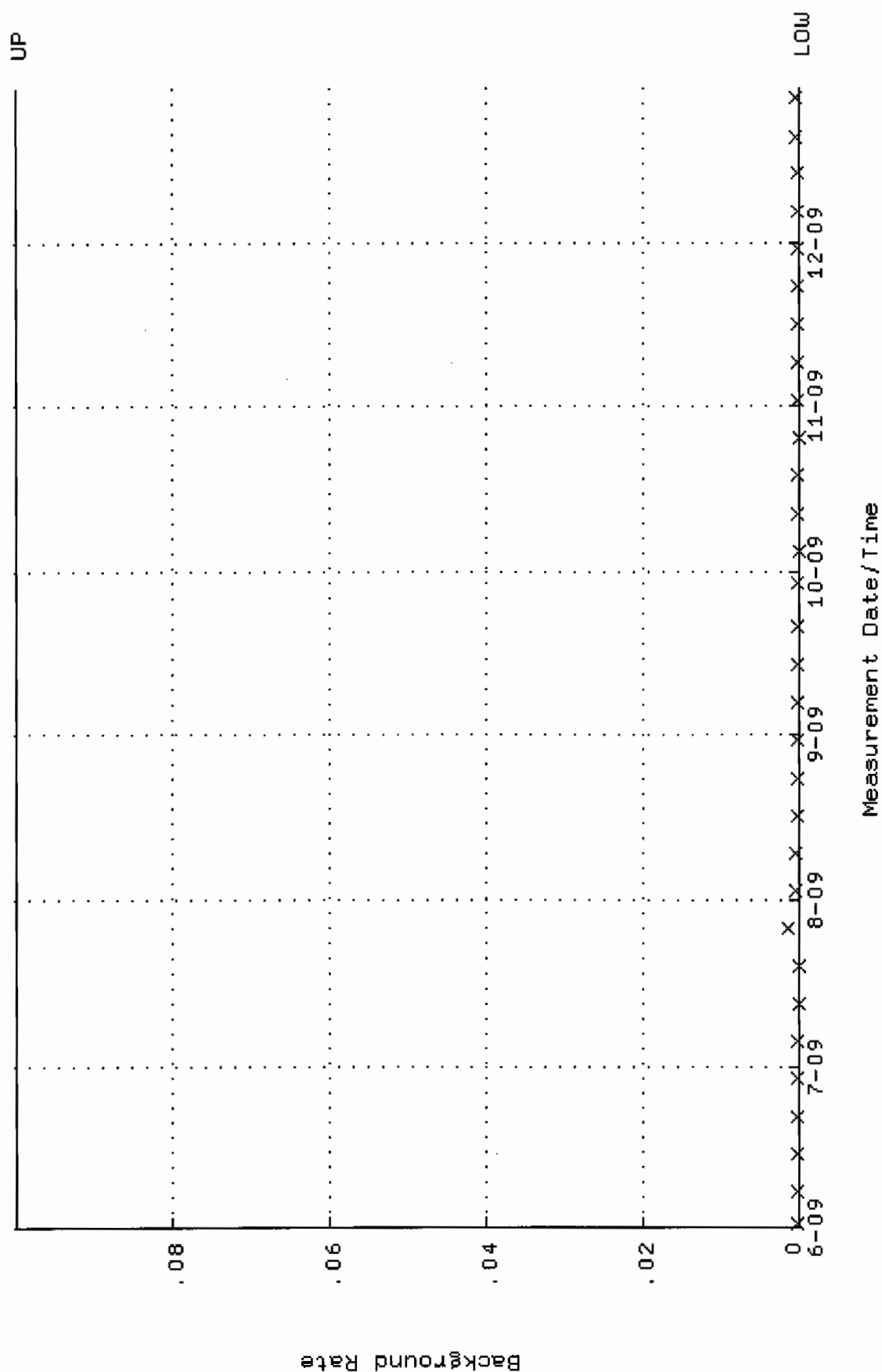


QA filename : DKA100:[ENV-ALPHA.QA.W]W211.QAF;1  
 Parameter Name : NACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:17:17 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 84.1583 through 93.0171

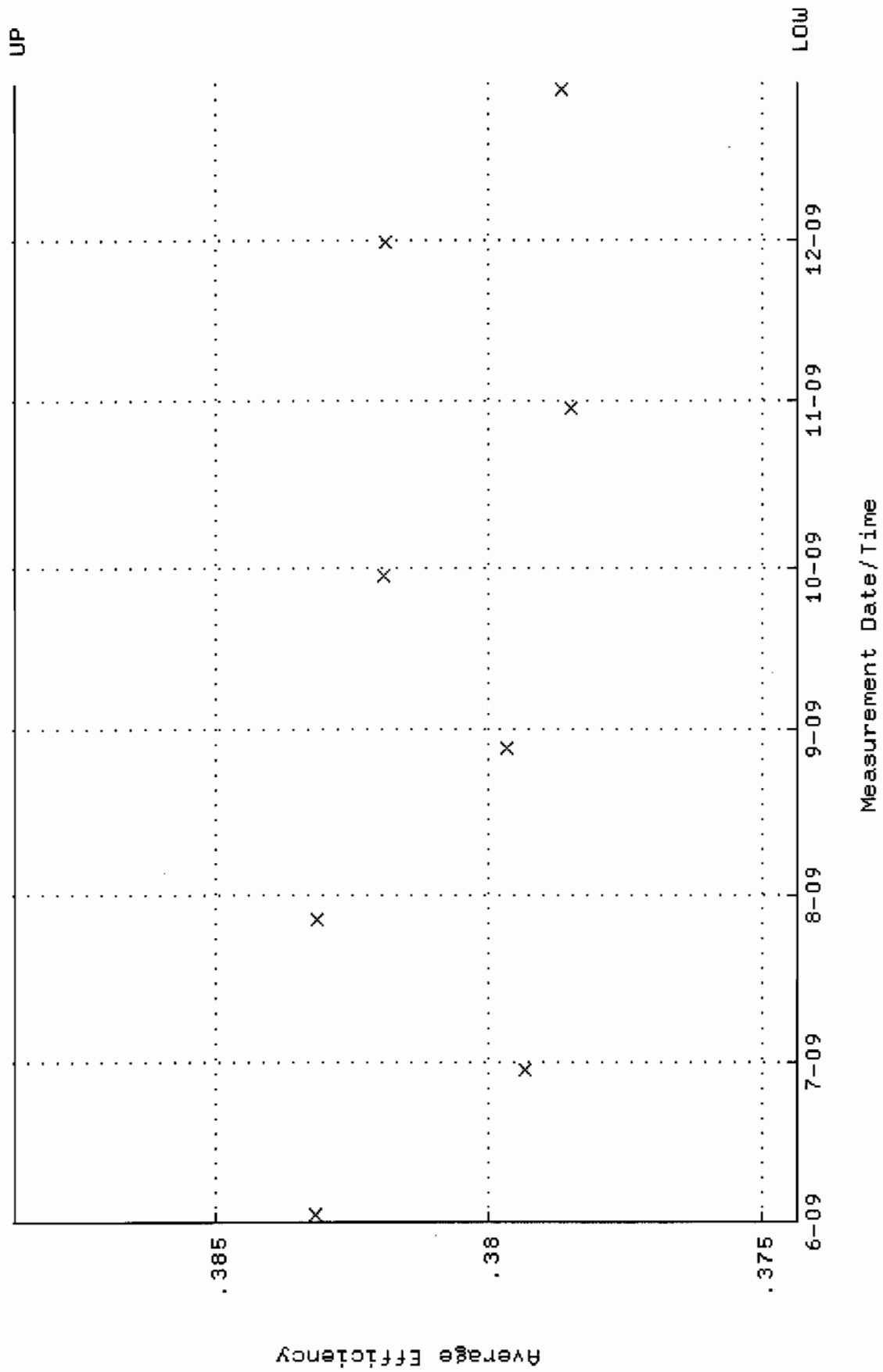




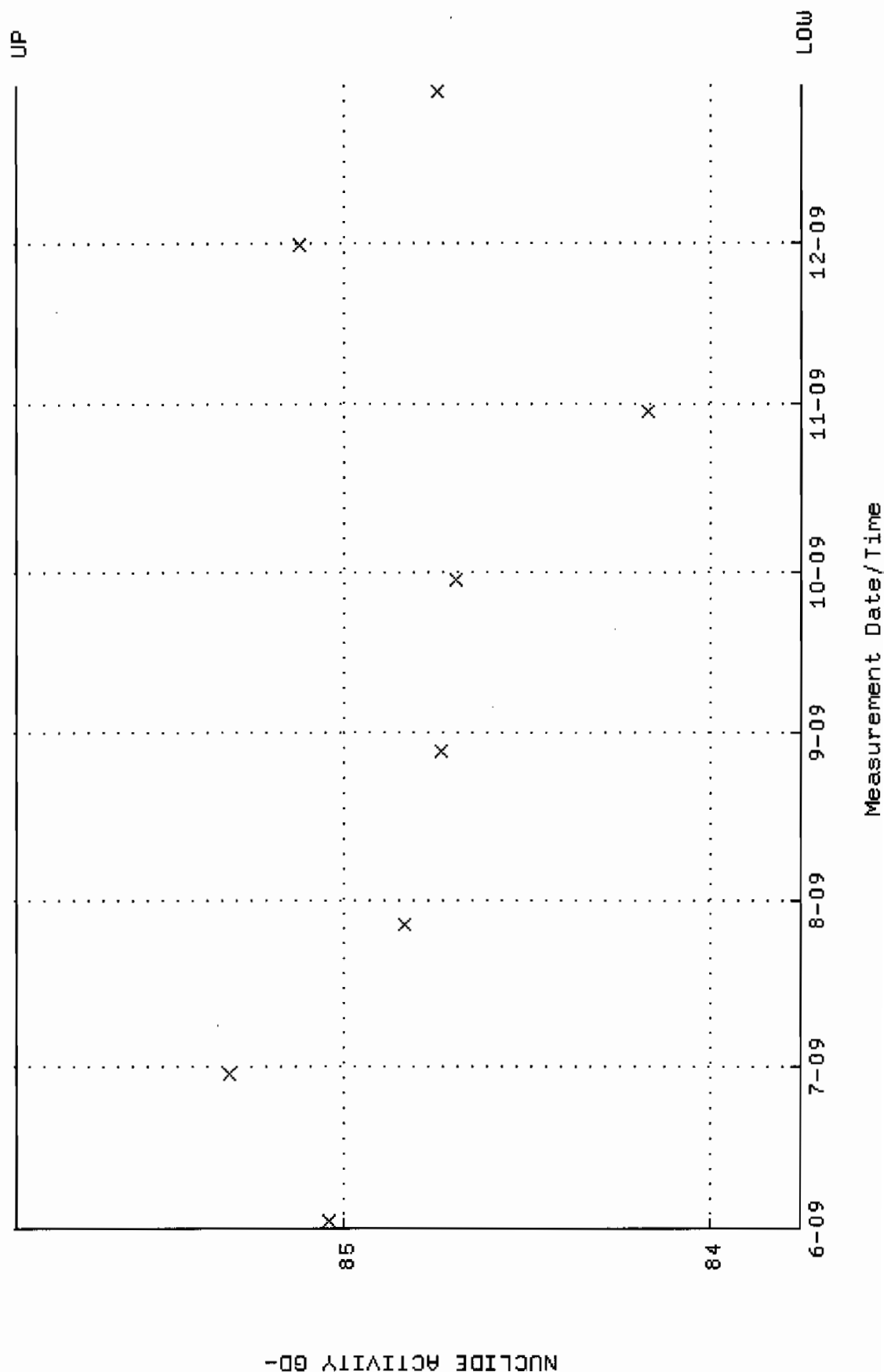
QA filename : DKA100:[ENV\_ALPHA.QA.B]B211.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:43:40 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



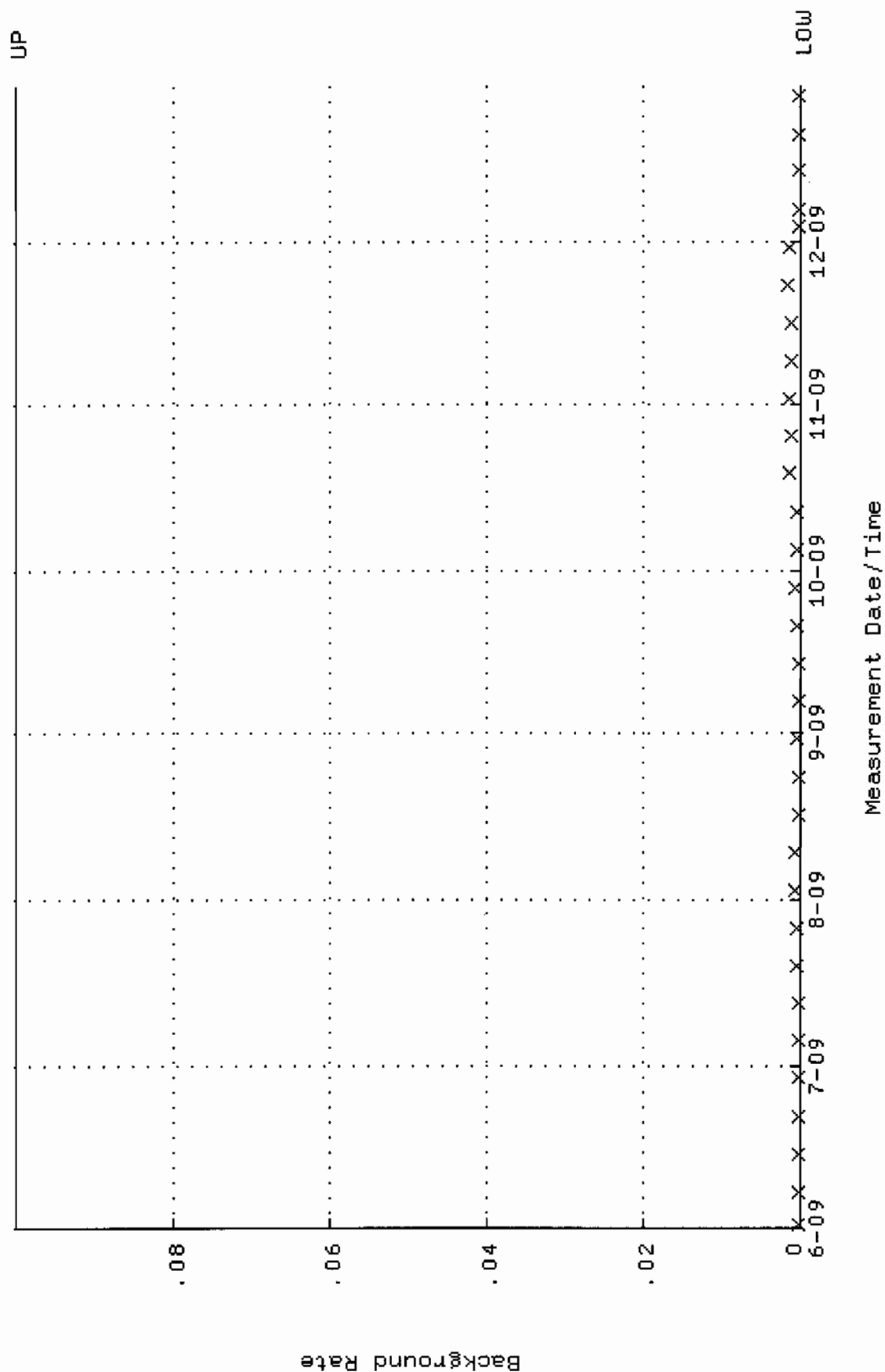
QA filename : DKA100:[ENV\_ALPHA.QA.W]W256.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:21:01 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.374371 through 0.388647



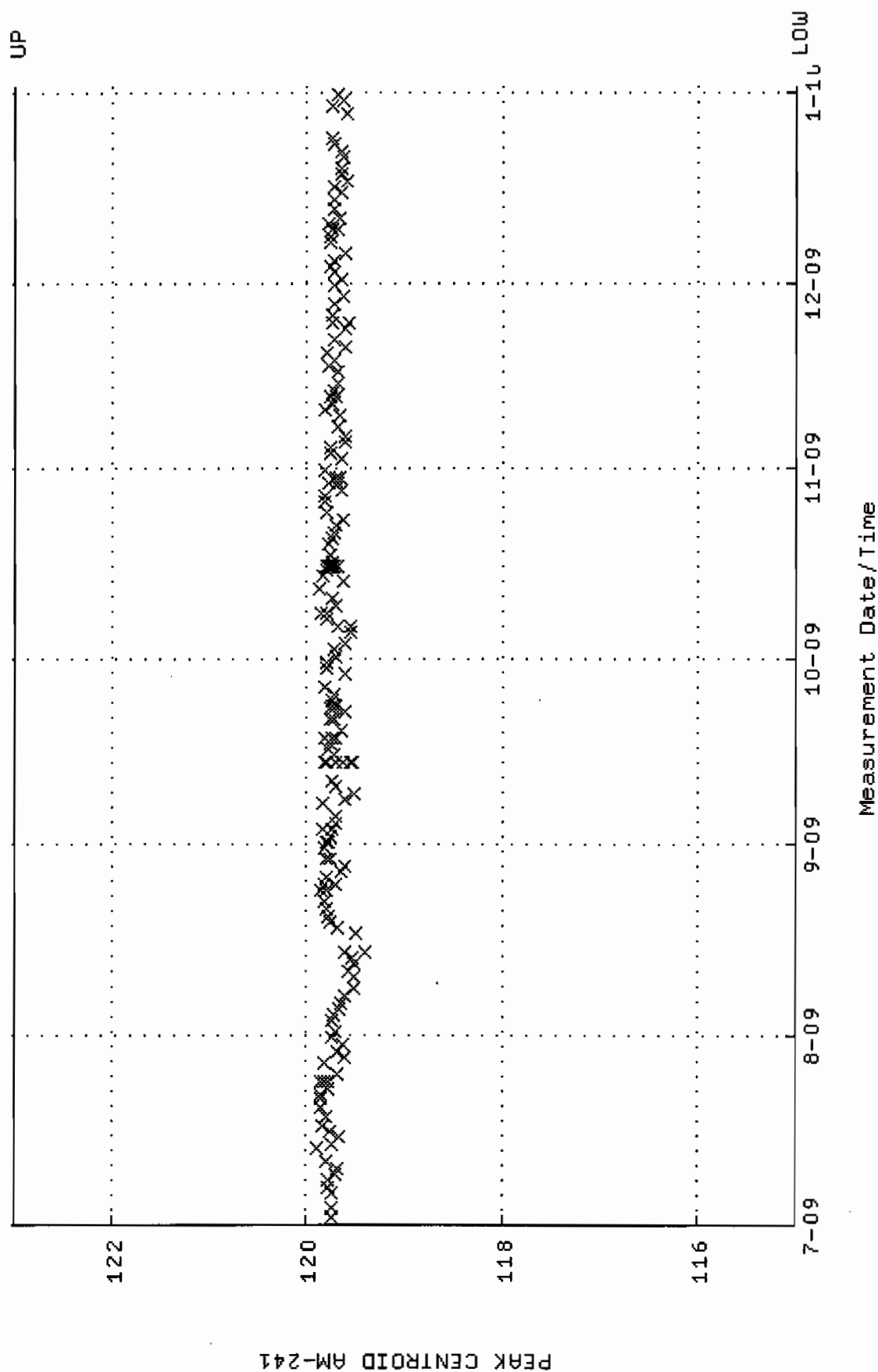
QA filename : DKA100:[ENV\_ALPHA.QA.W]w256.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:21:01 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 83.7553 through 85.8901



