

Page 1 of 4

REQUEST NUMBER: 10-1133

**ATTN: Valerie Davis**

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

These Samples are on:  
 LANL Request Number:10-1133  
 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, Below Background

LANL ER SMO CONTACTY

**Signature:**

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	

Thursday, January 07, 2010

REQUEST NUMBER: 10-1133

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1						
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
		1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	

HASL-300-AM-241

Thursday, January 07, 2010

REQUEST NUMBER: 10-1133

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:AM-241		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
		1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
HASL-300:ISOPU		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
HASL-300:ISOU		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
		1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	

Thursday, January 07, 2010

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REQUEST NUMBER: 10-1133

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
1		1	RE12-10-7638	R	1/5/2010	
1		1	RE12-10-7639	R	1/5/2010	
1		1	RE12-10-7640	R	1/5/2010	
1		1	RE12-10-7641	R	1/5/2010	
1		1	RE12-10-7642	R	1/5/2010	
1		1	RE12-10-7643	R	1/5/2010	
1		1	RE12-10-7644	R	1/5/2010	
1		1	RE12-10-7645	R	1/5/2010	
1		1	RE12-10-7646	R	1/5/2010	
1		1	RE12-10-7647	R	1/5/2010	
1		1	RE12-10-7648	R	1/5/2010	
1		1	RE12-10-7649	R	1/5/2010	
1		1	RE12-10-7650	R	1/5/2010	
1		1	RE12-10-7657	R	1/5/2010	
1		1	RE12-10-7658	R	1/5/2010	

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Thursday, January 07, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1133

REQUEST NUMBER: 10-1133

**LOS ALAMOS****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
RE12-10-7634	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7648	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7638	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7639	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7633	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7647	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7644	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7637	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7635	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7642	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7649	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7650	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7641	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7643	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7640	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7645	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7646	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7636	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7657	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7658	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Relinquished By:

Date

Time

Received By:

Date

Time

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: RE12-10-7633

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED(HH:MM)		9:42		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610647	OK		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		✓
BOTTOM DEPTH:	0	0.7		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
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	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: Brown sandy silt roots and rock

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-11, sw of firing pt

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$  dpm $\beta \leq 2060$  dpmPID ambient  
reading  
HE negative0.0 ppm  
0.0 ppm

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>M. L. McFarland</i> (Signature) <i>M. L. McFarland</i>	Date/Time 1/5/10 1540
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: RE12-10-7634

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		9:51		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610647	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:			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	AM241+GS+ISO PU+ISOU	1 LITER POLY 1 LITER	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 Liter	Ice	Y	
1		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 soil

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-11, Sw of firing Point

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 27$  dpm  
 $\beta \leq 2280$  dpm
PID  $\frac{\text{ambient}}{\text{reading}}$  $\frac{0.6}{0.0}$  ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>TLMcFarland</i> (Signature) <i>TLMcFarland</i>	Date/Time 1/5/10 1540
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: RE12-10-7635

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1023		SUB-MEDIA:	TUEF1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610648	OK		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	0.7		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 1m 01/04/2010	None	Yes	
1		Met+U+CLO4+C N	1 GAL POLY 1L	Ice	Yes	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: Brown sandy silt few roots  
and some rocks

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-35  
South of firing point

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 22 dpm      PID  $\frac{\text{ambient}}{\text{reading}}$  0.0 ppm  
 BY ≤ 2340 dpm      HE Neg.

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) ThmcFarland

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 1/5/10 1540
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: RE12-10-7636

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1031		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610648			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		
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 2h = 01/04/2010	None	Yes	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	✓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: Brown sandy silt, few Tuff peaces

SAMPLE COMMENTS:

2.8 hit tuff

LOCATION DESC:

PS 01/05/10  
2.8 hit Tuff 1q-35 South of firing Point

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 55$  dpmPID ambient  
reading 8.8 ppmBY  $\leq 2390$  dpm

COLLECTED BY (PRINT)

R. Saunders

REVIEWED BY (PRINT)

TL McFarland

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) M. L. M. M. (Signature) M. L. M. M.	Date/Time 1/5/10 1540
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: RE12-10-7637

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>	<u>AS PLANNED</u>	<u>AS COLLECTED</u>
DATE COLLECTED(MM/DD/YYYY):		01/05/2010	MEDIA:	OBT3
TIME COLLECTED (HH:MM)		1111	SUB-MEDIA:	TUFF 1
PRS ID:	12-001(b)	OK	SAMPLE TECH CODE:	HA
LOCATION ID:	12-610649	↓	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
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION:	NA	BOREHOLE DIRECTION:
			NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 73m 01/04/2010	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1L	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: brown sandy silt and pinkish grey weathered tuff, few roots

FD: RE12-10-7658

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-33

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 33 dpm      PID  $\frac{\text{reading}}{\text{ambient}}$   $\frac{0.0}{0.0}$  ppm

β ≤ 2330 dpm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

TLMcFarland

<b>RELINQUISHED BY</b> (Printed Name) R. Saunders (Signature) <i>R. Saunders</i>	Date/Time 01/05/2010 1540	<b>RECEIVED BY</b> (Printed Name) <i>Malise North</i> (Signature) <i>Malise North</i>	Date/Time 1/5/10 1540
<b>RELINQUISHED BY</b> (Printed Name) (Signature)	Date/Time	<b>RECEIVED BY</b> (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: RE12-10-7638

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		NA
TIME COLLECTED (HH:MM)		1050		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	12-610649	↓		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 72m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	✓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC:

Dark brown sandy loam, some roots

SAMPLE COMMENTS: NA

LOCATION DESC:

1a-33

FIELD SCREENING/MEASUREMENT RESULTS:

α ± 22 dpm  
 Bx ± 2450 dpm

PID ambient reading 0.0 ppm  
 HE neg

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) Phillip Martin (Signature) Phillip Martin	Date/Time 1/5/10 1520
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: RE12-10-7639

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1124		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610650	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	0.7		SCREEN/PORT DESC:		NA	↓
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			↓
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	NA		BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 12m 01/04/2010	None	Yes	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: brown loamy sand, some silt, rocks and roots, some wood

SAMPLE COMMENTS:

NA

LOCATION DESC:

1a-34

FIELD SCREENING/MEASUREMENT RESULTS:

L ≤ 27 dpm

PID

ambient  
reading

0.0 ppm

HE Neg.

BY ≤ 2320 dpm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) M. L. McFarland (Signature) M. L. McFarland	Date/Time 1/5/10 1540
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: RE12-10-7640

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		OK
TIME COLLECTED(HH:MM)		1133		SUB-MEDIA:	TUFF 1		OK
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610650			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	OK		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 732 01/04/2010	None	Yes	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	yes	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	yes	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	yes	

SAMPLE DESC: pinkish grey tuff, brown sandy silt

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-34

FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 16$  dpm / PID ambient  
 $\text{BY} \leq 2520$  dpm / reading  $\frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMcFarlane

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) M. L. M. M. (Signature) M. L. M. M.	Date/Time 1/5/10 1540
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: RE12-10-7641

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED(HH:MM)		1200		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610651	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	0.9		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 725 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: Brown sandy silt

FR: RE12-10-7659

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-46 northeast of firing Point

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 38$  dpm

PID

ambient  
reading

0.0 ppm

 $\text{BY} \leq 2110$  dpm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

Larry A. Lopez

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) M. L. M. M. (Signature) M. L. M. M.	Date/Time 1/5/10 1540
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: RE12-10-7642

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1307		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610651	↓		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	AM241+GS+ISO PU+ISOU	1 LITER POLY 13M 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: Light brown silty sand some rocks

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-46 northeast of firing Pit

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 55$  dpmPID ambient reading 0.0 Ppm  
0.0 $\text{BY} \leq 2180$  dpm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>Mike Muth</i> (Signature) <i>Mike Muth</i>	Date/Time 1/5/10 1540
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: RE12-10-7643

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3	ALLH	
TIME COLLECTED (HH:MM)		1310		SUB-MEDIA:	TUFF 1	NA	
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA	OK	
LOCATION ID:	12-610652	↓		FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA	NA		
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA	NO		
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 42m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: brown sandy silt

SAMPLE COMMENTS: NA

LOCATION DESC: la-47

## FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 44 dpm PID <sup>ambient</sup> reading 000 ppm  
 BY ≤ 2170 dpm HE Neg.

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TL McFarland

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>Michelle Montez</i> (Signature) <i>Michelle Montez</i>	Date/Time 1/5/10 1540
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: RE12-10-7644

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA: QBT3		ALLH	
TIME COLLECTED (HH:MM)		1314		SUB-MEDIA: TUFF 1		NA	
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE: HA		OK	
LOCATION ID:	12-610652	↓		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	AM241+GS+ISO PU+ISOU	1 LITER POLY 7am 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: brown sandy silt, some weathered tuff

SAMPLE COMMENTS:

2.8 hit tuff

LOCATION DESC: 1a-47

FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 11$  dpm  
 $\text{BY} \leq 2350$  dpm

PID ambient  
 reading 0.0  
 4.1 ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) TLMcFarland	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) TLMcFarland (Signature) TLMcFarland	Date/Time 1/5/10 1540
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: RE12-10-7645

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1324		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610653	↓		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	NO		
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 13m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 Liter	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: brown silty sand, few rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-45

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 38$  dpmPID ambient  
reading 0.0 ppmBY  $\leq 1969$  dpm

HE NEG

COLLECTED BY (PRINT)

REVIEWED BY (PRINT) TL McFarland

R Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TL McFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>Michelle Martin</i> (Signature) <i>Michelle Martin</i>	Date/Time 1/5/10 1540
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: RE12-10-7646

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1350		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	12-610653	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	3.6		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	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	AM241+GS+ISO PU+ISOU	1 LITER POLY 72m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	yes	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: Brown sandy silt, some gray tuff

FD: RE12-10-7657

SAMPLE COMMENTS:

Hit tuff at 3.2

LOCATION DESC: 1a-45, northeast of firing site

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$  dpm $\beta \leq 2340$  dpmPID ambient reading  $\frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>Michael Montoya</i> (Signature) <i>Michael Montoya</i>	Date/Time 1/5/10 1540
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: RE12-10-7647

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLI+
TIME COLLECTED (HH:MM)		1400		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610654	↓		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	AM241+GS+ISO PU+ISOU	1 LITER POLY 23m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: brown clayey silt, moist, few roots, few rocks

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-38, east of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 33$  dpm $\text{Bx} \leq 2270$  dpmPID reading  
ambient

8.8 ppm

HE NEG.

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TL McFarland

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>TL McFarland</i> (Signature) <i>TL McFarland</i>	Date/Time 1/5/10 1540
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: RE12-10-7648

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		OK
TIME COLLECTED (HH:MM)		1405		SUB-MEDIA:	TUFF 1		
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		
LOCATION ID:	12-610654	↓		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	OK		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	AM241+GS+ISO PU+ISOU	1 LITER POLY 72m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: pinkish grey, dry, some wood, few rocks

SAMPLE COMMENTS: Hit tuff at 1.0  
RS HA  
01/05/10

LOCATION DESC: 1a-38, east of firing site

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 22$  dpm  
 $\beta \leq 240$  dpm  
 PID  $\frac{\text{reading}}{\text{ambient}} = \frac{0.0}{0.0}$  ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) [Signature]	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 1/5/10 1541
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: RE12-10-7649

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1423		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610655	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	0.7		SCREEN/PORT DESC:	NA		↓
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA	NO		↓
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	NA		BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 12m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: Dark brown moist silty clay <sup>RS 01/05/10</sup> recontaminated numerous roots, few rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-44 north of firing Point

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 55$  dpm

PID

 $\text{BY} \leq 2060$  dpmambient  
reading

8.8 ppm

HE NEG

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy M. [Signature]	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 4/5/10 1540
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: RE12-10-7650

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1429		SUB-MEDIA:		TUFF 1	
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	12-610655	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	✓		FIELD PREP:		NA	
TOP DEPTH:	0	1.5		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	2.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA		NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA		NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 72m 01/04/2010	None	Yes	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Yes	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Yes	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: Brown silty sand slightly moist

FR RE12-10-7660  
 SAMPLE COMMENTS: NA

LOCATION DESC: 1a-44 north of firing point

## FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 22$  dpm <sup>72m 11/5/10</sup>  
 $\beta \leq 2610$  dpm <sup>1969</sup>  
<sup>72m 11/5/10</sup>  
 PID ambient  $0.0$  ppm  
 reading  $0.0$

COLLECTED BY (PRINT) R Saunders

REVIEWED BY (PRINT) TLMcFarland

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>Elise Martin</i> (Signature) <i>Elise Martin</i>	Date/Time 1/5/10 1540
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: RE12-10-7657

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		13:24	13:50	SUB-MEDIA:	TUFF1		NA
PRS ID:	12-001(b)		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	UNK	RS 01/05/10	12-10-7657	FIELD QC TYPE:	ED		↓
LOCATION TYPE:	GENERIC		OK	FIELD PREP:	NA		
TOP DEPTH:	0		2.0	SAMPLE USAGE:	QC		
BOTTOM DEPTH:	0		3.6	SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R		S	EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA		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	734 1/05/2010 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 1L	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC Sample of RE12-10-7646

Brownsandy silt, some gray stuff

SAMPLE COMMENTS:

Ht tuffat 3.2

LOCATION DESC: 1a-45, northeast of firing site

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$  dpmPID ambient  
reading $\frac{0.0}{0.0}$  ppmBX  $\leq 2340$  dpm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>Tracy M</i>	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) <i>M. L. McIntyre</i> (Signature) <i>M. L. McIntyre</i>	Date/Time 1/5/10 1540
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: RE12-10-7658

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	QBT3		ALLH
TIME COLLECTED (HH:MM)		1111		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	UNK	12-610649		FIELD QC TYPE:	FD		
LOCATION TYPE:	GENERIC	OK		FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	QC		✓
BOTTOM DEPTH:	0	3.0		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	73m 1/5/10 8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Yes	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Yes	
1		Met+U+CLO4+C N	1 GAL POLY	Ice	Yes	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Yes	

SAMPLE DESC: QC Sample of RE12-10-7637

brown sandy silt and pinkish grey weathered tuff, few roots

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-33

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 33 dpm

PID

ambient

0.0 ppm

BY ≤ 2330 dpm

reading

COLLECTED BY (PRINT)

R. Saunders

REVIEWED BY (PRINT)

TL McFarland

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) M. L. McFarland (Signature) [Signature]	Date/Time 1/5/20 1540
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: RE12-10-7659

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	NA		OK
TIME COLLECTED(HH:MM)		1207		SUB-MEDIA:	OTHER		↓
PRS ID:	12-001(b)			SAMPLE TECH CODE:	DC		OK
LOCATION ID:	UNK	12-610451	RS 01-05-10 12-610449	FIELD QC TYPE:	FR		↓
LOCATION TYPE:	GENERIC			FIELD PREP:	UF		↓
TOP DEPTH:	0			SAMPLE USAGE:	QC		↓
BOTTOM DEPTH:	0			SCREEN/PORT DESC:		NA	
FIELD MATRIX:	W			EXCAVATED: YES/NO	NA		
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA	NA			WATER FLOWING: YES/NO/NA	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 ~~RE12-10-7637~~ RE12-10-7641  
 RS 01-05-10

SAMPLE COMMENTS: Rinsete

LOCATION DESC: ~~1a-33~~ 1a-46  
 RS 01-05-10

## FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ ~~12M~~ 1105/10 dpm NA  
 BY ≤ ~~1105/10~~ dpm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

R Saunders

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) R. Saunders	01/05/2010	(Printed Name) <i>M. L. McIntyre</i>	1/5/10
(Signature) <i>R. Saunders</i>	1540	(Signature) <i>M. L. McIntyre</i>	1540
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: RE12-10-7660

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		01/05/2010		MEDIA:	NA		ok
TIME COLLECTED (HH:MM)		1444		SUB-MEDIA:	OTHER		
PRS ID:	12-001(b)	ok		SAMPLE TECH CODE:	DC		
LOCATION ID:	UNK	12-610655		FIELD QC TYPE:	ER		
LOCATION TYPE:	GENERIC	ok		FIELD PREP:	UF		
TOP DEPTH:	0			SAMPLE USAGE:	QC		
BOTTOM DEPTH:	0			SCREEN/PORT DESC:			
FIELD MATRIX:	W	W		EXCAVATED: YES <input checked="" type="radio"/> NO <input type="radio"/> NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES <input checked="" type="radio"/> NO <input type="radio"/> NA			
BOREHOLE: YES <input checked="" type="radio"/> NO <input type="radio"/> 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 RE-12-10-7650

FR RE12-10-7650  
SAMPLE COMMENTS: Rinsate

LOCATION DESC: 1a-44 north of firing point

FIELD SCREENING/MEASUREMENT RESULTS:

NA

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT) R Saunders

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Z...	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) M. L. M... (Signature) M. L. M...	Date/Time 1/5/10 1540
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: RE12-10-7661

WORK ORDER:

AS PLANNED	AS COLLECTED	AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):	01/05/2010	MEDIA:	NA
TIME COLLECTED (HH:MM)	1052	SUB-MEDIA:	OTHER
PRS ID: 12-001(b)	OK	SAMPLE TECH CODE:	DC
LOCATION ID: UNK	12-610648	FIELD QC TYPE:	FR
LOCATION TYPE: GENERIC	OK	FIELD PREP:	UF
TOP DEPTH: 0	↓	SAMPLE USAGE:	QC
BOTTOM DEPTH: 0	↓	SCREEN/PORT DESC:	NA
FIELD MATRIX: W	↓	EXCAVATED: YES/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	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 RE12-10-7636

SAMPLE COMMENTS: Rinsete

LOCATION DESC: 1a-35

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq$  NA dpmPID ambient NA ppm  
readingBX  $\leq$  NA dpm

COLLECTED BY (PRINT)

REVIEWED BY (PRINT)

TLMcFarland

RELINQUISHED BY (Printed Name) R. Saunders (Signature) R. Saunders	Date/Time 01/05/2010 1540	RECEIVED BY (Printed Name) M. J. M. M. (Signature) M. J. M. M.	Date/Time 1/5/10 1540
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):

RE12-10-7646  
7657  
7647  
7638  
7704  
7637  
7658  
7639  
7640  
7641  
7703  
7636  
7635

RE12-10-7698  
7647  
7648  
7645  
7644  
7642  
7643  
7633  
7634  
7649  
7650

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):

RE12-10-7660  
-7661  
7659

Reason: Rinsatc

.....  
Print Last Name McFarland

Signature

Tracy

Date 01/05/2010



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003

Request or PQ Number:

Client Sample ID: RE12-10-7673

ARS Sample ID:

ARS2-10-00003-001

Sample Collection Date: 01/05/10 09:42

Date Received:

01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date:

01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- %	MDC	TDU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	38.53	22.69	27.01	23.17		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	41.05	11.08	12.49	12.16		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	10.66	8.61	2.09	8.63		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	13.68	0.14	13.68		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.31	0.26	0.10	0.26		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.04	0.10	0.09	0.10		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.15	0.29	0.21	0.29		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	0.91	0.48	0.17	0.48		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-226	2.30	1.02	0.36	1.03		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.70	0.88	0.41	0.88		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	4.21	4.05	1.78	4.16		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.72	0.60	0.19	0.60		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.31

*Matthew J. Edm*  
Quality Assurance Review

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

LELAP Certificate # 30658

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133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: AR52-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7634

ARS Sample ID: AR52-10-00003-002

Sample Collection Date: 01/05/10 09:51

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- %	MDC	TPU	Qval	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	22.58	17.31	22.94	17.93		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	34.50	10.49	12.86	11.31		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.21	0.25	0.12	0.25		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	21.12	8.31	1.84	8.34		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	12.08	0.12	12.08		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.06	0.12	0.09	0.12		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.13	0.16	0.08	0.16		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.00	12.53	0.14	12.53		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.71	0.59	0.18	0.59		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-226	0.86	0.52	0.52	0.52		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.41	0.94	0.29	0.95		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	3.27	3.27	1.40	3.33		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.01	33.40	0.07	33.40		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 0.86

*Matthew A. Eden*  
Quality Assurance Review

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

LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7635

ARS Sample ID: ARS2-10-00003-003

Sample Collection Date: 01/05/10 10:23

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MC	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	18.71	15.22	19.32	15.39		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	34.19	11.07	13.71	11.84		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	18.59	7.46	1.68	7.49		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.00	11.01	0.11	11.01		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.13	0.11	0.08	0.11		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.08	0.12	0.07	0.12		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.00	58.19	0.13	58.19		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.44	0.51	0.14	0.51		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.49	0.70	0.29	0.71		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	0.66	0.70	0.42	0.70		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.47	2.71	1.44	4.73		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.05	0.17	0.09	0.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.39

*Matthew J. Eden*  
Quality Assurance Review

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

LELAP Certificate # 30658

NELAP Certificate # 287558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7636

ARS Sample ID: ARS2-10-00003-004

Sample Collection Date: 01/05/10 10:31

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 1 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	28.00	18.96	23.98	19.27		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	34.72	18.72	13.00	11.54		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	17.65	7.36	1.80	7.58		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	11.77	0.12	11.77		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.44	0.31	0.09	0.31		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.04	0.09	0.07	0.09		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.00	12.34	0.14	12.34		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.40	0.35	0.19	0.56		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.97	0.88	0.31	0.88		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	-0.07	104.98	0.24	104.95		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	0.99	2.71	1.29	4.74		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.05	0.18	0.10	0.18		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 0.98

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Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7637

ARS Sample ID: ARS2-10-00003-005

Sample Collection Date: 01/05/10 11:11

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Quat	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	137.40	38.20	27.61	41.74		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	115.27	16.42	12.49	21.65		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	12.62	6.54	1.82	6.55		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	11.42	0.12	11.42		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.34	0.26	0.09	0.26		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	15.59	0.08	15.59		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.13	0.21	0.14	0.21		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.75	0.62	0.20	0.62		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-226	5.44	1.35	0.32	1.35		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.24	1.01	0.35	1.01		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	6.10	3.45	1.27	3.72		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.40	0.46	0.15	0.46		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.00

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ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7638

ARS Sample ID: ARS2-10-00003-006

Sample Collection Date: 01/05/10 10:50

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	mmr	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	54.86	24.21	22.94	25.12		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	52.48	12.18	12.66	13.77		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	18.42	8.07	1.96	8.09		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	12.81	0.11	12.81		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.27	0.20	0.09	0.20		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.58	0.34	0.08	0.34		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
SU-152	0.00	13.32	0.15	13.32		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.63	0.57	0.15	0.58		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.10	0.60	0.78	0.60		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.09	1.04	0.40	1.04		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	5.44	3.52	1.51	4.02		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.32	0.26	0.09	0.26		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.20

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ARS Sample Delivery Group: ARS2-10-00003

Client Sample ID: RE12-10-7639

Sample Collection Date: 01/05/10 11:24

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00003-007

Date Received: 01/06/10 00:00

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MFC	TPH	Unit	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	79.08	28.14	19.32	29.75		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	94.86	13.43	13.71	19.02		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	20.65	8.46	1.94	8.49		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-40	0.00	12.70	0.13	12.70		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.10	0.13	0.09	0.13		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	16.62	0.08	16.62		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.76	0.58	0.15	0.58		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-213	1.78	0.61	0.17	0.61		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.50	1.16	0.34	1.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.64	0.82	0.20	0.82		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	5.01	4.21	1.74	4.36		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.26	0.35	0.15	0.35		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.41

*Matthew J. Edm*  
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ARS Sample Delivery Group: ARS2-10-00003

Request or PU Number:

Client Sample ID: RE12-10-7640

ARS Sample ID: ARS2-10-00003-008

Sample Collection Date: 01/05/10 11:33

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MR	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	64.73	26.18	23.98	27.33		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	62.57	13.09	12.00	15.17		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.16	0.22	0.13	0.22		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	23.98	9.26	2.02	9.29		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	13.21	0.13	13.21		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.00	43.36	0.10	43.36		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	17.29	0.08	17.29		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
BU-152	0.45	0.47	0.15	0.47		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.59	0.63	0.22	0.63		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.62	1.03	0.35	1.03		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	1.31	1.17	0.38	1.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.81	4.12	1.86	4.14		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.38	0.36	0.12	0.36		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 0.73

*M. J. Folan*  
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00003

Client Sample ID: RE12-10-7641

Sample Collection Date: 01/05/10 12:00

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00003-009

Date Received: 01/06/10 00:00

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	YPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analyst Technician	Tracer/Chem Recovery
GROSS ALPHA	167.13	41.73	27.61	46.48		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	104.87	16.12	12.49	20.61		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	16.66	7.13	1.70	7.15		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	11.11	0.11	11.11		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.18	0.17	0.08	0.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.01	0.03	0.07	0.03		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.00	58.72	0.13	58.72		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.85	0.55	0.15	0.55		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	2.48	1.01	0.30	1.02		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	2.00	1.56	0.61	1.56		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	8.87	3.75	1.22	4.27		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.04	0.15	0.09	0.15		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.26

*Matthew J. Eden*  
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7642

ARS Sample ID: ARS2-10-00003-010

Sample Collection Date: 01/05/10 13:07

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	YPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	98.68	31.22	22.94	33.48		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	74.69	14.03	12.66	16.78		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.07	0.14	0.12	0.14		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	19.19	8.03	1.88	8.05		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	12.78	0.19	12.78		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.24	0.22	0.09	0.22		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.01	0.04	0.08	0.04		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.37	0.36	0.14	0.36		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.06	0.61	0.17	0.61		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	-0.14	191.16	0.43	191.16		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	2.01	0.90	0.27	0.90		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	2.10	3.56	1.04	3.59		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	-0.01	48.99	0.10	48.99		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 0.99

*Matthew J. Edin*  
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ARS Sample Delivery Group: AR52-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7643

ARS Sample ID: AR52-10-00003-011

Sample Collection Date: 01/06/10 13:10

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 1σ	MDC	TPH	Quat	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	88.74	29.68	19.32	31.61		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	76.25	14.90	13.71	17.58		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	17.88	7.48	1.75	7.80		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	11.44	0.12	11.44		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.01	14.96	0.07	14.96		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.40	0.49	0.22	0.49		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.74	0.58	0.17	0.58		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.50	1.01	0.31	1.01		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	2.04	1.19	0.32	1.19		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	3.48	2.65	1.18	2.70		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.32	0.29	0.10	0.29		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.49

*M. A. Eden*  
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ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7644

ARS Sample ID: ARS2-10-00003-012

Sample Collection Date: 01/05/10 13:14

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	76.20	28.02	23.98	29.54		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	70.63	13.71	13.00	16.21		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.07	0.14	0.12	0.14		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	17.25	7.96	1.83	7.57		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	12.00	0.12	12.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.07	0.13	0.09	0.13		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	15.70	0.08	15.70		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.59	0.45	0.14	0.45		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.57	0.52	0.10	0.52		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.81	1.23	0.32	1.23		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	0.49	0.49	0.34	0.49		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	2.93	2.31	1.03	2.40		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.02	0.17	0.09	0.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 0.95

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ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7645

ARS Sample ID: ARS2-10-00003-013

Sample Collection Date: 01/05/10 13:24

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	Moist	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	125.10	36.61	27.01	39.69		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	81.11	14.50	12.49	17.56		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	-0.87	-23.92	4.05	-23.92		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	11.60	0.12	11.60		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.18	0.16	0.09	0.16		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	15.29	0.07	15.29		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.69	0.97	0.14	0.57		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
FB-212	1.87	0.55	0.10	0.56		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-226	1.33	0.95	0.31	0.94		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	-0.07	104.23	0.23	104.23		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	3.56	2.89	1.27	3.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.39	0.39	0.15	0.39		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 0.80

*Matthew A. Eden*  
Quality Assurance Review

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LELAP Certificate # 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003

Client Sample ID: RE12-10-7646

Sample Collection Date: 01/05/10 13:50

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00003-014

Date Received: 01/06/10 00:00

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	YAU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	107.91	32.50	22.94	35.09		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	67.06	13.67	12.66	15.94		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	25.11	9.28	2.09	9.30		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	0.17	0.14	0.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.12	0.13	0.10	0.13		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.04	0.10	0.09	0.10		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.00	72.32	0.16	72.32		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	2.54	0.73	0.18	0.74		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	2.94	1.22	0.36	1.23		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.41	0.86	0.21	0.86		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	3.07	3.47	1.01	3.54		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.09	0.20	0.10	0.20		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTE5: % Moisture: 1.01

*Matthew J. Eden*  
Quality Assurance Review

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LELAP Certificate # 30658

NELAP Certificate # E97558



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505-672-2770 FAX 505-672-9834

ARS Sample Delivery Group: ARS2-10-00003

Request or PO Number:

Client Sample ID: RE12-10-7647

ARS Sample ID: ARS2-10-00003-015

Sample Collection Date: 01/05/10 14:00

Date Received: 01/06/10 00:00

Sample Matrix: Soil/Solid

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MNC	TPH	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	186.36	38.84	19.32	43.30		pCi/g	EPA 908.0M	1/6/2010	ME	N/A
GROSS BETA	97.15	16.81	13.71	20.59		pCi/g	EPA 908.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	15.10	6.61	1.61	6.63		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.04	0.08	0.08	0.08		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.27	0.21	0.07	0.21		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.24	0.31	0.12	0.31		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-210	1.24	0.50	0.18	0.51		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	1.80	0.82	0.28	0.82		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	1.72	0.84	0.16	0.84		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	5.30	4.62	1.28	4.98		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.16	0.22	0.09	0.22		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.39

*Matthew A. Edm*  
Quality Assurance Review

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LELAP Certificate # 30658

NELAP Certificate # E87558





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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003  
 Client Sample ID: RE12-10-7648  
 Sample Collection Date: 01/05/10 14:05  
 Sample Matrix: Soil/Solid

Request or PO Number:  
 ARS Sample ID: ARS2-10-00003-016  
 Date Received: 01/06/10 00:00  
 Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TMD	Quant	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	204.79	43.83	23.98	50.49		pCi/g	EPA 900.0M	1/5/2010	ME	N/A
GROSS BETA	124.22	17.68	13.00	23.32		pCi/g	EPA 900.0M	1/5/2010	ME	N/A
NA-22	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
K-40	25.92	8.78	1.73	8.82		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
CO-60	0.14	0.20	0.11	0.20		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
CS-134	0.17	0.16	0.08	0.16		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
CS-137	0.03	0.09	0.07	0.09		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
EU-152	0.33	0.38	0.13	0.38		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
PB-212	1.20	0.45	0.11	0.45		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
RA-228	1.22	0.73	0.53	0.73		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
U-235	1.10	0.71	0.18	0.71		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
U-238	3.33	2.87	1.26	2.97		pCi/g	EPA 901.1M	1/5/2010	ME	N/A
AM-241	-0.01	31.35	0.07	31.35		pCi/g	EPA 901.1M	1/5/2010	ME	N/A

NOTES: % Moisture: 0.49

*Matthew A. Eder*  
 Quality Assurance Review

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LELAP Certificate # 30658

NECAP Certificate # 587558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: AR52-10-00003

Client Sample ID: RE12-10-7649

Sample Collection Date: 01/05/10 14:23

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: AR52-10-00003-017

Date Received: 01/06/10 00:00

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDG	TRU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	122.63	36.29	27.01	39.27		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	78.73	14.35	12.49	17.28		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.03	0.07	0.11	0.07		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	13.01	6.34	1.68	6.35		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	10.00	0.11	10.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.09	0.13	0.08	0.13		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	0.08	0.12	0.07	0.12		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.31	0.31	0.13	0.31		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	0.99	0.45	0.16	0.45		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	3.41	1.23	0.20	1.24		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	2.08	1.17	0.27	1.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	4.22	3.05	1.30	3.20		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.13	0.20	0.09	0.20		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 2.22

*Matthew A. Eden*  
Quality Assurance Review

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LELAP Certificate # 30658

NELAP Certificate # E87558



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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003

Client Sample ID: RE12-10-7650

Sample Collection Date: 01/05/10 14:29

Sample Matrix: Soil/Solid

Request or PO Number:


ARS Sample ID: ARS2-10-00003-018

Date Received: 01/06/10 00:00

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	HDC	TPM	Qval	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	75.63	27.75	22.94	29.28		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	82.08	12.38	12.56	13.93		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.09	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	17.00	6.45	1.38	6.47		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.00	9.08	0.00	9.08		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.00	0.00	0.07	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	28.12	0.06	28.12		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.70	0.49	0.11	0.49		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.65	0.49	0.13	0.49		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	2.11	0.79	0.24	0.80		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	2.15	0.92	0.31	0.92		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	1.00	2.34	1.21	2.35		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.17	0.21	0.09	0.21		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 1.32

  
Matthew J. Eden  
Quality Assurance Review

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LELAP Certificate # 30658

NELAP Certificate # ES7556



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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003

Client Sample ID: RE12-10-7557

Sample Collection Date: 01/05/10 13:50

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00003-019

Date Received: 01/06/10 00:00

Report Date: 01/06/10 21:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MFR	TOU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	88.74	29.68	19.32	31.61		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	51.50	13.34	13.71	14.76		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.03	0.08	0.11	0.08		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	21.04	8.13	1.77	8.13		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CO-60	0.09	0.12	0.12	0.12		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.27	0.22	0.09	0.22		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	15.17	0.07	15.17		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.31	0.32	0.14	0.32		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.82	0.54	0.10	0.55		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-228	-0.13	227.16	0.51	227.16		pCi/g	EPA 901.1M	1/6/2010	MP	N/A
U-235	2.19	1.22	0.36	1.22		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	5.95	3.64	1.31	3.98		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.27	0.28	0.10	0.28		pCi/g	EPA 901.1M	1/6/2010	ME	N/A

NOTES: % Moisture: 0.90

Quality Assurance Review

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LELAP Certificate # 30658

NE LAP Certificate # E87558



133 State Road 4, White Rock, NM 87544  
505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00003  
Client Sample ID: RE12-10-7656  
Sample Collection Date: 01/05/10 11:11  
Sample Matrix: Soil/Solid

Request or PQ Number:  
ARS Sample ID: ARS2-10-00003-020  
Date Received: 01/05/10 00:00  
Report Date: 01/06/10 22:16

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MCC	YPO	Qual	Analysis Units	Analysis Test Method	Analysis Date/TIME	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	147.40	37.60	23.96	41.71		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
GROSS BETA	74.89	14.66	13.00	17.29		pCi/g	EPA 900.0M	1/6/2010	ME	N/A
NA-22	0.00	0.00	0.09	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
K-40	15.86	6.37	1.43	6.39		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CN-40	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-134	0.16	0.13	0.07	0.13		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
CS-137	-0.01	12.29	0.06	12.29		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
EU-152	0.00	9.77	0.11	9.77		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
PB-212	1.45	0.47	0.13	0.46		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
RA-226	0.52	0.46	0.41	0.46		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-235	2.64	1.00	0.36	1.00		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
U-238	4.18	3.16	1.19	3.30		pCi/g	EPA 901.1M	1/6/2010	ME	N/A
AM-241	0.02	0.07	0.04	0.07		pCi/g	EPA 901.1M	1/6/2010	ME	N/A


NOTES: % Moisture: 1.07

Quality Assurance Review

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

LELAP Certificate # 30658

NELAP Certificate # EB7558

DATA VALIDATION COVER SHEET	
<b>5119-1</b>  <b>Data Validation Cover Sheet</b>	Records Use only  

Section I.	
REQUEST NUMBER: <u>10-1133</u>	VALIDATION DATE: <u>02/24/10</u> LAB CODE: <u>GEL</u>
CONTRACT LABORATORY NAME: <u>GEL Laboratories LLC</u>	
VALIDATOR: <u>Karen Germann</u> ORGANIZATION: <u>Analytical Quality Associates, Inc.</u>	
ANALYTICAL SUITE (CHECK ALL THAT APPLY):	
<input type="checkbox"/> TPH-GRO	<input type="checkbox"/> HIGH EXPLOSIVES
<input type="checkbox"/> TPH-DRO	<input type="checkbox"/> METALS
<input type="checkbox"/> GENERAL CHEMISTRY	<input checked="" type="checkbox"/> RADIOCHEMISTRY
<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 interference, low abundance, and no valid peak were qualified R,R5a. In the QC samples, several results were also rejected by the laboratory. No sample data were qualified as a result.
- The isotopic-U tracer %R value was > the laboratory UAL but  $\leq 125\%$  in sample RE12-10-7647. All associated sample results were detects and, thus, were qualified J-,R3a.

It should be noted that the isotopic-Am tracer %R values were > the laboratory UAL but  $\leq 125\%$  in the MB and LCS. No sample data were qualified as a result.


**Reviewed by:** Monica Dymerski **Level I** **Date:** 02/25/10

DATA VALIDATION COVER SHEET	
5119-1	Records Use only
Data Validation Cover Sheet	 Los Alamos NATIONAL LABORATORY EST. 1947
VALIDATOR'S SIGNATURE: <u>Karen F. Herman</u> DATE: <u>02/24/10</u>	
Form 5119-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project


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

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

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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 22, 2010

Client Sample ID: RE12-10-7634  
Sample ID: 244132001  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.3%

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	0.000235	0.0175	+/-0.00103	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0238	+/-0.00145	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00433	0.0273	+/-0.00434	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.110	+/-0.0985	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.044	0.0684	+/-0.0155	0.100	pCi/g						
Uranium-238		1.04	0.0639	+/-0.0953	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0441	0.113	+/-0.0344	0.200	pCi/g		MXR1	01/19/10	0911	940270	4
Bismuth-211	UI	4.48	R,R5a	0.427	+/-0.300	pCi/g						
Bismuth-214		1.39		0.160	+/-0.125	pCi/g						
Cadmium-109	U	0.642		1.38	+/-0.472	pCi/g						
Cerium-139	U	0.00152		0.0539	+/-0.0184	pCi/g						
Cesium-134	UI	0.158	R,R5a	0.121	+/-0.0525	pCi/g						
Cesium-137	U	0.0369		0.0853	+/-0.0247	pCi/g						
Cobalt-60	U	0.0243		0.100	+/-0.0301	pCi/g						
Europium-152	U	-0.0627		0.202	+/-0.0651	pCi/g						
Lanthanum-140	U	-0.0747		0.165	+/-0.0559	pCi/g						
Lead-212		1.75		0.107	+/-0.104	pCi/g						
Lead-214		1.56		0.146	+/-0.112	pCi/g						
Mercury-203	U	-0.00402		0.0779	+/-0.0232	pCi/g						
Potassium-40		19.8		0.549	+/-0.991	pCi/g						
Radium-223	U	0.566		1.37	+/-0.451	pCi/g						
Radium-224	UI	4.77	R,R5a	1.22	+/-0.828	pCi/g						
Radium-226		1.39		0.160	+/-0.125	pCi/g						
Radium-228		1.82		0.278	+/-0.206	pCi/g						
Ruthenium-106	U	0.557		0.787	+/-0.221	pCi/g						
Sodium-22	U	-0.0538		0.081	+/-0.027	pCi/g						
Strontium-85	U	0.0599		0.0852	+/-0.0268	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7634  
Sample ID: 244132001  
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		0.539	0.0787	+/-0.0591	0.080	pCi/g						
Thorium-227	U	0.080	0.743	+/-0.216		pCi/g						
Thorium-231	U	0.566	1.37	+/-0.451		pCi/g						
Thorium-234		1.71	1.15	+/-0.649	2.00	pCi/g						
Tin-113	U	-0.0096	0.0895	+/-0.0277	0.100	pCi/g						
Uranium-235	U	-0.0241	0.418	+/-0.129	0.500	pCi/g						
Yttrium-88	U	0.0211	0.0805	+/-0.0243	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"	91.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	76.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.0	(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

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7648  
Sample ID: 244132002  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 5.2%

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	-0.00181	0.0177	+/-0.00105	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00139	0.0229	+/-0.00139	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	1.65E-10	0.0262	+/-0.00277	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.871	0.115	+/-0.0848	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.023	0.0717	+/-0.0123	0.100	pCi/g						
Uranium-238		0.905	0.067	+/-0.0874	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0546	0.367	+/-0.121	0.200	pCi/g		MXR1	01/19/10	0912	940270	4
Bismuth-211	UI	3.04	R,R5a	0.371	+/-0.271	pCi/g						
Bismuth-214		1.03		0.133	+/-0.0968	0.200	pCi/g					
Cadmium-109	UI	3.29	R,R5a	1.69	+/-0.608	pCi/g						
Cerium-139	U	-0.0457	0.0543	+/-0.0177	0.050	pCi/g						
Cesium-134	U	0.0767	0.109	+/-0.0298	0.100	pCi/g						
Cesium-137	U	0.00871	0.0753	+/-0.0229	0.100	pCi/g						
Cobalt-60	U	0.0127	0.0868	+/-0.0261	0.100	pCi/g						
Europium-152	U	0.032	0.192	+/-0.0679	0.200	pCi/g						
Lanthanum-140	U	-0.0477	0.109	+/-0.0381		pCi/g						
Lead-212		1.55	0.106	+/-0.0833	0.100	pCi/g						
Lead-214		1.06	0.129	+/-0.0983	0.100	pCi/g						
Mercury-203	U	0.0662	0.084	+/-0.026	0.100	pCi/g						
Potassium-40		31.3	0.655	+/-1.59	1.00	pCi/g						
Radium-223	U	-0.925	1.27	+/-0.410		pCi/g						
Radium-224	UI	4.02	R,R5a	1.20	+/-0.720	pCi/g						
Radium-226		1.03		0.133	+/-0.0968	pCi/g						
Radium-228		1.60		0.257	+/-0.214	0.500	pCi/g					
Ruthenium-106	U	-0.275	0.580	+/-0.192	0.800	pCi/g						
Sodium-22	U	-0.0159	0.0839	+/-0.0268	0.080	pCi/g						
Strontium-85	U	0.0504	0.0715	+/-0.0224		pCi/g						
Thallium-208		0.382	0.0683	+/-0.0458	0.080	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7648  
244132002

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	0.372	0.777	+/-0.233		pCi/g					
Thorium-231	U	-0.925	1.27	+/-0.410		pCi/g					
Thorium-234	U	2.74	2.91	+/-1.14	2.00	pCi/g					
Tin-113	U	-0.0658	0.078	+/-0.0258	0.100	pCi/g					
Uranium-235	U	-0.0176	0.408	+/-0.127	0.500	pCi/g					
Yttrium-88	U	0.0145	0.0764	+/-0.0219	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"	89.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.8	(50%-105%)

### Notes:

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

The Qualifiers in this report are defined as follows :

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7638  
Sample ID: 244132003  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 11.4%

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	0.0063	0.0197	+/-0.00273	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00119	0.0196	+/-0.00206	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0166	0.0224	+/-0.00482	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.15	0.125	+/-0.323	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236		0.200	0.0777	+/-0.0353	0.100	pCi/g						
Uranium-238		4.47	0.0726	+/-0.346	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.162	0.300	+/-0.0913	0.200	pCi/g		MXR1	01/19/10	0923	940270	4
Bismuth-211	UI	3.74	R,R5a	0.280	+/-0.217	pCi/g						
Bismuth-214		1.12		0.0934	+/-0.082	pCi/g						
Cadmium-109	UI	3.61	R,R5a	1.23	+/-0.511	pCi/g						
Cerium-139	U	-0.00361		0.0414	+/-0.0119	pCi/g						
Cesium-134	UI	0.105	R,R5a	0.0705	+/-0.0303	pCi/g						
Cesium-137		0.473		0.0486	+/-0.036	pCi/g						
Cobalt-60	U	-0.006		0.0465	+/-0.0145	pCi/g						
Europium-152	U	-0.0825		0.126	+/-0.0479	pCi/g						
Lanthanum-140	U	-0.02		0.0969	+/-0.0322	pCi/g						
Lead-212		1.48		0.0718	+/-0.0698	pCi/g						
Lead-214		1.30		0.0977	+/-0.0829	pCi/g						
Mercury-203	U	0.0362		0.0528	+/-0.0272	pCi/g						
Potassium-40		20.6		0.375	+/-0.989	pCi/g						
Radium-223	U	0.0184		0.886	+/-0.308	pCi/g						
Radium-224	UI	3.81	R,R5a	0.816	+/-0.434	pCi/g						
Radium-226		1.12		0.0934	+/-0.082	pCi/g						
Radium-228		1.58		0.152	+/-0.152	pCi/g						
Ruthenium-106	U	-0.123		0.410	+/-0.130	pCi/g						
Sodium-22	U	-0.0187		0.0529	+/-0.0169	pCi/g						
Strontium-85	UI	0.108	R,R5a	0.0609	+/-0.0161	pCi/g						
Thallium-208		0.462		0.0459	+/-0.0402	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7638  
244132003

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	-0.032	0.518	+/-0.155		pCi/g						
Thorium-231	U	0.0184	0.886	+/-0.308		pCi/g						
Thorium-234		6.76	2.27	+/-1.58	2.00	pCi/g						
Tin-113	U	0.00591	0.0585	+/-0.0169	0.100	pCi/g						
Uranium-235	UI	0.323	R <sub>1</sub> R <sub>5a</sub>	+/-0.110	0.500	pCi/g						
Yttrium-88	U	0.0279	0.0463	+/-0.0121	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"	82.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	96.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	88.5	(50%-105%)

### Notes:

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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 22, 2010

Client Sample ID: RE12-10-7639  
Sample ID: 244132004  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 14.8%

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	0.00466	0.0183	+/-0.00273	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	8.90E-11	0.0247	+/-0.00211	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0149	0.0282	+/-0.00479	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.46	0.115	+/-0.127	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0553	0.0717	+/-0.0188	0.100	pCi/g						
Uranium-238		1.43	0.067	+/-0.125	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00568	0.180	+/-0.0583	0.200	pCi/g		MXR1	01/19/10	0953	940270	4
Bismuth-211	UI	4.18	R,R5a	0.288	+/-0.356	pCi/g						
Bismuth-214		1.17		0.106	+/-0.101	pCi/g						
Cadmium-109	UI	4.42	R,R5a	0.893	+/-0.483	pCi/g						
Cerium-139	U	-0.00737	0.0418	+/-0.0123	0.050	pCi/g						
Cesium-134	UI	0.111	R,R5a	0.0905	+/-0.0391	pCi/g						
Cesium-137		0.113	0.0603	+/-0.0272	0.100	pCi/g						
Cobalt-60	U	0.0115	0.0513	+/-0.0149	0.100	pCi/g						
Europium-152	U	-0.039	0.129	+/-0.0469	0.200	pCi/g						
Lanthanum-140	U	-0.0411	0.111	+/-0.0365	pCi/g							
Lead-212		1.74	0.0778	+/-0.134	0.100	pCi/g						
Lead-214		1.45	0.100	+/-0.130	0.100	pCi/g						
Mercury-203	U	0.0317	0.0607	+/-0.0194	0.100	pCi/g						
Potassium-40		19.4	0.465	+/-1.11	1.00	pCi/g						
Radium-223	U	-0.27	1.00	+/-0.357	pCi/g							
Radium-224	UI	4.37	R,R5a	0.886	+/-0.589	pCi/g						
Radium-226		1.17	0.106	+/-0.101	pCi/g							
Radium-228		1.74	0.188	+/-0.168	0.500	pCi/g						
Ruthenium-106	U	0.0954	0.495	+/-0.145	0.800	pCi/g						
Sodium-22	U	-0.0072	0.0601	+/-0.0189	0.080	pCi/g						
Strontium-85	U	-0.00798	0.0534	+/-0.0184	pCi/g							
Thallium-208		0.560	0.0507	+/-0.0525	0.080	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7639  
Sample ID: 244132004

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	-0.206	0.536	+/-0.168		pCi/g						
Thorium-231	U	-0.27	1.00	+/-0.357		pCi/g						
Thorium-234	U	1.46	1.46	+/-0.747	2.00	pCi/g						
Tin-113	U	-0.0303	0.0634	+/-0.0194	0.100	pCi/g						
Uranium-235	U	0.143	0.290	+/-0.134	0.500	pCi/g						
Yttrium-88	U	0.00976	0.0539	+/-0.0155	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"	86.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	77.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.3	(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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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7633  
Sample ID: 244132005  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 16.1%

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	0.00145	0.0185	+/-0.00199	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00122	0.0201	+/-0.00122	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0134	0.023	+/-0.00476	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.21	0.118	+/-0.182	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236		0.132	0.0735	+/-0.0267	0.100	pCi/g						
Uranium-238		2.58	0.0687	+/-0.208	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.103	0.544	+/-0.176	0.200	pCi/g		MXR1	01/19/10	0953	940270	4
Bismuth-211	UI	3.87	R,R5a	0.423	+/-0.349	pCi/g						
Bismuth-214		1.14		0.136	+/-0.110	pCi/g						
Cadmium-109	UI	4.16	R,R5a	1.55	+/-0.683	pCi/g						
Cerium-139	U	-0.0101		0.0613	+/-0.0187	pCi/g						
Cesium-134	UI	0.149	R,R5a	0.095	+/-0.0317	pCi/g						
Cesium-137		0.237		0.0667	+/-0.047	pCi/g						
Cobalt-60	U	0.0148		0.0733	+/-0.0217	pCi/g						
Europium-152	U	-0.125		0.205	+/-0.0864	pCi/g						
Lanthanum-140	U	0.0364		0.162	+/-0.0464	pCi/g						
Lead-212		1.72		0.111	+/-0.0983	pCi/g						
Lead-214		1.35		0.147	+/-0.126	pCi/g						
Mercury-203	U	0.0416		0.0898	+/-0.0254	pCi/g						
Potassium-40		19.6		0.616	+/-1.12	pCi/g						
Radium-223	U	-0.534		1.47	+/-0.450	pCi/g						
Radium-224	UI	4.70	R,R5a	1.26	+/-0.762	pCi/g						
Radium-226		1.14		0.136	+/-0.110	pCi/g						
Radium-228		1.76		0.252	+/-0.176	pCi/g						
Ruthenium-106	U	0.205		0.575	+/-0.167	pCi/g						
Sodium-22	U	-0.014		0.0862	+/-0.0274	pCi/g						
Strontium-85	U	0.0649		0.074	+/-0.0227	pCi/g						
Thallium-208		0.535		0.0582	+/-0.0465	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7633  
Sample ID: 244132005

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	0.278	0.827	+/-0.236		pCi/g						
Thorium-231	U	-0.534	1.47	+/-0.450		pCi/g						
Thorium-234	U	2.19	4.03	+/-1.69	2.00	pCi/g						
Tin-113	U	-0.0312	0.090	+/-0.0278	0.100	pCi/g						
Uranium-235	U	0.191	0.452	+/-0.135	0.500	pCi/g						
Yttrium-88	U	0.0038	0.0473	+/-0.0139	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"	82.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.0	(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 22, 2010

Client Sample ID: RE12-10-7647  
Sample ID: 244132006  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 17.2%

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	0.00255	0.0186	+/-0.00168	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0216	+/-0.00131	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00654	0.0247	+/-0.00348	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.64	L,R3g	0.103	+/-0.137	0.100	pCi/g	KXM4	01/19/10	1933	940269	3
Uranium-235/236		0.111	↓	0.0641	+/-0.0228	0.100	pCi/g					
Uranium-238		2.02	↓	0.0599	+/-0.164	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.102		0.220	+/-0.0678	0.200	pCi/g	MXR1	01/19/10	0954	940270	4
Bismuth-211	UI	4.53	R,R5a	0.307	+/-0.327		pCi/g					
Bismuth-214		1.15		0.099	+/-0.094	0.200	pCi/g					
Cadmium-109	UI	2.15	R,R5a	1.19	+/-0.485		pCi/g					
Cerium-139	U	-0.0069		0.0483	+/-0.0141	0.050	pCi/g					
Cesium-134	UI	0.0753	R,R5a	0.0734	+/-0.0206	0.100	pCi/g					
Cesium-137		0.0847		0.0526	+/-0.0288	0.100	pCi/g					
Cobalt-60	U	0.00199		0.0528	+/-0.0159	0.100	pCi/g					
Europium-152	U	-0.104		0.141	+/-0.0513	0.200	pCi/g					
Lanthanum-140	U	-0.0162		0.130	+/-0.0398		pCi/g					
Lead-212		1.72		0.0828	+/-0.124	0.100	pCi/g					
Lead-214		1.58		0.105	+/-0.121	0.100	pCi/g					
Mercury-203	U	0.0216		0.0623	+/-0.0185	0.100	pCi/g					
Potassium-40		21.9		0.461	+/-1.20	1.00	pCi/g					
Radium-223	U	-1.17		0.942	+/-0.321		pCi/g					
Radium-224	UI	5.53	R,R5a	0.941	+/-0.734		pCi/g					
Radium-226		1.15		0.099	+/-0.094		pCi/g					
Radium-228		1.71		0.176	+/-0.183	0.500	pCi/g					
Ruthenium-106	U	-0.201		0.449	+/-0.140	0.800	pCi/g					
Sodium-22	U	-0.0595		0.0593	+/-0.0201	0.080	pCi/g					
Strontium-85	UI	0.158	R,R5a	0.0684	+/-0.0206		pCi/g					
Thallium-208		0.522		0.0505	+/-0.0461	0.080	pCi/g					

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7647  
Sample ID: 244132006  
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	0.229	0.582	+/-0.172		pCi/g						
Thorium-231	U	-1.17	0.942	+/-0.321		pCi/g						
Thorium-234	U	1.63	1.84	+/-0.802	2.00	pCi/g						
Tin-113	U	0.0267	0.0663	+/-0.0191	0.100	pCi/g						
Uranium-235	U	0.0474	0.347	+/-0.102	0.500	pCi/g						
Yttrium-88	U	-0.00815	0.0437	+/-0.0153	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"	83.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	90.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	107 *	(50%-105%)

**Notes:**

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- 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 22, 2010

Client Sample ID: RE12-10-7644  
Sample ID: 244132007  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.98%

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	0.0107	0.0212	+/-0.00776	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0223	+/-0.00661	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00405	0.0255	+/-0.00235	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.02	0.114	+/-0.0949	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0365	0.0711	+/-0.0132	0.100	pCi/g						
Uranium-238		1.15	0.0664	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0209	0.0754	+/-0.0252	0.200	pCi/g		MXR1	01/19/10	0954	940270	4
Bismuth-211	UI	4.58	R,R5a	0.316	+/-0.321	pCi/g						
Bismuth-214		1.40		0.115	+/-0.116	pCi/g						
Cadmium-109	UI	4.44	R,R5a	0.701	+/-0.417	pCi/g						
Cerium-139	U	0.00471		0.0418	+/-0.0122	0.050						
Cesium-134	UI	0.111	R,R5a	0.0975	+/-0.0362	0.100						
Cesium-137	U	-0.0108		0.0781	+/-0.0225	0.100						
Cobalt-60	U	-0.0125		0.0578	+/-0.0185	0.100						
Europium-152	U	-0.0791		0.144	+/-0.0463	0.200						
Lanthanum-140	U	-0.0445		0.146	+/-0.0467	pCi/g						
Lead-212		2.05		0.0784	+/-0.130	0.100						
Lead-214		1.59		0.107	+/-0.119	0.100						
Mercury-203	U	0.000358		0.0606	+/-0.0187	0.100						
Potassium-40		20.7		0.513	+/-1.18	1.00						
Radium-223	U	-0.0933		1.01	+/-0.336	pCi/g						
Radium-224	UI	5.83	R,R5a	0.894	+/-0.749	pCi/g						
Radium-226		1.40		0.115	+/-0.116	pCi/g						
Radium-228		2.10		0.203	+/-0.207	0.500						
Ruthenium-106	U	0.094		0.537	+/-0.154	0.800						
Sodium-22	U	0.0141		0.0797	+/-0.0235	0.080						
Strontium-85	U	0.0362		0.0598	+/-0.019	pCi/g						
Thallium-208		0.617		0.0601	+/-0.0536	0.080						

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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7644  
Sample ID: 244132007  
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	-0.0649	0.585	+/-0.181		pCi/g					
Thorium-231	U	-0.0933	1.01	+/-0.336		pCi/g					
Thorium-234	U	0.484	0.759	+/-0.358	2.00	pCi/g					
Tin-113	U	-0.016	0.0702	+/-0.0213	0.100	pCi/g					
Uranium-235	U	0.0681	0.291	+/-0.085	0.500	pCi/g					
Yttrium-88	U	0.0365	0.077	+/-0.0205	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"	89.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.9	(50%-105%)

**Notes:**

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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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## 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 22, 2010

Client Sample ID: RE12-10-7637  
Sample ID: 244132008  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.73%

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	-0.000535	0.0216	+/-0.0018	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0141	0.0233	+/-0.00848	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00565	0.0267	+/-0.00448	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.110	+/-0.0961	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0615	0.0683	+/-0.017	0.100	pCi/g						
Uranium-238		1.17	0.0639	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0705	0.108	+/-0.0337	0.200	pCi/g		MXR1	01/19/10	1002	940270	4
Bismuth-211	UI	3.49	R,R5a	0.372	+/-0.255	pCi/g						
Bismuth-214		1.36		0.127	+/-0.102	pCi/g						
Cadmium-109	UI	3.94	R,R5a	1.03	+/-0.456	pCi/g						
Cerium-139	U	-0.000105	0.0531	+/-0.0158	0.050	pCi/g						
Cesium-134	UI	0.153	R,R5a	0.0992	+/-0.0373	pCi/g						
Cesium-137	U	0.0294		0.0744	+/-0.0216	pCi/g						
Cobalt-60	U	-0.0236		0.0631	+/-0.0211	pCi/g						
Europium-152	U	-0.084		0.179	+/-0.0606	pCi/g						
Lanthanum-140	U	-0.0706		0.122	+/-0.0425	pCi/g						
Lead-212		1.74		0.0975	+/-0.111	pCi/g						
Lead-214		1.21		0.120	+/-0.0941	pCi/g						
Mercury-203	U	0.0569		0.0784	+/-0.0216	pCi/g						
Potassium-40		20.1		0.623	+/-1.01	pCi/g						
Radium-223	U	-0.747		1.19	+/-0.372	pCi/g						
Radium-224	UI	4.67	R,R5a	1.11	+/-0.648	pCi/g						
Radium-226		1.36		0.127	+/-0.102	pCi/g						
Radium-228	UI	1.52	R,R5a	0.546	+/-0.223	pCi/g						
Ruthenium-106	U	0.370		0.671	+/-0.191	pCi/g						
Sodium-22	U	-0.0142		0.074	+/-0.0236	pCi/g						
Strontium-85	UI	0.0908	R,R5a	0.0788	+/-0.0237	pCi/g						
Thallium-208		0.573		0.0646	+/-0.0512	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7637  
Sample ID: 244132008  
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	0.101	0.671	+/-0.191		pCi/g					
Thorium-231	U	-0.747	1.19	+/-0.372		pCi/g					
Thorium-234		1.33	1.04	+/-0.402	2.00	pCi/g					
Tin-113	U	-0.0227	0.0792	+/-0.0241	0.100	pCi/g					
Uranium-235	U	0.215	0.403	+/-0.119	0.500	pCi/g					
Yttrium-88	U	0.0244	0.0717	+/-0.0197	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"	88.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	84.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.5	(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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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7635  
Sample ID: 244132009  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 14.6%

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	-0.00182	0.0225	+/-0.00285	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00579	0.0191	+/-0.00556	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00926	0.0219	+/-0.00403	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.48	0.112	+/-0.127	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0625	0.0695	+/-0.0173	0.100	pCi/g						
Uranium-238		1.57	0.0649	+/-0.134	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0063	0.313	+/-0.104	0.200	pCi/g		MXR1	01/19/10	1054	940270	4
Bismuth-211	UI	4.12	R,R5a	0.396	+/-0.350	pCi/g						
Bismuth-214		1.39		0.117	+/-0.111	0.200	pCi/g					
Cadmium-109	UI	2.52	R,R5a	1.34	+/-0.608	pCi/g						
Cerium-139	U	0.0117		0.0576	+/-0.0165	0.050	pCi/g					
Cesium-134	UI	0.154	R,R5a	0.116	+/-0.0388	0.100	pCi/g					
Cesium-137		0.163		0.0748	+/-0.0383	0.100	pCi/g					
Cobalt-60	U	-0.00805		0.0716	+/-0.0221	0.100	pCi/g					
Europium-152	U	-0.0368		0.180	+/-0.0637	0.200	pCi/g					
Lanthanum-140	U	-0.00373		0.171	+/-0.0525	pCi/g						
Lead-212		1.81		0.110	+/-0.113	0.100	pCi/g					
Lead-214		1.43		0.135	+/-0.127	0.100	pCi/g					
Mercury-203	UI	0.080	R,R5a	0.0744	+/-0.0398	0.100	pCi/g					
Potassium-40		20.4		0.604	+/-1.22	1.00	pCi/g					
Radium-223	U	0.286		1.37	+/-0.403	pCi/g						
Radium-224	UI	4.75	R,R5a	1.25	+/-0.823	pCi/g						
Radium-226		1.39		0.117	+/-0.111	pCi/g						
Radium-228		1.71		0.243	+/-0.186	0.500	pCi/g					
Ruthenium-106	U	0.153		0.614	+/-0.176	0.800	pCi/g					
Sodium-22	U	0.0291		0.0853	+/-0.024	0.080	pCi/g					
Strontium-85	U	0.0758		0.0868	+/-0.0275	pCi/g						
Thallium-208		0.551		0.0682	+/-0.0492	0.080	pCi/g					

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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7635  
Sample ID: 244132009  
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	0.757	+/-0.229		pCi/g					
Thorium-231	U	0.286	1.37	+/-0.403		pCi/g					
Thorium-234	U	1.69	2.55	+/-1.32	2.00	pCi/g					
Tin-113	U	0.0196	0.0909	+/-0.027	0.100	pCi/g					
Uranium-235	U	-0.00642	0.406	+/-0.121	0.500	pCi/g					
Yttrium-88	U	0.0241	0.0741	+/-0.0204	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"	81.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.1	(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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- 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 22, 2010

Client Sample ID: RE12-10-7642  
Sample ID: 244132010  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 11.4%

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	0.000652	0.021	+/-0.00197	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00359	0.0198	+/-0.00887	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00359	0.0226	+/-0.00268	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.13	0.110	+/-0.102	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0613	0.0681	+/-0.0169	0.100	pCi/g						
Uranium-238		1.26	0.0637	+/-0.111	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0737	0.375	+/-0.120	0.200	pCi/g		MXR1	01/19/10	1055	940270	4
Bismuth-211	UI	4.20	R,R5a	0.345	+/-0.275	pCi/g						
Bismuth-214		1.25		0.102	+/-0.099	0.200	pCi/g					
Cadmium-109	UI	4.03	R,R5a	1.50	+/-0.567	pCi/g						
Cerium-139	U	-0.0251		0.0466	+/-0.0146	0.050	pCi/g					
Cesium-134	UI	0.119	R,R5a	0.0901	+/-0.0477	0.100	pCi/g					
Cesium-137	U	0.026		0.0692	+/-0.0214	0.100	pCi/g					
Cobalt-60	U	-0.0101		0.0616	+/-0.0192	0.100	pCi/g					
Europium-152	U	-0.0348		0.161	+/-0.0526	0.200	pCi/g					
Lanthanum-140	U	-0.0631		0.120	+/-0.042	pCi/g						
Lead-212		1.87		0.0911	+/-0.0972	0.100	pCi/g					
Lead-214		1.46		0.114	+/-0.103	0.100	pCi/g					
Mercury-203	U	0.046		0.0621	+/-0.0194	0.100	pCi/g					
Potassium-40		19.6		0.542	+/-1.06	1.00	pCi/g					
Radium-223	U	-0.0973		1.12	+/-0.378	pCi/g						
Radium-224	UI	4.75	R,R5a	1.04	+/-0.661	pCi/g						
Radium-226		1.25		0.102	+/-0.099	pCi/g						
Radium-228		2.10		0.191	+/-0.198	0.500	pCi/g					
Ruthenium-106	U	-0.137		0.488	+/-0.158	0.800	pCi/g					
Sodium-22	U	0.0117		0.0721	+/-0.0209	0.080	pCi/g					
Strontium-85	U	0.0452		0.0621	+/-0.0192	pCi/g						
Thallium-208		0.622		0.0559	+/-0.0482	0.080	pCi/g					

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7642  
Sample ID: 244132010

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	0.100	0.623	+/-0.177		pCi/g					
Thorium-231	U	-0.0973	1.12	+/-0.378		pCi/g					
Thorium-234		2.88	2.77	+/-1.28	2.00	pCi/g					
Tin-113	U	-0.0189	0.0722	+/-0.0221	0.100	pCi/g					
Uranium-235	U	0.189	0.355	+/-0.103	0.500	pCi/g					
Yttrium-88	U	0.0182	0.0653	+/-0.0185	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"	95.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	96.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.8	(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
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- 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 22, 2010

Client Sample ID: RE12-10-7649  
Sample ID: 244132011  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 22%

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	-0.000614		0.0204	+/-0.00583	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>													
Plutonium-238	U	-0.00376		0.0207	+/-0.00517	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0125		0.0237	+/-0.00439	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>													
Uranium-233/234		1.37		0.128	+/-0.124	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0512		0.0797	+/-0.0166	0.100	pCi/g						
Uranium-238		1.59		0.0745	+/-0.140	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>													
<i>GAMMA SPEC "Dry Weight Corrected"</i>													
Americium-241	U	0.0262		0.227	+/-0.0759	0.200	pCi/g		MXR1	01/19/10	1104	940270	4
Bismuth-211	UI	4.36	R,R5a	0.305	+/-0.332		pCi/g						
Bismuth-214		1.28		0.103	+/-0.104	0.200	pCi/g						
Cadmium-109	UI	3.66	R,R5a	1.10	+/-0.383		pCi/g						
Cerium-139	U	-0.0211		0.0436	+/-0.0135	0.050	pCi/g						
Cesium-134	U	0.0105		0.0777	+/-0.0226	0.100	pCi/g						
Cesium-137		0.124		0.0617	+/-0.0282	0.100	pCi/g						
Cobalt-60	U	-0.0278		0.0574	+/-0.0198	0.100	pCi/g						
Europium-152	U	-0.0406		0.153	+/-0.0497	0.200	pCi/g						
Lanthanum-140	U	-0.0453		0.118	+/-0.0393		pCi/g						
Lead-212		1.75		0.082	+/-0.119	0.100	pCi/g						
Lead-214		1.52		0.106	+/-0.122	0.100	pCi/g						
Mercury-203	U	0.0192		0.0632	+/-0.0212	0.100	pCi/g						
Potassium-40		20.9		0.485	+/-1.20	1.00	pCi/g						
Radium-223	U	0.606		1.08	+/-0.356		pCi/g						
Radium-224	UI	4.99	R,R5a	0.933	+/-0.656		pCi/g						
Radium-226		1.28		0.103	+/-0.104		pCi/g						
Radium-228		1.78		0.196	+/-0.182	0.500	pCi/g						
Ruthenium-106	U	-0.0903		0.477	+/-0.150	0.800	pCi/g						
Sodium-22	U	-0.0108		0.0659	+/-0.021	0.080	pCi/g						
Strontium-85	U	0.0368		0.0591	+/-0.0184		pCi/g						
Thallium-208		0.542		0.0515	+/-0.0502	0.080	pCi/g						

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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7649  
Sample ID: 244132011

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	-0.0126	0.585	+/-0.180		pCi/g					
Thorium-231	U	0.606	1.08	+/-0.356		pCi/g					
Thorium-234	U	1.21	1.96	+/-0.935	2.00	pCi/g					
Tin-113	U	-0.0164	0.0734	+/-0.0222	0.100	pCi/g					
Uranium-235	U	-0.0661	0.325	+/-0.0996	0.500	pCi/g					
Yttrium-88	U	0.0153	0.0627	+/-0.0178	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"	95.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	85.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.2	(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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## 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 22, 2010

Client Sample ID: RE12-10-7650  
Sample ID: 244132012  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 13%

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	0.0079	0.0206	+/-0.00672	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00301	0.0248	+/-0.00521	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00301	0.0284	+/-0.00301	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.10	0.108	+/-0.099	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0475	0.0672	+/-0.0147	0.100	pCi/g						
Uranium-238		1.01	0.0627	+/-0.0926	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0544	0.280	+/-0.0879	0.200	pCi/g		MXR1	01/19/10	1112	940270	4
Bismuth-211	UI	4.70	R,R5a	0.369	+/-0.306	pCi/g						
Bismuth-214		1.28		0.123	+/-0.104	pCi/g						
Cadmium-109	UI	4.76	R,R5a	1.26	+/-0.633	pCi/g						
Cerium-139	U	-0.0265		0.0509	+/-0.0162	pCi/g						
Cesium-134	U	0.0653		0.0937	+/-0.0287	pCi/g						
Cesium-137	U	0.00252		0.0734	+/-0.0228	pCi/g						
Cobalt-60	U	0.032		0.0768	+/-0.0216	pCi/g						
Europium-152	U	0.0442		0.181	+/-0.0601	pCi/g						
Lanthanum-140	U	-0.0201		0.146	+/-0.0462	pCi/g						
Lead-212		2.01		0.0941	+/-0.0944	pCi/g						
Lead-214		1.63		0.129	+/-0.115	pCi/g						
Mercury-203	U	-0.0149		0.0694	+/-0.0214	pCi/g						
Potassium-40		19.2		0.612	+/-1.02	pCi/g						
Radium-223	U	0.0204		1.07	+/-0.362	pCi/g						
Radium-224	UI	5.44	R,R5a	1.07	+/-0.635	pCi/g						
Radium-226		1.28		0.123	+/-0.104	pCi/g						
Radium-228		1.88		0.215	+/-0.202	pCi/g						
Ruthenium-106	U	0.102		0.567	+/-0.165	pCi/g						
Sodium-22	U	0.00849		0.0753	+/-0.0225	pCi/g						
Strontium-85	U	0.0678		0.0705	+/-0.0216	pCi/g						
Thallium-208		0.687		0.0572	+/-0.0518	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7650  
Sample ID: 244132012  
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	-0.0414	0.644	+/-0.190		pCi/g						
Thorium-231	U	0.0204	1.07	+/-0.362		pCi/g						
Thorium-234	U	0.340	2.35	+/-0.929	2.00	pCi/g						
Tin-113	U	0.0163	0.0783	+/-0.0232	0.100	pCi/g						
Uranium-235	U	0.0374	0.377	+/-0.114	0.500	pCi/g						
Yttrium-88	U	-0.00167	0.0692	+/-0.0212	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"	91.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	84.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(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 22, 2010

Client Sample ID: RE12-10-7641  
Sample ID: 244132013  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 14.4%

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	0.00624	0.0195	+/-0.00355	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00605	0.020	+/-0.00554	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0121	0.0229	+/-0.00387	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.52	0.115	+/-0.203	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236		0.0967	0.0716	+/-0.0231	0.100	pCi/g						
Uranium-238		2.97	0.0669	+/-0.235	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0495	0.116	+/-0.0355	0.200	pCi/g		MXR1	01/19/10	1141	940270	4
Bismuth-211	UI	4.48	R,R5a	0.424	+/-0.294	pCi/g						
Bismuth-214		1.31		0.143	+/-0.128	pCi/g						
Cadmium-109	UI	3.40	R,R5a	1.10	+/-0.437	pCi/g						
Cerium-139	U	-0.0167		0.0577	+/-0.018	pCi/g						
Cesium-134	UI	0.115	R,R5a	0.112	+/-0.0378	pCi/g						
Cesium-137		0.207		0.0817	+/-0.0396	pCi/g						
Cobalt-60	U	-0.0213		0.0779	+/-0.026	pCi/g						
Europium-152	U	-0.0532		0.193	+/-0.0649	pCi/g						
Lanthanum-140	U	-0.0626		0.169	+/-0.0564	pCi/g						
Lead-212		1.59		0.101	+/-0.0958	pCi/g						
Lead-214		1.56		0.154	+/-0.110	pCi/g						
Mercury-203	U	0.0262		0.0807	+/-0.0233	pCi/g						
Potassium-40		19.0		0.771	+/-1.01	pCi/g						
Radium-223	U	-0.755		1.29	+/-0.413	pCi/g						
Radium-224	UI	4.73	R,R5a	1.15	+/-0.724	pCi/g						
Radium-226		1.31		0.143	+/-0.128	pCi/g						
Radium-228		1.71		0.305	+/-0.194	pCi/g						
Ruthenium-106	U	-0.154		0.722	+/-0.224	pCi/g						
Sodium-22	U	0.0346		0.103	+/-0.0294	pCi/g						
Strontium-85	UI	0.0819	R,R5a	0.0811	+/-0.0243	pCi/g						
Thallium-208		0.516		0.078	+/-0.0517	pCi/g						

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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7641  
Sample ID: 244132013  
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	-0.193	0.725	+/-0.219		pCi/g						
Thorium-231	U	-0.755	1.29	+/-0.413		pCi/g						
Thorium-234		2.98	1.14	+/-0.676	2.00	pCi/g						
Tin-113	U	-0.0135	0.0932	+/-0.029	0.100	pCi/g						
Uranium-235	U	0.081	0.393	+/-0.136	0.500	pCi/g						
Yttrium-88	U	0.0156	0.081	+/-0.0233	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"	92.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.8	(50%-105%)

**Notes:**

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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 22, 2010

Client Sample ID: RE12-10-7643  
Sample ID: 244132014  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 16.3%

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	0.00645	0.0201	+/-0.00365	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0128	0.0211	+/-0.00603	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0204	0.0241	+/-0.00552	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.99	0.0917	+/-0.158	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236		0.110	0.0569	+/-0.0227	0.100	pCi/g						
Uranium-238		2.33	0.0532	+/-0.182	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0564	0.228	+/-0.0755	0.200	pCi/g		MXR1	01/19/10	1141	940270	4
Bismuth-211	UI	4.71	R,R5a	0.349	+/-0.253	pCi/g						
Bismuth-214		1.28		0.112	+/-0.0943	0.200	pCi/g					
Cadmium-109	UI	2.70	R,R5a	1.34	+/-0.399	pCi/g						
Cerium-139	U	-0.00268	0.0508	+/-0.0155	0.050	pCi/g						
Cesium-134	UI	0.134	R,R5a	0.0918	+/-0.033	0.100	pCi/g					
Cesium-137		0.490	0.0618	+/-0.0425	0.100	pCi/g						
Cobalt-60	U	-0.0282	0.0493	+/-0.017	0.100	pCi/g						
Europium-152	U	-0.0294	0.164	+/-0.0605	0.200	pCi/g						
Lanthanum-140	U	0.0032	0.111	+/-0.0394	pCi/g							
Lead-212		1.56	0.094	+/-0.0779	0.100	pCi/g						
Lead-214		1.64	0.105	+/-0.0979	0.100	pCi/g						
Mercury-203	U	-0.0147	0.0672	+/-0.020	0.100	pCi/g						
Potassium-40		21.5	0.538	+/-1.07	1.00	pCi/g						
Radium-223	U	-0.639	1.18	+/-0.365	pCi/g							
Radium-224	UI	4.27	R,R5a	1.07	+/-0.589	pCi/g						
Radium-226		1.28	0.112	+/-0.0943	pCi/g							
Radium-228		1.53	0.222	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	-0.0286	0.502	+/-0.154	0.800	pCi/g						
Sodium-22	U	-0.034	0.0592	+/-0.0199	0.080	pCi/g						
Strontium-85	U	0.0635	0.0704	+/-0.022	pCi/g							
Thallium-208		0.569	0.0541	+/-0.0449	0.080	pCi/g						

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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7643  
Sample ID: 244132014  
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	0.415	0.689	+/-0.195		pCi/g					
Thorium-231	U	-0.639	1.18	+/-0.365		pCi/g					
Thorium-234		2.79	1.94	+/-0.797	2.00	pCi/g					
Tin-113	U	-0.024	0.0761	+/-0.0233	0.100	pCi/g					
Uranium-235	U	0.0505	0.374	+/-0.112	0.500	pCi/g					
Yttrium-88	U	-0.016	0.0435	+/-0.0154	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"	95.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	97.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.9	(50%-105%)

**Notes:**

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- D Results are reported from a diluted aliquot of the sample
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- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7640  
Sample ID: 244132015  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 7.63%

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	-0.000521	0.022	+/-0.0044	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00619	0.0205	+/-0.0054	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00372	0.0234	+/-0.00278	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.712	0.0902	+/-0.0673	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236	U	0.036	0.056	+/-0.0117	0.100	pCi/g						
Uranium-238		0.795	0.0523	+/-0.0731	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0351	0.101	+/-0.0326	0.200	pCi/g		MXR1	01/19/10	1141	940270	4
Bismuth-211	UI	3.65	R,R5a	0.330	+/-0.308	pCi/g						
Bismuth-214		1.24		0.125	+/-0.115	pCi/g						
Cadmium-109	UI	3.05	R,R5a	0.934	+/-0.377	pCi/g						
Cerium-139	U	-0.0259	0.0471	+/-0.0149	0.050	pCi/g						
Cesium-134	U	0.0267	0.104	+/-0.034	0.100	pCi/g						
Cesium-137	U	0.0117	0.0801	+/-0.0245	0.100	pCi/g						
Cobalt-60	U	0.028	0.0862	+/-0.0238	0.100	pCi/g						
Europium-152	U	0.0493	0.174	+/-0.0494	0.200	pCi/g						
Lanthanum-140	U	-0.135	0.136	+/-0.055		pCi/g						
Lead-212		1.39	0.115	+/-0.106	0.100	pCi/g						
Lead-214		1.27	0.115	+/-0.112	0.100	pCi/g						
Mercury-203	U	0.0347	0.0756	+/-0.0209	0.100	pCi/g						
Potassium-40		24.3	0.810	+/-1.54	1.00	pCi/g						
Radium-223	U	-0.408	1.10	+/-0.386		pCi/g						
Radium-224	UI	2.95	R,R5a	1.58	+/-0.536	pCi/g						
Radium-226		1.24	0.125	+/-0.115		pCi/g						
Radium-228		1.53	0.223	+/-0.196	0.500	pCi/g						
Ruthenium-106	U	-0.172	0.564	+/-0.184	0.800	pCi/g						
Sodium-22	U	-0.0204	0.0831	+/-0.0274	0.080	pCi/g						
Strontium-85	U	0.00243	0.0731	+/-0.0252		pCi/g						
Thallium-208		0.586	0.0675	+/-0.0567	0.080	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7640  
Sample ID: 244132015

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	0.149	0.655	+/-0.197		pCi/g					
Thorium-231	U	-0.408	1.10	+/-0.386		pCi/g					
Thorium-234		2.51	0.981	+/-0.678	2.00	pCi/g					
Tin-113	U	0.0101	0.0957	+/-0.028	0.100	pCi/g					
Uranium-235	U	0.0672	0.363	+/-0.108	0.500	pCi/g					
Yttrium-88	U	0.00395	0.0683	+/-0.0206	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"	93.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	86.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	102	(50%-105%)

### Notes:

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

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- < Result is less than value reported
- > Result is greater than value reported
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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 22, 2010

Client Sample ID: RE12-10-7645  
Sample ID: 244132016  
Matrix: R  
Collect Date: 05-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	0.00424	0.0205	+/-0.00285	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	2.49E-09	0.0216	+/-0.00826	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00784	0.0247	+/-0.00454	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.19	0.0947	+/-0.102	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236		0.102	0.0588	+/-0.0209	0.100	pCi/g						
Uranium-238		1.31	0.0549	+/-0.111	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00637	0.275	+/-0.087	0.200	pCi/g		MXR1	01/19/10	1142	940270	4
Bismuth-211	UI	3.94	R,R5a	0.245	+/-0.223	pCi/g						
Bismuth-214		1.28		0.0856	+/-0.0852	pCi/g						
Cadmium-109	UI	2.02	R,R5a	1.05	+/-0.609	pCi/g						
Cerium-139	U	-0.0198		0.040	+/-0.0118	pCi/g						
Cesium-134	UI	0.160	R,R5a	0.0772	+/-0.0252	pCi/g						
Cesium-137		0.0466		0.0426	+/-0.0168	pCi/g						
Cobalt-60	U	-0.0168		0.0427	+/-0.014	pCi/g						
Europium-152	U	0.00362		0.117	+/-0.0444	pCi/g						
Lanthanum-140	U	-0.00481		0.0863	+/-0.0311	pCi/g						
Lead-212		1.50		0.0751	+/-0.0709	pCi/g						
Lead-214		1.37		0.0853	+/-0.0853	pCi/g						
Mercury-203	UI	0.075	R,R5a	0.0599	+/-0.0164	pCi/g						
Potassium-40		20.1		0.396	+/-0.977	pCi/g						
Radium-223	U	0.421		0.861	+/-0.285	pCi/g						
Radium-224	UI	3.59	R,R5a	0.854	+/-0.449	pCi/g						
Radium-226		1.28		0.0856	+/-0.0852	pCi/g						
Radium-228		1.65		0.148	+/-0.157	pCi/g						
Ruthenium-106	U	0.0588		0.405	+/-0.122	pCi/g						
Sodium-22	U	-0.0188		0.0546	+/-0.0174	pCi/g						
Strontium-85	UI	0.0979	R,R5a	0.0585	+/-0.017	pCi/g						
Thallium-208		0.517		0.0432	+/-0.0375	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7645  
Sample ID: 244132016  
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	0.00468	0.507	+/-0.150		pCi/g					
Thorium-231	U	0.421	0.861	+/-0.285		pCi/g					
Thorium-234	U	0.366	2.22	+/-0.988	2.00	pCi/g					
Tin-113	U	-0.0448	0.0532	+/-0.0168	0.100	pCi/g					
Uranium-235	U	0.0742	0.307	+/-0.0931	0.500	pCi/g					
Yttrium-88	U	0.00858	0.0419	+/-0.0134	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"	91.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	90.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.7	(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 22, 2010