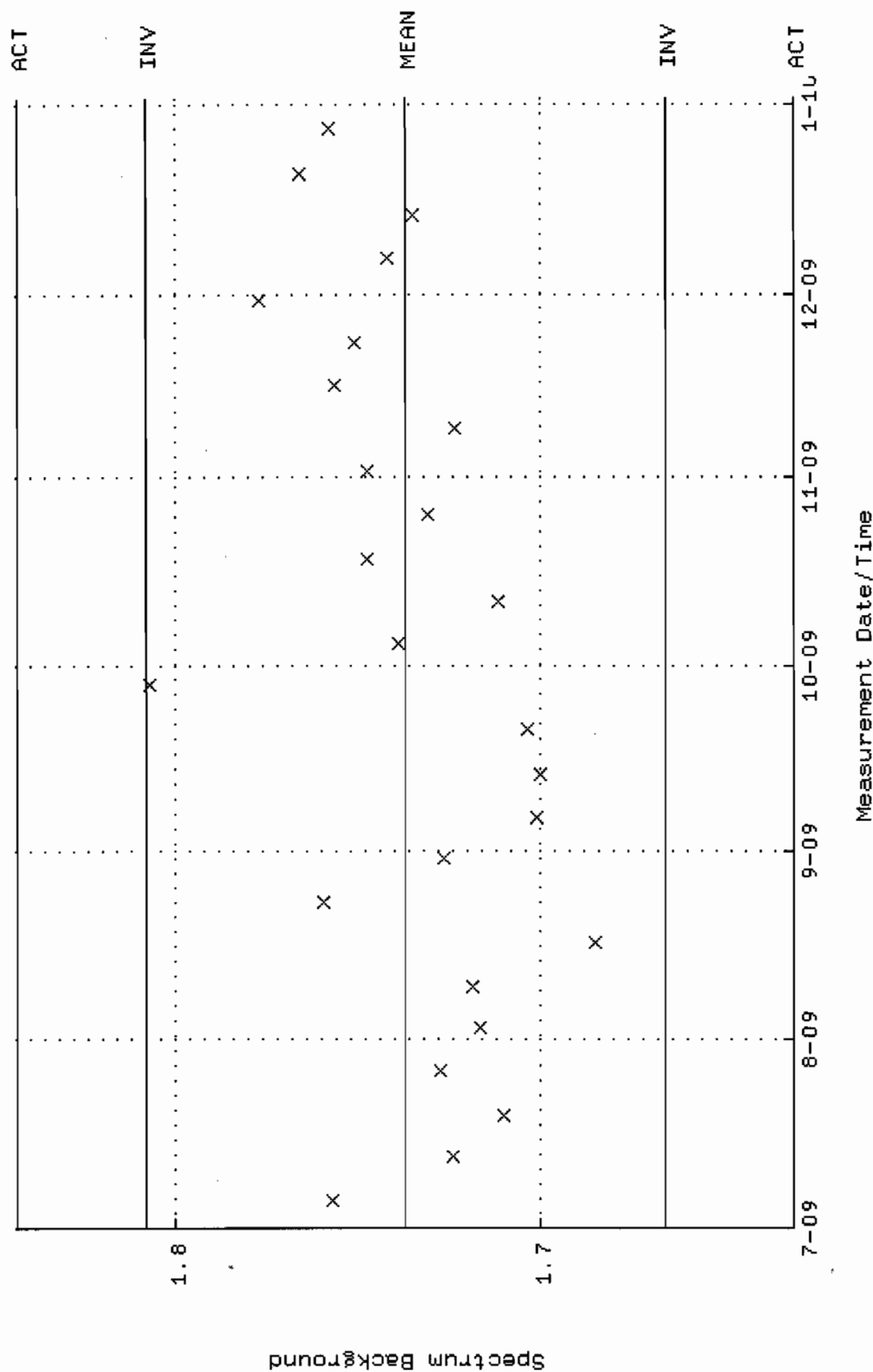
QA filename : DKA100:[ENV\_ALPHA.QA.B]B256.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:47:52 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



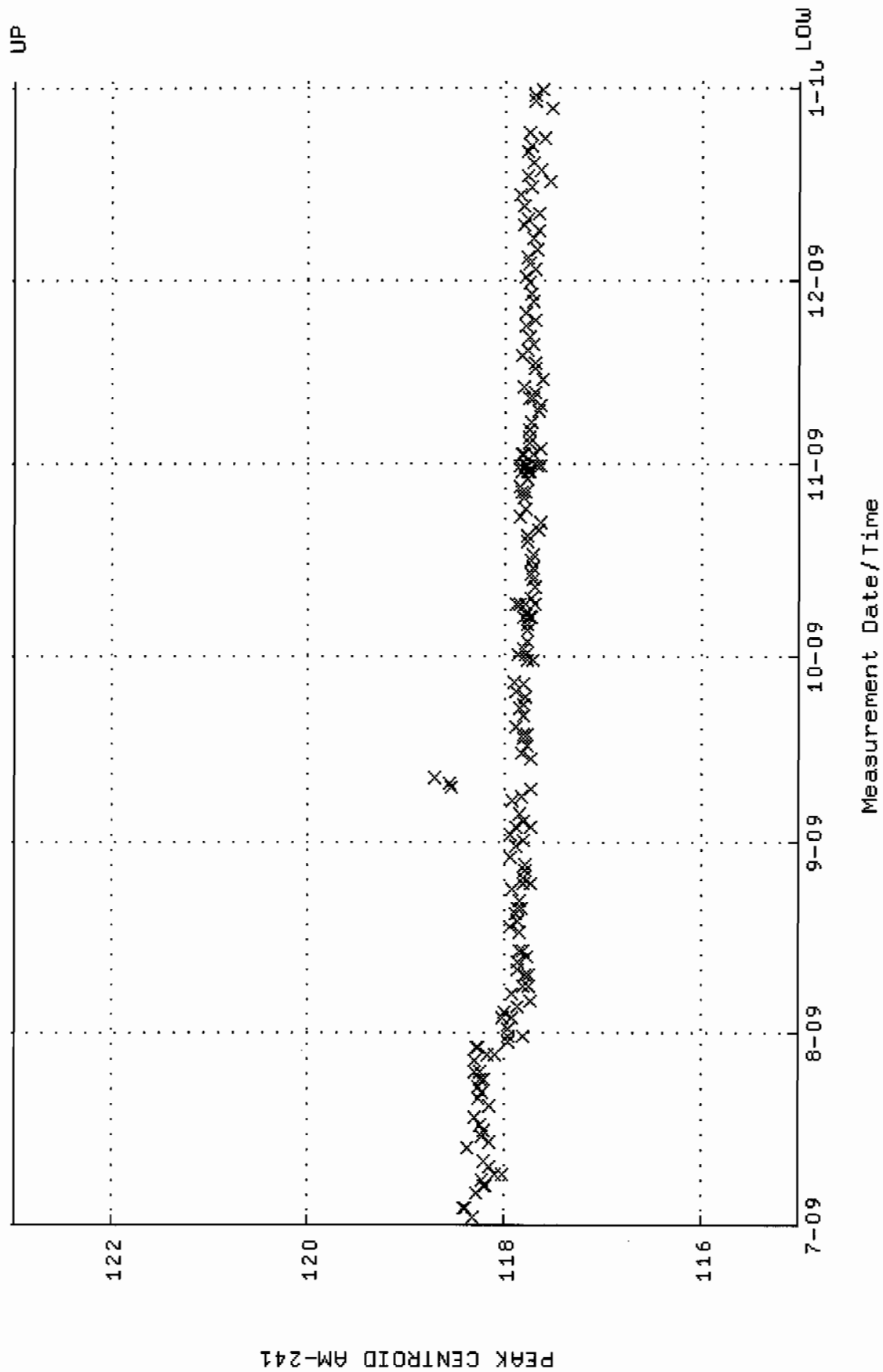
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM01-500MLMB.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 04:58:53 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



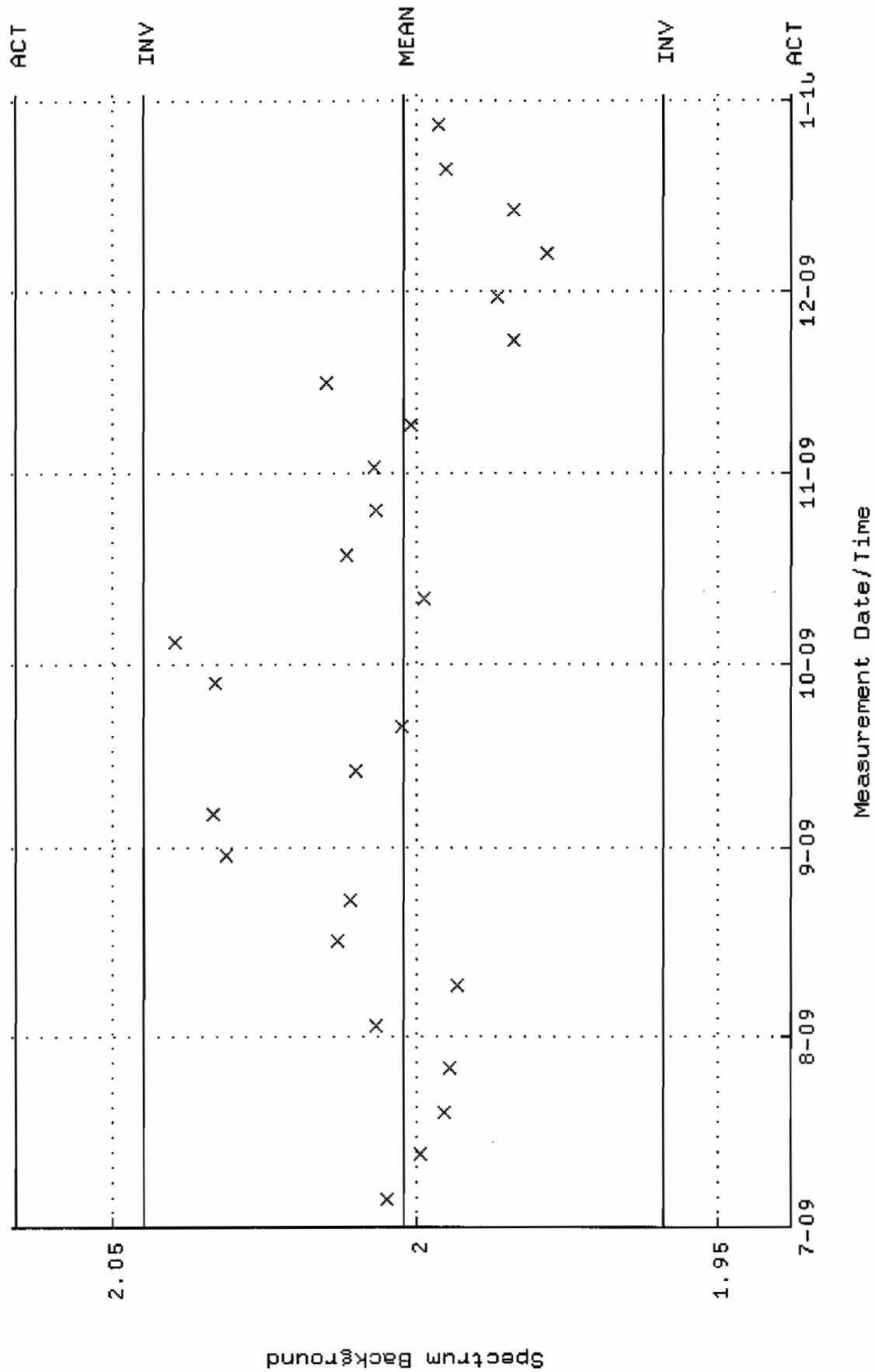
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM01.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:49:24 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.73723 +- 3.552524E-02 (2.04 %)



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

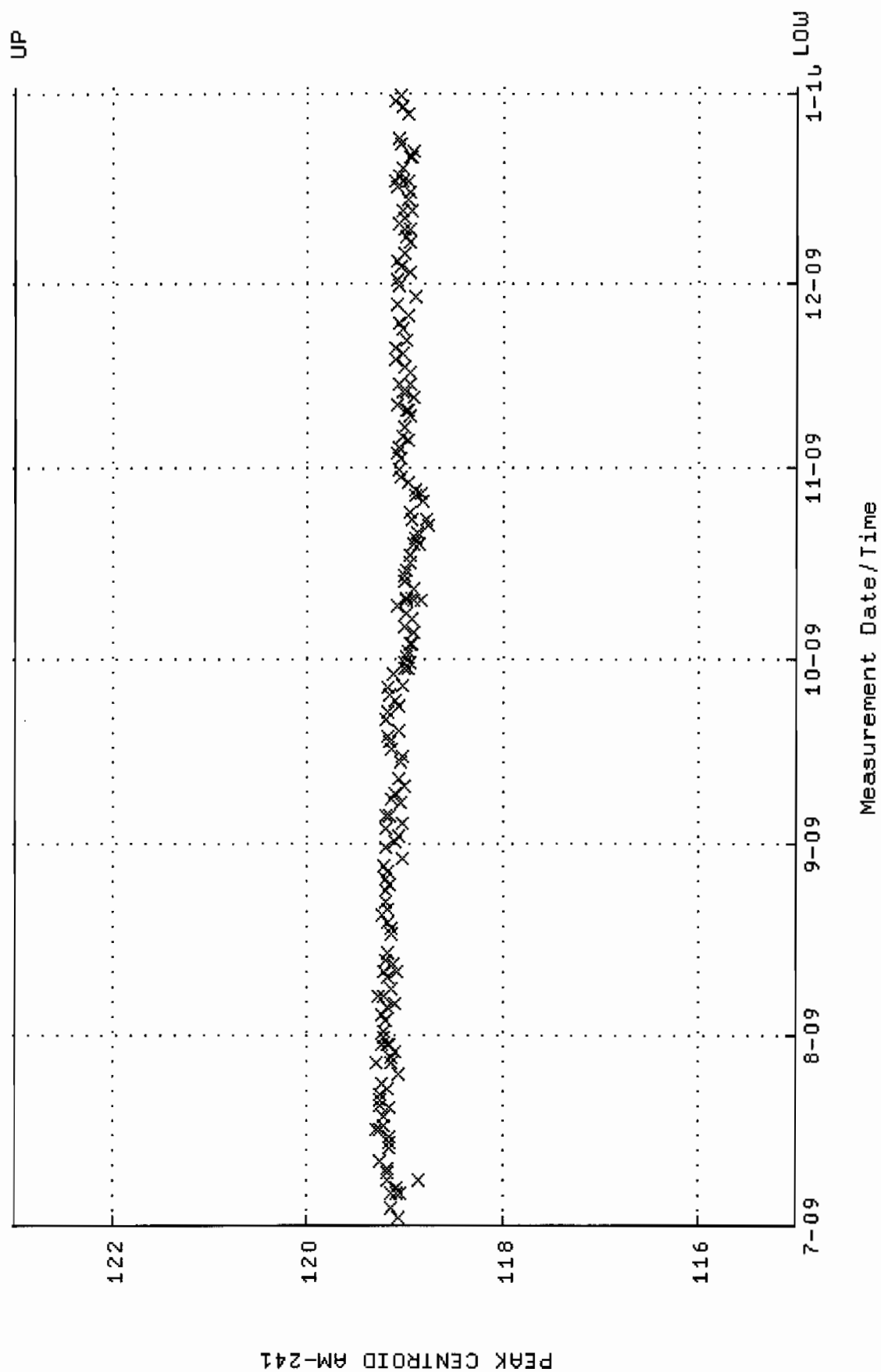


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM02.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:49:39 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 2.00226 +- 2.139827E-02 (1.07 %)

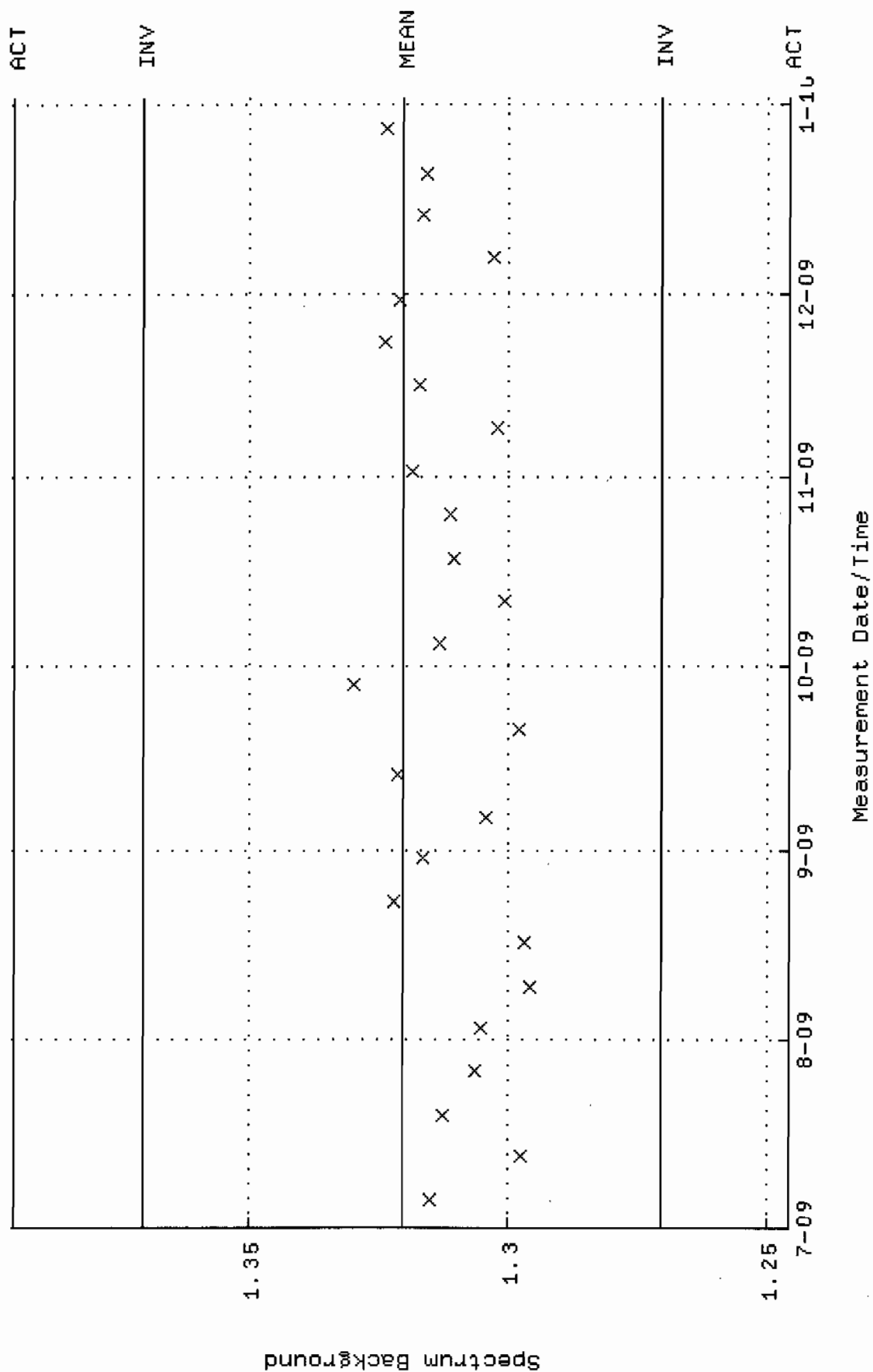




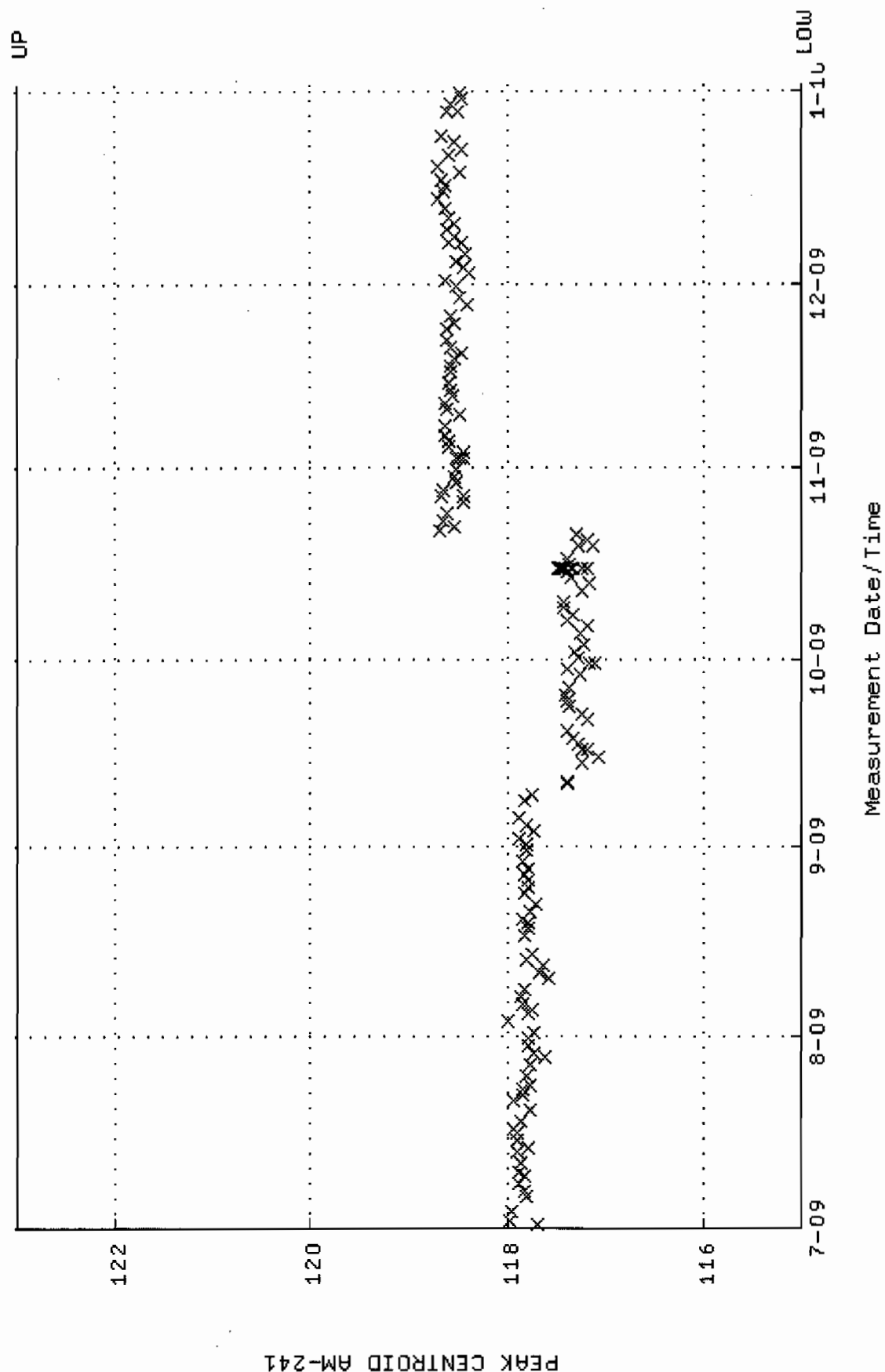
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM04\_CAN.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 04:59:00 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000



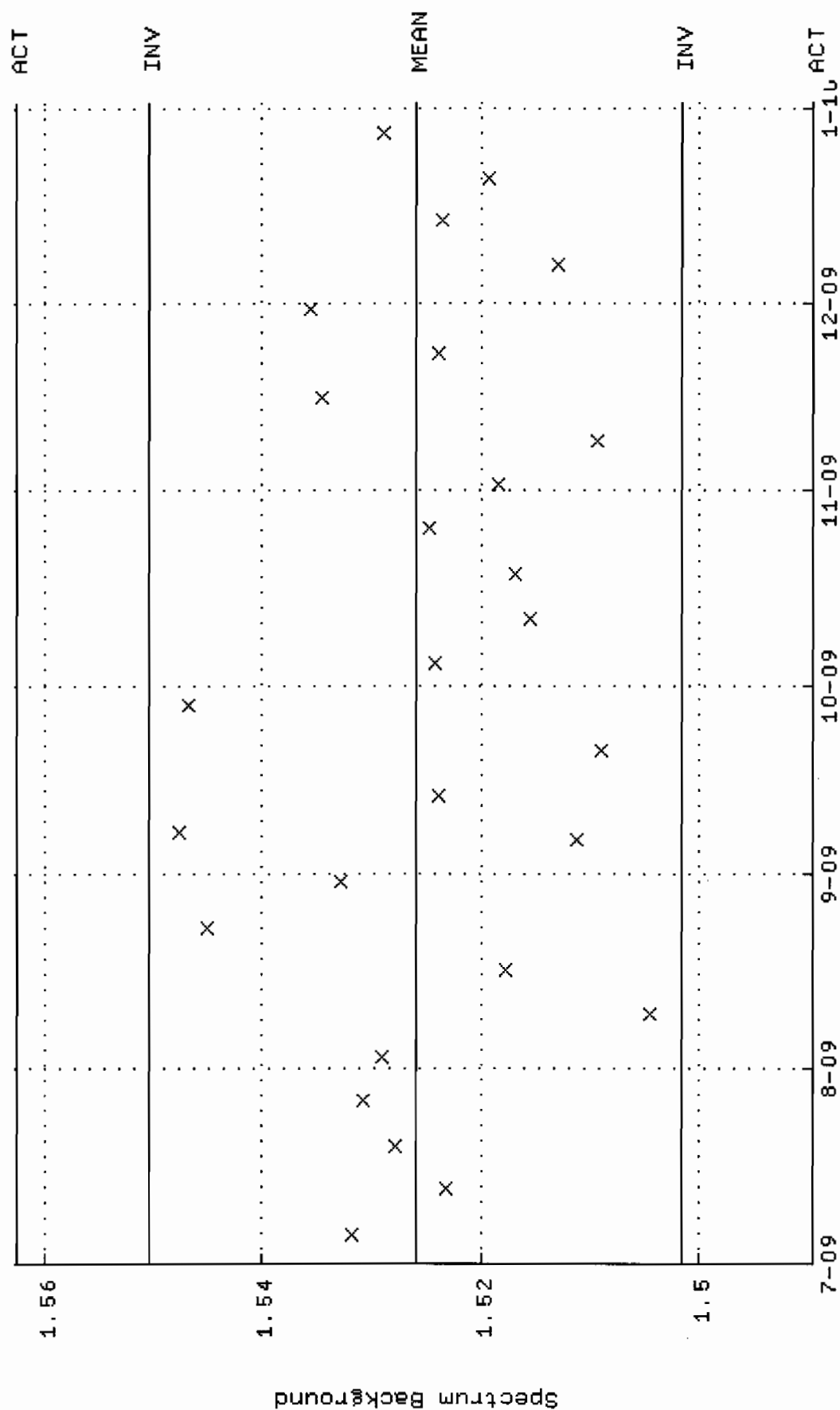
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM04.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:49:51 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



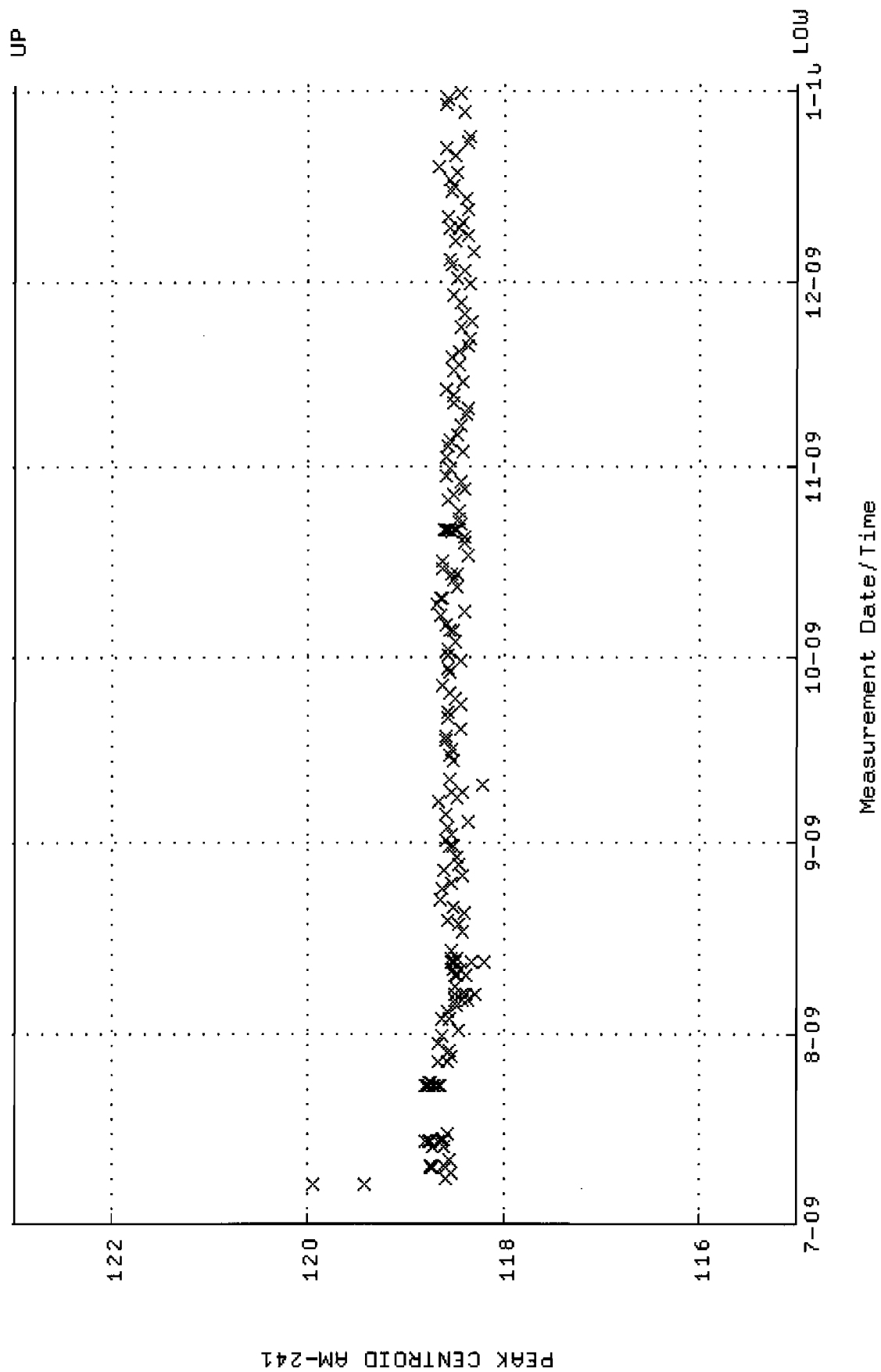
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM06\_500MLMB.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 1-JUL-2009 14:30:59 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



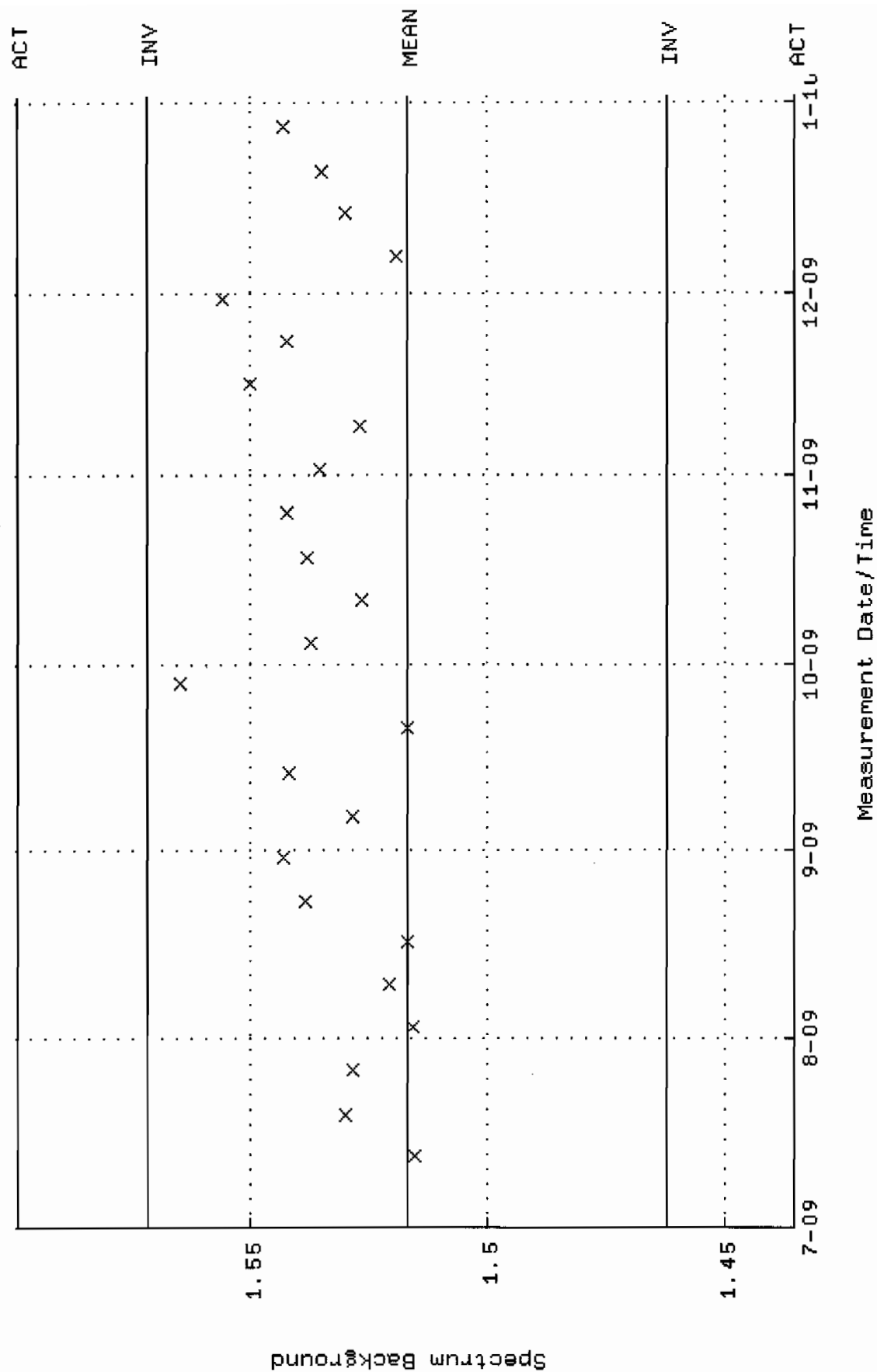
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM06.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:50:15 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



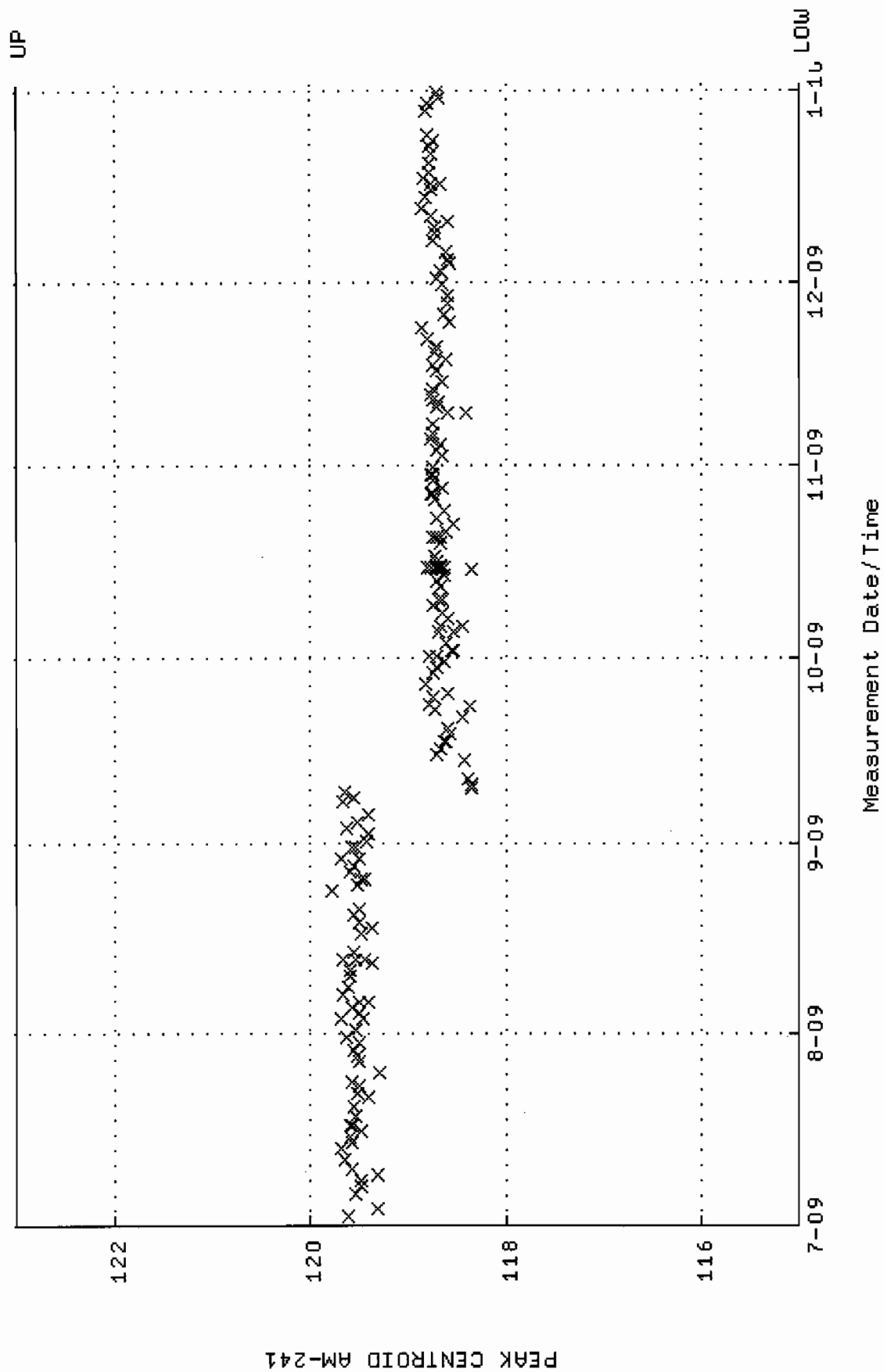
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM07\_JAR.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 7-JUL-2009 09:02:00 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



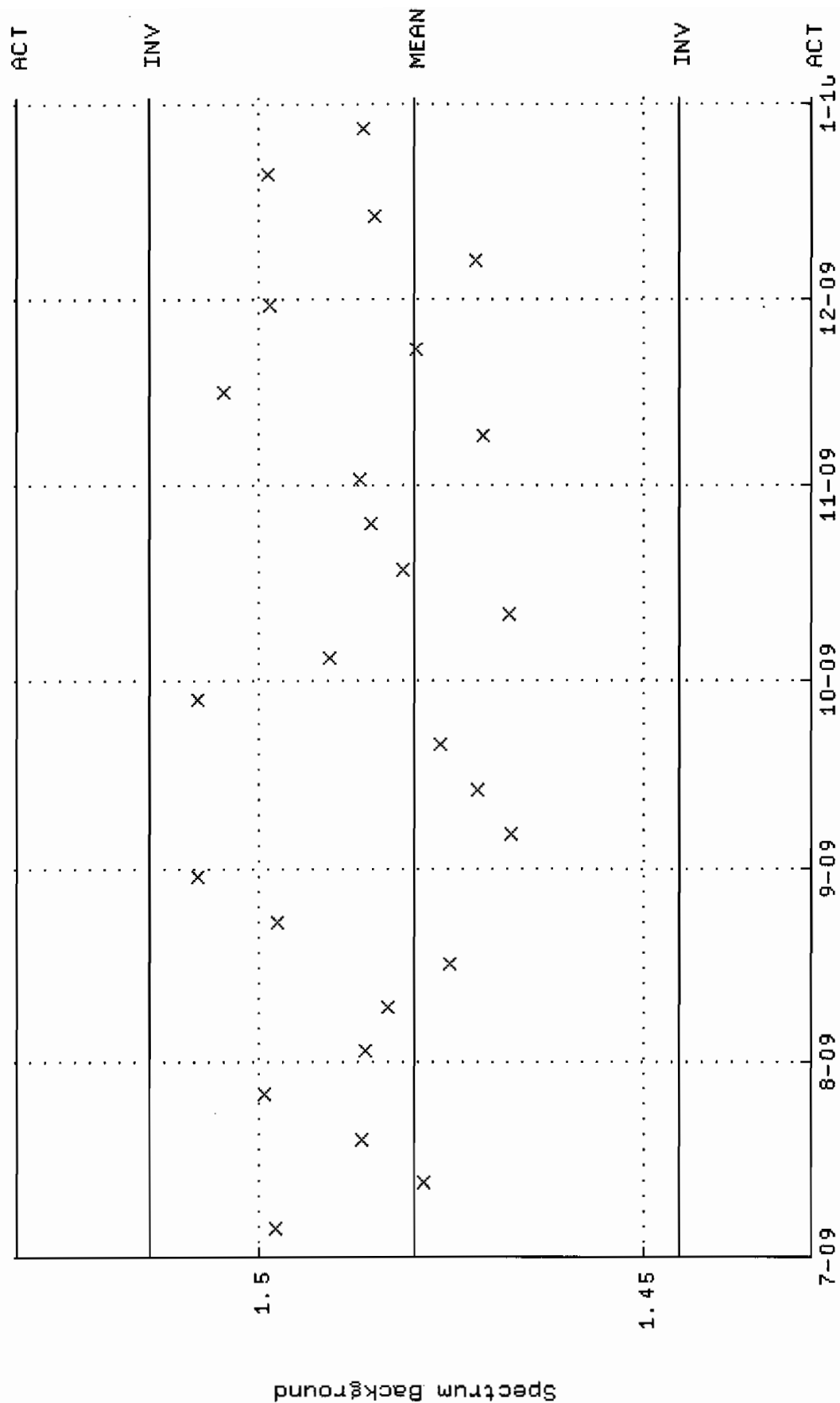
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM07.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 12-JUL-2009 17:17:31 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