Client Sample ID: RE12-10-7646  
Sample ID: 244132017  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.5%

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	0.0104	0.0208	+/-0.00584	0.050	pCi/g		KXM4	01/18/10	1453 940262	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	1.17E-09	0.0202	+/-0.006	0.050	pCi/g		KXM4	01/16/10	1122 940267	2
Plutonium-239/240	U	1.46E-10	0.0232	+/-0.00245	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		0.854	0.091	+/-0.078	0.100	pCi/g		KXM4	01/19/10	1934 940269	3
Uranium-235/236		0.0581	0.0565	+/-0.0159	0.100	pCi/g					
Uranium-238		1.09	0.0528	+/-0.0952	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	-0.0812	0.371	+/-0.110	0.200	pCi/g		MXR1	01/19/10	1142 940270	4
Bismuth-211	UI	4.08	R,R5a	0.395	+/-0.295	pCi/g					
Bismuth-214		1.25		0.113	+/-0.110	pCi/g					
Cadmium-109	UI	3.25	R,R5a	1.54	+/-0.614	pCi/g					
Cerium-139	U	0.0277	0.0589	+/-0.0172	0.050	pCi/g					
Cesium-134	U	0.0605	0.107	+/-0.0296	0.100	pCi/g					
Cesium-137	U	0.00164	0.0737	+/-0.0226	0.100	pCi/g					
Cobalt-60	U	-0.0342	0.0645	+/-0.0226	0.100	pCi/g					
Europium-152	U	-0.0186	0.188	+/-0.0824	0.200	pCi/g					
Lanthanum-140	U	-0.0576	0.148	+/-0.0493		pCi/g					
Lead-212		1.72	0.104	+/-0.0888	0.100	pCi/g					
Lead-214		1.42	0.145	+/-0.109	0.100	pCi/g					
Mercury-203	U	0.0847	0.089	+/-0.0272	0.100	pCi/g					
Potassium-40		20.0	0.516	+/-1.15	1.00	pCi/g					
Radium-223	U	-0.407	1.25	+/-0.443		pCi/g					
Radium-224	UI	4.52	R,R5a	1.18	+/-0.819	pCi/g					
Radium-226		1.25	0.113	+/-0.110		pCi/g					
Radium-228		1.65	0.253	+/-0.199	0.500	pCi/g					
Ruthenium-106	U	0.179	0.612	+/-0.180	0.800	pCi/g					
Sodium-22	U	0.0103	0.0938	+/-0.0283	0.080	pCi/g					
Strontium-85	U	0.0407	0.0768	+/-0.0249		pCi/g					
Thallium-208		0.562	0.0685	+/-0.0505	0.080	pCi/g					

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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7646  
Sample ID: 244132017  
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	-0.373	0.770	+/-0.250		pCi/g						
Thorium-231	U	-0.407	1.25	+/-0.443		pCi/g						
Thorium-234	U	0.0828	3.05	+/-0.898	2.00	pCi/g						
Tin-113	U	0.0296	0.0908	+/-0.0262	0.100	pCi/g						
Uranium-235	U	-0.0779	0.416	+/-0.129	0.500	pCi/g						
Yttrium-88	U	0.0196	0.0771	+/-0.0217	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"	81.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.2	(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 22, 2010

Client Sample ID: RE12-10-7636  
Sample ID: 244132018  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.79%

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	0.00628	0.0196	+/-0.00649	0.050	pCi/g		KXM4	01/18/10	1453 940262	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	-0.0013	0.0215	+/-0.00623	0.050	pCi/g		KXM4	01/16/10	1122 940267	2
Plutonium-239/240	U	-0.0039	0.0246	+/-0.00291	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		1.07	0.0915	+/-0.093	0.100	pCi/g		KXM4	01/19/10	1934 940269	3
Uranium-235/236		0.0766	0.0568	+/-0.0175	0.100	pCi/g					
Uranium-238		1.05	0.0531	+/-0.0919	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	0.187	0.535	+/-0.149	0.200	pCi/g		MXR1	01/19/10	1204 940270	4
Bismuth-211	UI	3.74	R,R5a	0.357	+/-0.296	pCi/g					
Bismuth-214		1.14		0.0885	+/-0.0875	0.200	pCi/g				
Cadmium-109	UI	1.85	R,R5a	1.68	+/-0.538	pCi/g					
Cerium-139	U	0.0167	0.0603	+/-0.0176	0.050	pCi/g					
Cesium-134	U	0.0811	0.0986	+/-0.0264	0.100	pCi/g					
Cesium-137	U	0.0115	0.0715	+/-0.0214	0.100	pCi/g					
Cobalt-60	U	0.00714	0.0635	+/-0.0191	0.100	pCi/g					
Europium-152	U	-0.0318	0.183	+/-0.095	0.200	pCi/g					
Lanthanum-140	U	-0.0733	0.121	+/-0.0424		pCi/g					
Lead-212		1.60	0.104	+/-0.0921	0.100	pCi/g					
Lead-214		1.30	0.125	+/-0.108	0.100	pCi/g					
Mercury-203	U	0.00864	0.0785	+/-0.0225	0.100	pCi/g					
Potassium-40		20.6	0.443	+/-1.12	1.00	pCi/g					
Radium-223	U	-1.48	1.25	+/-0.422		pCi/g					
Radium-224	UI	4.19	R,R5a	1.18	+/-0.826	pCi/g					
Radium-226		1.14	0.0885	+/-0.0875		pCi/g					
Radium-228		1.64	0.216	+/-0.174	0.500	pCi/g					
Ruthenium-106	U	0.271	0.625	+/-0.180	0.800	pCi/g					
Sodium-22	U	-0.019	0.0714	+/-0.0231	0.080	pCi/g					
Strontium-85	UI	0.0963	R,R5a	0.078	+/-0.0228	pCi/g					
Thallium-208		0.394	0.0622	+/-0.0495	0.080	pCi/g					

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7636  
244132018

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	0.408	0.827	+/-0.232		pCi/g						
Thorium-231	U	-1.48	1.25	+/-0.422		pCi/g						
Thorium-234	U	-0.0293	3.94	+/-1.13	2.00	pCi/g						
Tin-113	U	-0.0464	0.084	+/-0.0263	0.100	pCi/g						
Uranium-235	U	-0.0131	0.423	+/-0.127	0.500	pCi/g						
Yttrium-88	U	-0.00282	0.0526	+/-0.0164	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"	91.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	84.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.8	(50%-105%)

### Notes:

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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 22, 2010

Client Sample ID: RE12-10-7657  
Sample ID: 244132019  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.1%

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	-0.000726		0.0187	+/-0.00531	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>													
Plutonium-238	U	-0.00123		0.0203	+/-0.00213	0.050	pCi/g		KXM4	01/15/10	1323	940267	2
Plutonium-239/240	U	0.00123		0.0232	+/-0.00123	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>													
Uranium-233/234		0.962		0.093	+/-0.0857	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236		0.0705		0.0577	+/-0.0169	0.100	pCi/g						
Uranium-238		0.858		0.0539	+/-0.0782	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>													
<i>GAMMA SPEC "Dry Weight Corrected"</i>													
Americium-241	U	-0.152		0.554	+/-0.166	0.200	pCi/g		MXR1	01/19/10	1420	940270	4
Bismuth-211	UI	4.33	R,R5a	0.440	+/-0.319		pCi/g						
Bismuth-214		1.30		0.144	+/-0.109	0.200	pCi/g						
Cadmium-109	U	1.62		1.81	+/-0.801		pCi/g						
Cerium-139	U	-0.0216		0.065	+/-0.0203	0.050	pCi/g						
Cesium-134	U	0.0834		0.106	+/-0.0288	0.100	pCi/g						
Cesium-137	U	0.0309		0.080	+/-0.0235	0.100	pCi/g						
Cobalt-60	U	0.00847		0.077	+/-0.0233	0.100	pCi/g						
Europium-152	U	-0.146		0.205	+/-0.0993	0.200	pCi/g						
Lanthanum-140	U	0.0208		0.139	+/-0.0463		pCi/g						
Lead-212		1.92		0.124	+/-0.109	0.100	pCi/g						
Lead-214		1.51		0.147	+/-0.118	0.100	pCi/g						
Mercury-203	U	0.0386		0.0897	+/-0.0291	0.100	pCi/g						
Potassium-40		20.5		0.448	+/-1.15	1.00	pCi/g						
Radium-223	U	0.104		1.55	+/-0.458		pCi/g						
Radium-224	UI	5.09	R,R5a	1.41	+/-0.843		pCi/g						
Radium-226		1.30		0.144	+/-0.109		pCi/g						
Radium-228		1.60		0.254	+/-0.199	0.500	pCi/g						
Ruthenium-106	U	-0.00521		0.646	+/-0.200	0.800	pCi/g						
Sodium-22	U	-0.00192		0.0874	+/-0.0272	0.080	pCi/g						
Strontium-85	U	0.0686		0.0785	+/-0.0242		pCi/g						
Thallium-208		0.620		0.0694	+/-0.0552	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 22, 2010

Client Sample ID: RE12-10-7657  
Sample ID: 244132019

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	0.519	0.909	+/-0.260		pCi/g						
Thorium-231	U	0.104	1.55	+/-0.458		pCi/g						
Thorium-234	U	-0.425	4.26	+/-1.27	2.00	pCi/g						
Tin-113	U	-0.023	0.0941	+/-0.029	0.100	pCi/g						
Uranium-235	U	0.163	0.474	+/-0.143	0.500	pCi/g						
Yttrium-88	U	0.00242	0.0628	+/-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, 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"	91.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	92.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.0	(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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## 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 22, 2010

Client Sample ID: RE12-10-7658  
Sample ID: 244132020  
Matrix: R  
Collect Date: 05-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	0.00688	0.0211	+/-0.00424	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00124	0.0204	+/-0.00328	0.050	pCi/g		KXM4	01/15/10	1323	940267	2
Plutonium-239/240	U	0.00619	0.0234	+/-0.0054	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.07	0.0899	+/-0.0932	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236	U	0.0394	0.0558	+/-0.0141	0.100	pCi/g						
Uranium-238		1.09	0.0521	+/-0.0948	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0828	0.111	+/-0.0347	0.200	pCi/g		MXR1	01/19/10	1705	940270	4
Bismuth-211	UI	3.91	R,R5a	0.351	+/-0.294	pCi/g						
Bismuth-214		1.32		0.126	+/-0.108	pCi/g						
Cadmium-109	UI	3.83	R,R5a	1.02	+/-0.442	pCi/g						
Cerium-139	U	0.00172		0.0549	+/-0.0164	pCi/g						
Cesium-134	UI	0.112	R,R5a	0.105	+/-0.0381	pCi/g						
Cesium-137	U	0.0346		0.0732	+/-0.0239	pCi/g						
Cobalt-60	U	-0.00106		0.0719	+/-0.0223	pCi/g						
Europium-152	U	-0.113		0.169	+/-0.0622	pCi/g						
Lanthanum-140	U	-0.0362		0.141	+/-0.0539	pCi/g						
Lead-212		1.54		0.101	+/-0.101	pCi/g						
Lead-214		1.36		0.122	+/-0.108	pCi/g						
Mercury-203	U	0.0394		0.0785	+/-0.0221	pCi/g						
Potassium-40		20.6		0.612	+/-1.02	pCi/g						
Radium-223	U	-0.349		1.16	+/-0.407	pCi/g						
Radium-224	UI	4.60	R,R5a	1.15	+/-0.795	pCi/g						
Radium-226		1.32		0.126	+/-0.108	pCi/g						
Radium-228		1.79		0.251	+/-0.196	pCi/g						
Ruthenium-106	U	-0.0167		0.609	+/-0.187	pCi/g						
Sodium-22	U	-0.00957		0.0714	+/-0.0226	pCi/g						
Strontium-85	U	0.0527		0.0724	+/-0.0228	pCi/g						
Thallium-208		0.541		0.0698	+/-0.0532	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 22, 2010

Client Sample ID: RE12-10-7658  
Sample ID: 244132020

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	-0.166	0.680	+/-0.202		pCi/g						
Thorium-231	U	-0.349	1.16	+/-0.407		pCi/g						
Thorium-234	U	0.973	1.12	+/-0.472	2.00	pCi/g						
Tin-113	U	-0.0129	0.0793	+/-0.024	0.100	pCi/g						
Uranium-235	U	-0.0564	0.375	+/-0.115	0.500	pCi/g						
Yttrium-88	U	-0.0155	0.0589	+/-0.0196	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"	97.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	102	(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: 10-1133

LOS ALAMOS

REQUEST NUMBER: 10-1133

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:

2441321

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7634	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7648	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7638	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7639	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7633	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7647	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7644	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7637	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7635	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7642	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7649	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7650	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7641	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7643	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7640	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7645	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7646	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7636	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7657	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7658	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Relinquished By:

Date

Time

Received By:

Date

Time

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: 10-1133  
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, Below Background  
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature: 

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1					
		1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	

Thursday, January 07, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-801.1	1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
	HASL-300:AM-241	1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	

Thursday, January 07, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:AM-241	1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
	HASL-300:ISOPU	1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
	HASL-300:ISOU	1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	

Thursday, January 07, 2010

REQUEST NUMBER: 10-1133

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	

Final Page of REQUEST NUMBER 10-1133



Laboratories LLC

a member of **The GEL Group** INC



PO Box 30712 Charleston, SC 29417  
2040 Savage Road Charleston, SC 29407  
P 843.556.8171 F 843.766.1178

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: 244132  
SDG: 10-1133

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: 10-1133  
Enclosures



**Los Alamos National Laboratory (72733-001-09)**  
**LANL ER Project**  
**Work Order #: 244132**  
**SDG: 10-1133**

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# **Case Narrative**

**Case Narrative for  
Los Alamos National Laboratory (72733-001-09)  
LANL ER Project  
Workorder #: 244132  
SDG # : 10-1133**

**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:

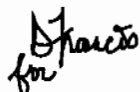
<b><u>Laboratory ID</u></b>	<b><u>Client ID</u></b>
244132001	RE12-10-7634
244132002	RE12-10-7648
244132003	RE12-10-7638
244132004	RE12-10-7639
244132005	RE12-10-7633
244132006	RE12-10-7647
244132007	RE12-10-7644
244132008	RE12-10-7637
244132009	RE12-10-7635
244132010	RE12-10-7642
244132011	RE12-10-7649
244132012	RE12-10-7650
244132013	RE12-10-7641
244132014	RE12-10-7643
244132015	RE12-10-7640
244132016	RE12-10-7645
244132017	RE12-10-7646
244132018	RE12-10-7636
244132019	RE12-10-7657
244132020	RE12-10-7658

### 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.



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: 10-1133

LOS ALAMOS

REQUEST NUMBER: 10-1133

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:

2441321

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7634	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7648	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7638	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7639	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7633	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7647	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7644	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7637	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7635	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7642	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7649	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7650	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7641	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7643	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7640	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7645	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7646	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7636	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7657	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7658	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Relinquished By:

Date

Time

Received By:

Date

Time

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, Below Background**

**LAB REQUEST COMMENTS:**

LANL ER SMO CONTACT:

Signature: 

Page 1 of 4

REQUEST NUMBER: 10-1133

These Samples are on:

LANL Request Number: 10-1133

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1						
		1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	

Thursday, January 07, 2010

REQUEST NUMBER: 10-1133

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA-901.1		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
		1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
HASL-300/AM-241		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7651	R	1/5/2010	
		1	RE12-10-7652	R	1/5/2010	
		1	RE12-10-7653	R	1/5/2010	
		1	RE12-10-7654	R	1/5/2010	
		1	RE12-10-7655	R	1/5/2010	

Thursday, January 07, 2010

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REQUEST NUMBER: 10-1133

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:AM-241	1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
	HASL-300:ISOPU	1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	
		1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	
	HASL-300:ISOU	1	RE12-10-7633	R	1/5/2010	
		1	RE12-10-7634	R	1/5/2010	
		1	RE12-10-7635	R	1/5/2010	
		1	RE12-10-7636	R	1/5/2010	
		1	RE12-10-7637	R	1/5/2010	

Thursday, January 07, 2010

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REQUEST NUMBER: 10-1133

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7638	R	1/5/2010	
		1	RE12-10-7639	R	1/5/2010	
		1	RE12-10-7640	R	1/5/2010	
		1	RE12-10-7641	R	1/5/2010	
		1	RE12-10-7642	R	1/5/2010	
		1	RE12-10-7643	R	1/5/2010	
		1	RE12-10-7644	R	1/5/2010	
		1	RE12-10-7645	R	1/5/2010	
		1	RE12-10-7646	R	1/5/2010	
		1	RE12-10-7647	R	1/5/2010	
		1	RE12-10-7648	R	1/5/2010	
		1	RE12-10-7649	R	1/5/2010	
		1	RE12-10-7650	R	1/5/2010	
		1	RE12-10-7657	R	1/5/2010	
		1	RE12-10-7658	R	1/5/2010	

Final Page of REQUEST NUMBER 10-1133

Client: LANL		SDG/ARCOC/Work Order: 10-1133	
Received By: Patricia Dover-Dent		Date Received: JANUARY 8, 2009	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further
COC/Samples marked as radioactive?		X	Maximum Counts Observed*: 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 (describe) 1,2,9,13,14
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5	Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH. If Preservative added Lot#
6	VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?		X		Sample ID's affected: No Time on Chain of Custody
11	Number of containers received match number indicated on COC?	X			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	X			

Comments: FED EX #S

7209 7849 4203 1C

7209 7849 4122 14C

7209 7849 4188 1C

7209 7849 4166 2C

7209 7849 4155 2C

7209 7849 4199 2C

7209 7849 4177 2C

7209 7849 4144 9C

7209 7849 4133 13C



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

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843) 556-8171  
REF: 6B010AMR3A05529E00

2c



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

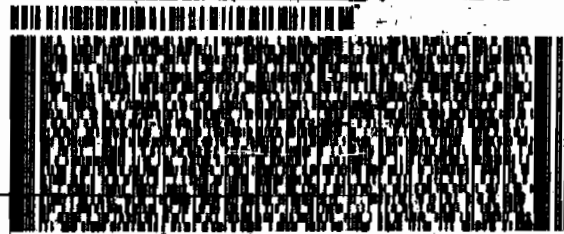
LOS ALAMOS, NM 87545  
UNITED STATES US

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843) 556-8171  
REF: 6B010AMR3A05529E00

2c



1 of 2  
TRK# 7209 7849 409  
0201  
MASTER

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

ACTWGT: 23.0 LB MAN  
CAD: 0014176/CAFE2449

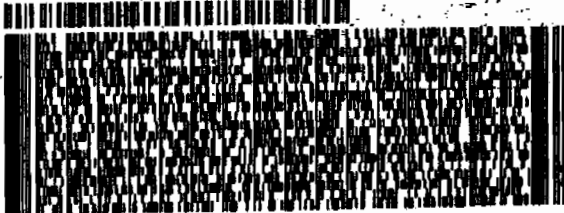
LOS ALAMOS, NM 87545  
UNITED STATES US

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843) 556-8171  
REF: 6B010AMR2A0515BYD0

9c



TRK# 7209 7849 4144  
0201

FRI - 08JAN A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



1 of 2  
TRK# 7209 7849 4177  
0201  
MASTER

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: 55.0 LB MAN  
CAD: 0014176/CAFE2449

LOS ALAMOS, NM 87545  
UNITED STATES US

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843) 556-8171  
REF: 6B010AMR2A0515BYD0

13c






3 of 3  
TRK# 7209 7849 4133  
0201

FRI - 08JAN A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA

TRK# 7209 7849 4134 0201

ORIGIN ID: SAFA (505) 665-9968 CYLENE VALDEZ LOS ALAMOS NATL LAB T800 BLDG 1237 DPU 03 LOS ALAMOS, NM 87545 UNITED STATES US		SHIP DATE: 07JAN10 WGT: 57.0 LB 0014176/CAFE2449
TO VALERIE DAVIS GENERAL ENGINEERING LAB 2040 SAVAGE RD CHARLESTON SC 29407 (843) 656-8171 REF: 6B010AMR2A0515		TILL SENDER
14C		
		
FedEx 		
FRI - 08 JAN PRIORITY OVERNIGHT		
7209 3 7849 4122 09 7849 4111 0201		29407
XX CHSA		CHS
		



# **Data Review Qualifier Flag Definition Sheet**

## Data Review Qualifier Definitions

Qualifier      Explanation

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

# RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative**  
**Los Alamos National Laboratory (LANL)**  
**SDG 10-1133**  
**Work Order 244132**

**Method/Analysis Information**

**Product:** AM241  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 940262  
**Prep Batch Number:** 939989

<b>Sample ID</b>	<b>Client ID</b>
244132001	RE12-10-7634
244132002	RE12-10-7648
244132003	RE12-10-7638
244132004	RE12-10-7639
244132005	RE12-10-7633
244132006	RE12-10-7647
244132007	RE12-10-7644
244132008	RE12-10-7637
244132009	RE12-10-7635
244132010	RE12-10-7642
244132011	RE12-10-7649
244132012	RE12-10-7650
244132013	RE12-10-7641
244132014	RE12-10-7643
244132015	RE12-10-7640
244132016	RE12-10-7645
244132017	RE12-10-7646
244132018	RE12-10-7636
244132019	RE12-10-7657
244132020	RE12-10-7658
1202012136	Method Blank (MB)
1202012137	244132006(RE12-10-7647) Sample Duplicate (DUP)
1202012138	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 1202012136 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 244132006 (RE12-10-7647). The QC was from LANL work order 244132.

**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 1202012136 (MB) and 1202012138 (LCS) were recounted twice due to high tracer yields.

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

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

**Manual Integration**

Manual integration of alpha spectroscopy spectra 1202012138 (LCS) was performed to fully separate counts in Regions of Interest which would have been biased.

**Additional Comments**

The MDCs are calculated using a blank population. Samples, 1202012136 (MB) and 1202012138 (LCS), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>ISOPU</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	940267
Prep Batch Number:	939989

<b>Sample ID</b>	<b>Client ID</b>
244132001	RE12-10-7634
244132002	RE12-10-7648
244132003	RE12-10-7638
244132004	RE12-10-7639
244132005	RE12-10-7633
244132006	RE12-10-7647
244132007	RE12-10-7644
244132008	RE12-10-7637
244132009	RE12-10-7635
244132010	RE12-10-7642
244132011	RE12-10-7649
244132012	RE12-10-7650
244132013	RE12-10-7641
244132014	RE12-10-7643
244132015	RE12-10-7640
244132016	RE12-10-7645
244132017	RE12-10-7646
244132018	RE12-10-7636
244132019	RE12-10-7657
244132020	RE12-10-7658
1202012147	Method Blank (MB)
1202012148	244132005(RE12-10-7633) Sample Duplicate (DUP)
1202012149	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 1202012147 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 244132005 (RE12-10-7633). The QC was from LANL work order 244132.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank result is less than 1.65 times the CSU.

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

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

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

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

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

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

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	940269
Prep Batch Number:	939989



Sample ID	Client ID
244132001	RE12-10-7634
244132002	RE12-10-7648
244132003	RE12-10-7638
244132004	RE12-10-7639
244132005	RE12-10-7633
244132006	RE12-10-7647
244132007	RE12-10-7644
244132008	RE12-10-7637
244132009	RE12-10-7635
244132010	RE12-10-7642
244132011	RE12-10-7649
244132012	RE12-10-7650
244132013	RE12-10-7641
244132014	RE12-10-7643
244132015	RE12-10-7640
244132016	RE12-10-7645
244132017	RE12-10-7646
244132018	RE12-10-7636
244132019	RE12-10-7657
244132020	RE12-10-7658
1202012159	Method Blank (MB)
1202012160	244132005(RE12-10-7633) Sample Duplicate (DUP)
1202012161	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 1202012159 (MB) was changed to 1.0 per client request.

#### **Designated QC**

The following sample was used for QC: 244132005 (RE12-10-7633). The QC was from LANL work order 244132.

#### **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. Sample, 244132006 (RE12-10-7647), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements.

#### **Blank Decision Level**

The blank result is less than the decision level.

### **Qualifier information**

Manual qualifiers were not required.

### **Method/Analysis Information**

**Product:** GAMMA SPEC

**Analytical Method:** DOE HASL 300, 4.5.2.3/Ga-01-R

**Prep Method:** Dry Soil Prep

**Analytical Batch Number:** 940270

**Prep Batch Number:** 939989

<b>Sample ID</b>	<b>Client ID</b>
244132001	RE12-10-7634
244132002	RE12-10-7648
244132003	RE12-10-7638
244132004	RE12-10-7639
244132005	RE12-10-7633
244132006	RE12-10-7647
244132007	RE12-10-7644
244132008	RE12-10-7637
244132009	RE12-10-7635
244132010	RE12-10-7642
244132011	RE12-10-7649
244132012	RE12-10-7650
244132013	RE12-10-7641
244132014	RE12-10-7643
244132015	RE12-10-7640
244132016	RE12-10-7645
244132017	RE12-10-7646
244132018	RE12-10-7636
244132019	RE12-10-7657
244132020	RE12-10-7658
1202012162	Method Blank (MB)
1202012163	244132001(RE12-10-7634) Sample Duplicate (DUP)
1202012164	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, 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: 244132001 (RE12-10-7634). The QC was from LANL work order 244132.

**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.

**Additional Comments**

Additional comments were not required for this sample set.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to interference.	Bismuth-211	244132001	RE12-10-7634

244132002	RE12-10-7648
244132003	RE12-10-7638
244132004	RE12-10-7639
244132005	RE12-10-7633
244132006	RE12-10-7647
244132007	RE12-10-7644
244132008	RE12-10-7637
244132009	RE12-10-7635
244132010	RE12-10-7642
244132011	RE12-10-7649
244132012	RE12-10-7650
244132013	RE12-10-7641
244132014	RE12-10-7643
244132015	RE12-10-7640
244132016	RE12-10-7645
244132017	RE12-10-7646
244132018	RE12-10-7636
244132019	RE12-10-7657
244132020	RE12-10-7658
1202012163	RE12-10-7634(244132001DUP)
Cadmium-109	244132002
	244132003
	244132004
	244132005
	244132006
	244132007
	244132008
	244132009
	244132010
	244132011

	244132012	RE12-10-7650
	244132013	RE12-10-7641
	244132014	RE12-10-7643
	244132015	RE12-10-7640
	244132016	RE12-10-7645
	244132017	RE12-10-7646
	244132018	RE12-10-7636
	244132020	RE12-10-7658
	1202012163	RE12-10-7634(244132001DUP)
Mercury-203	244132009	RE12-10-7635
Radium-224	244132001	RE12-10-7634
	244132002	RE12-10-7648
	244132003	RE12-10-7638
	244132004	RE12-10-7639
	244132005	RE12-10-7633
	244132006	RE12-10-7647
	244132007	RE12-10-7644
	244132008	RE12-10-7637
	244132009	RE12-10-7635
	244132010	RE12-10-7642
	244132011	RE12-10-7649
	244132012	RE12-10-7650
	244132013	RE12-10-7641
	244132014	RE12-10-7643
	244132015	RE12-10-7640
	244132016	RE12-10-7645
	244132017	RE12-10-7646
	244132018	RE12-10-7636
	244132019	RE12-10-7657
	244132020	RE12-10-7658

			1202012163	RE12-10-7634(244132001DUP)
UI	Data rejected due to low abundance.	Cesium-134	244132001	RE12-10-7634
			244132003	RE12-10-7638
			244132004	RE12-10-7639
			244132005	RE12-10-7633
			244132006	RE12-10-7647
			244132007	RE12-10-7644
			244132008	RE12-10-7637
			244132009	RE12-10-7635
			244132010	RE12-10-7642
			244132013	RE12-10-7641
			244132014	RE12-10-7643
			244132016	RE12-10-7645
			244132020	RE12-10-7658
		Mercury-203	244132016	RE12-10-7645
		Radium-228	244132008	RE12-10-7637
		Strontium-85	244132003	RE12-10-7638
			244132006	RE12-10-7647
			244132008	RE12-10-7637
			244132013	RE12-10-7641
			244132016	RE12-10-7645
			244132018	RE12-10-7636
UI	Data rejected due to no valid peak.	Uranium-235	244132003	RE12-10-7638

#### **Certification Statement**

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

**Review Validation:**

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

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

**Reviewer/Date:** \_\_\_\_\_

 1/22/10



# 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: 10-1133 GEL Work Order: 244132

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

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

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

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

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

Reviewed by



# GEL LABORATORIES LLC

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## Certificate of Analysis

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7634  
Sample ID: 244132001  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.3%

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	0.000235	0.0175	+/-0.00103	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0238	+/-0.00145	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00433	0.0273	+/-0.00434	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.110	+/-0.0985	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.044	0.0684	+/-0.0155	0.100	pCi/g						
Uranium-238		1.04	0.0639	+/-0.0953	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0441	0.113	+/-0.0344	0.200	pCi/g		MXR1	01/19/10	0911	940270	4
Bismuth-211	UI	4.48	0.427	+/-0.300		pCi/g						
Bismuth-214		1.39	0.160	+/-0.125	0.200	pCi/g						
Cadmium-109	U	0.642	1.38	+/-0.472		pCi/g						
Cerium-139	U	0.00152	0.0539	+/-0.0184	0.050	pCi/g						
Cesium-134	UI	0.158	0.121	+/-0.0525	0.100	pCi/g						
Cesium-137	U	0.0369	0.0853	+/-0.0247	0.100	pCi/g						
Cobalt-60	U	0.0243	0.100	+/-0.0301	0.100	pCi/g						
Europium-152	U	-0.0627	0.202	+/-0.0651	0.200	pCi/g						
Lanthanum-140	U	-0.0747	0.165	+/-0.0559		pCi/g						
Lead-212		1.75	0.107	+/-0.104	0.100	pCi/g						
Lead-214		1.56	0.146	+/-0.112	0.100	pCi/g						
Mercury-203	U	-0.00402	0.0779	+/-0.0232	0.100	pCi/g						
Potassium-40		19.8	0.549	+/-0.991	1.00	pCi/g						
Radium-223	U	0.566	1.37	+/-0.451		pCi/g						
Radium-224	UI	4.77	1.22	+/-0.828		pCi/g						
Radium-226		1.39	0.160	+/-0.125		pCi/g						
Radium-228		1.82	0.278	+/-0.206	0.500	pCi/g						
Ruthenium-106	U	0.557	0.787	+/-0.221	0.800	pCi/g						
Sodium-22	U	-0.0538	0.081	+/-0.027	0.080	pCi/g						
Strontium-85	U	0.0599	0.0852	+/-0.0268		pCi/g						

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7634  
Sample ID: 244132001

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		0.539	0.0787	+/-0.0591	0.080	pCi/g						
Thorium-227	U	0.080	0.743	+/-0.216		pCi/g						
Thorium-231	U	0.566	1.37	+/-0.451		pCi/g						
Thorium-234		1.71	1.15	+/-0.649	2.00	pCi/g						
Tin-113	U	-0.0096	0.0895	+/-0.0277	0.100	pCi/g						
Uranium-235	U	-0.0241	0.418	+/-0.129	0.500	pCi/g						
Yttrium-88	U	0.0211	0.0805	+/-0.0243	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"	91.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	76.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.0	(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

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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 22, 2010

Client Sample ID: RE12-10-7634  
Sample ID: 244132001

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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## Certificate of Analysis

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Address : PO Box 1663  
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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7648  
Sample ID: 244132002  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 5.2%

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	-0.00181	0.0177	+/-0.00105	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00139	0.0229	+/-0.00139	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	1.65E-10	0.0262	+/-0.00277	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.871	0.115	+/-0.0848	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.023	0.0717	+/-0.0123	0.100	pCi/g						
Uranium-238		0.905	0.067	+/-0.0874	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0546	0.367	+/-0.121	0.200	pCi/g		MXR1	01/19/10	0912	940270	4
Bismuth-211	UI	3.04	0.371	+/-0.271		pCi/g						
Bismuth-214		1.03	0.133	+/-0.0968	0.200	pCi/g						
Cadmium-109	UI	3.29	1.69	+/-0.608		pCi/g						
Cerium-139	U	-0.0457	0.0543	+/-0.0177	0.050	pCi/g						
Cesium-134	U	0.0767	0.109	+/-0.0298	0.100	pCi/g						
Cesium-137	U	0.00871	0.0753	+/-0.0229	0.100	pCi/g						
Cobalt-60	U	0.0127	0.0868	+/-0.0261	0.100	pCi/g						
Europium-152	U	0.032	0.192	+/-0.0679	0.200	pCi/g						
Lanthanum-140	U	-0.0477	0.109	+/-0.0381		pCi/g						
Lead-212		1.55	0.106	+/-0.0833	0.100	pCi/g						
Lead-214		1.06	0.129	+/-0.0983	0.100	pCi/g						
Mercury-203	U	0.0662	0.084	+/-0.026	0.100	pCi/g						
Potassium-40		31.3	0.655	+/-1.59	1.00	pCi/g						
Radium-223	U	-0.925	1.27	+/-0.410		pCi/g						
Radium-224	UI	4.02	1.20	+/-0.720		pCi/g						
Radium-226		1.03	0.133	+/-0.0968		pCi/g						
Radium-228		1.60	0.257	+/-0.214	0.500	pCi/g						
Ruthenium-106	U	-0.275	0.580	+/-0.192	0.800	pCi/g						
Sodium-22	U	-0.0159	0.0839	+/-0.0268	0.080	pCi/g						
Strontium-85	U	0.0504	0.0715	+/-0.0224		pCi/g						
Thallium-208		0.382	0.0683	+/-0.0458	0.080	pCi/g						

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## Certificate of Analysis

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7648  
Sample ID: 244132002

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	0.372	0.777	+/-0.233		pCi/g					
Thorium-231	U	-0.925	1.27	+/-0.410		pCi/g					
Thorium-234	U	2.74	2.91	+/-1.14	2.00	pCi/g					
Tin-113	U	-0.0658	0.078	+/-0.0258	0.100	pCi/g					
Uranium-235	U	-0.0176	0.408	+/-0.127	0.500	pCi/g					
Yttrium-88	U	0.0145	0.0764	+/-0.0219	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"	89.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.8	(50%-105%)

### Notes:

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

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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 22, 2010

Client Sample ID: RE12-10-7648  
Sample ID: 244132002

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

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7638  
Sample ID: 244132003  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 11.4%

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	0.0063	0.0197	+/-0.00273	0.050	pCi/g		KXM4	01/18/10	2001 940262	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	-0.00119	0.0196	+/-0.00206	0.050	pCi/g		KXM4	01/16/10	1122 940267	2
Plutonium-239/240	U	0.0166	0.0224	+/-0.00482	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		4.15	0.125	+/-0.323	0.100	pCi/g		KXM4	01/19/10	1933 940269	3
Uranium-235/236		0.200	0.0777	+/-0.0353	0.100	pCi/g					
Uranium-238		4.47	0.0726	+/-0.346	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	0.162	0.300	+/-0.0913	0.200	pCi/g		MXR1	01/19/10	0923 940270	4
Bismuth-211	UI	3.74	0.280	+/-0.217		pCi/g					
Bismuth-214		1.12	0.0934	+/-0.082	0.200	pCi/g					
Cadmium-109	UI	3.61	1.23	+/-0.511		pCi/g					
Cerium-139	U	-0.00361	0.0414	+/-0.0119	0.050	pCi/g					
Cesium-134	UI	0.105	0.0705	+/-0.0303	0.100	pCi/g					
Cesium-137		0.473	0.0486	+/-0.036	0.100	pCi/g					
Cobalt-60	U	-0.006	0.0465	+/-0.0145	0.100	pCi/g					
Europium-152	U	-0.0825	0.126	+/-0.0479	0.200	pCi/g					
Lanthanum-140	U	-0.02	0.0969	+/-0.0322		pCi/g					
Lead-212		1.48	0.0718	+/-0.0698	0.100	pCi/g					
Lead-214		1.30	0.0977	+/-0.0829	0.100	pCi/g					
Mercury-203	U	0.0362	0.0528	+/-0.0272	0.100	pCi/g					
Potassium-40		20.6	0.375	+/-0.989	1.00	pCi/g					
Radium-223	U	0.0184	0.886	+/-0.308		pCi/g					
Radium-224	UI	3.81	0.816	+/-0.434		pCi/g					
Radium-226		1.12	0.0934	+/-0.082		pCi/g					
Radium-228		1.58	0.152	+/-0.152	0.500	pCi/g					
Ruthenium-106	U	-0.123	0.410	+/-0.130	0.800	pCi/g					
Sodium-22	U	-0.0187	0.0529	+/-0.0169	0.080	pCi/g					
Strontium-85	UI	0.108	0.0609	+/-0.0161		pCi/g					
Thallium-208		0.462	0.0459	+/-0.0402	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 22, 2010

Client Sample ID: RE12-10-7638  
Sample ID: 244132003

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	-0.032	0.518	+/-0.155		pCi/g					
Thorium-231	U	0.0184	0.886	+/-0.308		pCi/g					
Thorium-234		6.76	2.27	+/-1.58	2.00	pCi/g					
Tin-113	U	0.00591	0.0585	+/-0.0169	0.100	pCi/g					
Uranium-235	UI	0.323	0.314	+/-0.110	0.500	pCi/g					
Yttrium-88	U	0.0279	0.0463	+/-0.0121	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"	82.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	96.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	88.5	(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 22, 2010

Client Sample ID: RE12-10-7638  
Sample ID: 244I32003

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 22, 2010

Client Sample ID: RE12-10-7639  
Sample ID: 244132004  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 14.8%

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	0.00466	0.0183	+/-0.00273	0.050	pCi/g		KXM4	01/18/10 2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	8.90E-11	0.0247	+/-0.00211	0.050	pCi/g		KXM4	01/16/10 1122	940267	2
Plutonium-239/240	U	0.0149	0.0282	+/-0.00479	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		1.46	0.115	+/-0.127	0.100	pCi/g		KXM4	01/19/10 1933	940269	3
Uranium-235/236	U	0.0553	0.0717	+/-0.0188	0.100	pCi/g					
Uranium-238		1.43	0.067	+/-0.125	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	0.00568	0.180	+/-0.0583	0.200	pCi/g		MXR1	01/19/10 0953	940270	4
Bismuth-211	UI	4.18	0.288	+/-0.356		pCi/g					
Bismuth-214		1.17	0.106	+/-0.101	0.200	pCi/g					
Cadmium-109	UI	4.42	0.893	+/-0.483		pCi/g					
Cerium-139	U	-0.00737	0.0418	+/-0.0123	0.050	pCi/g					
Cesium-134	UI	0.111	0.0905	+/-0.0391	0.100	pCi/g					
Cesium-137		0.113	0.0603	+/-0.0272	0.100	pCi/g					
Cobalt-60	U	0.0115	0.0513	+/-0.0149	0.100	pCi/g					
Europium-152	U	-0.039	0.129	+/-0.0469	0.200	pCi/g					
Lanthanum-140	U	-0.0411	0.111	+/-0.0365		pCi/g					
Lead-212		1.74	0.0778	+/-0.134	0.100	pCi/g					
Lead-214		1.45	0.100	+/-0.130	0.100	pCi/g					
Mercury-203	U	0.0317	0.0607	+/-0.0194	0.100	pCi/g					
Potassium-40		19.4	0.465	+/-1.11	1.00	pCi/g					
Radium-223	U	-0.27	1.00	+/-0.357		pCi/g					
Radium-224	UI	4.37	0.886	+/-0.589		pCi/g					
Radium-226		1.17	0.106	+/-0.101		pCi/g					
Radium-228		1.74	0.188	+/-0.168	0.500	pCi/g					
Ruthenium-106	U	0.0954	0.495	+/-0.145	0.800	pCi/g					
Sodium-22	U	-0.0072	0.0601	+/-0.0189	0.080	pCi/g					
Strontium-85	U	-0.00798	0.0534	+/-0.0184		pCi/g					
Thallium-208		0.560	0.0507	+/-0.0525	0.080	pCi/g					

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7639  
Sample ID: 244132004

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	-0.206	0.536	+/-0.168		pCi/g					
Thorium-231	U	-0.27	1.00	+/-0.357		pCi/g					
Thorium-234	U	1.46	1.46	+/-0.747	2.00	pCi/g					
Tin-113	U	-0.0303	0.0634	+/-0.0194	0.100	pCi/g					
Uranium-235	U	0.143	0.290	+/-0.134	0.500	pCi/g					
Yttrium-88	U	0.00976	0.0539	+/-0.0155	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"	86.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	77.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.3	(50%-105%)

### Notes:

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

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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 22, 2010

Client Sample ID: RE12-10-7639  
Sample ID: 244132004

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 22, 2010

Client Sample ID: RE12-10-7633  
Sample ID: 244132005  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 16.1%

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	0.00145	0.0185	+/-0.00199	0.050	pCi/g		KXM4	01/18/10 2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	0.00122	0.0201	+/-0.00122	0.050	pCi/g		KXM4	01/16/10 1122	940267	2
Plutonium-239/240	U	0.0134	0.023	+/-0.00476	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		2.21	0.118	+/-0.182	0.100	pCi/g		KXM4	01/19/10 1933	940269	3
Uranium-235/236		0.132	0.0735	+/-0.0267	0.100	pCi/g					
Uranium-238		2.58	0.0687	+/-0.208	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	0.103	0.544	+/-0.176	0.200	pCi/g		MXR1	01/19/10 0953	940270	4
Bismuth-211	UI	3.87	0.423	+/-0.349		pCi/g					
Bismuth-214		1.14	0.136	+/-0.110	0.200	pCi/g					
Cadmium-109	UI	4.16	1.55	+/-0.683		pCi/g					
Cerium-139	U	-0.0101	0.0613	+/-0.0187	0.050	pCi/g					
Cesium-134	UI	0.149	0.095	+/-0.0317	0.100	pCi/g					
Cesium-137		0.237	0.0667	+/-0.047	0.100	pCi/g					
Cobalt-60	U	0.0148	0.0733	+/-0.0217	0.100	pCi/g					
Europium-152	U	-0.125	0.205	+/-0.0864	0.200	pCi/g					
Lanthanum-140	U	0.0364	0.162	+/-0.0464		pCi/g					
Lead-212		1.72	0.111	+/-0.0983	0.100	pCi/g					
Lead-214		1.35	0.147	+/-0.126	0.100	pCi/g					
Mercury-203	U	0.0416	0.0898	+/-0.0254	0.100	pCi/g					
Potassium-40		19.6	0.616	+/-1.12	1.00	pCi/g					
Radium-223	U	-0.534	1.47	+/-0.450		pCi/g					
Radium-224	UI	4.70	1.26	+/-0.762		pCi/g					
Radium-226		1.14	0.136	+/-0.110		pCi/g					
Radium-228		1.76	0.252	+/-0.176	0.500	pCi/g					
Ruthenium-106	U	0.205	0.575	+/-0.167	0.800	pCi/g					
Sodium-22	U	-0.014	0.0862	+/-0.0274	0.080	pCi/g					
Strontium-85	U	0.0649	0.074	+/-0.0227		pCi/g					
Thallium-208		0.535	0.0582	+/-0.0465	0.080	pCi/g					

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7633  
Sample ID: 244132005

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	0.278	0.827	+/-0.236		pCi/g						
Thorium-231	U	-0.534	1.47	+/-0.450		pCi/g						
Thorium-234	U	2.19	4.03	+/-1.69	2.00	pCi/g						
Tin-113	U	-0.0312	0.090	+/-0.0278	0.100	pCi/g						
Uranium-235	U	0.191	0.452	+/-0.135	0.500	pCi/g						
Yttrium-88	U	0.0038	0.0473	+/-0.0139	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"	82.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.0	(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 22, 2010

Client Sample ID: RE12-10-7633  
Sample ID: 244132005

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 22, 2010

Client Sample ID: RE12-10-7647  
Sample ID: 244132006  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 17.2%

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	0.00255	0.0186	+/-0.00168	0.050	pCi/g		KXM4	01/18/10	2001	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0216	+/-0.00131	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00654	0.0247	+/-0.00348	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.64	0.103	+/-0.137	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236		0.111	0.0641	+/-0.0228	0.100	pCi/g						
Uranium-238		2.02	0.0599	+/-0.164	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.102	0.220	+/-0.0678	0.200	pCi/g		MXR1	01/19/10	0954	940270	4
Bismuth-211	UI	4.53	0.307	+/-0.327		pCi/g						
Bismuth-214		1.15	0.099	+/-0.094	0.200	pCi/g						
Cadmium-109	UI	2.15	1.19	+/-0.485		pCi/g						
Cerium-139	U	-0.0069	0.0483	+/-0.0141	0.050	pCi/g						
Cesium-134	UI	0.0753	0.0734	+/-0.0206	0.100	pCi/g						
Cesium-137		0.0847	0.0526	+/-0.0288	0.100	pCi/g						
Cobalt-60	U	0.00199	0.0528	+/-0.0159	0.100	pCi/g						
Europium-152	U	-0.104	0.141	+/-0.0513	0.200	pCi/g						
Lanthanum-140	U	-0.0162	0.130	+/-0.0398		pCi/g						
Lead-212		1.72	0.0828	+/-0.124	0.100	pCi/g						
Lead-214		1.58	0.105	+/-0.121	0.100	pCi/g						
Mercury-203	U	0.0216	0.0623	+/-0.0185	0.100	pCi/g						
Potassium-40		21.9	0.461	+/-1.20	1.00	pCi/g						
Radium-223	U	-1.17	0.942	+/-0.321		pCi/g						
Radium-224	UI	5.53	0.941	+/-0.734		pCi/g						
Radium-226		1.15	0.099	+/-0.094		pCi/g						
Radium-228		1.71	0.176	+/-0.183	0.500	pCi/g						
Ruthenium-106	U	-0.201	0.449	+/-0.140	0.800	pCi/g						
Sodium-22	U	-0.0595	0.0593	+/-0.0201	0.080	pCi/g						
Strontium-85	UI	0.158	0.0684	+/-0.0206		pCi/g						
Thallium-208		0.522	0.0505	+/-0.0461	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 22, 2010

Client Sample ID: RE12-10-7647  
Sample ID: 244132006

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	0.229	0.582	+/-0.172		pCi/g					
Thorium-231	U	-1.17	0.942	+/-0.321		pCi/g					
Thorium-234	U	1.63	1.84	+/-0.802	2.00	pCi/g					
Tin-113	U	0.0267	0.0663	+/-0.0191	0.100	pCi/g					
Uranium-235	U	0.0474	0.347	+/-0.102	0.500	pCi/g					
Yttrium-88	U	-0.00815	0.0437	+/-0.0153	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"	83.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	90.1	(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
- 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 22, 2010

Client Sample ID: RE12-10-7647  
Sample ID: 244132006

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 22, 2010

Client Sample ID: RE12-10-7644  
Sample ID: 244132007  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.98%

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	0.0107	0.0212	+/-0.00776	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0223	+/-0.00661	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00405	0.0255	+/-0.00235	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.02	0.114	+/-0.0949	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0365	0.0711	+/-0.0132	0.100	pCi/g						
Uranium-238		1.15	0.0664	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0209	0.0754	+/-0.0252	0.200	pCi/g		MXR1	01/19/10	0954	940270	4
Bismuth-211	UI	4.58	0.316	+/-0.321		pCi/g						
Bismuth-214		1.40	0.115	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	4.44	0.701	+/-0.417		pCi/g						
Cerium-139	U	0.00471	0.0418	+/-0.0122	0.050	pCi/g						
Cesium-134	UI	0.111	0.0975	+/-0.0362	0.100	pCi/g						
Cesium-137	U	-0.0108	0.0781	+/-0.0225	0.100	pCi/g						
Cobalt-60	U	-0.0125	0.0578	+/-0.0185	0.100	pCi/g						
Europium-152	U	-0.0791	0.144	+/-0.0463	0.200	pCi/g						
Lanthanum-140	U	-0.0445	0.146	+/-0.0467		pCi/g						
Lead-212		2.05	0.0784	+/-0.130	0.100	pCi/g						
Lead-214		1.59	0.107	+/-0.119	0.100	pCi/g						
Mercury-203	U	0.000358	0.0606	+/-0.0187	0.100	pCi/g						
Potassium-40		20.7	0.513	+/-1.18	1.00	pCi/g						
Radium-223	U	-0.0933	1.01	+/-0.336		pCi/g						
Radium-224	UI	5.83	0.894	+/-0.749		pCi/g						
Radium-226		1.40	0.115	+/-0.116		pCi/g						
Radium-228		2.10	0.203	+/-0.207	0.500	pCi/g						
Ruthenium-106	U	0.094	0.537	+/-0.154	0.800	pCi/g						
Sodium-22	U	0.0141	0.0797	+/-0.0235	0.080	pCi/g						
Strontium-85	U	0.0362	0.0598	+/-0.019		pCi/g						
Thallium-208		0.617	0.0601	+/-0.0536	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7644  
Sample ID: 244132007

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	-0.0649	0.585	+/-0.181		pCi/g					
Thorium-231	U	-0.0933	1.01	+/-0.336		pCi/g					
Thorium-234	U	0.484	0.759	+/-0.358	2.00	pCi/g					
Tin-113	U	-0.016	0.0702	+/-0.0213	0.100	pCi/g					
Uranium-235	U	0.0681	0.291	+/-0.085	0.500	pCi/g					
Yttrium-88	U	0.0365	0.077	+/-0.0205	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"	89.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.9	(50%-105%)

### Notes:

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

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- 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 22, 2010

Client Sample ID: RE12-10-7644  
Sample ID: 244132007

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 22, 2010

Client Sample ID: RE12-10-7637  
Sample ID: 244132008  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.73%

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	-0.000535	0.0216	+/-0.0018	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0141	0.0233	+/-0.00848	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00565	0.0267	+/-0.00448	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.110	+/-0.0961	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0615	0.0683	+/-0.017	0.100	pCi/g						
Uranium-238		1.17	0.0639	+/-0.104	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0705	0.108	+/-0.0337	0.200	pCi/g		MXR1	01/19/10	1002	940270	4
Bismuth-211	UI	3.49	0.372	+/-0.255		pCi/g						
Bismuth-214		1.36	0.127	+/-0.102	0.200	pCi/g						
Cadmium-109	UI	3.94	1.03	+/-0.456		pCi/g						
Cerium-139	U	-0.000105	0.0531	+/-0.0158	0.050	pCi/g						
Cesium-134	UI	0.153	0.0992	+/-0.0373	0.100	pCi/g						
Cesium-137	U	0.0294	0.0744	+/-0.0216	0.100	pCi/g						
Cobalt-60	U	-0.0236	0.0631	+/-0.0211	0.100	pCi/g						
Europium-152	U	-0.084	0.179	+/-0.0606	0.200	pCi/g						
Lanthanum-140	U	-0.0706	0.122	+/-0.0425		pCi/g						
Lead-212		1.74	0.0975	+/-0.111	0.100	pCi/g						
Lead-214		1.21	0.120	+/-0.0941	0.100	pCi/g						
Mercury-203	U	0.0569	0.0784	+/-0.0216	0.100	pCi/g						
Potassium-40		20.1	0.623	+/-1.01	1.00	pCi/g						
Radium-223	U	-0.747	1.19	+/-0.372		pCi/g						
Radium-224	UI	4.67	1.11	+/-0.648		pCi/g						
Radium-226		1.36	0.127	+/-0.102		pCi/g						
Radium-228	UI	1.52	0.546	+/-0.223	0.500	pCi/g						
Ruthenium-106	U	0.370	0.671	+/-0.191	0.800	pCi/g						
Sodium-22	U	-0.0142	0.074	+/-0.0236	0.080	pCi/g						
Strontium-85	UI	0.0908	0.0788	+/-0.0237		pCi/g						
Thallium-208		0.573	0.0646	+/-0.0512	0.080	pCi/g						



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7637  
244132008

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	0.101	0.671	+/-0.191		pCi/g					
Thorium-231	U	-0.747	1.19	+/-0.372		pCi/g					
Thorium-234		1.33	1.04	+/-0.402	2.00	pCi/g					
Tin-113	U	-0.0227	0.0792	+/-0.0241	0.100	pCi/g					
Uranium-235	U	0.215	0.403	+/-0.119	0.500	pCi/g					
Yttrium-88	U	0.0244	0.0717	+/-0.0197	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"	88.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	84.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.5	(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 22, 2010

Client Sample ID: RE12-10-7637  
Sample ID: 244132008

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 22, 2010

Client Sample ID: RE12-10-7635  
Sample ID: 244132009  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 14.6%

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	-0.00182	0.0225	+/-0.00285	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00579	0.0191	+/-0.00556	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00926	0.0219	+/-0.00403	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.48	0.112	+/-0.127	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0625	0.0695	+/-0.0173	0.100	pCi/g						
Uranium-238		1.57	0.0649	+/-0.134	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0063	0.313	+/-0.104	0.200	pCi/g		MXR1	01/19/10	1054	940270	4
Bismuth-211	UI	4.12	0.396	+/-0.350		pCi/g						
Bismuth-214		1.39	0.117	+/-0.111	0.200	pCi/g						
Cadmium-109	UI	2.52	1.34	+/-0.608		pCi/g						
Cerium-139	U	0.0117	0.0576	+/-0.0165	0.050	pCi/g						
Cesium-134	UI	0.154	0.116	+/-0.0388	0.100	pCi/g						
Cesium-137		0.163	0.0748	+/-0.0383	0.100	pCi/g						
Cobalt-60	U	-0.00805	0.0716	+/-0.0221	0.100	pCi/g						
Europium-152	U	-0.0368	0.180	+/-0.0637	0.200	pCi/g						
Lanthanum-140	U	-0.00373	0.171	+/-0.0525		pCi/g						
Lead-212		1.81	0.110	+/-0.113	0.100	pCi/g						
Lead-214		1.43	0.135	+/-0.127	0.100	pCi/g						
Mercury-203	UI	0.080	0.0744	+/-0.0398	0.100	pCi/g						
Potassium-40		20.4	0.604	+/-1.22	1.00	pCi/g						
Radium-223	U	0.286	1.37	+/-0.403		pCi/g						
Radium-224	UI	4.75	1.25	+/-0.823		pCi/g						
Radium-226		1.39	0.117	+/-0.111		pCi/g						
Radium-228		1.71	0.243	+/-0.186	0.500	pCi/g						
Ruthenium-106	U	0.153	0.614	+/-0.176	0.800	pCi/g						
Sodium-22	U	0.0291	0.0853	+/-0.024	0.080	pCi/g						
Strontium-85	U	0.0758	0.0868	+/-0.0275		pCi/g						
Thallium-208		0.551	0.0682	+/-0.0492	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 22, 2010

Client Sample ID: RE12-10-7635  
Sample ID: 244132009

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	0.757	+/-0.229		pCi/g						
Thorium-231	U	0.286	1.37	+/-0.403		pCi/g						
Thorium-234	U	1.69	2.55	+/-1.32	2.00	pCi/g						
Tin-113	U	0.0196	0.0909	+/-0.027	0.100	pCi/g						
Uranium-235	U	-0.00642	0.406	+/-0.121	0.500	pCi/g						
Yttrium-88	U	0.0241	0.0741	+/-0.0204	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"	81.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	91.1	(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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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7635  
Sample ID: 244132009

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7642  
Sample ID: 244132010  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 11.4%

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	0.000652	0.021	+/-0.00197	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00359	0.0198	+/-0.00887	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00359	0.0226	+/-0.00268	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.13	0.110	+/-0.102	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0613	0.0681	+/-0.0169	0.100	pCi/g						
Uranium-238		1.26	0.0637	+/-0.111	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0737	0.375	+/-0.120	0.200	pCi/g		MXR1	01/19/10	1055	940270	4
Bismuth-211	UI	4.20	0.345	+/-0.275		pCi/g						
Bismuth-214		1.25	0.102	+/-0.099	0.200	pCi/g						
Cadmium-109	UI	4.03	1.50	+/-0.567		pCi/g						
Cerium-139	U	-0.0251	0.0466	+/-0.0146	0.050	pCi/g						
Cesium-134	UI	0.119	0.0901	+/-0.0477	0.100	pCi/g						
Cesium-137	U	0.026	0.0692	+/-0.0214	0.100	pCi/g						
Cobalt-60	U	-0.0101	0.0616	+/-0.0192	0.100	pCi/g						
Europium-152	U	-0.0348	0.161	+/-0.0526	0.200	pCi/g						
Lanthanum-140	U	-0.0631	0.120	+/-0.042		pCi/g						
Lead-212		1.87	0.0911	+/-0.0972	0.100	pCi/g						
Lead-214		1.46	0.114	+/-0.103	0.100	pCi/g						
Mercury-203	U	0.046	0.0621	+/-0.0194	0.100	pCi/g						
Potassium-40		19.6	0.542	+/-1.06	1.00	pCi/g						
Radium-223	U	-0.0973	1.12	+/-0.378		pCi/g						
Radium-224	UI	4.75	1.04	+/-0.661		pCi/g						
Radium-226		1.25	0.102	+/-0.099		pCi/g						
Radium-228		2.10	0.191	+/-0.198	0.500	pCi/g						
Ruthenium-106	U	-0.137	0.488	+/-0.158	0.800	pCi/g						
Sodium-22	U	0.0117	0.0721	+/-0.0209	0.080	pCi/g						
Strontium-85	U	0.0452	0.0621	+/-0.0192		pCi/g						
Thallium-208		0.622	0.0559	+/-0.0482	0.080	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7642  
Sample ID: 244132010

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	0.100	0.623	+/-0.177		pCi/g					
Thorium-231	U	-0.0973	1.12	+/-0.378		pCi/g					
Thorium-234		2.88	2.77	+/-1.28	2.00	pCi/g					
Tin-113	U	-0.0189	0.0722	+/-0.0221	0.100	pCi/g					
Uranium-235	U	0.189	0.355	+/-0.103	0.500	pCi/g					
Yttrium-88	U	0.0182	0.0653	+/-0.0185	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"	95.3	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	96.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.8	(50%-105%)

### Notes:

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

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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 22, 2010

Client Sample ID: RE12-10-7642  
Sample ID: 244132010

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7649  
Sample ID: 244132011  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 22%

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	-0.000614	0.0204	+/-0.00583	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00376	0.0207	+/-0.00517	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0125	0.0237	+/-0.00439	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.37	0.128	+/-0.124	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0512	0.0797	+/-0.0166	0.100	pCi/g						
Uranium-238		1.59	0.0745	+/-0.140	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0262	0.227	+/-0.0759	0.200	pCi/g		MXR1	01/19/10	1104	940270	4
Bismuth-211	UI	4.36	0.305	+/-0.332		pCi/g						
Bismuth-214		1.28	0.103	+/-0.104	0.200	pCi/g						
Cadmium-109	UI	3.66	1.10	+/-0.383		pCi/g						
Cerium-139	U	-0.0211	0.0436	+/-0.0135	0.050	pCi/g						
Cesium-134	U	0.0105	0.0777	+/-0.0226	0.100	pCi/g						
Cesium-137		0.124	0.0617	+/-0.0282	0.100	pCi/g						
Cobalt-60	U	-0.0278	0.0574	+/-0.0198	0.100	pCi/g						
Europium-152	U	-0.0406	0.153	+/-0.0497	0.200	pCi/g						
Lanthanum-140	U	-0.0453	0.118	+/-0.0393		pCi/g						
Lead-212		1.75	0.082	+/-0.119	0.100	pCi/g						
Lead-214		1.52	0.106	+/-0.122	0.100	pCi/g						
Mercury-203	U	0.0192	0.0632	+/-0.0212	0.100	pCi/g						
Potassium-40		20.9	0.485	+/-1.20	1.00	pCi/g						
Radium-223	U	0.606	1.08	+/-0.356		pCi/g						
Radium-224	UI	4.99	0.933	+/-0.656		pCi/g						
Radium-226		1.28	0.103	+/-0.104		pCi/g						
Radium-228		1.78	0.196	+/-0.182	0.500	pCi/g						
Ruthenium-106	U	-0.0903	0.477	+/-0.150	0.800	pCi/g						
Sodium-22	U	-0.0108	0.0659	+/-0.021	0.080	pCi/g						
Strontium-85	U	0.0368	0.0591	+/-0.0184		pCi/g						
Thallium-208		0.542	0.0515	+/-0.0502	0.080	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7649  
244132011

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	-0.0126	0.585	+/-0.180		pCi/g					
Thorium-231	U	0.606	1.08	+/-0.356		pCi/g					
Thorium-234	U	1.21	1.96	+/-0.935	2.00	pCi/g					
Tin-113	U	-0.0164	0.0734	+/-0.0222	0.100	pCi/g					
Uranium-235	U	-0.0661	0.325	+/-0.0996	0.500	pCi/g					
Yttrium-88	U	0.0153	0.0627	+/-0.0178	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"	95.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	85.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.2	(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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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7649  
244132011

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 22, 2010

Client Sample ID: RE12-10-7650  
Sample ID: 244132012  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 13%

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	0.0079	0.0206	+/-0.00672	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00301	0.0248	+/-0.00521	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00301	0.0284	+/-0.00301	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.10	0.108	+/-0.099	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236	U	0.0475	0.0672	+/-0.0147	0.100	pCi/g						
Uranium-238		1.01	0.0627	+/-0.0926	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0544	0.280	+/-0.0879	0.200	pCi/g		MXR1	01/19/10	1112	940270	4
Bismuth-211	UI	4.70	0.369	+/-0.306		pCi/g						
Bismuth-214		1.28	0.123	+/-0.104	0.200	pCi/g						
Cadmium-109	UI	4.76	1.26	+/-0.633		pCi/g						
Cerium-139	U	-0.0265	0.0509	+/-0.0162	0.050	pCi/g						
Cesium-134	U	0.0653	0.0937	+/-0.0287	0.100	pCi/g						
Cesium-137	U	0.00252	0.0734	+/-0.0228	0.100	pCi/g						
Cobalt-60	U	0.032	0.0768	+/-0.0216	0.100	pCi/g						
Europium-152	U	0.0442	0.181	+/-0.0601	0.200	pCi/g						
Lanthanum-140	U	-0.0201	0.146	+/-0.0462		pCi/g						
Lead-212		2.01	0.0941	+/-0.0944	0.100	pCi/g						
Lead-214		1.63	0.129	+/-0.115	0.100	pCi/g						
Mercury-203	U	-0.0149	0.0694	+/-0.0214	0.100	pCi/g						
Potassium-40		19.2	0.612	+/-1.02	1.00	pCi/g						
Radium-223	U	0.0204	1.07	+/-0.362		pCi/g						
Radium-224	UI	5.44	1.07	+/-0.635		pCi/g						
Radium-226		1.28	0.123	+/-0.104		pCi/g						
Radium-228		1.88	0.215	+/-0.202	0.500	pCi/g						
Ruthenium-106	U	0.102	0.567	+/-0.165	0.800	pCi/g						
Sodium-22	U	0.00849	0.0753	+/-0.0225	0.080	pCi/g						
Strontium-85	U	0.0678	0.0705	+/-0.0216		pCi/g						
Thallium-208		0.687	0.0572	+/-0.0518	0.080	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 22, 2010

Client Sample ID: RE12-10-7650  
Sample ID: 244132012

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	-0.0414	0.644	+/-0.190		pCi/g					
Thorium-231	U	0.0204	1.07	+/-0.362		pCi/g					
Thorium-234	U	0.340	2.35	+/-0.929	2.00	pCi/g					
Tin-113	U	0.0163	0.0783	+/-0.0232	0.100	pCi/g					
Uranium-235	U	0.0374	0.377	+/-0.114	0.500	pCi/g					
Yttrium-88	U	-0.00167	0.0692	+/-0.0212	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"	91.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	84.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(50%-105%)

### Notes:

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

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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 22, 2010

Client Sample ID: RE12-10-7650  
Sample ID: 244132012

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 22, 2010

Client Sample ID: RE12-10-7641  
Sample ID: 244132013  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 14.4%

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	0.00624	0.0195	+/-0.00355	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00605	0.020	+/-0.00554	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0121	0.0229	+/-0.00387	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.52	0.115	+/-0.203	0.100	pCi/g		KXM4	01/19/10	1933	940269	3
Uranium-235/236		0.0967	0.0716	+/-0.0231	0.100	pCi/g						
Uranium-238		2.97	0.0669	+/-0.235	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0495	0.116	+/-0.0355	0.200	pCi/g		MXR1	01/19/10	1141	940270	4
Bismuth-211	UI	4.48	0.424	+/-0.294		pCi/g						
Bismuth-214		1.31	0.143	+/-0.128	0.200	pCi/g						
Cadmium-109	UI	3.40	1.10	+/-0.437		pCi/g						
Cerium-139	U	-0.0167	0.0577	+/-0.018	0.050	pCi/g						
Cesium-134	UI	0.115	0.112	+/-0.0378	0.100	pCi/g						
Cesium-137		0.207	0.0817	+/-0.0396	0.100	pCi/g						
Cobalt-60	U	-0.0213	0.0779	+/-0.026	0.100	pCi/g						
Europium-152	U	-0.0532	0.193	+/-0.0649	0.200	pCi/g						
Lanthanum-140	U	-0.0626	0.169	+/-0.0564		pCi/g						
Lead-212		1.59	0.101	+/-0.0958	0.100	pCi/g						
Lead-214		1.56	0.154	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.0262	0.0807	+/-0.0233	0.100	pCi/g						
Potassium-40		19.0	0.771	+/-1.01	1.00	pCi/g						
Radium-223	U	-0.755	1.29	+/-0.413		pCi/g						
Radium-224	UI	4.73	1.15	+/-0.724		pCi/g						
Radium-226		1.31	0.143	+/-0.128		pCi/g						
Radium-228		1.71	0.305	+/-0.194	0.500	pCi/g						
Ruthenium-106	U	-0.154	0.722	+/-0.224	0.800	pCi/g						
Sodium-22	U	0.0346	0.103	+/-0.0294	0.080	pCi/g						
Strontium-85	UI	0.0819	0.0811	+/-0.0243		pCi/g						
Thallium-208		0.516	0.078	+/-0.0517	0.080	pCi/g						

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7641  
Sample ID: 244132013

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	-0.193	0.725	+/-0.219		pCi/g					
Thorium-231	U	-0.755	1.29	+/-0.413		pCi/g					
Thorium-234		2.98	1.14	+/-0.676	2.00	pCi/g					
Tin-113	U	-0.0135	0.0932	+/-0.029	0.100	pCi/g					
Uranium-235	U	0.081	0.393	+/-0.136	0.500	pCi/g					
Yttrium-88	U	0.0156	0.081	+/-0.0233	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"	92.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.0	(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 :

- \*\* 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 22, 2010

Client Sample ID: RE12-10-7641  
Sample ID: 244132013

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7643  
Sample ID: 244132014  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 16.3%

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	0.00645	0.0201	+/-0.00365	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0128	0.0211	+/-0.00603	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.0204	0.0241	+/-0.00552	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.99	0.0917	+/-0.158	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236		0.110	0.0569	+/-0.0227	0.100	pCi/g						
Uranium-238		2.33	0.0532	+/-0.182	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0564	0.228	+/-0.0755	0.200	pCi/g		MXR1	01/19/10	1141	940270	4
Bismuth-211	UI	4.71	0.349	+/-0.253		pCi/g						
Bismuth-214		1.28	0.112	+/-0.0943	0.200	pCi/g						
Cadmium-109	UI	2.70	1.34	+/-0.399		pCi/g						
Cerium-139	U	-0.00268	0.0508	+/-0.0155	0.050	pCi/g						
Cesium-134	UI	0.134	0.0918	+/-0.033	0.100	pCi/g						
Cesium-137		0.490	0.0618	+/-0.0425	0.100	pCi/g						
Cobalt-60	U	-0.0282	0.0493	+/-0.017	0.100	pCi/g						
Europium-152	U	-0.0294	0.164	+/-0.0605	0.200	pCi/g						
Lanthanum-140	U	0.0032	0.111	+/-0.0394		pCi/g						
Lead-212		1.56	0.094	+/-0.0779	0.100	pCi/g						
Lead-214		1.64	0.105	+/-0.0979	0.100	pCi/g						
Mercury-203	U	-0.0147	0.0672	+/-0.020	0.100	pCi/g						
Potassium-40		21.5	0.538	+/-1.07	1.00	pCi/g						
Radium-223	U	-0.639	1.18	+/-0.365		pCi/g						
Radium-224	UI	4.27	1.07	+/-0.589		pCi/g						
Radium-226		1.28	0.112	+/-0.0943		pCi/g						
Radium-228		1.53	0.222	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	-0.0286	0.502	+/-0.154	0.800	pCi/g						
Sodium-22	U	-0.034	0.0592	+/-0.0199	0.080	pCi/g						
Strontium-85	U	0.0635	0.0704	+/-0.022		pCi/g						
Thallium-208		0.569	0.0541	+/-0.0449	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7643  
Sample ID: 244132014

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	0.415	0.689	+/-0.195		pCi/g					
Thorium-231	U	-0.639	1.18	+/-0.365		pCi/g					
Thorium-234		2.79	1.94	+/-0.797	2.00	pCi/g					
Tin-113	U	-0.024	0.0761	+/-0.0233	0.100	pCi/g					
Uranium-235	U	0.0505	0.374	+/-0.112	0.500	pCi/g					
Yttrium-88	U	-0.016	0.0435	+/-0.0154	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"	95.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	97.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.9	(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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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7643  
Sample ID: 244132014

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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Address : PO Box 1663  
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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7640  
Sample ID: 244132015  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 7.63%

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	-0.000521	0.022	+/-0.0044	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00619	0.0205	+/-0.0054	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00372	0.0234	+/-0.00278	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.712	0.0902	+/-0.0673	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236	U	0.036	0.056	+/-0.0117	0.100	pCi/g						
Uranium-238		0.795	0.0523	+/-0.0731	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0351	0.101	+/-0.0326	0.200	pCi/g		MXR1	01/19/10	1141	940270	4
Bismuth-211	UI	3.65	0.330	+/-0.308		pCi/g						
Bismuth-214		1.24	0.125	+/-0.115	0.200	pCi/g						
Cadmium-109	UI	3.05	0.934	+/-0.377		pCi/g						
Cerium-139	U	-0.0259	0.0471	+/-0.0149	0.050	pCi/g						
Cesium-134	U	0.0267	0.104	+/-0.034	0.100	pCi/g						
Cesium-137	U	0.0117	0.0801	+/-0.0245	0.100	pCi/g						
Cobalt-60	U	0.028	0.0862	+/-0.0238	0.100	pCi/g						
Europium-152	U	0.0493	0.174	+/-0.0494	0.200	pCi/g						
Lanthanum-140	U	-0.135	0.136	+/-0.055		pCi/g						
Lead-212		1.39	0.115	+/-0.106	0.100	pCi/g						
Lead-214		1.27	0.115	+/-0.112	0.100	pCi/g						
Mercury-203	U	0.0347	0.0756	+/-0.0209	0.100	pCi/g						
Potassium-40		24.3	0.810	+/-1.54	1.00	pCi/g						
Radium-223	U	-0.408	1.10	+/-0.386		pCi/g						
Radium-224	UI	2.95	1.58	+/-0.536		pCi/g						
Radium-226		1.24	0.125	+/-0.115		pCi/g						
Radium-228		1.53	0.223	+/-0.196	0.500	pCi/g						
Ruthenium-106	U	-0.172	0.564	+/-0.184	0.800	pCi/g						
Sodium-22	U	-0.0204	0.0831	+/-0.0274	0.080	pCi/g						
Strontium-85	U	0.00243	0.0731	+/-0.0252		pCi/g						
Thallium-208		0.586	0.0675	+/-0.0567	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7640  
Sample ID: 244132015

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	0.149	0.655	+/-0.197		pCi/g						
Thorium-231	U	-0.408	1.10	+/-0.386		pCi/g						
Thorium-234		2.51	0.981	+/-0.678	2.00	pCi/g						
Tin-113	U	0.0101	0.0957	+/-0.028	0.100	pCi/g						
Uranium-235	U	0.0672	0.363	+/-0.108	0.500	pCi/g						
Yttrium-88	U	0.00395	0.0683	+/-0.0206	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"	93.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	86.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	102	(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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## Certificate of Analysis

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TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7640  
Sample ID: 244132015

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

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 22, 2010

Client Sample ID: RE12-10-7645  
Sample ID: 244132016  
Matrix: R  
Collect Date: 05-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	0.00424	0.0205	+/-0.00285	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	2.49E-09	0.0216	+/-0.00826	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	0.00784	0.0247	+/-0.00454	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.19	0.0947	+/-0.102	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236		0.102	0.0588	+/-0.0209	0.100	pCi/g						
Uranium-238		1.31	0.0549	+/-0.111	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00637	0.275	+/-0.087	0.200	pCi/g		MXR1	01/19/10	1142	940270	4
Bismuth-211	UI	3.94	0.245	+/-0.223		pCi/g						
Bismuth-214		1.28	0.0856	+/-0.0852	0.200	pCi/g						
Cadmium-109	UI	2.02	1.05	+/-0.609		pCi/g						
Cerium-139	U	-0.0198	0.040	+/-0.0118	0.050	pCi/g						
Cesium-134	UI	0.160	0.0772	+/-0.0252	0.100	pCi/g						
Cesium-137		0.0466	0.0426	+/-0.0168	0.100	pCi/g						
Cobalt-60	U	-0.0168	0.0427	+/-0.014	0.100	pCi/g						
Europium-152	U	0.00362	0.117	+/-0.0444	0.200	pCi/g						
Lanthanum-140	U	-0.00481	0.0863	+/-0.0311		pCi/g						
Lead-212		1.50	0.0751	+/-0.0709	0.100	pCi/g						
Lead-214		1.37	0.0853	+/-0.0853	0.100	pCi/g						
Mercury-203	UI	0.075	0.0599	+/-0.0164	0.100	pCi/g						
Potassium-40		20.1	0.396	+/-0.977	1.00	pCi/g						
Radium-223	U	0.421	0.861	+/-0.285		pCi/g						
Radium-224	UI	3.59	0.854	+/-0.449		pCi/g						
Radium-226		1.28	0.0856	+/-0.0852		pCi/g						
Radium-228		1.65	0.148	+/-0.157	0.500	pCi/g						
Ruthenium-106	U	0.0588	0.405	+/-0.122	0.800	pCi/g						
Sodium-22	U	-0.0188	0.0546	+/-0.0174	0.080	pCi/g						
Strontium-85	UI	0.0979	0.0585	+/-0.017		pCi/g						
Thallium-208		0.517	0.0432	+/-0.0375	0.080	pCi/g						



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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7645  
Sample ID: 244132016

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	0.00468	0.507	+/-0.150		pCi/g					
Thorium-231	U	0.421	0.861	+/-0.285		pCi/g					
Thorium-234	U	0.366	2.22	+/-0.988	2.00	pCi/g					
Tin-113	U	-0.0448	0.0532	+/-0.0168	0.100	pCi/g					
Uranium-235	U	0.0742	0.307	+/-0.0931	0.500	pCi/g					
Yttrium-88	U	0.00858	0.0419	+/-0.0134	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"	91.0	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	90.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.7	(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
- 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 22, 2010

Client Sample ID: RE12-10-7645  
Sample ID: 244132016  
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 22, 2010

Client Sample ID: RE12-10-7646  
Sample ID: 244132017  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.5%

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	0.0104	0.0208	+/-0.00584	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	1.17E-09	0.0202	+/-0.006	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	1.46E-10	0.0232	+/-0.00245	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.854	0.091	+/-0.078	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236		0.0581	0.0565	+/-0.0159	0.100	pCi/g						
Uranium-238		1.09	0.0528	+/-0.0952	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0812	0.371	+/-0.110	0.200	pCi/g		MXR1	01/19/10	1142	940270	4
Bismuth-211	UI	4.08	0.395	+/-0.295		pCi/g						
Bismuth-214		1.25	0.113	+/-0.110	0.200	pCi/g						
Cadmium-109	UI	3.25	1.54	+/-0.614		pCi/g						
Cerium-139	U	0.0277	0.0589	+/-0.0172	0.050	pCi/g						
Cesium-134	U	0.0605	0.107	+/-0.0296	0.100	pCi/g						
Cesium-137	U	0.00164	0.0737	+/-0.0226	0.100	pCi/g						
Cobalt-60	U	-0.0342	0.0645	+/-0.0226	0.100	pCi/g						
Europium-152	U	-0.0186	0.188	+/-0.0824	0.200	pCi/g						
Lanthanum-140	U	-0.0576	0.148	+/-0.0493		pCi/g						
Lead-212		1.72	0.104	+/-0.0888	0.100	pCi/g						
Lead-214		1.42	0.145	+/-0.109	0.100	pCi/g						
Mercury-203	U	0.0847	0.089	+/-0.0272	0.100	pCi/g						
Potassium-40		20.0	0.516	+/-1.15	1.00	pCi/g						
Radium-223	U	-0.407	1.25	+/-0.443		pCi/g						
Radium-224	UI	4.52	1.18	+/-0.819		pCi/g						
Radium-226		1.25	0.113	+/-0.110		pCi/g						
Radium-228		1.65	0.253	+/-0.199	0.500	pCi/g						
Ruthenium-106	U	0.179	0.612	+/-0.180	0.800	pCi/g						
Sodium-22	U	0.0103	0.0938	+/-0.0283	0.080	pCi/g						
Strontium-85	U	0.0407	0.0768	+/-0.0249		pCi/g						
Thallium-208		0.562	0.0685	+/-0.0505	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7646  
Sample ID: 244132017

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	-0.373	0.770	+/-0.250		pCi/g					
Thorium-231	U	-0.407	1.25	+/-0.443		pCi/g					
Thorium-234	U	0.0828	3.05	+/-0.898	2.00	pCi/g					
Tin-113	U	0.0296	0.0908	+/-0.0262	0.100	pCi/g					
Uranium-235	U	-0.0779	0.416	+/-0.129	0.500	pCi/g					
Yttrium-88	U	0.0196	0.0771	+/-0.0217	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"	81.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.2	(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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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7646  
Sample ID: 244132017

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 22, 2010

Client Sample ID: RE12-10-7636  
Sample ID: 244132018  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 9.79%

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	0.00628	0.0196	+/-0.00649	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0013	0.0215	+/-0.00623	0.050	pCi/g		KXM4	01/16/10	1122	940267	2
Plutonium-239/240	U	-0.0039	0.0246	+/-0.00291	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.07	0.0915	+/-0.093	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236		0.0766	0.0568	+/-0.0175	0.100	pCi/g						
Uranium-238		1.05	0.0531	+/-0.0919	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.187	0.535	+/-0.149	0.200	pCi/g		MXR1	01/19/10	1204	940270	4
Bismuth-211	UI	3.74	0.357	+/-0.296		pCi/g						
Bismuth-214		1.14	0.0885	+/-0.0875	0.200	pCi/g						
Cadmium-109	UI	1.85	1.68	+/-0.538		pCi/g						
Cerium-139	U	0.0167	0.0603	+/-0.0176	0.050	pCi/g						
Cesium-134	U	0.0811	0.0986	+/-0.0264	0.100	pCi/g						
Cesium-137	U	0.0115	0.0715	+/-0.0214	0.100	pCi/g						
Cobalt-60	U	0.00714	0.0635	+/-0.0191	0.100	pCi/g						
Europium-152	U	-0.0318	0.183	+/-0.095	0.200	pCi/g						
Lanthanum-140	U	-0.0733	0.121	+/-0.0424		pCi/g						
Lead-212		1.60	0.104	+/-0.0921	0.100	pCi/g						
Lead-214		1.30	0.125	+/-0.108	0.100	pCi/g						
Mercury-203	U	0.00864	0.0785	+/-0.0225	0.100	pCi/g						
Potassium-40		20.6	0.443	+/-1.12	1.00	pCi/g						
Radium-223	U	-1.48	1.25	+/-0.422		pCi/g						
Radium-224	UI	4.19	1.18	+/-0.826		pCi/g						
Radium-226		1.14	0.0885	+/-0.0875		pCi/g						
Radium-228		1.64	0.216	+/-0.174	0.500	pCi/g						
Ruthenium-106	U	0.271	0.625	+/-0.180	0.800	pCi/g						
Sodium-22	U	-0.019	0.0714	+/-0.0231	0.080	pCi/g						
Strontium-85	UI	0.0963	0.078	+/-0.0228		pCi/g						
Thallium-208		0.394	0.0622	+/-0.0495	0.080	pCi/g						