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

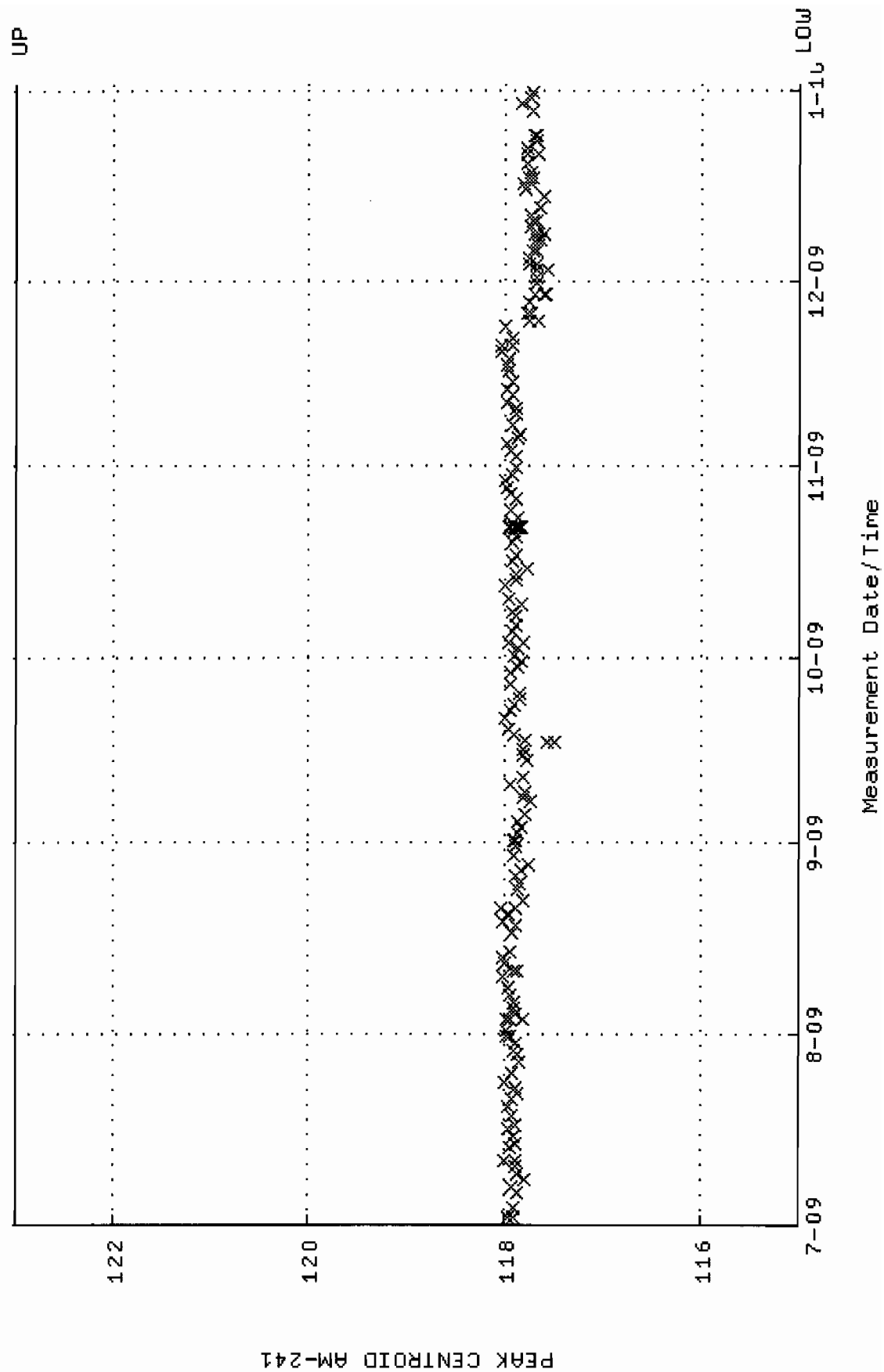


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM10.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:51:14 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.48000 +- 1.723892E-02 (1.16 %)

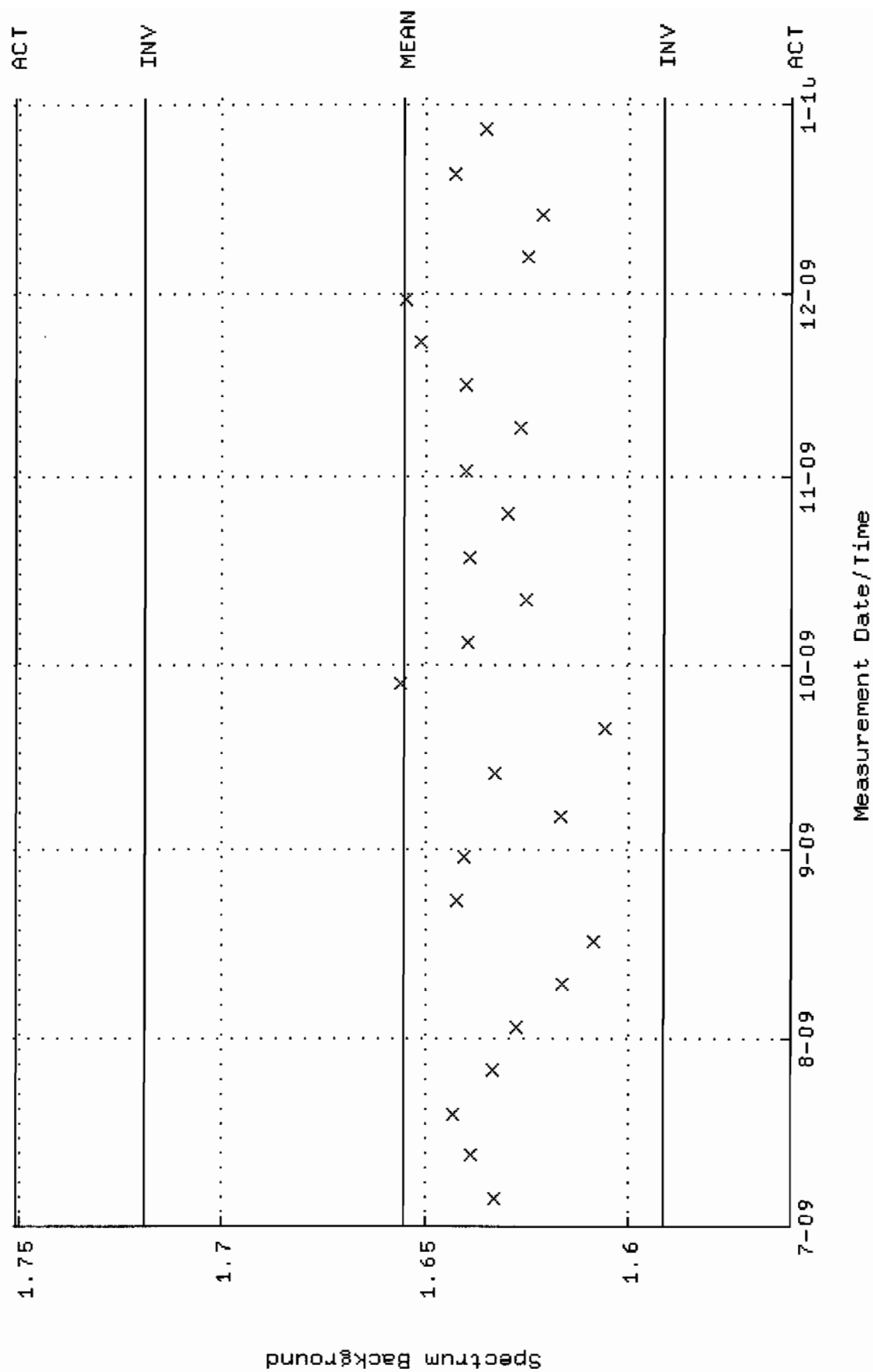




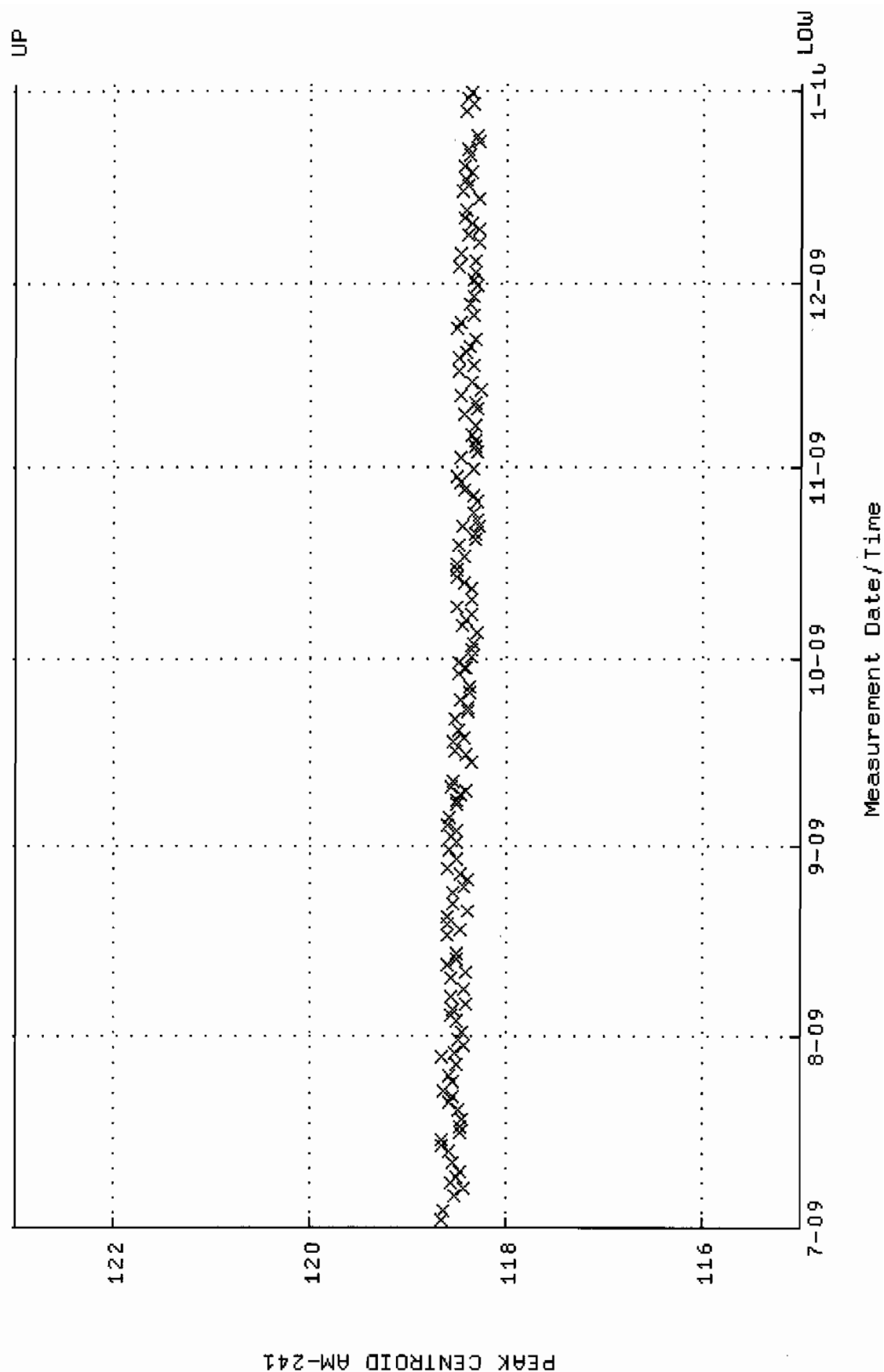
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM11\_JAR.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 05:29:04 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000



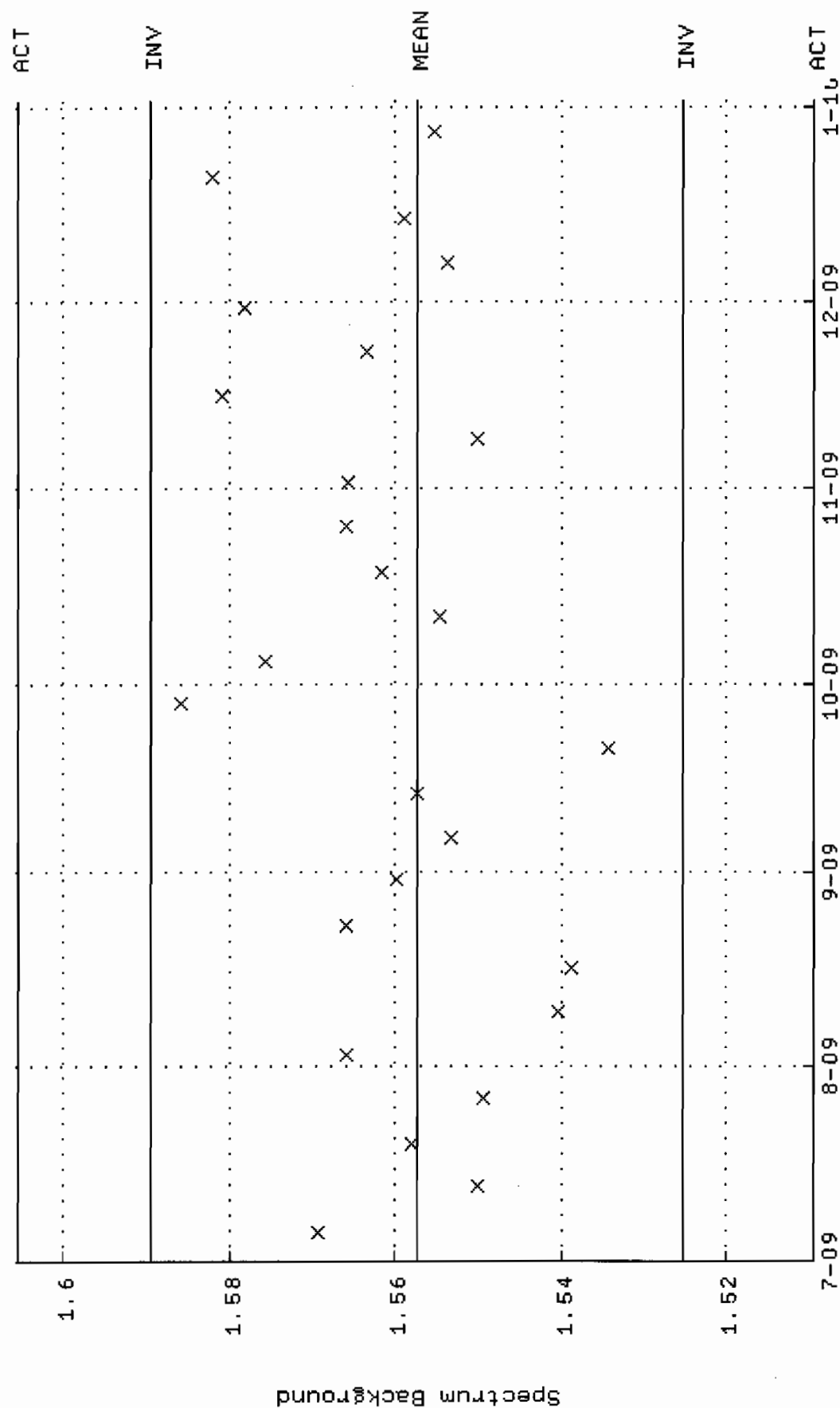
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM11.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:51:39 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



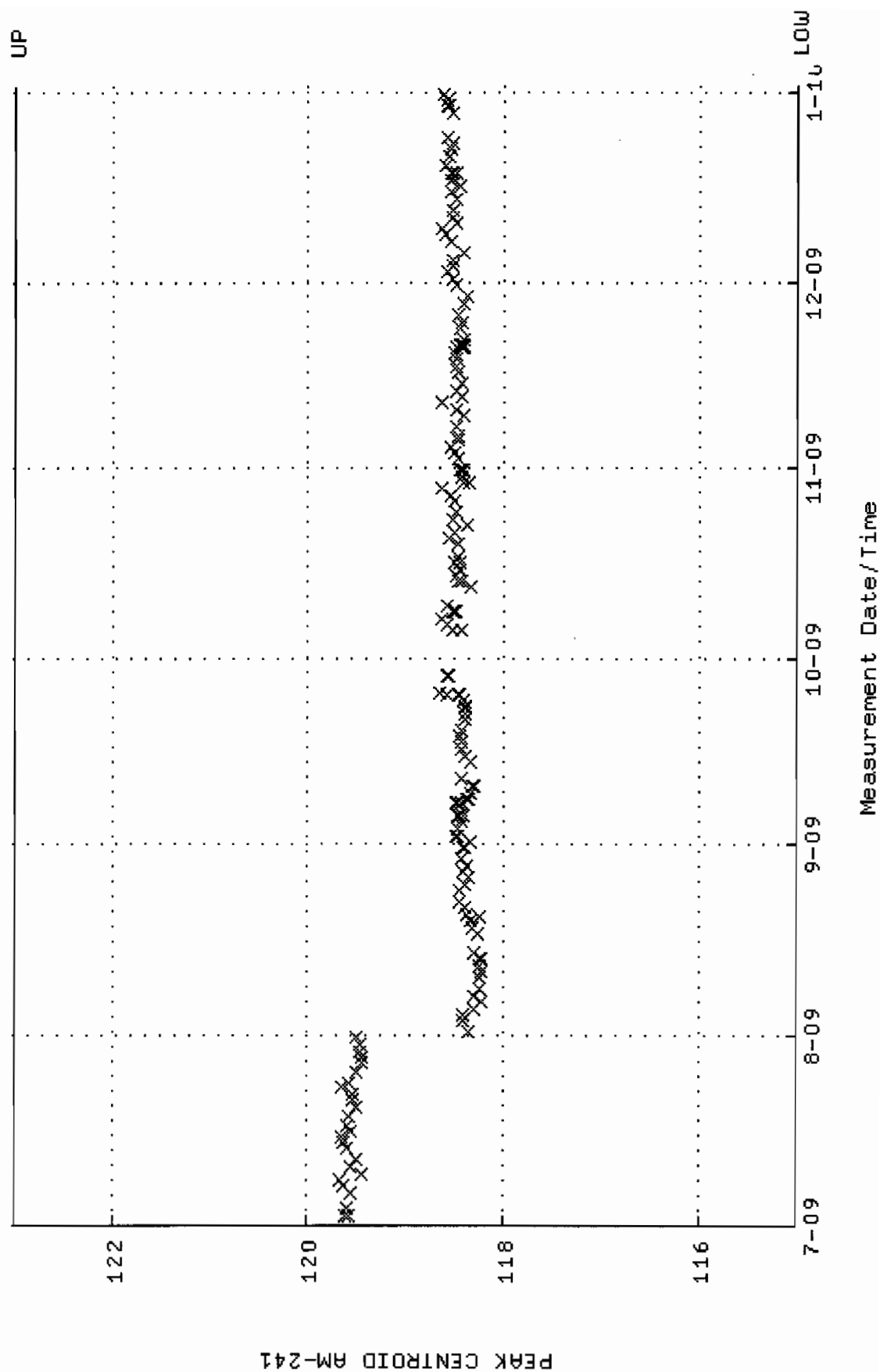
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM12\_CAN.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:11 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



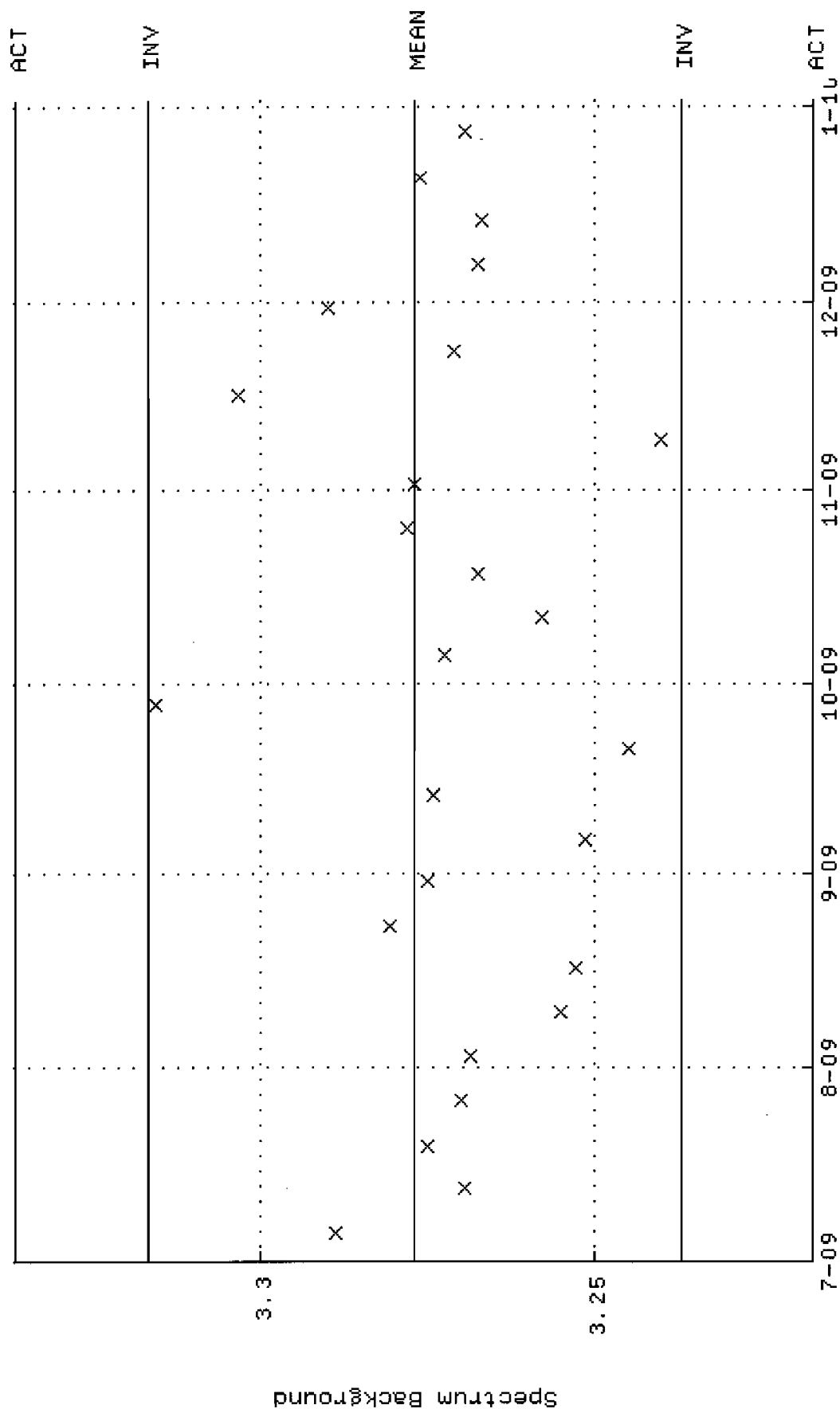
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM12.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:04 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)



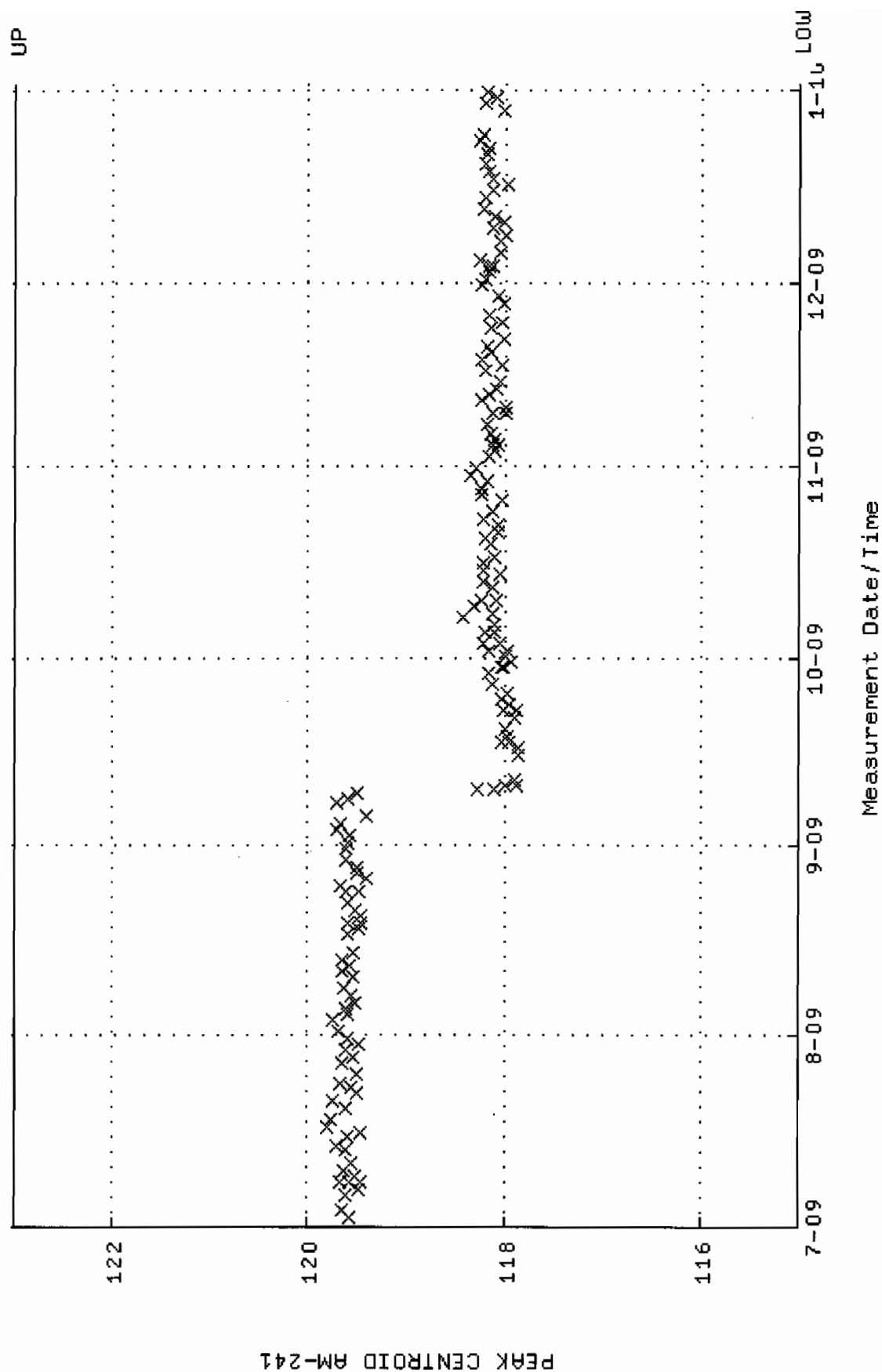
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM13\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 10:47:30 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



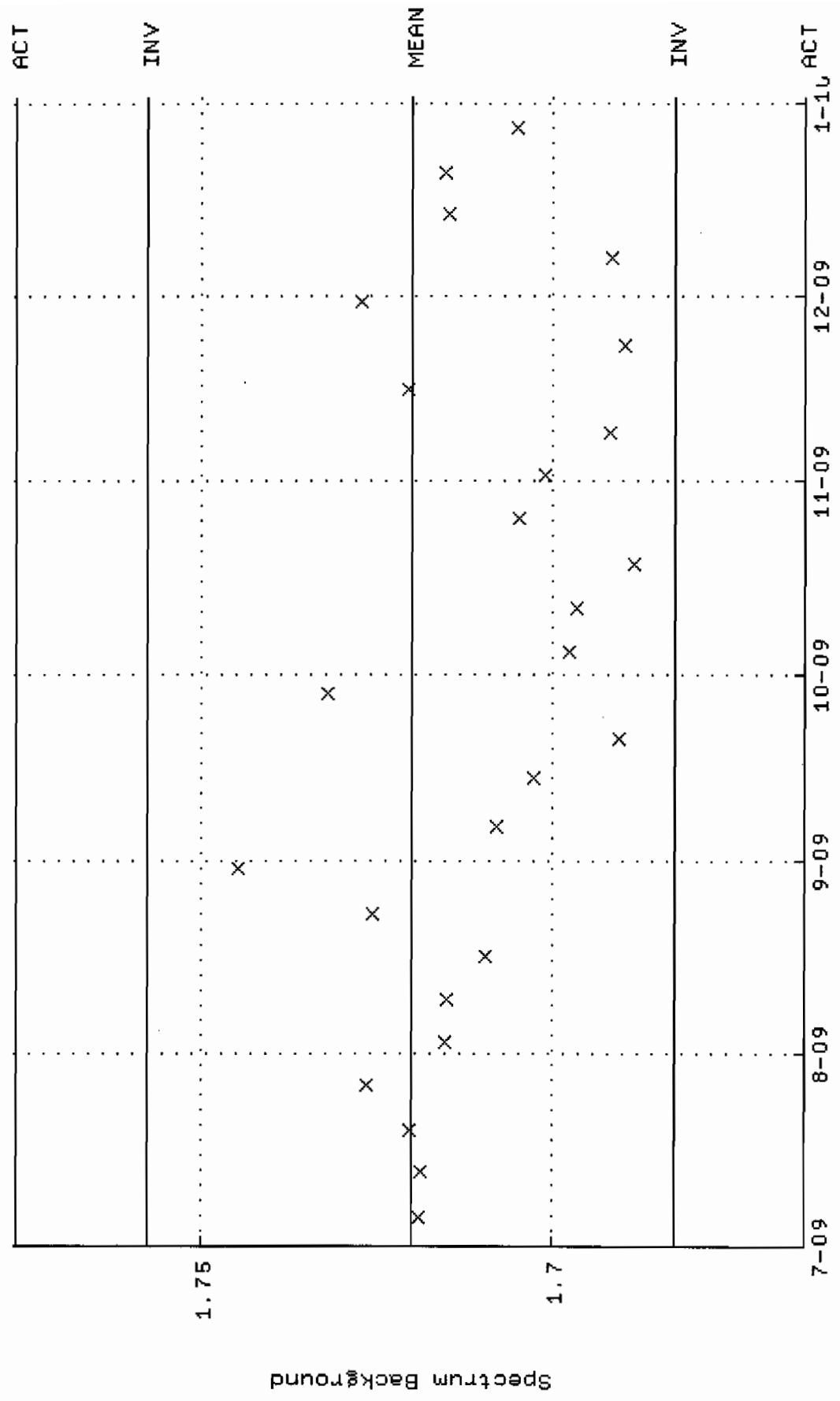
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM13.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:16 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



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

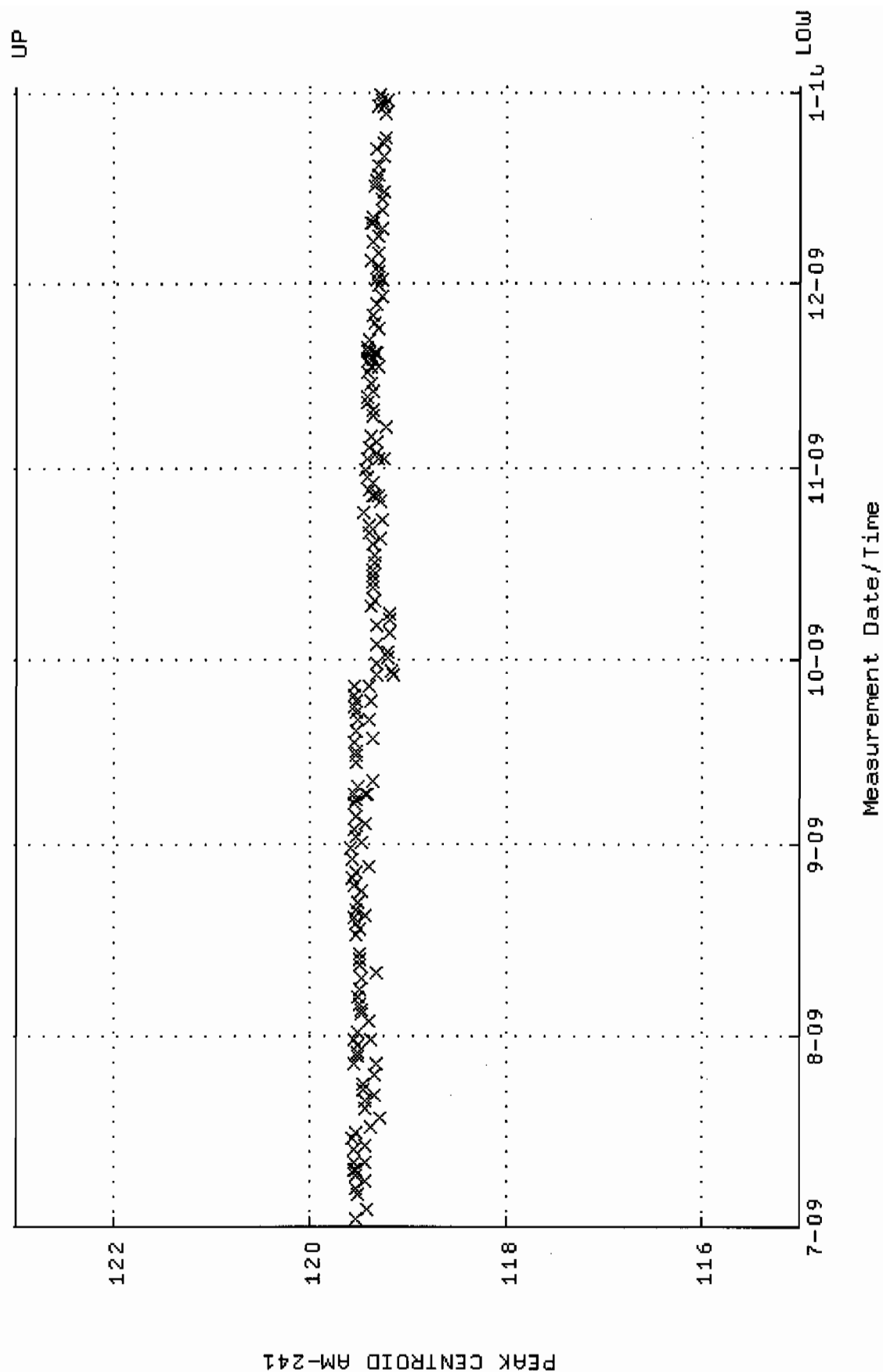


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM15.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:45 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)

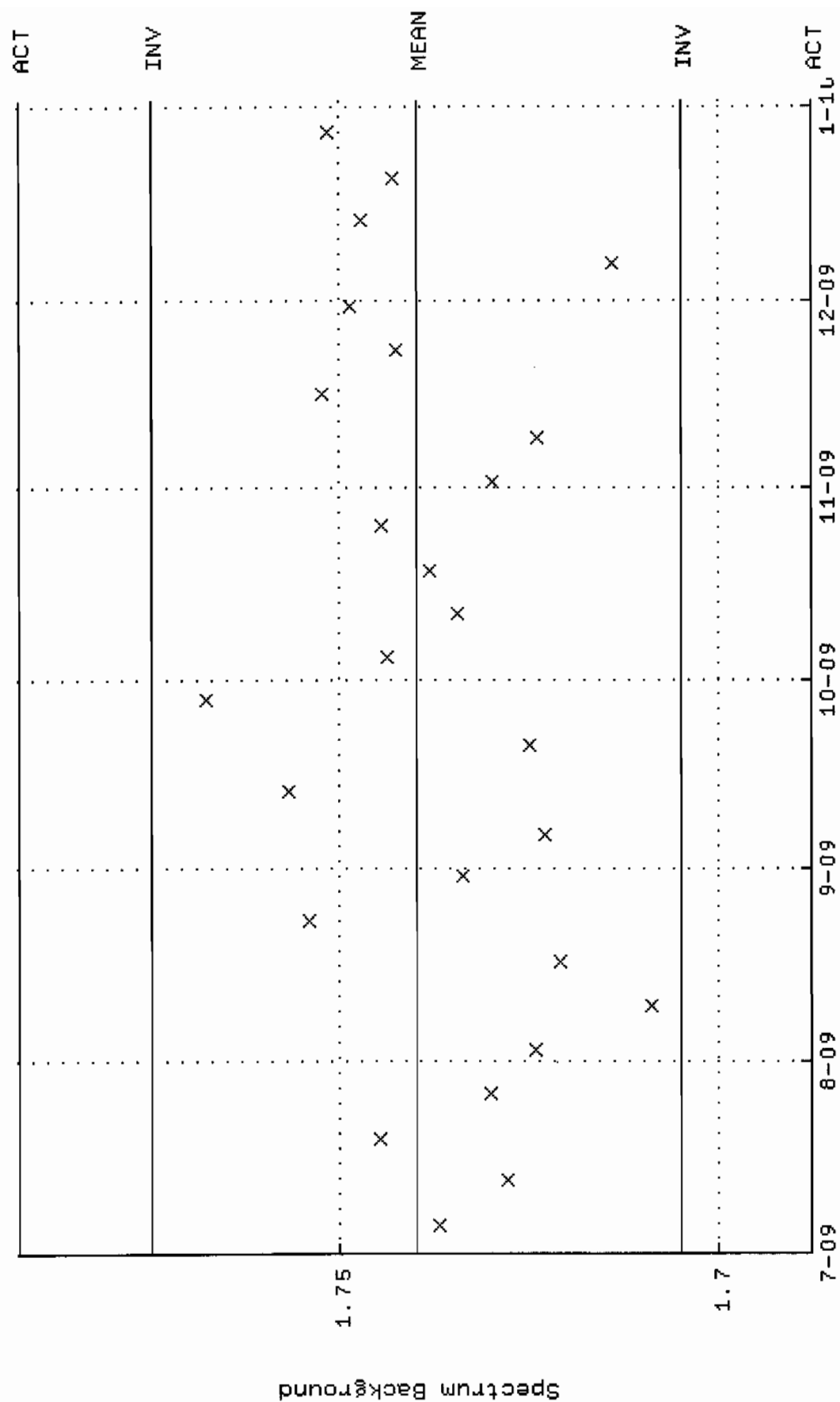




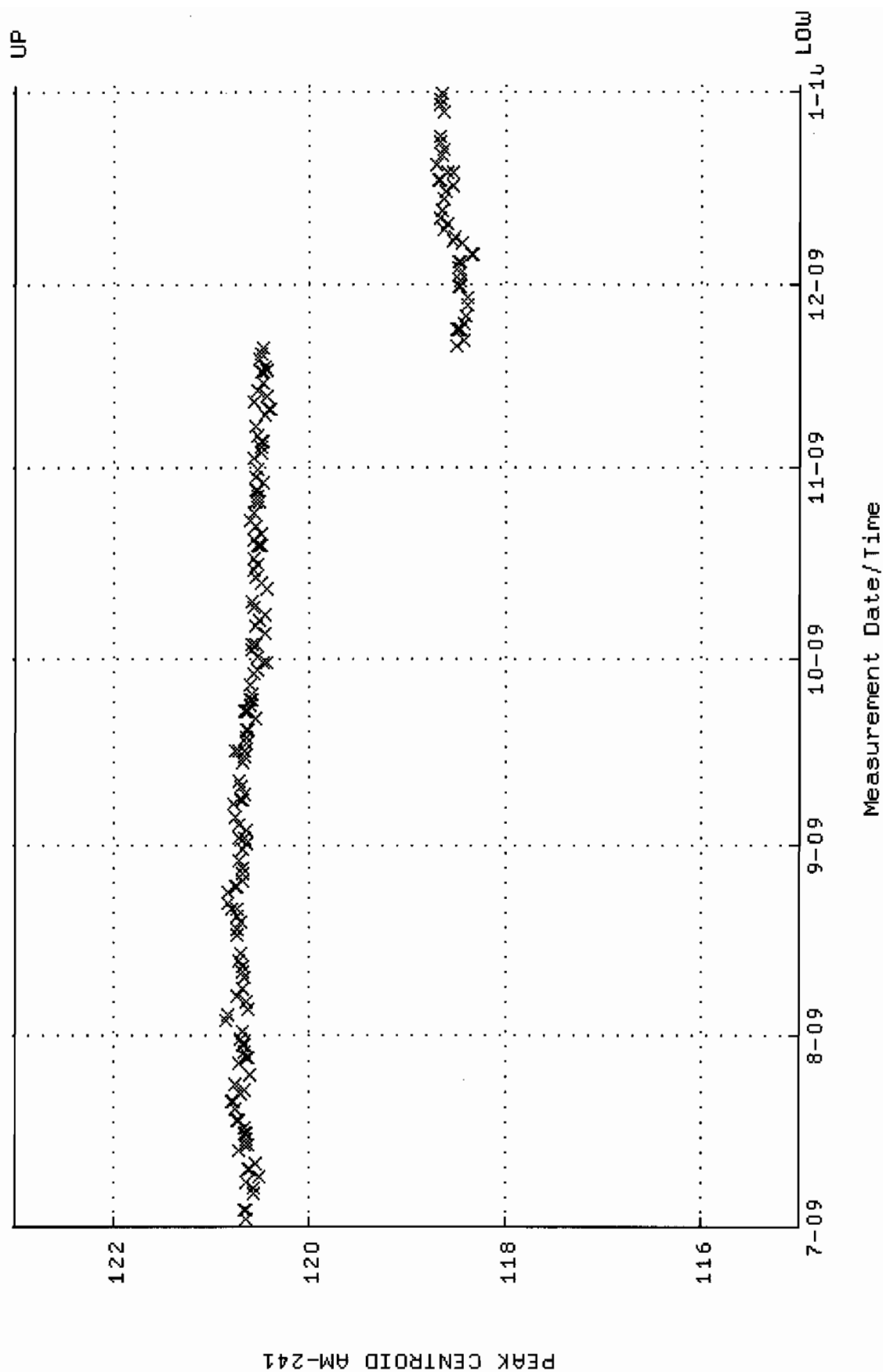
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM16\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:19 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



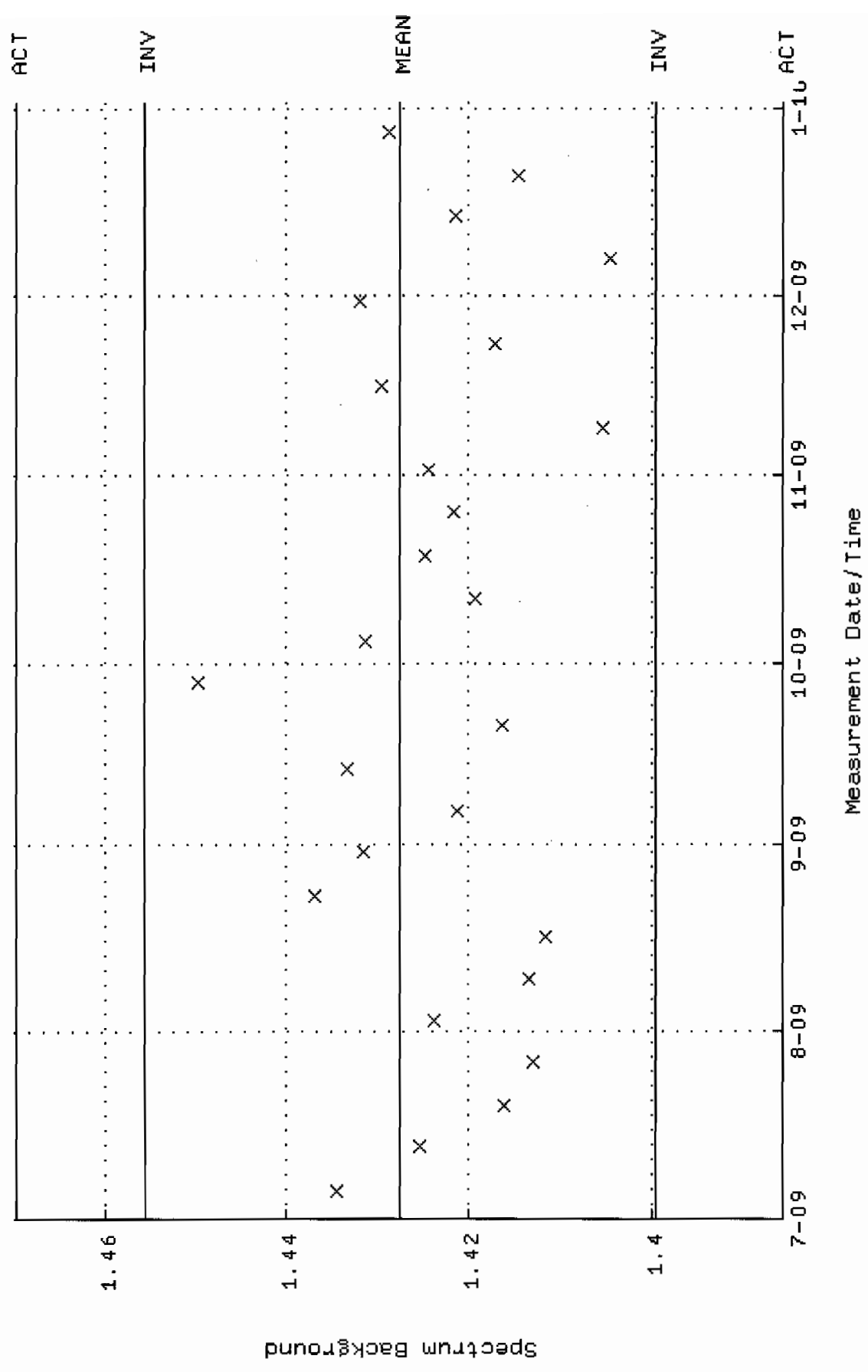
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM16.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:58 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