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID: RE12-10-7636  
Sample ID: 244132018

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	0.408	0.827	+/-0.232		pCi/g					
Thorium-231	U	-1.48	1.25	+/-0.422		pCi/g					
Thorium-234	U	-0.0293	3.94	+/-1.13	2.00	pCi/g					
Tin-113	U	-0.0464	0.084	+/-0.0263	0.100	pCi/g					
Uranium-235	U	-0.0131	0.423	+/-0.127	0.500	pCi/g					
Yttrium-88	U	-0.00282	0.0526	+/-0.0164	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"	91.4	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	84.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.8	(50%-105%)

### Notes:

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

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- 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 22, 2010

Client Sample ID: RE12-10-7636  
Sample ID: 244132018

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 22, 2010

Client Sample ID: RE12-10-7657  
Sample ID: 244132019  
Matrix: R  
Collect Date: 05-JAN-10  
Receive Date: 08-JAN-10  
Collector: Client  
Moisture: 10.1%

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	-0.000726	0.0187	+/-0.00531	0.050	pCi/g		KXM4	01/18/10	1453 940262	1
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	-0.00123	0.0203	+/-0.00213	0.050	pCi/g		KXM4	01/15/10	1323 940267	2
Plutonium-239/240	U	0.00123	0.0232	+/-0.00123	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		0.962	0.093	+/-0.0857	0.100	pCi/g		KXM4	01/19/10	1934 940269	3
Uranium-235/236		0.0705	0.0577	+/-0.0169	0.100	pCi/g					
Uranium-238		0.858	0.0539	+/-0.0782	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	-0.152	0.554	+/-0.166	0.200	pCi/g		MXR1	01/19/10	1420 940270	4
Bismuth-211	UI	4.33	0.440	+/-0.319		pCi/g					
Bismuth-214		1.30	0.144	+/-0.109	0.200	pCi/g					
Cadmium-109	U	1.62	1.81	+/-0.801		pCi/g					
Cerium-139	U	-0.0216	0.065	+/-0.0203	0.050	pCi/g					
Cesium-134	U	0.0834	0.106	+/-0.0288	0.100	pCi/g					
Cesium-137	U	0.0309	0.080	+/-0.0235	0.100	pCi/g					
Cobalt-60	U	0.00847	0.077	+/-0.0233	0.100	pCi/g					
Europium-152	U	-0.146	0.205	+/-0.0993	0.200	pCi/g					
Lanthanum-140	U	0.0208	0.139	+/-0.0463		pCi/g					
Lcad-212		1.92	0.124	+/-0.109	0.100	pCi/g					
Lead-214		1.51	0.147	+/-0.118	0.100	pCi/g					
Mercury-203	U	0.0386	0.0897	+/-0.0291	0.100	pCi/g					
Potassium-40		20.5	0.448	+/-1.15	1.00	pCi/g					
Radium-223		0.104	1.55	+/-0.458		pCi/g					
Radium-224	UI	5.09	1.41	+/-0.843		pCi/g					
Radium-226		1.30	0.144	+/-0.109		pCi/g					
Radium-228		1.60	0.254	+/-0.199	0.500	pCi/g					
Ruthenium-106	U	-0.00521	0.646	+/-0.200	0.800	pCi/g					
Sodium-22	U	-0.00192	0.0874	+/-0.0272	0.080	pCi/g					
Strontium-85	U	0.0686	0.0785	+/-0.0242		pCi/g					
Thallium-208		0.620	0.0694	+/-0.0552	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 22, 2010

Client Sample ID: RE12-10-7657  
Sample ID: 244132019

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	0.519	0.909	+/-0.260		pCi/g					
Thorium-231	U	0.104	1.55	+/-0.458		pCi/g					
Thorium-234	U	-0.425	4.26	+/-1.27	2.00	pCi/g					
Tin-113	U	-0.023	0.0941	+/-0.029	0.100	pCi/g					
Uranium-235	U	0.163	0.474	+/-0.143	0.500	pCi/g					
Yttrium-88	U	0.00242	0.0628	+/-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, 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"	91.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	92.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.0	(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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Project: LANL ER Project

Report Date: January 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7657  
244132019

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

Report Date: January 22, 2010

Client Sample ID: RE12-10-7658  
Sample ID: 244132020  
Matrix: R  
Collect Date: 05-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	0.00688	0.0211	+/-0.00424	0.050	pCi/g		KXM4	01/18/10	1453	940262	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00124	0.0204	+/-0.00328	0.050	pCi/g		KXM4	01/15/10	1323	940267	2
Plutonium-239/240	U	0.00619	0.0234	+/-0.0054	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.07	0.0899	+/-0.0932	0.100	pCi/g		KXM4	01/19/10	1934	940269	3
Uranium-235/236	U	0.0394	0.0558	+/-0.0141	0.100	pCi/g						
Uranium-238		1.09	0.0521	+/-0.0948	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0828	0.111	+/-0.0347	0.200	pCi/g		MXR1	01/19/10	1705	940270	4
Bismuth-211	UI	3.91	0.351	+/-0.294		pCi/g						
Bismuth-214		1.32	0.126	+/-0.108	0.200	pCi/g						
Cadmium-109	UI	3.83	1.02	+/-0.442		pCi/g						
Cerium-139	U	0.00172	0.0549	+/-0.0164	0.050	pCi/g						
Cesium-134	UI	0.112	0.105	+/-0.0381	0.100	pCi/g						
Cesium-137	U	0.0346	0.0732	+/-0.0239	0.100	pCi/g						
Cobalt-60	U	-0.00106	0.0719	+/-0.0223	0.100	pCi/g						
Europium-152	U	-0.113	0.169	+/-0.0622	0.200	pCi/g						
Lanthanum-140	U	-0.0362	0.141	+/-0.0539		pCi/g						
Lead-212		1.54	0.101	+/-0.101	0.100	pCi/g						
Lead-214		1.36	0.122	+/-0.108	0.100	pCi/g						
Mercury-203	U	0.0394	0.0785	+/-0.0221	0.100	pCi/g						
Potassium-40		20.6	0.612	+/-1.02	1.00	pCi/g						
Radium-223	U	-0.349	1.16	+/-0.407		pCi/g						
Radium-224	UI	4.60	1.15	+/-0.795		pCi/g						
Radium-226		1.32	0.126	+/-0.108		pCi/g						
Radium-228		1.79	0.251	+/-0.196	0.500	pCi/g						
Ruthenium-106	U	-0.0167	0.609	+/-0.187	0.800	pCi/g						
Sodium-22	U	-0.00957	0.0714	+/-0.0226	0.080	pCi/g						
Strontium-85	U	0.0527	0.0724	+/-0.0228		pCi/g						
Thallium-208		0.541	0.0698	+/-0.0532	0.080	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 22, 2010

Client Sample ID:  
Sample ID:

RE12-10-7658  
244132020

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	-0.166	0.680	+/-0.202		pCi/g					
Thorium-231	U	-0.349	1.16	+/-0.407		pCi/g					
Thorium-234	U	0.973	1.12	+/-0.472	2.00	pCi/g					
Tin-113	U	-0.0129	0.0793	+/-0.024	0.100	pCi/g					
Uranium-235	U	-0.0564	0.375	+/-0.115	0.500	pCi/g					
Yttrium-88	U	-0.0155	0.0589	+/-0.0196	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"	97.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	102	(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.
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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 22, 2010

Client Sample ID: RE12-10-7658  
Sample ID: 244132020

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

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## QC Summary

Report Date: January 22, 2010

Page 1 of 6

Client : Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico  
Contact: Ms. Joylene Valdez  
Workorder: 244132

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
<b>Rad Alpha Spec</b>										
Batch	940262									
QC1202012137	244132006	DUP								
Americium-241		U	0.00255	U	0.00167	pCi/g	0.115	(0-1)	KXM4	01/18/1014:53
		TPU:	+/-0.00168		+/-0.00216					
		Yield:	83.1		92.3					
QC1202012138	LCS									
Americium-241	33.2				30.9	pCi/g	93.1	(75%-125%)		01/21/1010:49
		TPU:			+/-2.03					
		Yield:			109					
QC1202012136	MB									
Americium-241		U	-0.00114		pCi/g					01/21/1010:49
		TPU:	+/-0.00302							
		Yield:	106							
Batch	940267									
QC1202012148	244132005	DUP								
Plutonium-238		U	0.00122	U	1.43E-10	pCi/g	0.168	(0-1)	KXM4	01/15/1013:24
		TPU:	+/-0.00122		+/-0.0024					
		Yield:	91.8		89.7					
Plutonium-239/240		U	0.0134	U	0.0156	pCi/g	0.112	(0-1)		
		TPU:	+/-0.00476		+/-0.005					
		Yield:	91.8		89.7					
QC1202012149	LCS									
Plutonium-238					6.81	pCi/g		(75%-125%)		01/15/1013:24
		TPU:			+/-0.483					
		Yield:			90.9					
Plutonium-239/240	41.8				38.0	pCi/g	90.9	(75%-125%)		
		TPU:			+/-2.27					
		Yield:			90.9					
QC1202012147	MB									
Plutonium-238		U	-0.00292		pCi/g					01/15/1013:23
		TPU:	+/-0.00292							
		Yield:	95.6							
Plutonium-239/240		U	0.00292		pCi/g					
		TPU:	+/-0.00358							
		Yield:	95.6							
Batch	940269									
QC1202012160	244132005	DUP								
Uranium-233/234			2.21		1.67	pCi/g	0.844	(0-1)	KXM4	01/19/1019:34
		TPU:	+/-0.182		+/-0.136					
		Yield:	96.0		89.2					
Uranium-235/236			0.132		0.0879	pCi/g	0.479	(0-1)		
		TPU:	+/-0.0267		+/-0.0196					
		Yield:	96.0		89.2					
Uranium-238			2.58		2.12	pCi/g	0.620	(0-1)		
		TPU:	+/-0.208		+/-0.167					



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## QC Summary

Workorder: 244132

Page 2 of 6

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	940269										
QC1202012161	LCS	Yield:	96.0	89.2							
Uranium-233/234				6.08	pCi/g			(75%-125%)			
		TPU:		+/-0.552							
		Yield:		87.0							
Uranium-235/236				0.336	pCi/g			(75%-125%)			
		TPU:		+/-0.0873							
		Yield:		87.0							
Uranium-238	5.75			6.21	pCi/g		108	(75%-125%)			
		TPU:		+/-0.561							
		Yield:		87.0							
QC1202012159	MB										
Uranium-233/234			U	0.00919	pCi/g						
		TPU:		+/-0.00365							
		Yield:		100							
Uranium-235/236			U	0.00348	pCi/g						
		TPU:		+/-0.00348							
		Yield:		100							
Uranium-238			U	0.00281	pCi/g						
		TPU:		+/-0.00345							
		Yield:		100							
Rad Gamma Spec											
Batch	940270										
QC1202012163	244132001	DUP									
Americium-241		U	0.0441	U	0.0707	pCi/g	0.141	(0-1)	MXR1	01/19/10	17:39
		TPU:	+/-0.0344		+/-0.0597						
Bismuth-211		UI	4.48	UI	4.56	pCi/g	0.0622	(0-1)			
		TPU:	+/-0.300		+/-0.327						
Bismuth-214			1.39		1.37	pCi/g	0.0456	(0-1)			
		TPU:	+/-0.125		+/-0.106						
Cadmium-109		U	0.642	UI	4.88	pCi/g	2.11	(0-1)			
		TPU:	+/-0.472		+/-0.531						
Cerium-139		U	0.00152	U	-0.0108	pCi/g	0.187	(0-1)			
		TPU:	+/-0.0184		+/-0.0146						
Cesium-134		UI	0.158	U	0.066	pCi/g	0.573	(0-1)			
		TPU:	+/-0.0525		+/-0.0279						
Cesium-137		U	0.0369	U	-0.0161	pCi/g	0.625	(0-1)			
		TPU:	+/-0.0247		+/-0.0177						
Cobalt-60		U	0.0243	U	-0.0101	pCi/g	0.345	(0-1)			
		TPU:	+/-0.0301		+/-0.0198						
Europium-152		U	-0.0627	U	-0.0595	pCi/g	0.0139	(0-1)			
		TPU:	+/-0.0651		+/-0.0488						
Lanthanum-140		U	-0.0747	U	-0.026	pCi/g	0.267	(0-1)			
		TPU:	+/-0.0559		+/-0.0353						
Lead-212			1.75		1.89	pCi/g	0.330	(0-1)			
		TPU:	+/-0.104		+/-0.116						
Lead-214			1.56		1.59	pCi/g	0.0579	(0-1)			
		TPU:	+/-0.112		+/-0.121						
Mercury-203		U	-0.00402	U	0.000468	pCi/g	0.0518	(0-1)			
		TPU:	+/-0.0232		+/-0.0202						

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## QC Summary

Workorder: 244132

Page 3 of 6

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	940270										
Potassium-40		19.8		21.1	pCi/g	0.308		(0-1)			
	TPU:	+/-0.991		+/-1.17							
Radium-223	U	0.566	U	0.190	pCi/g	0.232		(0-1)			
	TPU:	+/-0.451		+/-0.359							
Radium-224	UI	4.77	UI	4.67	pCi/g	0.0338		(0-1)			
	TPU:	+/-0.828		+/-0.593							
Radium-226		1.39		1.37	pCi/g	0.0456		(0-1)			
	TPU:	+/-0.125		+/-0.106							
Radium-228		1.82		2.15	pCi/g	0.420		(0-1)			
	TPU:	+/-0.206		+/-0.190							
Ruthenium-106	U	0.557	U	-0.0369	pCi/g	0.809		(0-1)			
	TPU:	+/-0.221		+/-0.146							
Sodium-22	U	-0.0538	U	0.0121	pCi/g	0.719		(0-1)			
	TPU:	+/-0.027		+/-0.0188							
Strontium-85	U	0.0599	U	0.0192	pCi/g	0.473		(0-1)			
	TPU:	+/-0.0268		+/-0.0163							
Thallium-208		0.539		0.614	pCi/g	0.339		(0-1)			
	TPU:	+/-0.0591		+/-0.0528							
Thorium-227	U	0.080	U	0.389	pCi/g	0.399		(0-1)			
	TPU:	+/-0.216		+/-0.171							
Thorium-231	U	0.566	U	0.190	pCi/g	0.232		(0-1)			
	TPU:	+/-0.451		+/-0.359							
Thorium-234		1.71		2.03	pCi/g	0.109		(0-1)			
	TPU:	+/-0.649		+/-0.822							
Tin-113	U	-0.0096	U	-0.033	pCi/g	0.246		(0-1)			
	TPU:	+/-0.0277		+/-0.020							
Uranium-235	U	-0.0241	U	0.202	pCi/g	0.492		(0-1)			
	TPU:	+/-0.129		+/-0.101							
Yttrium-88	U	0.0211	U	0.000566	pCi/g	0.269		(0-1)			
	TPU:	+/-0.0243		+/-0.0139							
QC1202012164	LCS										
Americium-241	15.9			14.8	pCi/g		93.3 (75%-125%)			01/19/10	18:15
	TPU:			+/-1.11							
Bismuth-211				2.13	pCi/g						
	TPU:			+/-0.335							
Bismuth-214				0.455	pCi/g						
	TPU:			+/-0.157							
Cadmium-109				33.3	pCi/g						
	TPU:			+/-2.62							
Cerium-139			U	0.00218	pCi/g						
	TPU:			+/-0.0273							
Cesium-134			U	-0.0222	pCi/g						
	TPU:			+/-0.0505							
Cesium-137	5.57			5.56	pCi/g		99.7 (75%-125%)				
	TPU:			+/-0.203							
Cobalt-60	6.46			6.74	pCi/g		104 (75%-125%)				
	TPU:			+/-0.313							
Europium-152			U	-0.0991	pCi/g						
	TPU:			+/-0.119							
Lanthanum-140			U	-0.0204	pCi/g						
	TPU:			+/-0.0354							

# GEL LABORATORIES LLC

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## QC Summary

Workorder: 244132

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	940270									
Lead-212			1.05	pCi/g						
	TPU:		+/-0.133							
Lead-214			0.741	pCi/g						
	TPU:		+/-0.118							
Mercury-203		U	0.0133	pCi/g						
	TPU:		+/-0.0374							
Potassium-40		U	0.461	pCi/g						
	TPU:		+/-0.305							
Radium-223		U	-0.518	pCi/g						
	TPU:		+/-0.743							
Radium-224			3.86	pCi/g						
	TPU:		+/-0.813							
Radium-226			0.455	pCi/g						
	TPU:		+/-0.157							
Radium-228			1.14	pCi/g						
	TPU:		+/-0.274							
Ruthenium-106		U	-0.205	pCi/g						
	TPU:		+/-0.337							
Sodium-22		U	-0.0123	pCi/g						
	TPU:		+/-0.0306							
Strontium-85		U	0.0237	pCi/g						
	TPU:		+/-0.0405							
Thallium-208			0.419	pCi/g						
	TPU:		+/-0.0712							
Thorium-227		U	0.985	pCi/g						
	TPU:		+/-0.399							
Thorium-231		U	-0.518	pCi/g						
	TPU:		+/-0.743							
Thorium-234		U	-2.2	pCi/g						
	TPU:		+/-1.95							
Tin-113		U	-0.0886	pCi/g						
	TPU:		+/-0.050							
Uranium-235		U	0.0889	pCi/g						
	TPU:		+/-0.194							
Yttrium-88		U	0.024	pCi/g						
	TPU:		+/-0.0251							
QC1202012162 MB										
Americium-241		U	0.0403	pCi/g					01/19/1017:38	
	TPU:		+/-0.0352							
Bismuth-211		U	-0.0315	pCi/g						
	TPU:		+/-0.0522							
Bismuth-214		U	-0.0109	pCi/g						
	TPU:		+/-0.0216							
Cadmium-109		U	0.165	pCi/g						
	TPU:		+/-0.133							
Cerium-139		U	-0.00814	pCi/g						
	TPU:		+/-0.00631							
Cesium-134		U	0.00125	pCi/g						
	TPU:		+/-0.00884							
Cesium-137		U	-0.00826	pCi/g						
	TPU:		+/-0.00954							

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## QC Summary

Workorder: 244132

Page 5 of 6

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	940270										
Cobalt-60			U	-0.0207	pCi/g						
	TPU:			+/-0.0128							
Europium-152			U	0.00672	pCi/g						
	TPU:			+/-0.0237							
Lanthanum-140			U	-0.0146	pCi/g						
	TPU:			+/-0.0161							
Lead-212			U	-0.0399	pCi/g						
	TPU:			+/-0.0173							
Lead-214			U	-0.0116	pCi/g						
	TPU:			+/-0.0185							
Mercury-203			U	0.0107	pCi/g						
	TPU:			+/-0.00908							
Potassium-40			U	-0.0364	pCi/g						
	TPU:			+/-0.129							
Radium-223			U	0.0584	pCi/g						
	TPU:			+/-0.168							
Radium-224			U	-0.488	pCi/g						
	TPU:			+/-0.173							
Radium-226			U	-0.0109	pCi/g						
	TPU:			+/-0.0216							
Radium-228			U	-0.0561	pCi/g						
	TPU:			+/-0.0391							
Ruthenium-106			U	0.0295	pCi/g						
	TPU:			+/-0.0712							
Sodium-22			U	0.00631	pCi/g						
	TPU:			+/-0.00936							
Strontium-85			U	-0.0872	pCi/g						
	TPU:			+/-0.0149							
Thallium-208			U	0.000454	pCi/g						
	TPU:			+/-0.0113							
Thorium-227			U	0.022	pCi/g						
	TPU:			+/-0.099							
Thorium-231			U	0.0584	pCi/g						
	TPU:			+/-0.168							
Thorium-234			U	0.118	pCi/g						
	TPU:			+/-0.409							
Tin-113			U	-0.0052	pCi/g						
	TPU:			+/-0.00992							
Uranium-235			U	0.0473	pCi/g						
	TPU:			+/-0.0491							
Yttrium-88			U	-0.000812	pCi/g						
	TPU:			+/-0.00978							

### Notes:

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported

## GEL LABORATORIES LLC

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### QC Summary

Workorder: 244132

Page 6 of 6

Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
A	The TIC is a suspected aldol-condensation product									
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.									
BD	Results are either below the MDC or tracer recovery is low									
C	Analyte has been confirmed by GC/MS analysis									
D	Results are reported from a diluted aliquot of the sample									
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# 940262 Product: AM Date: 1/22/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)	/		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	/		
Instrument source check is within limits.	/		
Instrument bkg check is within limits.	/		
Method RDL/ LLD has been met.	/		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	/		
Or meets the client's required RER acceptance criteria.	/		
Tracer yield is 15-125% . Carrier yield 25-125%.		/	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.			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	/		
Hit notification complete (if necessary)	/		NA
Batch entered into Case Narrative.	/		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (if 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: [Signature] 1/22/10

Secondary Review Performed By: [Signature] 1/22/10

has (A/S)

AM

# Am/Cm Que Sheet

11-JAN-10

Batch #: 940262 Analyst: KXM4 First Client Due Date: 05-FEB-10 Internal Due Date 25-JAN-10 Comments:  
 Tracer(s): Am241/Cm244 Tracer Code: 445-96-7-55 Expiration Date: 5-11-10 Vol: 0.1n1  
 LCS Isotope(s): Am241/Cm244 LCS Code(s): SAM 0244-B1 NA Expiration Date: 4-30-10 NA Vol(s): 0.13 1 NA  
 Spike Isotope(s): Am241/Cm244 Spike Code(s): NA NA Expiration Date: NA NA Vol(s): NA-1 NA  
 Prep Date: 1-13-10 Initials: KM Pipet ID: 2971058 Balance ID: 50410272 Witness: NDA 11216

Sample ID	Client Description	Type	Hazard Code	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry	Aliquot (g)	1/1/n	Am/Cm	Det #
244132001-1	RE12-10-7634	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	1	1	1.250	1.250	1.250	233	233
244132002-1	RE12-10-7648	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	2	2	1.261	1.261	1.261	234	234
244132003-1	RE12-10-7638	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	3	3	1.258	1.258	1.258	235	235
244132004-1	RE12-10-7639	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	4	4	1.259	1.259	1.259	236	236
244132005-1	RE12-10-7633	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	5	5	1.258	1.258	1.258	237	237
244132006-1	RE12-10-7647	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	6	6	1.253	1.253	1.253	238	238
244132007-1	RE12-10-7644	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	7	7	1.264	1.264	1.264	239	239
244132008-1	RE12-10-7637	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	8	8	1.265	1.265	1.265	240	240
244132009-1	RE12-10-7635	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	9	9	1.253	1.253	1.253	241	241
244132010-1	RE12-10-7642	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	10	10	1.254	1.254	1.254	242	242
244132011-1	RE12-10-7649	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	11	11	1.257	1.257	1.257	243	243
244132012-1	RE12-10-7650	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	12	12	1.261	1.261	1.261	244	244
244132013-1	RE12-10-7641	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	13	13	1.265	1.265	1.265	245	245
244132014-1	RE12-10-7643	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	14	14	1.257	1.257	1.257	246	246
244132015-1	RE12-10-7640	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	15	15	1.259	1.259	1.259	247	247
244132016-1	RE12-10-7645	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	16	16	1.269	1.269	1.269	248	248
244132017-1	RE12-10-7646	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	17	17	1.256	1.256	1.256	249	249
244132018-1	RE12-10-7636	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	18	18	1.258	1.258	1.258	250	250
244132019-1	RE12-10-7657	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	19	19	1.250	1.250	1.250	251	251
244132020-1	RE12-10-7658	SAMPLE	.05	pC/g	SOIL	LANL010	05-JAN-10	20	20	1.252	1.252	1.252	252	252
1202012136-1	MB for batch 940262	MB	.05	pC/g	SOIL	QC ACCOUNT	05-JAN-10	21	21	1.264	1.264	1.264	253	253
1202012137-1	RE12-10-7647(244132006DUP)	DUP	.05	pC/g	SOIL	QC ACCOUNT	05-JAN-10	22	22	1.253	1.253	1.253	254	254
1202012138-1	LCS for batch 940262	LCS	.05	pC/g	SOIL	QC ACCOUNT	05-JAN-10	23	23	0.120	0.120	0.120	255	255

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

Solid Sample Dissolution by: LEACH or DIGESTION  
 Circle One

Data Reviewed By:

GEL Laboratories LLC, Radiochemistry Division

1122/10



# Blank Correction Report

Batch ID 940262

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202012137	DUP	Americium-241	1.25 g	0.00167	0.00216	0.0198	-0.000912	pCi/g	NO
1202012138	LCS	Americium-241	0.120 g	30.9	2.03	0.164	-0.0095	pCi/g	NO
1202012136	MB	Americium-241	1.00 g	-0.00114	0.00302	0.0194	-0.00114	pCi/g	NO
244132001	RE12-10-7634	Americium-241	1.25 g	0.000235	0.00103	0.0175	-0.000912	pCi/g	NO
244132002	RE12-10-7648	Americium-241	1.26 g	-0.00181	0.00105	0.0177	-0.00090476	pCi/g	NO
244132003	RE12-10-7638	Americium-241	1.26 g	0.0063	0.00273	0.0197	-0.00090476	pCi/g	NO
244132004	RE12-10-7639	Americium-241	1.26 g	0.00466	0.00273	0.0183	-0.00090476	pCi/g	NO
244132005	RE12-10-7633	Americium-241	1.26 g	0.00145	0.00199	0.0185	-0.00090476	pCi/g	NO
244132006	RE12-10-7647	Americium-241	1.25 g	0.00255	0.00168	0.0186	-0.000912	pCi/g	NO
244132007	RE12-10-7644	Americium-241	1.26 g	0.0107	0.00776	0.0212	-0.00090476	pCi/g	NO
244132008	RE12-10-7637	Americium-241	1.27 g	-0.000535	0.0018	0.0216	-0.00089764	pCi/g	NO
244132009	RE12-10-7635	Americium-241	1.25 g	-0.00182	0.00285	0.0225	-0.000912	pCi/g	NO
244132010	RE12-10-7642	Americium-241	1.25 g	0.000652	0.00197	0.021	-0.000912	pCi/g	NO
244132011	RE12-10-7649	Americium-241	1.26 g	-0.000614	0.00583	0.0204	-0.00090476	pCi/g	NO
244132012	RE12-10-7650	Americium-241	1.26 g	0.0079	0.00672	0.0206	-0.00090476	pCi/g	NO
244132013	RE12-10-7641	Americium-241	1.27 g	0.00624	0.00355	0.0195	-0.00089764	pCi/g	NO
244132014	RE12-10-7643	Americium-241	1.26 g	0.00645	0.00365	0.0201	-0.00090476	pCi/g	NO
244132015	RE12-10-7640	Americium-241	1.26 g	-0.000521	0.0044	0.022	-0.00090476	pCi/g	NO
244132016	RE12-10-7645	Americium-241	1.27 g	0.00424	0.00285	0.0205	-0.00089764	pCi/g	NO
244132017	RE12-10-7646	Americium-241	1.26 g	0.0104	0.00584	0.0208	-0.00090476	pCi/g	NO
244132018	RE12-10-7636	Americium-241	1.26 g	0.00628	0.00649	0.0196	-0.00090476	pCi/g	NO
244132019	RE12-10-7657	Americium-241	1.25 g	-0.000726	0.00531	0.0187	-0.000912	pCi/g	NO
244132020	RE12-10-7658	Americium-241	1.25 g	0.00688	0.00424	0.0211	-0.000912	pCi/g	NO

*11/24/10*

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940262 SAMPLE DATE : 13-JAN-2010 00:00:00			SAMPLE ID : S1202012138_AM SAMPLE QTY: 0.120 G		
DETECTOR NUMBER :79415 AVERAGE %EFFICIENCY :35.6666 % YIELD : 116.864			COUNT DATE:21-JAN-2010 10:49:39 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91658 dpm RESULTS : 3.40844 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B222.CNF;70 BKG DATE : 17-JAN-2010 EFF FILE : W222.CNF;24 CAL DATE : 28-DEC-2009		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	6.000	6.000	0.000	5.2338	100.0000	5.41E-02	2.23E-02	1.10E-01	2.44E-01	2.21E-02
CM-5/6	5386.000	136.000	136.000	0.000	19.8463	86.09000	1.42E+00	1.51E-01	4.83E-01	9.94E-01	1.22E-01
AM-241	5479.150	3041.000	3038.889	0.000	3.0704	99.94000	2.74E+01	1.79E+00	6.44E-02	1.53E-01	4.97E-01
CM-242	6102.000	2.000	1.000	1.000	4.3186	100.0000	9.35E-03	1.62E-02	9.05E-02	2.05E-01	1.62E-02
AM243	5270.000	1213.000	1213.000	0.000	0.0000	99.78000	1.09E+01	7.57E-01	0.00E+00	2.45E-02	3.14E-01
CM-247	4946.000	36.000	36.000	0.000	15.3366	79.30000	4.09E-01	7.28E-02	4.05E-01	8.41E-01	6.81E-02
CM-248	5078.600	39.000	39.000	0.000	22.1555	91.00000	3.86E-01	6.64E-02	5.10E-01	1.05E+00	6.18E-02

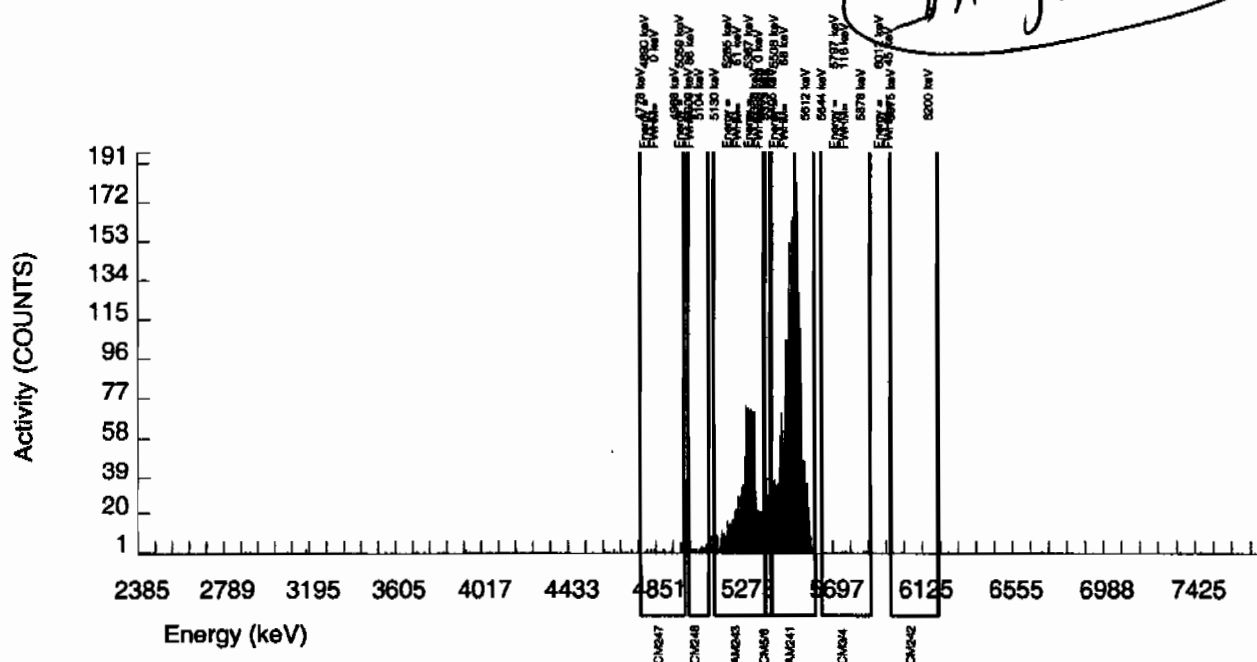
NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity

**DO NOT REPORT**

*Integrated*



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940262 SAMPLE DATE : 5-JAN-2010 00:00:00.			SAMPLE ID : S0244132001_AM SAMPLE QTY: 1.250 G		
DETECTOR NUMBER :SAMPLE AVERAGE %EFFICIENCY :38.1505 % YIELD : 91.692			COUNT DATE:18-JAN-2010 20:01:25 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.67427 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B233.CNF;70 BKG DATE : 17-JAN-2010 EFF FILE : W233.CNF;24 CAL DATE : 28-DEC-2009		

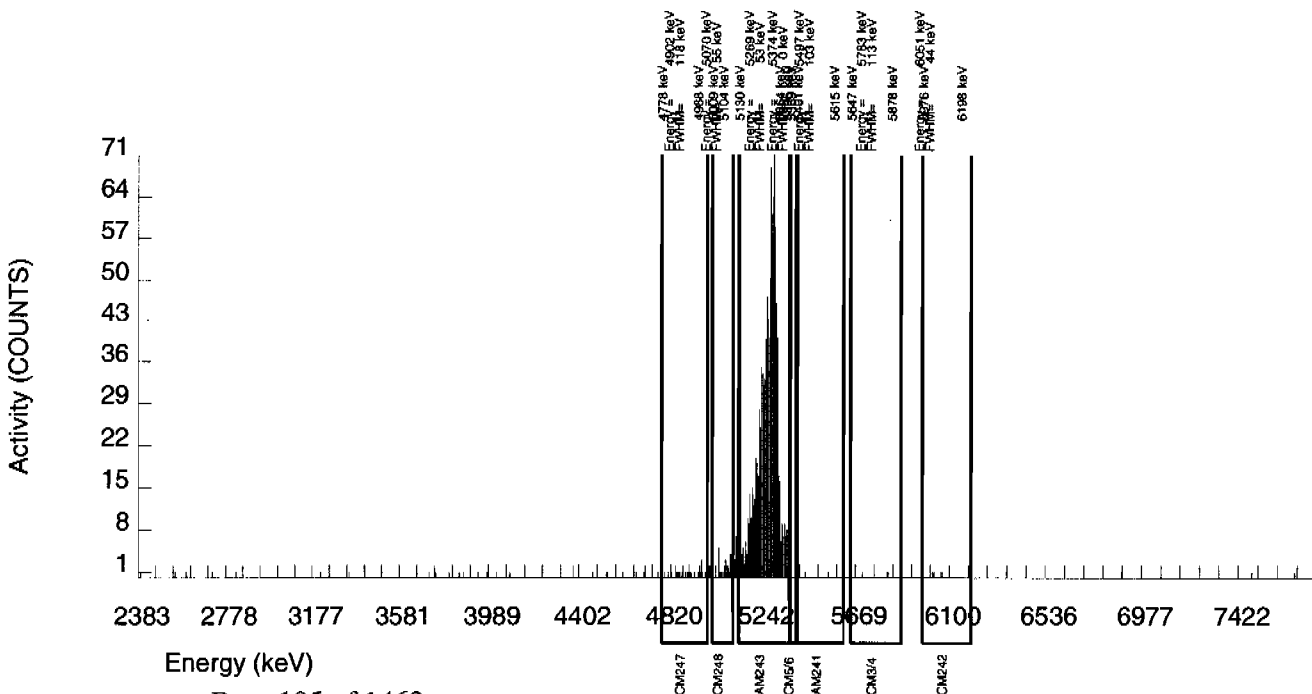
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	3.000	3.000	0.000	5.2338	100.0000	3.10E-03	1.80E-03	1.25E-02	2.79E-02	1.79E-03
CM-5/6	5386.000	13.000	13.000	0.000	19.8463	86.09000	1.56E-02	4.41E-03	5.52E-02	1.14E-01	4.31E-03
AM-241	5479.150	2.000	0.228	0.000	3.0704	99.94000	2.35E-04	1.03E-03	7.36E-03	1.75E-02	1.03E-03
CM-242	6102.000	4.000	4.000	0.000	4.3186	100.0000	4.38E-03	2.20E-03	1.03E-02	2.35E-02	2.19E-03
AM243	5270.000	1018.000	1018.000	0.000	0.0000	99.78000	1.05E+00	6.96E-02	0.00E+00	2.80E-03	3.29E-02
CM-247	4946.000	27.000	27.000	0.000	15.3366	79.30000	3.51E-02	7.05E-03	4.63E-02	9.62E-02	6.75E-03
CM-248	5078.600	28.000	28.000	0.000	22.1555	91.00000	3.17E-02	6.27E-03	5.83E-02	1.20E-01	5.99E-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: 940262 SAMPLE DATE : 5-JAN-2010 00:00:00.			SAMPLE ID : S0244132002_AM SAMPLE QTY: 1.261 G		
DETECTOR NUMBER :79427 AVERAGE %EFFICIENCY :38.3332 % YIELD : 89.372			COUNT DATE:18-JAN-2010 20:01:28 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.60662 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B234.CNF;70 BKG DATE : 17-JAN-2010 EFF FILE : W234.CNF;24 CAL DATE : 28-DEC-2009		

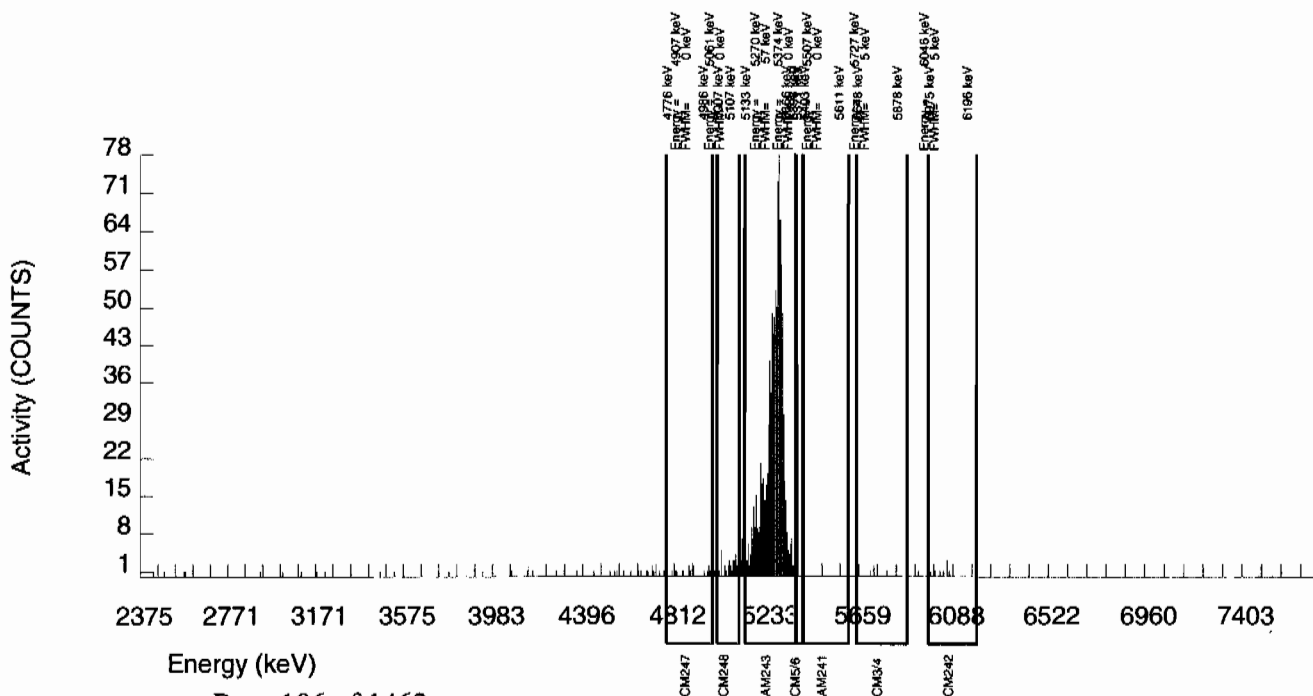
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	5.000	5.000	0.000	5.2338	100.0000	5.22E-03	2.35E-03	1.27E-02	2.82E-02	2.33E-03
CM-5/6	5386.000	10.000	10.000	0.000	19.8463	86.09000	1.21E-02	3.89E-03	5.59E-02	1.15E-01	3.83E-03
AM-241	5479.150	0.000	-1.735	0.000	3.0704	99.94000	-1.81E-03	1.05E-03	7.45E-03	1.77E-02	1.04E-03
CM-242	6102.000	8.000	7.000	1.000	4.3186	100.0000	7.75E-03	3.35E-03	1.05E-02	2.38E-02	3.32E-03
AM243	5270.000	997.000	997.000	0.000	0.0000	99.78000	1.04E+00	6.93E-02	0.00E+00	2.83E-03	3.30E-02
CM-247	4946.000	21.000	20.000	1.000	15.3366	79.30000	2.63E-02	6.36E-03	4.69E-02	9.74E-02	6.17E-03
CM-248	5078.600	40.000	40.000	0.000	22.1555	91.00000	4.58E-02	7.73E-03	5.91E-02	1.21E-01	7.25E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132003\_AM  
SAMPLE QTY: 1.258 G

DETECTOR NUMBER :79428  
AVERAGE %EFFICIENCY :37.2918  
% YIELD : 82.930

COUNT DATE:18-JAN-2010 20:01:30  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_AM.N
ID : 0244-B	ID : 0244-B	ID : 445-96-2-SS	BKG FILE : B235.CNF;70
ISOTOPE : AM-241	ISOTOPE : AM-241	ISOTOPE : AM243	BKG DATE : 17-JAN-2010
PCI/G : 3.316E+01	PCI/G : 3.316E+01	NOMINAL : 2.91659 dpm	EFF FILE : W235.CNF;24
		RESULTS : 2.41873 dpm	CAL DATE : 28-DEC-2009

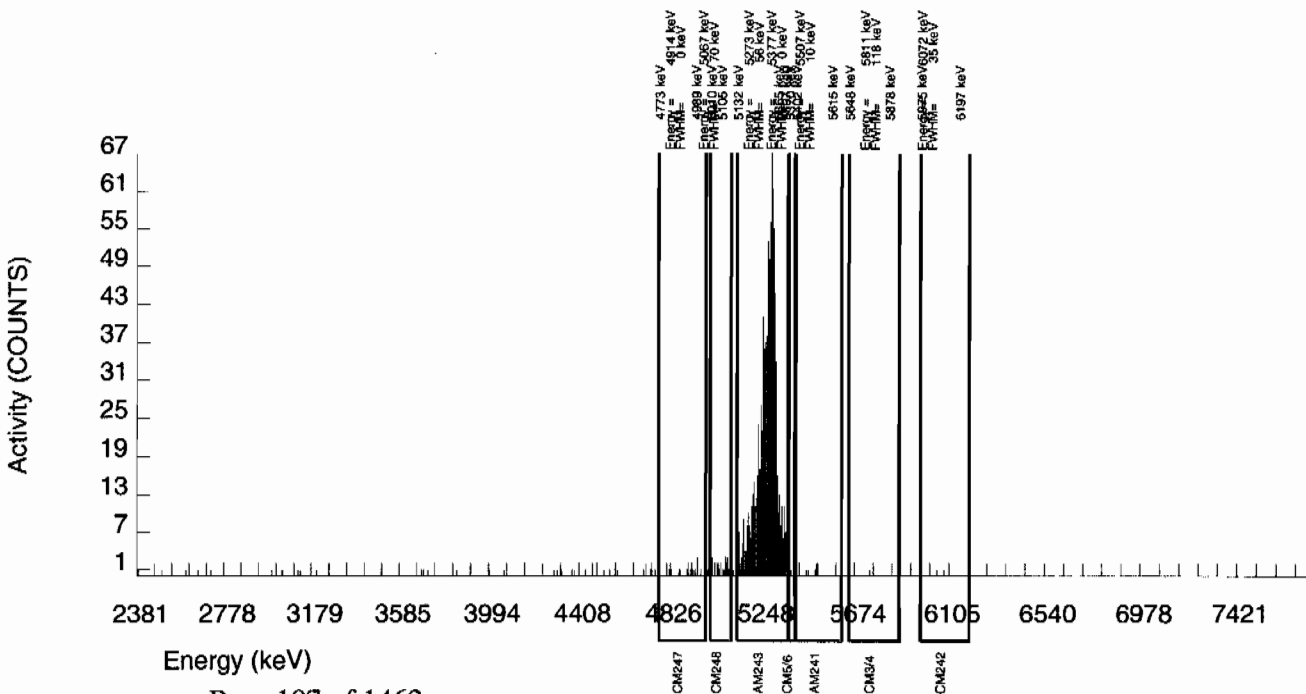
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	2.000	2.000	0.000	5.2338	100.0000	2.32E-03	1.65E-03	1.41E-02	3.13E-02	1.64E-03
CM-5/6	5386.000	8.000	8.000	0.000	19.8463	86.09000	1.08E-02	3.86E-03	6.21E-02	1.28E-01	3.80E-03
AM-241	5479.150	7.000	5.434	0.000	3.0704	99.94000	6.30E-03	2.73E-03	8.28E-03	1.97E-02	2.70E-03
CM-242	6102.000	2.000	2.000	0.000	4.3186	100.0000	2.46E-03	1.75E-03	1.16E-02	2.64E-02	1.74E-03
AM243	5270.000	900.000	900.000	0.000	0.0000	99.78000	1.04E+00	7.26E-02	0.00E+00	3.14E-03	3.48E-02
CM-247	4946.000	18.000	17.000	1.000	15.3366	79.30000	2.48E-02	6.54E-03	5.21E-02	1.08E-01	6.36E-03
CM-248	5078.600	24.000	24.000	0.000	22.1555	91.00000	3.05E-02	6.51E-03	6.56E-02	1.35E-01	6.23E-03

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

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940262 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132004_AM SAMPLE QTY: 1.259 G	
DETECTOR NUMBER :79429 AVERAGE %EFFICIENCY :38.5832 % YIELD : 86.032		COUNT DATE:18-JAN-2010 20:01:33 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.50921 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B236.CNF;70 BKG DATE : 17-JAN-2010 EFF FILE : W236.CNF;24 CAL DATE : 28-DEC-2009

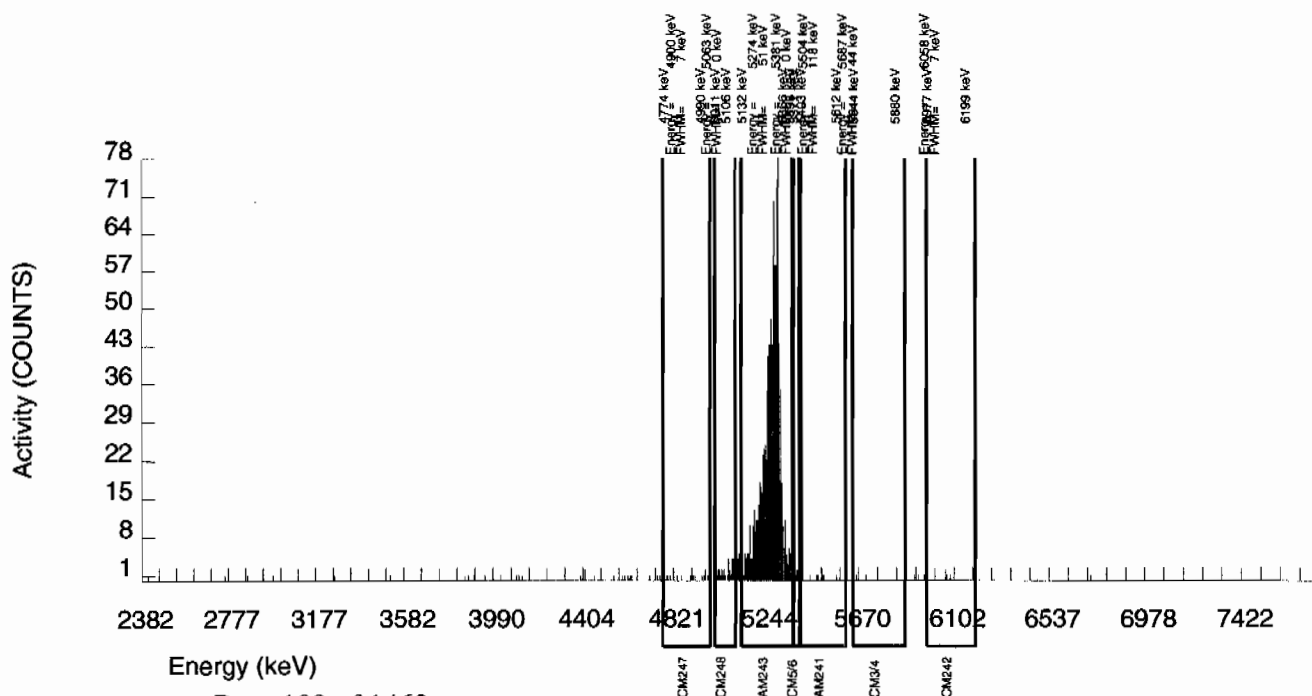
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	2.000	2.000	0.000	5.2338	100.0000	2.16E-03	1.53E-03	1.31E-02	2.92E-02	1.53E-03
CM-5/6	5386.000	10.000	10.000	0.000	19.8463	86.09000	1.25E-02	4.03E-03	5.78E-02	1.19E-01	3.96E-03
AM-241	5479.150	7.000	4.319	1.000	3.0704	99.94000	4.66E-03	2.73E-03	7.70E-03	1.83E-02	2.71E-03
CM-242	6102.000	5.000	5.000	0.000	4.3186	100.0000	5.72E-03	2.58E-03	1.08E-02	2.46E-02	2.56E-03
AM243	5270.000	968.000	966.000	2.000	1.4142	99.78000	1.04E+00	7.00E-02	3.55E-03	1.00E-02	3.36E-02
CM-247	4946.000	15.000	15.000	0.000	15.3366	79.30000	2.04E-02	5.40E-03	4.85E-02	1.01E-01	5.26E-03
CM-248	5078.600	34.000	34.000	0.000	22.1555	91.00000	4.03E-02	7.30E-03	6.10E-02	1.25E-01	6.91E-03

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

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132005\_AM  
SAMPLE QTY: 1.258 G

DETECTOR NUMBER :79430  
AVERAGE %EFFICIENCY :39.7183  
% YIELD : 82.882

COUNT DATE:18-JAN-2010 20:01:35  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.41731 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B237.CNF;70  
BKG DATE : 17-JAN-2010  
EFF FILE : W237.CNF;24  
CAL DATE : 28-DEC-2009

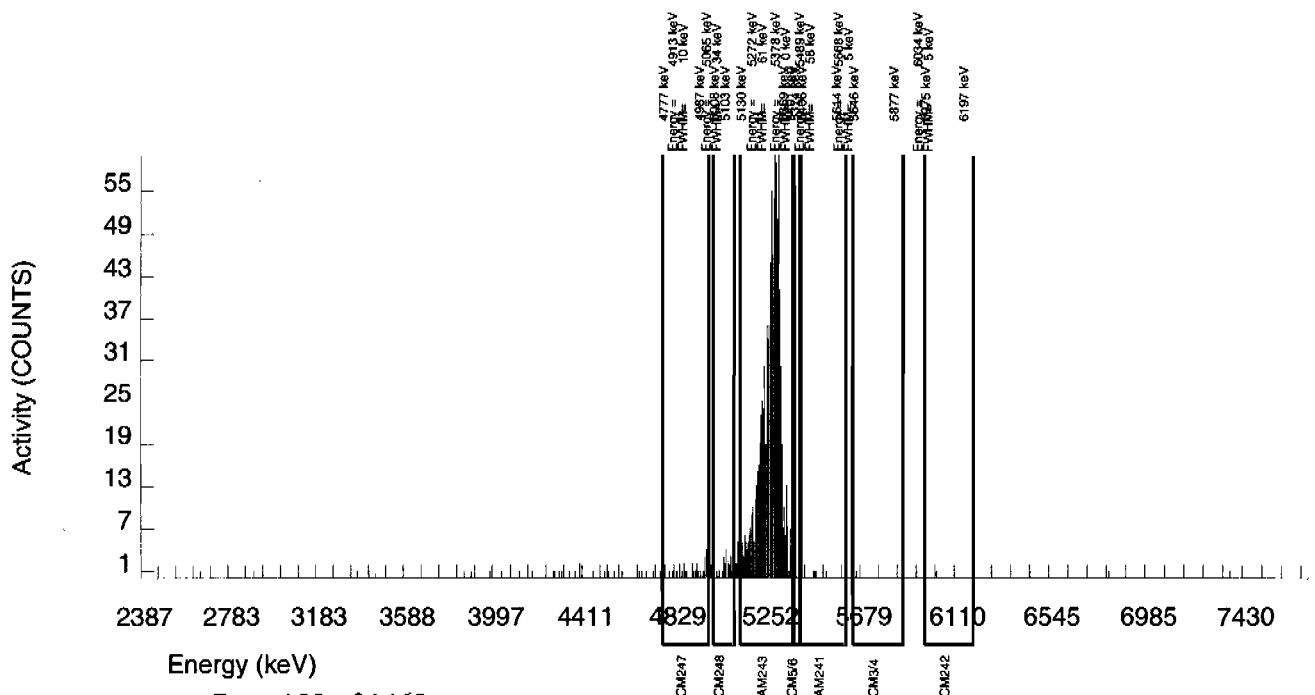
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	1.000	1.000	0.000	5.2338	100.0000	1.09E-03	1.09E-03	1.32E-02	2.94E-02	1.09E-03
CM-5/6	5386.000	13.000	13.000	0.000	19.8463	86.09000	1.64E-02	4.66E-03	5.83E-02	1.20E-01	4.56E-03
AM-241	5479.150	4.000	1.333	1.000	3.0704	99.94000	1.45E-03	1.99E-03	7.77E-03	1.85E-02	1.99E-03
CM-242	6102.000	1.000	1.000	0.000	4.3186	100.0000	1.16E-03	1.16E-03	1.09E-02	2.48E-02	1.16E-03
AM243	5270.000	959.000	958.000	1.000	1.0000	99.78000	1.04E+00	7.17E-02	2.54E-03	8.03E-03	3.38E-02
CM-247	4946.000	31.000	31.000	0.000	15.3366	79.30000	4.25E-02	8.06E-03	4.89E-02	1.02E-01	7.64E-03
CM-248	5078.600	23.000	23.000	0.000	22.1555	91.00000	2.75E-02	5.97E-03	6.16E-02	1.26E-01	5.73E-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: 940262 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132006_AM SAMPLE QTY: 1.253 G	
DETECTOR NUMBER :79431 AVERAGE %EFFICIENCY :39.6257 % YIELD : 83.075		COUNT DATE:18-JAN-2010 20:01:37 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.42296 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B238.CNF;70 BKG DATE : 17-JAN-2010 EFF FILE : W238.CNF;26 CAL DATE : 28-DEC-2009

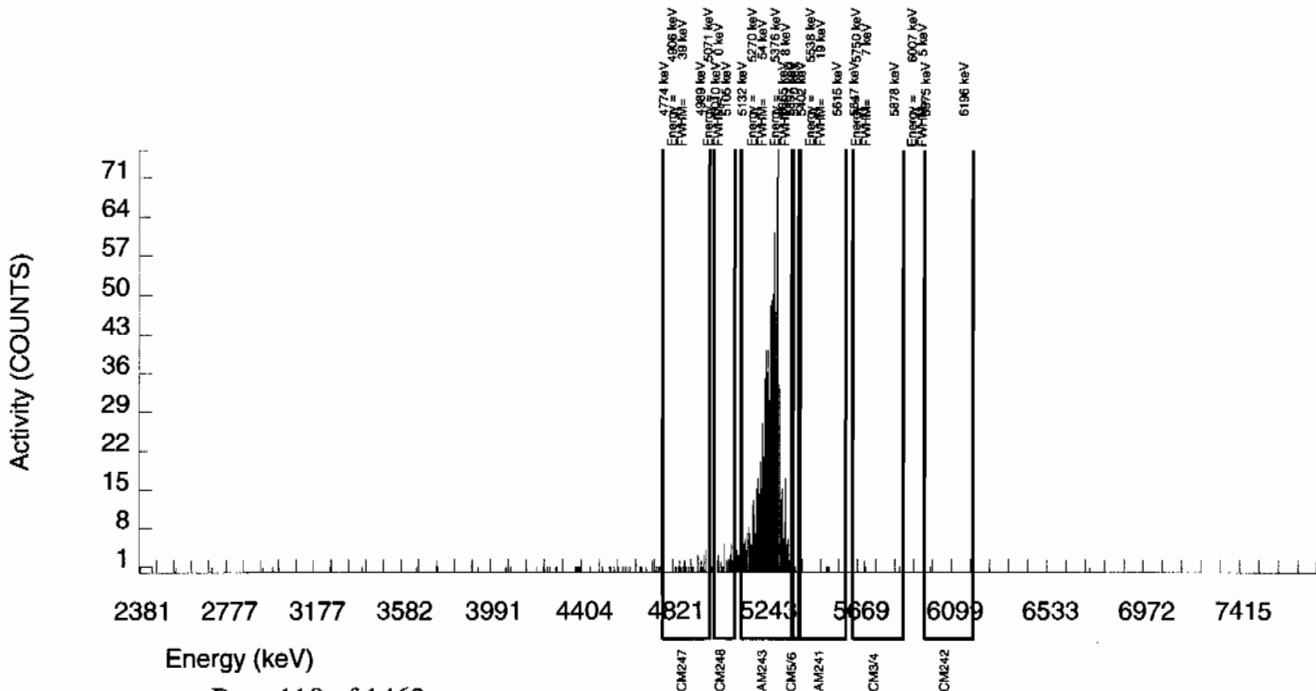
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	5.000	4.000	1.000	5.2338	100.0000	4.37E-03	2.69E-03	1.33E-02	2.96E-02	2.68E-03
CM-5/6	5386.000	10.000	10.000	0.000	19.8463	86.09000	1.27E-02	4.08E-03	5.86E-02	1.21E-01	4.01E-03
AM-241	5479.150	4.000	2.333	0.000	3.0704	99.94000	2.55E-03	1.68E-03	7.81E-03	1.86E-02	1.67E-03
CM-242	6102.000	1.000	1.000	0.000	4.3186	100.0000	1.16E-03	1.16E-03	1.10E-02	2.49E-02	1.16E-03
AM243	5270.000	958.000	958.000	0.000	0.0000	99.78000	1.05E+00	7.04E-02	0.00E+00	2.97E-03	3.39E-02
CM-247	4946.000	33.000	33.000	0.000	15.3366	79.30000	4.54E-02	8.35E-03	4.91E-02	1.02E-01	7.91E-03
CM-248	5078.600	35.000	34.000	1.000	22.1555	91.00000	4.08E-02	7.59E-03	6.19E-02	1.27E-01	7.20E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132007\_AM  
SAMPLE QTY: 1.264 G

DETECTOR NUMBER :45-149AA5  
AVERAGE %EFFICIENCY :32.4684  
% YIELD : 88.159

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.57124 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B025.CNF;1104  
BKG DATE : 17-JAN-2010  
EFF FILE : W025.CNF;326  
CAL DATE : 4-JAN-2010

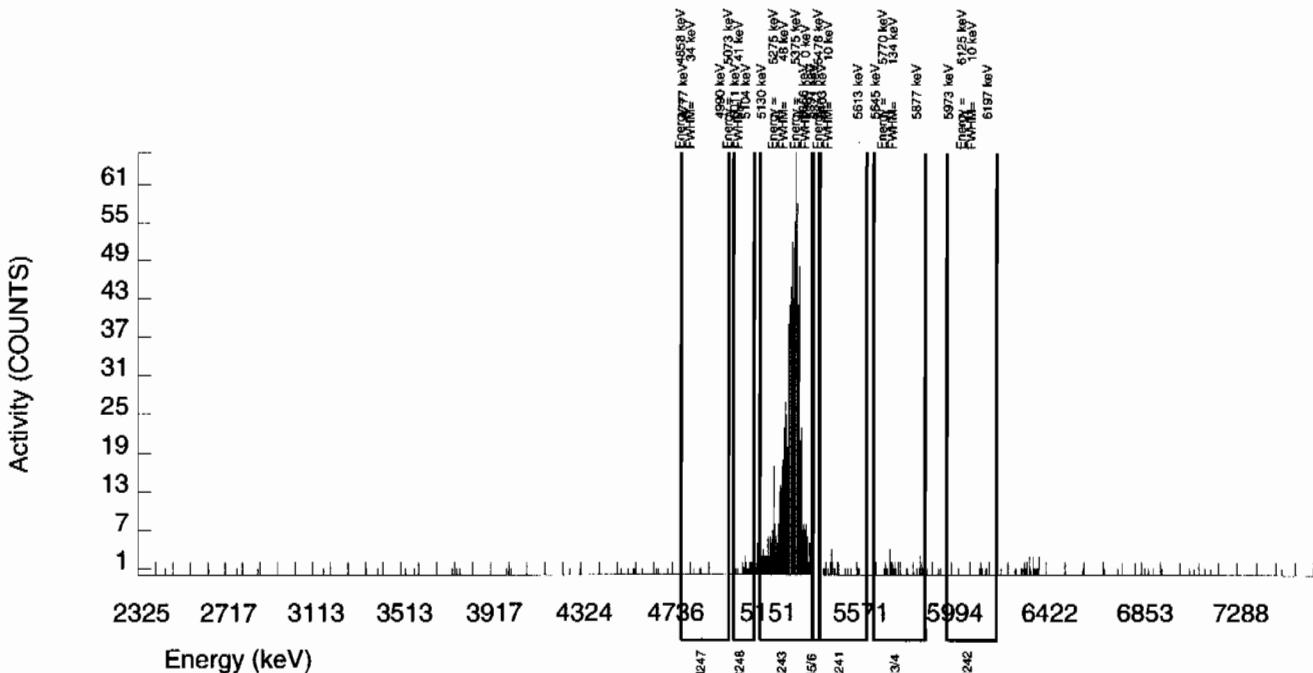
NUCLIDE ACTIVITY SUMMARY

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	31.000	3.000	28.000	5.2338	100.0000	3.74E-03	9.58E-03	1.52E-02	3.37E-02	9.58E-03
CM-5/6	5386.000	6.000	4.000	2.000	19.8463	86.09000	5.78E-03	4.11E-03	6.68E-02	1.37E-01	4.09E-03
AM-241	5479.150	25.000	8.550	15.000	3.0704	99.94000	1.07E-02	7.76E-03	8.90E-03	2.12E-02	7.74E-03
CM-242	6102.000	7.000	1.000	6.000	4.3186	100.0000	1.32E-03	4.76E-03	1.25E-02	2.84E-02	4.76E-03
AM243	5270.000	836.000	833.000	3.000	1.7321	99.78000	1.04E+00	7.24E-02	5.03E-03	1.34E-02	3.61E-02
CM-247	4946.000	3.000	3.000	0.000	15.3366	79.30000	4.71E-03	2.73E-03	5.60E-02	1.16E-01	2.72E-03
CM-248	5078.600	16.000	16.000	0.000	22.1555	91.00000	2.19E-02	5.63E-03	7.05E-02	1.45E-01	5.47E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132008\_AM  
SAMPLE QTY: 1.265 G

DETECTOR NUMBER :78204  
AVERAGE %EFFICIENCY :31.5763  
% YIELD : 88.908

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.59309 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B026.CNF;1105  
BKG DATE : 17-JAN-2010  
EFF FILE : W026.CNF;300  
CAL DATE : 4-JAN-2010

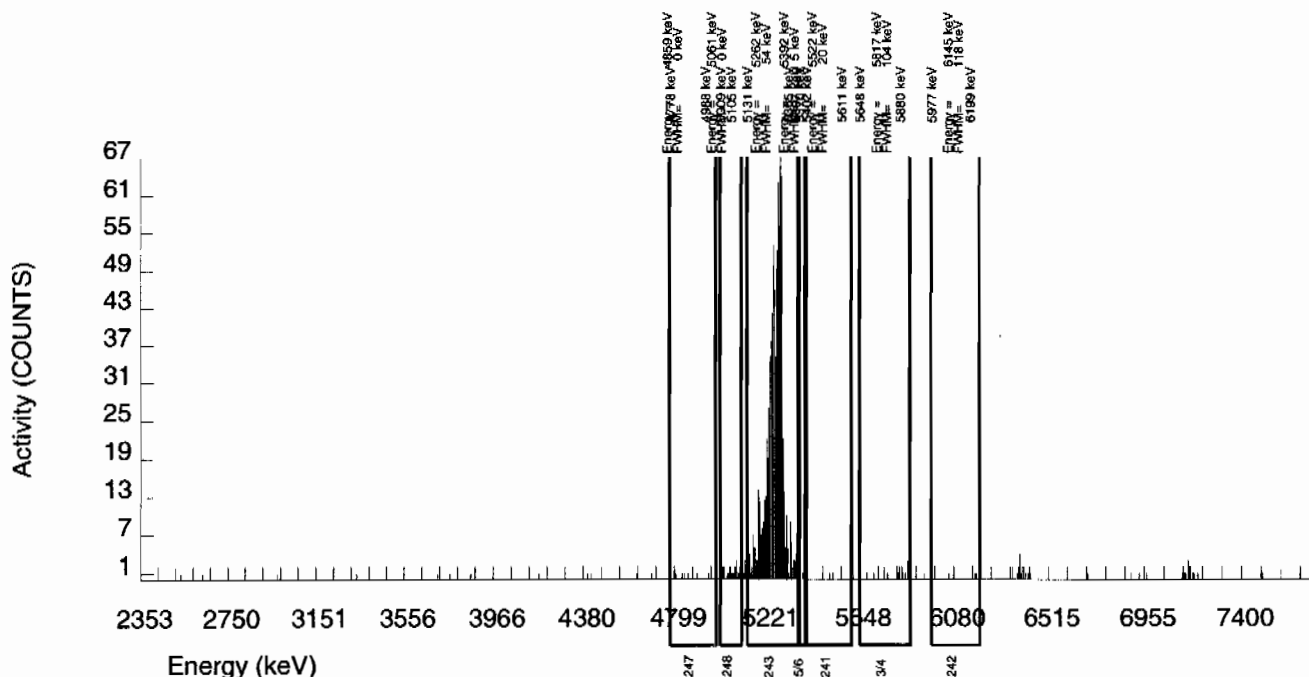
NUCLIDE ACTIVITY SUMMARY

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	18.000	7.000	11.000	5.2338	100.0000	8.89E-03	6.86E-03	1.54E-02	3.43E-02	6.84E-03
CM-5/6	5386.000	1.000	1.000	0.000	19.8463	86.09000	1.47E-03	1.48E-03	6.80E-02	1.40E-01	1.47E-03
AM-241	5479.150	2.000	-0.422	1.000	3.0704	99.94000	-5.35E-04	1.80E-03	9.07E-03	2.16E-02	1.79E-03
CM-242	6102.000	3.000	3.000	0.000	4.3186	100.0000	4.04E-03	2.34E-03	1.27E-02	2.89E-02	2.33E-03
AM243	5270.000	821.000	817.000	4.000	2.0000	99.78000	1.04E+00	7.42E-02	5.91E-03	1.53E-02	3.65E-02
CM-247	4946.000	7.000	5.000	2.000	15.3366	79.30000	8.00E-03	4.82E-03	5.71E-02	1.18E-01	4.80E-03
CM-248	5078.600	25.000	25.000	0.000	22.1555	91.00000	3.48E-02	7.30E-03	7.18E-02	1.47E-01	6.97E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132009\_AM  
SAMPLE QTY: 1.253 G

DETECTOR NUMBER :42484  
AVERAGE %EFFICIENCY :33.2327  
% YIELD : 81.789

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_AM.N
ID : 0244-B	ID : 0244-B	ID : 445-96-2-SS	BKG FILE : B027.CNF;1111
ISOTOPE : AM-241	ISOTOPE : AM-241	ISOTOPE : AM243	BKG DATE : 17-JAN-2010
PCI/G : 3.316E+01	PCI/G : 3.316E+01	NOMINAL : 2.91659 dpm	EFF FILE : W027.CNF;327
		RESULTS : 2.38544 dpm	CAL DATE : 4-JAN-2010

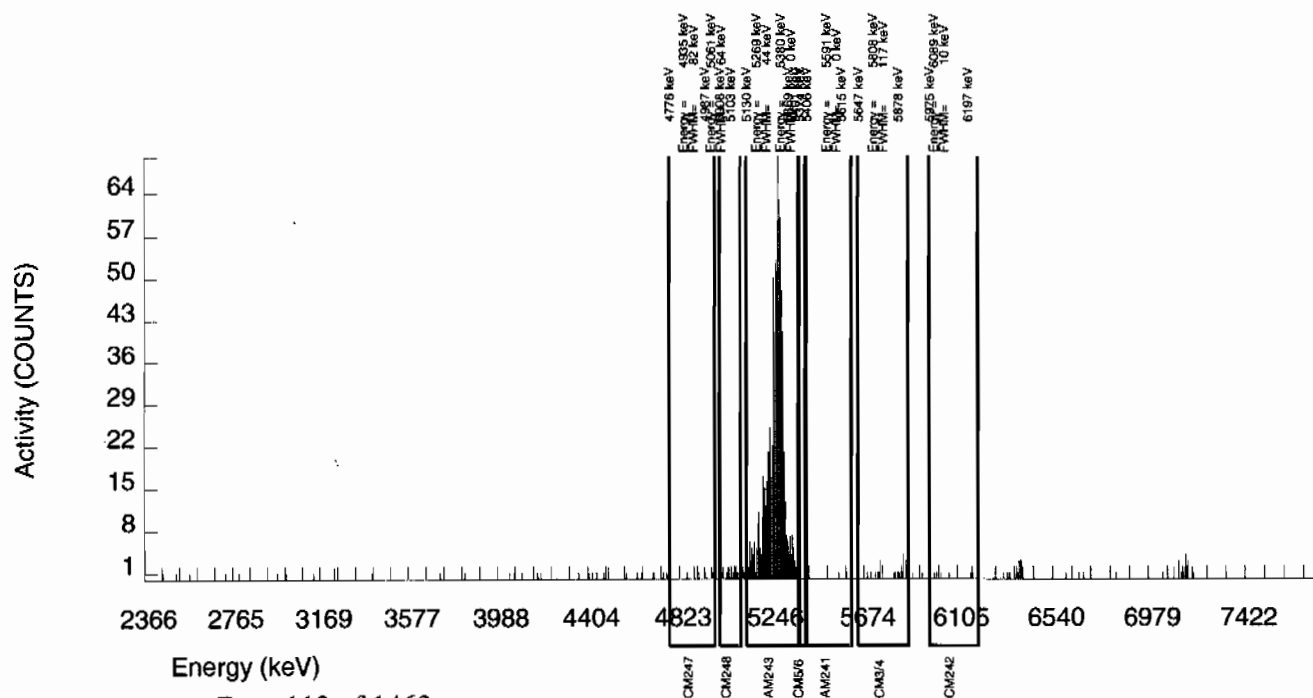
NUCLIDE ACTIVITY SUMMARY

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	24.000	9.000	15.000	5.2338	100.0000	1.19E-02	8.31E-03	1.61E-02	3.58E-02	8.27E-03
CM-5/6	5386.000	2.000	2.000	0.000	19.8463	86.09000	3.07E-03	2.18E-03	7.09E-02	1.46E-01	2.17E-03
AM-241	5479.150	3.000	-1.377	3.000	3.0704	99.94000	-1.82E-03	2.85E-03	9.45E-03	2.25E-02	2.85E-03
CM-242	6102.000	9.000	9.000	0.000	4.3186	100.0000	1.26E-02	4.28E-03	1.33E-02	3.02E-02	4.21E-03
AM243	5270.000	793.000	791.000	2.000	1.4142	99.78000	1.05E+00	7.54E-02	4.36E-03	1.23E-02	3.74E-02
CM-247	4946.000	10.000	9.000	1.000	15.3366	79.30000	1.50E-02	5.61E-03	5.95E-02	1.24E-01	5.53E-03
CM-248	5078.600	15.000	15.000	0.000	22.1555	91.00000	2.18E-02	5.79E-03	7.49E-02	1.54E-01	5.63E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132010\_AM  
SAMPLE QTY: 1.254 G

DETECTOR NUMBER :78792  
AVERAGE %EFFICIENCY :30.5070  
% YIELD : 95.291

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.77926 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

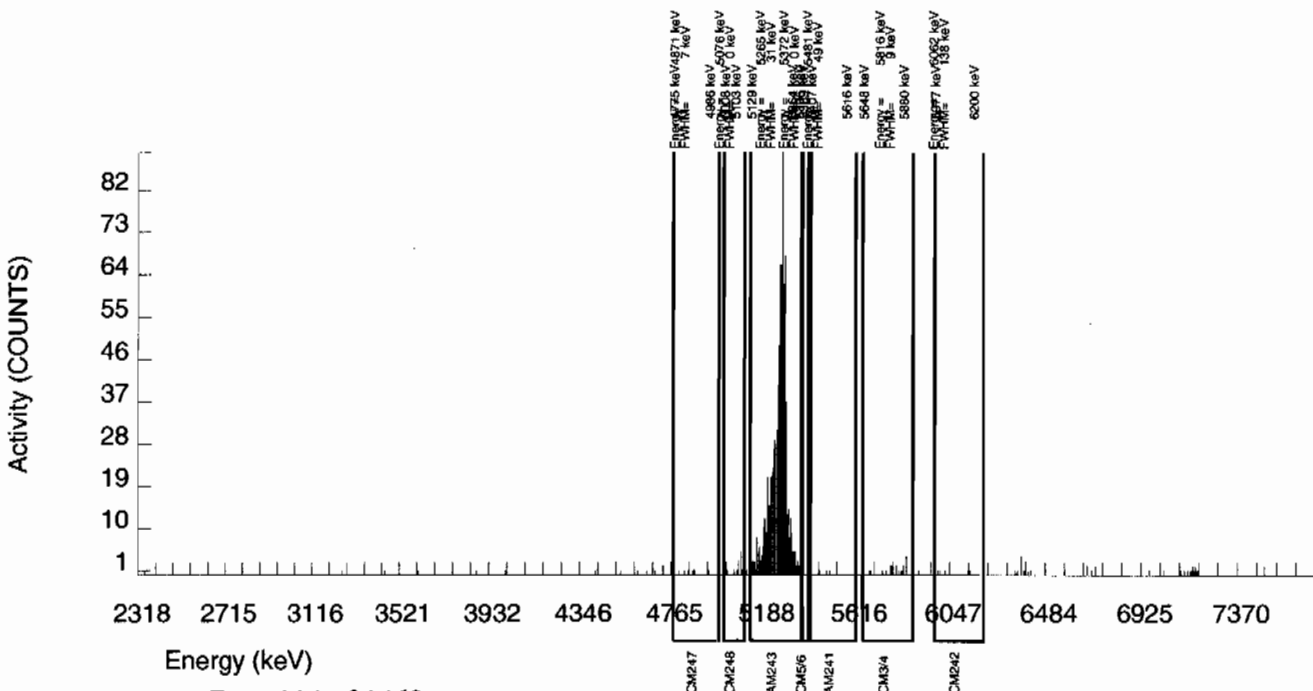
NUCLIDE ACTIVITY SUMMARY

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	5.000	20.000	5.2338	100.0000	6.19E-03	8.31E-03	1.50E-02	3.34E-02	8.30E-03
CM-5/6	5386.000	2.000	2.000	0.000	19.8463	86.09000	2.87E-03	2.04E-03	6.63E-02	1.36E-01	2.03E-03
AM-241	5479.150	3.000	0.528	1.000	3.0704	99.94000	6.52E-04	1.97E-03	8.83E-03	2.10E-02	1.97E-03
CM-242	6102.000	6.000	3.000	3.000	4.3186	100.0000	3.93E-03	3.94E-03	1.24E-02	2.82E-02	3.93E-03
AM243	5270.000	847.000	846.000	1.000	1.0000	99.78000	1.05E+00	7.41E-02	2.88E-03	9.12E-03	3.61E-02
CM-247	4946.000	10.000	10.000	0.000	15.3366	79.30000	1.56E-02	5.02E-03	5.56E-02	1.15E-01	4.93E-03
CM-248	5078.600	18.000	17.000	1.000	22.1555	91.00000	2.31E-02	6.09E-03	7.00E-02	1.44E-01	5.92E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132011\_AM  
SAMPLE QTY: 1.257 G

DETECTOR NUMBER :33454  
AVERAGE %EFFICIENCY :31.1998  
% YIELD : 95.598

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.78821 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

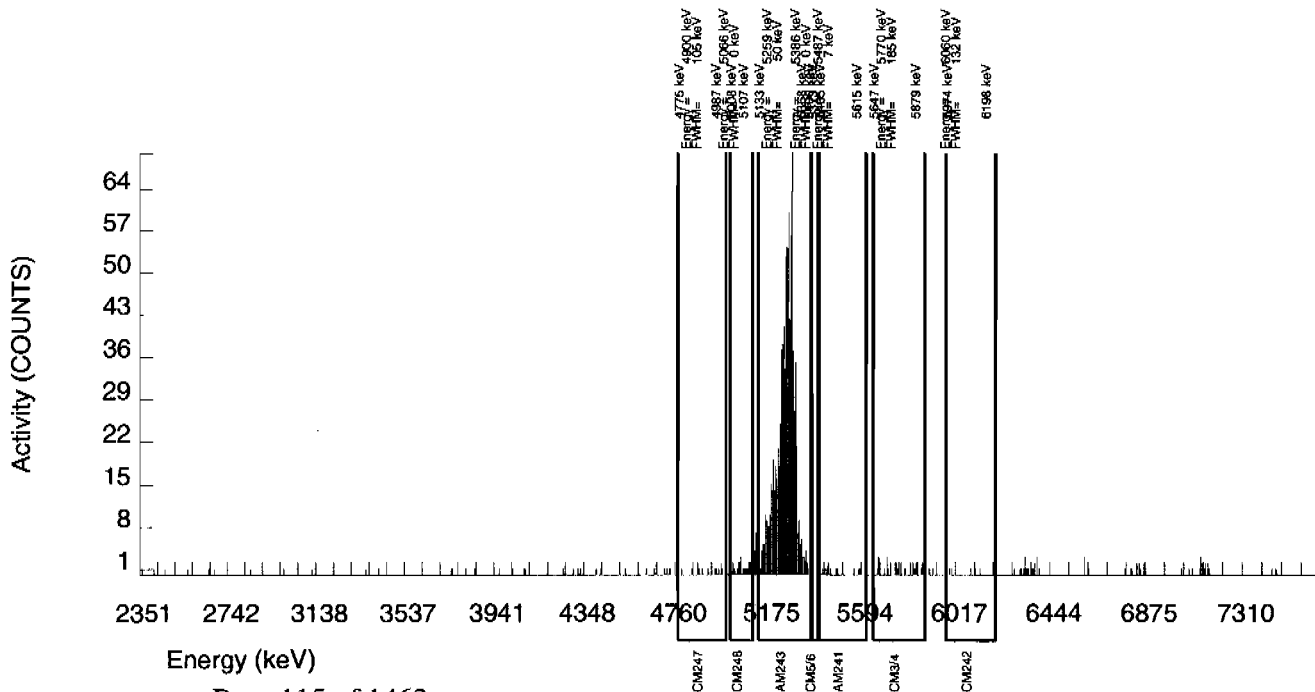
NUCLIDE ACTIVITY SUMMARY

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	34.000	14.000	20.000	5.2338	100.0000	1.68E-02	8.90E-03	1.46E-02	3.25E-02	8.84E-03
CM-5/6	5386.000	0.000	-1.000	1.000	19.8463	86.09000	-1.40E-03	1.98E-03	6.44E-02	1.33E-01	1.97E-03
AM-241	5479.150	13.000	-0.511	12.000	3.0704	99.94000	-6.14E-04	5.83E-03	8.59E-03	2.04E-02	5.83E-03
CM-242	6102.000	6.000	-2.000	8.000	4.3186	100.0000	-2.55E-03	4.77E-03	1.21E-02	2.74E-02	4.77E-03
AM243	5270.000	874.000	868.000	6.000	2.4495	99.78000	1.05E+00	7.37E-02	6.86E-03	1.70E-02	3.57E-02
CM-247	4946.000	17.000	13.000	4.000	15.3366	79.30000	1.97E-02	7.05E-03	5.41E-02	1.12E-01	6.94E-03
CM-248	5078.600	24.000	23.000	1.000	22.1555	91.00000	3.04E-02	6.86E-03	6.81E-02	1.40E-01	6.60E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132012\_AM  
SAMPLE QTY: 1.261 G