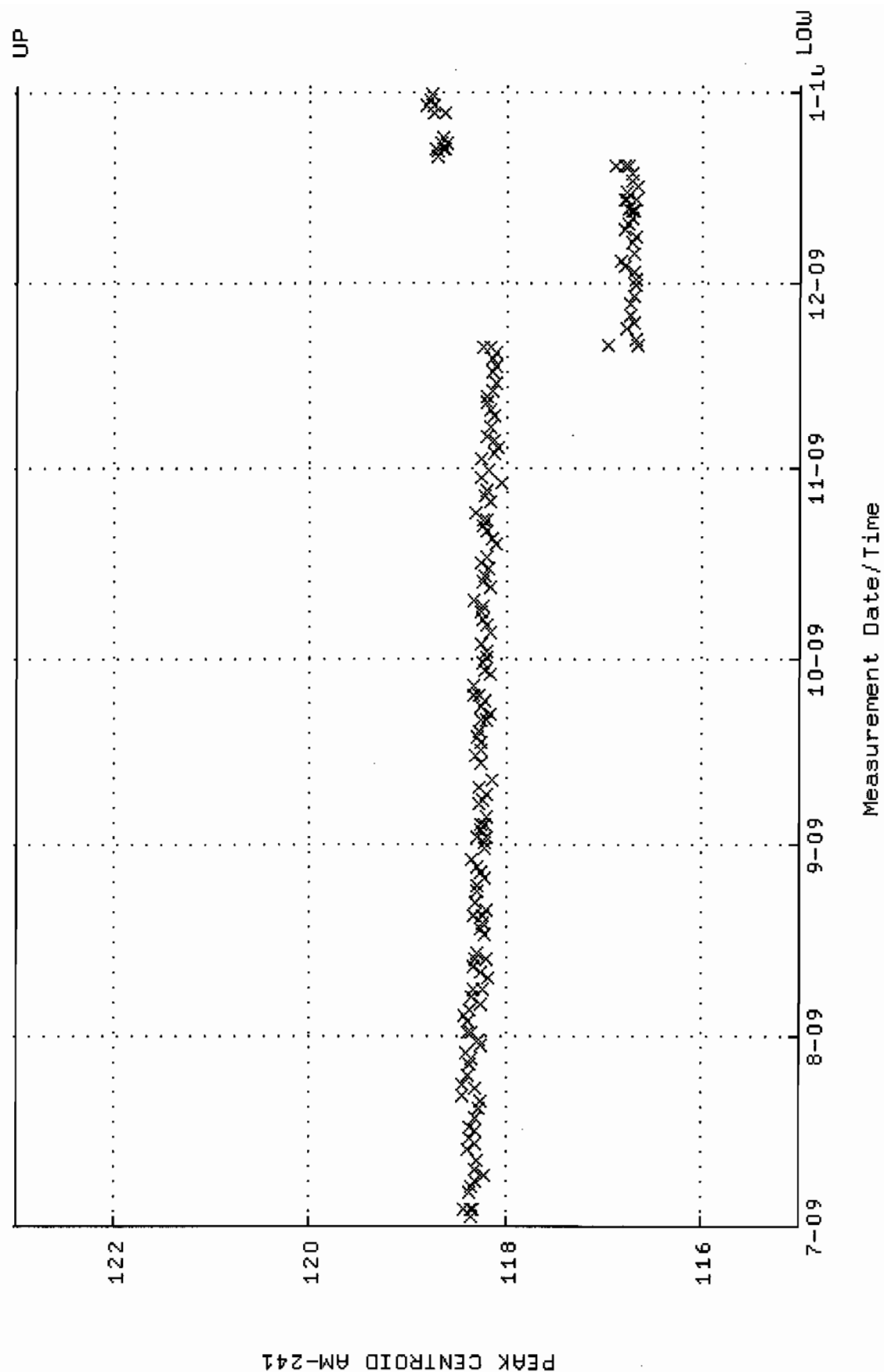
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM17-CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:26 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



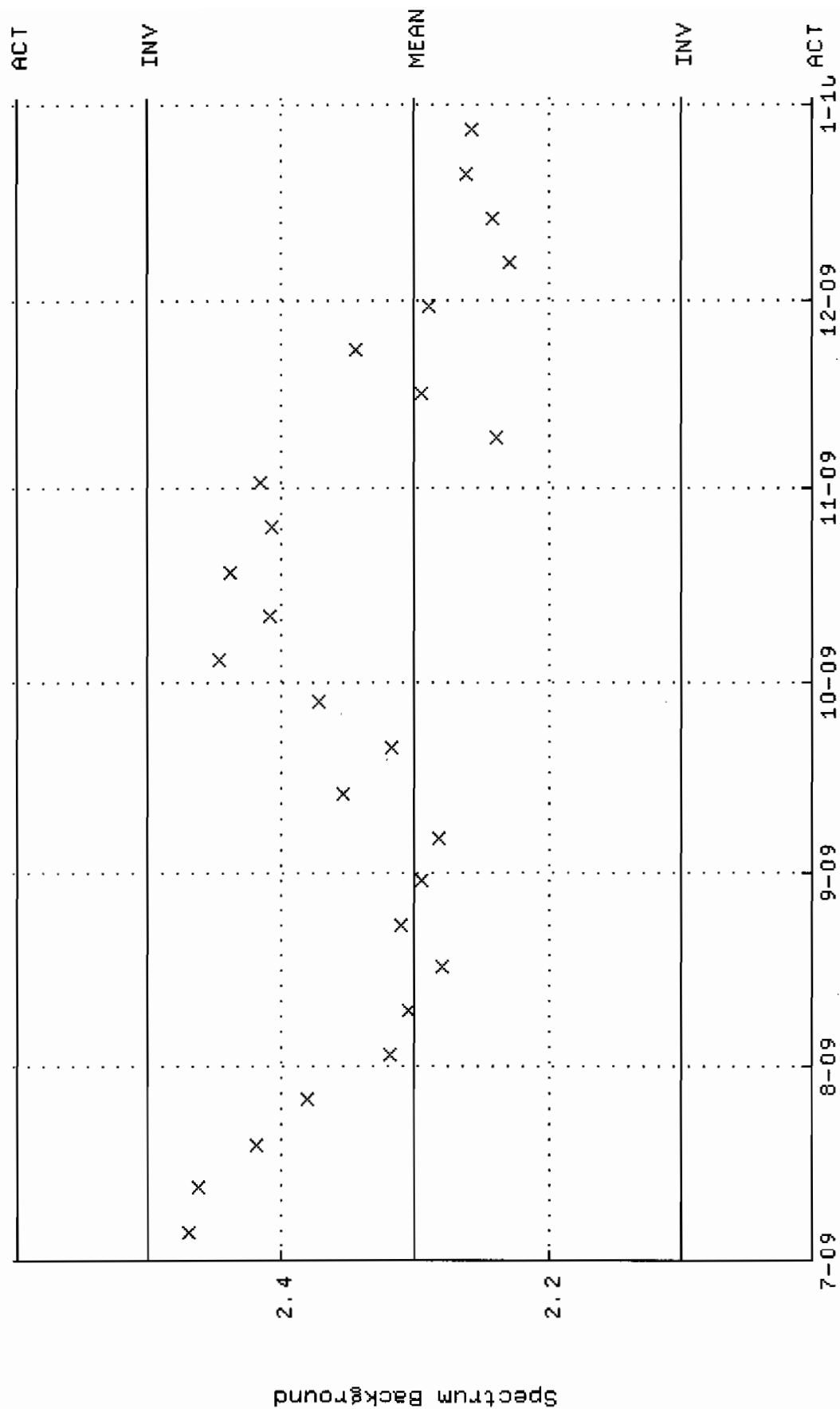
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM17.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:53:11 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



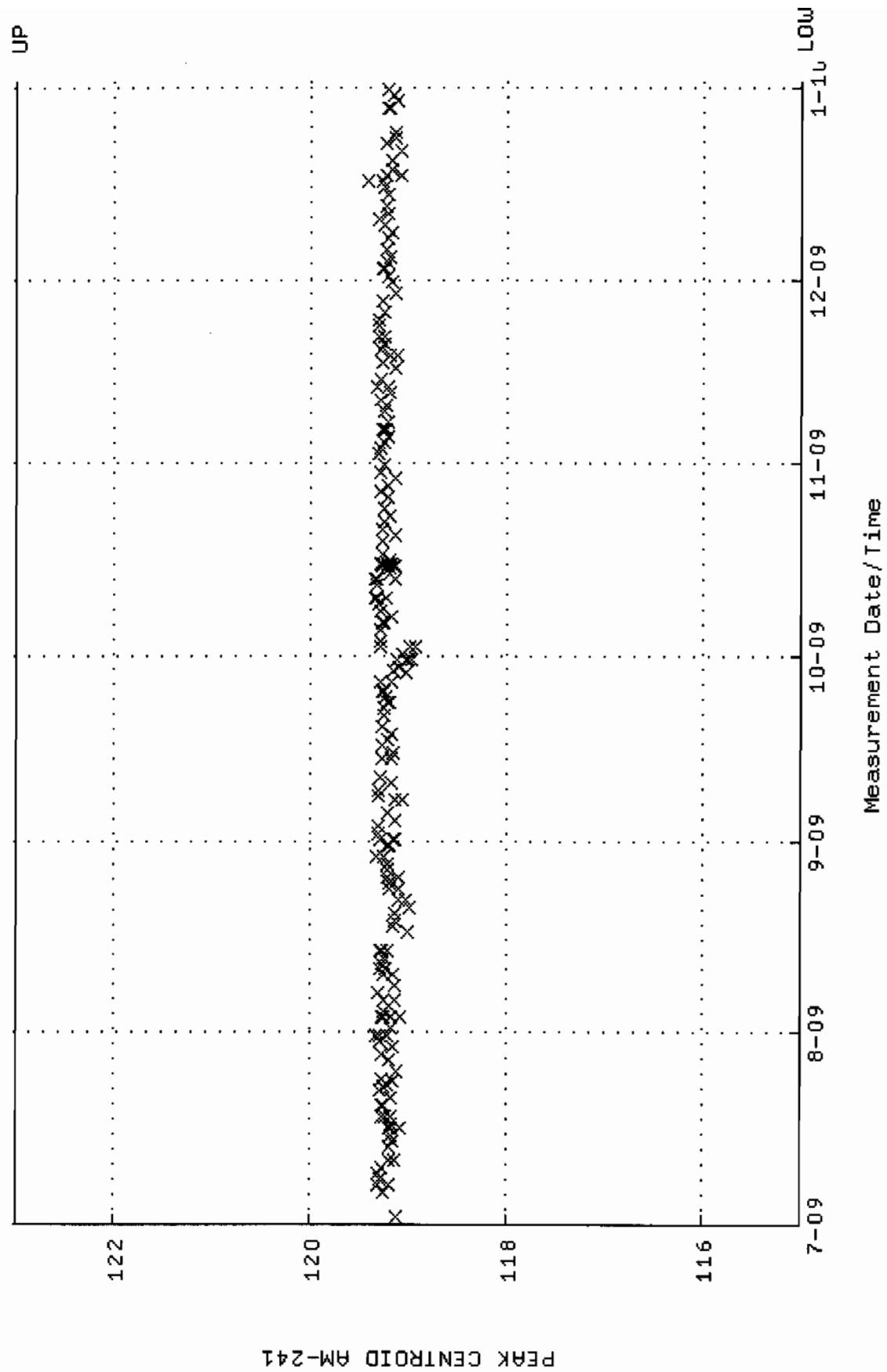
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM18\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 11:04:02 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



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\_GAM20\_500MLMB.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 05:29:34 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000

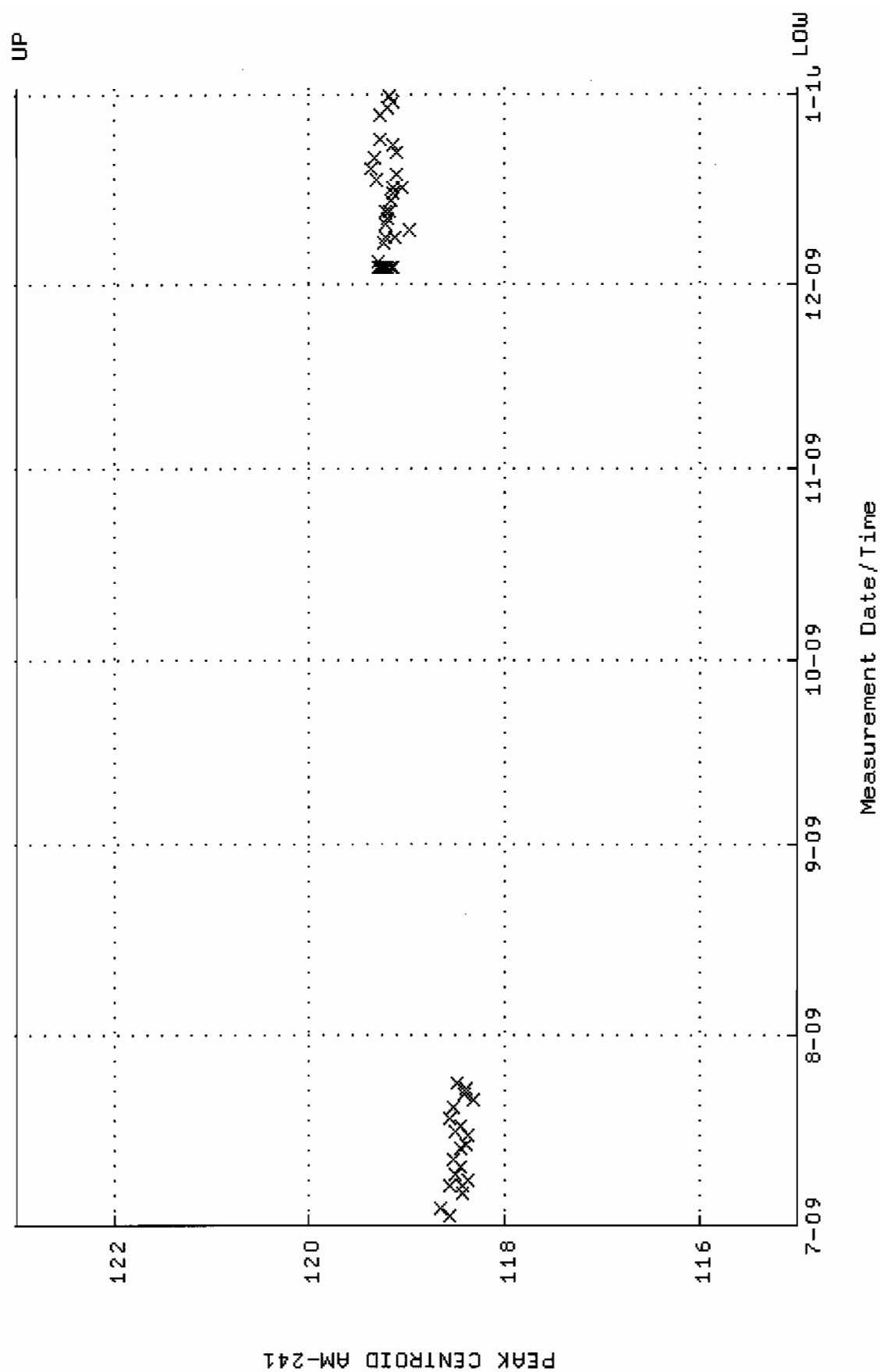


The figure is a scatter plot titled 'Spectrum Background' on the y-axis and 'Measurement Date/Time' on the x-axis. The y-axis ranges from 1.45 to 1.55 with major ticks every 0.05. The x-axis ranges from 7-09 to 1-10 with major ticks every day. A horizontal line labeled 'MEAN' is drawn at approximately 1.51. The plot is divided into three sections: 'ACT' (top), 'INV' (middle), and 'ACT' (bottom). Data points are marked with 'x'.

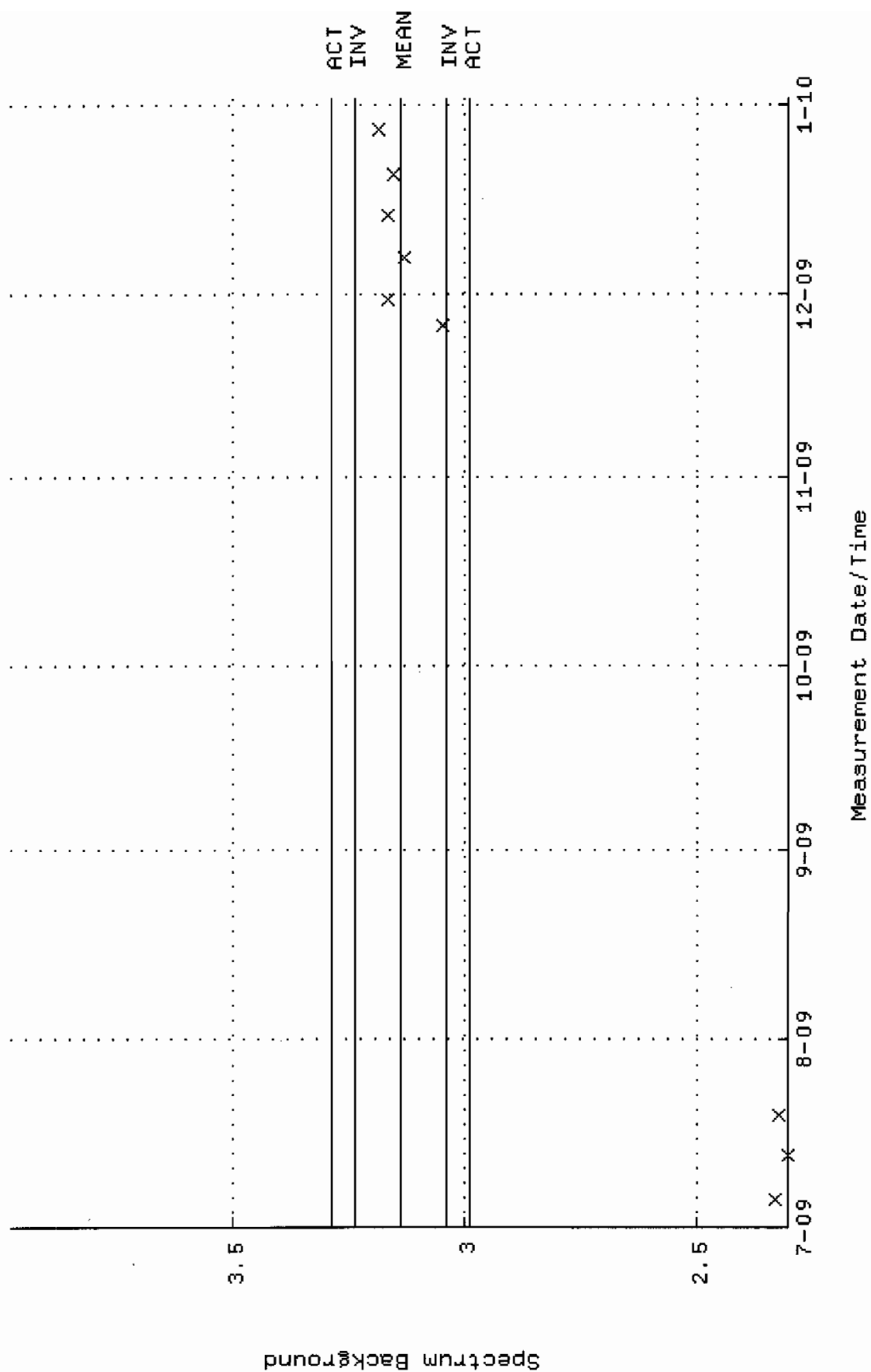
Measurement Date/Time	Spectrum Background
7-09	1.505
7-09	1.505
7-09	1.505
8-09	1.495
8-09	1.505
8-09	1.515
9-09	1.495
9-09	1.505
9-09	1.515
10-09	1.495
10-09	1.505
10-09	1.515
11-09	1.495
11-09	1.505
11-09	1.515
12-09	1.495
12-09	1.505
12-09	1.515
1-10	1.495
1-10	1.505
1-10	1.515