DETECTOR NUMBER :33447  
AVERAGE %EFFICIENCY :32.1103  
% YIELD : 91.711

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.67482 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B030.CNF;1103  
BKG DATE : 17-JAN-2010  
EFF FILE : W030.CNF;303  
CAL DATE : 4-JAN-2010

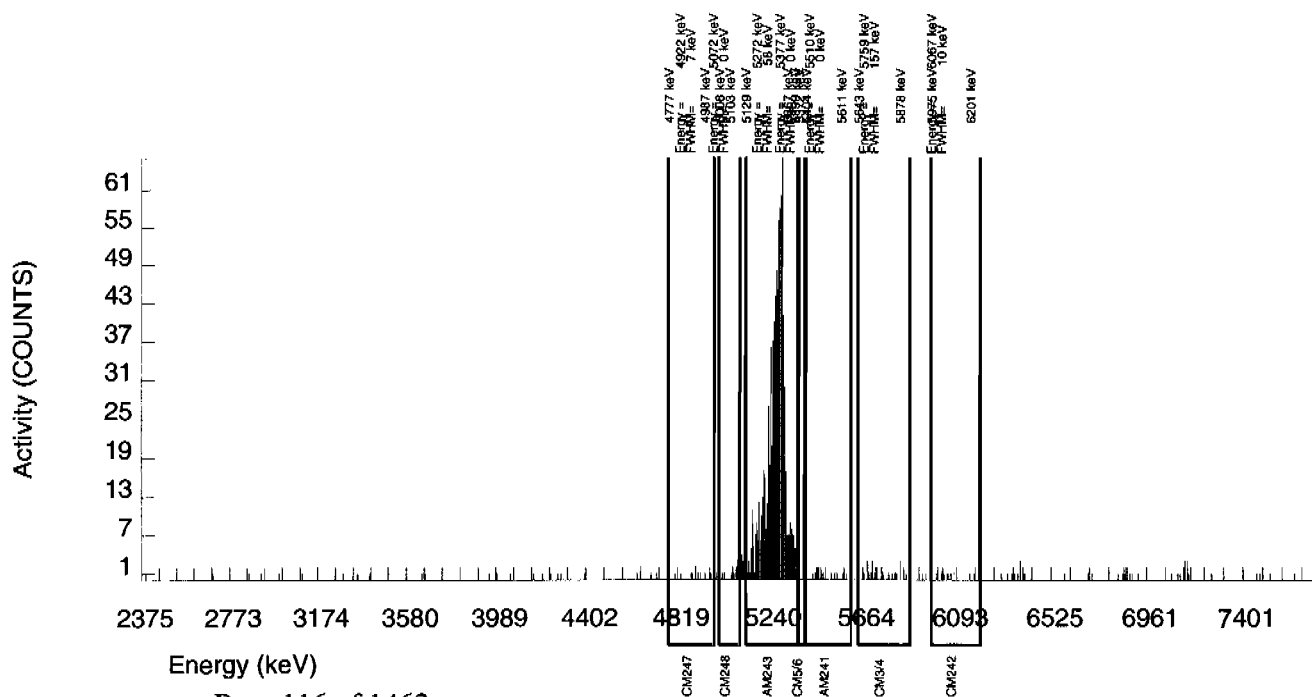
NUCLIDE ACTIVITY SUMMARY

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	28.000	5.000	23.000	5.2338	100.0000	6.07E-03	8.68E-03	1.48E-02	3.28E-02	8.68E-03
CM-5/6	5386.000	8.000	8.000	0.000	19.8463	86.09000	1.13E-02	4.05E-03	6.51E-02	1.34E-01	3.99E-03
AM-241	5479.150	20.000	6.509	12.000	3.0704	99.94000	7.90E-03	6.72E-03	8.67E-03	2.06E-02	6.70E-03
CM-242	6102.000	10.000	5.000	5.000	4.3186	100.0000	6.44E-03	5.00E-03	1.22E-02	2.77E-02	4.99E-03
AM243	5270.000	860.000	857.000	3.000	1.7321	99.78000	1.04E+00	7.35E-02	4.90E-03	1.31E-02	3.57E-02
CM-247	4946.000	11.000	6.000	5.000	15.3366	79.30000	9.18E-03	6.14E-03	5.46E-02	1.13E-01	6.12E-03
CM-248	5078.600	17.000	15.000	2.000	22.1555	91.00000	2.00E-02	5.94E-03	6.87E-02	1.41E-01	5.81E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132013\_AM  
SAMPLE QTY: 1.265 G

DETECTOR NUMBER :79988  
AVERAGE %EFFICIENCY :33.5512  
% YIELD : 92.381

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.69437 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B031.CNF;1101  
BKG DATE : 17-JAN-2010  
EFF FILE : W031.CNF;343  
CAL DATE : 4-JAN-2010

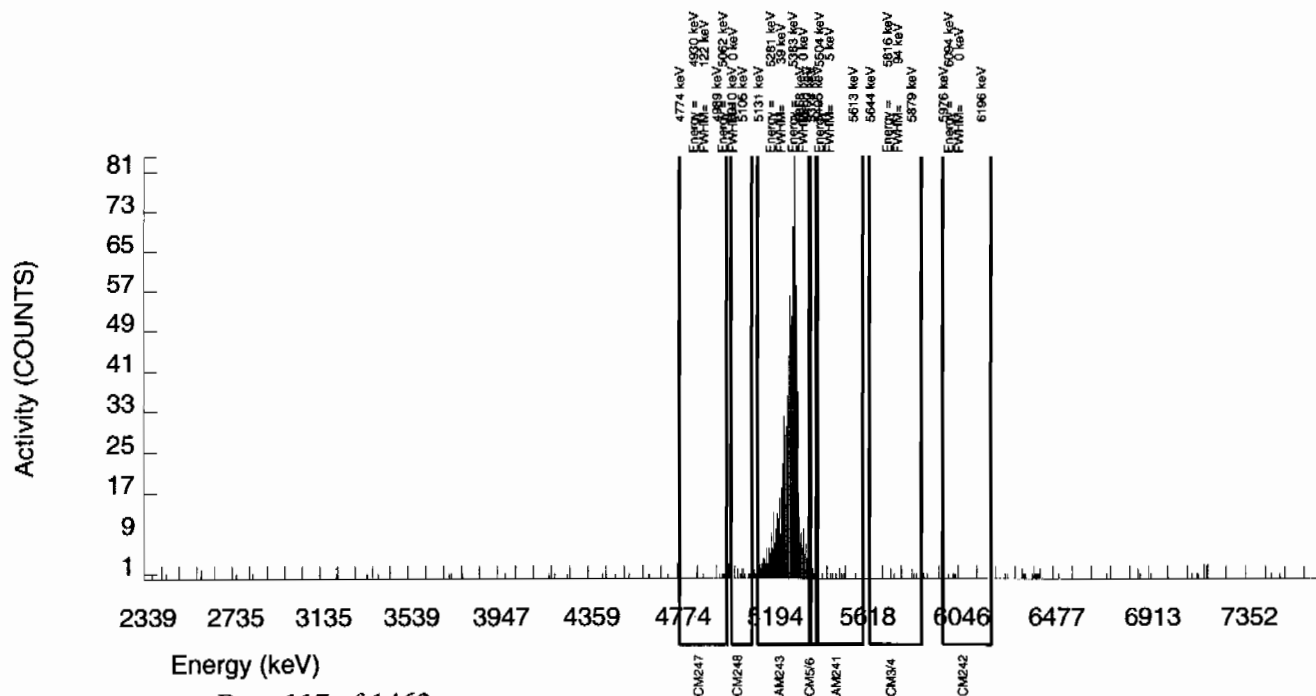
NUCLIDE ACTIVITY SUMMARY

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	8.000	-7.000	15.000	5.2338	100.0000	-8.05E-03	5.52E-03	1.40E-02	3.11E-02	5.52E-03
CM-5/6	5386.000	13.000	13.000	0.000	19.8463	86.09000	1.73E-02	4.92E-03	6.16E-02	1.27E-01	4.81E-03
AM-241	5479.150	9.000	5.430	2.000	3.0704	99.94000	6.24E-03	3.55E-03	8.21E-03	1.95E-02	3.53E-03
CM-242	6102.000	8.000	6.000	2.000	4.3186	100.0000	7.32E-03	3.88E-03	1.15E-02	2.62E-02	3.86E-03
AM243	5270.000	907.000	902.000	5.000	2.2361	99.78000	1.04E+00	7.10E-02	5.99E-03	1.51E-02	3.48E-02
CM-247	4946.000	7.000	3.000	4.000	15.3366	79.30000	4.35E-03	4.81E-03	5.17E-02	1.07E-01	4.80E-03
CM-248	5078.600	19.000	16.000	3.000	22.1555	91.00000	2.02E-02	6.04E-03	6.51E-02	1.34E-01	5.92E-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: 940262 SAMPLE DATE : 5-JAN-2010 00:00:00.			SAMPLE ID : S0244132014_AM SAMPLE QTY: 1.257 G		
DETECTOR NUMBER :78785 AVERAGE %EFFICIENCY :31.8010 % YIELD : 95.520			COUNT DATE:18-JAN-2010 14:53:08 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.78593 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B033.CNF;1100 BKG DATE : 17-JAN-2010 EFF FILE : W033.CNF;328 CAL DATE : 4-JAN-2010		

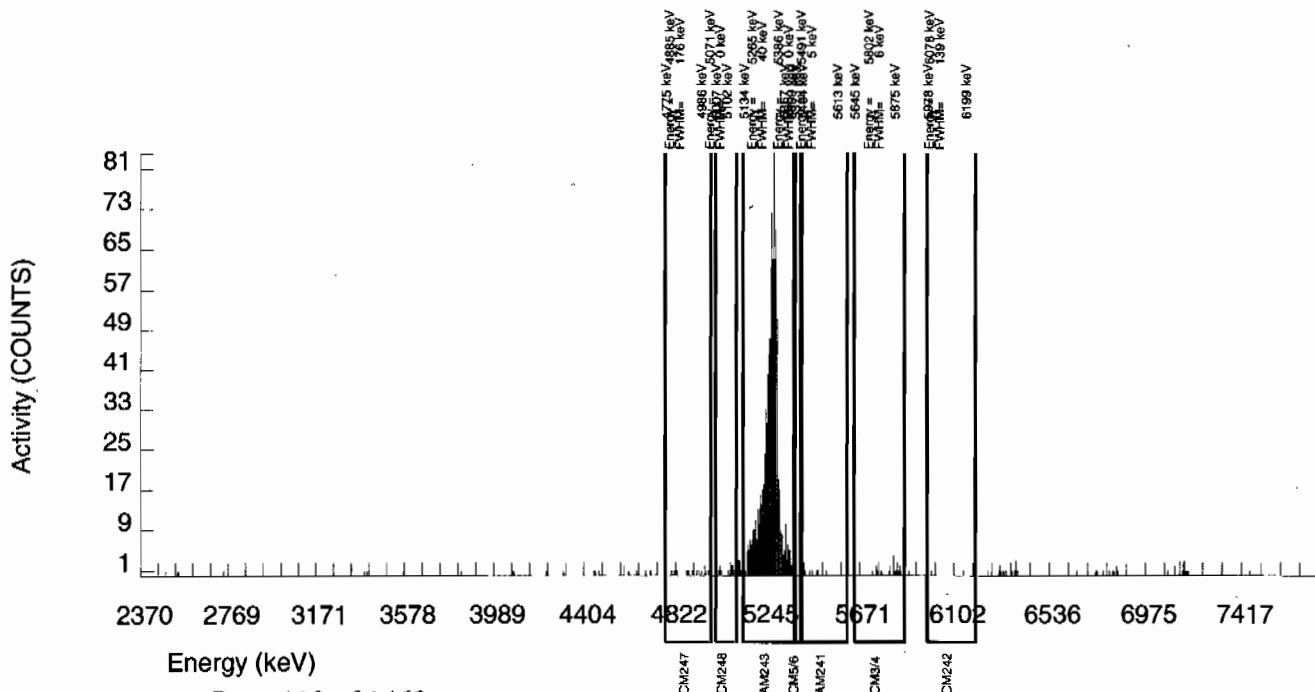
NUCLIDE ACTIVITY SUMMARY

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	21.000	9.000	12.000	5.2338	100.0000	1.06E-02	6.82E-03	1.44E-02	3.19E-02	6.79E-03
CM-5/6	5386.000	0.000	0.000	0.000	19.8463	86.09000	0.00E+00	1.37E-03	6.33E-02	1.30E-01	1.37E-03
AM-241	5479.150	9.000	5.462	2.000	3.0704	99.94000	6.45E-03	3.65E-03	8.43E-03	2.01E-02	3.63E-03
CM-242	6102.000	2.000	-1.000	3.000	4.3186	100.0000	-1.25E-03	2.80E-03	1.19E-02	2.69E-02	2.80E-03
AM243	5270.000	884.000	884.000	0.000	0.0000	99.78000	1.05E+00	7.16E-02	0.00E+00	3.20E-03	3.52E-02
CM-247	4946.000	18.000	17.000	1.000	15.3366	79.30000	2.53E-02	6.66E-03	5.31E-02	1.10E-01	6.48E-03
CM-248	5078.600	15.000	14.000	1.000	22.1555	91.00000	1.81E-02	5.30E-03	6.68E-02	1.37E-01	5.19E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132015\_AM  
SAMPLE QTY: 1.259 G

DETECTOR NUMBER :78202  
AVERAGE %EFFICIENCY :29.7838  
% YIELD : 92.990

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.71214 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B035.CNF;1098  
BKG DATE : 17-JAN-2010  
EFF FILE : W035.CNF;317  
CAL DATE : 4-JAN-2010

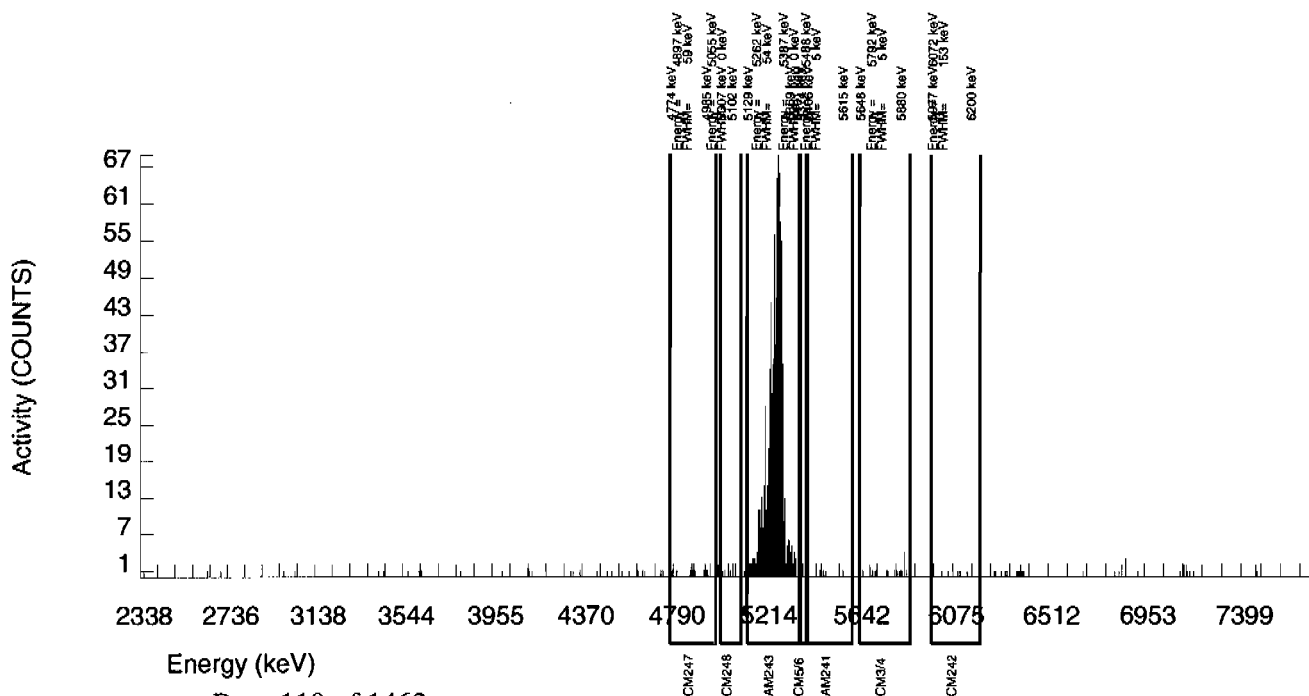
NUCLIDE ACTIVITY SUMMARY

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	18.000	9.000	9.000	5.2338	100.0000	1.16E-02	6.76E-03	1.57E-02	3.50E-02	6.72E-03
CM-5/6	5386.000	0.000	-1.000	1.000	19.8463	86.09000	-1.50E-03	2.12E-03	6.93E-02	1.43E-01	2.12E-03
AM-241	5479.150	7.000	-0.403	6.000	3.0704	99.94000	-5.21E-04	4.40E-03	9.23E-03	2.20E-02	4.40E-03
CM-242	6102.000	6.000	4.000	2.000	4.3186	100.0000	5.48E-03	3.89E-03	1.30E-02	2.95E-02	3.88E-03
AM243	5270.000	815.000	806.000	9.000	3.0000	99.78000	1.04E+00	7.36E-02	9.04E-03	2.16E-02	3.72E-02
CM-247	4946.000	12.000	12.000	0.000	15.3366	79.30000	1.95E-02	5.77E-03	5.81E-02	1.21E-01	5.64E-03
CM-248	5078.600	12.000	4.000	8.000	22.1555	91.00000	5.68E-03	6.36E-03	7.32E-02	1.50E-01	6.35E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132016\_AM  
SAMPLE QTY: 1.269 G

DETECTOR NUMBER :78203  
AVERAGE %EFFICIENCY :32.3142  
% YIELD : 91.026

COUNT DATE:18-JAN-2010 14:53:08  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.65484 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B036.CNF;1096  
BKG DATE : 17-JAN-2010  
EFF FILE : W036.CNF;329  
CAL DATE : 4-JAN-2010

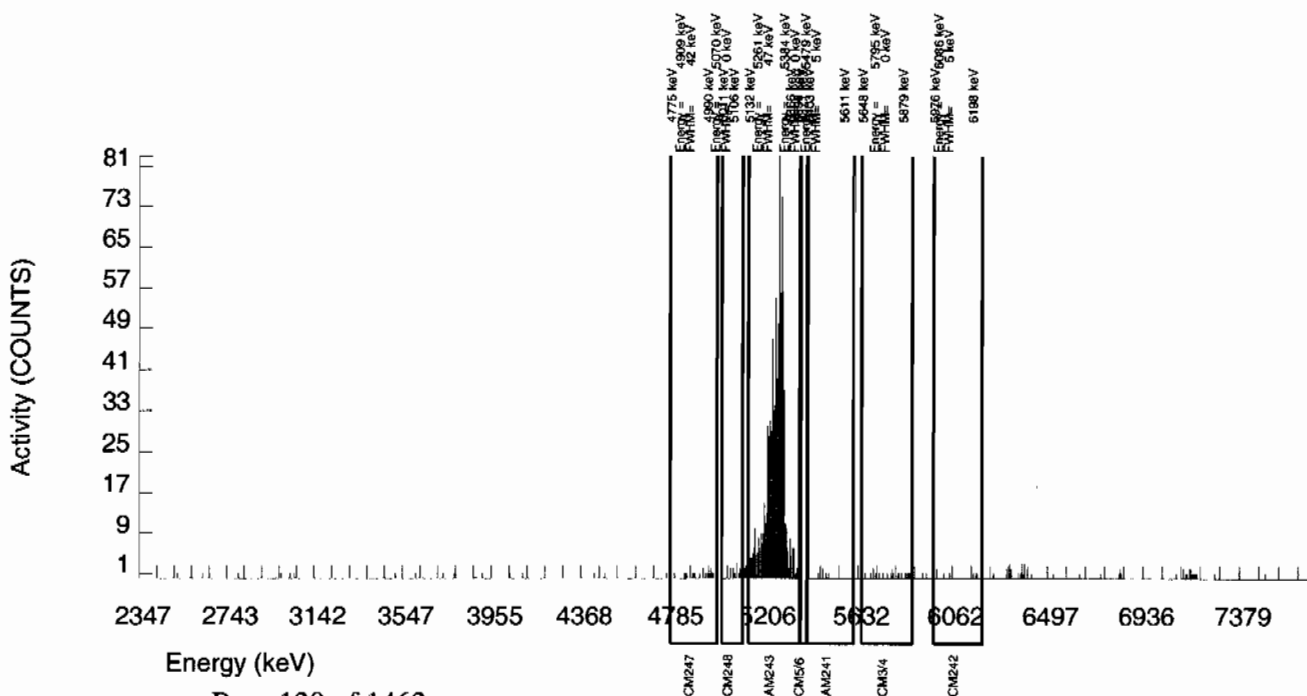
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	23.000	5.000	18.000	5.2338	100.0000	6.04E-03	7.75E-03	1.47E-02	3.27E-02	7.74E-03
CM-5/6	5386.000	4.000	4.000	0.000	19.8463	86.09000	5.61E-03	2.82E-03	6.47E-02	1.33E-01	2.80E-03
AM-241	5479.150	6.000	3.510	1.000	3.0704	99.94000	4.24E-03	2.85E-03	8.63E-03	2.05E-02	2.83E-03
CM-242	6102.000	7.000	4.000	3.000	4.3186	100.0000	5.12E-03	4.06E-03	1.21E-02	2.75E-02	4.05E-03
AM243	5270.000	859.000	856.000	3.000	1.7321	99.78000	1.04E+00	7.16E-02	4.87E-03	1.30E-02	3.55E-02
CM-247	4946.000	20.000	17.000	3.000	15.3366	79.30000	2.59E-02	7.46E-03	5.43E-02	1.13E-01	7.30E-03
CM-248	5078.600	18.000	17.000	1.000	22.1555	91.00000	2.25E-02	5.94E-03	6.84E-02	1.40E-01	5.78E-03

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

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132017\_AM  
SAMPLE QTY: 1.256 G

DETECTOR NUMBER :45-149BB5  
AVERAGE %EFFICIENCY :35.8566  
% YIELD : 81.841

COUNT DATE:18-JAN-2010 14:53:10  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.38697 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B037.CNF;1108  
BKG DATE : 17-JAN-2010  
EFF FILE : W037.CNF;305  
CAL DATE : 4-JAN-2010

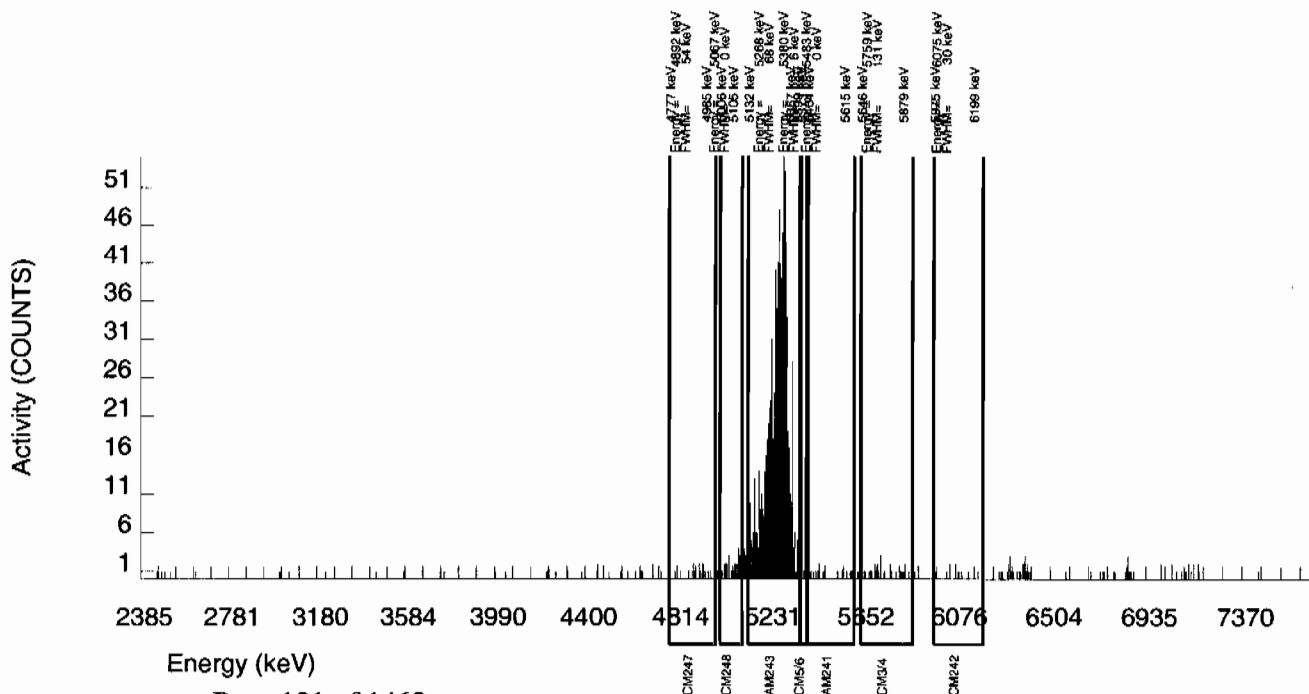
NUCLIDE ACTIVITY SUMMARY

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	27.000	2.000	25.000	5.2338	100.0000	2.45E-03	8.83E-03	1.49E-02	3.31E-02	8.83E-03
CM-5/6	5386.000	5.000	5.000	0.000	19.8463	86.09000	7.10E-03	3.20E-03	6.55E-02	1.35E-01	3.17E-03
AM-241	5479.150	17.000	8.514	7.000	3.0704	99.94000	1.04E-02	5.84E-03	8.73E-03	2.08E-02	5.80E-03
CM-242	6102.000	14.000	9.000	5.000	4.3186	100.0000	1.17E-02	5.70E-03	1.23E-02	2.79E-02	5.65E-03
AM243	5270.000	860.000	854.000	6.000	2.4495	99.78000	1.05E+00	7.25E-02	6.98E-03	1.73E-02	3.60E-02
CM-247	4946.000	20.000	16.000	4.000	15.3366	79.30000	2.47E-02	7.69E-03	5.50E-02	1.14E-01	7.55E-03
CM-248	5078.600	32.000	30.000	2.000	22.1555	91.00000	4.03E-02	8.20E-03	6.92E-02	1.42E-01	7.83E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132018\_AM  
SAMPLE QTY: 1.258 G

DETECTOR NUMBER :72532  
AVERAGE %EFFICIENCY :33.8964  
% YIELD : 91.440

COUNT DATE:18-JAN-2010 14:53:10  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.66692 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B038.CNF;1105  
BKG DATE : 17-JAN-2010  
EFF FILE : W038.CNF;319  
CAL DATE : 4-JAN-2010

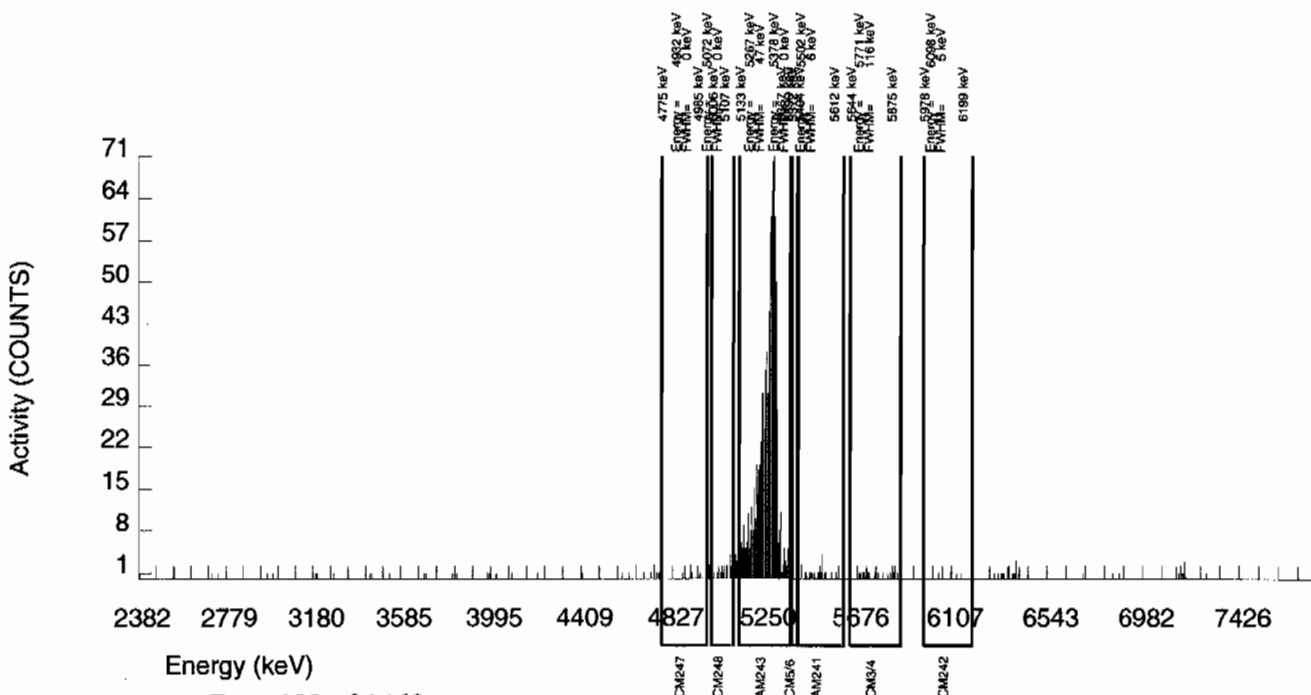
NUCLIDE ACTIVITY SUMMARY

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	19.000	3.000	16.000	5.2338	100.0000	3.47E-03	6.85E-03	1.41E-02	3.13E-02	6.84E-03
CM-5/6	5386.000	9.000	9.000	0.000	19.8463	86.09000	1.21E-02	4.09E-03	6.20E-02	1.28E-01	4.03E-03
AM-241	5479.150	20.000	5.430	13.000	3.0704	99.94000	6.28E-03	6.49E-03	8.26E-03	1.96E-02	6.48E-03
CM-242	6102.000	6.000	2.000	4.000	4.3186	100.0000	2.45E-03	3.88E-03	1.16E-02	2.63E-02	3.88E-03
AM243	5270.000	905.000	902.000	3.000	1.7321	99.78000	1.04E+00	7.13E-02	4.67E-03	1.25E-02	3.49E-02
CM-247	4946.000	10.000	9.000	1.000	15.3366	79.30000	1.31E-02	4.89E-03	5.20E-02	1.08E-01	4.83E-03
CM-248	5078.600	25.000	25.000	0.000	22.1555	91.00000	3.17E-02	6.62E-03	6.54E-02	1.34E-01	6.35E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132019\_AM  
SAMPLE QTY: 1.250 G

DETECTOR NUMBER :45-149BB2  
AVERAGE %EFFICIENCY :35.9356  
% YIELD : 91.223

COUNT DATE:18-JAN-2010 14:53:10  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.66061 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B039.CNF;1105  
BKG DATE : 17-JAN-2010  
EFF FILE : W039.CNF;296  
CAL DATE : 4-JAN-2010

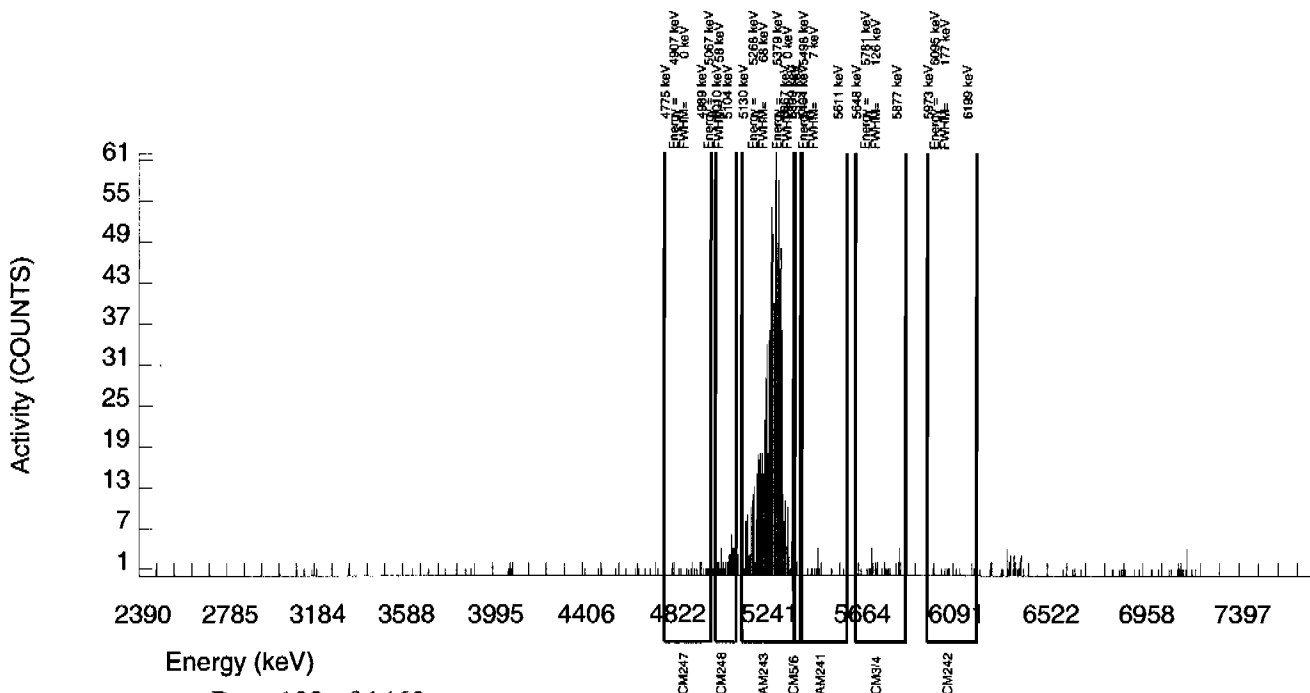
NUCLIDE ACTIVITY SUMMARY

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	34.000	5.000	29.000	5.2338	100.0000	5.50E-03	8.74E-03	1.34E-02	2.97E-02	8.74E-03
CM-5/6	5386.000	9.000	8.000	1.000	19.8463	86.09000	1.02E-02	4.08E-03	5.90E-02	1.21E-01	4.04E-03
AM-241	5479.150	13.000	-0.660	12.000	3.0704	99.94000	-7.26E-04	5.31E-03	7.86E-03	1.87E-02	5.31E-03
CM-242	6102.000	10.000	5.000	5.000	4.3186	100.0000	5.83E-03	4.53E-03	1.10E-02	2.51E-02	4.52E-03
AM243	5270.000	959.000	954.000	5.000	2.2361	99.78000	1.05E+00	7.09E-02	5.73E-03	1.44E-02	3.42E-02
CM-247	4946.000	23.000	21.000	2.000	15.3366	79.30000	2.91E-02	7.14E-03	4.95E-02	1.03E-01	6.93E-03
CM-248	5078.600	42.000	41.000	1.000	22.1555	91.00000	4.95E-02	8.44E-03	6.23E-02	1.28E-01	7.92E-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: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132020\_AM  
SAMPLE QTY: 1.252 G

DETECTOR NUMBER :78773  
AVERAGE %EFFICIENCY :32.1969  
% YIELD : 89.970

COUNT DATE:18-JAN-2010 14:53:10  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.62405 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B040.CNF;1108  
BKG DATE : 17-JAN-2010  
EFF FILE : W040.CNF;315  
CAL DATE : 4-JAN-2010

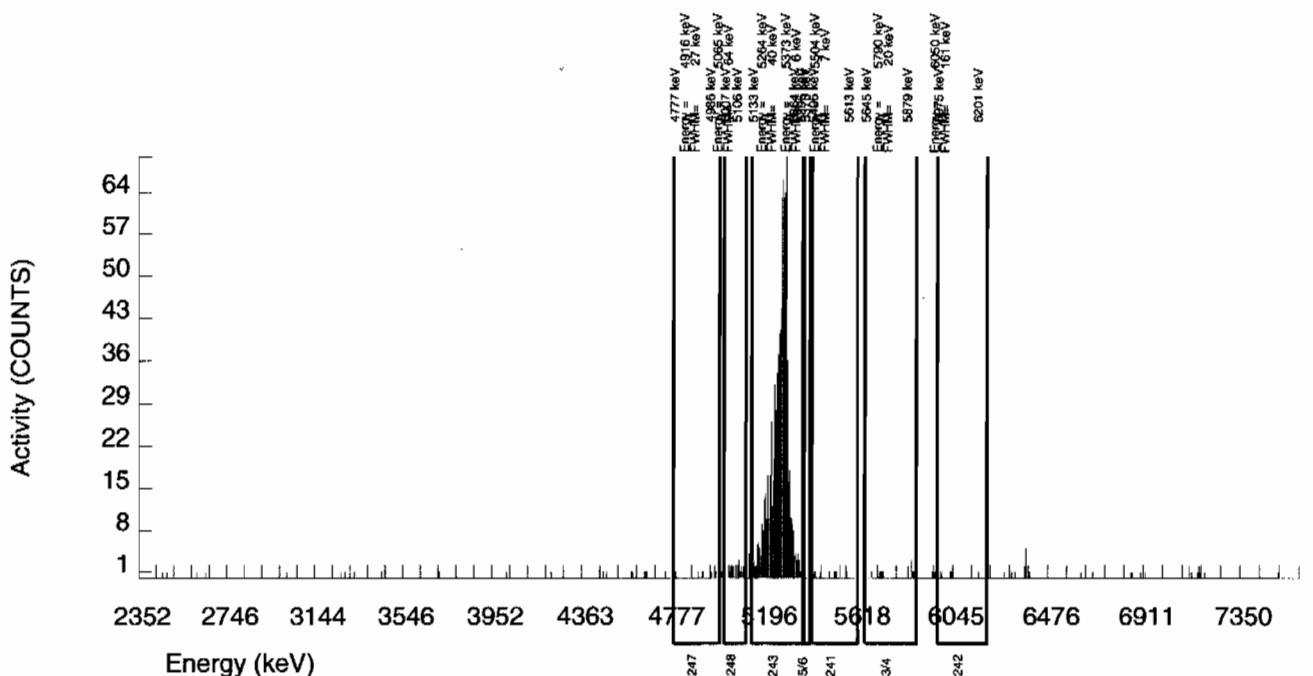
NUCLIDE ACTIVITY SUMMARY

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	13.000	1.000	12.000	5.2338	100.0000	1.24E-03	6.22E-03	1.51E-02	3.36E-02	6.22E-03
CM-5/6	5386.000	4.000	4.000	0.000	19.8463	86.09000	5.77E-03	2.91E-03	6.66E-02	1.37E-01	2.89E-03
AM-241	5479.150	10.000	5.533	3.000	3.0704	99.94000	6.88E-03	4.24E-03	8.88E-03	2.11E-02	4.22E-03
CM-242	6102.000	6.000	5.000	1.000	4.3186	100.0000	6.59E-03	3.51E-03	1.25E-02	2.83E-02	3.49E-03
AM243	5270.000	845.000	843.000	2.000	1.4142	99.78000	1.05E+00	7.28E-02	4.10E-03	1.16E-02	3.62E-02
CM-247	4946.000	11.000	10.000	1.000	15.3366	79.30000	1.57E-02	5.51E-03	5.59E-02	1.16E-01	5.43E-03
CM-248	5078.600	26.000	24.000	2.000	22.1555	91.00000	3.28E-02	7.49E-03	7.03E-02	1.44E-01	7.22E-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: 940262  
SAMPLE DATE : 13-JAN-2010 00:00:00

SAMPLE ID : S1202012136\_AM  
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :79414  
AVERAGE %EFFICIENCY :37.2887  
% YIELD : 105.791

COUNT DATE:21-JAN-2010 10:49:38  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91658 dpm  
RESULTS : 3.08547 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B221.CNF;70  
BKG DATE : 17-JAN-2010  
EFF FILE : W221.CNF;24  
CAL DATE : 28-DEC-2009

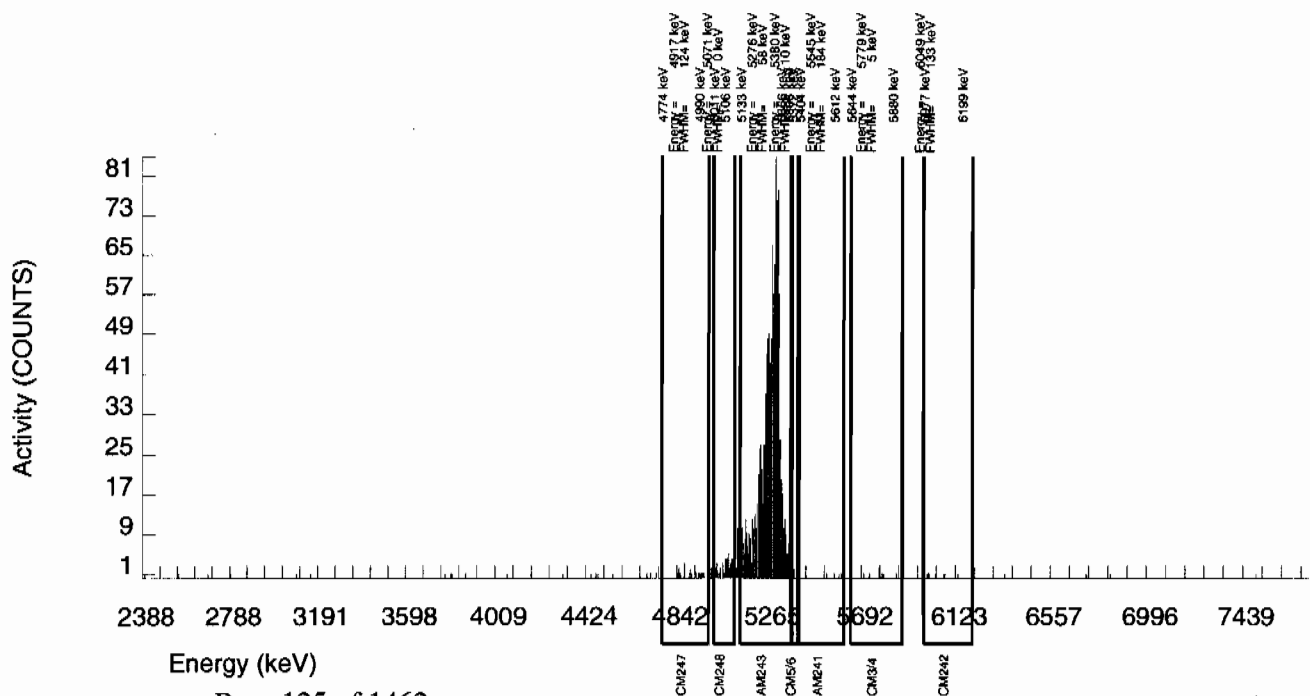
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	7.000	7.000	0.000	5.2338	100.0000	8.00E-03	3.06E-03	1.39E-02	3.09E-02	3.02E-03
CM-5/6	5386.000	10.000	10.000	0.000	19.8463	86.09000	1.33E-02	4.26E-03	6.12E-02	1.26E-01	4.19E-03
AM-241	5479.150	5.000	-0.998	4.000	3.0704	99.94000	-1.14E-03	3.02E-03	8.16E-03	1.94E-02	3.02E-03
CM-242	6102.000	7.000	5.000	2.000	4.3186	100.0000	5.93E-03	3.57E-03	1.15E-02	2.60E-02	3.56E-03
AM243	5270.000	1148.000	1148.000	0.000	0.0000	99.78000	1.31E+00	8.47E-02	0.00E+00	3.10E-03	3.88E-02
CM-247	4946.000	23.000	22.000	1.000	15.3366	79.30000	3.17E-02	7.28E-03	5.14E-02	1.07E-01	7.05E-03
CM-248	5078.600	45.000	45.000	0.000	22.1555	91.00000	5.65E-02	9.02E-03	6.47E-02	1.33E-01	8.42E-03

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

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940262  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202012137\_AM  
SAMPLE QTY: 1.253 G

DETECTOR NUMBER :78793  
AVERAGE %EFFICIENCY :33.4897  
% YIELD : 92.345

COUNT DATE:18-JAN-2010 14:53:10  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 2.69333 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B042.CNF;1100  
BKG DATE : 17-JAN-2010  
EFF FILE : W042.CNF;292  
CAL DATE : 4-JAN-2010

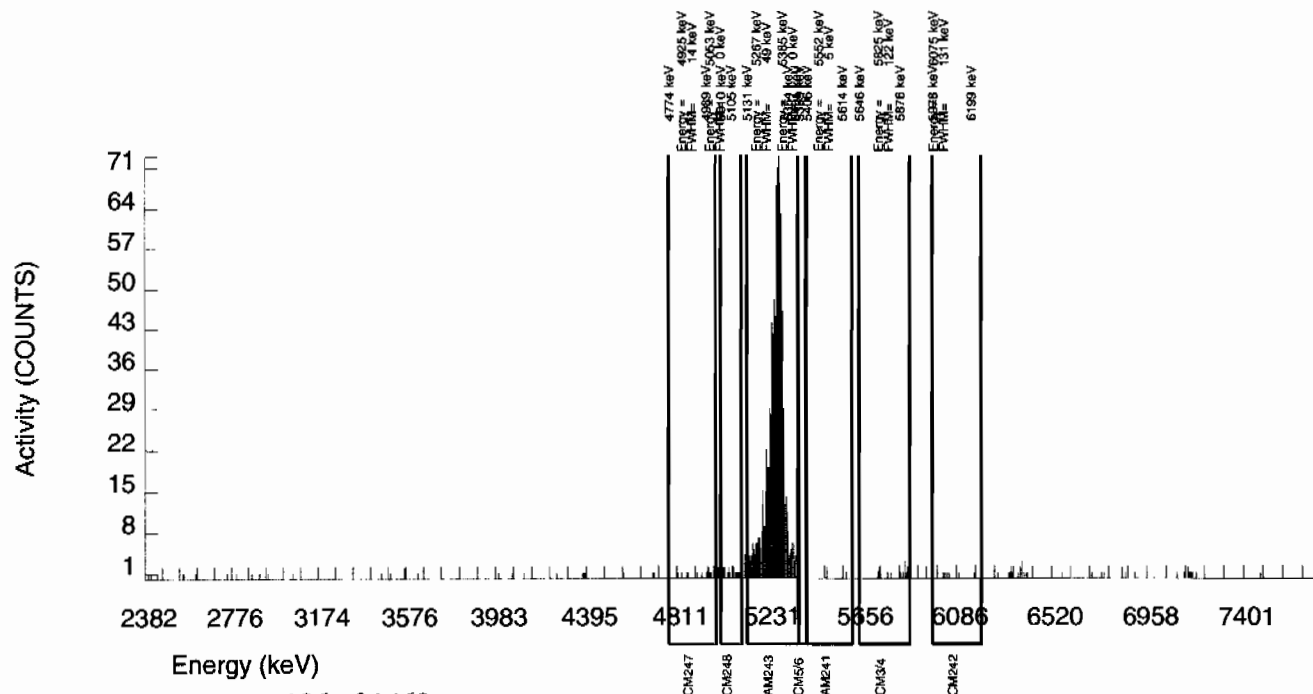
NUCLIDE ACTIVITY SUMMARY

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	15.000	-4.000	19.000	5.2338	100.0000	-4.66E-03	6.79E-03	1.42E-02	3.15E-02	6.79E-03
CM-5/6	5386.000	2.000	2.000	0.000	19.8463	86.09000	2.70E-03	1.92E-03	6.23E-02	1.28E-01	1.91E-03
AM-241	5479.150	4.000	1.434	1.000	3.0704	99.94000	1.67E-03	2.16E-03	8.31E-03	1.98E-02	2.16E-03
CM-242	6102.000	6.000	1.000	5.000	4.3186	100.0000	1.23E-03	4.09E-03	1.17E-02	2.65E-02	4.09E-03
AM243	5270.000	905.000	900.000	5.000	2.2361	99.78000	1.05E+00	7.17E-02	6.06E-03	1.53E-02	3.51E-02
CM-247	4946.000	14.000	13.000	1.000	15.3366	79.30000	1.91E-02	5.79E-03	5.23E-02	1.09E-01	5.68E-03
CM-248	5078.600	20.000	19.000	1.000	22.1555	91.00000	2.43E-02	6.03E-03	6.58E-02	1.35E-01	5.85E-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: 940262 SAMPLE DATE : 13-JAN-2010 00:00:00			SAMPLE ID : S1202012138_AM SAMPLE QTY: 0.120 G		
DETECTOR NUMBER :79415 AVERAGE %EFFICIENCY :35.6666 % YIELD : 109.157			COUNT DATE:21-JAN-2010 10:49:39 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91658 dpm RESULTS : 3.18364 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B222.CNF;70 BKG DATE : 17-JAN-2010 EFF FILE : W222.CNF;24 CAL DATE : 28-DEC-2009		

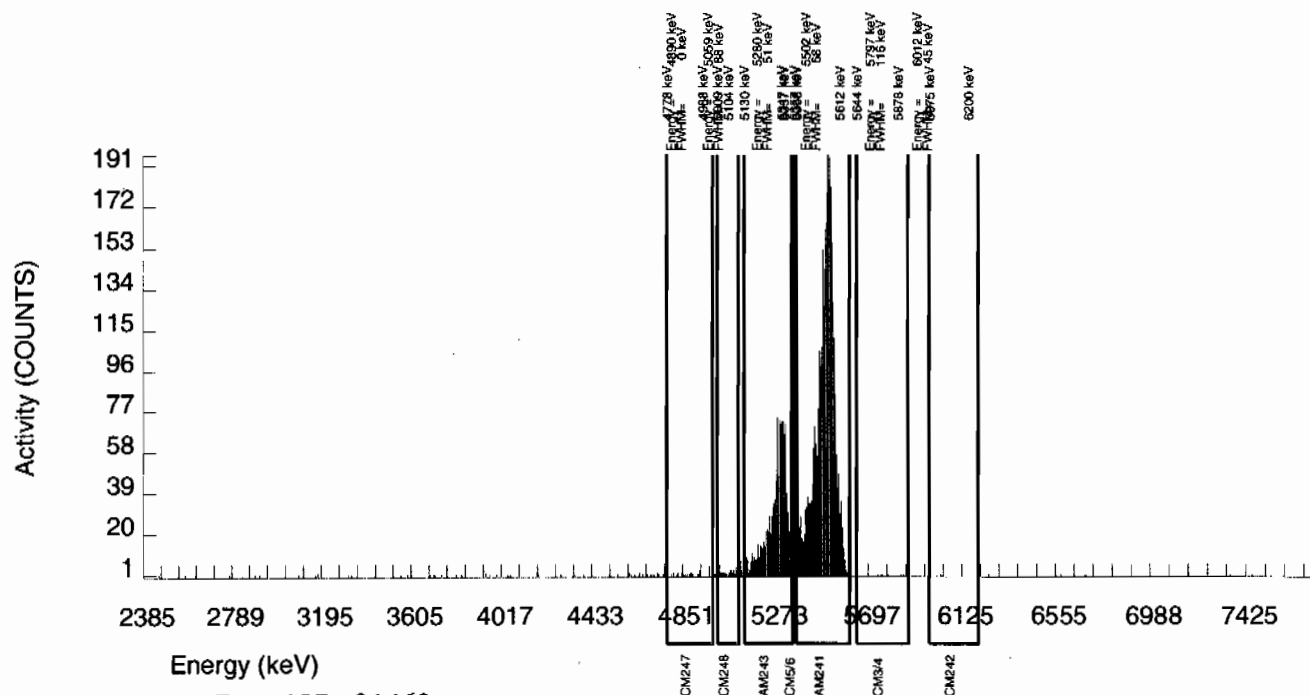
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	6.000	6.000	0.000	5.2338	100.0000	5.79E-02	2.39E-02	1.17E-01	2.61E-01	2.36E-02
CM-5/6	5386.000	3204.000	3202.028	0.000	19.8463	86.09000	3.59E+01	2.36E+00	5.17E-01	1.06E+00	6.34E-01
AM-241	5479.150	3204.000	3202.028	0.000	3.0704	99.94000	3.09E+01	2.03E+00	6.89E-02	1.64E-01	5.46E-01
CM-242	6102.000	2.000	1.000	1.000	4.3186	100.0000	1.00E-02	1.73E-02	9.69E-02	2.20E-01	1.73E-02
AM243	5270.000	1133.000	1133.000	0.000	0.0000	99.78000	1.09E+01	7.66E-01	0.00E+00	2.62E-02	3.25E-01
CM-247	4946.000	36.000	36.000	0.000	15.3366	79.30000	4.38E-01	7.80E-02	4.34E-01	9.01E-01	7.30E-02
CM-248	5078.600	39.000	39.000	0.000	22.1555	91.00000	4.13E-01	7.12E-02	5.46E-01	1.12E+00	6.62E-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#

940267

Product:

PU

Date:

1/18/10

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	✓		
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
Alquot 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 1/18/10

Secondary Review Performed By:

JLM 1/18/10

2/5  
LANC

# Plutonium Que Sheet

11-JAN-10

Batch #: 940267 Analyst: KXM4 First Client Due Date: 05-FEB-10 Internal Due Date: 25-JAN-10

Tracer Isotope(s): Pu-242 Pu-238 Tracer Code: 1374-A Expiration Date: 12-8-10 Vol: 0.1mL

LCS Isotope(s): Pu-239/Pu-238 LCS Code: 58M 0244-B Expiration Date: 4-30-10 Vol: 0.1g

Spike Isotope(s): Pu-239/Pu-238 Spike Code: NA Expiration Date: NA Vol: NA

Prep Date: 1-13-10 Initials: KM Pipet ID: 2971059 Balance ID: 50410272 Witness: MDA 1/13/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Qty	Pu Det #
244132001-1	RE12-10-7634	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	1	1	1,250	1
244132002-1	RE12-10-7648	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	2	2	1,261	2
244132003-1	RE12-10-7638	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	3	3	1,258	3
244132004-1	RE12-10-7639	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	4	4	1,259	4
244132005-1	RE12-10-7633	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	5	5	1,258	5
244132006-1	RE12-10-7647	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	6	6	1,253	6
244132007-1	RE12-10-7644	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	7	7	1,264	11
244132008-1	RE12-10-7637	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	8	8	1,265	12
244132009-1	RE12-10-7635	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	9	9	1,253	13
244132010-1	RE12-10-7642	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	10	10	1,254	14
244132011-1	RE12-10-7649	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	11	11	1,257	16
244132012-1	RE12-10-7659	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	12	12	1,261	17
244132013-1	RE12-10-7641	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	13	13	1,265	18
244132014-1	RE12-10-7643	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	14	14	1,257	19
244132015-1	RE12-10-7640	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	15	15	1,259	20
244132016-1	RE12-10-7645	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	16	16	1,269	21
244132017-1	RE12-10-7646	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	17	17	1,256	22
244132018-1	RE12-10-7636	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	18	18	1,258	23
244132019-1	RE12-10-7657	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	19	19	1,250	33
244132020-1	RE12-10-7658	SAMPLE	.05 pCi/g		SOIL	LANL010	05-JAN-10	20	20	1,252	35
1202012147-1	MB for batch 940267	MB	.05 pCi/g		SOIL	QC ACCOUNT	05-JAN-10	21	21	1,254	36
1202012148-1	RE12-10-7633(244132005DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	05-JAN-10	22	22	1,253	42
1202012149-1	LCS for batch 940267	LCS	.05 pCi/g		SOIL	QC ACCOUNT	05-JAN-10	23	23	0.120	43

Solid Sample Dissolution by LEACH or DIGESTION Circle One

Choose SOP Used: GL-RAD-A-012, GL-RAD-A-036, GL-RAD-A-043, GL-RAD-A-045, GL-RAD-A-043

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: [Signature] 1/18/10

1/18/10

# Blank Correction Report

**Batch ID 940267**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202012148	DUP	Plutonium-238	1.25 g	1.43E-10	0.0024	0.0198	-.002336	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0156	0.005	0.0226	.002336	pCi/g	NO
1202012149	LCS	Plutonium-238	0.120 g	6.81	0.483	0.199	-.02433333	pCi/g	NO
		Plutonium-239/240	0.120 g	38.0	2.27	0.228	.024333333	pCi/g	NO
1202012147	MB	Plutonium-238	1.00 g	-0.00292	0.00292	0.0241	-.00292	pCi/g	NO
		Plutonium-239/240	1.00 g	0.00292	0.00358	0.0276	.00292	pCi/g	YES
244132001	RE12-10-7634	Plutonium-238	1.25 g	0.00	0.00145	0.0238	-.002336	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00433	0.00434	0.0273	.002336	pCi/g	YES
244132002	RE12-10-7648	Plutonium-238	1.26 g	0.00139	0.00139	0.0229	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	1.65E-10	0.00277	0.0262	.002317460	pCi/g	YES
244132003	RE12-10-7638	Plutonium-238	1.26 g	-0.00119	0.00206	0.0196	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0166	0.00482	0.0224	.002317460	pCi/g	NO
244132004	RE12-10-7639	Plutonium-238	1.26 g	8.90E-11	0.00211	0.0247	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0149	0.00479	0.0282	.002317460	pCi/g	NO
244132005	RE12-10-7633	Plutonium-238	1.26 g	0.00122	0.00122	0.0201	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0134	0.00476	0.023	.002317460	pCi/g	NO
244132006	RE12-10-7647	Plutonium-238	1.25 g	0.00	0.00131	0.0216	-.002336	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00654	0.00348	0.0247	.002336	pCi/g	YES
244132007	RE12-10-7644	Plutonium-238	1.26 g	0.00	0.00661	0.0223	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00405	0.00235	0.0255	.002317460	pCi/g	YES
244132008	RE12-10-7637	Plutonium-238	1.27 g	-0.0141	0.00848	0.0233	-.00229921	pCi/g	YES
		Plutonium-239/240	1.27 g	0.00565	0.00448	0.0267	.002299213	pCi/g	YES
244132009	RE12-10-7635	Plutonium-238	1.25 g	0.00579	0.00556	0.0191	-.002336	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00926	0.00403	0.0219	.002336	pCi/g	YES
244132010	RE12-10-7642	Plutonium-238	1.25 g	0.00359	0.00887	0.0198	-.002336	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00359	0.00268	0.0226	.002336	pCi/g	YES
244132011	RE12-10-7649	Plutonium-238	1.26 g	-0.00376	0.00517	0.0207	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0125	0.00439	0.0237	.002317460	pCi/g	NO
244132012	RE12-10-7650	Plutonium-238	1.26 g	0.00301	0.00521	0.0248	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00301	0.00301	0.0284	.002317460	pCi/g	YES
244132013	RE12-10-7641	Plutonium-238	1.27 g	-0.00605	0.00554	0.020	-.00229921	pCi/g	NO
		Plutonium-239/240	1.27 g	0.0121	0.00387	0.0229	.002299213	pCi/g	NO
244132014	RE12-10-7643	Plutonium-238	1.26 g	0.0128	0.00603	0.0211	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0204	0.00552	0.0241	.002317460	pCi/g	NO
244132015	RE12-10-7640	Plutonium-238	1.26 g	-0.00619	0.0054	0.0205	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00372	0.00278	0.0234	.002317460	pCi/g	YES
244132016	RE12-10-7645	Plutonium-238	1.27 g	2.49E-09	0.00828	0.0216	-.00229921	pCi/g	NO
		Plutonium-239/240	1.27 g	0.00784	0.00454	0.0247	.002299213	pCi/g	YES
244132017	RE12-10-7646	Plutonium-238	1.26 g	1.17E-09	0.006	0.0202	-.00231746	pCi/g	NO



# Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
244132017	RE12-10-7646	Plutonium-239/240	1.26 g	1.46E-10	0.00245	0.0232	.002317460	pCi/g	YES
244132018	RE12-10-7636	Plutonium-238	1.26 g	-0.0013	0.00623	0.0215	-.00231746	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.0039	0.00291	0.0246	.002317460	pCi/g	YES
244132019	RE12-10-7657	Plutonium-238	1.25 g	-0.00123	0.00213	0.0203	-.002336	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00123	0.00123	0.0232	.002336	pCi/g	YES
244132020	RE12-10-7658	Plutonium-238	1.25 g	0.00124	0.00328	0.0204	-.002336	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00619	0.0054	0.0234	.002336	pCi/g	YES

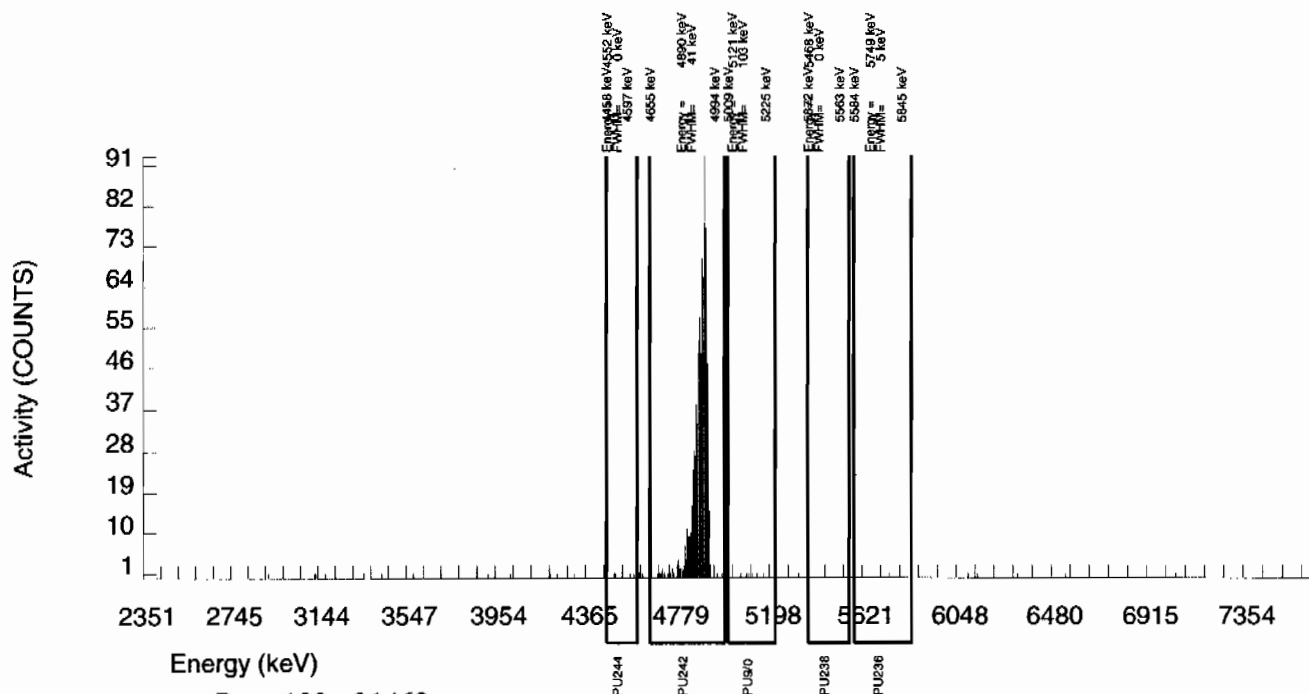
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.			SAMPLE ID : S0244132001_PU SAMPLE QTY: 1.250 G		
DETECTOR NUMBER :79451 AVERAGE %EFFICIENCY :32.5060 % YIELD : 76.876			COUNT DATE:16-JAN-2010 11:22:16 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4		
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.60260 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B001.CNF;1113 BKG DATE : 10-JAN-2010 EFF FILE : W001.CNF;380 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	6.000	3.000	3.000	3.4797	99.90000	4.33E-03	4.34E-03	1.17E-02	2.73E-02	4.33E-03
PU-236	5749.000	1.000	1.000	0.000	2.1286	100.0000	1.45E-03	1.46E-03	7.14E-03	1.82E-02	1.45E-03
PU-238	5499.000	0.000	0.000	0.000	2.9680	99.90000	0.00E+00	1.45E-03	9.97E-03	2.38E-02	1.44E-03
PU242	4890.000	846.000	846.000	0.000	0.0000	100.0000	1.22E+00	7.66E-02	0.00E+00	3.91E-03	4.19E-02
PU-244	4589.000	5.000	4.000	1.000	5.2050	99.90000	5.77E-03	3.55E-03	1.75E-02	3.89E-02	3.54E-03

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



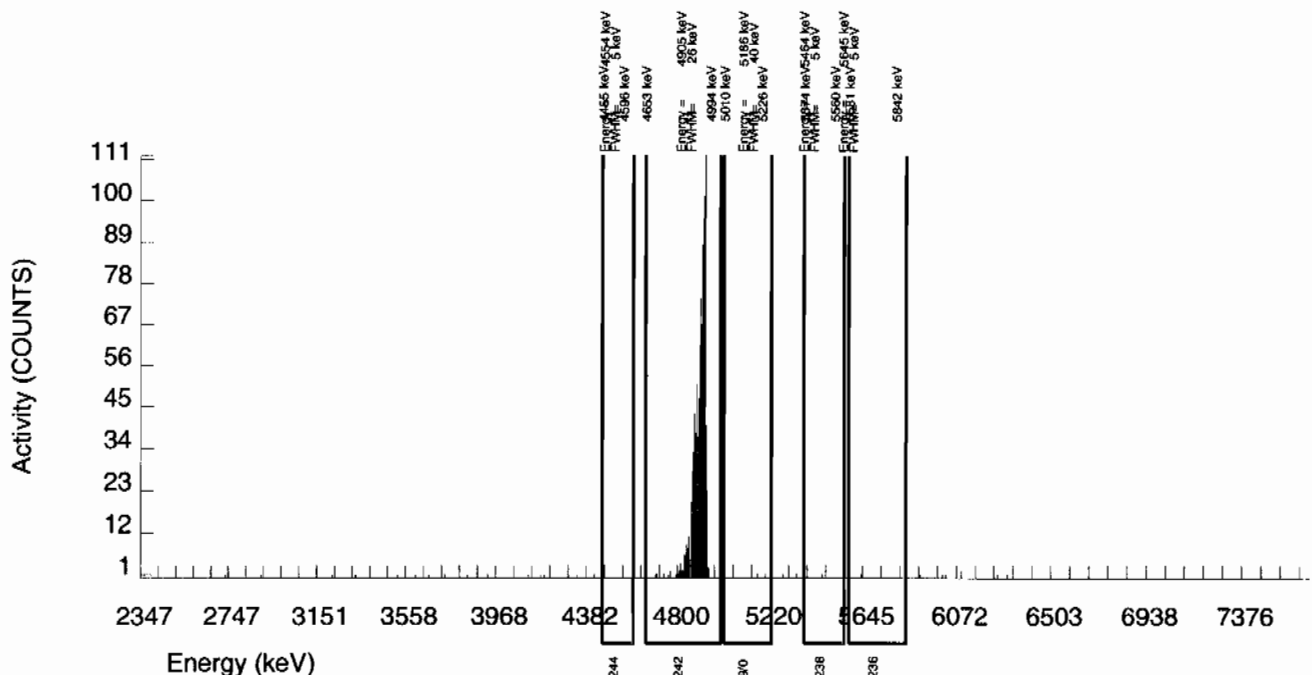
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132002_PU SAMPLE QTY: 1.261 G	
DETECTOR NUMBER :79452 AVERAGE %EFFICIENCY :29.6879 % YIELD : 86.960		COUNT DATE:16-JAN-2010 11:22:16 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.94396 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B002.CNF;1103 BKG DATE : 10-JAN-2010 EFF FILE : W002.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
PU-9/0	5155.000	2.000	0.000	2.000	3.4797	99.90000	1.65E-10	2.77E-03	1.12E-02	2.62E-02	2.77E-03
PU-236	5749.000	1.000	1.000	0.000	2.1286	100.0000	1.39E-03	1.40E-03	6.85E-03	1.75E-02	1.39E-03
PU-238	5499.000	1.000	1.000	0.000	2.9680	99.90000	1.39E-03	1.39E-03	9.56E-03	2.29E-02	1.39E-03
PU242	4890.000	875.000	874.000	1.000	1.0000	100.0000	1.21E+00	7.53E-02	3.22E-03	1.02E-02	4.10E-02
PU-244	4589.000	1.000	0.000	1.000	5.2050	99.90000	8.26E-11	1.96E-03	1.68E-02	3.73E-02	1.96E-03

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



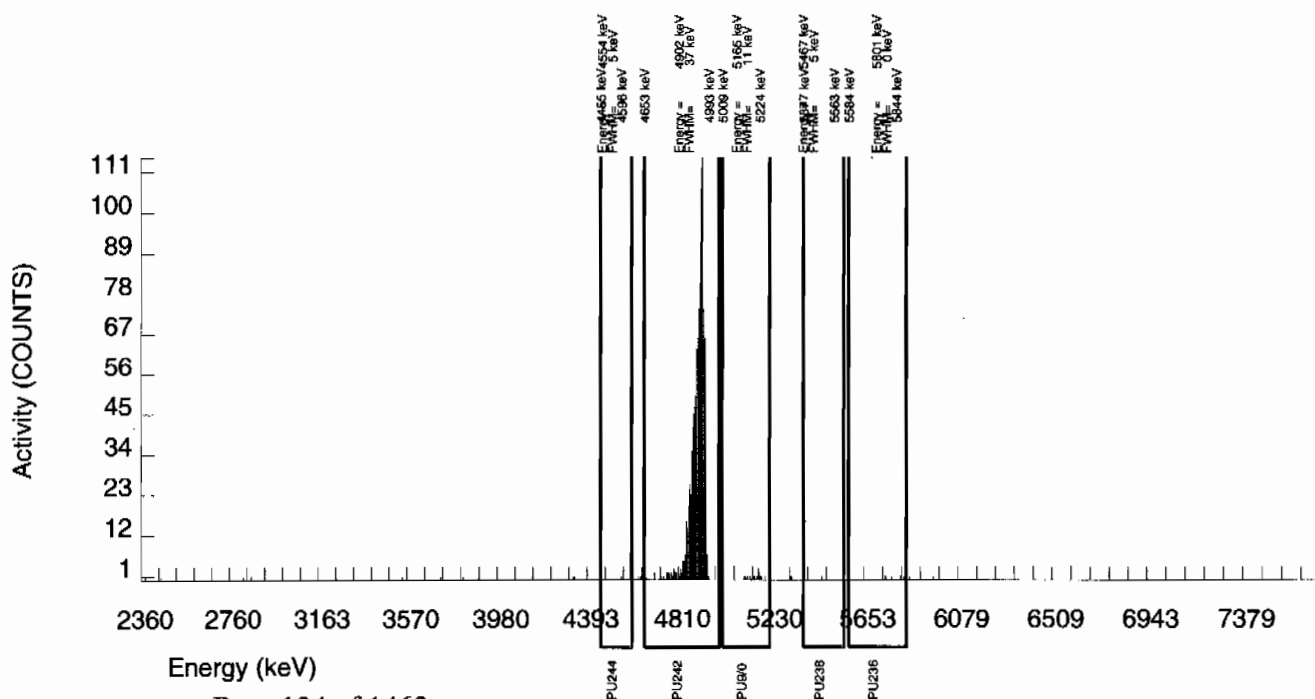
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132003_PU SAMPLE QTY: 1.258 G	
DETECTOR NUMBER :79453 AVERAGE %EFFICIENCY :31.1793 % YIELD : 96.821		COUNT DATE:16-JAN-2010 11:22:16 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.27782 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B003.CNF;1098 BKG DATE : 10-JAN-2010 EFF FILE : W003.CNF;339 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	15.000	14.000	1.000	3.4797	99.90000	1.66E-02	4.82E-03	9.61E-03	2.24E-02	4.75E-03
PU-236	5749.000	6.000	2.000	4.000	2.1286	100.0000	2.39E-03	3.78E-03	5.87E-03	1.50E-02	3.78E-03
PU-238	5499.000	1.000	-1.000	2.000	2.9680	99.90000	-1.19E-03	2.06E-03	8.20E-03	1.96E-02	2.06E-03
PU242	4890.000	1026.000	1022.000	4.000	2.0000	100.0000	1.21E+00	7.22E-02	5.52E-03	1.43E-02	3.81E-02
PU-244	4589.000	1.000	-1.000	2.000	5.2050	99.90000	-1.19E-03	2.06E-03	1.44E-02	3.20E-02	2.06E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132004\_PU  
SAMPLE QTY: 1.259 G

DETECTOR NUMBER :68548  
AVERAGE %EFFICIENCY :30.7853  
% YIELD : 77.911

COUNT DATE:16-JAN-2010 11:22:16  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

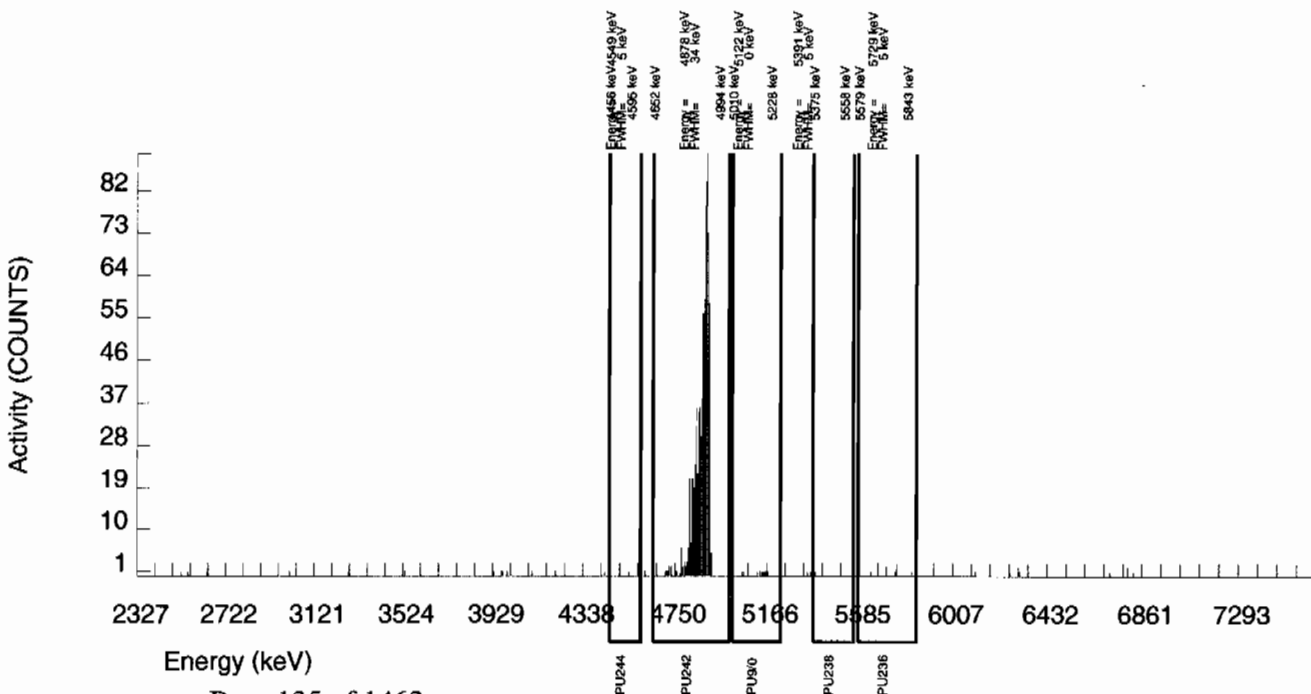
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.63762 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B004.CNF;1107  
BKG DATE : 10-JAN-2010  
EFF FILE : W004.CNF;328  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	10.000	10.000	0.000	3.4797	99.90000	1.49E-02	4.79E-03	1.21E-02	2.82E-02	4.72E-03
PU-236	5749.000	5.000	5.000	0.000	2.1286	100.0000	7.52E-03	3.39E-03	7.39E-03	1.88E-02	3.36E-03
PU-238	5499.000	1.000	0.000	1.000	2.9680	99.90000	8.90E-11	2.11E-03	1.03E-02	2.47E-02	2.11E-03
PU242	4890.000	819.000	812.000	7.000	2.6458	100.0000	1.21E+00	7.74E-02	9.18E-03	2.24E-02	4.29E-02
PU-244	4589.000	1.000	-2.000	3.000	5.2050	99.90000	-2.99E-03	2.99E-03	1.81E-02	4.02E-02	2.99E-03

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



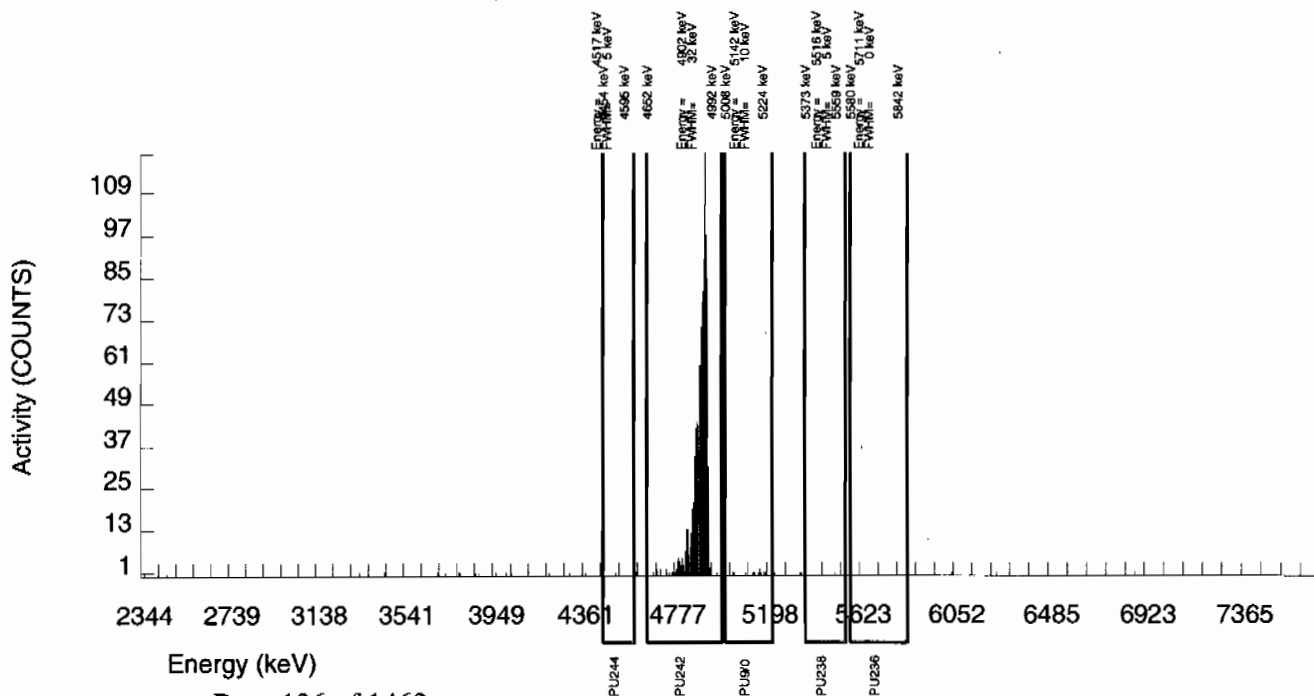
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132005_PU SAMPLE QTY: 1.258 G	
DETECTOR NUMBER :79454 AVERAGE %EFFICIENCY :32.0695 % YIELD : 91.831		COUNT DATE:16-JAN-2010 11:22:16 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.10887 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B005.CNF;1093 BKG DATE : 10-JAN-2010 EFF FILE : W005.CNF;335 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	13.000	11.000	2.000	3.4797	99.90000	1.34E-02	4.76E-03	9.85E-03	2.30E-02	4.71E-03
PU-236	5749.000	0.000	-1.000	1.000	2.1286	100.0000	-1.23E-03	1.73E-03	6.02E-03	1.53E-02	1.73E-03
PU-238	5499.000	1.000	1.000	0.000	2.9680	99.90000	1.22E-03	1.22E-03	8.40E-03	2.01E-02	1.22E-03
PU242	4890.000	1000.000	997.000	3.000	1.7321	100.0000	1.21E+00	7.27E-02	4.90E-03	1.31E-02	3.85E-02
PU-244	4589.000	1.000	1.000	0.000	5.2050	99.90000	1.22E-03	1.22E-03	1.47E-02	3.28E-02	1.22E-03

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



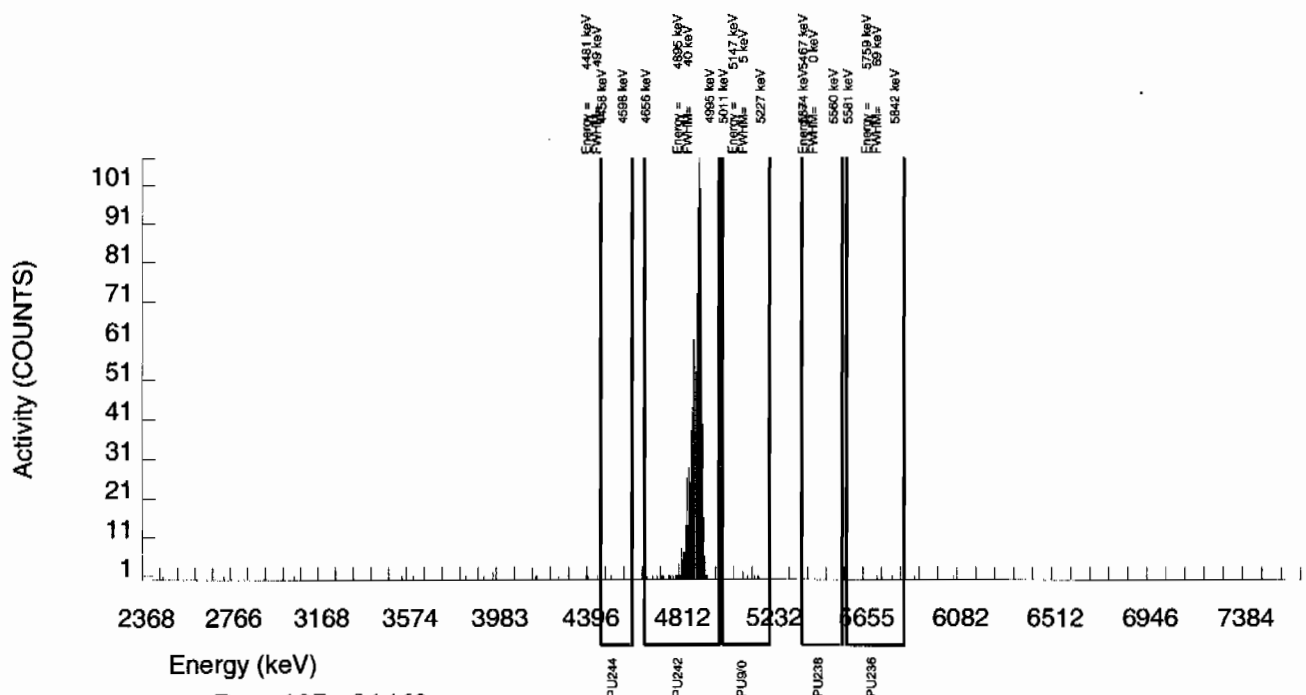
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132006_PU SAMPLE QTY: 1.253 G	
DETECTOR NUMBER :79455 AVERAGE %EFFICIENCY :30.5320 % YIELD : 90.070		COUNT DATE:16-JAN-2010 11:22:16 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.04926 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B006.CNF;1106 BKG DATE : 10-JAN-2010 EFF FILE : W006.CNF;359 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	6.000	5.000	1.000	3.4797	99.90000	6.54E-03	3.48E-03	1.06E-02	2.47E-02	3.46E-03
PU-236	5749.000	2.000	2.000	0.000	2.1286	100.0000	2.64E-03	1.87E-03	6.47E-03	1.65E-02	1.86E-03
PU-238	5499.000	0.000	0.000	0.000	2.9680	99.90000	0.00E+00	1.31E-03	9.04E-03	2.16E-02	1.31E-03
PU242	4890.000	932.000	931.000	1.000	1.0000	100.0000	1.22E+00	7.44E-02	3.04E-03	9.63E-03	3.99E-02
PU-244	4589.000	3.000	3.000	0.000	5.2050	99.90000	3.93E-03	2.28E-03	1.58E-02	3.52E-02	2.27E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132007\_PU  
SAMPLE QTY: 1.264 G

DETECTOR NUMBER :72531  
AVERAGE %EFFICIENCY :29.5906  
% YIELD : 89.342

COUNT DATE:16-JAN-2010 11:22:17  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

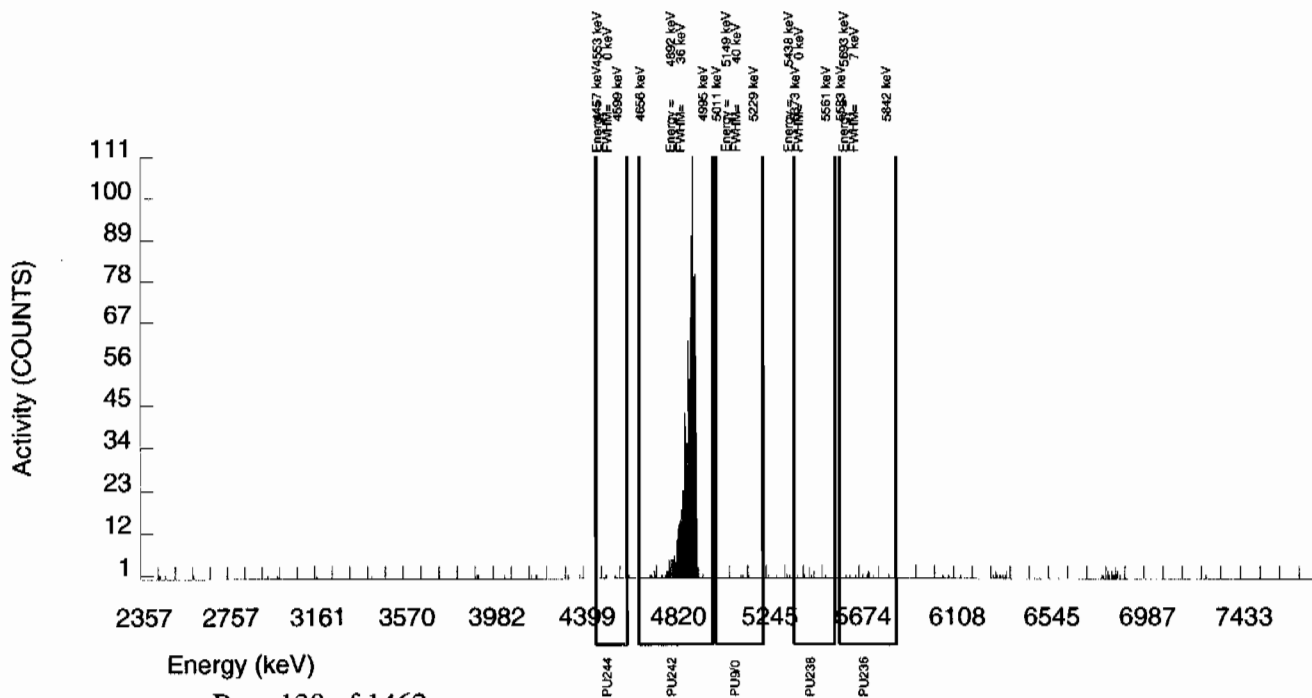
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.02461 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B011.CNF;1104  
BKG DATE : 10-JAN-2010  
EFF FILE : W011.CNF;311  
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	3.000	0.000	3.4797	99.90000	4.05E-03	2.35E-03	1.09E-02	2.55E-02	2.34E-03
PU-236	5749.000	10.000	0.000	10.000	2.1286	100.0000	0.00E+00	6.08E-03	6.68E-03	1.70E-02	6.08E-03
PU-238	5499.000	12.000	0.000	12.000	2.9680	99.90000	0.00E+00	6.61E-03	9.32E-03	2.23E-02	6.61E-03
PU242	4890.000	898.000	895.000	3.000	1.7321	100.0000	1.21E+00	7.46E-02	5.43E-03	1.45E-02	4.05E-02
PU-244	4589.000	3.000	3.000	0.000	5.2050	99.90000	4.05E-03	2.35E-03	1.63E-02	3.63E-02	2.34E-03

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



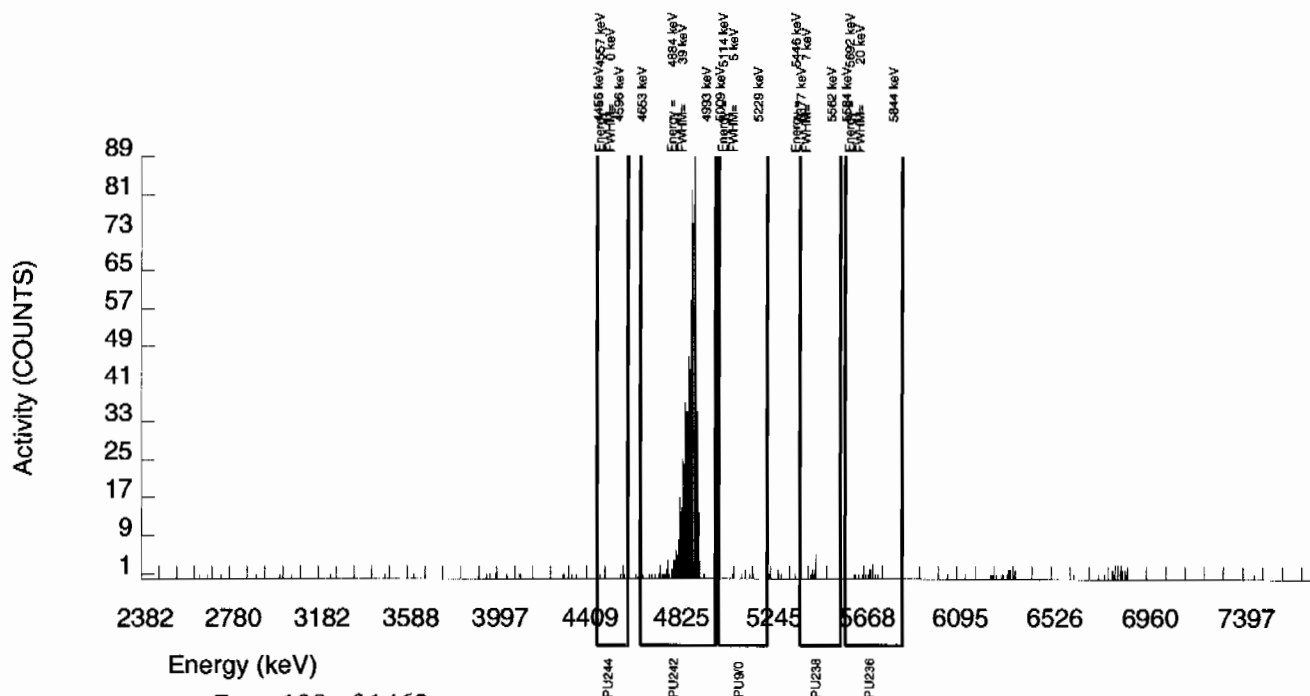
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132008_PU SAMPLE QTY: 1.265 G	
DETECTOR NUMBER :67594 AVERAGE %EFFICIENCY :29.8562 % YIELD : 84.491		COUNT DATE:16-JAN-2010 11:22:17 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.86037 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B012.CNF;1106 BKG DATE : 10-JAN-2010 EFF FILE : W012.CNF;312 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	4.000	3.000	3.4797	99.90000	5.65E-03	4.48E-03	1.14E-02	2.67E-02	4.47E-03
PU-236	5749.000	16.000	-1.000	17.000	2.1286	100.0000	-1.42E-03	8.17E-03	6.99E-03	1.78E-02	8.17E-03
PU-238	5499.000	13.000	-10.000	23.000	2.9680	99.90000	-1.41E-02	8.48E-03	9.76E-03	2.33E-02	8.48E-03
PU242	4890.000	859.000	854.000	5.000	2.2361	100.0000	1.21E+00	7.58E-02	7.34E-03	1.85E-02	4.15E-02
PU-244	4589.000	4.000	4.000	0.000	5.2050	99.90000	5.65E-03	2.84E-03	1.71E-02	3.80E-02	2.83E-03

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



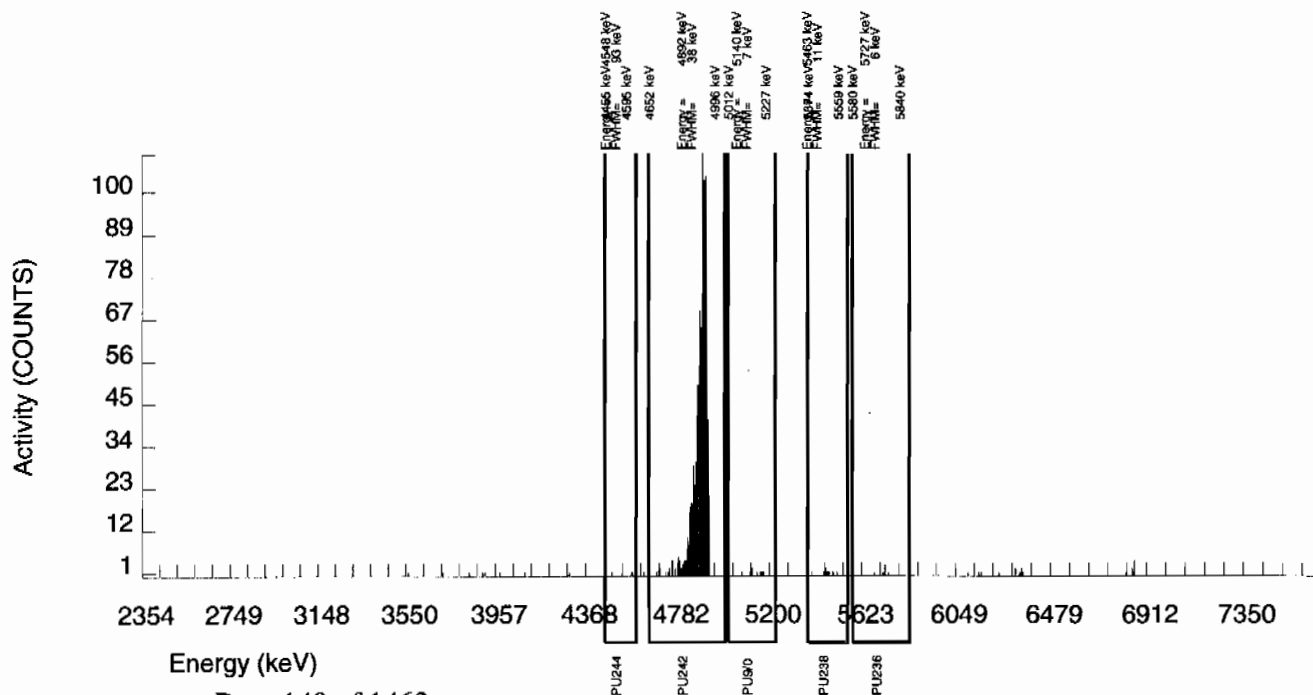
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132009_PU SAMPLE QTY: 1.253 G	
DETECTOR NUMBER :78790 AVERAGE %EFFICIENCY :34.1503 % YIELD : 91.079		COUNT DATE:16-JAN-2010 11:22:18 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.08342 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B013.CNF;1083 BKG DATE : 10-JAN-2010 EFF FILE : W013.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
PU-9/0	5155.000	10.000	8.000	2.000	3.4797	99.90000	9.26E-03	4.03E-03	9.37E-03	2.19E-02	4.01E-03
PU-236	5749.000	7.000	3.000	4.000	2.1286	100.0000	3.49E-03	3.87E-03	5.72E-03	1.46E-02	3.86E-03
PU-238	5499.000	14.000	5.000	9.000	2.9680	99.90000	5.79E-03	5.56E-03	7.99E-03	1.91E-02	5.55E-03
PU242	4890.000	1056.000	1053.000	3.000	1.7321	100.0000	1.22E+00	7.18E-02	4.66E-03	1.24E-02	3.76E-02
PU-244	4589.000	4.000	3.000	1.000	5.2050	99.90000	3.47E-03	2.59E-03	1.40E-02	3.12E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132010\_PU  
SAMPLE QTY: 1.254 G

DETECTOR NUMBER :67616  
AVERAGE %EFFICIENCY :31.1824  
% YIELD : 96.433

COUNT DATE:16-JAN-2010 11:22:18  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

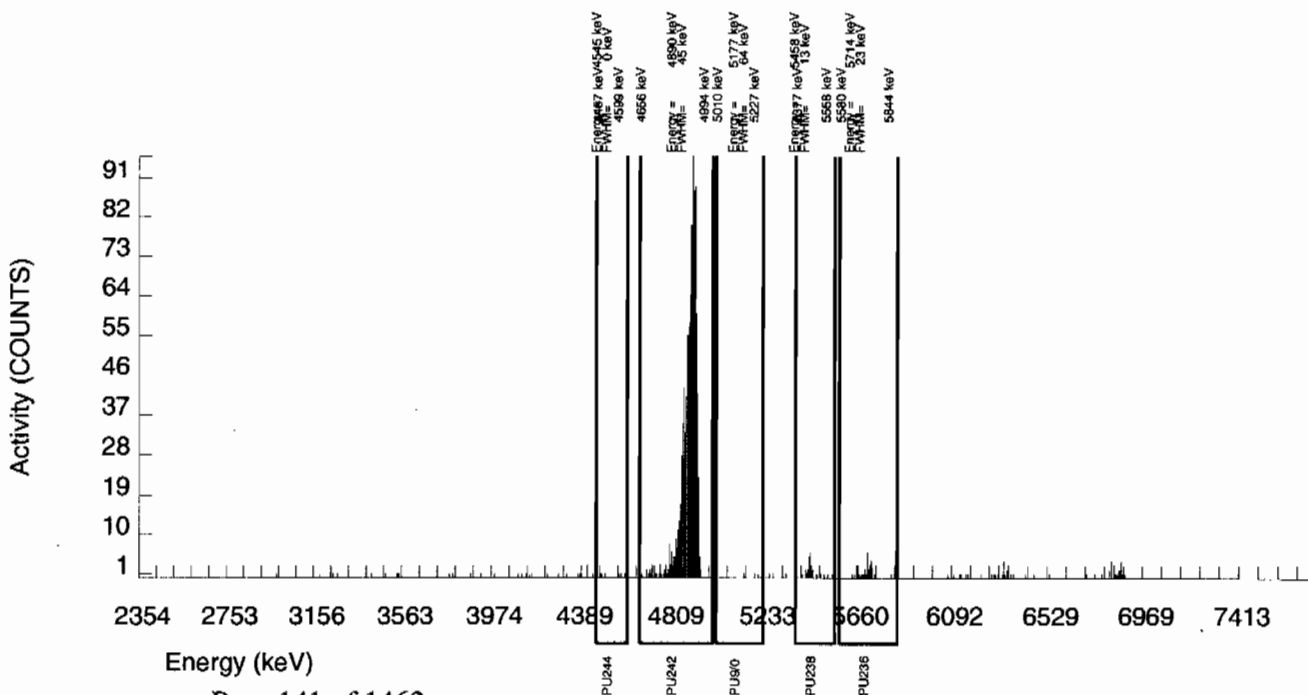
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.26466 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B014.CNF;1084  
BKG DATE : 10-JAN-2010  
EFF FILE : W014.CNF;323  
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	4.000	3.000	1.000	3.4797	99.90000	3.59E-03	2.68E-03	9.68E-03	2.26E-02	2.67E-03
PU-236	5749.000	34.000	15.000	19.000	2.1286	100.0000	1.81E-02	8.81E-03	5.92E-03	1.51E-02	8.77E-03
PU-238	5499.000	29.000	3.000	26.000	2.9680	99.90000	3.59E-03	8.87E-03	8.26E-03	1.98E-02	8.87E-03
PU242	4890.000	1023.000	1018.000	5.000	2.2361	100.0000	1.22E+00	7.26E-02	6.21E-03	1.57E-02	3.83E-02
PU-244	4589.000	7.000	6.000	1.000	5.2050	99.90000	7.17E-03	3.40E-03	1.45E-02	3.22E-02	3.38E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132011\_PU  
SAMPLE QTY: 1.257 G

DETECTOR NUMBER :78774  
AVERAGE %EFFICIENCY :33.5958  
% YIELD : 85.197

COUNT DATE:16-JAN-2010 11:22:18  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

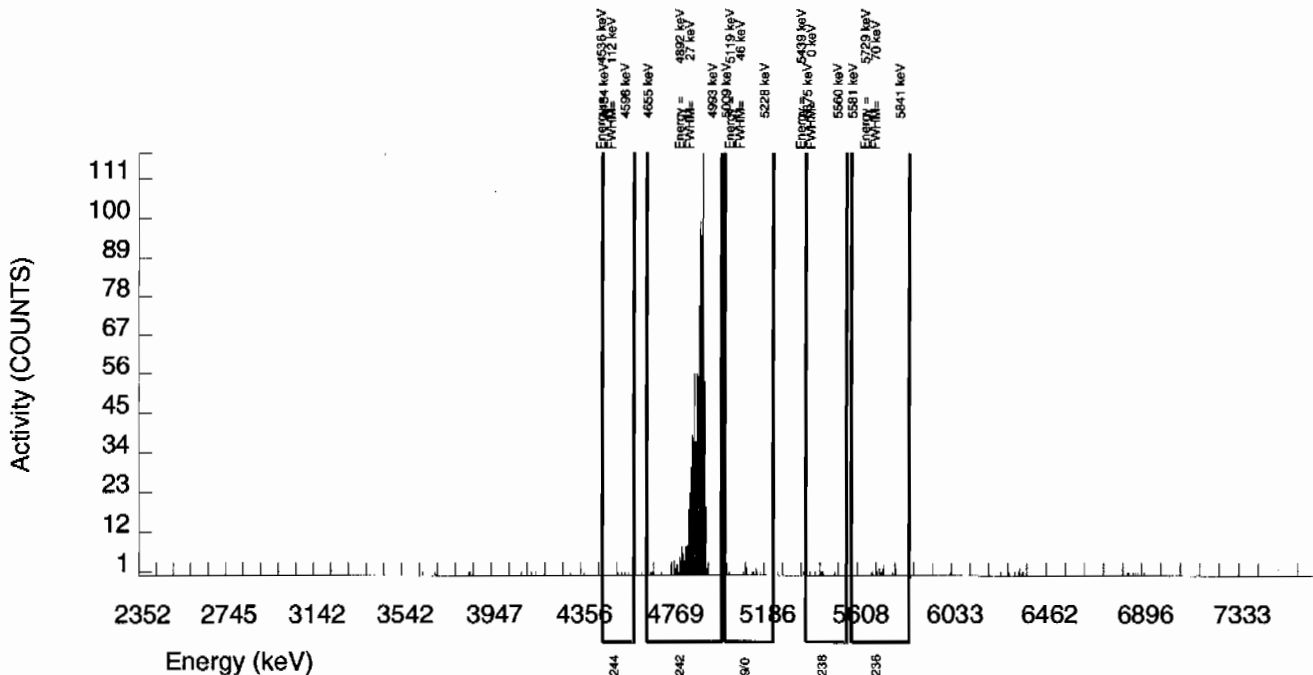
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.88429 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B016.CNF;1079  
BKG DATE : 10-JAN-2010  
EFF FILE : W016.CNF;309  
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	11.000	10.000	1.000	3.4797	99.90000	1.25E-02	4.39E-03	1.01E-02	2.37E-02	4.34E-03
PU-236	5749.000	15.000	3.000	12.000	2.1286	100.0000	3.79E-03	6.56E-03	6.20E-03	1.58E-02	6.56E-03
PU-238	5499.000	7.000	-3.000	10.000	2.9680	99.90000	-3.76E-03	5.17E-03	8.65E-03	2.07E-02	5.17E-03
PU242	4890.000	971.000	969.000	2.000	1.4142	100.0000	1.21E+00	7.33E-02	4.12E-03	1.16E-02	3.91E-02
PU-244	4589.000	5.000	4.000	1.000	5.2050	99.90000	5.01E-03	3.08E-03	1.52E-02	3.37E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132012\_PU  
SAMPLE QTY: 1.261 G

DETECTOR NUMBER :78791  
AVERAGE %EFFICIENCY :28.2764  
% YIELD : 84.093

COUNT DATE:16-JAN-2010 11:22:18  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

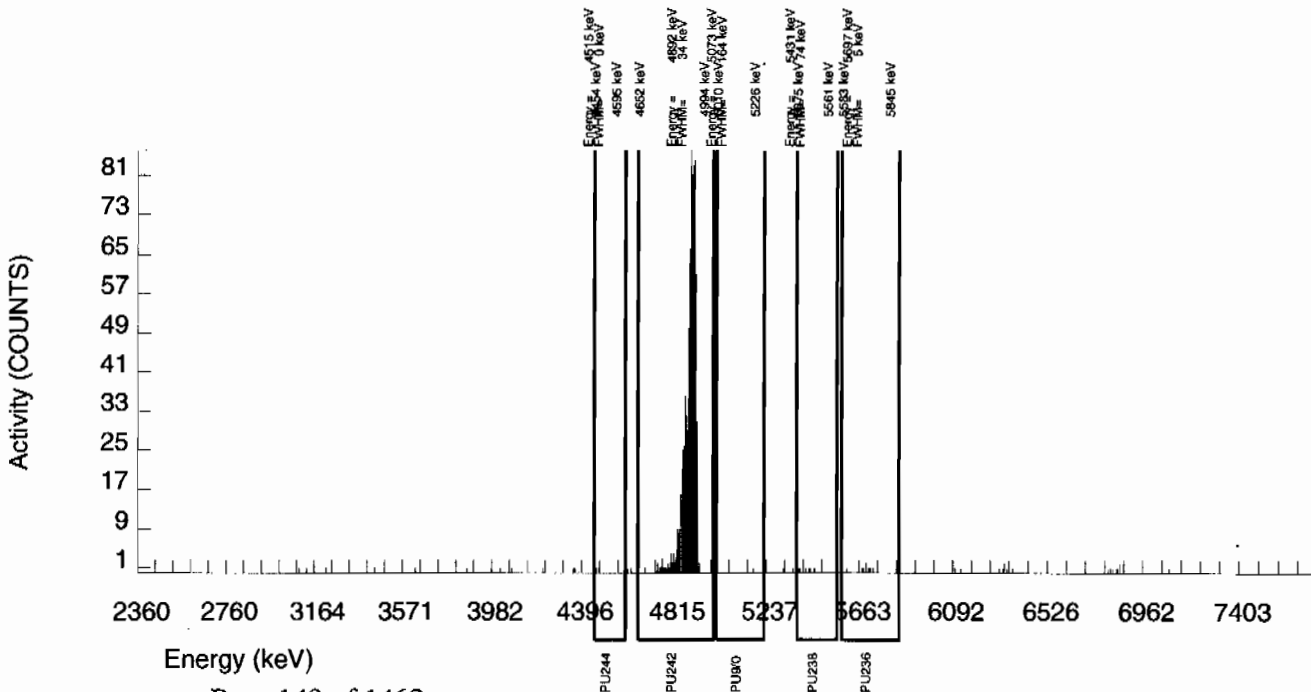
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.84690 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B017.CNF;1926  
BKG DATE : 10-JAN-2010  
EFF FILE : W017.CNF;1260  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	3.000	2.000	1.000	3.4797	99.90000	3.01E-03	3.01E-03	1.22E-02	2.84E-02	3.01E-03
PU-236	5749.000	9.000	1.000	8.000	2.1286	100.0000	1.51E-03	6.24E-03	7.44E-03	1.89E-02	6.24E-03
PU-238	5499.000	7.000	2.000	5.000	2.9680	99.90000	3.01E-03	5.21E-03	1.04E-02	2.48E-02	5.21E-03
PU242	4890.000	805.000	805.000	0.000	0.0000	100.0000	1.21E+00	7.71E-02	0.00E+00	4.07E-03	4.26E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	3.01E-03	3.01E-03	1.82E-02	4.05E-02	3.01E-03

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



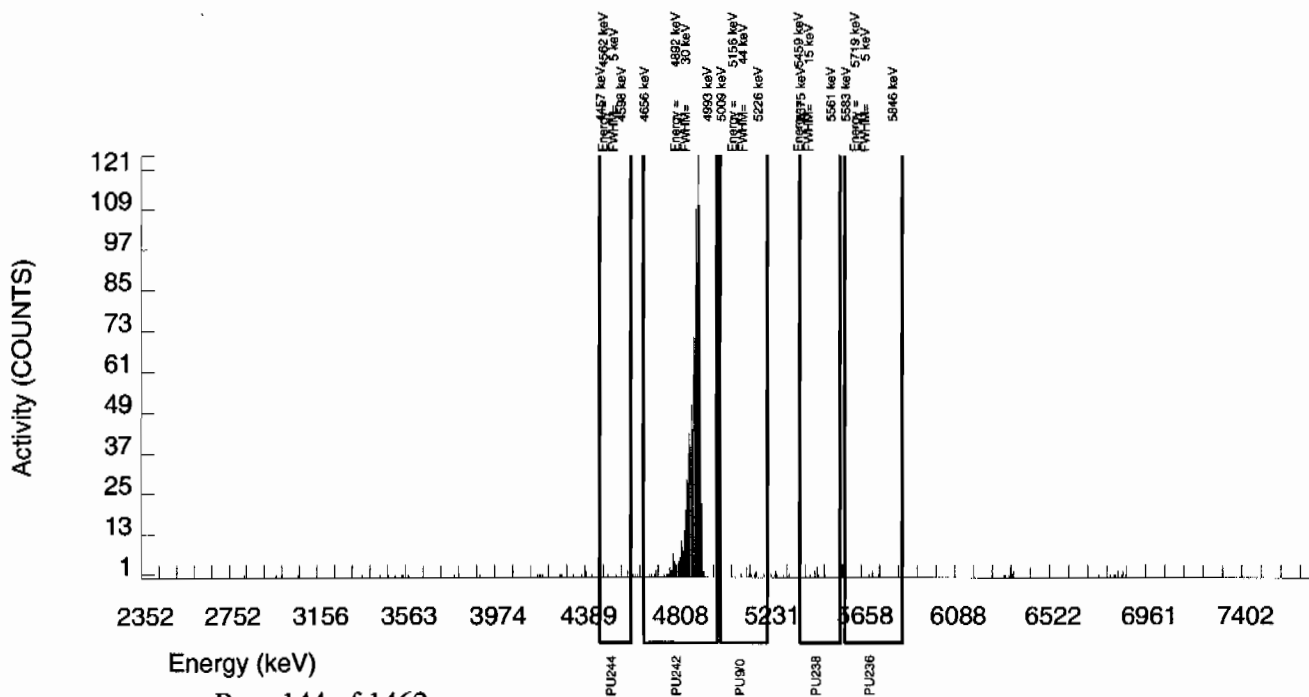
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132013_PU SAMPLE QTY: 1.265 G	
DETECTOR NUMBER :78782 AVERAGE %EFFICIENCY :31.6882 % YIELD : 93.029		COUNT DATE:16-JAN-2010 11:22:18 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.14944 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B018.CNF;1078 BKG DATE : 10-JAN-2010 EFF FILE : W018.CNF;304 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	10.000	10.000	0.000	3.4797	99.90000	1.21E-02	3.87E-03	9.79E-03	2.29E-02	3.82E-03
PU-236	5749.000	4.000	-7.000	11.000	2.1286	100.0000	-8.52E-03	4.72E-03	5.98E-03	1.52E-02	4.72E-03
PU-238	5499.000	8.000	-5.000	13.000	2.9680	99.90000	-6.05E-03	5.54E-03	8.35E-03	2.00E-02	5.54E-03
PU242	4890.000	999.000	998.000	1.000	1.0000	100.0000	1.21E+00	7.22E-02	2.81E-03	8.89E-03	3.82E-02
PU-244	4589.000	5.000	5.000	0.000	5.2050	99.90000	6.05E-03	2.72E-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)



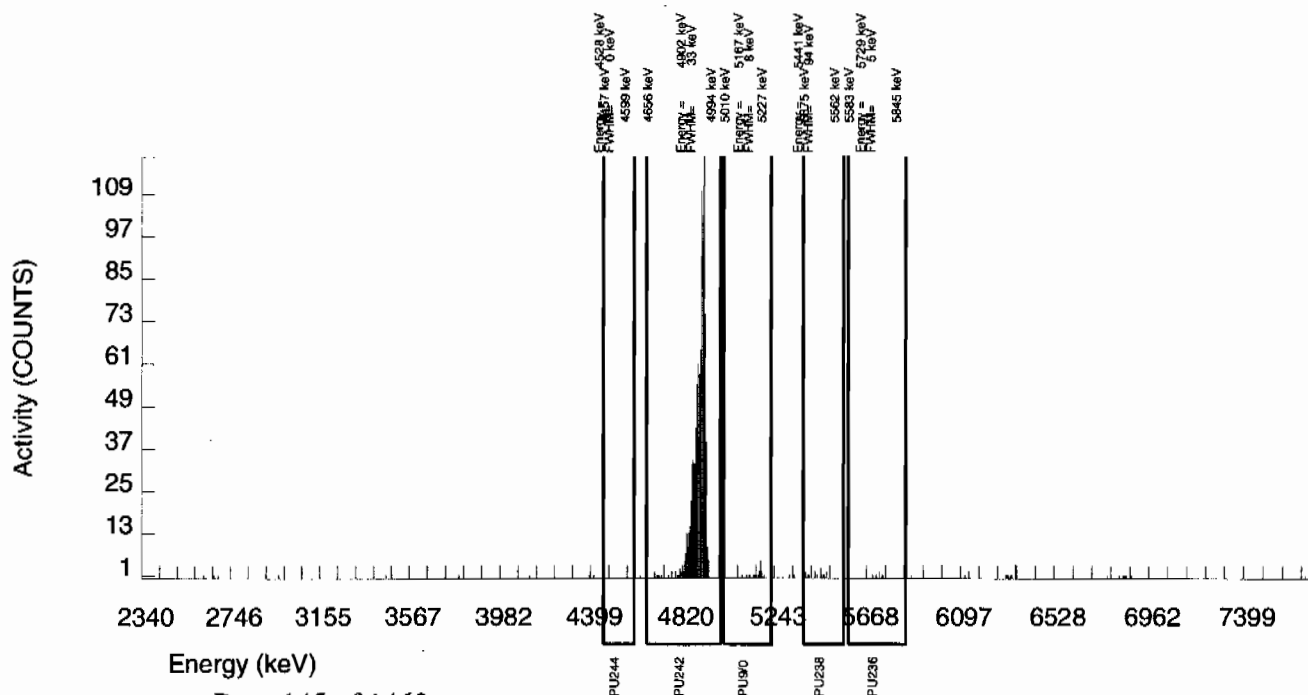
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132014_PU SAMPLE QTY: 1.257 G	
DETECTOR NUMBER :78786 AVERAGE %EFFICIENCY :28.8706 % YIELD : 97.299		COUNT DATE:16-JAN-2010 11:22:19 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.29401 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B019.CNF;1092 BKG DATE : 10-JAN-2010 EFF FILE : W019.CNF;305 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	17.000	16.000	1.000	3.4797	99.90000	2.04E-02	5.52E-03	1.03E-02	2.41E-02	5.42E-03
PU-236	5749.000	6.000	-2.000	8.000	2.1286	100.0000	-2.57E-03	4.81E-03	6.32E-03	1.61E-02	4.81E-03
PU-238	5499.000	16.000	10.000	6.000	2.9680	99.90000	1.28E-02	6.03E-03	8.82E-03	2.11E-02	5.99E-03
PU242	4890.000	951.000	951.000	0.000	0.0000	100.0000	1.21E+00	7.37E-02	0.00E+00	3.46E-03	3.93E-02
PU-244	4589.000	0.000	0.000	0.000	5.2050	99.90000	0.00E+00	1.28E-03	1.55E-02	3.44E-02	1.28E-03

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



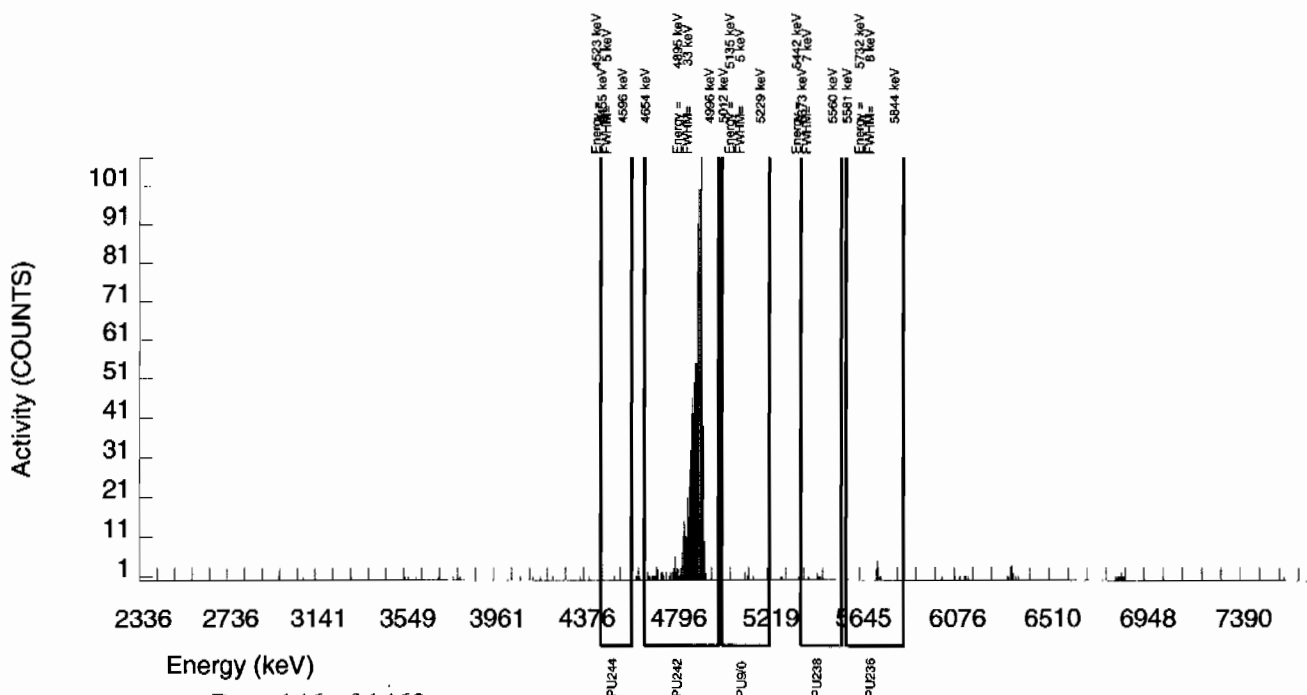
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132015_PU SAMPLE QTY: 1.259 G	
DETECTOR NUMBER :78787 AVERAGE %EFFICIENCY :33.6054 % YIELD : 86.052		COUNT DATE:16-JAN-2010 11:22:19 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.91322 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B020.CNF;1087 BKG DATE : 10-JAN-2010 EFF FILE : W020.CNF;318 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	4.000	3.000	1.000	3.4797	99.90000	3.72E-03	2.78E-03	1.00E-02	2.34E-02	2.77E-03
PU-236	5749.000	10.000	-3.000	13.000	2.1286	100.0000	-3.74E-03	5.98E-03	6.13E-03	1.56E-02	5.98E-03
PU-238	5499.000	7.000	-5.000	12.000	2.9680	99.90000	-6.19E-03	5.40E-03	8.55E-03	2.05E-02	5.40E-03
PU242	4890.000	979.000	979.000	0.000	0.0000	100.0000	1.21E+00	7.29E-02	0.00E+00	3.35E-03	3.87E-02
PU-244	4589.000	1.000	1.000	0.000	5.2050	99.90000	1.24E-03	1.24E-03	1.50E-02	3.33E-02	1.24E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132016\_PU  
SAMPLE QTY: 1.269 G

DETECTOR NUMBER :67047  
AVERAGE %EFFICIENCY :30.1536  
% YIELD : 90.221

COUNT DATE:16-JAN-2010 11:22:19  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

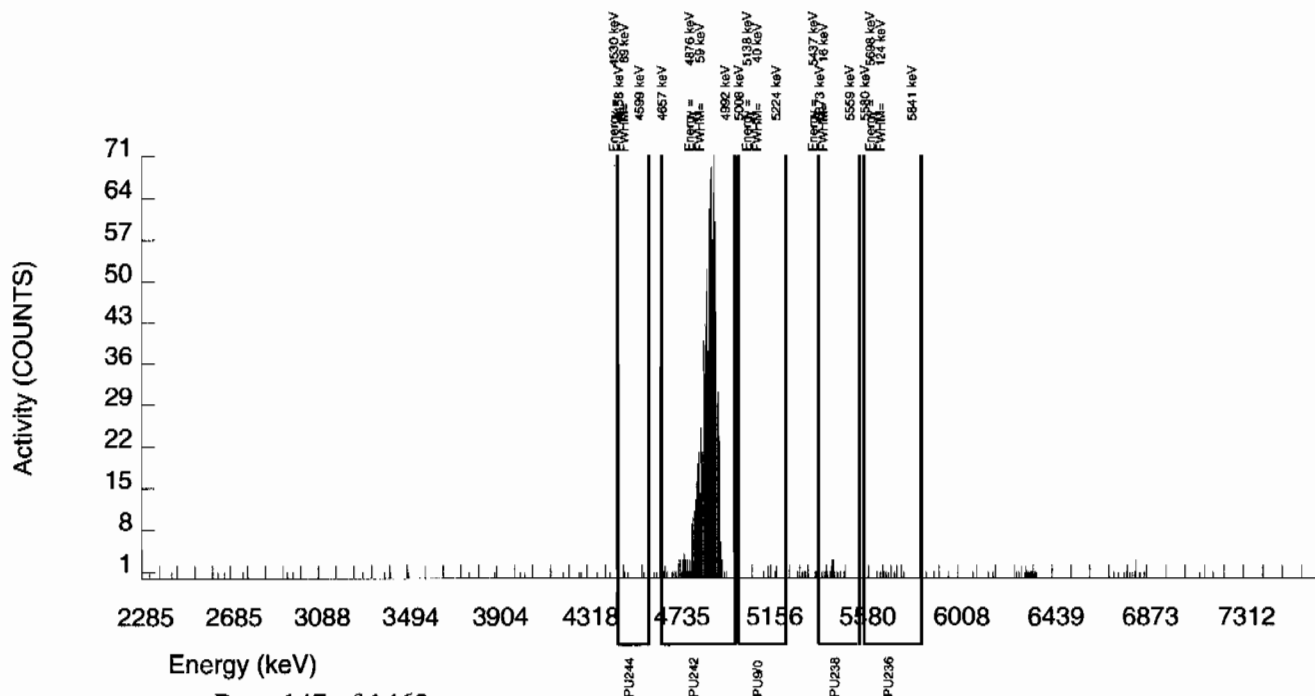
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.05436 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B021.CNF;1095  
BKG DATE : 10-JAN-2010  
EFF FILE : W021.CNF;326  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	9.000	6.000	3.000	3.4797	99.90000	7.84E-03	4.54E-03	1.06E-02	2.47E-02	4.52E-03
PU-236	5749.000	15.000	-3.000	18.000	2.1286	100.0000	-3.95E-03	7.55E-03	6.46E-03	1.65E-02	7.55E-03
PU-238	5499.000	20.000	0.000	20.000	2.9680	99.90000	2.49E-09	8.26E-03	9.02E-03	2.16E-02	8.26E-03
PU242	4890.000	921.000	921.000	0.000	0.0000	100.0000	1.20E+00	7.36E-02	0.00E+00	3.54E-03	3.96E-02
PU-244	4589.000	3.000	0.000	3.000	5.2050	99.90000	3.11E-10	3.20E-03	1.58E-02	3.52E-02	3.20E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132017\_PU  
SAMPLE QTY: 1.256 G

DETECTOR NUMBER : 72530  
AVERAGE %EFFICIENCY : 31.2191  
% YIELD : 93.859

COUNT DATE: 16-JAN-2010 11:22:19  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST : KXM4

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

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

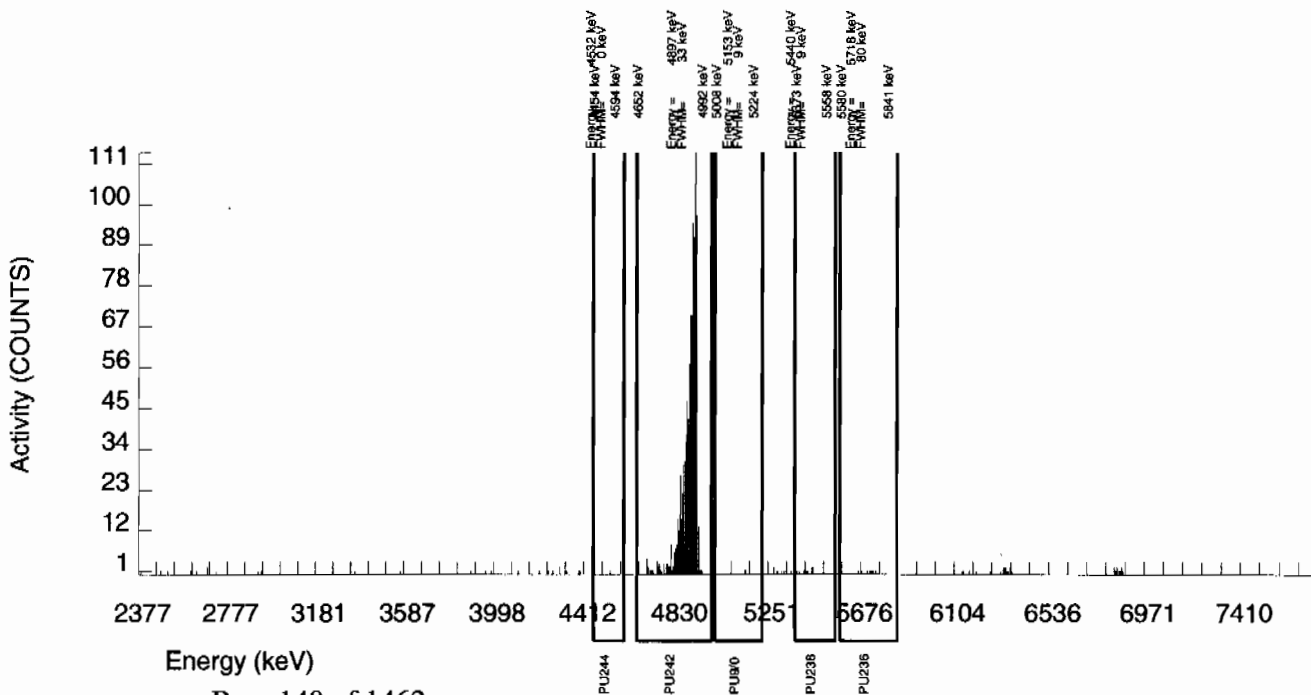
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.17754 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B022.CNF;1099  
BKG DATE : 10-JAN-2010  
EFF FILE : W022.CNF;316  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2.000	0.000	2.000	3.4797	99.90000	1.46E-10	2.45E-03	9.92E-03	2.32E-02	2.45E-03
PU-236	5749.000	8.000	-2.000	10.000	2.1286	100.0000	-2.47E-03	5.23E-03	6.06E-03	1.54E-02	5.23E-03
PU-238	5499.000	12.000	0.000	12.000	2.9680	99.90000	1.17E-09	6.00E-03	8.46E-03	2.02E-02	6.00E-03
PU242	4890.000	992.000	992.000	0.000	0.0000	100.0000	1.21E+00	7.28E-02	0.00E+00	3.32E-03	3.85E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.45E-03	2.45E-03	1.48E-02	3.30E-02	2.45E-03

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



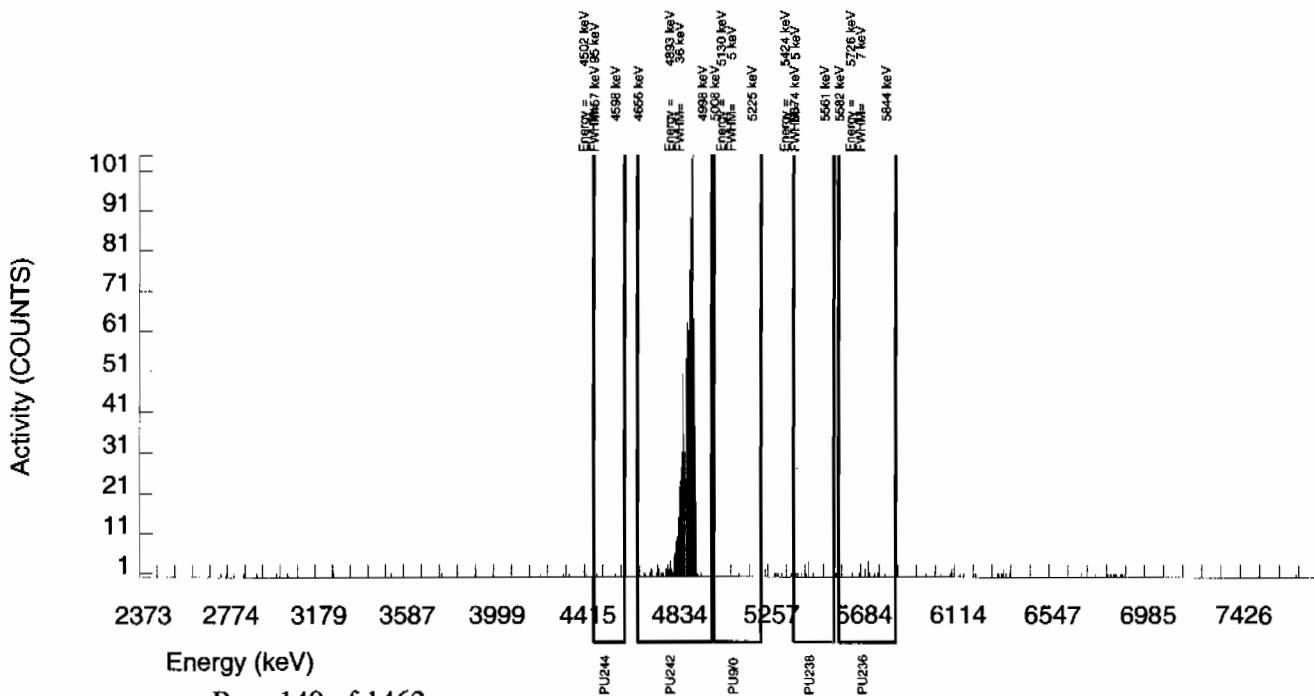
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132018_PU SAMPLE QTY: 1.258 G	
DETECTOR NUMBER :78264 AVERAGE %EFFICIENCY :32.5118 % YIELD : 84.858		COUNT DATE:16-JAN-2010 11:22:19 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 2.87280 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B023.CNF;1099 BKG DATE : 10-JAN-2010 EFF FILE : W023.CNF;299 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	-3.000	4.000	3.4797	99.90000	-3.90E-03	2.91E-03	1.05E-02	2.46E-02	2.91E-03
PU-236	5749.000	13.000	5.000	8.000	2.1286	100.0000	6.54E-03	6.00E-03	6.43E-03	1.64E-02	5.99E-03
PU-238	5499.000	11.000	-1.000	12.000	2.9680	99.90000	-1.30E-03	6.23E-03	8.97E-03	2.15E-02	6.23E-03
PU242	4890.000	935.000	934.000	1.000	1.0000	100.0000	1.21E+00	7.40E-02	3.02E-03	9.56E-03	3.97E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.60E-03	2.60E-03	1.57E-02	3.50E-02	2.60E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132019\_PU  
SAMPLE QTY: 1.250 G

DETECTOR NUMBER :78785  
AVERAGE %EFFICIENCY :31.8010  
% YIELD : 92.328

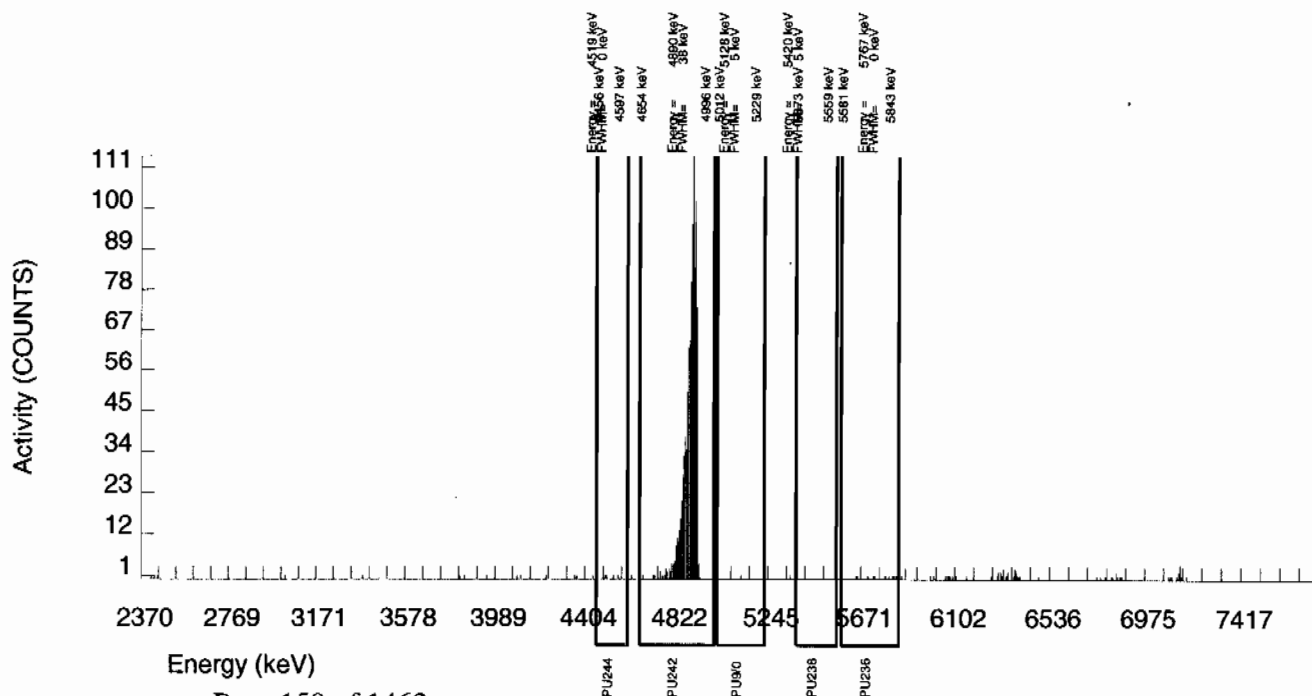
COUNT DATE:15-JAN-2010 13:23:59  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_PU.N
ID : 0244-B	ID : 0244-B	ID : 1374-A	BKG FILE : B033.CNF;1098
ISOTOPE : PU-9/0	ISOTOPE : PU-9/0	ISOTOPE : PU242	BKG DATE : 10-JAN-2010
PCI/G : 4.178E+01	PCI/G : 4.178E+01	NOMINAL : 3.38543 dpm	EFF FILE : W033.CNF;328
		RESULTS : 3.12569 dpm	CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	1.000	1.000	0.000	3.4797	99.90000	1.23E-03	1.23E-03	9.95E-03	2.32E-02	1.23E-03
PU-236	5749.000	13.000	3.000	10.000	2.1286	100.0000	3.71E-03	5.93E-03	6.08E-03	1.55E-02	5.93E-03
PU-238	5499.000	1.000	-1.000	2.000	2.9680	99.90000	-1.23E-03	2.13E-03	8.48E-03	2.03E-02	2.13E-03
PU242	4890.000	996.000	994.000	2.000	1.4142	100.0000	1.22E+00	7.33E-02	4.04E-03	1.14E-02	3.88E-02
PU-244	4589.000	7.000	6.000	1.000	5.2050	99.90000	7.37E-03	3.50E-03	1.49E-02	3.31E-02	3.47E-03

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





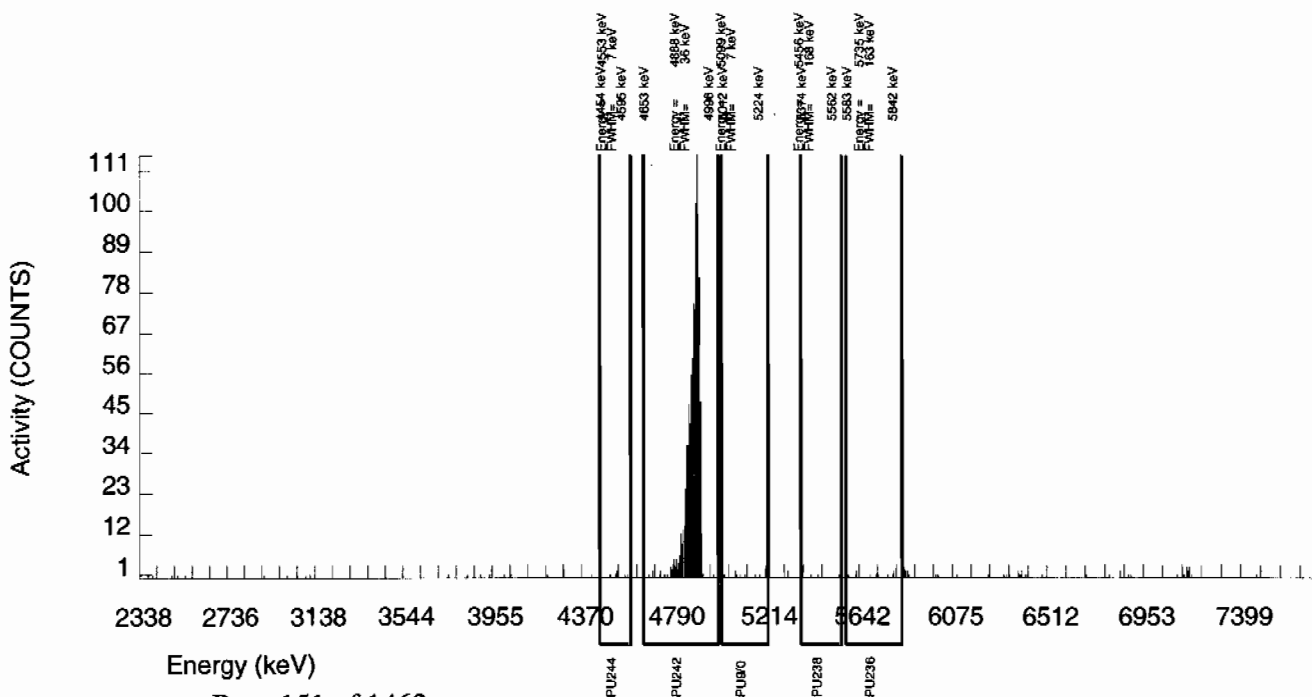
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 5-JAN-2010 00:00:00.			SAMPLE ID : S0244132020_PU SAMPLE QTY: 1.252 G		
DETECTOR NUMBER :78202 AVERAGE %EFFICIENCY :29.7838 % YIELD : 97.688			COUNT DATE:15-JAN-2010 13:23:59 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4		
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.30716 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B035.CNF;1096 BKG DATE : 10-JAN-2010 EFF FILE : W035.CNF;317 CAL DATE : 4-JAN-2010		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	12.000	5.000	7.000	3.4797	99.90000	6.19E-03	5.40E-03	1.00E-02	2.34E-02	5.40E-03
PU-236	5749.000	11.000	-4.000	15.000	2.1286	100.0000	-4.98E-03	6.35E-03	6.12E-03	1.56E-02	6.35E-03
PU-238	5499.000	4.000	1.000	3.000	2.9680	99.90000	1.24E-03	3.28E-03	8.55E-03	2.04E-02	3.28E-03
PU242	4890.000	994.000	985.000	9.000	3.0000	100.0000	1.22E+00	7.36E-02	8.63E-03	2.06E-02	3.92E-02
PU-244	4589.000	7.000	4.000	3.000	5.2050	99.90000	4.95E-03	3.92E-03	1.50E-02	3.33E-02	3.91E-03

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



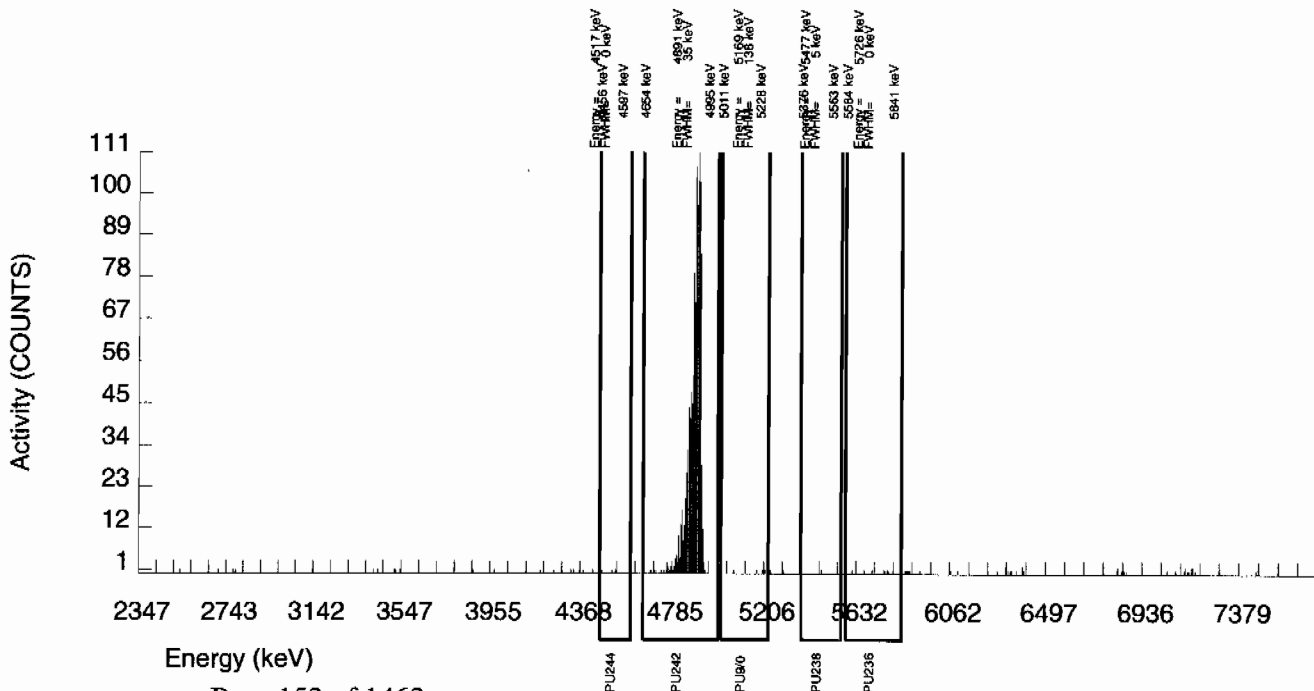
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940267 SAMPLE DATE : 13-JAN-2010 00:00:00		SAMPLE ID : S1202012147_PU SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :78203 AVERAGE %EFFICIENCY :32.3142 % YIELD : 95.615		COUNT DATE:15-JAN-2010 13:23:59 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	LCS/LCSD ID : 0244-B ISOTOPE : PU-9/0 PCI/G : 4.178E+01	TRACER ID : 1374-A ISOTOPE : PU242 NOMINAL : 3.38543 dpm RESULTS : 3.23696 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B036.CNF;1094 BKG DATE : 10-JAN-2010 EFF FILE : W036.CNF;329 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	4.000	2.000	2.000	3.4797	99.90000	2.92E-03	3.58E-03	1.18E-02	2.76E-02	3.57E-03
PU-236	5749.000	9.000	1.000	8.000	2.1286	100.0000	1.46E-03	6.02E-03	7.22E-03	1.84E-02	6.02E-03
PU-238	5499.000	1.000	-2.000	3.000	2.9680	99.90000	-2.92E-03	2.92E-03	1.01E-02	2.41E-02	2.92E-03
PU242	4890.000	1052.000	1046.000	6.000	2.4495	100.0000	1.52E+00	9.05E-02	8.31E-03	2.06E-02	4.74E-02
PU-244	4589.000	5.000	5.000	0.000	5.2050	99.90000	7.30E-03	3.28E-03	1.77E-02	3.93E-02	3.26E-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: 940267  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202012148\_PU  
SAMPLE QTY: 1.253 G

DETECTOR NUMBER : 78793  
AVERAGE %EFFICIENCY : 33.4897  
% YIELD : 89.701

COUNT DATE: 15-JAN-2010 13:24:00  
ELAPSED LIVE TIME (SEC): 59999.99  
ANALYST : KXM4

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

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

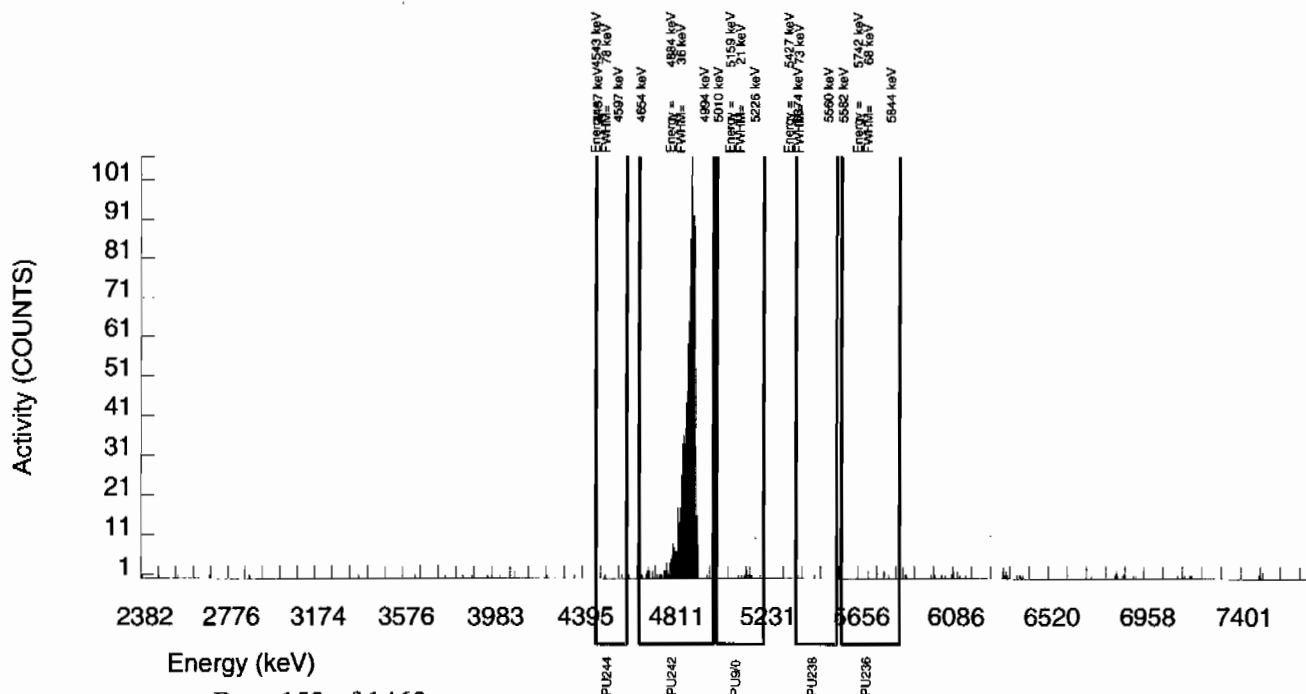
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.03676 dpm

LIB FILE : ENV\_ALPHA\_PU.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
PU-9/0	5155.000	15.000	13.000	2.000	3.4797	99.90000	1.56E-02	5.00E-03	9.70E-03	2.26E-02	4.94E-03
PU-236	5749.000	8.000	-4.000	12.000	2.1286	100.0000	-4.82E-03	5.39E-03	5.93E-03	1.51E-02	5.39E-03
PU-238	5499.000	2.000	0.000	2.000	2.9680	99.90000	1.43E-10	2.40E-03	8.27E-03	1.98E-02	2.40E-03
PU242	4890.000	1018.000	1017.000	1.000	1.0000	100.0000	1.22E+00	7.26E-02	2.78E-03	8.81E-03	3.82E-02
PU-244	4589.000	2.000	2.000	0.000	5.2050	99.90000	2.40E-03	1.70E-03	1.45E-02	3.23E-02	1.69E-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: 940267  
SAMPLE DATE : 13-JAN-2010 00:00:00

SAMPLE ID : S1202012149\_PU  
SAMPLE QTY: 0.120 G

DETECTOR NUMBER :76543  
AVERAGE %EFFICIENCY :34.3031  
% YIELD : 90.932

COUNT DATE:15-JAN-2010 13:24:01  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

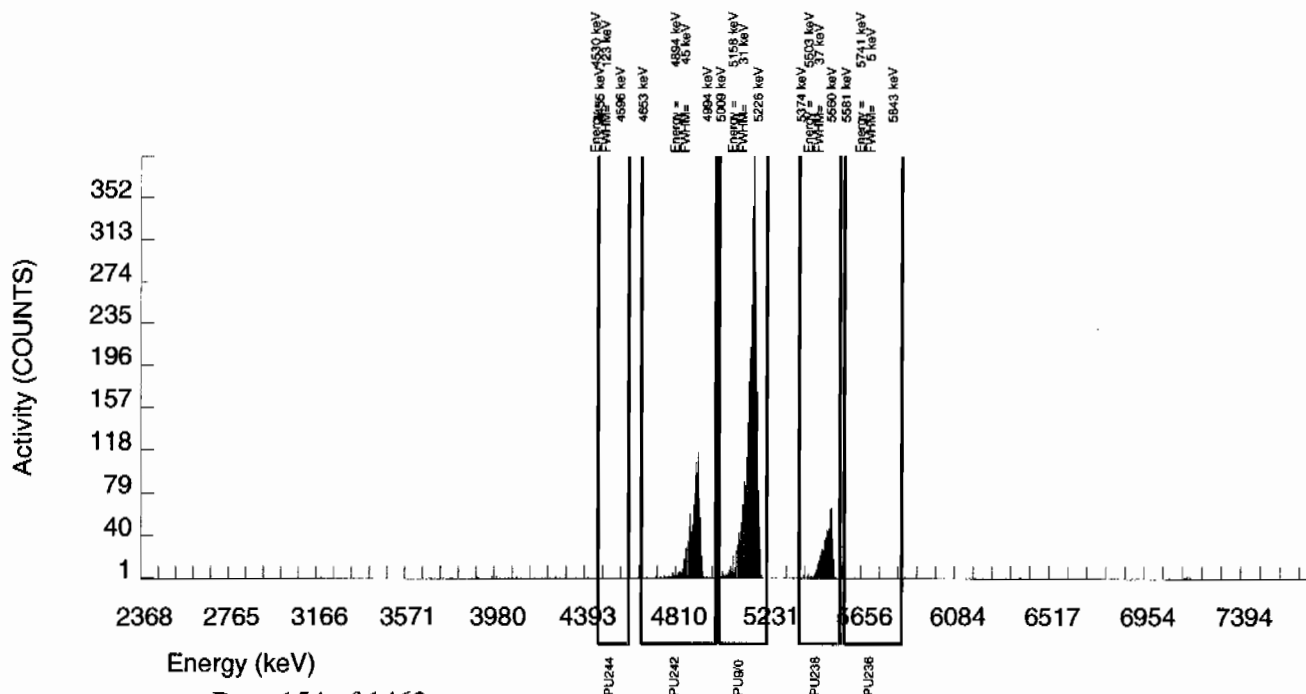
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.07844 dpm

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	3154.000	3153.000	1.000	3.4797	99.90000	3.80E+01	2.27E+00	9.75E-02	2.28E-01	6.77E-01
PU-236	5749.000	12.000	-1.000	13.000	2.1286	100.0000	-1.21E-02	6.03E-02	5.96E-02	1.52E-01	6.03E-02
PU-238	5499.000	568.000	565.000	3.000	2.9680	99.90000	6.81E+00	4.83E-01	8.32E-02	1.99E-01	2.88E-01
PU242	4890.000	1058.000	1056.000	2.000	1.4142	100.0000	1.27E+01	8.24E-01	3.96E-02	1.12E-01	3.92E-01
PU-244	4589.000	10.000	10.000	0.000	5.2050	99.90000	1.20E-01	3.87E-02	1.46E-01	3.24E-01	3.81E-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# 940269 Product: U 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.	✓		case narrative
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			N/A
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
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 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: E. [Signature] 1/20/10

Secondary Review Performed By: J. [Signature] 1/20/10  
1/21/10 (302)

LANL

1/25 - 2/5

# Uranium Que Sheet

11-JAN-10

Batch #: 940269 Analyst: KXM4 First Client Due Date: 05-FEB-10 Internal Due Date: 25-JAN-10  
 Tracer Isotope: U-232/236 Tracer Code: 1183-14 Expiration Date: 12-9-10 Vol: 0.141  
 LCS Isotope: U-238 LCS Code: SAM 0244-A Expiration Date: 10-31-20 Vol: 0.12  
 Spike Isotope: U-238 Spike Code: NA Expiration Date: NA Vol: NA  
 Prep Date: 1-13-10 Initials: KM Pipet ID: 2971058 Balance ID: 50410272

Witness: ADA-11310

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Allquot (g/l/f)	U Det #
244132001-1	RE12-10-7634	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	1	1	0.519	146
244132002-1	RE12-10-7648	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	2	2	0.506	147
244132003-1	RE12-10-7638	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	3	3	0.505	148
244132004-1	RE12-10-7639	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	4	4	0.506	149
244132005-1	RE12-10-7633	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	5	5	0.502	150
244132006-1	RE12-10-7647	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	6	6	0.519	151
244132007-1	RE12-10-7644	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	7	7	0.507	152
244132008-1	RE12-10-7637	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	8	8	0.508	153
244132009-1	RE12-10-7635	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	9	9	0.512	154
244132010-1	RE12-10-7642	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	10	10	0.506	155
244132011-1	RE12-10-7649	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	11	11	0.519	156
244132012-1	RE12-10-7650	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	12	12	0.508	157
244132013-1	RE12-10-7641	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	13	13	0.502	158
244132014-1	RE12-10-7643	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	14	14	0.515	1
244132015-1	RE12-10-7640	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	15	15	0.509	2
244132016-1	RE12-10-7645	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	16	16	0.521	3
244132017-1	RE12-10-7646	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	17	17	0.529	4
244132018-1	RE12-10-7636	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	18	18	0.513	5
244132019-1	RE12-10-7657	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	19	19	0.502	6
244132020-1	RE12-10-7658	SAMPLE		.1 pCi/g	SOIL	LANL010	05-JAN-10	20	20	0.516	7
1202012159-1	MB for batch 940269	MB		.1 pCi/g	SOIL	QC ACCOUNT		21	21	0.519	8
1202012160-1	RE12-10-7633(244132005DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	05-JAN-10	22	22	0.500	9
1202012161-1	LCS for batch 940269	LCS		.1 pCi/g	SOIL	QC ACCOUNT		23	23	0.109	10

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: [Signature] 1/20/10

# Blank Correction Report

**Batch ID 940269**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202012160	DUP	Uranium-233/234	0.500 g	1.67	0.136	0.0919	.01838	pCi/g	NO
		Uranium-235/236	0.500 g	0.0879	0.0196	0.057	.00696	pCi/g	NO
		Uranium-238	0.500 g	2.12	0.167	0.0533	.00562	pCi/g	NO
1202012161	LCS	Uranium-233/234	0.109 g	6.08	0.552	0.468	.084311927	pCi/g	NO
		Uranium-235/236	0.109 g	0.336	0.0873	0.291	.031926606	pCi/g	NO
		Uranium-238	0.109 g	6.21	0.561	0.272	.025779817	pCi/g	NO
1202012159	MB	Uranium-233/234	1.00 g	0.00919	0.00365	0.0436	.00919	pCi/g	YES
		Uranium-235/236	1.00 g	0.00348	0.00348	0.0271	.00348	pCi/g	YES
		Uranium-238	1.00 g	0.00281	0.00345	0.0253	.00281	pCi/g	YES
244132001	RE12-10-7634	Uranium-233/234	0.516 g	1.08	0.0985	0.110	.017810078	pCi/g	NO
		Uranium-235/236	0.516 g	0.044	0.0155	0.0684	.006744186	pCi/g	NO
		Uranium-238	0.516 g	1.04	0.0953	0.0639	.005445736	pCi/g	NO
244132002	RE12-10-7648	Uranium-233/234	0.506 g	0.871	0.0848	0.115	.018162055	pCi/g	NO
		Uranium-235/236	0.506 g	0.023	0.0123	0.0717	.006877470	pCi/g	YES
		Uranium-238	0.506 g	0.905	0.0874	0.067	.005553360	pCi/g	NO
244132003	RE12-10-7638	Uranium-233/234	0.505 g	4.15	0.323	0.125	.018198020	pCi/g	NO
		Uranium-235/236	0.505 g	0.200	0.0353	0.0777	.006891089	pCi/g	NO
		Uranium-238	0.505 g	4.47	0.346	0.0726	.005564356	pCi/g	NO
244132004	RE12-10-7639	Uranium-233/234	0.506 g	1.46	0.127	0.115	.018162055	pCi/g	NO
		Uranium-235/236	0.506 g	0.0553	0.0188	0.0717	.006877470	pCi/g	NO
		Uranium-238	0.506 g	1.43	0.125	0.067	.005553360	pCi/g	NO
244132005	RE12-10-7633	Uranium-233/234	0.502 g	2.21	0.182	0.118	.018308773	pCi/g	NO
		Uranium-235/236	0.502 g	0.132	0.0267	0.0735	.006932271	pCi/g	NO
		Uranium-238	0.502 g	2.58	0.208	0.0687	.005597610	pCi/g	NO
244132006	RE12-10-7647	Uranium-233/234	0.519 g	1.64	0.137	0.103	.017707129	pCi/g	NO
		Uranium-235/236	0.519 g	0.111	0.0228	0.0641	.006705202	pCi/g	NO
		Uranium-238	0.519 g	2.02	0.164	0.0599	.005414258	pCi/g	NO
244132007	RE12-10-7644	Uranium-233/234	0.507 g	1.02	0.0949	0.114	.018126233	pCi/g	NO
		Uranium-235/236	0.507 g	0.0365	0.0132	0.0711	.006863905	pCi/g	NO
		Uranium-238	0.507 g	1.15	0.104	0.0664	.005542406	pCi/g	NO
244132008	RE12-10-7637	Uranium-233/234	0.508 g	1.05	0.0961	0.110	.018090551	pCi/g	NO
		Uranium-235/236	0.508 g	0.0615	0.017	0.0683	.006850394	pCi/g	NO
		Uranium-238	0.508 g	1.17	0.104	0.0639	.005531496	pCi/g	NO
244132009	RE12-10-7635	Uranium-233/234	0.512 g	1.48	0.127	0.112	.017949219	pCi/g	NO
		Uranium-235/236	0.512 g	0.0625	0.0173	0.0695	.006796875	pCi/g	NO
		Uranium-238	0.512 g	1.57	0.134	0.0649	.005488281	pCi/g	NO
244132010	RE12-10-7642	Uranium-233/234	0.506 g	1.13	0.102	0.110	.018162055	pCi/g	NO
		Uranium-235/236	0.506 g	0.0613	0.0169	0.0681	.006877470	pCi/g	NO
		Uranium-238	0.506 g	1.26	0.111	0.0637	.005553360	pCi/g	NO
244132011	RE12-10-7649	Uranium-233/234	0.519 g	1.37	0.124	0.128	.017707129	pCi/g	NO
		Uranium-235/236	0.519 g	0.0512	0.0166	0.0797	.006705202	pCi/g	NO