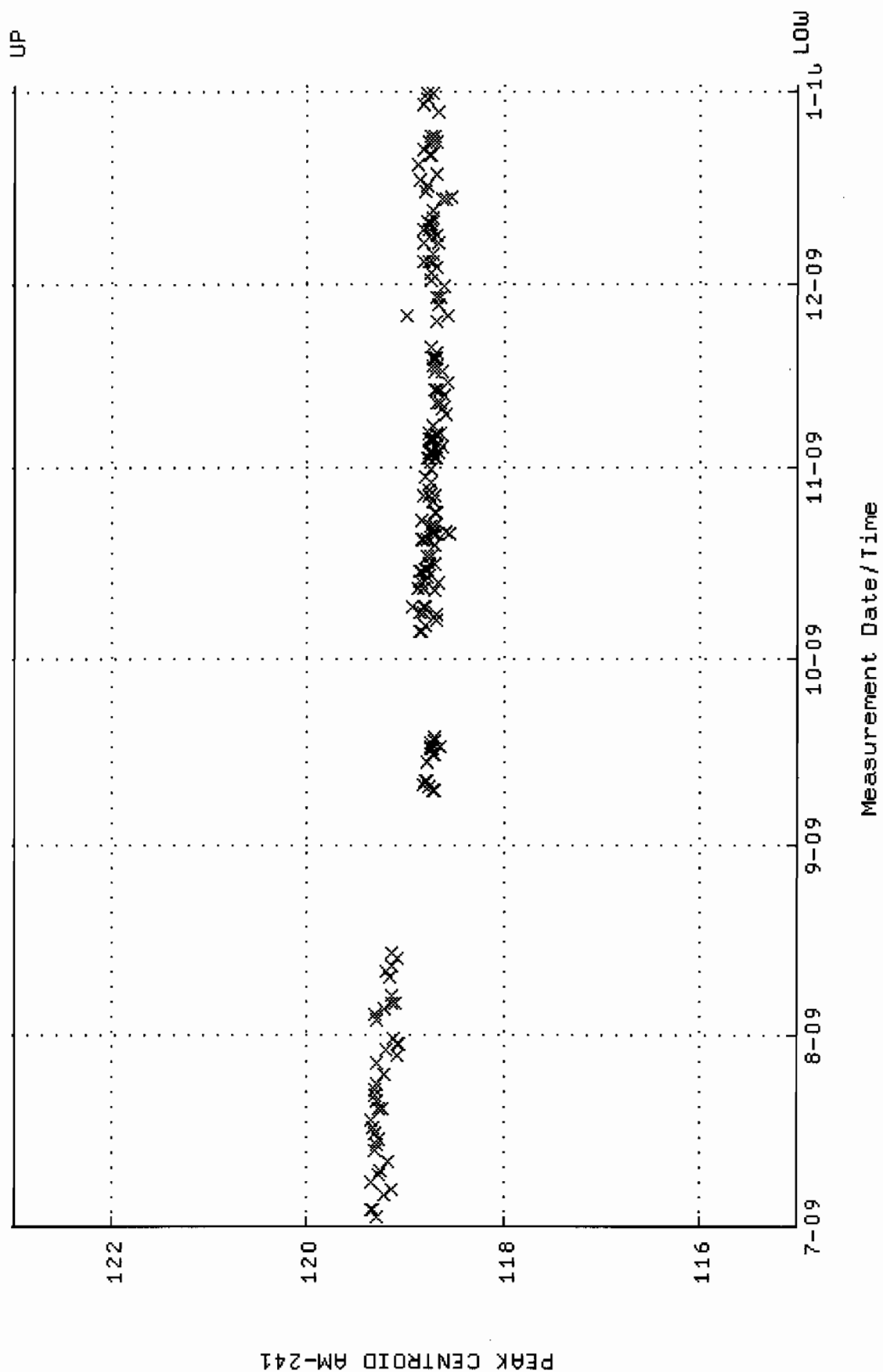
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM22\_CAN.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 10:47:50 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000



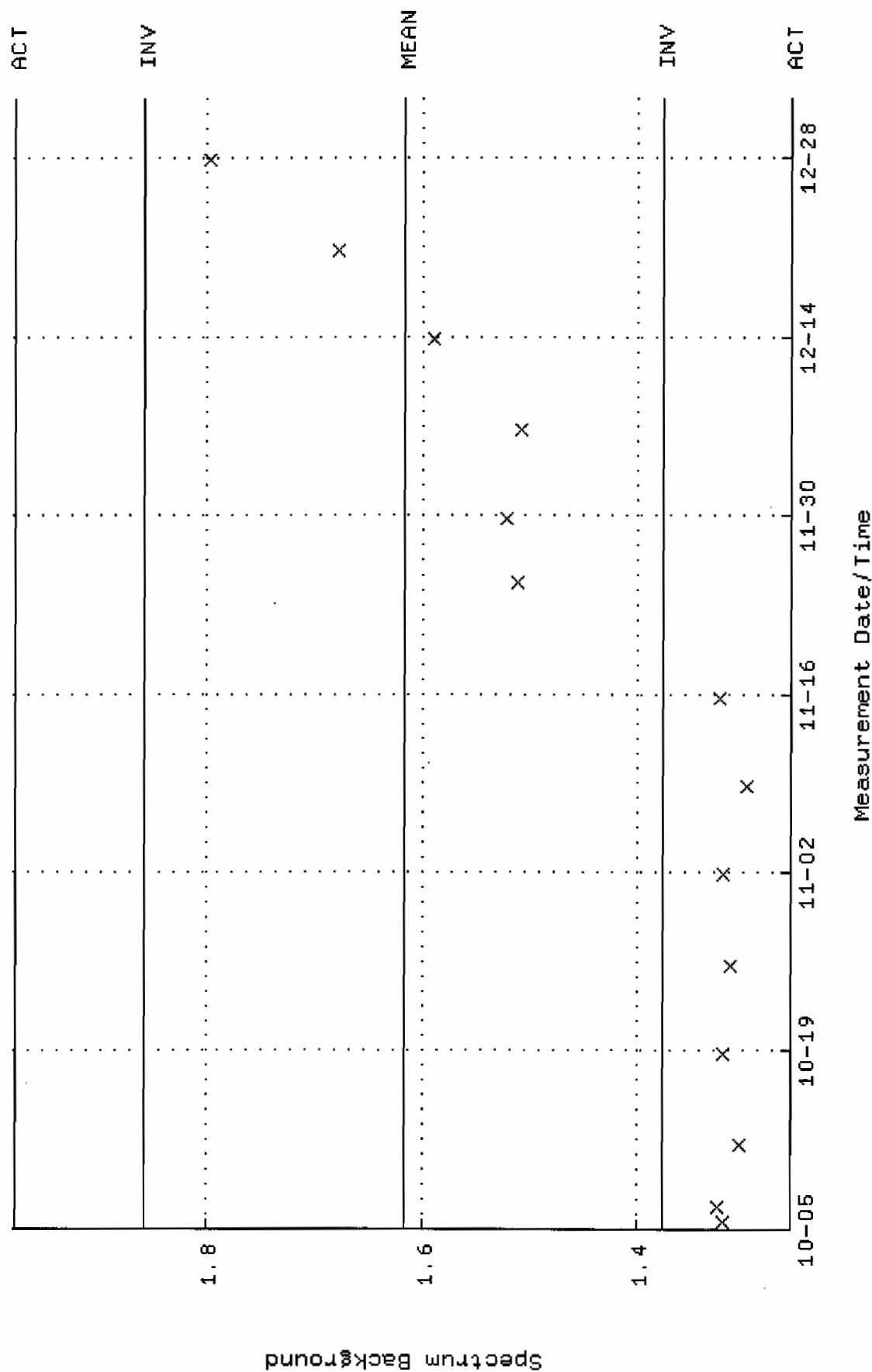
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM22.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:54:18 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



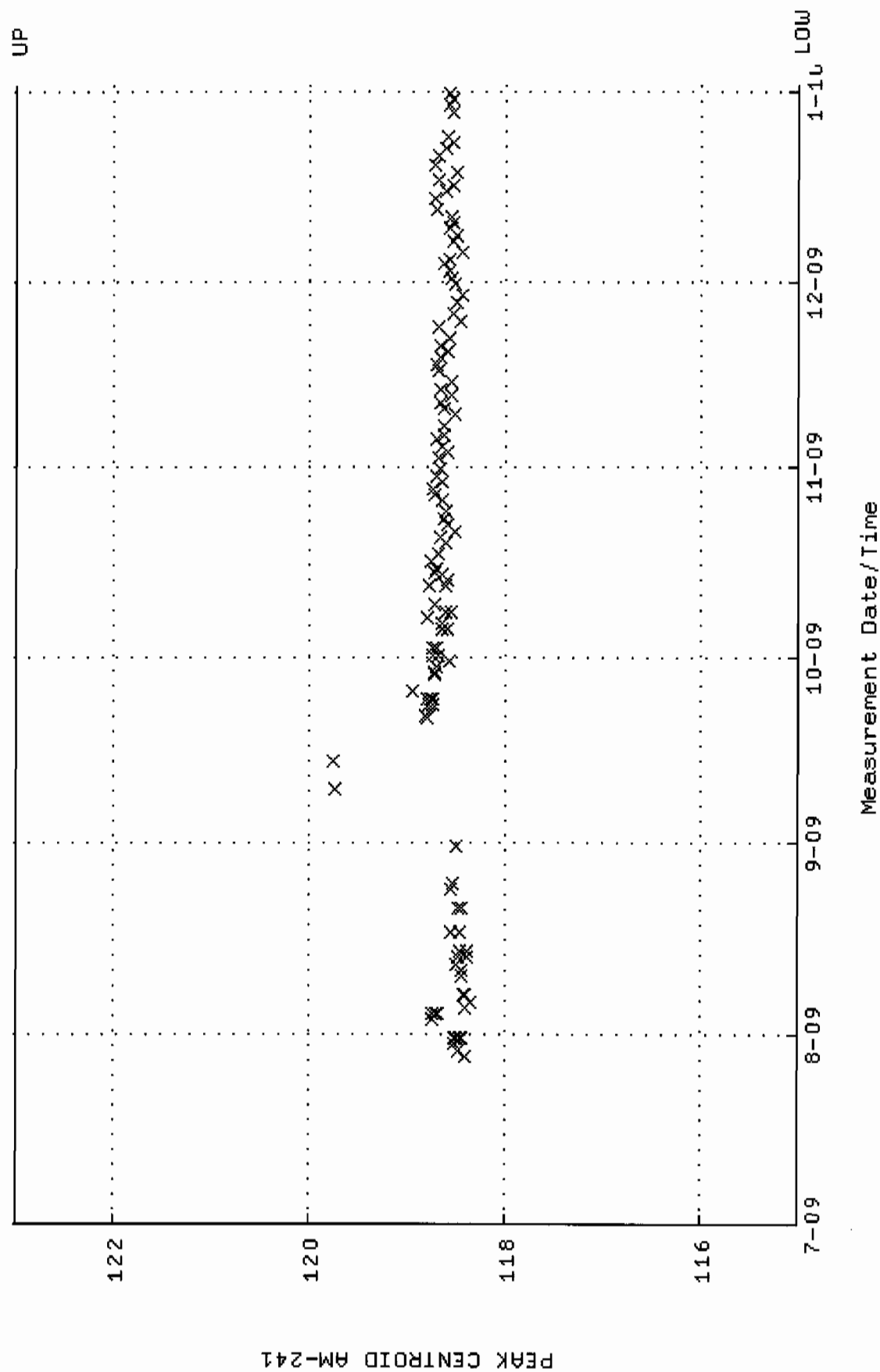
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM23\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 11:00:38 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



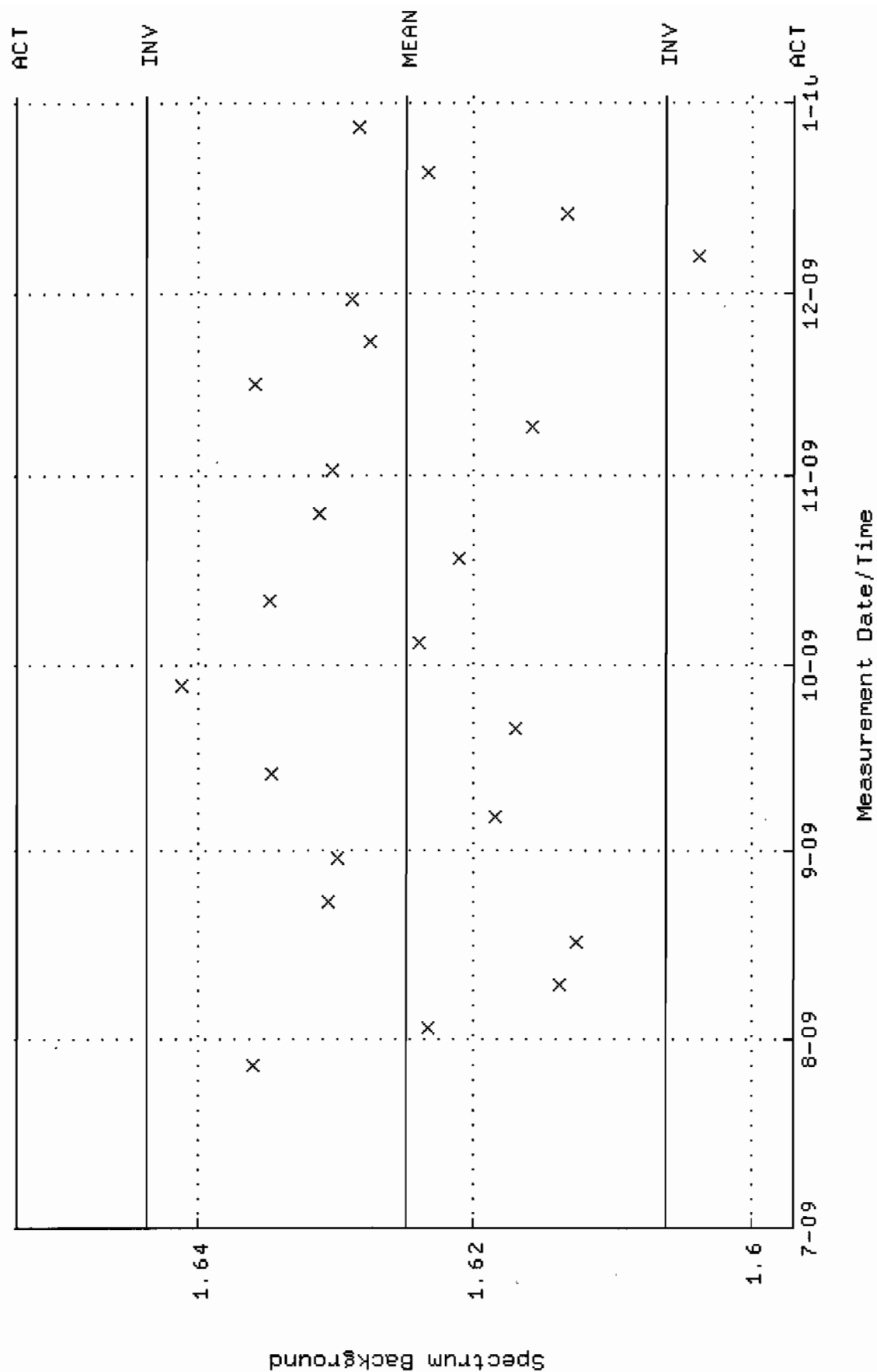
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM23.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-OCT-2009 15:13:53 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM25\_2LMB.QAF;1  
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)  
 Start/End Dates : 28-JUL-2009 10:32:53 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM25.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 27-JUL-2009 17:25:45 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.62502 +- 9.370414E-03 (0.58 %)



# 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 <sup>1</sup>	Statistics <sup>2</sup>	Calibration <sup>2</sup>	Peak Fitting <sup>2</sup>	Geometry <sup>2</sup>	Impurities <sup>2</sup>	Weighing	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

#### Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

#### Calibration Methods:

4π LS (4 π Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

<sup>2</sup>As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1032	Isotope:	Mixed Gamma
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL	Prep Date:	11/30/2006
Reference Date:	10/01/2006	Verification Date:	12/02/2009
Ampoule Mass (g):	5.31725 g	Expiration Date:	12/02/2010
Uncertainty:	+/- 2.81 %	Primary Code:	1032-A
LogBook No:	RC-S-045-073	Dilution(mL):	100 mL
		Mass of Parent(g):	5.2579 g
		Density(g/mL):	1.0611
		Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
-----------	----------	--------------	---------------	------	-------------	-------------------	-----------------

GEL Laboratories LLC  
Version 1.0 9/18/2000

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Am-241

Isotope	Result	pCi/L - Ver. Jar-1
Mixed Gamma N1	2534	pCi/L
Mixed Gamma N2	2510	pCi/L
Mixed Gamma N3	2413	pCi/L

Mean Value (Counting) = 2485.67  
Stdev = 64.065  
Rule 3 (Pass/Fail) Pass

Certificate Value = 2485.68018  
Lower Limit = 2357.536524  
Upper Limit = 2613.796809  
Rule 1 (Pass/Fail) Pass  
Two sigma = 128.1301422  
10 % of Mean = 248.56666667  
Rule 2 (Pass/Fail) Pass

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. Jar-1
Mixed Gamma N1	854.2	pCi/L
Mixed Gamma N2	907.6	pCi/L
Mixed Gamma N3	898.9	pCi/L

Mean Value (Counting) =  
Stdev =

886.90  
28.651  
95.01  
Rule 3 (Pass/Fail)

Certificate Value =  
Lower Limit =  
Upper Limit =  
Rule 1 (Pass/Fail)  
Two sigma =  
10 % of Mean =  
Rule 2 (Pass/Fail)

933.44144  
829.597644  
944.202356  
Pass  
57.30235597  
88.69000000  
Pass

## 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:*  
12/2/2009  
M. Stamps  
12/2/09

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver-Int-5
Mixed Gamma N1	1572	pCi/L - Ver-Int-2
Mixed Gamma N2	1495	pCi/L - Ver-Int-3
Mixed Gamma N3	1501	

Mean Value (Counting) =  
Stdev =

1522.67  
42.829  
98.50  
Rule 3 (Pass/Fail)

Certificate Value =  
Lower Limit =  
Upper Limit =  
Rule 1 (Pass/Fail)  
Two sigma =  
10 % of Mean =  
Rule 2 (Pass/Fail)

1545.8378  
1437.008431  
1608.324902  
Pass  
85.65823564  
152.26666667  
Pass

pCi/L  
pCi/L  
pCi/L

*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 DATA 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 through 6  
 7 " baghouse dirt

use 1/4 gm x 10 samples WITH Together  
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM-1	TRM-2	TRM-3	TRM-4
U-238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U-234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th-230	471 ± 11	24.5 ± 0.6	58.5 ± 2.1	44.0 ± 1.6
Ra-226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb-210	425 ± 24	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0





### 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.

Attention Nancy Slater At GEL  
Not for Log In  
9911627-01-20  
Page 1 of 1  
AR/COC- 602945

SF 2001-COC (10-97)  
Supervisor (5-97) use  
Internal Lab  
Batch No.

SARWR No. N/A

Press F1 for Instructions for each field.

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/Vol: 726-199 Lab Contact: EDIE KENT Lab Destination: GEL SMO Contact/Phone: Doug Salimi / 844-3110 Send Report to SMO: Suzi 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		Tech Area VI Room N/A ER Sample ID or Sample Location Detail		Reference LOV (available at SMO)	
050484 - 001 050486 - 001 050486 - 001		PEM-1 TRM-2 -NRM-2 NBHD		Container Type Volume P 1 L 4 C G 1 L 4 C G 1 L 4 C	
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# CERTIFICATE OF CALIBRATION

## ALPHA STANDARD SOLUTION

Radionuclide            Am-243  
Half Life:            7380  $\pm$  40 years  
Catalog No.:           7243  
Source No.:            445-96-2

Customer:            GENERAL ENGINEERING LABS  
P.O.No.:              9290-RAD  
Reference Date:       January 1 1994       12:00 PST.  
Contained Radioactivity: (Am-243) 101.2  $\mu$ Ci  
Contained Radioactivity: (Am-243) 3750 kBq

### Description of Solution

a. Mass of solution:            5.3739 g (in a 5 ml Flame Sealed Ampoule)  
b. Chemical form:              Am(NO<sub>3</sub>)<sub>3</sub> in 2N HNO<sub>3</sub>  
c. Carrier content:              None added  
d. Density:                      1.0651                      g/ml @ 20°C.

### Radioimpurities

None detected

### Radioactive Daughters

Np-239 (beta active) in equilibrium

### Radionuclide Concentration

(Am-243) 18.84  $\mu$ Ci/g

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under:       228, 278                      keV.  
Branching ratio(s) used:                  0.108, 0.1420                  gamma rays per decay.

### Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:        $\pm 3.0\%$   
b. Random uncertainty in assay:                                $\pm 0.4\%$   
c. Random uncertainty in weighing(s):                        $\pm 0.0\%$   
d. Total uncertainty at the 99% confidence level:            $\pm 3.0\%$

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

Anna H. Khan  
QUALITY CONTROL

Jan 3, 1994  
Date Signed

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO  
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE

☒ 1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 2. SOAK TEST

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.

☒ 5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha at the time of shipment.



# Standard Traceability Log Rad

Source Material Info	
Parent Code:	445-96-2
Prepared By:	Genie Bost
Carrier Conc:	2M HNO3
Reference Date:	01/01/1994
Ampoule Mass (g):	5.3739 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 005 032

A Solution Material Info	
Isotope:	Americium-243
Prepared By:	Angela Johnson
Prep Date:	01/05/1994
Verification Date:	05/11/2009
Expiration Date:	05/11/2010
Primary Code:	445-96-2-A
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	Isotope	Value	Uncertainty
5/15/2009	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.

May 15, 2009 5115109  
 Taha Bin  
 007509



Eckert & Ziegler

Analytics

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Atlanta, Georgia 30318  
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CERTIFICATE OF CALIBRATION  
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC  
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%  
5.20453 grams 1M HNO<sub>3</sub> solution.

Source Prepared By: W. Mao  
W. Mao, Radiochemist

QA Approved: D. M. Montgomery  
D. M. Montgomery, QA Manager

Date: 12-11-08

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12/15/08

22-S-05

# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

## Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/ml	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/30/2008	12/30/2009
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/ml	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/09/2009	12/30/2009
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

## Verification for Uranium-232 Standard 1283-H

<b>Analyst: A. Drochta</b>	<b>Serial #</b>	<b>Value</b>	<b>Uncertainty</b>	
<b>Date: 12/10/09</b>	1283-H N1	2.020	pCi/L	0.238
	1283-H N2	2.000	pCi/L	0.234
	1283-H N3	2.060	pCi/L	0.242
<b>Mean Value (Counting) =</b>	2.027	pCi/L	<b>99.66904</b>	<b>Pass</b>
<b>Stdev =</b>	0.030550505	pCi/L	<b>Rule 3 (Pass/Fail)</b>	
<b>Target =</b>	2.033	pCi/L		
<b>Lower Limit =</b>	1.965565657	pCi/L		
<b>Upper Limit =</b>	2.087767676	pCi/L		
<b>Rule 1 Pass/Fail</b>	<b>Pass</b>			
<b>Two sigma =</b>	0.061101009			
<b>10 % of Mean =</b>	0.202666667			
<b>Rule 2 (Pass/Fail)</b>	<b>Pass</b>			

**Rule 1 =** The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

**Rule 2 =** The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

**Rule 3 =** The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

*A. Drochta*  
12/14/09

1374



# National Institute of Standards & Technology Certificate

## Standard Reference Material 4334H Plutonium-242 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive plutonium-242 nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

**Radiological Hazard:** The SRM ampoule contains plutonium-242 with a total activity of approximately 150 Bq. Plutonium-242 decays by alpha-particle emission. None of the alpha particles escape from the SRM ampoule. During the decay process, X-rays and gamma rays with energies from 10 keV to 160 keV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. The SRM should be used only by persons qualified to handle radioactive material.

**Chemical Hazard:** The SRM ampoule contains nitric acid ( $\text{HNO}_3$ ) with a concentration of 3 moles per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

**Storage and Handling:** The SRM should be stored and used at a temperature between 5 °C and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least January 2015. The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

**Preparation:** This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, M.P. Unterwieser, Acting Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group. The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program.

RECEIVED  
12/21/04

Lisa R. Karam, Acting Chief  
Ionizing Radiation Division

Gaithersburg, Maryland 20899  
January 2005

Robert L. Watters, Jr., Chief  
Measurement Services Division

### **Recommended Procedure for Opening the SRM Ampoule**

- 1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.
- 2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.
- 3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.
- 4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.
- 5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.
- 6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.
- 7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.
- 8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.
- 9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]\*.

# PROPERTIES OF SRM 4334H

## Certified values

Radionuclide	Plutonium-242
Reference time	1200 EST, 07 June 1994 [b]*
Massic activity of the solution [c]	26.31 Bq·g <sup>-1</sup>
Relative expanded uncertainty (k=2)	0.72% [d] [e]
Solution density	(1.105 ± 0.002) g·mL <sup>-1</sup> at 20 °C [f]

## Uncertified values

Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter	(16.5 ± 0.5) mm	
	Wall thickness	(0.60 ± 0.04) mm	
	Barium content	Less than 2.5%	
	Lead-oxide content	Less than 0.02%	
	Other heavy elements	Trace quantities	
Solution mass	Approximately 5.5 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L <sup>-1</sup> )	Mass Fraction (g·g <sup>-1</sup> )
	H <sub>2</sub> O	50	0.81
	HNO <sub>3</sub>	3.2	0.19
	<sup>242</sup> Pu <sup>+6</sup>	8 × 10 <sup>-7</sup>	2 × 10 <sup>-7</sup>
Radiological Properties:			
Alpha-particle-emitting impurities	None detected [g] [h]. See table on page 5.		
Beta-particle-emitting impurities	Plutonium-241: (0.092 ± 0.018) Bq·g <sup>-1</sup> [f] [h]		
Photon-emitting impurities	None detected [i]		
Half lives used	Plutonium-242: (373 500 ± 1100) a [j] [5] Plutonium-241: (14.35 ± 0.10) a [j] [5] Americium-241: (432.2 ± 0.7) a [j] [5]		
Calibration method and measuring instrument(s)	Three 4π 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><math>\times 2</math></u>
Relative Expanded Uncertainty of the Output Quantity, $U(y)$ , (%)				0.72

RELATIVE ACTIVITIES OF RADIONUCLIDIC IMPURITIES AT THE REFERENCE TIME [b]

Radionuclide	Half Life (years) [j] [5]	Relative Activity As Determined By	
		LLNL	NIST
Plutonium-242	373 500 ± 1100	1.000 000	1.000 000
Plutonium-241	14.35 ± 0.10	- -	0.0035 ± 0.0004 [t]
Plutonium-240	6 564 ± 11	<sup>239</sup> Pu + <sup>240</sup> Pu <0.000 001 [u]	<sup>239</sup> Pu + <sup>240</sup> Pu 0.000 020 ± 0.000 021 [v]
Plutonium-239	24 110 ± 30		
Plutonium-238	87.7 ± 0.1	<sup>238</sup> Pu + <sup>241</sup> Am <0.000 016 [u]	0.000 009 ± 0.000 016 [v]
Americium-241	432.2 ± 0.7		0.000 000 assumed [t]

NOTES

- [a] The Sievert is the SI unit for dose equivalent. See reference [1]. One  $\mu\text{Sv}$  is equal to 0.1 mrem.  
Distance from Ampoule (cm): 1 30 100  
Approximate Dose Rate ( $\mu\text{Sv/h}$ ): <0.1 - -
- [b] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994.
- [c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].
- [d] The reported value,  $y$ , of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as  $y = f(x_1, x_2, x_3, \dots, x_n)$ , where  $f$  is a mathematical function derived from the assumed model of the measurement process. The value,  $x_i$ , used for each input quantity  $i$  has a **standard uncertainty**,  $u(x_i)$ , that generates a corresponding uncertainty in  $y$ ,  $u_i(y) \equiv |\partial y / \partial x_i| \cdot u(x_i)$ , 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:  
 $0.003 \text{ s}^{-1}\text{g}^{-1}$  for energies less than 3.1 MeV,  
 $0.03 \text{ s}^{-1}\text{g}^{-1}$  for energies between 3.1 and 4.4 MeV, and  
 $0.003 \text{ s}^{-1}\text{g}^{-1}$  for energies greater than 5.0 MeV.
- [h] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994. Americium-241, the daughter of plutonium-241, was removed but has been growing in since that time.
- [i] Estimated limits of detection for photon-emitting impurities, expressed as massic photon emission rates (numbers of photons per second per gram), are:  
 $5 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 19 and 39 keV,  
 $7 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 49 and 92 keV,  
 $2 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 106 and 507 keV,  
 $1 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 515 and 1456 keV, and  
 $5 \times 10^{-6} \text{ s}^{-1}\text{g}^{-1}$  for energies between 1465 and 2750 keV,  
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of plutonium-242, plutonium-241, or americium-241.
- [j] The stated uncertainty is the standard uncertainty.
- [k] Relative standard uncertainty of the input quantity  $x_i$ .
- [m] The relative change in the output quantity  $y$  divided by the relative change in the input quantity  $x_i$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 1.0$ , then a 1% change in  $x_i$  results in a 1% change in  $y$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 0.05$ , then a 1% change in  $x_i$  results in a 0.05% change in  $y$ .
- [n] Relative component of combined standard uncertainty of output quantity  $y$ , rounded to two significant figures or less. The relative component of combined standard uncertainty of  $y$  is given by  $u_c(y)/y \approx |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$ . The numerical values of  $u(x_i)/x_i$ ,  $|\partial y / \partial x_i| \cdot (x_i / y)$ , and  $u_c(y)/y$ , all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

- [p] The relative standard uncertainty of  $\lambda \cdot t$  is determined by the relative standard uncertainty of  $\lambda$  (i.e., of the half life). The relative standard uncertainty of  $t$  is negligible.
- [q]  $|\partial y / \partial x_i| \cdot (x_i / y) = |\lambda \cdot t|$
- [r] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.
- [s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e.  $u(x_i) / x_i = 100\%$ .  $|\partial y / \partial x_i| \cdot (x_i / y) = \{(\text{response per Bq of impurity}) / (\text{response per Bq of Pu-242})\} \cdot \{(\text{Bq of impurity}) / (\text{Bq of Pu-242})\}$ . Thus  $u_i(y) / y$  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	Value	Uncertainty
	1374-A	1.610	0.2480
	1374-A	1.580	0.2510
	1374-A	1.530	0.2440
Mean Value (Counting) =	1.573	103.17	Pass
Stdev =	0.040414519		Rule 3 (Pass/Fail)
Target =	1.52		
Lower Limit =	1.492504296		
Upper Limit =	1.654162371		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.080829038		
10 % of Mean =	0.157333333		
Rule 2 (Pass/Fail)	Pass		

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

The analyst prepared three standard verification sources for standard 1374-A using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu239 standard 0338-BB and 50 micrograms of neodymium carrier in a disposable centrifuge tube containing 4 mL of 2 M HCl and 6 mL of DI water. Four drops of 25% Hydrazine dihydrochloride were added to each centrifuge tube and swirled. Two mL of 49% HF was added to precipitate neodymium (and plutonium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Pu-242 were calculated by comparison to Pu-239 certified values.

*Not called*  
*12/9/09*  
*12/9/09*

# RUNLOGS

# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 940237**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244148001	SAMPLE	MXE1	1024	16-JAN-10 11:22	DONE		
244148002	SAMPLE	MXE1	1025	16-JAN-10 11:29	DONE		
244148003	SAMPLE	MXE1	1026	16-JAN-10 11:29	DONE		
244148004	SAMPLE	MXE1	1027	16-JAN-10 11:29	DONE		
244148005	SAMPLE	MXE1	1028	16-JAN-10 11:29	DONE		
244148006	SAMPLE	MXE1	1029	16-JAN-10 11:29	DONE		
244148007	SAMPLE	MXE1	1030	16-JAN-10 11:29	DONE		
244148008	SAMPLE	MXE1	1031	16-JAN-10 11:29	DONE		
244148009	SAMPLE	MXE1	1033	16-JAN-10 11:29	DONE		
244148010	SAMPLE	MXE1	1035	16-JAN-10 11:29	DONE		
244148011	SAMPLE	MXE1	1036	16-JAN-10 11:29	DUSE		
244148012	SAMPLE	MXE1	1037	16-JAN-10 11:29	DONE		
244148013	SAMPLE	MXE1	1038	16-JAN-10 11:29	DONE		
244148014	SAMPLE	MXE1	1039	16-JAN-10 11:29	DONE		
244148015	SAMPLE	MXE1	1040	16-JAN-10 11:29	DONE		
244148016	SAMPLE	MXE1	1041	16-JAN-10 11:29	DONE		
244148017	SAMPLE	MXE1	1042	16-JAN-10 11:29	DONE		
244148018	SAMPLE	MXE1	1043	16-JAN-10 11:29	DONE		
1202012062	MB	MXE1	1044	16-JAN-10 11:29	DONE		
1202012063	DUP	MXE1	1045	16-JAN-10 11:29	DONE		
1202012064	LCS	MXE1	1046	16-JAN-10 11:29	DONE		



# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 940239**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244148001	SAMPLE	MXE1	1043	14-JAN-10 17:50	DONE		
244148002	SAMPLE	MXE1	1044	14-JAN-10 17:50	DONE		
244148003	SAMPLE	MXE1	1045	14-JAN-10 17:50	DONE		
244148004	SAMPLE	MXE1	1046	14-JAN-10 17:50	DONE		
244148005	SAMPLE	MXE1	1047	14-JAN-10 17:50	DONE		
244148006	SAMPLE	MXE1	1048	14-JAN-10 17:50	DONE		
244148007	SAMPLE	MXE1	1065	14-JAN-10 17:50	DONE		
244148008	SAMPLE	MXE1	1066	14-JAN-10 17:50	DONE		
244148009	SAMPLE	MXE1	1067	14-JAN-10 17:50	DONE		
244148010	SAMPLE	MXE1	1068	14-JAN-10 17:50	DONE		
244148011	SAMPLE	MXE1	1069	14-JAN-10 17:50	DONE		
244148012	SAMPLE	MXE1	1070	14-JAN-10 17:50	DUSE		
244148013	SAMPLE	MXE1	1071	14-JAN-10 17:50	DONE		
244148014	SAMPLE	MXE1	1072	14-JAN-10 17:50	DONE		
244148015	SAMPLE	MXE1	1073	14-JAN-10 17:50	DONE		
244148016	SAMPLE	MXE1	1074	14-JAN-10 17:50	DONE		
244148017	SAMPLE	MXE1	1075	14-JAN-10 17:50	DONE		
244148018	SAMPLE	MXE1	1076	14-JAN-10 17:50	DONE		
1202012073	MB	MXE1	1077	14-JAN-10 17:50	DONE		
1202012074	DUP	MXE1	1078	14-JAN-10 17:50	DONE		
1202012075	LCS	MXE1	1079	14-JAN-10 17:50	DONE		
244148012	SAMPLE	MXE1	1211	16-JAN-10 11:07	DONE		

# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 940245**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202012086	LCS	MXE1	1256	20-JAN-10 08:24	DONE		
244148001	SAMPLE	MXE1	1131	21-JAN-10 20:07	DUSE		
244148002	SAMPLE	MXE1	1132	21-JAN-10 20:07	DONE		
244148003	SAMPLE	MXE1	1133	21-JAN-10 20:07	DONE		
244148004	SAMPLE	MXE1	1134	21-JAN-10 20:07	DONE		
244148005	SAMPLE	MXE1	1139	21-JAN-10 20:07	DONE		
244148006	SAMPLE	MXE1	1140	21-JAN-10 20:07	DONE		
244148007	SAMPLE	MXE1	1141	21-JAN-10 20:07	DONE		
244148008	SAMPLE	MXE1	1142	21-JAN-10 20:07	DONE		
244148009	SAMPLE	MXE1	1147	21-JAN-10 20:07	DONE		
244148010	SAMPLE	MXE1	1148	21-JAN-10 20:07	DONE		
244148011	SAMPLE	MXE1	1149	21-JAN-10 20:07	DONE		
244148012	SAMPLE	MXE1	1150	21-JAN-10 20:07	DONE		
244148013	SAMPLE	MXE1	1153	21-JAN-10 20:07	DONE		
244148014	SAMPLE	MXE1	1154	21-JAN-10 20:07	DONE		
244148015	SAMPLE	MXE1	1155	21-JAN-10 20:07	DONE		
244148016	SAMPLE	MXE1	1156	21-JAN-10 20:07	DONE		
244148017	SAMPLE	MXE1	1157	21-JAN-10 20:07	DONE		
244148018	SAMPLE	MXE1	1158	21-JAN-10 20:07	DONE		
1202012084	MB	MXE1	1159	21-JAN-10 20:07	DONE		
1202012085	DUP	MXE1	1160	21-JAN-10 20:07	DONE		
244148001	SAMPLE	MXE1	1137	22-JAN-10 20:46	DUSE		

# Instrument Run Log

**Instrument Type: GAMMA SPECTROMETER**

**Batch ID: 940268**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244148001	SAMPLE	MXR1	GAM02	20-JAN-10 15:48	DONE	CAN	29-OCT-09 00:00
244148002	SAMPLE	MXR1	GAM06	20-JAN-10 15:49	DONE	CAN	04-FEB-09 00:00
244148003	SAMPLE	MXR1	GAM07	20-JAN-10 15:49	DONE	CAN	20-JUL-09 00:00
244148004	SAMPLE	MXR1	GAM10	20-JAN-10 15:50	DONE	CAN	16-MAR-09 00:00
244148005	SAMPLE	MXR1	GAM12	20-JAN-10 15:50	DONE	CAN	10-FEB-09 00:00
244148006	SAMPLE	MXR1	GAM16	20-JAN-10 15:51	DONE	CAN	16-NOV-09 00:00
244148007	SAMPLE	MXR1	GAM22	20-JAN-10 15:51	DONE	CAN	02-DEC-09 00:00
244148008	SAMPLE	MXR1	GAM23	20-JAN-10 15:51	DONE	CAN	02-JUN-09 00:00
244148009	SAMPLE	MXR1	GAM01	20-JAN-10 15:56	DONE	CAN	30-JAN-09 00:00
244148010	SAMPLE	MXR1	GAM11	20-JAN-10 15:56	DONE	CAN	18-NOV-09 00:00
244148011	SAMPLE	MXR1	GAM13	20-JAN-10 15:57	DONE	CAN	02-FEB-09 00:00
244148012	SAMPLE	MXR1	GAM15	20-JAN-10 15:57	DONE	CAN	16-FEB-09 00:00
244148013	SAMPLE	MXR1	GAM17	20-JAN-10 15:58	DONE	CAN	06-JAN-10 00:00
244148014	SAMPLE	MXR1	GAM20	20-JAN-10 15:58	DONE	CAN	26-AUG-09 00:00
244148015	SAMPLE	MXR1	GAM25	20-JAN-10 15:59	DONE	CAN	07-OCT-09 00:00
244148016	SAMPLE	MXR1	GAM04	20-JAN-10 16:27	DONE	CAN	05-MAY-09 00:00
244148017	SAMPLE	MXR1	GAM18	20-JAN-10 18:02	DONE	CAN	23-APR-09 00:00
244148018	SAMPLE	MXR1	GAM22	20-JAN-10 18:02	DONE	CAN	02-DEC-09 00:00
1202012156	MB	MXR1	GAM23	20-JAN-10 18:03	DONE	CAN	02-JUN-09 00:00
1202012157	DUP	MXR1	GAM16	20-JAN-10 18:04	DONE	CAN	16-NOV-09 00:00
1202012158	LCS	MXR1	GAM01	20-JAN-10 18:05	DONE	CAN	30-JAN-09 00:00

## Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 943139**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244414006	SAMPLE	MXA1	1026	22-JAN-10 12:03	DONE		
1202019361	MB	MXA1	1027	22-JAN-10 12:03	DONE		
1202019362	DUP	MXA1	1028	22-JAN-10 12:03	DONE		
1202019363	LCS	MXA1	1029	22-JAN-10 12:03	DONE		
244148011	SAMPLE	MXA1	1081	22-JAN-10 12:03	DONE		
244222005	SAMPLE	MXA1	1082	22-JAN-10 12:03	DONE		
244413001	SAMPLE	MXA1	1087	22-JAN-10 12:03	DONE		
244413002	SAMPLE	MXA1	1088	22-JAN-10 12:03	DONE		
244413003	SAMPLE	MXA1	1089	22-JAN-10 12:04	DONE		
244413004	SAMPLE	MXA1	1090	22-JAN-10 12:04	DONE		
244413005	SAMPLE	MXA1	1091	22-JAN-10 12:04	DONE		
244414001	SAMPLE	MXA1	1092	22-JAN-10 12:04	DONE		
244414002	SAMPLE	MXA1	1093	22-JAN-10 12:04	DONE		
244414003	SAMPLE	MXA1	1094	22-JAN-10 12:04	DONE		
244414004	SAMPLE	MXA1	1095	22-JAN-10 12:04	DONE		
244414005	SAMPLE	MXA1	1097	22-JAN-10 12:04	DONE		

# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 944933**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244148001	SAMPLE	MXE1	1161	27-JAN-10 12:23	DONE		
1202023629	DUP	MXE1	1162	27-JAN-10 12:23	DONE		
1202023630	LCS	MXE1	1163	27-JAN-10 12:23	DONE		
1202023628	MB	MXE1	1172	27-JAN-10 12:24	DONE		