2/1/10

# Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
244132011	RE12-10-7649	Uranium-238	0.519 g	1.59	0.140	0.0745	.005414258	pCi/g	NO
244132012	RE12-10-7650	Uranium-233/234	0.508 g	1.10	0.099	0.108	.018090551	pCi/g	NO
		Uranium-235/236	0.508 g	0.0475	0.0147	0.0672	.006850394	pCi/g	NO
		Uranium-238	0.508 g	1.01	0.0926	0.0627	.005531496	pCi/g	NO
244132013	RE12-10-7641	Uranium-233/234	0.502 g	2.52	0.203	0.115	.018306773	pCi/g	NO
		Uranium-235/236	0.502 g	0.0967	0.0231	0.0716	.006932271	pCi/g	NO
		Uranium-238	0.502 g	2.97	0.235	0.0669	.005597610	pCi/g	NO
244132014	RE12-10-7643	Uranium-233/234	0.515 g	1.99	0.158	0.0917	.017844660	pCi/g	NO
		Uranium-235/236	0.515 g	0.110	0.0227	0.0569	.006757282	pCi/g	NO
		Uranium-238	0.515 g	2.33	0.182	0.0532	.005456311	pCi/g	NO
244132015	RE12-10-7640	Uranium-233/234	0.509 g	0.712	0.0673	0.0902	.018055010	pCi/g	NO
		Uranium-235/236	0.509 g	0.036	0.0117	0.056	.006836935	pCi/g	NO
		Uranium-238	0.509 g	0.795	0.0731	0.0523	.005520629	pCi/g	NO
244132016	RE12-10-7645	Uranium-233/234	0.521 g	1.19	0.102	0.0947	.017639155	pCi/g	NO
		Uranium-235/236	0.521 g	0.102	0.0209	0.0588	.006679463	pCi/g	NO
		Uranium-238	0.521 g	1.31	0.111	0.0549	.005393474	pCi/g	NO
244132017	RE12-10-7646	Uranium-233/234	0.529 g	0.854	0.078	0.091	.017372401	pCi/g	NO
		Uranium-235/236	0.529 g	0.0581	0.0159	0.0585	.006578450	pCi/g	NO
		Uranium-238	0.529 g	1.09	0.0952	0.0528	.005311909	pCi/g	NO
244132018	RE12-10-7636	Uranium-233/234	0.513 g	1.07	0.093	0.0915	.017914230	pCi/g	NO
		Uranium-235/236	0.513 g	0.0766	0.0175	0.0568	.006783626	pCi/g	NO
		Uranium-238	0.513 g	1.05	0.0919	0.0531	.005477583	pCi/g	NO
244132019	RE12-10-7657	Uranium-233/234	0.502 g	0.962	0.0857	0.093	.018306773	pCi/g	NO
		Uranium-235/236	0.502 g	0.0705	0.0169	0.0577	.006932271	pCi/g	NO
		Uranium-238	0.502 g	0.858	0.0782	0.0539	.005597610	pCi/g	NO
244132020	RE12-10-7658	Uranium-233/234	0.516 g	1.07	0.0932	0.0899	.017810078	pCi/g	NO
		Uranium-235/236	0.516 g	0.0394	0.0141	0.0558	.006744186	pCi/g	NO
		Uranium-238	0.516 g	1.09	0.0948	0.0521	.005445736	pCi/g	NO



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132001\_UU  
SAMPLE QTY: 0.516 G

DETECTOR NUMBER :72527  
AVERAGE %EFFICIENCY :25.0439  
% YIELD : 97.983

COUNT DATE:19-JAN-2010 19:33:10  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.41808 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B146.CNF;390  
BKG DATE : 17-JAN-2010  
EFF FILE : W146.CNF;113  
CAL DATE : 18-JAN-2010

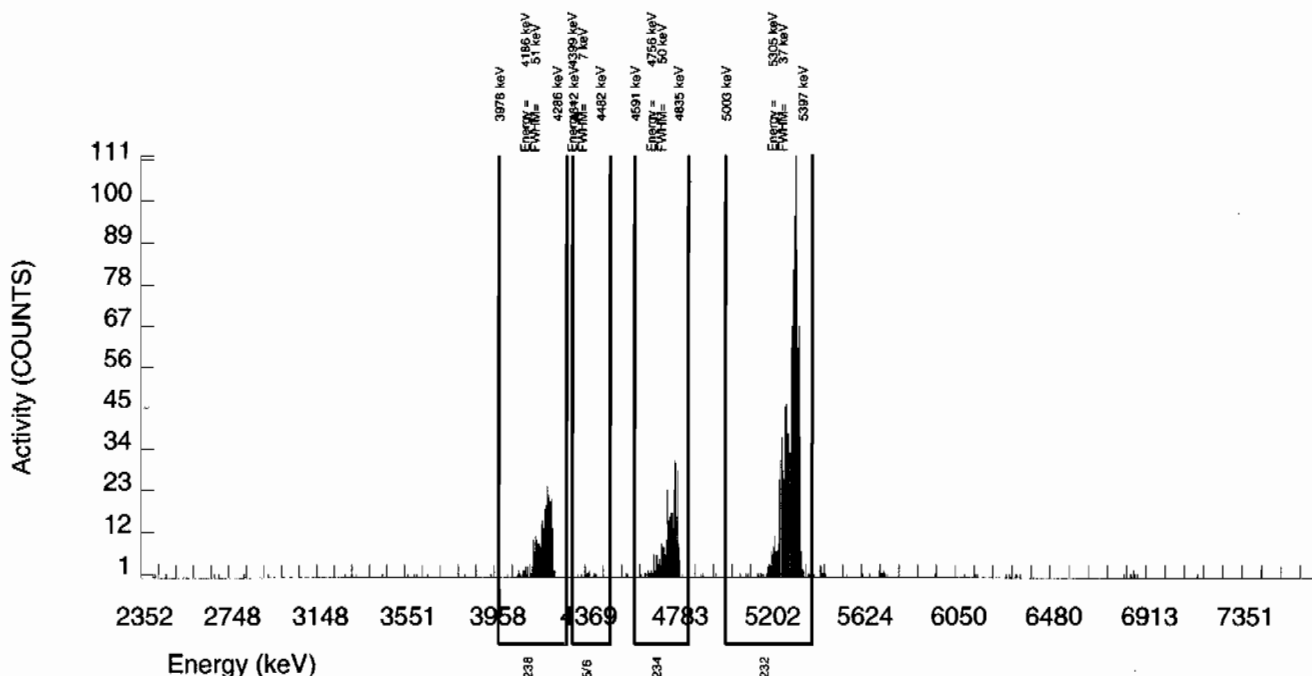
NUCLIDE ACTIVITY SUMMARY

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	306.000	304.882	0.000	6.0782	100.0000	1.08E+00	9.85E-02	5.03E-02	1.10E-01	6.21E-02
U232	5302.100	1109.000	1106.000	3.000	1.7321	100.0000	3.94E+00	3.02E-01	1.43E-02	3.83E-02	1.19E-01
U-235	4391.000	11.000	10.000	1.000	2.7628	80.90000	4.40E-02	1.55E-02	2.83E-02	6.84E-02	1.52E-02
U-238	4184.730	293.000	292.000	1.000	3.2810	100.0000	1.04E+00	9.53E-02	2.72E-02	6.39E-02	6.10E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132002\_UU  
SAMPLE QTY: 0.506 G

DETECTOR NUMBER :75550  
AVERAGE %EFFICIENCY :24.6786  
% YIELD : 96.827

COUNT DATE:19-JAN-2010 19:33:13  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.36594 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

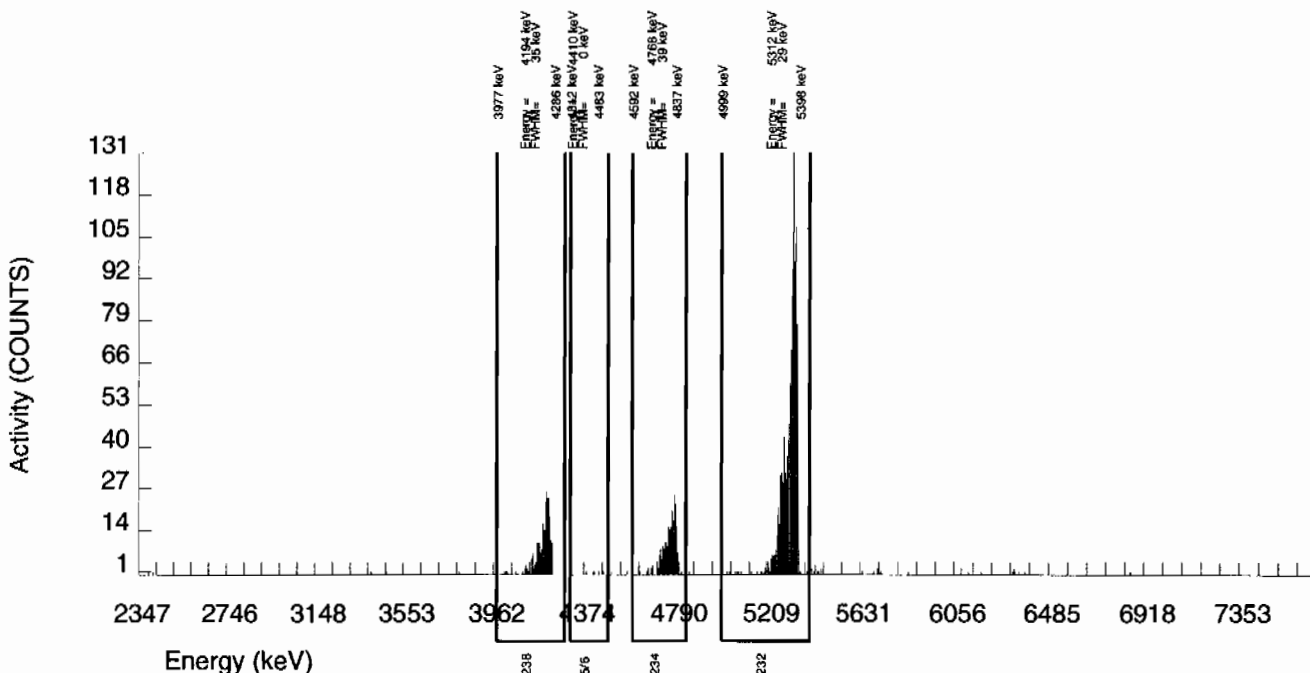
NUCLIDE ACTIVITY SUMMARY

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	235.000	233.911	0.000	6.0782	100.0000	8.71E-01	8.48E-02	5.27E-02	1.15E-01	5.70E-02
U232	5302.100	1080.000	1077.000	3.000	1.7321	100.0000	4.01E+00	3.14E-01	1.50E-02	4.01E-02	1.23E-01
U-235	4391.000	6.000	5.000	1.000	2.7628	80.90000	2.30E-02	1.23E-02	2.96E-02	7.17E-02	1.22E-02
U-238	4184.730	243.000	243.000	0.000	3.2810	100.0000	9.05E-01	8.74E-02	2.84E-02	6.70E-02	5.81E-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: 940269 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132003_UU SAMPLE QTY: 0.505 G	
DETECTOR NUMBER :74429 AVERAGE %EFFICIENCY :24.9625 % YIELD : 88.526		COUNT DATE:19-JAN-2010 19:33:16 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50902 dpm RESULTS : 3.99164 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

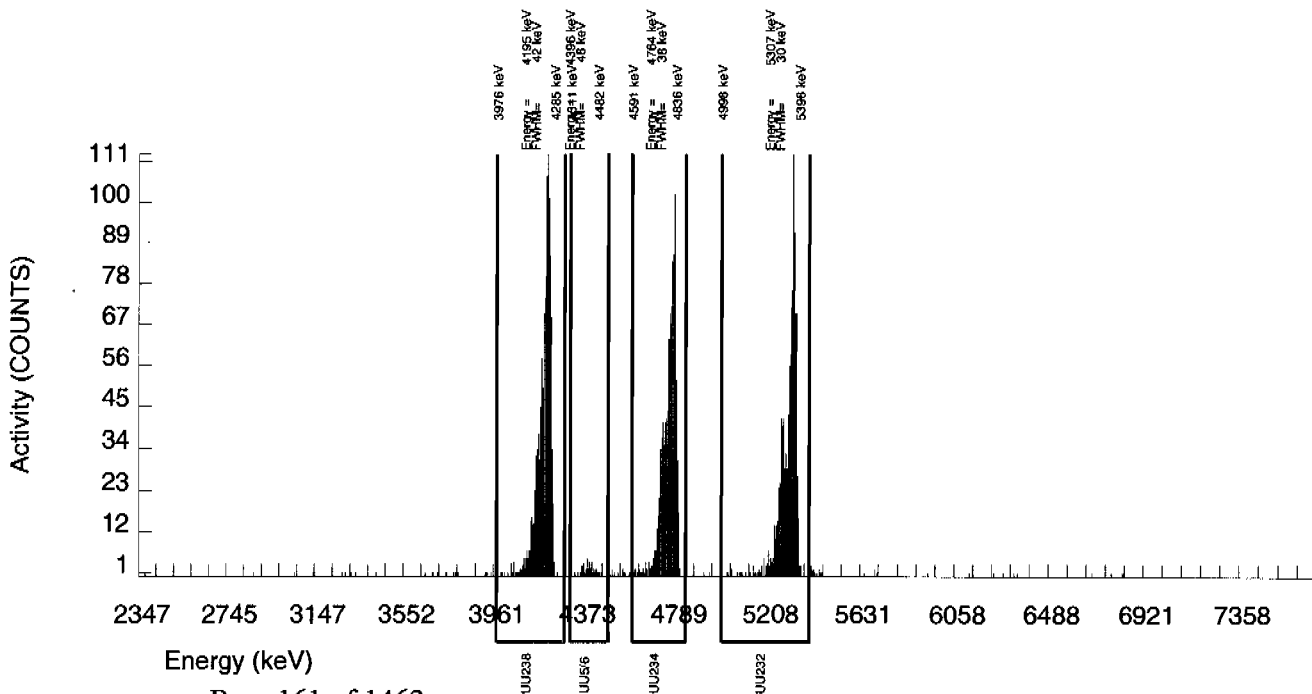
NUCLIDE ACTIVITY SUMMARY

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	1029.000	1026.993	1.000	6.0782	100.0000	4.15E+00	3.23E-01	5.71E-02	1.25E-01	1.29E-01
U232	5302.100	1000.000	996.000	4.000	2.0000	100.0000	4.02E+00	3.14E-01	1.88E-02	4.85E-02	1.28E-01
U-235	4391.000	41.000	40.000	1.000	2.7628	80.90000	2.00E-01	3.53E-02	3.21E-02	7.77E-02	3.23E-02
U-238	4184.730	1108.000	1107.000	1.000	3.2810	100.0000	4.47E+00	3.46E-01	3.08E-02	7.26E-02	1.34E-01

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

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

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



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132004\_UU  
SAMPLE QTY: 0.506 G

DETECTOR NUMBER :33449  
AVERAGE %EFFICIENCY :24.3144  
% YIELD : 98.277

COUNT DATE:19-JAN-2010 19:33:19  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.43132 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

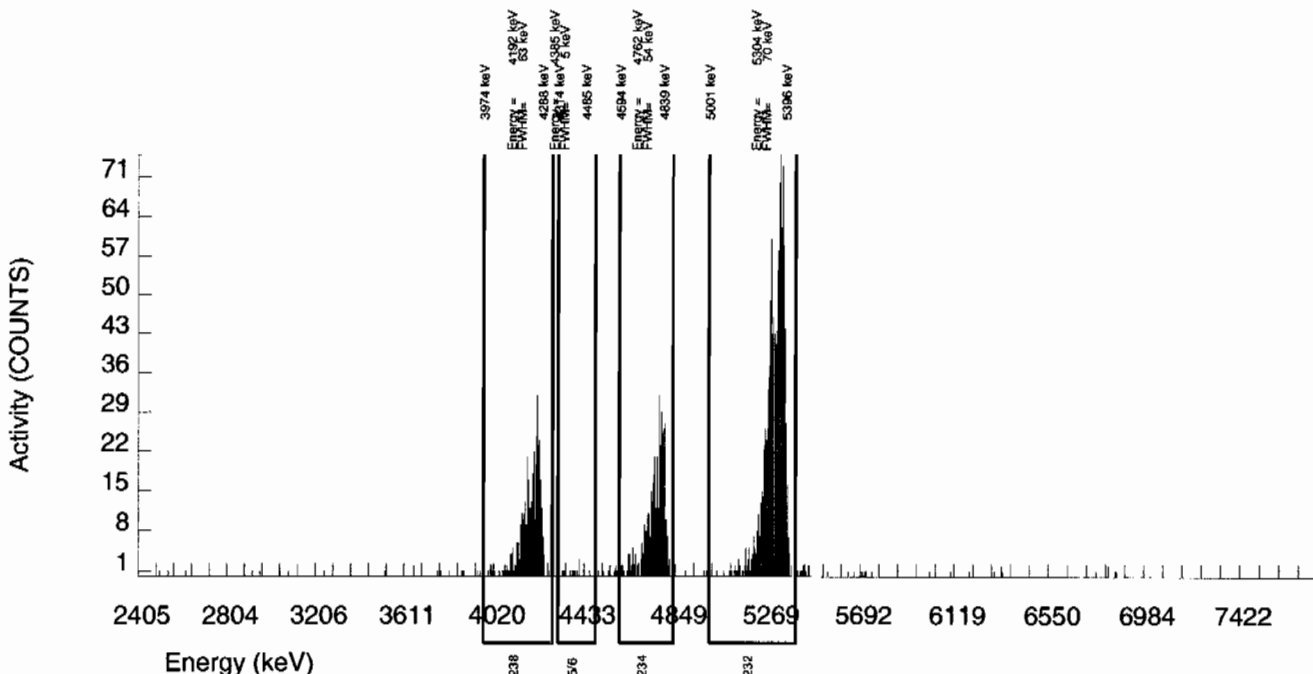
NUCLIDE ACTIVITY SUMMARY

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	394.000	390.911	2.000	6.0782	100.0000	1.46E+00	1.27E-01	5.27E-02	1.15E-01	7.40E-02
U232	5302.100	1080.000	1077.000	3.000	1.7321	100.0000	4.01E+00	3.09E-01	1.50E-02	4.01E-02	1.23E-01
U-235	4391.000	14.000	12.000	2.000	2.7628	80.90000	5.53E-02	1.88E-02	2.96E-02	7.17E-02	1.84E-02
U-238	4184.730	386.000	384.000	2.000	3.2810	100.0000	1.43E+00	1.25E-01	2.84E-02	6.70E-02	7.34E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132005\_UU  
SAMPLE QTY: 0.502 G

DETECTOR NUMBER :75552  
AVERAGE %EFFICIENCY :24.4633  
% YIELD : 95.955

COUNT DATE:19-JAN-2010 19:33:22  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.32665 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

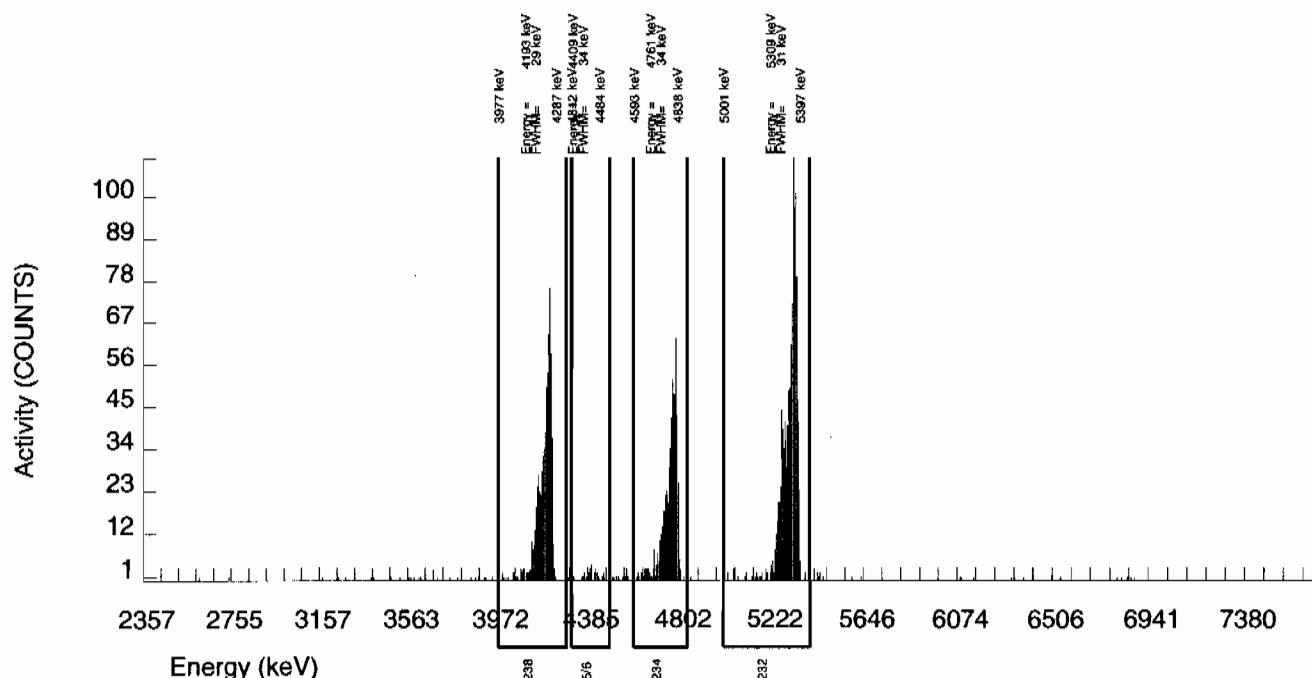
NUCLIDE ACTIVITY SUMMARY

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	580.000	577.930	1.000	6.0782	100.0000	2.21E+00	1.82E-01	5.41E-02	1.18E-01	9.21E-02
U232	5302.100	1058.000	1058.000	0.000	0.0000	100.0000	4.05E+00	3.12E-01	0.00E+00	1.04E-02	1.24E-01
U-235	4391.000	28.000	28.000	0.000	2.7628	80.90000	1.32E-01	2.67E-02	3.04E-02	7.35E-02	2.50E-02
U-238	4184.730	676.000	676.000	0.000	3.2810	100.0000	2.58E+00	2.08E-01	2.92E-02	6.87E-02	9.94E-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: 940269 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132006_UU SAMPLE QTY: 0.519 G	
DETECTOR NUMBER :75556 AVERAGE %EFFICIENCY :24.3876 % YIELD : 106.806		COUNT DATE:19-JAN-2010 19:33:25 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50903 dpm RESULTS : 4.81593 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B151.CNF;389 BKG DATE : 17-JAN-2010 EFF FILE : W151.CNF;118 CAL DATE : 18-JAN-2010

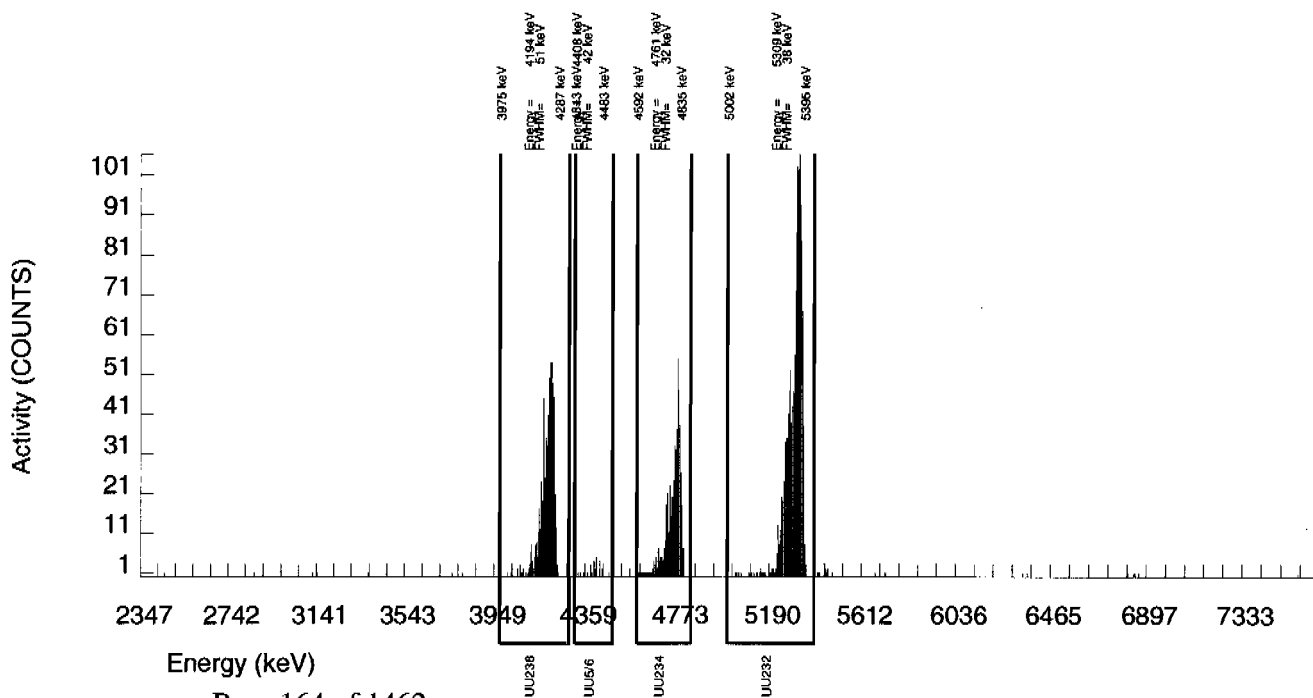
NUCLIDE ACTIVITY SUMMARY

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	494.000	490.813	2.000	6.0782	100.0000	1.64E+00	1.37E-01	4.71E-02	1.03E-01	7.41E-02
U232	5302.100	1179.000	1174.000	5.000	2.2361	100.0000	3.91E+00	2.98E-01	1.73E-02	4.37E-02	1.15E-01
U-235	4391.000	27.000	27.000	0.000	2.7628	80.90000	1.11E-01	2.28E-02	2.65E-02	6.41E-02	2.14E-02
U-238	4184.730	607.000	607.000	0.000	3.2810	100.0000	2.02E+00	1.64E-01	2.54E-02	5.99E-02	8.21E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132007\_UU  
SAMPLE QTY: 0.507 G

DETECTOR NUMBER :76222  
AVERAGE %EFFICIENCY :24.3115  
% YIELD : 98.927

COUNT DATE:19-JAN-2010 19:33:27  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.46065 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B152.CNF;386  
BKG DATE : 17-JAN-2010  
EFF FILE : W152.CNF;105  
CAL DATE : 18-JAN-2010

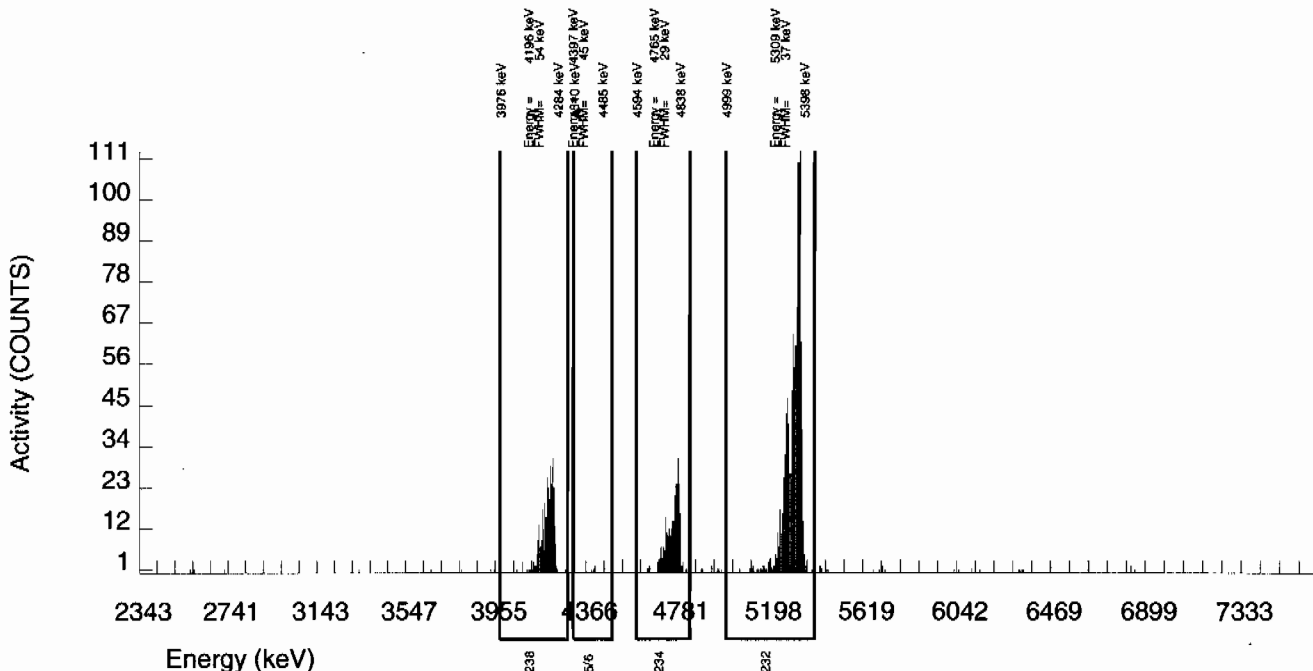
NUCLIDE ACTIVITY SUMMARY

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	278.000	276.904	0.000	6.0782	100.0000	1.02E+00	9.49E-02	5.22E-02	1.14E-01	6.15E-02
U232	5302.100	1085.000	1084.000	1.000	1.0000	100.0000	4.01E+00	3.08E-01	8.59E-03	2.72E-02	1.22E-01
U-235	4391.000	8.000	8.000	0.000	2.7628	80.90000	3.65E-02	1.32E-02	2.93E-02	7.11E-02	1.29E-02
U-238	4184.730	311.000	310.000	1.000	3.2810	100.0000	1.15E+00	1.04E-01	2.82E-02	6.64E-02	6.53E-02

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

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

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



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132008\_UU  
SAMPLE QTY: 0.508 G

DETECTOR NUMBER :76223  
AVERAGE %EFFICIENCY :25.3391  
% YIELD : 98.505

COUNT DATE:19-JAN-2010 19:33:30  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50903 dpm  
RESULTS : 4.44163 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

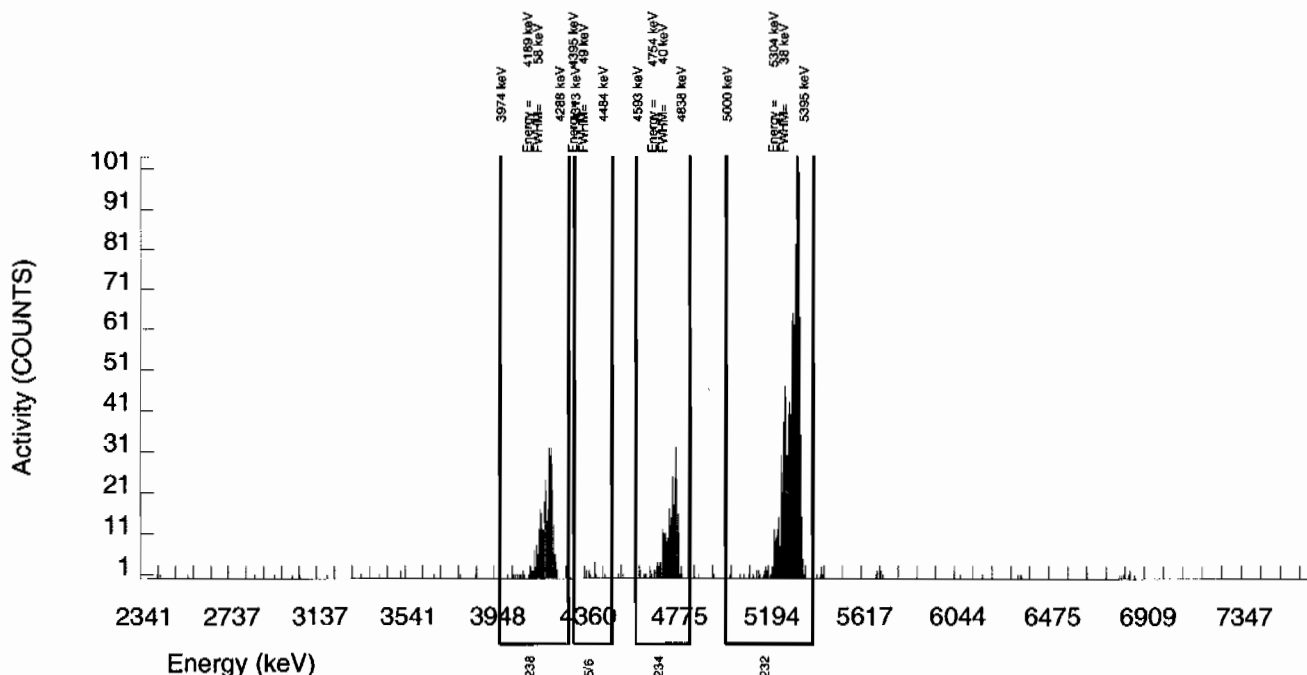
NUCLIDE ACTIVITY SUMMARY

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	298.000	295.862	1.000	6.0782	100.0000	1.05E+00	9.61E-02	5.02E-02	1.10E-01	6.13E-02
U232	5302.100	1127.000	1125.000	2.000	1.4142	100.0000	4.00E+00	3.06E-01	1.17E-02	3.30E-02	1.19E-01
U-235	4391.000	14.000	14.000	0.000	2.7628	80.90000	6.15E-02	1.70E-02	2.82E-02	6.83E-02	1.64E-02
U-238	4184.730	328.000	328.000	0.000	3.2810	100.0000	1.17E+00	1.04E-01	2.71E-02	6.39E-02	6.43E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132009\_UU  
SAMPLE QTY: 0.512 G

DETECTOR NUMBER :76224  
AVERAGE %EFFICIENCY :25.6513  
% YIELD : 94.971

COUNT DATE:19-JAN-2010 19:33:33  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50903 dpm  
RESULTS : 4.28228 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

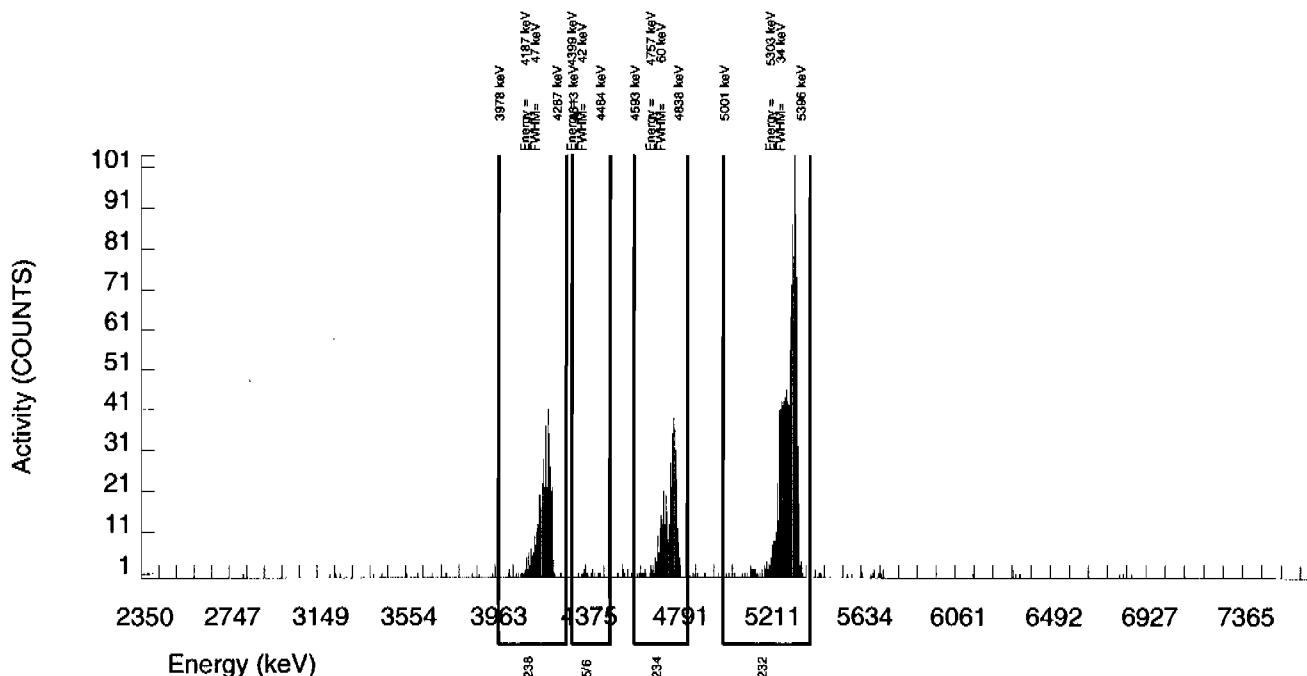
NUCLIDE ACTIVITY SUMMARY

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	410.000	408.890	0.000	6.0782	100.0000	1.48E+00	1.27E-01	5.11E-02	1.12E-01	7.30E-02
U232	5302.100	1100.000	1098.000	2.000	1.4142	100.0000	3.97E+00	3.05E-01	1.19E-02	3.35E-02	1.20E-01
U-235	4391.000	14.000	14.000	0.000	2.7628	80.90000	6.25E-02	1.73E-02	2.87E-02	6.95E-02	1.67E-02
U-238	4184.730	436.000	435.000	1.000	3.2810	100.0000	1.57E+00	1.34E-01	2.76E-02	6.49E-02	7.55E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132010\_UU  
SAMPLE QTY: 0.506 G

DETECTOR NUMBER :75553  
AVERAGE %EFFICIENCY :25.9756  
% YIELD : 96.775

COUNT DATE:19-JAN-2010 19:33:36  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50903 dpm  
RESULTS : 4.36361 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

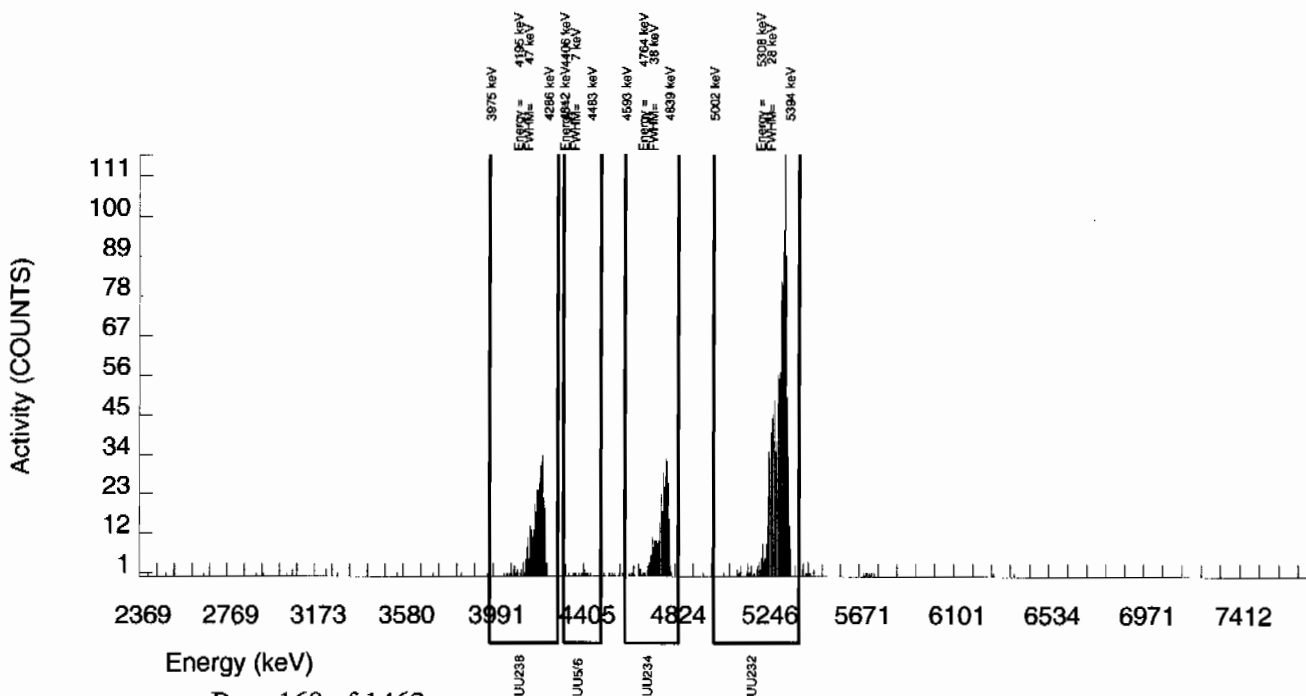
NUCLIDE ACTIVITY SUMMARY

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	320.000	318.854	0.000	6.0782	100.0000	1.13E+00	1.02E-01	5.01E-02	1.10E-01	6.32E-02
U232	5302.100	1133.000	1133.000	0.000	0.0000	100.0000	4.01E+00	3.07E-01	0.00E+00	9.60E-03	1.19E-01
U-235	4391.000	14.000	14.000	0.000	2.7628	80.90000	6.13E-02	1.69E-02	2.81E-02	6.81E-02	1.64E-02
U-238	4184.730	357.000	357.000	0.000	3.2810	100.0000	1.26E+00	1.11E-01	2.70E-02	6.37E-02	6.69E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132011\_UU  
SAMPLE QTY: 0.519 G

DETECTOR NUMBER :75554  
AVERAGE %EFFICIENCY :24.5738  
% YIELD : 85.231

COUNT DATE:19-JAN-2010 19:33:39  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 3.84310 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

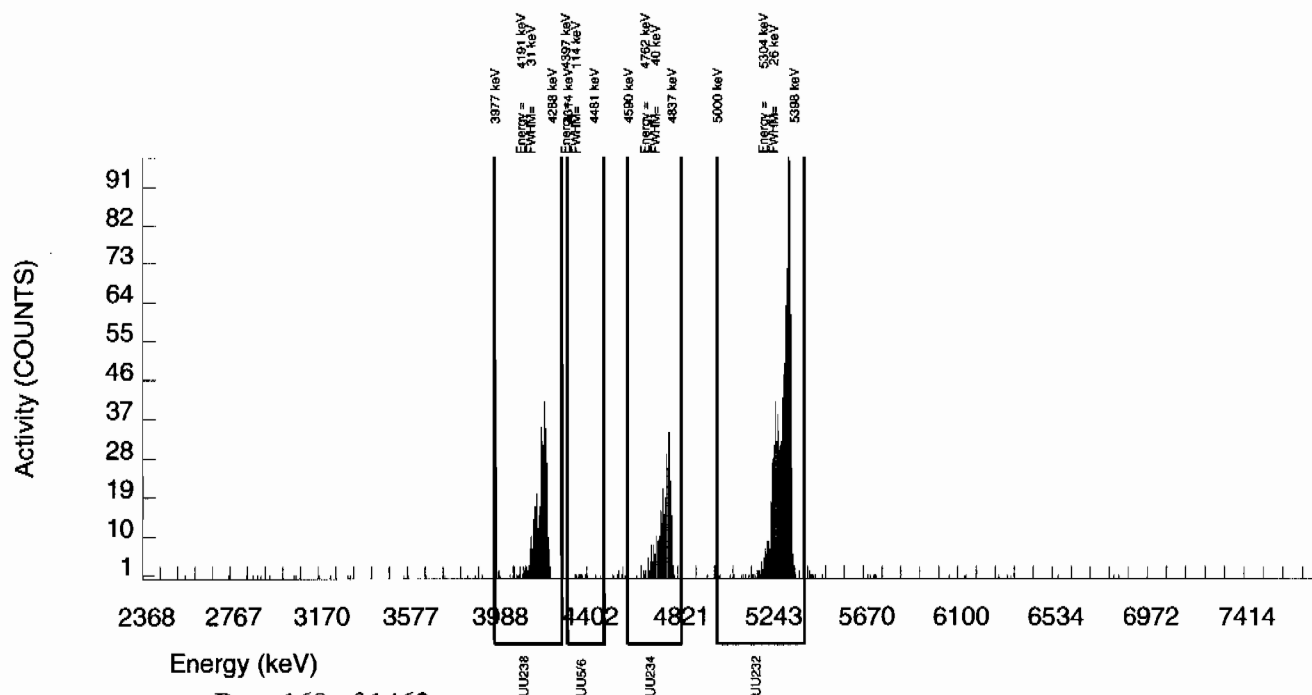
NUCLIDE ACTIVITY SUMMARY

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	331.000	330.045	0.000	6.0782	100.0000	1.37E+00	1.24E-01	5.86E-02	1.28E-01	7.53E-02
U232	5302.100	948.000	944.000	4.000	2.0000	100.0000	3.91E+00	3.08E-01	1.93E-02	4.98E-02	1.28E-01
U-235	4391.000	10.000	10.000	0.000	2.7628	80.90000	5.12E-02	1.66E-02	3.29E-02	7.97E-02	1.62E-02
U-238	4184.730	385.000	384.000	1.000	3.2810	100.0000	1.59E+00	1.40E-01	3.16E-02	7.45E-02	8.14E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132012\_UU  
SAMPLE QTY: 0.508 G

DETECTOR NUMBER :75555  
AVERAGE %EFFICIENCY :24.6661  
% YIELD : 102.992

COUNT DATE:19-JAN-2010 19:33:41  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.64393 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

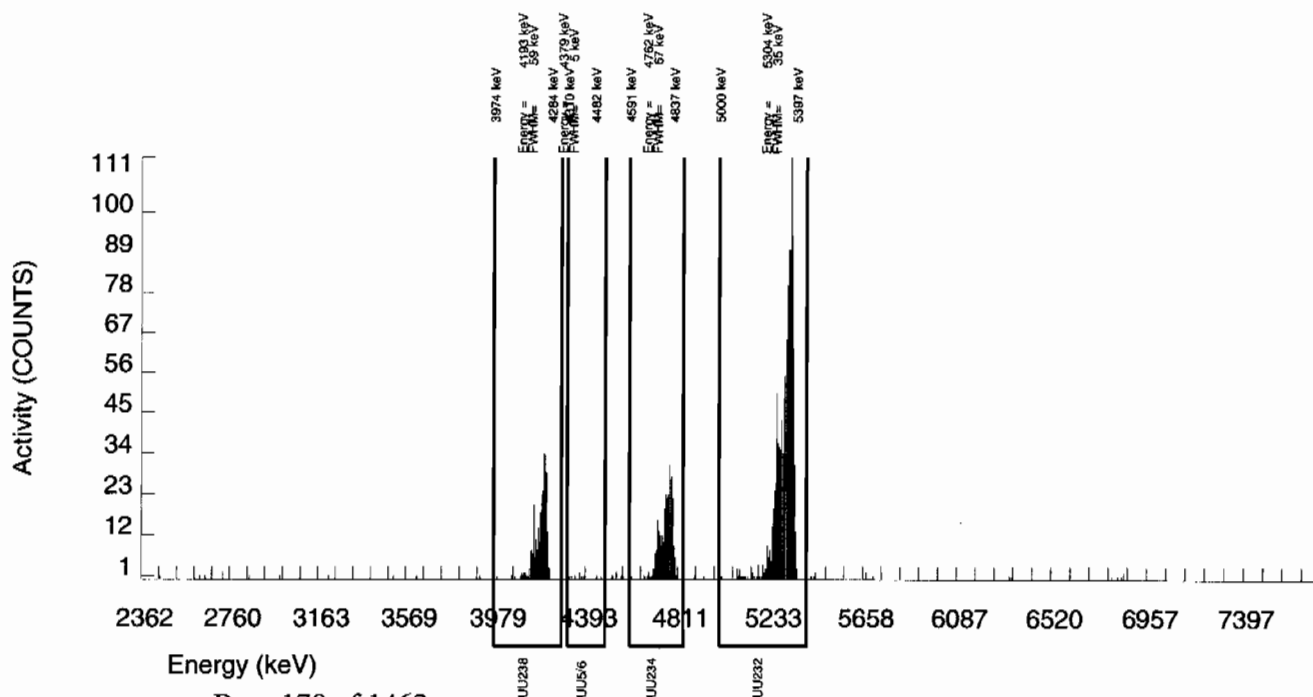
NUCLIDE ACTIVITY SUMMARY

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	316.000	314.842	0.000	6.0782	100.0000	1.10E+00	9.90E-02	4.94E-02	1.08E-01	6.19E-02
U232	5302.100	1146.000	1145.000	1.000	1.0000	100.0000	4.00E+00	3.05E-01	8.12E-03	2.57E-02	1.18E-01
U-235	4391.000	11.000	11.000	0.000	2.7628	80.90000	4.75E-02	1.47E-02	2.77E-02	6.72E-02	1.43E-02
U-238	4184.730	290.000	289.000	1.000	3.2810	100.0000	1.01E+00	9.26E-02	2.66E-02	6.27E-02	5.95E-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: 940269 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132013_UU SAMPLE QTY: 0.502 G	
DETECTOR NUMBER :33451 AVERAGE %EFFICIENCY :24.3861 % YIELD : 98.807		COUNT DATE:19-JAN-2010 19:33:44 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50903 dpm RESULTS : 4.45521 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

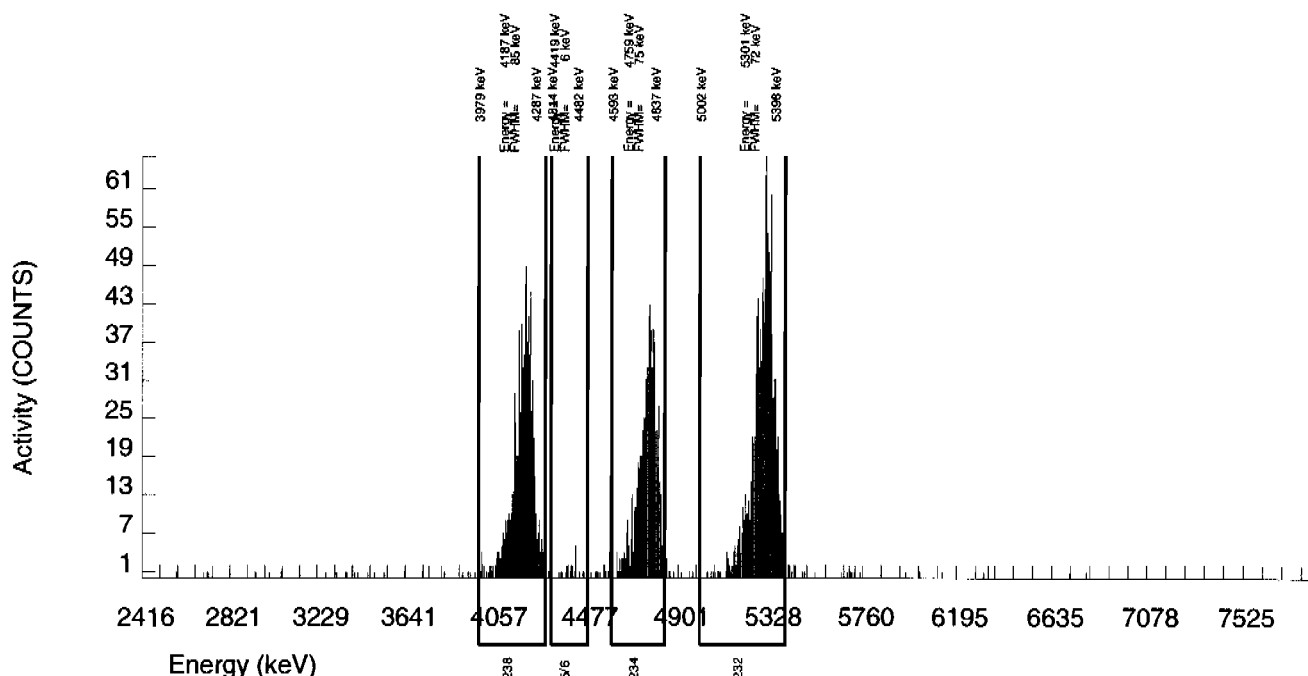
NUCLIDE ACTIVITY SUMMARY

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	679.000	676.902	1.000	6.0782	100.0000	2.52E+00	2.03E-01	5.27E-02	1.15E-01	9.70E-02
U232	5302.100	1089.000	1086.000	3.000	1.7321	100.0000	4.05E+00	3.11E-01	1.50E-02	4.01E-02	1.23E-01
U-235	4391.000	22.000	21.000	1.000	2.7628	80.90000	9.67E-02	2.31E-02	2.96E-02	7.16E-02	2.21E-02
U-238	4184.730	802.000	798.000	4.000	3.2810	100.0000	2.97E+00	2.35E-01	2.84E-02	6.69E-02	1.06E-01

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

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

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



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132014\_UU  
SAMPLE QTY: 0.515 G

DETECTOR NUMBER :79451  
AVERAGE %EFFICIENCY :32.5060  
% YIELD : 90.916

COUNT DATE:19-JAN-2010 19:34:44  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.09942 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B001.CNF;1115  
BKG DATE : 17-JAN-2010  
EFF FILE : W001.CNF;380  
CAL DATE : 4-JAN-2010

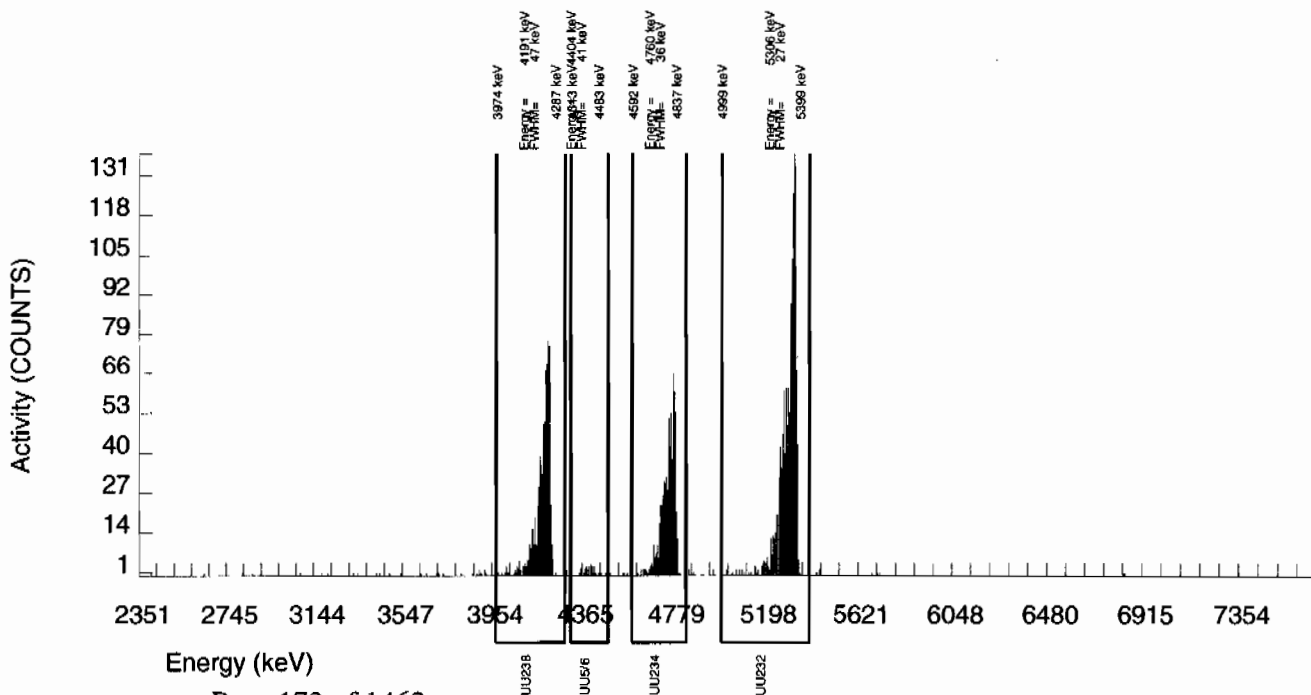
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	674.000	672.653	0.000	6.0782	100.0000	1.99E+00	1.58E-01	4.18E-02	9.17E-02	7.68E-02
U232	5302.100	1336.000	1332.000	4.000	2.0000	100.0000	3.94E+00	2.94E-01	1.38E-02	3.56E-02	1.08E-01
U-235	4391.000	32.000	30.000	2.000	2.7628	80.90000	1.10E-01	2.27E-02	2.35E-02	5.69E-02	2.13E-02
U-238	4184.730	787.000	787.000	0.000	3.2810	100.0000	2.33E+00	1.82E-01	2.26E-02	5.32E-02	8.30E-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: 940269 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S0244132015_UU SAMPLE QTY: 0.509 G	
DETECTOR NUMBER :79452 AVERAGE %EFFICIENCY :29.6879 % YIELD : 102.386		COUNT DATE:19-JAN-2010 19:34:44 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50902 dpm RESULTS : 4.61660 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B002.CNF;1105 BKG DATE : 17-JAN-2010 EFF FILE : W002.CNF;326 CAL DATE : 4-JAN-2010

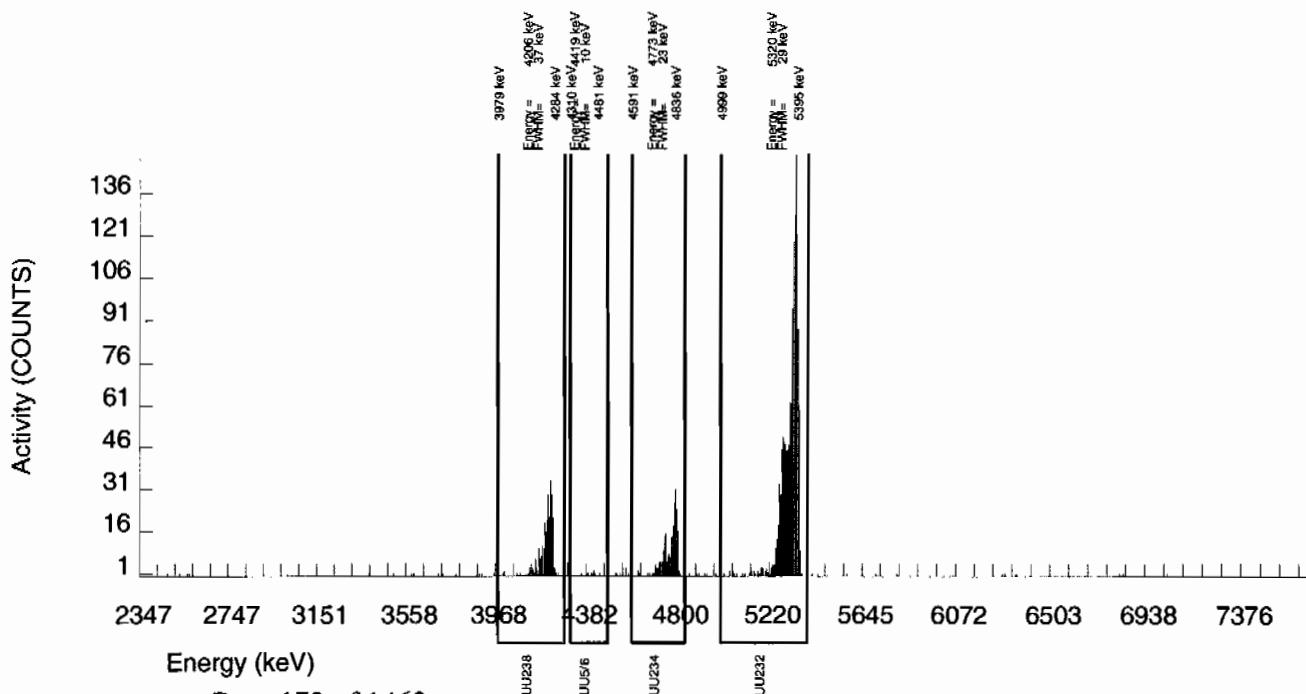
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	247.000	244.615	1.000	6.0782	100.0000	7.12E-01	6.73E-02	4.12E-02	9.02E-02	4.57E-02
U232	5302.100	1373.000	1370.000	3.000	1.7321	100.0000	3.99E+00	2.97E-01	1.17E-02	3.14E-02	1.08E-01
U-235	4391.000	10.000	10.000	0.000	2.7628	80.90000	3.60E-02	1.17E-02	2.31E-02	5.60E-02	1.14E-02
U-238	4184.730	273.000	273.000	0.000	3.2810	100.0000	7.95E-01	7.31E-02	2.22E-02	5.23E-02	4.81E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132016\_UU  
SAMPLE QTY: 0.521 G

DETECTOR NUMBER :79453  
AVERAGE %EFFICIENCY :31.1793  
% YIELD : 90.728

COUNT DATE:19-JAN-2010 19:34:44  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.09096 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B003.CNF;1100  
BKG DATE : 17-JAN-2010  
EFF FILE : W003.CNF;339  
CAL DATE : 4-JAN-2010

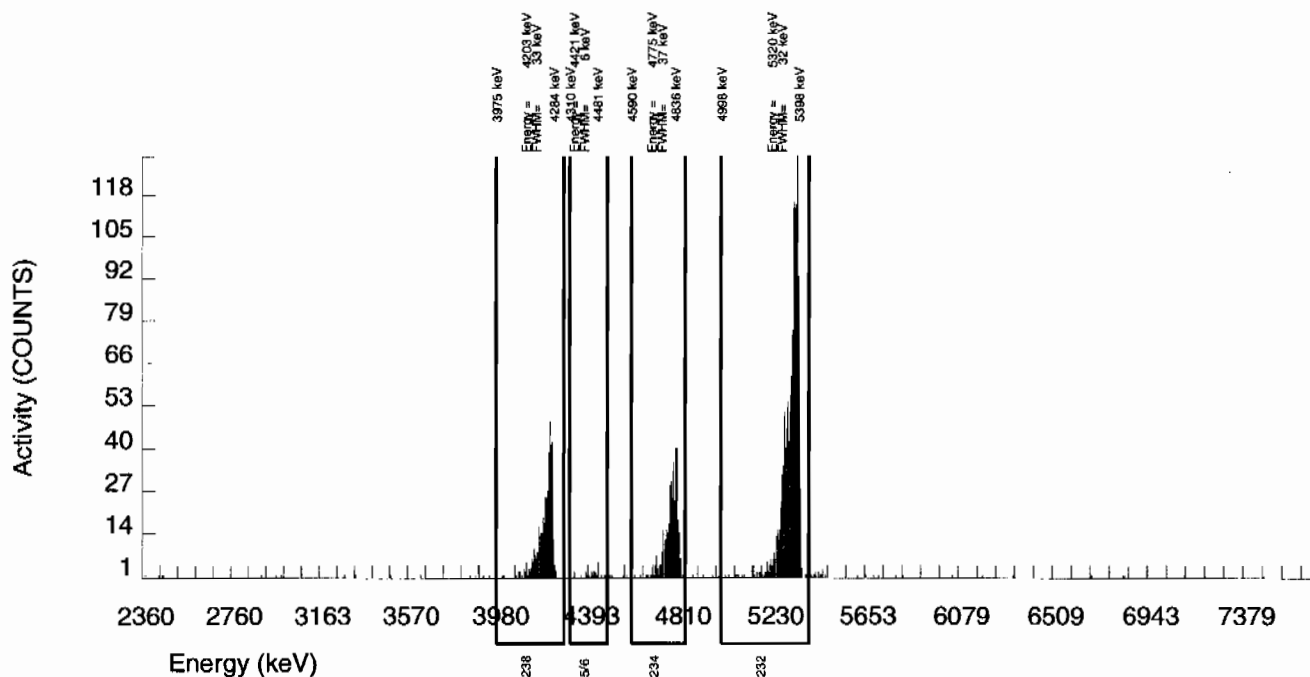
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	390.000	388.711	0.000	6.0782	100.0000	1.19E+00	1.02E-01	4.32E-02	9.47E-02	6.03E-02
U232	5302.100	1280.000	1275.000	5.000	2.2361	100.0000	3.90E+00	2.93E-01	1.59E-02	4.01E-02	1.10E-01
U-235	4391.000	27.000	27.000	0.000	2.7628	80.90000	1.02E-01	2.09E-02	2.43E-02	5.88E-02	1.96E-02
U-238	4184.730	427.000	427.000	0.000	3.2810	100.0000	1.31E+00	1.11E-01	2.33E-02	5.49E-02	6.32E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132017\_UU  
SAMPLE QTY: 0.529 G

DETECTOR NUMBER :68548  
AVERAGE %EFFICIENCY :30.7853  
% YIELD : 94.196

COUNT DATE:19-JAN-2010 19:34:44  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.24730 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B004.CNF;1109  
BKG DATE : 17-JAN-2010  
EFF FILE : W004.CNF;328  
CAL DATE : 4-JAN-2010

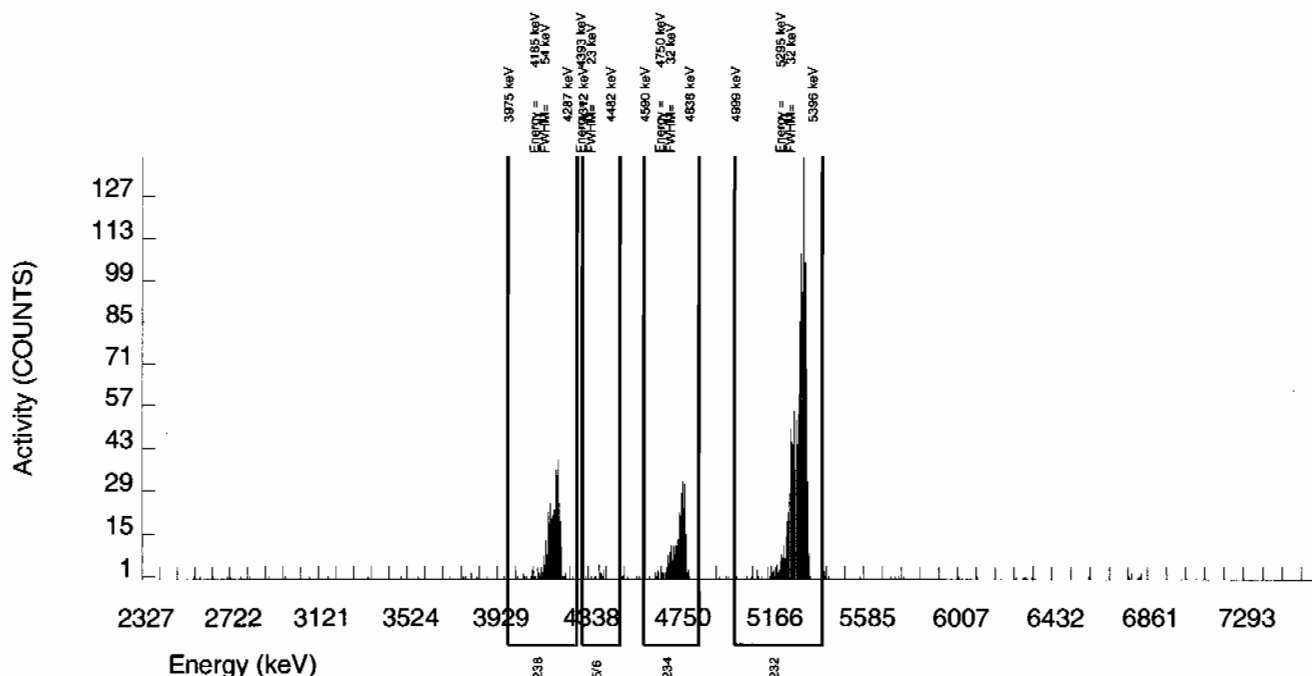
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	295.000	290.678	3.000	6.0782	100.0000	8.54E-01	7.80E-02	4.15E-02	9.10E-02	5.06E-02
U232	5302.100	1313.000	1307.000	6.000	2.4495	100.0000	3.84E+00	2.87E-01	1.67E-02	4.14E-02	1.07E-01
U-235	4391.000	17.000	16.000	1.000	2.7628	80.90000	5.81E-02	1.59E-02	2.33E-02	5.65E-02	1.54E-02
U-238	4184.730	377.000	372.000	5.000	3.2810	100.0000	1.09E+00	9.52E-02	2.24E-02	5.28E-02	5.74E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132018\_UU  
SAMPLE QTY: 0.513 G

DETECTOR NUMBER :79454  
AVERAGE %EFFICIENCY :32.0695  
% YIELD : 92.776

COUNT DATE:19-JAN-2010 19:34:44  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.18329 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B005.CNF;1095  
BKG DATE : 17-JAN-2010  
EFF FILE : W005.CNF;335  
CAL DATE : 4-JAN-2010

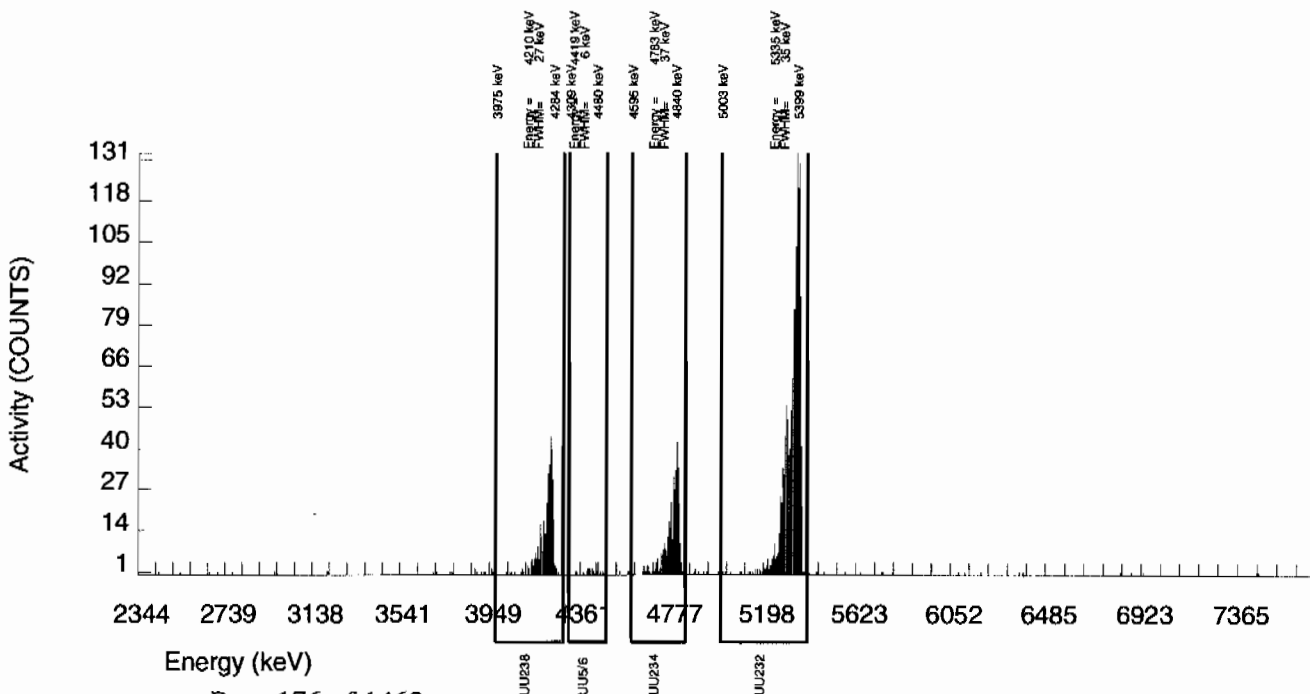
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	365.000	361.644	2.000	6.0782	100.0000	1.07E+00	9.30E-02	4.17E-02	9.15E-02	5.64E-02
U232	5302.100	1342.000	1341.000	1.000	1.0000	100.0000	3.96E+00	2.95E-01	6.87E-03	2.17E-02	1.08E-01
U-235	4391.000	21.000	21.000	0.000	2.7628	80.90000	7.66E-02	1.75E-02	2.34E-02	5.68E-02	1.67E-02
U-238	4184.730	357.000	357.000	0.000	3.2810	100.0000	1.05E+00	9.19E-02	2.25E-02	5.31E-02	5.58E-02

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

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

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



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132019\_UU  
SAMPLE QTY: 0.502 G

DETECTOR NUMBER :79455  
AVERAGE %EFFICIENCY :30.5320  
% YIELD : 97.957

COUNT DATE:19-JAN-2010 19:34:44  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.41689 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B006.CNF;1108  
BKG DATE : 17-JAN-2010  
EFF FILE : W006.CNF;359  
CAL DATE : 4-JAN-2010

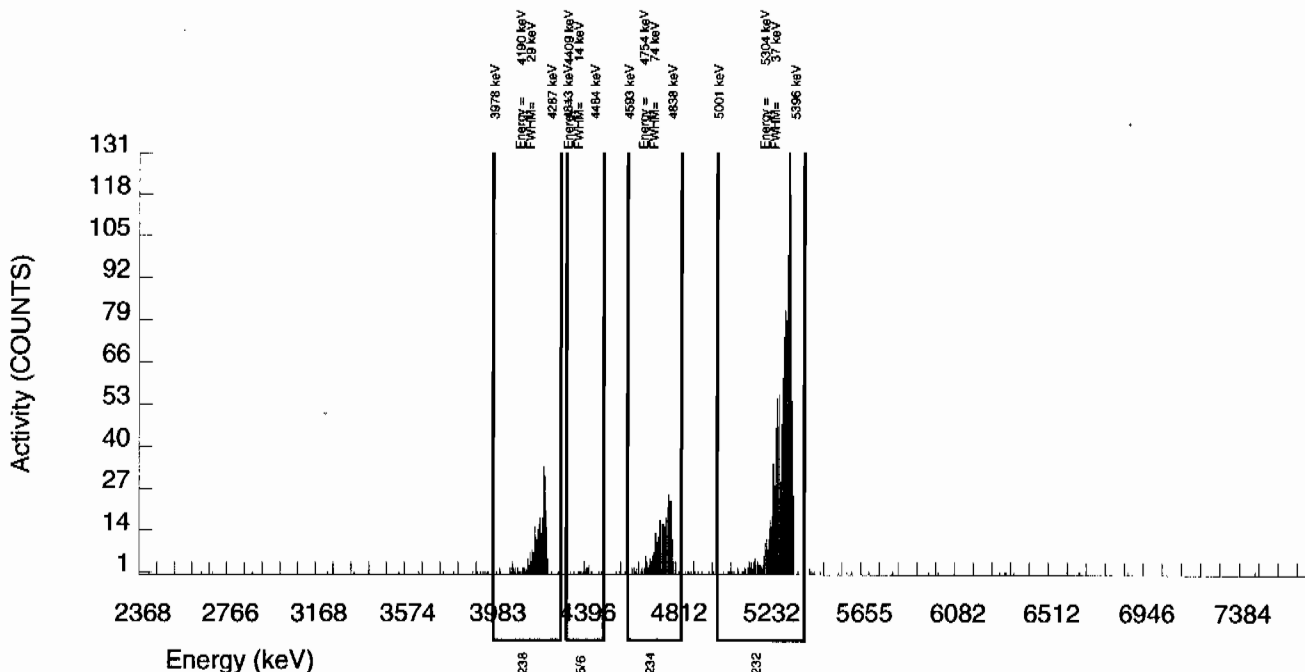
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	323.000	320.637	1.000	6.0782	100.0000	9.62E-01	8.57E-02	4.24E-02	9.30E-02	5.39E-02
U232	5302.100	1349.000	1348.000	1.000	1.0000	100.0000	4.05E+00	3.01E-01	6.98E-03	2.21E-02	1.10E-01
U-235	4391.000	19.000	19.000	0.000	2.7628	80.90000	7.05E-02	1.69E-02	2.38E-02	5.77E-02	1.62E-02
U-238	4184.730	286.000	286.000	0.000	3.2810	100.0000	8.58E-01	7.82E-02	2.29E-02	5.39E-02	5.07E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S0244132020\_UU  
SAMPLE QTY: 0.516 G

DETECTOR NUMBER :67607  
AVERAGE %EFFICIENCY :29.6523  
% YIELD : 101.536

COUNT DATE:19-JAN-2010 19:34:45  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.57829 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B007.CNF;1103  
BKG DATE : 17-JAN-2010  
EFF FILE : W007.CNF;310  
CAL DATE : 4-JAN-2010

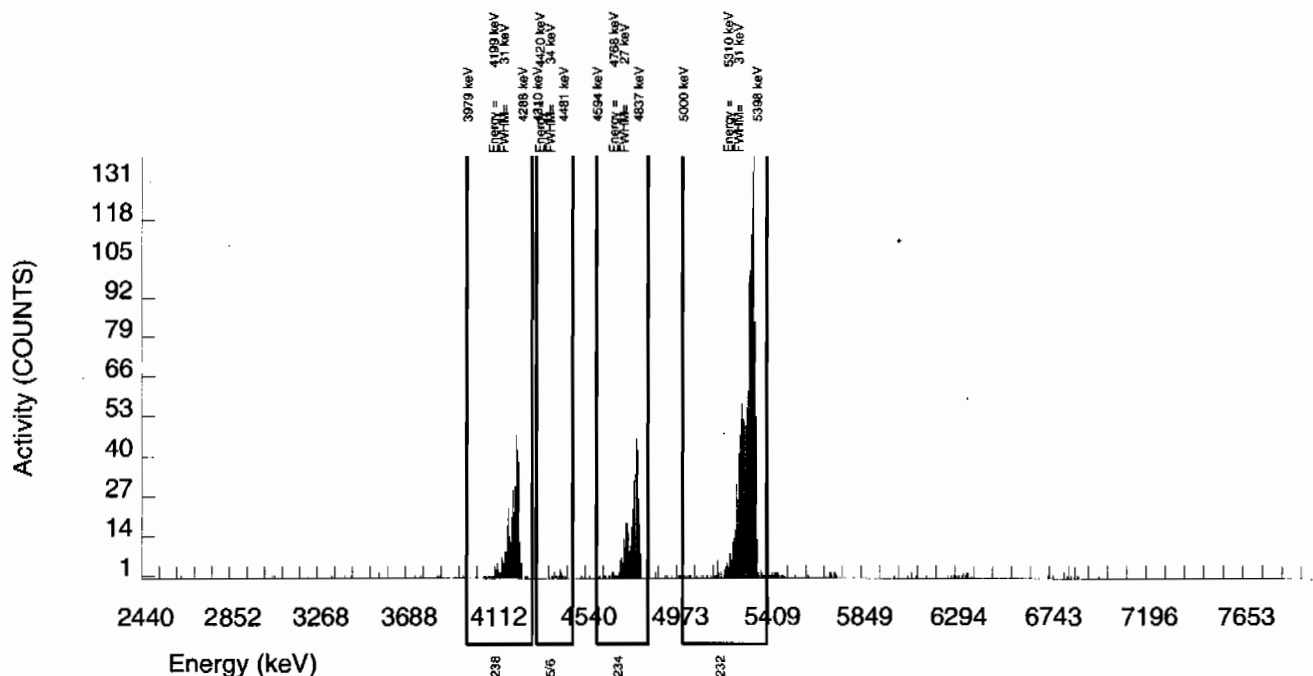
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	374.000	369.628	3.000	6.0782	100.0000	1.07E+00	9.32E-02	4.10E-02	8.99E-02	5.62E-02
U232	5302.100	1376.000	1357.000	19.000	4.3589	100.0000	3.94E+00	2.94E-01	2.94E-02	6.67E-02	1.08E-01
U-235	4391.000	13.000	11.000	2.000	2.7628	80.90000	3.94E-02	1.41E-02	2.30E-02	5.58E-02	1.39E-02
U-238	4184.730	380.000	377.000	3.000	3.2810	100.0000	1.09E+00	9.48E-02	2.21E-02	5.21E-02	5.67E-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: 940269 SAMPLE DATE : 13-JAN-2010 00:00:00		SAMPLE ID : S1202012159_UU SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :78788 AVERAGE %EFFICIENCY :31.9627 % YIELD : 100.236		COUNT DATE:19-JAN-2010 19:34:45 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50804 dpm RESULTS : 4.51866 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B008.CNF;1105 BKG DATE : 17-JAN-2010 EFF FILE : W008.CNF;341 CAL DATE : 4-JAN-2010

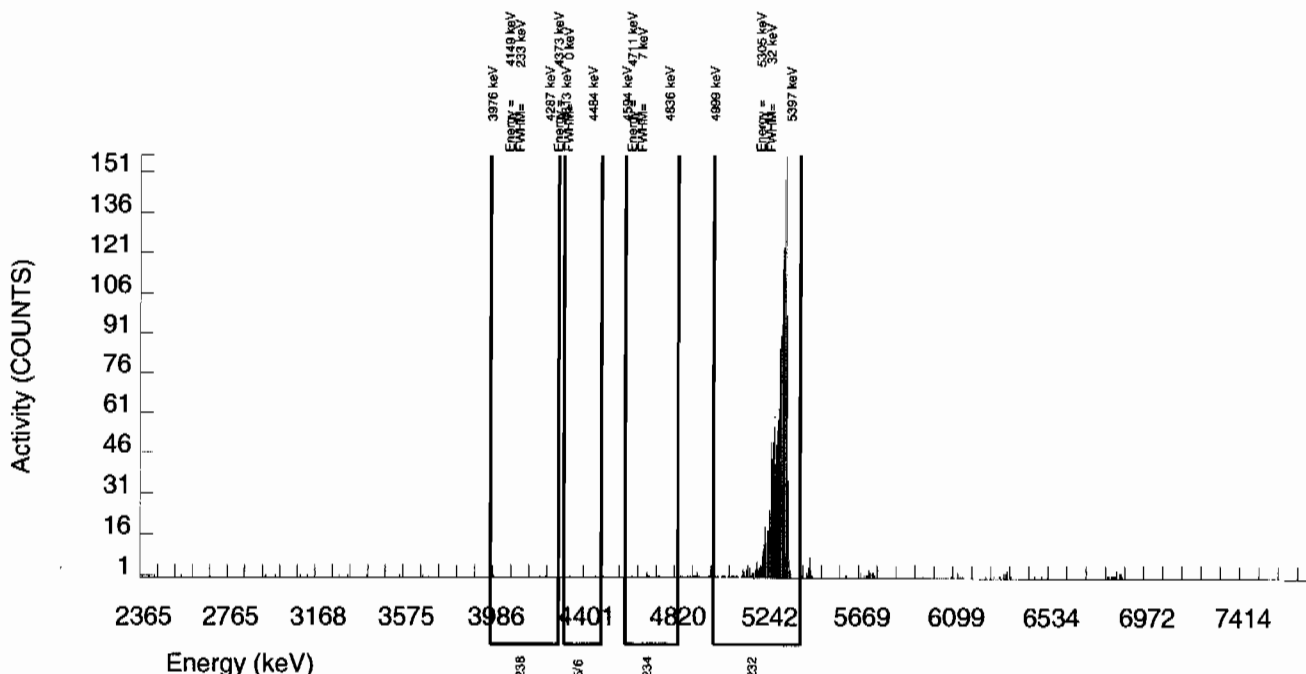
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	8.000	6.540	0.000	6.0782	100.0000	9.19E-03	3.65E-03	1.99E-02	4.36E-02	3.60E-03
U232	5302.100	1448.000	1444.000	4.000	2.0000	100.0000	2.03E+00	1.50E-01	6.54E-03	1.69E-02	5.36E-02
U-235	4391.000	3.000	2.000	1.000	2.7628	80.90000	3.48E-03	3.48E-03	1.12E-02	2.71E-02	3.48E-03
U-238	4184.730	4.000	2.000	2.000	3.2810	100.0000	2.81E-03	3.45E-03	1.07E-02	2.53E-02	3.44E-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: 940269  
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202012160\_UU  
SAMPLE QTY: 0.500 G

DETECTOR NUMBER :72528  
AVERAGE %EFFICIENCY :34.0896  
% YIELD : 89.166

COUNT DATE:19-JAN-2010 19:34:45  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :KXM4

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

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

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50902 dpm  
RESULTS : 4.02050 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B009.CNF;1096  
BKG DATE : 17-JAN-2010  
EFF FILE : W009.CNF;305  
CAL DATE : 4-JAN-2010

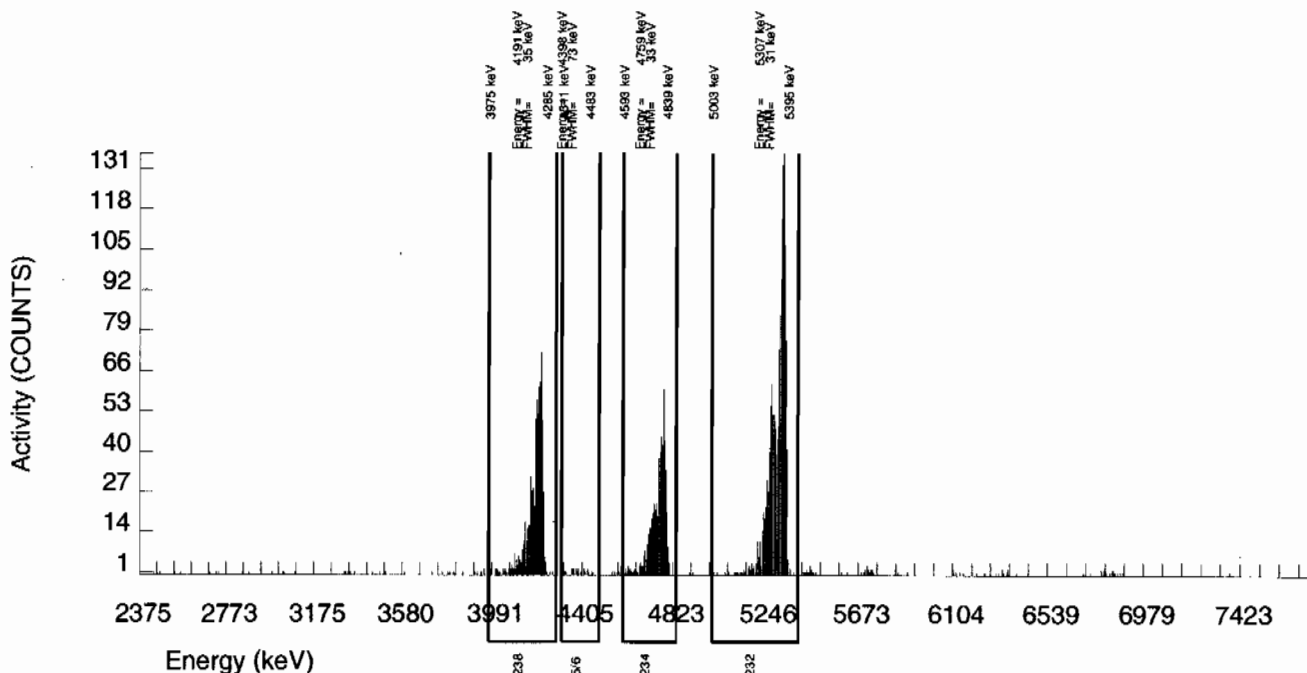
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	569.000	564.615	3.000	6.0782	100.0000	1.67E+00	1.36E-01	4.19E-02	9.19E-02	7.08E-02
U232	5302.100	1377.000	1370.000	7.000	2.6458	100.0000	4.06E+00	3.02E-01	1.82E-02	4.45E-02	1.10E-01
U-235	4391.000	25.000	24.000	1.000	2.7628	80.90000	8.79E-02	1.96E-02	2.35E-02	5.70E-02	1.87E-02
U-238	4184.730	716.000	715.000	1.000	3.2810	100.0000	2.12E+00	1.67E-01	2.26E-02	5.33E-02	7.94E-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: 940269 SAMPLE DATE : 13-JAN-2010 00:00:00			SAMPLE ID : S1202012161_UU SAMPLE QTY: 0.109 G		
DETECTOR NUMBER :72529 AVERAGE %EFFICIENCY :31.4316 % YIELD : 87.035			COUNT DATE:19-JAN-2010 19:34:45 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4		
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50804 dpm RESULTS : 3.92357 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B010.CNF;1114 BKG DATE : 17-JAN-2010 EFF FILE : W010.CNF;333 CAL DATE : 4-JAN-2010		

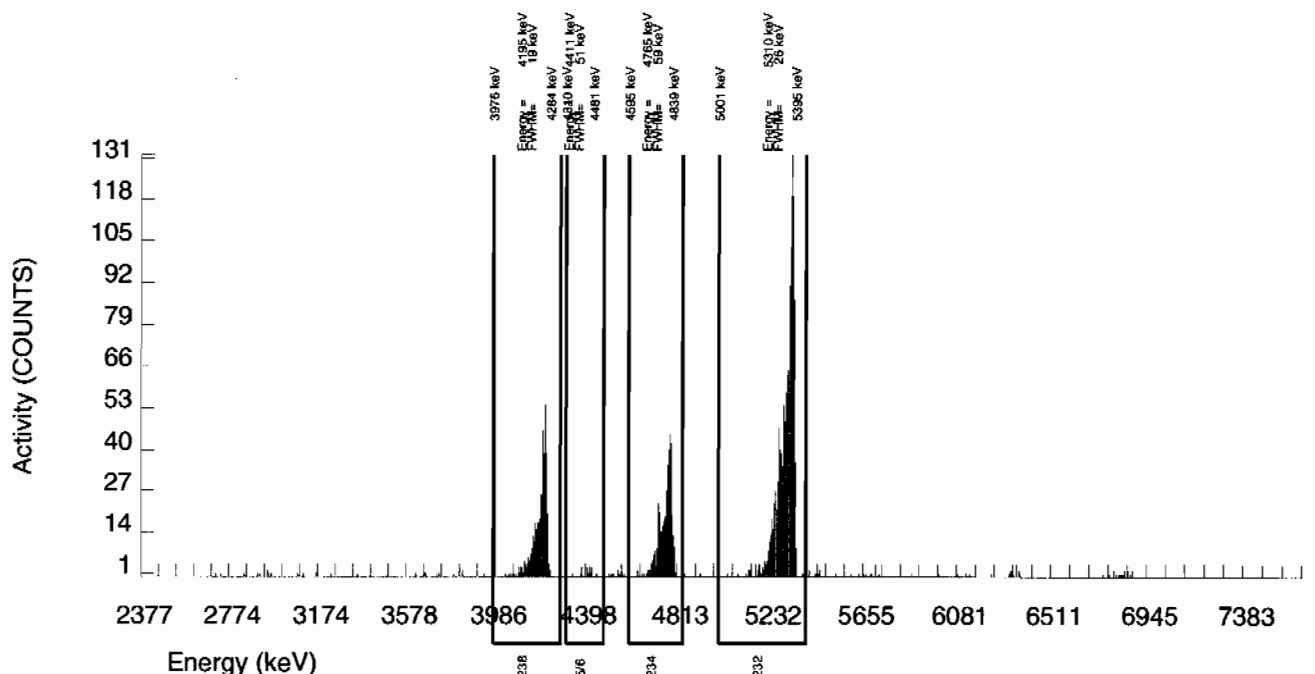
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	407.000	402.753	3.000	6.0782	100.0000	6.08E+00	5.52E-01	2.14E-01	4.68E-01	3.05E-01
U232	5302.100	1237.000	1233.000	4.000	2.0000	100.0000	1.86E+01	1.51E+00	7.03E-02	1.82E-01	5.32E-01
U-235	4391.000	19.000	18.000	1.000	2.7628	80.90000	3.36E-01	8.73E-02	1.20E-01	2.91E-01	8.35E-02
U-238	4184.730	412.000	411.000	1.000	3.2810	100.0000	6.21E+00	5.61E-01	1.15E-01	2.72E-01	3.07E-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# 940270 Product: 8-5 Date: 1/20/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.			NA
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			NA
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Allquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: K. D. At 1/20/10

Secondary Review Performed By: Life X Ray 1/24/10

LANL  
2/5



# Gamma Spec Que Sheet

1.6-1/19/10

01/11/2010

Batch #:940270

Analyst: MXRI

First Client Due Date: 02/05/2010

Internal Due Date: 01/25/2010

Gamma Spike Isotope: Mixed Gamma

Gamma LCS Isotope: Mixed Gamma

Spike Code: n/a

Expiration Date: n/a

Vol: n/a Nominal Concentration: n/a

C-60 6.460

Initials: MS

LCS Code: 1032-A

Expiration Date: 12/2/10

Vol: 1.0mL Nominal Concentration: 15.91

Prep Date: 1/12/10

Library: SOLID

Witness: n/a

Wet/Dry

Hazard

Aliquot

Sealing Date/Time

Sample ID	Client Description / Container ID	Type	Code	Client	Matrix	Collect Date	Geometry	Detector	Sealing Date/Time
244132001-1	RE12-10-7634	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF	CAN	125.22	13
244132002-1	RE12-10-7648	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		109.50	23
244132003-1	RE12-10-7638	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		127.72	18
244132004-1	RE12-10-7639	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		127.67	11
244132005-1	RE12-10-7633	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		123.70	15
244132006-1	RE12-10-7647	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		129.36	22
244132007-1	RE12-10-7644	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		125.27	25
244132008-1	RE12-10-7637	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		134.79	5
244132009-1	RE12-10-7635	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		119.81	1
244132010-1	RE12-10-7642	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		123.83	4
244132011-1	RE12-10-7649	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		116.14	16
244132012-1	RE12-10-7650	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		115.20	12
244132013-1	RE12-10-7641	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		122.66	13
244132014-1	RE12-10-7643	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		127.10	14
244132015-1	RE12-10-7640	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		121.52	17
244132016-1	RE12-10-7645	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		129.13	18
244132017-1	RE12-10-7646	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		117.63	23
244132018-1	RE12-10-7636	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		134.79	15
244132019-1	RE12-10-7657	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		114.68	15
244132020-1	RE12-10-7658	SAMPLE	LANL010	SOIL	05-JAN-10 12:00:00	RF		129.58	5
1202012162-1	MB	MB	QC ACCOUNT	SOIL	1/12/10	u		134.79	16
1202012163-1	DUP RE12-10-7634(244132001)	DUP	QC ACCOUNT	SOIL	05-JAN-10 12:00:00	u		125.22	20
1202012164-1	LCS	LCS	QC ACCOUNT	SOIL	1/12/10	u		155.44	15

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: K. B. 1/20/10

✓ no history

✓ detrites

Page 1 of 1

# Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
940270	244132001	SAMPLE	19-JAN-10		Cerium-139	0.00152	0.05386	0.050
					Europium-152	-0.06268	0.202	0.200
					Sodium-22	-0.05382	0.08104	0.080
940270	244132002	SAMPLE	19-JAN-10		Americium-241	0.05456	0.3665	0.200
					Cerium-139	-0.04567	0.05432	0.050
					Cesium-134	0.07665	0.1092	0.100
					Sodium-22	-0.01589	0.08386	0.080
					Thorium-234	2.742	2.909	2.00
940270	244132003	SAMPLE	19-JAN-10		Americium-241	0.1624	0.2996	0.200
940270	244132004	SAMPLE	19-JAN-10					
940270	244132005	SAMPLE	19-JAN-10		Americium-241	0.1033	0.5438	0.200
					Cerium-139	-0.01005	0.06134	0.050
					Europium-152	-0.1251	0.2047	0.200
					Sodium-22	-0.01395	0.08618	0.080
					Thorium-234	2.188	4.031	2.00
940270	244132006	SAMPLE	19-JAN-10		Americium-241	0.1015	0.2195	0.200
940270	244132007	SAMPLE	19-JAN-10					
940270	244132008	SAMPLE	19-JAN-10		Cerium-139	-0.00011	0.05307	0.050
940270	244132009	SAMPLE	19-JAN-10		Americium-241	0.0063	0.313	0.200
					Cerium-139	0.01168	0.05762	0.050
					Sodium-22	0.02908	0.08534	0.080
					Thorium-234	1.691	2.548	2.00
940270	244132010	SAMPLE	19-JAN-10		Americium-241	-0.07371	0.3748	0.200
940270	244132011	SAMPLE	19-JAN-10		Americium-241	0.02624	0.2265	0.200
940270	244132012	SAMPLE	19-JAN-10		Americium-241	0.0544	0.2795	0.200
					Cerium-139	-0.02646	0.05086	0.050
					Thorium-234	0.3402	2.349	2.00
940270	244132013	SAMPLE	19-JAN-10		Cerium-139	-0.01671	0.0577	0.050
					Sodium-22	0.03455	0.1026	0.080
940270	244132014	SAMPLE	19-JAN-10		Americium-241	0.05638	0.2283	0.200
					Cerium-139	-0.00268	0.05084	0.050
940270	244132015	SAMPLE	19-JAN-10		Cesium-134	0.02669	0.1044	0.100
					Sodium-22	-0.02041	0.08314	0.080
940270	244132016	SAMPLE	19-JAN-10		Americium-241	0.00637	0.2752	0.200
					Thorium-234	0.3656	2.217	2.00
940270	244132017	SAMPLE	19-JAN-10		Americium-241	-0.08124	0.3706	0.200
					Cerium-139	0.02769	0.05886	0.050
					Cesium-134	0.0605	0.1069	0.100
					Sodium-22	0.01032	0.09376	0.080
					Thorium-234	0.08284	3.054	2.00
940270	244132018	SAMPLE	19-JAN-10		Americium-241	0.1867	0.5349	0.200
					Cerium-139	0.01669	0.06032	0.050
					Thorium-234	-0.02928	3.941	2.00

# Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
940270	244132019	SAMPLE	19-JAN-10		Americium-241	-0.1524	0.5541	0.200
					Cerium-139	-0.02161	0.06495	0.050
					Cesium-134	0.08338	0.1064	0.100
					Europium-152	-0.1463	0.2052	0.200
					Sodium-22	-0.00192	0.08735	0.080
					Thorium-234	-0.4245	4.256	2.00
940270	244132020	SAMPLE	19-JAN-10		Cerium-139	0.00172	0.0549	0.050
940270	1202012162	MB	19-JAN-10					
940270	1202012163	DUP	19-JAN-10					
940270	1202012164	LCS	19-JAN-10		Cerium-139	0.00218	0.09414	0.050
					Cesium-134	-0.02219	0.1698	0.100
					Europium-152	-0.09905	0.3469	0.200
					Mercury-203	0.01327	0.1331	0.100
					Potassium-40	0.4605	1.159	1.00
					Ruthenium-106	-0.2046	1.097	0.800
					Sodium-22	-0.01231	0.09707	0.080
					Thorium-234	-2.196	6.045	2.00
					Tin-113	-0.0886	0.1642	0.100
					Uranium-235	0.08893	0.681	0.500

## Gamma Review Report based on Result &gt; MDA for Batch:940270

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132001	05-JAN-10 12:00	19-JAN-10 09:11	13.9	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 ✓	1.817	0.2063	pCi/g	0.2782	N	911.1 3	1.916	IDENTIFIED 10.1	<input type="checkbox"/>	
Americium-243 INT	0.406	0.03543	pCi/g	0.06927	N	74.71 1	1.217	IDENTIFIED 7.584	<input type="checkbox"/>	
Annihilation Rad. —	0.2262	0.04063	pCi/g	0.06022	N	510.6 1	2.078	IDENTIFIED 17.62	<input type="checkbox"/>	
Antimony-124 HE	0.1912	0.05336	pCi/g	0.1857	N	0 10 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-211 INT	4.479	0.3002	pCi/g	0.4271	Y	351.8 4	1.362	IDENTIFIED 5.628	<input checked="" type="checkbox"/>	u#
Bismuth-212 —	1.678	0.3297	pCi/g	0.8991	N	0 10 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 ✓	1.391	0.1248	pCi/g	0.1595	0.200	609.3 4	1.656	IDENTIFIED 7.66	<input type="checkbox"/>	
Cerium-143 —	383.8	66.58	pCi/g	0	N	0 10 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 LA	0.158	0.05247	pCi/g	0.1211	0.100	0 10 0		FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-135 HE	0.4486	0.0969	pCi/g	0.326	N	0 10 0		NOT_IDENTI 0	<input type="checkbox"/>	
Gross Gamma —	8.943	1.488	pCi/g	4.172	N	0			<input type="checkbox"/>	
Iodine-123 —	1.55E+06	7.09E+05	pCi/g	0	N	0 10 0		SHORT_HLIF 0	<input type="checkbox"/>	
Lead-212 ✓	1.748	0.1035	pCi/g	0.107	0.100	238.5 4	1.271	IDENTIFIED 3.799	<input type="checkbox"/>	
Lead-214 ✓	1.558	0.112	pCi/g	0.1464	0.100	351.8 4	1.362	IDENTIFIED 5.628	<input type="checkbox"/>	
Lutetium-177 HE	3.034	0.6708	pCi/g	2.006	N	0 10 0		FAIL_ABUND 0	<input type="checkbox"/>	
Neptunium-237 INT	1.663	0.2781	pCi/g	0.3803	N	85.57 1	1.132	IDENTIFIED 12.53	<input type="checkbox"/>	
Polonium-212 NR	1.748	0.1035	pCi/g	0.107	N	238.5 4	1.271	IDENTIFIED 3.799	<input type="checkbox"/>	
Polonium-214 NR	1.558	0.112	pCi/g	0.1464	N	351.8 4	1.362	IDENTIFIED 5.628	<input type="checkbox"/>	
Polonium-216 NR	1.748	0.1035	pCi/g	0.107	N	238.5 4	1.271	IDENTIFIED 3.799	<input type="checkbox"/>	
Polonium-218 NR	1.558	0.112	pCi/g	0.1464	N	351.8 4	1.362	IDENTIFIED 5.628	<input type="checkbox"/>	
Potassium-40 ✓	19.81	0.9909	pCi/g	0.5488	1.00	1461 1	2.415	IDENTIFIED 3.96	<input type="checkbox"/>	
Radium-224 INT	4.767	0.8276	pCi/g	1.218	Y	241.5 1	1.831	IDENTIFIED 16.91	<input checked="" type="checkbox"/>	u#
Radium-226 ✓	1.391	0.1248	pCi/g	0.1595	Y	609.3 4	1.656	IDENTIFIED 7.66	<input type="checkbox"/>	
Radium-228 ✓	1.817	0.2063	pCi/g	0.2782	0.500	911.1 3	1.916	IDENTIFIED 10.1	<input type="checkbox"/>	
Thallium-200 HE	77.38	122.7	pCi/g	0	N	0 10 0		SHORT_HLIF 0	<input type="checkbox"/>	
Thallium-208 ✓	0.5386	0.05911	pCi/g	0.07866	0.080	583 1	1.493	IDENTIFIED 10.16	<input type="checkbox"/>	
Thorium-228 NR	1.773	0.105	pCi/g	0.1085	N	238.5 4	1.271	IDENTIFIED 3.799	<input type="checkbox"/>	
Thorium-230 NR	1.391	0.1248	pCi/g	0.1595	N	609.3 4	1.656	IDENTIFIED 7.66	<input type="checkbox"/>	
Thorium-232 NR	1.817	0.2063	pCi/g	0.2782	N	911.1 3	1.916	IDENTIFIED 10.1	<input type="checkbox"/>	
Thorium-234 ✓	1.709	0.649	pCi/g	1.148	2.00	63.18 2	1.205	IDENTIFIED 36.86	<input type="checkbox"/>	
Titanium-44 —	0.4042	0.02843	pCi/g	0.06052	N	0 10 0		FAIL_ABUND 0	<input type="checkbox"/>	
Total Uranium —	5.0718	1.93E-06	ug/g	1.7107	N	0			<input type="checkbox"/>	
Uranium-234 NR	1.391	0.1248	pCi/g	0.1595	N	609.3 4	1.656	IDENTIFIED 7.66	<input type="checkbox"/>	
Uranium-238 HE	1.709	0.649	pCi/g	1.148	N	63.18 2	1.205	IDENTIFIED 36.86	<input type="checkbox"/>	
Zirconium-97 —	1.56E+06	3.87E+05	pCi/g	0	N	0 10 0		SHORT_HLIF 0	<input type="checkbox"/>	
*** = Number of isotopes identified with a keyline at this energy.										
Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132002	05-JAN-10 12:00	19-JAN-10 09:12	13.9	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 ✓	1.595	0.2139	pCi/g	0.2571	N	910 3	1.594	IDENTIFIED 12.11	<input type="checkbox"/>	
Americium-243 INT	0.3395	0.05069	pCi/g	0.1116	N	74.63 1	1.385	IDENTIFIED 14.25	<input type="checkbox"/>	
Annihilation Rad. —	0.1646	0.03766	pCi/g	0.05	N	510 1	1.891	IDENTIFIED 22.7	<input type="checkbox"/>	
Bismuth-211 INT	3.04	0.2712	pCi/g	0.3713	Y	351.5 4	1.298	IDENTIFIED 8.306	<input checked="" type="checkbox"/>	u#
Bismuth-212 HE	0.8204	0.3111	pCi/g	0.7734	N	0 8 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 ✓	1.032	0.09681	pCi/g	0.1334	0.200	608.5 4	1.904	IDENTIFIED 8.589	<input type="checkbox"/>	
Cadmium-109 INT	3.285	0.6078	pCi/g	1.688	Y	86.95 3	1.093	IDENTIFIED 17.86	<input checked="" type="checkbox"/>	u#
Cerium-143 —	487.5	76.34	pCi/g	0	N	0 8 0		SHORT_HLIF 0	<input type="checkbox"/>	
Gross Gamma —	8.587	1.41	pCi/g	2.777	N	0			<input type="checkbox"/>	
Iodine-123 HE	6.94E+05	7.06E+05	pCi/g	0	N	0 8 0		SHORT_HLIF 0	<input type="checkbox"/>	
Iodine-135 HE	1.58E+14	1.62E+14	pCi/g	0	N	0 8 0		SHORT_HLIF 0	<input type="checkbox"/>	
Lead-212 ✓	1.552	0.08325	pCi/g	0.1055	0.100	238.3 4	1.143	IDENTIFIED 3.982	<input type="checkbox"/>	



Thorium-232	NR	1.579	0.1517	pCi/g	0.1521	N	910.9	3	1.662	IDENTIFIED	6.959	<input type="checkbox"/>
Thorium-234	✓	6.764	1.583	pCi/g	2.274	2.00	64.35	2	1.422	IDENTIFIED	21.68	<input type="checkbox"/>
Tin-126	INT	0.3557	0.05028	pCi/g	0.1221	N	87.3	3	1.185	IDENTIFIED	13.37	<input type="checkbox"/>
Titanium-44	—	0.3091	0.0269	pCi/g	0.07848	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>
Total Uranium	—	20.274	4.71E-06	ug/g	3.3848	N	0					<input type="checkbox"/>
Tungsten-181	—	2.018	0.4445	pCi/g	0.7057	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>
Uranium-234	NR	1.116	0.082	pCi/g	0.09341	N	609.1	4	1.491	IDENTIFIED	5.834	<input type="checkbox"/>
Uranium-235	NR	0.3229	0.1104	pCi/g	0.3136	0.500	143.7	1	1.445	IDENTIFIED	33.22	<input checked="" type="checkbox"/> <i>UI</i>
Uranium-238	NR	6.764	1.583	pCi/g	2.274	N	64.35	2	1.422	IDENTIFIED	21.68	<input type="checkbox"/>
Zirconium-97	—	1.33E+06	2.48E+05	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
244132004	05-JAN-10 12:00	19-JAN-10 09:53	13.9	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.741	0.168	pCi/g	0.1883	N	911.4	3	1.627	IDENTIFIED 7.49 <input type="checkbox"/>
Americium-243	INT	0.4117	0.03371	pCi/g	0.07207	N	74.77	1	0.8568	IDENTIFIED 7.114 <input type="checkbox"/>
Annihilation Rad. HE		0.08232	0.03151	pCi/g	0.04469	N	510.7	1	1.905	IDENTIFIED 37.9 <input type="checkbox"/>
Barium-137m	HE	0.1068	0.02574	pCi/g	0.05701	N	661.4	2	1.314	IDENTIFIED 23.64 <input type="checkbox"/>
Bismuth-211	INT	4.176	0.3561	pCi/g	0.2881	Y	352	4	1.112	IDENTIFIED 5.427 <input checked="" type="checkbox"/> <i>UI</i>
Bismuth-212	HE	1.034	0.245	pCi/g	0.6581	N	0	11	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.173	0.1007	pCi/g	0.1056	0.200	609.4	4	1.248	IDENTIFIED 6.467 <input type="checkbox"/>
Cadmium-109	INT	4.424	0.4829	pCi/g	0.8931	Y	87.17	3	1.247	IDENTIFIED 9.853 <input checked="" type="checkbox"/> <i>UI</i>
Cerium-143	—	171.3	44.86	pCi/g	0	N	0	11	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-134	LA	0.111	0.03914	pCi/g	0.09045	0.100	0	11	0	FAIL_ABUND 0 <input checked="" type="checkbox"/> <i>UI</i> Data rejected due to low abundance.
Cesium-137	✓	0.1129	0.02721	pCi/g	0.06026	0.100	661.4	2	1.314	IDENTIFIED 23.64 <input type="checkbox"/>
Gross Gamma	—	8.75	1.305	pCi/g	2.945	N	0			<input type="checkbox"/>
Iodine-123	HE	1.28E+05	5.07E+05	pCi/g	0	N	0	11	0	SHORT_HLIF 0 <input type="checkbox"/>
Iodine-135	HE	1.03E+14	1.17E+14	pCi/g	0	N	0	11	0	SHORT_HLIF 0 <input type="checkbox"/>
Lead-212	✓	1.741	0.1338	pCi/g	0.07782	0.100	238.6	4	0.9638	IDENTIFIED 3.157 <input type="checkbox"/>
Lead-214	✓	1.453	0.1295	pCi/g	0.1004	0.100	352	4	1.112	IDENTIFIED 5.427 <input type="checkbox"/>
Lutetium-177	—	2.908	0.6105	pCi/g	1.642	N	0	11	0	FAIL_ABUND 0 <input type="checkbox"/>
Neptunium-237	INT	1.279	0.1921	pCi/g	0.2612	N	87.17	3	1.247	IDENTIFIED 9.853 <input type="checkbox"/>
Niobium-97	HE	22430	13340	pCi/g	0	N	0	11	0	SHORT_HLIF 0 <input type="checkbox"/>
Polonium-212	NR	1.741	0.1338	pCi/g	0.07782	N	238.6	4	0.9638	IDENTIFIED 3.157 <input type="checkbox"/>
Polonium-214	NR	1.453	0.1295	pCi/g	0.1004	N	352	4	1.112	IDENTIFIED 5.427 <input type="checkbox"/>
Polonium-216	NR	1.741	0.1338	pCi/g	0.07782	N	238.6	4	0.9638	IDENTIFIED 3.157 <input type="checkbox"/>
Polonium-218	NR	1.453	0.1295	pCi/g	0.1004	N	352	4	1.112	IDENTIFIED 5.427 <input type="checkbox"/>
Potassium-40	✓	19.4	1.112	pCi/g	0.4647	1.00	1461	1	1.657	IDENTIFIED 3.768 <input type="checkbox"/>
Radium-224	INT	4.369	0.5893	pCi/g	0.8858	Y	241.6	1	1.472	IDENTIFIED 11.7 <input checked="" type="checkbox"/> <i>UI</i>
Radium-226	✓	1.173	0.1007	pCi/g	0.1056	Y	609.4	4	1.248	IDENTIFIED 6.467 <input type="checkbox"/>
Radium-228	✓	1.741	0.168	pCi/g	0.1883	0.500	911.4	3	1.627	IDENTIFIED 7.49 <input type="checkbox"/>
Sodium-24	HE	35050	76320	pCi/g	0	N	0	11	0	SHORT_HLIF 0 <input type="checkbox"/>
Technetium-99m	HE	3.73E+14	6.14E+14	pCi/g	0	N	0	11	0	SHORT_HLIF 0 <input type="checkbox"/>
Thallium-208	✓	0.5603	0.05245	pCi/g	0.05066	0.080	583.2	1	1.408	IDENTIFIED 7.646 <input type="checkbox"/>
Thorium-228	NR	1.766	0.1356	pCi/g	0.07891	N	238.6	4	0.9638	IDENTIFIED 3.157 <input type="checkbox"/>
Thorium-230	NR	1.173	0.1007	pCi/g	0.1056	N	609.4	4	1.248	IDENTIFIED 6.467 <input type="checkbox"/>
Thorium-232	NR	1.741	0.168	pCi/g	0.1883	N	911.4	3	1.627	IDENTIFIED 7.49 <input type="checkbox"/>
Tin-126	NR	0.4356	0.04754	pCi/g	0.08823	N	87.17	3	1.247	IDENTIFIED 9.853 <input type="checkbox"/>
Titanium-44	—	0.3424	0.02453	pCi/g	0.05837	N	0	11	0	FAIL_ABUND 0 <input type="checkbox"/>
Total Uranium	—	4.3954	2.22E-06	ug/g	2.1754	N	0			<input type="checkbox"/>
Uranium-234	NR	1.173	0.1007	pCi/g	0.1056	N	609.4	4	1.248	IDENTIFIED 6.467 <input type="checkbox"/>
Zirconium-97	HE	1.81E+05	2.58E+05	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
244132005	05-JAN-10 12:00	19-JAN-10 09:53	13.9	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.761	0.1763	pCi/g 0.252	N	910.6 3	1.755	IDENTIFIED 8.327	<input type="checkbox"/>	
Americium-243	INT	0.4742	0.07414	pCi/g 0.1302	N	74.36 1	1.786	IDENTIFIED 14.61	<input type="checkbox"/>	
Annihilation Rad.	✓	0.1301	0.03398	pCi/g 0.05647	N	510.3 1	2.065	IDENTIFIED 25.97	<input type="checkbox"/>	
Barium-137m	✓	0.2238	0.04447	pCi/g 0.06307	N	661 2	1.489	IDENTIFIED 19.71	<input type="checkbox"/>	
Bismuth-211	INT	3.869	0.3485	pCi/g 0.4225	Y	351.2 4	1.503	IDENTIFIED 8.328	<input checked="" type="checkbox"/> UI	
Bismuth-212	HE	1.064	0.2755	pCi/g 0.7289	N	0 9 0	FAIL_ABUND 0	<input type="checkbox"/>		
Bismuth-214	✓	1.141	0.1095	pCi/g 0.1359	0.200	608.6 4	1.549	IDENTIFIED 8.856	<input type="checkbox"/>	
Cadmium-109	INT	4.162	0.6833	pCi/g 1.553	Y	86.72 3	1.368	IDENTIFIED 15.38	<input checked="" type="checkbox"/> UI	
Cerium-143	✓	755.7	107.7	pCi/g 0	N	0 9 0	SHORT_HLIF 0	<input type="checkbox"/>		
Cesium-134	LA	0.149	0.03174	pCi/g 0.095	0.100	0 9 0	FAIL_ABUND 0	<input checked="" type="checkbox"/> UI		Data rejected due to low abundance.
Cesium-137	✓	0.2366	0.04702	pCi/g 0.06667	0.100	661 2	1.489	IDENTIFIED 19.71	<input type="checkbox"/>	
Gross Gamma	✓	8.875	1.592	pCi/g 4.135	N	0			<input type="checkbox"/>	
Iodine-123	HE	3.00E+05	8.11E+05	pCi/g 0	N	0 9 0	SHORT_HLIF 0	<input type="checkbox"/>		
Lead-212	✓	1.718	0.09829	pCi/g 0.1108	0.100	238 4	1.35	IDENTIFIED 3.951	<input type="checkbox"/>	
Lead-214	✓	1.346	0.1262	pCi/g 0.1472	0.100	351.2 4	1.503	IDENTIFIED 8.328	<input type="checkbox"/>	
Neptunium-237	INT	1.203	0.2333	pCi/g 0.4614	N	86.72 3	1.368	IDENTIFIED 15.38	<input type="checkbox"/>	
Niobium-95m	✓	1.808	0.1375	pCi/g 0.4471	N	0 9 0	NOT_IDENTI 0	<input type="checkbox"/>		
Niobium-97	✓	69800	20920	pCi/g 0	N	0 9 0	SHORT_HLIF 0	<input type="checkbox"/>		
Polonium-212	NR	1.718	0.09829	pCi/g 0.1108	N	238 4	1.35	IDENTIFIED 3.951	<input type="checkbox"/>	
Polonium-214	NR	1.346	0.1262	pCi/g 0.1472	N	351.2 4	1.503	IDENTIFIED 8.328	<input type="checkbox"/>	
Polonium-216	NR	1.718	0.09829	pCi/g 0.1108	N	238 4	1.35	IDENTIFIED 3.951	<input type="checkbox"/>	
Polonium-218	NR	1.346	0.1262	pCi/g 0.1472	N	351.2 4	1.503	IDENTIFIED 8.328	<input type="checkbox"/>	
Potassium-40	✓	19.61	1.121	pCi/g 0.6159	1.00	1460 1	1.812	IDENTIFIED 4.248	<input type="checkbox"/>	
Radium-224	INT	4.702	0.7619	pCi/g 1.261	Y	241 1	1.835	IDENTIFIED 15.83	<input checked="" type="checkbox"/> UI	
Radium-226	✓	1.141	0.1095	pCi/g 0.1359	Y	608.6 4	1.549	IDENTIFIED 8.856	<input type="checkbox"/>	
Radium-228	✓	1.761	0.1763	pCi/g 0.252	0.500	910.6 3	1.755	IDENTIFIED 8.327	<input type="checkbox"/>	
Thallium-200	HE	38.16	129.8	pCi/g 0	N	0 9 0	SHORT_HLIF 0	<input type="checkbox"/>		
Thallium-208	✓	0.5347	0.04646	pCi/g 0.05821	0.080	582.4 1	1.634	IDENTIFIED 8.084	<input type="checkbox"/>	
Thorium-228	NR	1.742	0.09967	pCi/g 0.1124	N	238 4	1.35	IDENTIFIED 3.951	<input type="checkbox"/>	
Thorium-230	NR	1.141	0.1095	pCi/g 0.1359	N	608.6 4	1.549	IDENTIFIED 8.856	<input type="checkbox"/>	
Thorium-232	NR	1.761	0.1763	pCi/g 0.252	N	910.6 3	1.755	IDENTIFIED 8.327	<input type="checkbox"/>	
Tin-126	NR	0.4098	0.06728	pCi/g 0.1542	N	86.72 3	1.368	IDENTIFIED 15.38	<input type="checkbox"/>	
Titanium-44	✓	0.2562	0.03853	pCi/g 0.1006	N	0 9 0	NOT_IDENTI 0	<input type="checkbox"/>		
Total Uranium	✓	6.5968	5.01E-06	ug/g 6.001	N	0			<input type="checkbox"/>	
Uranium-234	NR	1.141	0.1095	pCi/g 0.1359	N	608.6 4	1.549	IDENTIFIED 8.856	<input type="checkbox"/>	
Zirconium-97	✓	2.91E+06	4.23E+05	pCi/g 0	N	0 9 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
244132006	05-JAN-10 12:00	19-JAN-10 09:54	13.9	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.71	0.1833	pCi/g 0.1764	N	911.4 3	1.955	IDENTIFIED 8.429	<input type="checkbox"/>	
Americium-243	INT	0.4083	0.03747	pCi/g 0.07951	N	74.82 1	1.224	IDENTIFIED 8.218	<input type="checkbox"/>	
Annihilation Rad.	✓	0.1481	0.03315	pCi/g 0.03859	N	510.9 1	2.086	IDENTIFIED 21.81	<input type="checkbox"/>	
Barium-137m	HE	0.0801	0.02726	pCi/g 0.04975	N	661.3 2	1.183	IDENTIFIED 33.63	<input type="checkbox"/>	
Bismuth-211	INT	4.531	0.3271	pCi/g 0.3069	Y	352 4	1.498	IDENTIFIED 4.28	<input checked="" type="checkbox"/> UI	
Bismuth-212	✓	1.187	0.214	pCi/g 0.5758	N	0 12 0	FAIL_ABUND 0	<input type="checkbox"/>		
Bismuth-214	✓	1.147	0.09398	pCi/g 0.09902	0.200	609.4 4	1.673	IDENTIFIED 5.778	<input type="checkbox"/>	
Cadmium-109	INT	2.15	0.4848	pCi/g 1.19	Y	86.92 3	1.106	IDENTIFIED 22.06	<input checked="" type="checkbox"/> UI	
Cerium-143	✓	457.3	71.01	pCi/g 0	N	0 12 0	SHORT_HLIF 0	<input type="checkbox"/>		
Cesium-134	LA	0.0753	0.0206	pCi/g 0.07335	0.100	0 12 0	NOT_IDENTI 0	<input checked="" type="checkbox"/> UI		Data rejected due to low abundance.
Cesium-137	✓	0.08467	0.02882	pCi/g 0.05259	0.100	661.3 2	1.183	IDENTIFIED 33.63	<input type="checkbox"/>	
Gross Gamma	✓	8.872	1.117	pCi/g 2.2	N	0			<input type="checkbox"/>	
Iodine-123	HE	9.20E+05	6.02E+05	pCi/g 0	N	0 12 0	SHORT_HLIF 0	<input type="checkbox"/>		
Krypton-85	✓	31.2	4.077	pCi/g 13.52	N	0 12 0	NOT_IDENTI 0	<input type="checkbox"/>		
Lead-212	✓	1.722	0.1243	pCi/g 0.08281	0.100	238.7 4	1.234	IDENTIFIED 2.897	<input type="checkbox"/>	
Lead-214	✓	1.576	0.121	pCi/g 0.1051	0.100	352 4	1.498	IDENTIFIED 4.28	<input type="checkbox"/>	
Lutetium-177	HE	3.054	0.7408	pCi/g 1.701	N	0 12 0	FAIL_ABUND 0	<input type="checkbox"/>		

Neptunium-237	HE	0.6216	0.1541	pCi/g	0.3675	N	86.92	3	1.106	IDENTIFIED	22.06	<input type="checkbox"/>
Niobium-95	HE	0.07984	0.02042	pCi/g	0.07225	N	0	12	0	NOT_IDENTI	0	<input type="checkbox"/>
Niobium-95m	HE	0.2323	0.06384	pCi/g	0.1988	N	0	12	0	NOT_IDENTI	0	<input type="checkbox"/>
Niobium-97	HE	16990	14940	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>
Polonium-212	NR	1.722	0.1243	pCi/g	0.08281	N	238.7	4	1.234	IDENTIFIED	2.897	<input type="checkbox"/>
Polonium-214	NR	1.576	0.121	pCi/g	0.1051	N	352	4	1.498	IDENTIFIED	4.28	<input type="checkbox"/>
Polonium-216	NR	1.722	0.1243	pCi/g	0.08281	N	238.7	4	1.234	IDENTIFIED	2.897	<input type="checkbox"/>
Polonium-218	NR	1.576	0.121	pCi/g	0.1051	N	352	4	1.498	IDENTIFIED	4.28	<input type="checkbox"/>
Potassium-40	✓	21.92	1.201	pCi/g	0.4609	1.00	1461	1	2.594	IDENTIFIED	3.009	<input type="checkbox"/>
Radium-224	INT	5.528	0.7338	pCi/g	0.9412	Y	241.7	1	1.919	IDENTIFIED	11.7	<input checked="" type="checkbox"/> UI
Radium-226	✓	1.147	0.09398	pCi/g	0.09902	Y	609.4	4	1.673	IDENTIFIED	5.778	<input type="checkbox"/>
Radium-228	✓	1.71	0.1833	pCi/g	0.1764	0.500	911.4	3	1.955	IDENTIFIED	8.429	<input type="checkbox"/>
Strontium-85	LA	0.158	0.02064	pCi/g	0.06844	Y	0	12	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.5223	0.04613	pCi/g	0.05048	0.080	583.2	1	1.604	IDENTIFIED	6.972	<input type="checkbox"/>
Thorium-228	NR	1.747	0.126	pCi/g	0.08396	N	238.7	4	1.234	IDENTIFIED	2.897	<input type="checkbox"/>
Thorium-230	NR	1.147	0.09398	pCi/g	0.09902	N	609.4	4	1.673	IDENTIFIED	5.778	<input type="checkbox"/>
Thorium-232	NR	1.71	0.1833	pCi/g	0.1764	N	911.4	3	1.955	IDENTIFIED	8.429	<input type="checkbox"/>
Tin-126	HE	0.2117	0.04773	pCi/g	0.1284	N	86.92	3	1.106	IDENTIFIED	22.06	<input type="checkbox"/>
Titanium-44	—	0.3692	0.02609	pCi/g	0.0721	N	0	12	0	FAIL_ABUND	0	<input type="checkbox"/>
Total Uranium	—	4.8585	2.39E-06	ug/g	2.7397	N	0					<input type="checkbox"/>
Uranium-234	NR	1.147	0.09398	pCi/g	0.09902	N	609.4	4	1.673	IDENTIFIED	5.778	<input type="checkbox"/>
Zirconium-97	—	1.76E+06	2.99E+05	pCi/g	0	N	0	12	0	SHORT_HLIF	0	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132007	05-JAN-10 12:00	19-JAN-10 09:54	13.9	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	2.103	0.2073	pCi/g	0.2029	N	910.6	3	1.638	IDENTIFIED 7.864 <input type="checkbox"/>
Americium-243	INT	0.4013	0.02848	pCi/g	0.04543	N	74.81	1	0.8915	IDENTIFIED 4.956 <input type="checkbox"/>
Annihilation Rad.	—	0.1488	0.0342	pCi/g	0.04726	N	510.6	1	1.676	IDENTIFIED 22.4 <input type="checkbox"/>
Bismuth-210	HE	0.9233	0.3734	pCi/g	0.6029	N	46.59	3	0.922	IDENTIFIED 40.11 <input type="checkbox"/>
Bismuth-211	INT	4.579	0.3213	pCi/g	0.3156	Y	351.8	4	1.116	IDENTIFIED 4.645 <input checked="" type="checkbox"/> UI
Bismuth-212	HE	1.293	0.3032	pCi/g	0.7596	N	0	6	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.399	0.1158	pCi/g	0.1145	0.200	609	4	1.639	IDENTIFIED 5.673 <input type="checkbox"/>
Cadmium-109	INT	4.435	0.417	pCi/g	0.7005	Y	87.19	3	1.158	IDENTIFIED 7.732 <input checked="" type="checkbox"/> UI
Cerium-143	—	333.1	56.49	pCi/g	0	N	0	6	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-134	LA	0.1105	0.03615	pCi/g	0.09747	0.100	0	6	0	FAIL_ABUND 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Gross Gamma	—	9.589	1.263	pCi/g	3.477	N	0			<input type="checkbox"/>
Lead-210	HE	0.9233	0.3734	pCi/g	0.6029	N	46.59	3	0.922	IDENTIFIED 40.11 <input type="checkbox"/>
Lead-212	✓	2.047	0.1298	pCi/g	0.07843	0.100	238.6	4	0.9725	IDENTIFIED 2.792 <input type="checkbox"/>
Lead-214	✓	1.593	0.1193	pCi/g	0.107	0.100	351.8	4	1.116	IDENTIFIED 4.645 <input type="checkbox"/>
Lutetium-177	—	3.828	0.7258	pCi/g	1.74	N	0	6	0	FAIL_ABUND 0 <input type="checkbox"/>
Neptunium-237	INT	1.282	0.179	pCi/g	0.2012	N	87.19	3	1.158	IDENTIFIED 7.732 <input type="checkbox"/>
Polonium-210	HE	0.9233	0.3729	pCi/g	0.6029	N	46.59	3	0.922	IDENTIFIED 40.11 <input type="checkbox"/>
Polonium-212	NR	2.047	0.1298	pCi/g	0.07843	N	238.6	4	0.9725	IDENTIFIED 2.792 <input type="checkbox"/>
Polonium-214	NR	1.593	0.1193	pCi/g	0.107	N	351.8	4	1.116	IDENTIFIED 4.645 <input type="checkbox"/>
Polonium-216	NR	2.047	0.1298	pCi/g	0.07843	N	238.6	4	0.9725	IDENTIFIED 2.792 <input type="checkbox"/>
Polonium-218	NR	1.593	0.1193	pCi/g	0.107	N	351.8	4	1.116	IDENTIFIED 4.645 <input type="checkbox"/>
Potassium-40	✓	20.65	1.175	pCi/g	0.5133	1.00	1460	1	2.249	IDENTIFIED 3.775 <input type="checkbox"/>
Radium-224	INT	5.829	0.7489	pCi/g	0.8936	Y	241.4	1	1.769	IDENTIFIED 11.72 <input checked="" type="checkbox"/> UI
Radium-226	✓	1.399	0.1158	pCi/g	0.1145	Y	609	4	1.639	IDENTIFIED 5.673 <input type="checkbox"/>
Radium-228	✓	2.103	0.2073	pCi/g	0.2029	0.500	910.6	3	1.638	IDENTIFIED 7.864 <input type="checkbox"/>
Thallium-208	✓	0.6168	0.05355	pCi/g	0.06008	0.080	582.9	1	1.486	IDENTIFIED 6.602 <input type="checkbox"/>
Thorium-228	NR	2.075	0.1316	pCi/g	0.07952	N	238.6	4	0.9725	IDENTIFIED 2.792 <input type="checkbox"/>
Thorium-230	NR	1.399	0.1158	pCi/g	0.1145	N	609	4	1.639	IDENTIFIED 5.673 <input type="checkbox"/>
Thorium-232	NR	2.103	0.2073	pCi/g	0.2029	N	910.6	3	1.638	IDENTIFIED 7.864 <input type="checkbox"/>
Tin-126	NR	0.4366	0.04106	pCi/g	0.06884	N	87.19	3	1.158	IDENTIFIED 7.732 <input type="checkbox"/>
Titanium-44	—	0.4369	0.02718	pCi/g	0.04715	N	0	6	0	FAIL_ABUND 0 <input type="checkbox"/>
Total Uranium	—	1.4699	1.06E-06	ug/g	1.131	N	0			<input type="checkbox"/>



Uranium-234 *NR* 1.399 0.1158 pCi/g 0.1145 N 609 4 1.639 IDENTIFIED 5.673 ☐  
 Zirconium-97 *—* 7.80E+05 3.14E+05 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
244132008	05-JAN-10 12:00	19-JAN-10 10:02	13.9	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>✓</i>	1.522	0.2226	pCi/g	0.5462	N	0 15 0		FAIL_ABUND 0	<input type="checkbox"/>	
Americium-243 <i>INT</i>	0.3753	0.03064	pCi/g	0.06479	N	74.7 1 1.329		IDENTIFIED 7.165	<input type="checkbox"/>	
Annihilation Rad. <i>—</i>	0.1767	0.03807	pCi/g	0.05204	N	510.7 1 2.213		IDENTIFIED 21.31	<input type="checkbox"/>	
Bismuth-210 <i>HE</i>	1.661	0.5017	pCi/g	0.8513	N	45.98 3 1.294		IDENTIFIED 29.95	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	3.491	0.2546	pCi/g	0.3721	Y	351.7 4 1.291		IDENTIFIED 6.13	<input checked="" type="checkbox"/>	<i>✓</i>
Bismuth-212 <i>HE</i>	0.9612	0.2543	pCi/g	0.7202	N	0 15 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.364	0.1015	pCi/g	0.1271	0.200	609 4 1.618		IDENTIFIED 6.147	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	3.938	0.4561	pCi/g	1.025	Y	87.15 3 1.475		IDENTIFIED 10.94	<input checked="" type="checkbox"/>	<i>✓</i>
Cerium-143 <i>—</i>	570.9	82.83	pCi/g	0	N	0 15 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 <i>LA</i>	0.1528	0.03726	pCi/g	0.09918	0.100	0 15 0		FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gross Gamma <i>—</i>	8.592	1.263	pCi/g	3.811	N	0			<input type="checkbox"/>	
Iodine-133 <i>HE</i>	602.2	1244	pCi/g	0	N	0 15 0		SHORT_HLIF 0	<input type="checkbox"/>	
Iodine-135 <i>HE</i>	1.50E+14	1.55E+14	pCi/g	0	N	0 15 0		SHORT_HLIF 0	<input type="checkbox"/>	
Krypton-85 <i>HE</i>	17.94	4.671	pCi/g	15.57	N	0 15 0		NOT_IDENTI 0	<input type="checkbox"/>	
Lead-210 <i>HE</i>	1.661	0.5017	pCi/g	0.8513	N	45.98 3 1.294		IDENTIFIED 29.95	<input type="checkbox"/>	
Lead-212 <i>✓</i>	1.74	0.1105	pCi/g	0.09752	0.100	238.5 4 1.311		IDENTIFIED 3.348	<input type="checkbox"/>	
Lead-214 <i>✓</i>	1.214	0.09406	pCi/g	0.1202	0.100	351.7 4 1.291		IDENTIFIED 6.13	<input type="checkbox"/>	
Lutetium-177 <i>—</i>	3.341	0.7099	pCi/g	1.887	N	0 15 0		FAIL_ABUND 0	<input type="checkbox"/>	
Neptunium-237 <i>INT</i>	1.139	0.1766	pCi/g	0.295	N	87.15 3 1.475		IDENTIFIED 10.94	<input type="checkbox"/>	
Niobium-95m <i>—</i>	0.5363	0.08781	pCi/g	0.2887	N	0 15 0		NOT_IDENTI 0	<input type="checkbox"/>	
Niobium-97 <i>HE</i>	607.7	16410	pCi/g	0	N	0 15 0		SHORT_HLIF 0	<input type="checkbox"/>	
Polonium-210 <i>HE</i>	1.661	0.5006	pCi/g	0.8513	N	45.98 3 1.294		IDENTIFIED 29.95	<input type="checkbox"/>	
Polonium-212 <i>NR</i>	1.74	0.1105	pCi/g	0.09752	N	238.5 4 1.311		IDENTIFIED 3.348	<input type="checkbox"/>	
Polonium-214 <i>NR</i>	1.214	0.09406	pCi/g	0.1202	N	351.7 4 1.291		IDENTIFIED 6.13	<input type="checkbox"/>	
Polonium-216 <i>NR</i>	1.74	0.1105	pCi/g	0.09752	N	238.5 4 1.311		IDENTIFIED 3.348	<input type="checkbox"/>	
Polonium-218 <i>NR</i>	1.214	0.09406	pCi/g	0.1202	N	351.7 4 1.291		IDENTIFIED 6.13	<input type="checkbox"/>	
Potassium-40 <i>✓</i>	20.06	1.01	pCi/g	0.6231	1.00	1460 1 2.04		IDENTIFIED 3.963	<input type="checkbox"/>	
Radium-224 <i>INT</i>	4.67	0.6476	pCi/g	1.11	Y	241.6 1 1.841		IDENTIFIED 12.98	<input checked="" type="checkbox"/>	<i>✓</i>
Radium-226 <i>✓</i>	1.364	0.1015	pCi/g	0.1271	Y	609 4 1.618		IDENTIFIED 6.147	<input type="checkbox"/>	
Radium-228 <i>LA</i>	1.522	0.2226	pCi/g	0.5462	0.500	0 15 0		FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Strontium-85 <i>LA</i>	0.09084	0.02365	pCi/g	0.07884	Y	0 15 0		NOT_IDENTI 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208 <i>✓</i>	0.5733	0.05116	pCi/g	0.06459	0.080	583.1 1 1.673		IDENTIFIED 8.13	<input type="checkbox"/>	
Thorium-228 <i>NR</i>	1.765	0.112	pCi/g	0.09888	N	238.5 4 1.311		IDENTIFIED 3.348	<input type="checkbox"/>	
Thorium-230 <i>NR</i>	1.364	0.1015	pCi/g	0.1271	N	609 4 1.618		IDENTIFIED 6.147	<input type="checkbox"/>	
Thorium-232 <i>—</i>	1.522	0.2226	pCi/g	0.5462	N	0 15 0		FAIL_ABUND 0	<input type="checkbox"/>	
Thorium-234 <i>✓</i>	1.329	0.4018	pCi/g	1.043	2.00	63.3 2 1.136		IDENTIFIED 28.9	<input type="checkbox"/>	
Tin-126 <i>NR</i>	0.3878	0.04491	pCi/g	0.1008	N	87.15 3 1.475		IDENTIFIED 10.94	<input type="checkbox"/>	
Titanium-44 <i>—</i>	0.3872	0.02377	pCi/g	0.06879	N	0 15 0		FAIL_ABUND 0	<input type="checkbox"/>	
Total Uranium <i>—</i>	4.0535	1.20E-06	ug/g	1.5548	N	0			<input type="checkbox"/>	
Uranium-234 <i>NR</i>	1.364	0.1015	pCi/g	0.1271	N	609 4 1.618		IDENTIFIED 6.147	<input type="checkbox"/>	
Uranium-238 <i>HE</i>	1.329	0.4018	pCi/g	1.043	N	63.3 2 1.136		IDENTIFIED 28.9	<input type="checkbox"/>	
Zirconium-97 <i>—</i>	2.58E+06	3.68E+05	pCi/g	0	N	0 15 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
244132009	05-JAN-10 12:00	19-JAN-10 10:54	14	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>✓</i>	1.713	0.1859	pCi/g	0.243	N	911.4 3 1.902		IDENTIFIED 9.178	<input type="checkbox"/>	
Americium-243 <i>INT</i>	0.4143	0.04374	pCi/g	0.1062	N	74.96 1 1.046		IDENTIFIED 9.701	<input type="checkbox"/>	
Annihilation Rad. <i>HE</i>	0.1063	0.0382	pCi/g	0.05889	N	511.5 1 1.923		IDENTIFIED 35.69	<input type="checkbox"/>	
Barium-137m <i>✓</i>	0.1544	0.03626	pCi/g	0.0708	N	662.3 2 1.265		IDENTIFIED 23.13	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	4.122	0.3501	pCi/g	0.3957	Y	352.2 4 1.305		IDENTIFIED 7.18	<input checked="" type="checkbox"/>	<i>✓</i>

Bismuth-212	HE	1.254	0.3225	pCi/g	0.8139	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.388	0.1114	pCi/g	0.1167	0.200	609.5	4	1.506	IDENTIFIED	6.332	<input type="checkbox"/>	
Cadmium-109	INT	2.523	0.6081	pCi/g	1.34	Y	87.39	3	1.115	IDENTIFIED	23.64	<input checked="" type="checkbox"/>	UI
Cerium-143	—	269.6	59.28	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.154	0.03881	pCi/g	0.1155	0.100	0	9	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137	✓	0.1632	0.03834	pCi/g	0.07484	0.100	662.3	2	1.265	IDENTIFIED	23.13	<input type="checkbox"/>	
Gross Gamma	—	8.768	1.638	pCi/g	4.298	N	0	0	0			<input type="checkbox"/>	
Iodine-123	HE	69750	7.24E+05	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-133	HE	133.6	1320	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	✓	1.811	0.1129	pCi/g	0.1101	0.100	239	4	1.152	IDENTIFIED	3.64	<input type="checkbox"/>	
Lead-214	✓	1.434	0.1274	pCi/g	0.1353	0.100	352.2	4	1.305	IDENTIFIED	7.18	<input type="checkbox"/>	
Lutetium-177	HE	2.788	0.7944	pCi/g	2.1	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Mercury-203	INT	0.08003	0.03978	pCi/g	0.07443	0.100	277.8	1	1.196	IDENTIFIED	49.49	<input checked="" type="checkbox"/>	UI
Neptunium-237	HE	0.7295	0.1912	pCi/g	0.5038	N	87.39	3	1.115	IDENTIFIED	23.64	<input type="checkbox"/>	
Polonium-212	NR	1.811	0.1129	pCi/g	0.1101	N	239	4	1.152	IDENTIFIED	3.64	<input type="checkbox"/>	
Polonium-214	NR	1.434	0.1274	pCi/g	0.1353	N	352.2	4	1.305	IDENTIFIED	7.18	<input type="checkbox"/>	
Polonium-216	NR	1.811	0.1129	pCi/g	0.1101	N	239	4	1.152	IDENTIFIED	3.64	<input type="checkbox"/>	
Polonium-218	NR	1.434	0.1274	pCi/g	0.1353	N	352.2	4	1.305	IDENTIFIED	7.18	<input type="checkbox"/>	
Potassium-40	✓	20.42	1.224	pCi/g	0.604	1.00	1461	1	2.075	IDENTIFIED	4.024	<input type="checkbox"/>	
Radium-224	INT	4.754	0.8228	pCi/g	1.254	Y	242	1	1.879	IDENTIFIED	16.7	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.388	0.1114	pCi/g	0.1167	Y	609.5	4	1.506	IDENTIFIED	6.332	<input type="checkbox"/>	
Radium-228	✓	1.713	0.1859	pCi/g	0.243	0.500	911.4	3	1.902	IDENTIFIED	9.178	<input type="checkbox"/>	
Technetium-99m	HE	3.93E+14	8.93E+14	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.5505	0.04916	pCi/g	0.06815	0.080	583.6	1	1.315	IDENTIFIED	7.69	<input type="checkbox"/>	
Thorium-228	NR	1.836	0.1145	pCi/g	0.1117	N	239	4	1.152	IDENTIFIED	3.64	<input type="checkbox"/>	
Thorium-230	NR	1.388	0.1114	pCi/g	0.1167	N	609.5	4	1.506	IDENTIFIED	6.332	<input type="checkbox"/>	
Thorium-232	NR	1.713	0.1859	pCi/g	0.243	N	911.4	3	1.902	IDENTIFIED	9.178	<input type="checkbox"/>	
Tin-126	HE	0.2484	0.05987	pCi/g	0.1326	N	87.39	3	1.115	IDENTIFIED	23.64	<input type="checkbox"/>	
Titanium-44	—	0.4289	0.03643	pCi/g	0.09446	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Total Uranium	—	5.0277	3.94E-06	ug/g	3.7937	N	0	0	0			<input type="checkbox"/>	
Uranium-234	NR	1.388	0.1114	pCi/g	0.1167	N	609.5	4	1.506	IDENTIFIED	6.332	<input type="checkbox"/>	
Zirconium-97	HE	27850	3.92E+05	pCi/g	0	N	0	9	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		
244132010	05-JAN-10 12:00	19-JAN-10 10:55	14	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228	✓	2.1	0.1984	pCi/g	0.1909	N	910.9	3	1.804	IDENTIFIED 7.715	<input type="checkbox"/>	
Americium-243	INT	0.3386	0.04677	pCi/g	0.106	N	74.87	1	0.9904	IDENTIFIED 12.57	<input type="checkbox"/>	
Annihilation Rad.	—	0.1392	0.0346	pCi/g	0.04492	N	511	1	1.839	IDENTIFIED 24.7	<input type="checkbox"/>	
Bismuth-211	INT	4.204	0.2747	pCi/g	0.3454	Y	351.9	4	1.178	IDENTIFIED 5.597	<input checked="" type="checkbox"/> UI	
Bismuth-212	—	1.424	0.2832	pCi/g	0.7435	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214	✓	1.245	0.09896	pCi/g	0.1024	0.200	609.2	4	1.306	IDENTIFIED 7.05	<input type="checkbox"/>	
Cadmium-109	INT	4.033	0.5674	pCi/g	1.501	Y	87.22	3	1.048	IDENTIFIED 12.73	<input checked="" type="checkbox"/> UI	
Cerium-143	—	337.1	60.44	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-134	LA	0.1187	0.0477	pCi/g	0.09012	0.100	0	9	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Gross Gamma	—	9.264	1.382	pCi/g	3.258	N	0	0	0		<input type="checkbox"/>	
Iodine-135	—	2.88E+14	1.42E+14	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.87	0.09717	pCi/g	0.09111	0.100	238.6	4	1.107	IDENTIFIED 3.296	<input type="checkbox"/>	
Lead-214	✓	1.462	0.1029	pCi/g	0.1142	0.100	351.9	4	1.178	IDENTIFIED 5.597	<input type="checkbox"/>	
Lutetium-177	HE	1.929	0.5926	pCi/g	1.868	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>
Neptunium-237	INT	1.166	0.2034	pCi/g	0.4584	N	87.22	3	1.048	IDENTIFIED 12.73	<input type="checkbox"/>	
Polonium-212	NR	1.87	0.09717	pCi/g	0.09111	N	238.6	4	1.107	IDENTIFIED 3.296	<input type="checkbox"/>	
Polonium-214	NR	1.462	0.1029	pCi/g	0.1142	N	351.9	4	1.178	IDENTIFIED 5.597	<input type="checkbox"/>	
Polonium-216	NR	1.87	0.09717	pCi/g	0.09111	N	238.6	4	1.107	IDENTIFIED 3.296	<input type="checkbox"/>	
Polonium-218	NR	1.462	0.1029	pCi/g	0.1142	N	351.9	4	1.178	IDENTIFIED 5.597	<input type="checkbox"/>	
Potassium-40	✓	19.57	1.063	pCi/g	0.5421	1.00	1461	1	2.088	IDENTIFIED 4.109	<input type="checkbox"/>	
Radium-224	INT	4.752	0.6614	pCi/g	1.037	Y	241.5	1	1.556	IDENTIFIED 13.51	<input checked="" type="checkbox"/> UI	
Radium-226	✓	1.245	0.09896	pCi/g	0.1024	Y	609.2	4	1.306	IDENTIFIED 7.05	<input type="checkbox"/>	

Radium-228	✓	2.1	0.1984	pCi/g	0.1909	0.500	910.9	3	1.804	IDENTIFIED	7.715	<input type="checkbox"/>
Sodium-24	HE	72.02	1.07E+05	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-200	HE	163.1	110.7	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	✓	0.6216	0.04823	pCi/g	0.05587	0.080	583.1	1	1.526	IDENTIFIED	7.092	<input type="checkbox"/>
Thorium-228	NR	1.897	0.09853	pCi/g	0.09239	N	238.6	4	1.107	IDENTIFIED	3.296	<input type="checkbox"/>
Thorium-230	NR	1.245	0.09896	pCi/g	0.1024	N	609.2	4	1.306	IDENTIFIED	7.05	<input type="checkbox"/>
Thorium-232	NR	2.1	0.1984	pCi/g	0.1909	N	910.9	3	1.804	IDENTIFIED	7.715	<input type="checkbox"/>
Thorium-234	✓	2.879	1.275	pCi/g	2.77	2.00	63.18	2	1.123	IDENTIFIED	43.17	<input type="checkbox"/>
Tin-126	NR	0.3971	0.05587	pCi/g	0.1489	N	87.22	3	1.048	IDENTIFIED	12.73	<input type="checkbox"/>
Titanium-44	—	0.3666	0.03589	pCi/g	0.08652	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>
Total Uranium	—	8.6511	3.79E-06	ug/g	4.1231	N	0					<input type="checkbox"/>
Uranium-234	NR	1.245	0.09896	pCi/g	0.1024	N	609.2	4	1.306	IDENTIFIED	7.05	<input type="checkbox"/>
Uranium-238	HE	2.879	1.275	pCi/g	2.77	N	63.18	2	1.123	IDENTIFIED	43.17	<input type="checkbox"/>
Zirconium-97	HE	5.82E+05	3.26E+05	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132011	05-JAN-10 12:00	19-JAN-10 11:04	14	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	✓	1.776	0.1817	pCi/g	0.1962	N	910.9	3	1.45	IDENTIFIED	8.327	<input type="checkbox"/>		
Americium-243	INT	0.4303	0.0379	pCi/g	0.07601	N	74.87	1	1.023	IDENTIFIED	7.771	<input type="checkbox"/>		
Annihilation Rad.	HE	0.09789	0.03348	pCi/g	0.04483	N	510.6	1	1.757	IDENTIFIED	33.87	<input type="checkbox"/>		
Barium-137m	✓	0.1176	0.02663	pCi/g	0.05841	N	661.3	2	1.293	IDENTIFIED	22.2	<input type="checkbox"/>		
Bismuth-211	INT	4.358	0.3322	pCi/g	0.3048	Y	351.8	4	1.178	IDENTIFIED	5.322	<input checked="" type="checkbox"/>	✓	✓
Bismuth-212	—	1.3	0.2243	pCi/g	0.6969	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>		
Bismuth-214	✓	1.279	0.1044	pCi/g	0.1034	0.200	609.2	4	1.437	IDENTIFIED	6.216	<input type="checkbox"/>		
Cadmium-109	INT	3.661	0.3826	pCi/g	1.095	Y	87.22	3	1.08	IDENTIFIED	9.297	<input checked="" type="checkbox"/>	✓	✓
Cerium-143	—	336.3	59.67	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>		
Cesium-137	✓	0.1243	0.02815	pCi/g	0.06174	0.100	661.3	2	1.293	IDENTIFIED	22.2	<input type="checkbox"/>		
Gross Gamma	—	9.024	1.368	pCi/g	3.377	N	0					<input type="checkbox"/>		
Lead-212	✓	1.753	0.1187	pCi/g	0.08201	0.100	238.5	4	1.142	IDENTIFIED	3.293	<input type="checkbox"/>		
Lead-214	✓	1.516	0.1221	pCi/g	0.1063	0.100	351.8	4	1.178	IDENTIFIED	5.322	<input type="checkbox"/>		
Lutetium-177	HE	2.455	0.7852	pCi/g	1.781	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>		
Neptunium-237	INT	1.058	0.1554	pCi/g	0.376	N	87.22	3	1.08	IDENTIFIED	9.297	<input type="checkbox"/>		
Niobium-97	HE	11870	17010	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>		
Polonium-212	NR	1.753	0.1187	pCi/g	0.08201	N	238.5	4	1.142	IDENTIFIED	3.293	<input type="checkbox"/>		
Polonium-214	NR	1.516	0.1221	pCi/g	0.1063	N	351.8	4	1.178	IDENTIFIED	5.322	<input type="checkbox"/>		
Polonium-216	NR	1.753	0.1187	pCi/g	0.08201	N	238.5	4	1.142	IDENTIFIED	3.293	<input type="checkbox"/>		
Polonium-218	NR	1.516	0.1221	pCi/g	0.1063	N	351.8	4	1.178	IDENTIFIED	5.322	<input type="checkbox"/>		
Potassium-40	✓	20.92	1.195	pCi/g	0.4846	1.00	1460	1	1.738	IDENTIFIED	3.65	<input type="checkbox"/>		
Radium-224	INT	4.99	0.6556	pCi/g	0.9333	Y	241.5	1	1.581	IDENTIFIED	11.92	<input checked="" type="checkbox"/>	✓	✓
Radium-226	✓	1.279	0.1044	pCi/g	0.1034	Y	609.2	4	1.437	IDENTIFIED	6.216	<input type="checkbox"/>		
Radium-228	✓	1.776	0.1817	pCi/g	0.1962	0.500	910.9	3	1.45	IDENTIFIED	8.327	<input type="checkbox"/>		
Technetium-99m	HE	1.78E+14	7.36E+14	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>		
Thallium-200	HE	21.24	100.6	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>		
Thallium-208	✓	0.5416	0.05024	pCi/g	0.05149	0.080	583.1	1	1.504	IDENTIFIED	7.841	<input type="checkbox"/>		
Thorium-228	NR	1.778	0.1204	pCi/g	0.08316	N	238.5	4	1.142	IDENTIFIED	3.293	<input type="checkbox"/>		
Thorium-230	NR	1.279	0.1044	pCi/g	0.1034	N	609.2	4	1.437	IDENTIFIED	6.216	<input type="checkbox"/>		
Thorium-232	NR	1.776	0.1817	pCi/g	0.1962	N	910.9	3	1.45	IDENTIFIED	8.327	<input type="checkbox"/>		
Tin-126	NR	0.3604	0.03767	pCi/g	0.1083	N	87.22	3	1.08	IDENTIFIED	9.297	<input type="checkbox"/>		
Titanium-44	NR	0.3896	0.02897	pCi/g	0.07123	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>		
Total Uranium	—	3.5547	2.78E-06	ug/g	2.9127	N	0					<input type="checkbox"/>		
Uranium-234	NR	1.279	0.1044	pCi/g	0.1034	N	609.2	4	1.437	IDENTIFIED	6.216	<input type="checkbox"/>		
Zirconium-97	—	9.58E+05	3.08E+05	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>		

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132012	05-JAN-10 12:00	19-JAN-10 11:12	14	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	✓	1.878	0.2018	pCi/g 0.2149	N	910.9	3	1.961	IDENTIFIED	9.233				
Americium-243	INT	0.4661	0.04705	pCi/g 0.09702	N	74.7	1	1.215	IDENTIFIED	9.505				
Annihilation Rad.	—	0.2199	0.04313	pCi/g 0.05108	N	510.4	1	2.091	IDENTIFIED	19.37				
Bismuth-211	INT	4.698	0.3062	pCi/g 0.3686	Y	351.7	4	1.244	IDENTIFIED	5.709	✓	UI		
Bismuth-212	✓	1.487	0.2693	pCi/g 0.486	N	727.1	1	1.375	IDENTIFIED	17.59				
Bismuth-214	✓	1.278	0.1042	pCi/g 0.1229	0.200	609	4	1.291	IDENTIFIED	7.036				
Cadmium-109	INT	4.762	0.6334	pCi/g 1.259	Y	87.09	3	1.386	IDENTIFIED	12.75	✓	UI		
Cerium-143	—	559.4	80.81	pCi/g 0	N	0	6	0	SHORT_HLIF	0				
Gross Gamma	—	9.508	1.624	pCi/g 3.709	N	0								
Iodine-133	HE	733.1	1310	pCi/g 0	N	0	6	0	SHORT_HLIF	0				
Lead-212	✓	2.007	0.09441	pCi/g 0.09409	0.100	238.5	4	1.076	IDENTIFIED	3.088				
Lead-214	✓	1.634	0.1147	pCi/g 0.1285	0.100	351.7	4	1.244	IDENTIFIED	5.709				
Lutetium-177	HE	2.64	0.7845	pCi/g 1.915	N	0	6	0	FAIL_ABUND	0				
Neptunium-237	INT	1.377	0.2318	pCi/g 0.37	N	87.09	3	1.386	IDENTIFIED	12.75				
Polonium-212	NR	2.007	0.09441	pCi/g 0.09409	N	238.5	4	1.076	IDENTIFIED	3.088				
Polonium-214	NR	1.634	0.1147	pCi/g 0.1285	N	351.7	4	1.244	IDENTIFIED	5.709				
Polonium-216	NR	2.007	0.09441	pCi/g 0.09409	N	238.5	4	1.076	IDENTIFIED	3.088				
Polonium-218	NR	1.634	0.1147	pCi/g 0.1285	N	351.7	4	1.244	IDENTIFIED	5.709				
Potassium-40	✓	19.17	1.018	pCi/g 0.6115	1.00	1460	1	2.08	IDENTIFIED	3.94				
Radium-224	INT	5.439	0.6352	pCi/g 1.071	Y	241.4	1	1.64	IDENTIFIED	11.35	✓	UI		
Radium-226	✓	1.278	0.1042	pCi/g 0.1229	Y	609	4	1.291	IDENTIFIED	7.036				
Radium-228	✓	1.878	0.2018	pCi/g 0.2149	0.500	910.9	3	1.961	IDENTIFIED	9.233				
Thallium-200	HE	6.669	114.6	pCi/g 0	N	0	6	0	SHORT_HLIF	0				
Thallium-208	✓	0.6873	0.05175	pCi/g 0.05723	0.080	582.8	1	1.274	IDENTIFIED	6.626				
Thorium-228	NR	2.035	0.09574	pCi/g 0.09541	N	238.5	4	1.076	IDENTIFIED	3.088				
Thorium-230	NR	1.278	0.1042	pCi/g 0.1229	N	609	4	1.291	IDENTIFIED	7.036				
Thorium-232	NR	1.878	0.2018	pCi/g 0.2149	N	910.9	3	1.961	IDENTIFIED	9.233				
Tin-126	NR	0.4688	0.06236	pCi/g 0.1245	N	87.09	3	1.386	IDENTIFIED	12.75				
Titanium-44	NR	0.4552	0.03089	pCi/g 0.08526	N	0	6	0	FAIL_ABUND	0				
Uranium-234	NR	1.278	0.1042	pCi/g 0.1229	N	609	4	1.291	IDENTIFIED	7.036				
Zirconium-97	—	1.92E+06	3.77E+05	pCi/g 0	N	0	6	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		
244132013	05-JAN-10 12:00	19-JAN-10 11:41	14	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.713	0.1937	pCi/g 0.3045	N	911.2	3	1.514	IDENTIFIED	10.05	☐	
Americium-243	INT	0.4204	0.03742	pCi/g 0.06444	N	74.69	1	1.34	IDENTIFIED	7.782	☐	
Annihilation Rad.	—	0.1594	0.04174	pCi/g 0.06009	N	510.8	1	1.385	IDENTIFIED	25.95	☐	
Barium-137m	✓	0.1962	0.03746	pCi/g 0.07725	N	661.3	2	1.919	IDENTIFIED	18.65	☐	
Bismuth-210	HE	1.09	0.4335	pCi/g 0.9104	N	46.4	3	1.254	IDENTIFIED	39.55	☐	
Bismuth-211	INT	4.48	0.2939	pCi/g 0.4237	Y	351.7	4	1.485	IDENTIFIED	5.459	☑ UI	
Bismuth-212	HE	1.084	0.2433	pCi/g 0.8764	N	0	11	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.306	0.1275	pCi/g 0.1428	0.200	609.3	4	1.714	IDENTIFIED	8.57	☐	
Cadmium-109	INT	3.4	0.4369	pCi/g 1.1	Y	87.2	3	1.059	IDENTIFIED	12.23	☑ UI	
Cerium-143	—	536.4	81.36	pCi/g 0	N	0	11	0	SHORT_HLIF	0	☐	
Cesium-134	LA	0.115	0.03778	pCi/g 0.1121	0.100	0	11	0	FAIL_ABUND	0	☑ UI	Data rejected due to low abundance.
Cesium-137	✓	0.2074	0.0396	pCi/g 0.08166	0.100	661.3	2	1.919	IDENTIFIED	18.65	☐	
Gross Gamma	—	8.634	1.444	pCi/g 3.662	N	0					☐	
Iodine-135	HE	1.69E+14	1.96E+14	pCi/g 0	N	0	11	0	SHORT_HLIF	0	☐	
Krypton-85	HE	16.17	4.805	pCi/g 16	N	0	11	0	NOT_IDENTI	0	☐	
Lead-210	HE	1.09	0.4335	pCi/g 0.9104	N	46.4	3	1.254	IDENTIFIED	39.55	☐	
Lead-212	✓	1.586	0.09576	pCi/g 0.1008	0.100	238.6	4	1.341	IDENTIFIED	3.98	☐	
Lead-214	✓	1.558	0.11	pCi/g 0.1544	0.100	351.7	4	1.485	IDENTIFIED	5.459	☐	
Lutetium-177	HE	2.829	0.899	pCi/g 2.077	N	0	11	0	FAIL_ABUND	0	☐	
Neptunium-237	INT	0.9829	0.162	pCi/g 0.3166	N	87.2	3	1.059	IDENTIFIED	12.23	☐	
Niobium-97	HE	3352	24860	pCi/g 0	N	0	11	0	SHORT_HLIF	0	☐	
Polonium-210	HE	1.09	0.4329	pCi/g 0.9104	N	46.4	3	1.254	IDENTIFIED	39.55	☐	

Polonium-212	NR	1.586	0.09576	pCi/g	0.1008	N	238.6	4	1.341	IDENTIFIED	3.98	<input type="checkbox"/>
Polonium-214	NR	1.558	0.11	pCi/g	0.1544	N	351.7	4	1.485	IDENTIFIED	5.459	<input type="checkbox"/>
Polonium-216	NR	1.586	0.09576	pCi/g	0.1008	N	238.6	4	1.341	IDENTIFIED	3.98	<input type="checkbox"/>
Polonium-218	NR	1.558	0.11	pCi/g	0.1544	N	351.7	4	1.485	IDENTIFIED	5.459	<input type="checkbox"/>
Potassium-40	✓	18.97	1.011	pCi/g	0.7705	1.00	1461	1	2.359	IDENTIFIED	4.364	<input type="checkbox"/>
Radium-224	INT	4.728	0.7244	pCi/g	1.147	Y	241.6	1	1.831	IDENTIFIED	14.8	<input checked="" type="checkbox"/> <i>u1</i>
Radium-226	✓	1.306	0.1275	pCi/g	0.1428	Y	609.3	4	1.714	IDENTIFIED	8.57	<input type="checkbox"/>
Radium-228	✓	1.713	0.1937	pCi/g	0.3045	0.500	911.2	3	1.514	IDENTIFIED	10.05	<input type="checkbox"/>
Strontium-85	LA	0.08191	0.02434	pCi/g	0.08105	Y	0	11	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Technetium-99m	HE	1.96E+15	1.09E+15	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	✓	0.5158	0.05169	pCi/g	0.07798	0.080	583.1	1	1.774	IDENTIFIED	9.128	<input type="checkbox"/>
Thorium-228	NR	1.608	0.0971	pCi/g	0.1022	N	238.6	4	1.341	IDENTIFIED	3.98	<input type="checkbox"/>
Thorium-230	NR	1.306	0.1275	pCi/g	0.1428	N	609.3	4	1.714	IDENTIFIED	8.57	<input type="checkbox"/>
Thorium-232	NR	1.713	0.1937	pCi/g	0.3045	N	911.2	3	1.514	IDENTIFIED	10.05	<input type="checkbox"/>
Thorium-234	✓	2.978	0.6758	pCi/g	1.143	2.00	63.2	2	1.191	IDENTIFIED	20.76	<input type="checkbox"/>
Tin-126	NR	0.3347	0.04302	pCi/g	0.1081	N	87.2	3	1.059	IDENTIFIED	12.23	<input type="checkbox"/>
Titanium-44	✓	0.4092	0.02696	pCi/g	0.06351	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>
Total Uranium	✓	8.8967	2.01E-06	ug/g	1.704	N			0			<input type="checkbox"/>
Uranium-234	NR	1.306	0.1275	pCi/g	0.1428	N	609.3	4	1.714	IDENTIFIED	8.57	<input type="checkbox"/>
Uranium-238	NR	2.978	0.6758	pCi/g	1.143	N	63.2	2	1.191	IDENTIFIED	20.76	<input type="checkbox"/>
Zirconium-97	✓	2.04E+06	4.12E+05	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
244132014	05-JAN-10 12:00	19-JAN-10 11:41	14	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.529	0.176	pCi/g	0.2221	N	911.7	3	1.692	IDENTIFIED 9.902 <input type="checkbox"/>
Americium-243	INT	0.4098	0.04282	pCi/g	0.08771	N	74.91	1	1.499	IDENTIFIED 9.748 <input type="checkbox"/>
Annihilation Rad. HE		0.1075	0.03384	pCi/g	0.04332	N	510.5	1	1.366	IDENTIFIED 31.35 <input type="checkbox"/>
Barium-137m	✓	0.4637	0.04017	pCi/g	0.05846	N	661.8	2	1.63	IDENTIFIED 8.136 <input type="checkbox"/>
Bismuth-211	INT	4.714	0.253	pCi/g	0.3487	Y	351.8	4	1.553	IDENTIFIED 4.335 <input checked="" type="checkbox"/> <i>u1</i>
Bismuth-212	✓	1.299	0.251	pCi/g	0.7027	N	0	8	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.282	0.09425	pCi/g	0.1118	0.200	609.4	4	1.403	IDENTIFIED 6.195 <input type="checkbox"/>
Cadmium-109	INT	2.697	0.3992	pCi/g	1.338	Y	87.34	3	1.355	IDENTIFIED 14.15 <input checked="" type="checkbox"/> <i>u1</i>
Cerium-143	✓	623.5	84.68	pCi/g	0	N	0	8	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-134	LA	0.134	0.03304	pCi/g	0.09177	0.100	0	8	0	FAIL_ABUND 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Cesium-137	✓	0.4902	0.04248	pCi/g	0.0618	0.100	661.8	2	1.63	IDENTIFIED 8.136 <input type="checkbox"/>
Gross Gamma	✓	9.738	1.344	pCi/g	4.757	N			0	<input type="checkbox"/>
Lead-212	✓	1.555	0.07788	pCi/g	0.09396	0.100	238.5	4	1.396	IDENTIFIED 3.437 <input type="checkbox"/>
Lead-214	✓	1.64	0.09787	pCi/g	0.1046	0.100	351.8	4	1.553	IDENTIFIED 4.335 <input type="checkbox"/>
Neptunium-237	INT	0.7796	0.1407	pCi/g	0.4023	N	87.34	3	1.355	IDENTIFIED 14.15 <input type="checkbox"/>
Niobium-95m	✓	0.5708	0.07743	pCi/g	0.2628	N	0	8	0	NOT_IDENTI 0 <input type="checkbox"/>
Niobium-97	✓	48490	18590	pCi/g	0	N	0	8	0	SHORT_HLIF 0 <input type="checkbox"/>
Polonium-212	NR	1.555	0.07788	pCi/g	0.09396	N	238.5	4	1.396	IDENTIFIED 3.437 <input type="checkbox"/>
Polonium-214	NR	1.64	0.09787	pCi/g	0.1046	N	351.8	4	1.553	IDENTIFIED 4.335 <input type="checkbox"/>
Polonium-216	NR	1.555	0.07788	pCi/g	0.09396	N	238.5	4	1.396	IDENTIFIED 3.437 <input type="checkbox"/>
Polonium-218	NR	1.64	0.09787	pCi/g	0.1046	N	351.8	4	1.553	IDENTIFIED 4.335 <input type="checkbox"/>
Potassium-40	✓	21.49	1.067	pCi/g	0.5375	1.00	1461	1	2.138	IDENTIFIED 3.39 <input type="checkbox"/>
Radium-224	INT	4.271	0.5887	pCi/g	1.069	Y	241.5	1	1.726	IDENTIFIED 13.48 <input checked="" type="checkbox"/> <i>u1</i>
Radium-226	✓	1.282	0.09425	pCi/g	0.1118	Y	609.4	4	1.403	IDENTIFIED 6.195 <input type="checkbox"/>
Radium-228	✓	1.529	0.176	pCi/g	0.2221	0.500	911.7	3	1.692	IDENTIFIED 9.902 <input type="checkbox"/>
Thallium-200	HE	16.12	111	pCi/g	0	N	0	8	0	SHORT_HLIF 0 <input type="checkbox"/>
Thallium-208	✓	0.5689	0.04491	pCi/g	0.05405	0.080	583.2	1	1.523	IDENTIFIED 7.115 <input type="checkbox"/>
Thorium-228	NR	1.577	0.07897	pCi/g	0.09528	N	238.5	4	1.396	IDENTIFIED 3.437 <input type="checkbox"/>
Thorium-230	NR	1.282	0.09425	pCi/g	0.1118	N	609.4	4	1.403	IDENTIFIED 6.195 <input type="checkbox"/>
Thorium-232	NR	1.529	0.176	pCi/g	0.2221	N	911.7	3	1.692	IDENTIFIED 9.902 <input type="checkbox"/>
Thorium-234	✓	2.79	0.7971	pCi/g	1.937	2.00	63.49	2	1.587	IDENTIFIED 27.24 <input type="checkbox"/>
Tin-126	INT	0.2655	0.0393	pCi/g	0.1487	N	87.34	3	1.355	IDENTIFIED 14.15 <input type="checkbox"/>
Titanium-44	✓	0.3651	0.0275	pCi/g	0.08274	N	0	8	0	FAIL_ABUND 0 <input type="checkbox"/>





Tin-126	NR	0.3201	0.06047	pCi/g	0.1529	N	86.98	3	1.116	IDENTIFIED	18.26	<input type="checkbox"/>
Titanium-44	-	0.4546	0.03706	pCi/g	0.1014	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>
Uranium-234	NR	1.249	0.1103	pCi/g	0.113	N	608.6	4	1.349	IDENTIFIED	7.994	<input type="checkbox"/>
Zirconium-97	-	2.50E+06	4.29E+05	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132018	05-JAN-10 12:00	19-JAN-10 12:04	14	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.636	0.1738	pCi/g	0.216	N	910.7	3	1.813	IDENTIFIED 9.052 <input type="checkbox"/>
Americium-243	INT	0.3742	0.06004	pCi/g	0.1288	N	74.03	1	1.581	IDENTIFIED 15.05 <input type="checkbox"/>
Annihilation Rad. HE		0.116	0.03728	pCi/g	0.05313	N	510.4	1	2.07	IDENTIFIED 32.03 <input type="checkbox"/>
Bismuth-211	INT	3.741	0.2959	pCi/g	0.3572	Y	351.2	4	1.558	IDENTIFIED 7.126 <input checked="" type="checkbox"/> UI
Bismuth-212	-	1.404	0.2496	pCi/g	0.8031	N	0	14	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.138	0.08753	pCi/g	0.0885	0.200	608.7	4	1.739	IDENTIFIED 6.733 <input type="checkbox"/>
Cadmium-109	INT	1.845	0.5376	pCi/g	1.681	Y	89.35	1	1.117	IDENTIFIED 28.59 <input checked="" type="checkbox"/> UI
Cerium-143	-	700.3	105.2	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-135	HE	0.3295	0.1267	pCi/g	0.2847	N	269.2	1	1.13	IDENTIFIED 38.21 <input type="checkbox"/>
Gross Gamma	-	7.848	1.15	pCi/g	2.763	N	0			<input type="checkbox"/>
Iodine-123	HE	1.85E+05	8.29E+05	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>
Iodine-135	-	4.00E+14	1.87E+14	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>
Krypton-85	HE	19.01	4.504	pCi/g	15.39	N	0	14	0	NOT_IDENTI 0 <input type="checkbox"/>
Lead-212	✓	1.602	0.09208	pCi/g	0.1041	0.100	238.1	4	1.398	IDENTIFIED 3.991 <input type="checkbox"/>
Lead-214	✓	1.301	0.1084	pCi/g	0.1254	0.100	351.2	4	1.558	IDENTIFIED 7.126 <input type="checkbox"/>
Lutetium-177	-	4.939	1.085	pCi/g	2.165	N	0	14	0	FAIL_ABUND 0 <input type="checkbox"/>
Neptunium-237	INT	0.963	0.2181	pCi/g	0.5104	N	86.59	2	1.584	IDENTIFIED 19.33 <input type="checkbox"/>
Niobium-95m	-	1.569	0.1222	pCi/g	0.4054	N	0	14	0	NOT_IDENTI 0 <input type="checkbox"/>
Niobium-97	HE	1600	16890	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>
Polonium-212	NR	1.602	0.09208	pCi/g	0.1041	N	238.1	4	1.398	IDENTIFIED 3.991 <input type="checkbox"/>
Polonium-214	NR	1.301	0.1084	pCi/g	0.1254	N	351.2	4	1.558	IDENTIFIED 7.126 <input type="checkbox"/>
Polonium-216	NR	1.602	0.09208	pCi/g	0.1041	N	238.1	4	1.398	IDENTIFIED 3.991 <input type="checkbox"/>
Polonium-218	NR	1.301	0.1084	pCi/g	0.1254	N	351.2	4	1.558	IDENTIFIED 7.126 <input type="checkbox"/>
Potassium-40	✓	20.59	1.12	pCi/g	0.4425	1.00	1460	1	2.147	IDENTIFIED 3.869 <input type="checkbox"/>
Radium-224	INT	4.191	0.8262	pCi/g	1.184	Y	241	1	2.019	IDENTIFIED 19.4 <input checked="" type="checkbox"/> UI
Radium-226	✓	1.138	0.08753	pCi/g	0.0885	Y	608.7	4	1.739	IDENTIFIED 6.733 <input type="checkbox"/>
Radium-228	✓	1.636	0.1738	pCi/g	0.216	0.500	910.7	3	1.813	IDENTIFIED 9.052 <input type="checkbox"/>
Sodium-24	HE	1.13E+05	1.25E+05	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>
Strontium-85	LA	0.09631	0.02282	pCi/g	0.07797	Y	0	14	0	NOT_IDENTI 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Technetium-99m	HE	5.39E+14	1.03E+15	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>
Thallium-200	HE	63.21	128.1	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>
Thallium-208	✓	0.3939	0.04953	pCi/g	0.06218	0.080	582.6	1	1.163	IDENTIFIED 12.17 <input type="checkbox"/>
Thorium-228	NR	1.624	0.09337	pCi/g	0.1055	N	238.1	4	1.398	IDENTIFIED 3.991 <input type="checkbox"/>
Thorium-230	NR	1.138	0.08753	pCi/g	0.0885	N	608.7	4	1.739	IDENTIFIED 6.733 <input type="checkbox"/>
Thorium-232	NR	1.636	0.1738	pCi/g	0.216	N	910.7	3	1.813	IDENTIFIED 9.052 <input type="checkbox"/>
Tin-126	NR	0.3279	0.06613	pCi/g	0.1668	N	86.59	2	1.584	IDENTIFIED 19.33 <input type="checkbox"/>
Titanium-44	-	0.2214	0.03022	pCi/g	0.09765	N	0	14	0	NOT_IDENTI 0 <input type="checkbox"/>
Uranium-234	NR	1.138	0.08753	pCi/g	0.0885	N	608.7	4	1.739	IDENTIFIED 6.733 <input type="checkbox"/>
Zirconium-97	-	2.58E+06	4.27E+05	pCi/g	0	N	0	14	0	SHORT_HLIF 0 <input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132019	05-JAN-10 12:00	19-JAN-10 14:20	14.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.599	0.1991	pCi/g	0.2536	N	910.7	3	1.63	IDENTIFIED 11.14 <input type="checkbox"/>
Americium-243	INT	0.541	0.083	pCi/g	0.14	N	74.26	1	1.829	IDENTIFIED 14.3 <input type="checkbox"/>
Annihilation Rad. HE		0.1084	0.04163	pCi/g	0.05491	N	510.2	1	1.41	IDENTIFIED 38.31 <input type="checkbox"/>
Bismuth-211	INT	4.334	0.3187	pCi/g	0.4399	Y	351.2	4	1.304	IDENTIFIED 6.5 <input checked="" type="checkbox"/> UI
Bismuth-212	HE	1.146	0.3482	pCi/g	0.826	N	0	10	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.297	0.1087	pCi/g	0.1436	0.200	608.6	4	1.707	IDENTIFIED 7.518 <input type="checkbox"/>



Cerium-143	—	903.7	128.8	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>
Gross Gamma	—	9.013	1.689	pCi/g 4.154	N	0	0	0		<input type="checkbox"/>
Iodine-123	HE	1.96E+06	1.10E+06	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>
Iodine-135	HE	1.12E+14	2.74E+14	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>
Lead-212	✓	1.923	0.1088	pCi/g 0.1241	0.100	238	4	1.378	IDENTIFIED 3.855	<input type="checkbox"/>
Lead-214	✓	1.508	0.1176	pCi/g 0.1465	0.100	351.2	4	1.304	IDENTIFIED 6.5	<input type="checkbox"/>
Lutetium-177	HE	3.309	0.6641	pCi/g 2.371	N	0	10	0	FAIL_ABUND 0	<input type="checkbox"/>
Niobium-95m	—	1.739	0.1433	pCi/g 0.4661	N	0	10	0	NOT_IDENTI 0	<input type="checkbox"/>
Niobium-97	HE	19590	22000	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>
Polonium-212	NK	1.923	0.1088	pCi/g 0.1241	N	238	4	1.378	IDENTIFIED 3.855	<input type="checkbox"/>
Polonium-214	NK	1.508	0.1176	pCi/g 0.1465	N	351.2	4	1.304	IDENTIFIED 6.5	<input type="checkbox"/>
Polonium-216	NK	1.923	0.1088	pCi/g 0.1241	N	238	4	1.378	IDENTIFIED 3.855	<input type="checkbox"/>
Polonium-218	NK	1.508	0.1176	pCi/g 0.1465	N	351.2	4	1.304	IDENTIFIED 6.5	<input type="checkbox"/>
Potassium-40	✓	20.48	1.152	pCi/g 0.4476	1.00	1460	1	1.973	IDENTIFIED 4.127	<input type="checkbox"/>
Radium-224	INT	5.093	0.8428	pCi/g 1.412	Y	241	1	1.835	IDENTIFIED 16.18	<input checked="" type="checkbox"/> UI
Radium-226	✓	1.297	0.1087	pCi/g 0.1436	Y	608.6	4	1.707	IDENTIFIED 7.518	<input type="checkbox"/>
Radium-228	✓	1.599	0.1991	pCi/g 0.2536	0.500	910.7	3	1.63	IDENTIFIED 11.14	<input type="checkbox"/>
Thallium-200	HE	4.076	148.8	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>
Thallium-208	✓	0.6196	0.05523	pCi/g 0.06936	0.080	582.6	1	1.523	IDENTIFIED 8.326	<input type="checkbox"/>
Thorium-228	NK	1.95	0.1103	pCi/g 0.1259	N	238	4	1.378	IDENTIFIED 3.855	<input type="checkbox"/>
Thorium-230	NK	1.297	0.1087	pCi/g 0.1436	N	608.6	4	1.707	IDENTIFIED 7.518	<input type="checkbox"/>
Thorium-232	NK	1.599	0.1991	pCi/g 0.2536	N	910.7	3	1.63	IDENTIFIED 11.14	<input type="checkbox"/>
Titanium-44	—	0.2078	0.03373	pCi/g 0.1062	N	0	10	0	NOT_IDENTI 0	<input type="checkbox"/>
Uranium-234	NK	1.297	0.1087	pCi/g 0.1436	N	608.6	4	1.707	IDENTIFIED 7.518	<input type="checkbox"/>
Zirconium-97	—	3.91E+06	5.38E+05	pCi/g 0	N	0	10	0	SHORT_HLIF 0	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
244132020	05-JAN-10 12:00	19-JAN-10 17:05	14.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	✓	1.786	0.196	pCi/g 0.2512	N	910.7	3	1.913	IDENTIFIED 9.065	<input type="checkbox"/>
Americium-243	INT	0.4089	0.03395	pCi/g 0.06302	N	74.64	1	1.452	IDENTIFIED 7.322	<input type="checkbox"/>
Annihilation Rad.	HE	0.1162	0.0374	pCi/g 0.0522	N	510.5	1	1.723	IDENTIFIED 32.03	<input type="checkbox"/>
Bismuth-211	INT	3.909	0.294	pCi/g 0.3505	Y	351.7	4	1.416	IDENTIFIED 6.398	<input checked="" type="checkbox"/> UI
Bismuth-212	—	1.217	0.2156	pCi/g 0.7054	N	0	12	0	FAIL_ABUND 0	<input type="checkbox"/>
Bismuth-214	✓	1.319	0.1077	pCi/g 0.1263	0.200	608.9	4	1.362	IDENTIFIED 7.003	<input type="checkbox"/>
Cadmium-109	INT	3.828	0.442	pCi/g 1.023	Y	87.14	3	1.35	IDENTIFIED 10.9	<input checked="" type="checkbox"/> UI
Cerium-143	—	644.4	95.78	pCi/g 0	N	0	12	0	SHORT_HLIF 0	<input type="checkbox"/>
Cesium-134	LA	0.1124	0.03809	pCi/g 0.1051	0.100	0	12	0	FAIL_ABUND 0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Gross Gamma	—	8.808	1.448	pCi/g 4.327	N	0	0	0		<input type="checkbox"/>
Iodine-123	HE	1.21E+06	9.88E+05	pCi/g 0	N	0	12	0	SHORT_HLIF 0	<input type="checkbox"/>
Iodine-133	HE	786.3	1557	pCi/g 0	N	0	12	0	SHORT_HLIF 0	<input type="checkbox"/>
Iodine-135	HE	3.94E+14	2.98E+14	pCi/g 0	N	0	12	0	SHORT_HLIF 0	<input type="checkbox"/>
Lead-212	✓	1.54	0.1009	pCi/g 0.1014	0.100	238.6	4	1.17	IDENTIFIED 3.724	<input type="checkbox"/>
Lead-214	✓	1.36	0.1082	pCi/g 0.1222	0.100	351.7	4	1.416	IDENTIFIED 6.398	<input type="checkbox"/>
Lutetium-177	HE	2.518	0.7551	pCi/g 2.073	N	0	12	0	FAIL_ABUND 0	<input type="checkbox"/>
Neptunium-237	INT	1.106	0.1713	pCi/g 0.2945	N	87.14	3	1.35	IDENTIFIED 10.9	<input type="checkbox"/>
Niobium-95	HE	0.09726	0.02873	pCi/g 0.09689	N	0	12	0	NOT_IDENTI 0	<input type="checkbox"/>
Niobium-95m	—	0.6493	0.08639	pCi/g 0.2859	N	0	12	0	NOT_IDENTI 0	<input type="checkbox"/>
Niobium-97	HE	46140	24330	pCi/g 0	N	0	12	0	SHORT_HLIF 0	<input type="checkbox"/>
Polonium-212	NK	1.54	0.1009	pCi/g 0.1014	N	238.6	4	1.17	IDENTIFIED 3.724	<input type="checkbox"/>
Polonium-214	NK	1.36	0.1082	pCi/g 0.1222	N	351.7	4	1.416	IDENTIFIED 6.398	<input type="checkbox"/>
Polonium-216	NK	1.54	0.1009	pCi/g 0.1014	N	238.6	4	1.17	IDENTIFIED 3.724	<input type="checkbox"/>
Polonium-218	NK	1.36	0.1082	pCi/g 0.1222	N	351.7	4	1.416	IDENTIFIED 6.398	<input type="checkbox"/>
Potassium-40	✓	20.61	1.02	pCi/g 0.6115	1.00	1460	1	2.104	IDENTIFIED 3.851	<input type="checkbox"/>
Radium-224	INT	4.601	0.7948	pCi/g 1.154	Y	241.4	1	1.932	IDENTIFIED 16.57	<input checked="" type="checkbox"/> UI
Radium-226	✓	1.319	0.1077	pCi/g 0.1263	Y	608.9	4	1.362	IDENTIFIED 7.003	<input type="checkbox"/>
Radium-228	✓	1.786	0.196	pCi/g 0.2512	0.500	910.7	3	1.913	IDENTIFIED 9.065	<input type="checkbox"/>
Thallium-208	✓	0.5409	0.05321	pCi/g 0.06977	0.080	583	1	1.345	IDENTIFIED 9.122	<input type="checkbox"/>



1202012164		19-JAN-10 18:15	0	LCS	LOAD	1		GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	HE 1.137	0.2743	pCi/g	0.7652	N	0	13	0	FAIL_ABUND 0		
Americium-241	✓ 14.84	1.109	pCi/g	1.014	0.200	58.95	1	1.305	IDENTIFIED 3.81		
Americium-243	HE 0.3757	0.07789	pCi/g	0.2641	N	0	13	0	FAIL_ABUND 0		
Barium-137m	5.255	0.1914	pCi/g	0.1178	N	661.1	2	1.767	IDENTIFIED 2.632		
Bismuth-211	2.131	0.3353	pCi/g	0.7485	Y	351.4	4	1.099	IDENTIFIED 15.36		
Bismuth-214	0.4552	0.1566	pCi/g	0.2471	0.200	609.3	4	1.631	IDENTIFIED 34.2		
Cadmium-109	33.31	2.617	pCi/g	2.674	Y	87.44	3	1.395	IDENTIFIED 5.335		
Cerium-143	HE 15.23	4.754	pCi/g	13.4	N	0	13	0	FAIL_ABUND 0		
Cesium-137	✓ 5.555	0.2028	pCi/g	0.1245	0.100	661.1	2	1.767	IDENTIFIED 2.632		
Cobalt-57	0.2335	0.03479	pCi/g	0.07648	N	121.3	1	1.269	IDENTIFIED 14.45		
Cobalt-60	✓ 6.739	0.3132	pCi/g	0.1137	0.100	1332	1	1.879	IDENTIFIED 2.717		
Gross Gamma	26.96	3.535	pCi/g	3.895	N	0					
Iodine-123	HE 33.02	466.3	pCi/g	0	N	0	13	0	SHORT_HLIF 0		
Lead-212	1.054	0.1333	pCi/g	0.1933	0.100	238.1	4	1.395	IDENTIFIED 11.96		
Lead-214	0.7412	0.1182	pCi/g	0.2557	0.100	351.4	4	1.099	IDENTIFIED 15.36		
Neptunium-237	9.722	1.261	pCi/g	0.8019	N	87.44	3	1.395	IDENTIFIED 5.335		
Niobium-95m	1.018	0.1471	pCi/g	0.5145	N	0	13	0	NOT_IDENTI 0		
Niobium-97	3080	172.7	pCi/g	0	N	0	13	0	SHORT_HLIF 0		
Polonium-212	1.054	0.1333	pCi/g	0.1933	N	238.1	4	1.395	IDENTIFIED 11.96		
Polonium-214	0.7412	0.1182	pCi/g	0.2557	N	351.4	4	1.099	IDENTIFIED 15.36		
Polonium-216	1.054	0.1333	pCi/g	0.1933	N	238.1	4	1.395	IDENTIFIED 11.96		
Polonium-218	0.7412	0.1182	pCi/g	0.2557	N	351.4	4	1.099	IDENTIFIED 15.36		
Radium-224	3.859	0.8133	pCi/g	2.801	Y	0	13	0	NOT_IDENTI 0		
Radium-226	0.4552	0.1566	pCi/g	0.2471	Y	609.3	4	1.631	IDENTIFIED 34.2		
Radium-228	1.137	0.2743	pCi/g	0.7652	0.500	0	13	0	FAIL_ABUND 0		
Silver-110m	1.217	0.07892	pCi/g	0.2971	N	0	13	0	NOT_IDENTI 0		
Sodium-24	HE 15.98	169	pCi/g	0	N	0	13	0	SHORT_HLIF 0		
Technetium-99m	HE 6.84E+07	5.00E+07	pCi/g	0	N	0	13	0	SHORT_HLIF 0		
Thallium-208	0.4185	0.07119	pCi/g	0.1267	0.080	582.6	1	1.335	IDENTIFIED 16.71		
Thorium-228	1.062	0.1344	pCi/g	0.1948	N	238.1	4	1.395	IDENTIFIED 11.96		
Thorium-230	HE 0.4552	0.1566	pCi/g	0.2471	N	609.3	4	1.631	IDENTIFIED 34.2		
Thorium-232	HE 1.137	0.2743	pCi/g	0.7652	N	0	13	0	FAIL_ABUND 0		
Tin-126	3.311	0.2601	pCi/g	0.2679	N	87.44	3	1.395	IDENTIFIED 5.335		
Uranium-234	HE 0.4552	0.1566	pCi/g	0.2471	N	609.3	4	1.631	IDENTIFIED 34.2		
Zirconium-97	4390	1727	pCi/g	0	N	0	13	0	SHORT_HLIF 0		

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

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

# GEL QUALS

Batch ID: 940270

Report run on: January 20, 2010 3:52 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
244132001-1 19-JAN-2010 09:11	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.479			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.158		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.767			
244132002-1 19-JAN-2010 09:12	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.04			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.285			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.019			
244132003-1 19-JAN-2010 09:23	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.739			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.612			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1053		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.807			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1078			
	Uranium-235	UI	UI	UI	Data rejected due to no valid peak.		.3229		.5	.5
244132004-1 19-JAN-2010 09:53	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.176			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.424			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.111		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.369			
244132005-1 19-JAN-2010 09:53	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.869			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.162			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.149		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.702			

# GEL QUALS

Batch ID: 940270

Report run on: January 20, 2010 3:52 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
244132008-1 19-JAN-2010 09:54	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.531			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.15			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.0753		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.528			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.158			
244132007-1 19-JAN-2010 09:54	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.579			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.435			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1105		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.829			
244132008-1 19-JAN-2010 10:02	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.491			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.938			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1528		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.67			
	Radium-228	UI	UI	UI	Data rejected due to low abundance.		1.522		.5	.5
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09084			
244132009-1 19-JAN-2010 10:54	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.122			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.523			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.154		.1	.1
	Mercury-203	UI	UI	UI	Data rejected due to interference.		.08003		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.754			

# GEL QUALS

Batch ID: 940270

Report run on: January 20, 2010 3:52 PM

Samp Id	Parname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
244132010-1 19-JAN-2010 10:55	Bismuth-211	UI	UI	Data rejected due to interference.		4.204			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.033			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1187		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.752			
244132011-1 19-JAN-2010 11:04	Bismuth-211	UI	UI	Data rejected due to interference.		4.358			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.661			
	Radium-224	UI	UI	Data rejected due to interference.		4.99			
244132012-1 19-JAN-2010 11:12	Bismuth-211	UI	UI	Data rejected due to interference.		4.698			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.762			
	Radium-224	UI	UI	Data rejected due to interference.		5.439			
244132013-1 19-JAN-2010 11:41	Bismuth-211	UI	UI	Data rejected due to interference.		4.48			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.4			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.115		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.728			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.08191			
244132014-1 19-JAN-2010 11:41	Bismuth-211	UI	UI	Data rejected due to interference.		4.714			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.697			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.134		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.271			

# GEL QUALS

Batch ID: 940270

Report run on: January 20, 2010 3:52 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
244132015-1 19-JAN-2010 11:41	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.652			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.05			
	Radium-224	UI	UI	UI	Data rejected due to interference.		2.948			
244132016-1 19-JAN-2010 11:42	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.941			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.023			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1602		.1	.1
	Mercury-203	UI	UI	UI	Data rejected due to low abundance.		.07502		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.591			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09789			
244132017-1 19-JAN-2010 11:42	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.075			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.251			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.515			
244132018-1 19-JAN-2010 12:04	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.741			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		1.845			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.191			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09631			
244132019-1 19-JAN-2010 14:20	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.334			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.093			
244132020-1 19-JAN-2010 17:05	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.909			

# GEL QUALS

Batch ID: 940270

Report run on: January 20, 2010 3:52 PM

Samp Id	Parmname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
244132020-1 19-JAN-2010 17:05	Cadmium-109	UI	UI	UI Data rejected due to interference.		3.828			
	Cesium-134	UI	UI	UI Data rejected due to low abundance.		.1124		.1	.1
	Radium-224	UI	UI	UI Data rejected due to interference.		4.601			
1202012163-1 DUP 19-JAN-2010 17:39	Bismuth-211	UI	UI	UI Data rejected due to interference.		4.557			
	Cadmium-109	UI	UI	UI Data rejected due to interference.		4.88			
	Radium-224	UI	UI	UI Data rejected due to interference.		4.671			



# Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertainty	Units	DL	RDL
940270	244132020	SAMPLE	19-JAN-10	Krypton-85	10.37	4.481	pCi/g	7.128	N
				Lead-212	1.54	0.1009	pCi/g	0.05075	0.100
				Lead-214	1.36	0.1082	pCi/g	0.06114	0.100
				Mercury-203	0.0394	0.02205	pCi/g	0.03928	0.100
				Niobium-97	46140	24330	pCi/g	0	N
				Potassium-40	20.61	1.02	pCi/g	0.3059	1.00
				Radium-224	4.601	0.7948	pCi/g	0.5775	Y
				Radium-226	1.319	0.1077	pCi/g	0.06321	Y
				Radium-228	1.786	0.196	pCi/g	0.1257	0.500
				Strontium-85	0.05266	0.02261	pCi/g	0.0362	Y
				Thallium-201	6.423	3.144	pCi/g	5.443	N
				Thallium-208	0.5409	0.05321	pCi/g	0.03491	0.080
				Thorium-234	0.9732	0.4721	pCi/g	0.539	2.00
				Zirconium-97	2.35E+06	5.30E+05	pCi/g	0	N
940270	1202012162	MB	19-JAN-10	Iodine-133	5.507	3.981	pCi/g	0	N
				Iodine-135	6.85E+06	9.01E+06	pCi/g	0	N
940270	1202012163	DUP	19-JAN-10	Bismuth-211	4.557	0.3269	pCi/g	0.1553	Y
				Bismuth-214	1.37	0.1057	pCi/g	0.05316	0.200
				Cadmium-109	4.88	0.5307	pCi/g	0.5397	Y
				Cerium-143	511.3	77.49	pCi/g	0	N
				Cesium-134	0.06596	0.02786	pCi/g	0.04199	0.100
				Gross Gamma	10.14	1.537	pCi/g	2.311	N
				Iodine-123	9.62E+05	9.25E+05	pCi/g	0	N
				Iodine-133	463	1301	pCi/g	0	N
				Lead-212	1.893	0.1161	pCi/g	0.04234	0.100
				Lead-214	1.585	0.121	pCi/g	0.05412	0.100
				Niobium-97	17010	18820	pCi/g	0	N
				Potassium-40	21.14	1.166	pCi/g	0.2018	1.00
				Radium-224	4.671	0.5933	pCi/g	0.4817	Y
				Radium-226	1.37	0.1057	pCi/g	0.05316	Y
				Radium-228	2.15	0.1904	pCi/g	0.09169	0.500
				Thallium-200	12.32	118.8	pCi/g	0	N
				Thallium-208	0.6144	0.05279	pCi/g	0.02975	0.080
				Thorium-227	0.3886	0.1708	pCi/g	0.3038	Y
				Thorium-234	2.031	0.8219	pCi/g	0.815	2.00
				Uranium-235	0.2019	0.1014	pCi/g	0.1701	0.500
				Zirconium-97	9.47E+05	3.92E+05	pCi/g	0	N

1/20/10

1/20/10

## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 11:12:07.59

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132001.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:11:36
Sample ID          : G244132001      Sample quantity      : 1.25220E+02 GRAM
Detector name      : GAM13           Detector geometry    : CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time  : 0 02:00:01.62  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials   : MXR1
Abundance limit    : 75.00000        Sensitivity        : 5.00000
Batch ID           : 940270          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	46.40*	48	484	1.13	92.56	89	8	6.70E-03	84.9	
2	0	63.18*	160	820	1.21	126.12	121	10	2.22E-02	36.9	
3	4	74.71	658	662	1.22	149.20	144	22	9.14E-02	7.6	1.81E+00
4	4	76.96*	966	584	1.15	153.69	144	22	1.34E-01	5.6	
5	0	85.57	508	838	1.13	170.92	165	13	7.05E-02	12.5	
6	0	92.68*	295	541	1.33	185.14	182	9	4.10E-02	17.6	
7	0	163.23*	39	302	1.78	326.27	324	8	5.36E-03	83.4	
8	0	185.92*	125	557	1.30	371.67	366	14	1.74E-02	43.6	
9	0	209.06	136	247	1.56	417.96	414	8	1.89E-02	21.7	
10	4	238.54*	1226	266	1.27	476.93	472	19	1.70E-01	3.8	8.39E-01
11	4	241.46	294	323	1.83	482.77	472	19	4.08E-02	16.9	
12	0	270.02	113	172	1.62	539.91	536	8	1.57E-02	22.3	
13	1	295.12*	332	191	1.46	590.12	586	19	4.61E-02	9.7	1.08E+00
14	1	299.98	75	214	1.44	599.84	586	19	1.04E-02	36.2	
15	0	327.93	70	106	1.55	655.76	653	7	9.66E-03	27.4	
16	0	338.13*	235	183	1.45	676.16	672	9	3.26E-02	12.6	
17	0	351.80*	676	192	1.36	703.51	699	11	9.39E-02	5.6	
18	0	510.64*	191	139	2.08	1021.30	1014	15	2.66E-02	17.6	
19	0	583.04*	341	166	1.49	1166.14	1159	15	4.74E-02	10.2	
20	0	609.25*	466	160	1.66	1218.57	1213	15	6.47E-02	7.7	
21	0	727.72	123	92	3.09	1455.60	1448	14	1.70E-02	19.1	
22	0	794.89	69	93	1.46	1589.99	1582	15	9.55E-03	33.0	
23	0	860.64	41	87	1.42	1721.54	1715	12	5.63E-03	48.7	
24	0	911.14*	257	65	1.92	1822.58	1815	17	3.57E-02	10.1	
25	1	964.63	71	71	2.11	1929.60	1921	24	9.86E-03	26.8	1.77E+00
26	1	968.84*	152	61	2.21	1938.03	1921	24	2.10E-02	14.2	
27	0	1120.40*	107	76	2.01	2241.27	2231	18	1.48E-02	21.8	
28	0	1460.55*	734	15	2.42	2921.88	2912	20	1.02E-01	4.0	
29	0	1509.33	29	11	1.55	3019.48	3014	11	4.00E-03	29.1	
30	0	1690.17	25	4	4.43	3381.37	3372	17	3.44E-03	27.7	
31	0	1764.43	77	8	2.48	3529.95	3522	14	1.08E-02	13.5	
32	0	1846.77*	15	12	5.06	3694.73	3686	16	2.05E-03	61.6	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 11:12:10

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132001.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 5-JAN-2010 12:00:00 Acquisition date : 19-JAN-2010 09:11:36  
 Sample ID : G244132001 Sample quantity : 125.22 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA13 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.62 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	*	1.981E+01	1.982E+00	5.492E-01	3.358E-02	36.062
TL-208		277.35		7.312E-01	4.608E-01	7.695E-01	9.013E-02	0.950
	+	510.84		1.047E+00	3.862E-01	2.748E-01	2.987E-02	3.810
	+	583.14	*	5.386E-01	1.182E-01	7.770E-02	6.432E-03	6.932
	+	860.37		6.076E-01	5.934E-01	5.833E-01	4.918E-02	1.042
BI-210	+	46.50	*	4.899E-01	8.329E-01	8.302E-01	6.767E-02	0.590
PB-210	+	46.50	*	4.899E-01	8.329E-01	8.302E-01	6.767E-02	0.590
PO-210	+	46.50	*	4.899E-01	8.326E-01	8.302E-01	5.919E-02	0.590
BI-211		72.87		4.618E+00	2.457E+00	3.907E+00	3.416E-01	1.182
	+	351.07	*	4.479E+00	6.003E-01	4.189E-01	3.053E-02	10.693
PB-212	+	74.81		2.504E+00	4.958E-01	4.104E-01	5.221E-02	6.102
	+	77.11		2.190E+00	3.081E-01	2.453E-01	2.084E-02	8.927
		87.30		5.361E-01	4.068E-01	6.274E-01	8.006E-02	0.854
	+	238.63	*	1.748E+00	2.070E-01	1.044E-01	9.481E-03	16.752
	+	300.09		1.650E+00	1.206E+00	1.419E+00	1.350E-01	1.163
PO-212	+	74.81		2.504E+00	4.958E-01	4.104E-01	5.221E-02	6.102
	+	77.11		2.190E+00	3.081E-01	2.453E-01	2.084E-02	8.927
		87.30		5.361E-01	4.068E-01	6.274E-01	8.006E-02	0.854
		115.19		5.464E-01	3.815E+00	6.279E+00	7.281E-01	0.087
	+	238.63	*	1.748E+00	2.070E-01	1.044E-01	9.481E-03	16.752
	+	300.09		1.650E+00	1.206E+00	1.419E+00	1.350E-01	1.163
BI-214	+	609.31	*	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
	+	1120.29		1.649E+00	7.352E-01	5.955E-01	5.327E-02	2.769
	+	1764.49		1.635E+00	4.515E-01	3.829E-01	2.175E-02	4.269
PB-214	+	74.81		4.315E+00	8.182E-01	7.072E-01	8.043E-02	6.102
	+	77.11		3.755E+00	6.007E-01	4.206E-01	4.800E-02	8.927
		87.30		9.184E-01	6.944E-01	1.075E+00	1.188E-01	0.854
	+	241.98		2.514E+00	8.843E-01	6.289E-01	6.088E-02	3.997
	+	295.21		1.286E+00	2.792E-01	2.482E-01	2.431E-02	5.179
	+	351.92	*	1.558E+00	2.241E-01	1.435E-01	1.285E-02	10.854
PO-214	+	74.81		4.315E+00	8.182E-01	7.072E-01	8.043E-02	6.102
	+	77.11		3.755E+00	6.007E-01	4.206E-01	4.800E-02	8.927
		87.30		9.184E-01	6.944E-01	1.075E+00	1.188E-01	0.854
	+	241.98		2.514E+00	8.843E-01	6.289E-01	6.088E-02	3.997

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	295.21		1.286E+00	2.792E-01	2.482E-01	2.431E-02	5.179
	+	351.92	*	1.558E+00	2.241E-01	1.435E-01	1.285E-02	10.854
	+	74.81		2.504E+00	4.958E-01	4.104E-01	5.221E-02	6.102
	+	77.11		2.190E+00	3.081E-01	2.453E-01	2.084E-02	8.927
		87.30		5.361E-01	4.068E-01	6.274E-01	8.006E-02	0.854
PO-218	+	238.63	*	1.748E+00	2.070E-01	1.044E-01	9.481E-03	16.752
	+	300.09		1.650E+00	1.206E+00	1.419E+00	1.350E-01	1.163
	+	74.81		4.315E+00	8.182E-01	7.072E-01	8.043E-02	6.102
	+	77.11		3.755E+00	6.007E-01	4.206E-01	4.800E-02	8.927
		87.30		9.184E-01	6.944E-01	1.075E+00	1.188E-01	0.854
RA-224	+	241.98		2.514E+00	8.843E-01	6.289E-01	6.088E-02	3.997
	+	295.21		1.286E+00	2.792E-01	2.482E-01	2.431E-02	5.179
	+	351.92	*	1.558E+00	2.241E-01	1.435E-01	1.285E-02	10.854
RA-226	+	240.98	*	4.767E+00	1.655E+00	1.188E+00	9.380E-02	4.012
	+	609.31	*	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
AC-228	+	1120.29		1.649E+00	7.352E-01	5.955E-01	5.327E-02	2.769
	+	1764.49		1.635E+00	4.515E-01	3.829E-01	2.175E-02	4.269
	+	338.32		1.709E+00	8.212E-01	4.611E-01	1.888E-01	3.706
	+	911.07	*	1.817E+00	4.126E-01	2.766E-01	2.872E-02	6.571
	+	969.11		1.885E+00	6.862E-01	5.366E-01	1.226E-01	3.513
RA-228	+	338.32		1.709E+00	8.212E-01	4.611E-01	1.888E-01	3.706
	+	911.07	*	1.817E+00	4.126E-01	2.766E-01	2.872E-02	6.571
	+	969.11		1.885E+00	6.862E-01	5.366E-01	1.226E-01	3.513
TH-228	+	74.81		2.539E+00	4.441E-01	4.162E-01	3.622E-02	6.102
	+	77.11		2.221E+00	3.124E-01	2.488E-01	2.113E-02	8.927
		87.30		5.436E-01	4.089E-01	6.362E-01	5.042E-02	0.854
TH-230	+	238.63	*	1.773E+00	2.099E-01	1.058E-01	9.613E-03	16.752
	+	300.09		1.673E+00	1.565E+00	1.439E+00	8.508E-01	1.163
	+	609.31	*	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
	+	1120.29		1.649E+00	7.352E-01	5.955E-01	5.327E-02	2.769
	+	1764.49		1.635E+00	4.515E-01	3.829E-01	2.175E-02	4.269
TH-232	+	338.32		1.709E+00	4.461E-01	4.611E-01	3.210E-02	3.706
	+	911.07	*	1.817E+00	4.126E-01	2.766E-01	2.872E-02	6.571
	+	969.11		1.885E+00	6.862E-01	5.366E-01	1.226E-01	3.513
TH-234	+	63.29	*	1.709E+00	1.298E+00	1.099E+00	2.017E-01	1.554
	+	92.38		2.280E+00	9.030E-01	7.926E-01	1.427E-01	2.876
U-234	+	609.31	*	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
	+	1120.29		1.649E+00	7.352E-01	5.955E-01	5.327E-02	2.769
	+	1764.49		1.635E+00	4.515E-01	3.829E-01	2.175E-02	4.269
U-235		89.95		7.952E-01	1.378E+00	1.663E+00	5.108E-01	0.478
	+	93.35		2.741E+00	1.234E+00	9.559E-01	2.677E-01	2.868
		105.00		6.230E-01	1.111E+00	1.803E+00	5.466E-01	0.346
		143.76	*	-2.414E-02	2.570E-01	4.045E-01	7.468E-02	-0.060
	+	163.35		4.147E-01	6.961E-01	8.567E-01	1.617E-01	0.484
NP-237	+	185.71		1.260E-01	1.102E-01	8.067E-02	6.368E-03	1.562
		205.31		-3.371E-01	6.447E-01	9.150E-01	1.718E-01	-0.368
	+	86.50	*	1.663E+00	5.561E-01	3.659E-01	8.094E-02	4.545
		95.87		-3.129E-01	9.441E-01	1.372E+00	3.393E-01	-0.228
	+	63.29	*	1.709E+00	1.298E+00	1.099E+00	2.017E-01	1.554

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	+	92.38		2.280E+00	8.270E-01	7.926E-01	6.691E-02	2.876
	+	74.67	*	4.060E-01	7.086E-02	6.652E-02	5.746E-03	6.104
	+	86.72		6.236E+01	1.641E+01	1.373E+01	1.093E+00	4.542
		117.66		-3.313E+00	4.037E+00	6.343E+00	7.591E-01	-0.522
ANH-511		142.18		-1.250E+01	2.147E+01	3.309E+01	3.506E+00	-0.378
	+	511.00	*	2.262E-01	8.126E-02	5.937E-02	4.144E-03	3.809

## ---- 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	*	9.792E-02	3.975E-01	6.741E-01	5.069E-02	0.145
NA-22		1274.54	*	-5.382E-02	5.401E-02	8.094E-02	4.569E-03	-0.665
NA-24		1368.53	*	-1.201E-01	5.401E-02	Half-Life too short		
AL-26		1129.67		-2.630E+00	2.363E+00	3.195E+00	1.894E-01	-0.823
		1808.65	*	9.708E-03	4.236E-02	7.279E-02	4.107E-03	0.133
TI-44		67.85		-4.674E-03	2.844E-02	4.564E-02	4.133E-03	-0.102
	+	78.38	*	4.042E-01	5.685E-02	5.815E-02	4.897E-03	6.951
SC-46		889.25	*	1.185E-02	5.626E-02	9.459E-02	7.163E-03	0.125
	+	1120.51		2.794E-01	1.232E-01	1.520E-01	9.139E-03	1.838
V-48		944.10		3.883E-01	1.155E+00	1.953E+00	1.426E-01	0.199
		983.50	*	4.124E-02	8.947E-02	1.524E-01	1.078E-02	0.271
		1312.09		-4.713E-02	9.781E-02	1.543E-01	8.745E-03	-0.306
CR-51		320.08	*	-7.603E-02	4.476E-01	7.249E-01	5.642E-02	-0.105
MN-52		744.21		-1.681E-02	2.905E-01	4.649E-01	3.774E-02	-0.036
		848.13		-3.545E+00	7.913E+00	1.270E+01	9.888E-01	-0.279
		935.52		2.091E-01	2.902E-01	5.048E-01	3.708E-02	0.414
		1246.25		5.725E-02	8.187E+00	1.365E+01	7.639E-01	0.004
		1333.61		1.323E+00	6.682E+00	1.089E+01	6.192E-01	0.122
		1434.06	*	1.794E-01	2.658E-01	4.707E-01	2.705E-02	0.381
MN-54		834.83	*	4.490E-03	4.880E-02	8.180E-02	6.419E-03	0.055
CO-56		846.75	*	-4.791E-03	5.238E-02	8.650E-02	6.742E-03	-0.055
		977.42		1.903E+00	4.026E+00	6.584E+00	4.682E-01	0.289
		1037.82		1.248E-01	3.895E-01	6.541E-01	4.764E-02	0.191
		1175.09		-1.439E+00	2.827E+00	4.338E+00	2.386E-01	-0.332
		1238.25		1.946E-01	1.222E-01	2.232E-01	1.332E-02	0.872
		1360.21		-8.092E-01	1.329E+00	2.049E+00	1.169E-01	-0.395
		1771.40		-2.872E-02	3.079E-01	4.251E-01	2.412E-02	-0.068
CO-57		122.06	*	2.547E-03	2.664E-02	4.361E-02	5.516E-03	0.058
		136.48		1.471E-02	2.329E-01	3.780E-01	4.424E-02	0.039
CO-58		810.76	*	-1.805E-02	5.067E-02	8.225E-02	6.551E-03	-0.219
FE-59		142.65		-7.623E-01	3.257E+00	5.101E+00	5.379E-01	-0.149
		192.34		-1.089E-01	1.146E+00	1.710E+00	2.219E-01	-0.064
		1099.22	*	7.227E-02	1.116E-01	1.918E-01	1.370E-02	0.377
		1291.56		7.461E-02	1.614E-01	2.787E-01	2.035E-02	0.268
CO-60		1173.22		1.497E-02	5.677E-02	9.372E-02	5.151E-03	0.160
		1332.49	*	2.427E-02	6.026E-02	9.991E-02	5.683E-03	0.243
ZN-65		1115.52	*	-3.989E-02	1.416E-01	1.894E-01	1.150E-02	-0.211
GE-68		1077.35	*	3.630E-01	1.624E+00	2.694E+00	1.722E-01	0.135

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-73	53.44	*		3.501E-02	2.420E-01	3.953E-01	3.339E-02	0.089
AS-74	595.88	*		3.681E-02	1.156E-01	1.936E-01	1.486E-02	0.190
	634.78			-3.700E-02	4.321E-01	7.002E-01	5.580E-02	-0.053
SE-75	66.05			1.067E+00	2.896E+00	4.466E+00	4.865E-01	0.239
	96.73			-5.865E-01	8.108E-01	1.129E+00	1.567E-01	-0.519
	121.11			4.791E-02	1.412E-01	2.333E-01	3.363E-02	0.205
	136.00			4.022E-02	4.274E-02	7.152E-02	8.079E-03	0.562
	198.60			-4.878E-01	2.019E+00	3.283E+00	2.934E-01	-0.149
	264.65	*		-5.055E-02	4.985E-02	7.124E-02	5.581E-03	-0.710
	279.53			-7.874E-02	1.244E-01	1.989E-01	1.600E-02	-0.396
	303.91			-1.147E+00	2.796E+00	3.899E+00	4.142E-01	-0.294
	400.65			-2.448E-01	3.285E-01	4.841E-01	4.449E-02	-0.506
BR-77	87.88			4.688E+01	1.333E+02	2.014E+02	1.590E+01	0.233
	200.40			6.096E+01	1.224E+02	2.109E+02	1.671E+01	0.289
	239.00	+		1.959E+02	2.147E+01	2.966E+01	2.343E+00	6.604
	249.79			-2.358E+01	4.870E+01	7.910E+01	6.220E+00	-0.298
	281.68			-4.673E+01	7.139E+01	1.138E+02	8.723E+00	-0.411
	297.23			1.527E+02	4.926E+01	8.902E+01	6.696E+00	1.716
	303.76			-4.377E+01	1.656E+02	2.336E+02	1.740E+01	-0.187
	439.47			1.006E+02	1.277E+02	2.238E+02	1.414E+01	0.450
	484.57			-2.082E+02	2.107E+02	3.300E+02	2.225E+01	-0.631
	520.65	*		-3.388E+00	9.270E+00	1.501E+01	1.060E+00	-0.226
	574.64			4.588E+01	1.964E+02	3.198E+02	2.403E+01	0.143
	578.91			-1.510E+01	8.836E+01	1.237E+02	9.338E+00	-0.122
	585.48			9.328E+02	2.374E+02	4.076E+02	3.097E+01	2.289
	755.35			-1.024E+02	1.765E+02	2.709E+02	2.194E+01	-0.378
	817.79			-4.846E+01	1.182E+02	1.906E+02	1.509E+01	-0.254
SR-82	698.33			-2.463E+01	4.537E+01	7.037E+01	5.745E+00	-0.350
	776.49	*		-1.641E-01	4.996E-01	8.179E-01	6.583E-02	-0.201
	1395.20			-1.416E+01	1.460E+01	2.134E+01	1.223E+00	-0.664
RB-83	520.41	*		-5.175E-03	8.611E-02	1.424E-01	1.005E-02	-0.036
	529.64			-2.265E-02	1.312E-01	2.150E-01	1.535E-02	-0.105
	552.65			-2.422E-01	2.554E-01	3.932E-01	2.884E-02	-0.616
RB-84	881.50	*		5.692E-02	9.332E-02	1.617E-01	1.232E-02	0.352
KR-85	513.99	*		1.184E+01	1.060E+01	1.661E+01	1.163E+00	0.713
SR-85	513.99	*		5.991E-02	5.366E-02	8.404E-02	5.887E-03	0.713
RB-86	1076.63	*		4.722E-01	9.847E-01	1.669E+00	1.068E-01	0.283
Y-88	898.02			-2.835E-02	5.694E-02	9.040E-02	6.843E-03	-0.314
	1836.01	*		2.109E-02	4.850E-02	8.079E-02	4.550E-03	0.261
ZR-88	392.90	*		-1.546E-02	3.757E-02	5.876E-02	3.441E-03	-0.263
Y-91	1204.90	*		-1.037E+01	2.368E+01	3.822E+01	2.118E+00	-0.271
NB-94	702.63	*		-2.729E-02	4.716E-02	7.292E-02	5.952E-03	-0.374
	871.10			-4.016E-04	4.280E-02	7.095E-02	5.444E-03	-0.006
NB-95	765.79	*		5.341E-02	5.962E-02	1.051E-01	8.486E-03	0.508
NB-95M	235.69	*		2.436E-01	1.598E-01	2.510E-01	2.322E-02	0.971
ZR-95	724.18			-8.638E-02	1.690E-01	2.232E-01	1.993E-02	-0.387
	756.15	*		1.456E-02	1.055E-01	1.710E-01	1.542E-02	0.085
NB-97	657.90	*		-2.076E-02	1.055E-01	Half-Life	too short	
	1024.50			-4.534E-01	1.055E-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
ZR-97		254.15		4.118E-01	1.055E-01	Half-Life	too short	
		355.39		-2.468E-02	1.055E-01	Half-Life	too short	
		507.63	*	1.558E+00	1.055E-01	Half-Life	too short	
		602.52		-2.596E+00	1.055E-01	Half-Life	too short	
		1021.30		-4.563E-01	1.055E-01	Half-Life	too short	
		1147.95		-9.162E-01	1.055E-01	Half-Life	too short	
		1362.66		1.087E+00	1.055E-01	Half-Life	too short	
		1750.46		-1.622E+00	1.055E-01	Half-Life	too short	
MO-99		140.51		-1.460E+00	2.182E+01	3.514E+01	9.992E+00	-0.042
		181.06		9.073E-02	1.618E+01	2.279E+01	4.092E+00	0.004
		366.43		2.404E+00	7.148E+01	1.158E+02	7.447E+00	0.021
		739.58	*	-1.591E+00	1.247E+01	1.986E+01	2.961E+00	-0.080
		778.00		-1.608E+01	3.393E+01	5.491E+01	4.417E+00	-0.293
TC-99M		140.51	*	-9.574E+07	3.393E+01	Half-Life	too short	
RH-101		127.23		-1.829E-02	3.612E-02	5.746E-02	6.978E-03	-0.318
		198.01	*	-1.259E-02	3.734E-02	6.049E-02	4.790E-03	-0.208
		325.23		-1.401E-02	2.972E-01	4.233E-01	3.034E-02	-0.033
RH-102		418.52		2.121E-02	3.721E-01	5.968E-01	3.648E-02	0.036
		475.06	*	-4.045E-02	3.820E-02	5.760E-02	3.833E-03	-0.702
		631.29		3.092E-02	7.079E-02	1.192E-01	9.466E-03	0.259
		697.49		-6.114E-02	1.078E-01	1.670E-01	1.364E-02	-0.366
		766.84		1.954E-01	1.570E-01	2.807E-01	2.266E-02	0.696
		1046.59		-1.557E-02	1.491E-01	2.407E-01	1.598E-02	-0.065
		1112.84		-1.578E-02	3.415E-01	4.705E-01	2.862E-02	-0.034
RU-103		497.08	*	-7.249E-02	4.945E-02	7.261E-02	9.558E-03	-0.998
	+	610.33		1.469E+01	3.284E+00	3.533E+00	5.749E-01	4.159
RH-106		511.85		1.127E+00	4.049E-01	5.485E-01	3.832E-02	2.055
		621.84	*	5.568E-01	4.451E-01	7.779E-01	1.003E-01	0.716
		1050.47		-2.393E-01	3.094E+00	5.008E+00	3.309E-01	-0.048
RU-106		511.85		1.127E+00	4.049E-01	5.485E-01	3.832E-02	2.055
		621.84	*	5.568E-01	4.415E-01	7.779E-01	6.126E-02	0.716
		1050.47		-2.393E-01	3.094E+00	5.008E+00	3.309E-01	-0.048
AG-108M		433.93	*	-2.843E-03	4.116E-02	6.908E-02	4.647E-03	-0.041
		614.37		-7.018E-04	6.037E-02	8.532E-02	6.989E-03	-0.008
		722.95		-4.865E-02	7.372E-02	9.555E-02	8.125E-03	-0.509
CD-109		88.03	*	6.423E-01	9.430E-01	1.324E+00	1.045E-01	0.485
AG-110M		657.75	*	-8.218E-03	4.504E-02	7.221E-02	6.066E-03	-0.114
		677.61		-1.772E-02	4.115E-01	6.651E-01	5.600E-02	-0.027
		706.67		-7.437E-02	2.919E-01	4.625E-01	3.890E-02	-0.161
		763.93		-3.365E-01	2.440E-01	3.715E-01	3.098E-02	-0.906
		884.67		-3.655E-02	7.025E-02	1.116E-01	8.829E-03	-0.328
		937.48		-8.519E-02	1.541E-01	2.373E-01	1.827E-02	-0.359
		1384.27		-3.586E-01	2.433E-01	3.380E-01	2.056E-02	-1.061
IN-111		171.28		-1.977E-01	8.345E-01	1.314E+00	1.031E-01	-0.150
		245.39	*	2.877E-01	9.364E-01	1.402E+00	1.105E-01	0.205
IN-113M		391.69	*	-9.597E-03	5.531E-02	8.792E-02	5.478E-03	-0.109
SN-113		391.69	*	-9.597E-03	5.531E-02	8.792E-02	5.478E-03	-0.109
IN-114M		190.27	*	1.030E-01	2.304E-01	3.319E-01	2.623E-02	0.310
CD-115		260.90		1.633E+01	9.717E+01	1.627E+02	1.271E+01	0.100

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		492.35		1.012E+01	3.209E+01	5.451E+01	3.713E+00	0.186
		527.90	*	-1.663E+00	9.013E+00	1.475E+01	1.051E+00	-0.113
SN-117M		156.02		-1.633E+00	2.468E+00	3.837E+00	3.466E-01	-0.426
		158.56	*	4.707E-02	5.840E-02	9.659E-02	8.435E-03	0.487
SB-122		563.90	*	8.004E-01	1.965E+00	3.323E+00	2.468E-01	0.241
		692.80		2.197E+01	4.331E+01	7.259E+01	5.927E+00	0.303
I-123		159.00	*	1.549E+00	4.331E+01	Half-Life too short		
		528.96		-1.774E+01	4.331E+01	Half-Life too short		
TE-123M		159.00	*	3.628E-02	3.322E-02	5.315E-02	4.641E-03	0.683
I-124		602.71	*	-5.715E-01	8.993E-01	1.201E+00	9.282E-02	-0.476
		722.78		-1.440E+00	6.049E+00	8.200E+00	6.681E-01	-0.176
		1325.50		1.546E+01	3.905E+01	6.706E+01	3.810E+00	0.231
		1376.25		6.466E+01	3.603E+01	6.843E+01	3.913E+00	0.945
	+	1509.49		2.943E+01	1.721E+01	3.252E+01	1.875E+00	0.905
	+	1691.02		7.955E+00	4.435E+00	7.747E+00	4.436E-01	1.027
SB-124		602.71		-4.018E-02	6.323E-02	8.441E-02	6.528E-03	-0.476
		645.85		3.620E-01	6.542E-01	1.107E+00	9.523E-02	0.327
		709.31		7.998E-01	3.732E+00	6.121E+00	4.994E-01	0.131
		713.82		-8.666E-01	2.212E+00	3.457E+00	4.048E-01	-0.251
		722.78		-1.468E-01	6.165E-01	8.357E-01	6.974E-02	-0.176
	+	968.20		1.913E+01	5.594E+00	8.727E+00	6.254E-01	2.192
		1045.16		3.878E-01	3.447E+00	5.183E+00	3.445E-01	0.075
		1325.50		1.683E+00	4.251E+00	7.300E+00	4.148E-01	0.231
		1368.21		-3.738E-01	2.328E+00	3.776E+00	4.467E-01	-0.099
		1436.60		-3.815E+00	4.872E+00	7.204E+00	4.141E-01	-0.530
	+	1691.02	*	1.912E-01	1.067E-01	1.862E-01	1.160E-02	1.027
SB-125		427.89	*	-7.199E-02	1.094E-01	1.773E-01	1.141E-02	-0.406
		463.38		7.095E-01	3.790E-01	6.881E-01	5.101E-02	1.031
		600.56		1.055E-01	2.476E-01	4.164E-01	3.506E-02	0.253
		635.90		-2.339E-01	3.527E-01	5.449E-01	4.754E-02	-0.429
TE-125M		109.28	*	-5.153E+00	9.496E+00	1.524E+01	1.850E+00	-0.338
I-126		388.63		1.381E-01	2.353E-01	3.918E-01	2.320E-02	0.352
		666.33	*	-1.287E-01	2.308E-01	3.592E-01	2.931E-02	-0.358
		753.82		5.201E-01	2.135E+00	3.486E+00	2.824E-01	0.149
SB-126		223.80		1.214E+00	4.151E+00	7.055E+00	5.592E-01	0.172
		278.60		1.932E+00	2.640E+00	4.506E+00	3.466E-01	0.429
	+	296.50		1.195E+01	2.484E+00	3.630E+00	2.733E-01	3.291
		414.70		-1.109E-02	8.878E-02	1.408E-01	8.555E-03	-0.079
		415.30		-4.367E+00	7.591E+00	1.168E+01	7.104E-01	-0.374
		555.20		3.409E+00	4.760E+00	8.219E+00	6.046E-01	0.415
		573.80		7.238E-01	1.308E+00	2.227E+00	1.672E-01	0.325
		593.00		-8.274E-01	1.129E+00	1.753E+00	1.342E-01	-0.472
		656.30		-1.361E+00	4.171E+00	6.616E+00	5.372E-01	-0.206
		666.33		-5.362E-02	9.617E-02	1.497E-01	1.221E-02	-0.358
		675.00		1.387E+00	2.545E+00	4.287E+00	3.500E-01	0.323
		695.00		-1.058E-02	9.994E-02	1.604E-01	1.310E-02	-0.066
		697.00		-4.161E-02	3.475E-01	5.572E-01	4.549E-02	-0.075
		720.50	*	2.559E-01	2.184E-01	3.381E-01	2.755E-02	0.757
		856.80		-2.348E-01	6.765E-01	9.287E-01	7.194E-02	-0.253



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-126	+	989.30	-9.593E-01	1.708E+00	2.669E+00	1.878E-01	-0.359
		1034.80	4.358E+00	1.041E+01	1.763E+01	1.186E+00	0.247
		1213.00	-1.457E+00	5.336E+00	8.716E+00	4.841E-01	-0.167
		64.28	6.763E-01	5.097E-01	5.503E-01	8.569E-02	1.229
		86.94	2.354E+00	1.136E+00	5.715E-01	2.356E-01	4.119
SB-127	*	87.57	5.579E-02	8.754E-02	1.335E-01	1.056E-02	0.418
		61.10	1.076E+01	2.261E+01	3.517E+01	4.050E+00	0.306
		252.40	-1.159E+00	3.764E+00	6.117E+00	2.556E+00	-0.189
		290.80	-3.398E+00	2.189E+01	3.126E+01	3.126E+00	-0.109
		411.60	-3.679E+00	1.240E+01	1.945E+01	2.762E+00	-0.189
XE-127	*	444.90	-4.658E-01	9.297E+00	1.558E+01	1.675E+00	-0.030
		473.00	1.201E-01	1.640E+00	2.756E+00	3.110E-01	0.044
		543.00	2.044E+00	1.741E+01	2.901E+01	3.866E+00	0.070
		603.60	-1.092E+01	1.531E+01	2.023E+01	2.343E+00	-0.540
		685.20	-6.354E-01	1.482E+00	2.319E+00	2.477E-01	-0.274
I-131	*	698.50	-7.653E+00	1.678E+01	2.617E+01	4.009E+00	-0.292
		722.20	-5.910E+00	4.103E+01	5.618E+01	5.860E+00	-0.105
		783.80	3.534E+00	4.050E+00	7.127E+00	8.327E-01	0.496
		57.60	-4.202E-02	2.227E+00	3.624E+00	3.349E-01	-0.012
		145.22	5.082E-01	7.856E-01	1.296E+00	1.330E-01	0.392
TE-132	*	172.10	-2.274E-02	1.323E-01	2.088E-01	1.640E-02	-0.109
		202.84	-3.943E-02	4.940E-02	8.069E-02	6.394E-03	-0.489
		374.96	5.545E-02	2.386E-01	3.903E-01	2.438E-02	0.142
		80.18	-5.231E+00	3.637E+00	5.096E+00	4.265E-01	-1.026
		284.30	-4.956E-01	1.473E+00	2.385E+00	1.942E-01	-0.208
BA-133	*	364.48	-1.252E-01	1.218E-01	1.832E-01	1.296E-02	-0.683
		636.97	-1.324E+00	1.805E+00	2.770E+00	2.352E-01	-0.478
		722.89	-7.117E+00	1.117E+01	1.452E+01	1.190E+00	-0.490
		49.72	5.670E-01	3.488E+00	5.434E+00	5.342E-01	0.104
		111.76	-7.877E+00	2.515E+01	3.940E+01	4.980E+00	-0.200
I-133	*	116.30	9.997E-01	2.214E+01	3.628E+01	4.801E+00	0.028
		228.16	-9.554E-02	5.788E-01	9.634E-01	1.457E-01	-0.099
		53.15	2.925E-01	1.041E+00	1.708E+00	1.434E-01	0.171
		79.62	-1.797E+00	1.145E+00	1.558E+00	2.349E-01	-1.153
		81.00	-1.582E-01	8.934E-02	1.188E-01	1.864E-02	-1.332
CS-134	*	276.40	4.601E-01	4.504E-01	7.388E-01	1.029E-01	0.623
		302.84	-3.086E-02	1.923E-01	2.735E-01	3.437E-02	-0.113
		356.01	9.822E-03	6.082E-02	8.785E-02	1.055E-02	0.112
		383.85	4.888E-03	3.800E-01	6.122E-01	6.735E-02	0.008
		510.53	8.576E-01	3.800E-01	Half-Life too short		
I-133	+	529.87	-4.623E-04	3.800E-01	Half-Life too short		
		706.58	-5.756E-02	3.800E-01	Half-Life too short		
		856.28	-9.002E-02	3.800E-01	Half-Life too short		
		875.33	-3.482E-02	3.800E-01	Half-Life too short		
		1236.41	6.385E-01	3.800E-01	Half-Life too short		
CS-134	+	1298.22	-3.353E-02	3.800E-01	Half-Life too short		
		475.35	-2.303E+00	2.473E+00	3.760E+00	2.503E-01	-0.613
		563.23	2.001E-01	4.698E-01	7.954E-01	5.979E-02	0.251
		569.32	-1.585E-01	2.734E-01	4.157E-01	3.161E-02	-0.381

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135		604.70		-2.033E-03	5.248E-02	7.413E-02	5.760E-03	-0.027
	+	795.84	*	1.580E-01	1.049E-01	1.201E-01	9.680E-03	1.315
		801.93		-9.888E-02	6.674E-01	9.105E-01	7.307E-02	-0.109
		1038.57		-6.717E-01	4.948E+00	7.971E+00	5.339E-01	-0.084
		1167.94		-6.394E-01	3.393E+00	5.382E+00	2.987E-01	-0.119
		1365.15		8.416E-01	1.601E+00	2.793E+00	1.756E-01	0.301
		268.24	*	4.486E-01	1.938E-01	3.186E-01	2.943E-02	1.408
		288.45		1.080E+09	1.938E-01	Half-Life	too short	
		417.63		9.471E+08	1.938E-01	Half-Life	too short	
		546.56		-2.623E+07	1.938E-01	Half-Life	too short	
		836.80		3.798E+08	1.938E-01	Half-Life	too short	
		1038.76		-2.335E+08	1.938E-01	Half-Life	too short	
		1124.00		3.502E+09	1.938E-01	Half-Life	too short	
		1131.51		-1.286E+08	1.938E-01	Half-Life	too short	
		1260.41	*	-1.818E+08	1.938E-01	Half-Life	too short	
		1457.56		2.630E+10	1.938E-01	Half-Life	too short	
		1678.03		-3.920E+07	1.938E-01	Half-Life	too short	
		1706.46		1.560E+08	1.938E-01	Half-Life	too short	
		1791.20		-9.071E+07	1.938E-01	Half-Life	too short	
CS-136		66.91		6.749E-01	4.589E-01	7.189E-01	1.130E-01	0.939
	+	86.29		6.925E+00	1.938E+00	1.678E+00	2.086E-01	4.127
		153.22		1.031E+00	7.097E-01	1.195E+00	1.232E-01	0.862
	+	163.89		8.804E-01	1.471E+00	1.904E+00	1.748E-01	0.462
		176.55		-1.125E-01	3.971E-01	6.224E-01	5.233E-02	-0.181
		273.65		-5.526E-01	5.672E-01	7.687E-01	6.424E-02	-0.719
		340.57		2.287E-01	1.729E-01	2.665E-01	1.928E-02	0.858
		818.51		5.437E-02	8.705E-02	1.522E-01	1.205E-02	0.357
		1048.07	*	-6.315E-03	1.343E-01	2.181E-01	1.547E-02	-0.029
		1235.34		7.210E-01	7.352E-01	1.300E+00	1.282E-01	0.554
BA-137M		661.65	*	3.488E-02	4.671E-02	7.986E-02	6.513E-03	0.437
CS-137		661.65	*	3.687E-02	4.938E-02	8.442E-02	6.900E-03	0.437
CE-139		165.85	*	1.522E-03	3.673E-02	5.228E-02	4.099E-03	0.029
BA-140	+	162.64		6.188E-01	1.033E+00	1.340E+00	1.174E-01	0.462
		304.84		-9.373E-01	1.629E+00	2.213E+00	6.126E-01	-0.424
		423.70		1.371E-01	2.187E+00	3.504E+00	1.116E+00	0.039
		537.32	*	-1.670E-01	3.248E-01	5.119E-01	1.679E-01	-0.326
LA-140	+	328.77		5.839E-01	3.230E-01	5.552E-01	4.272E-02	1.052
		432.53		1.330E+00	2.387E+00	4.144E+00	2.825E-01	0.321
		487.03		1.040E-01	1.669E-01	2.885E-01	2.144E-02	0.360
		751.79		1.231E+00	2.385E+00	3.969E+00	3.603E-01	0.310
		815.85		-9.271E-02	3.778E-01	6.176E-01	5.555E-02	-0.150
		867.82		-1.742E+00	1.821E+00	2.509E+00	2.057E-01	-0.694
		919.63		1.109E+00	3.790E+00	5.780E+00	5.609E-01	0.192
		925.24		1.635E-01	1.390E+00	2.315E+00	1.857E-01	0.071
		1596.49	*	-7.468E-02	1.118E-01	1.652E-01	9.523E-03	-0.452
CE-141		145.44	*	3.679E-02	7.038E-02	1.156E-01	1.200E-02	0.318
CE-143		57.37		-8.307E-05	7.038E-02	Half-Life	too short	
		231.56		-4.870E-04	7.038E-02	Half-Life	too short	
		293.26	*	3.838E-04	7.038E-02	Half-Life	too short	

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	350.59		1.906E-02	7.038E-02	Half-Life	too short	
		490.36		5.099E-04	7.038E-02	Half-Life	too short	
		664.57		-2.952E-04	7.038E-02	Half-Life	too short	
		721.93		-1.627E-04	7.038E-02	Half-Life	too short	
CE-144		80.11		-2.718E+00	1.853E+00	2.593E+00	2.158E-01	-1.048
		133.54	*	-1.677E-01	2.268E-01	3.531E-01	6.120E-02	-0.475
PM-144		476.78		-2.246E-02	8.852E-02	1.412E-01	1.085E-02	-0.159
		618.01		8.718E-03	4.743E-02	7.410E-02	6.008E-03	0.118
		696.49	*	-5.213E-03	4.800E-02	7.702E-02	6.290E-03	-0.068
		778.57		-1.768E+00	3.182E+00	5.122E+00	4.121E-01	-0.345
PR-144		696.49	*	-3.530E-01	3.250E+00	5.216E+00	4.258E-01	-0.068
		1489.15		8.423E+00	1.850E+01	3.177E+01	1.831E+00	0.265
PM-146		453.90	*	1.921E-02	5.315E-02	9.105E-02	8.264E-03	0.211
		633.02		6.637E-01	1.816E+00	3.016E+00	1.123E+00	0.220
		735.90		4.249E-02	2.186E-01	3.563E-01	1.014E-01	0.119
		747.13		-8.124E-02	1.342E-01	2.049E-01	2.813E-02	-0.397
ND-147		91.11		-4.750E-01	3.519E-01	4.764E-01	4.296E-02	-0.997
		319.41		-1.536E+00	3.815E+00	6.101E+00	4.425E-01	-0.252
		439.89		5.912E+00	6.842E+00	1.203E+01	7.611E-01	0.491
		531.02	*	-3.500E-01	6.559E-01	1.044E+00	1.478E-01	-0.335
PM-149		285.90	*	-6.237E+01	6.998E+01	1.088E+02	1.634E+01	-0.573
EU-152		121.78		-4.077E-03	7.846E-02	1.277E-01	1.727E-02	-0.032
		244.69		2.706E-01	3.921E-01	6.008E-01	4.736E-02	0.450
		344.27	*	-6.268E-02	1.301E-01	1.981E-01	1.485E-02	-0.316
		443.98		-6.517E-01	1.177E+00	1.914E+00	1.217E-01	-0.341
		778.89		-2.621E-01	3.747E-01	5.968E-01	4.799E-02	-0.439
		867.32		-9.634E-01	1.229E+00	1.665E+00	1.281E-01	-0.579
	+	964.01		1.016E+00	5.498E-01	7.743E-01	5.568E-02	1.313
		1085.78		2.042E-01	4.952E-01	8.356E-01	5.281E-02	0.244
		1112.02		5.194E-02	4.891E-01	6.935E-01	4.224E-02	0.075
		1407.95		2.328E-01	2.743E-01	4.874E-01	2.795E-02	0.478
GD-153		69.67		-1.020E+00	1.145E+00	1.669E+00	1.492E-01	-0.611
		83.37		3.687E+01	1.527E+01	2.048E+01	1.667E+00	1.800
		97.43	*	-3.618E-02	8.401E-02	1.193E-01	1.086E-02	-0.303
		103.18		-9.999E-02	1.045E-01	1.652E-01	1.631E-02	-0.605
EU-154		123.07		8.917E-03	5.493E-02	9.011E-02	1.313E-02	0.099
		247.94		1.417E-01	4.293E-01	6.436E-01	7.031E-02	0.220
		591.81		-8.184E-01	8.209E-01	1.243E+00	1.364E-01	-0.658
		723.30		-2.219E-01	3.074E-01	3.953E-01	3.598E-02	-0.561
		756.87		-2.222E-02	1.175E+00	1.882E+00	2.184E-01	-0.012
		873.19		3.322E-01	3.728E-01	6.606E-01	7.656E-02	0.503
		996.32		-1.194E-01	5.402E-01	8.691E-01	1.481E-01	-0.137
		1004.76		-1.620E-01	2.913E-01	4.533E-01	4.739E-02	-0.357
		1274.45	*	-1.517E-01	1.512E-01	2.258E-01	2.086E-02	-0.672
EU-155		48.70		2.552E-01	5.020E-01	7.946E-01	5.997E-02	0.321
		60.01		1.497E+00	2.274E+00	3.569E+00	3.416E-01	0.419
	+	86.54		6.817E-01	1.796E-01	1.666E-01	1.343E-02	4.093
		105.31	*	9.591E-02	1.135E-01	1.880E-01	1.929E-02	0.510
TB-160	+	86.79		1.800E+00	4.738E-01	4.390E-01	3.491E-02	4.101

## ---- 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		-1.769E-01	6.287E-01	1.021E+00	8.085E-02	-0.173
		215.65		-2.679E-01	8.471E-01	1.408E+00	1.117E-01	-0.190
	+	298.57		2.373E-01	1.728E-01	2.325E-01	1.745E-02	1.021
		879.36	*	-3.674E-02	1.829E-01	2.982E-01	2.275E-02	-0.123
		962.29		1.233E+00	8.487E-01	1.344E+00	9.678E-02	0.917
		966.15		1.480E+00	3.580E-01	6.866E-01	4.929E-02	2.156
		1177.93		-2.699E-01	4.468E-01	6.780E-01	3.731E-02	-0.398
		1271.85		1.417E-02	8.855E-01	1.475E+00	8.299E-02	0.010
		80.57		-3.650E-01	2.396E-01	3.340E-01	2.771E-02	-1.093
		184.41		1.368E-02	5.065E-02	7.871E-02	6.210E-03	0.174
		280.46		-1.100E-01	9.769E-02	1.515E-01	1.163E-02	-0.726
		410.95		1.715E-01	3.087E-01	5.108E-01	3.084E-02	0.336
		711.68	*	-1.252E-02	8.300E-02	1.324E-01	1.080E-02	-0.095
		752.31		4.102E-01	4.075E-01	6.993E-01	5.667E-02	0.587
TM-171		810.29		-3.961E-02	7.762E-02	1.244E-01	9.882E-03	-0.318
		51.35		-2.944E-01	7.413E+00	1.267E+01	1.020E+00	-0.023
		52.39		-3.807E+00	4.466E+00	7.061E+00	5.823E-01	-0.539
		59.40		7.915E+00	1.177E+01	1.849E+01	1.773E+00	0.428
LU-176		66.72	*	2.619E+01	1.736E+01	2.770E+01	2.528E+00	0.945
		88.36		9.949E-02	2.191E-01	3.049E-01	2.418E-02	0.326
		201.83		-2.153E-02	3.138E-02	5.156E-02	4.086E-03	-0.417
		306.84	*	-1.552E-02	3.067E-02	4.728E-02	3.505E-03	-0.328
LU-177		401.10		-6.808E+00	8.585E+00	1.262E+01	7.493E-01	-0.540
		112.95		3.377E-01	1.572E+00	2.513E+00	2.831E-01	0.134
LU-177M	+	208.36	*	3.034E+00	1.342E+00	1.953E+00	1.549E-01	1.553
		52.97		-3.716E-02	4.670E-01	7.583E-01	6.338E-02	-0.049
		54.07		-5.504E-02	2.628E-01	4.240E-01	3.632E-02	-0.130
		61.30		8.196E-01	7.461E-01	1.183E+00	1.122E-01	0.693
		121.62		-3.342E-02	3.996E-01	6.494E-01	8.166E-02	-0.051
		147.16		-3.044E-01	7.474E-01	1.182E+00	1.188E-01	-0.258
		171.86		-1.322E-01	5.434E-01	8.550E-01	6.714E-02	-0.155
		218.09		-2.167E-01	9.712E-01	1.619E+00	1.284E-01	-0.134
	+	268.79		2.448E+00	1.106E+00	1.664E+00	1.292E-01	1.471
		319.02		-4.019E-02	3.198E-01	5.194E-01	3.769E-02	-0.077
HF-181		367.43		-8.833E-02	1.063E+00	1.708E+00	1.095E-01	-0.052
		413.65	*	-1.440E-01	2.214E-01	3.387E-01	2.054E-02	-0.425
		56.28		-3.555E-01	3.088E-01	5.029E-01	4.520E-02	-0.707
		57.53		-6.464E-02	1.807E-01	3.039E-01	2.805E-02	-0.213
		65.20		1.685E-01	5.593E-01	8.610E-01	7.941E-02	0.196
		133.02		-4.466E-02	7.046E-02	1.109E-01	1.281E-02	-0.403
		136.25		4.389E-01	4.910E-01	8.206E-01	9.211E-02	0.535
W-181		345.85		5.445E-02	2.544E-01	3.874E-01	2.647E-02	0.141
		482.03	*	-2.308E-02	5.385E-02	8.759E-02	5.885E-03	-0.263
		56.28		-1.411E-01	1.225E-01	1.995E-01	1.793E-02	-0.707
		57.53		-2.570E-02	7.172E-02	1.206E-01	1.113E-02	-0.213
		65.20	*	6.635E-02	2.202E-01	3.390E-01	3.127E-02	0.196
TA-182		67.75		-7.663E-03	6.728E-02	1.082E-01	9.800E-03	-0.071
		100.10		3.810E-03	1.684E-01	2.783E-01	2.632E-02	0.014
		152.43		2.509E-01	3.874E-01	6.377E-01	6.029E-02	0.393

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		222.10		-4.661E-02	3.894E-01	6.511E-01	5.162E-02	-0.072
		1001.68		-1.627E+00	2.992E+00	4.441E+00	3.090E-01	-0.366
	+	1121.28		7.739E-01	3.412E-01	4.108E-01	2.467E-02	1.884
		1189.05		2.896E-01	3.959E-01	6.983E-01	3.854E-02	0.415
		1221.42	*	-3.183E-05	2.482E-01	4.143E-01	2.306E-02	0.000
		1230.97		-6.604E-01	6.473E-01	9.987E-01	5.571E-02	-0.661
		57.98		2.798E-02	7.555E-02	1.246E-01	1.161E-02	0.225
		59.32		3.295E-02	4.772E-02	7.504E-02	7.184E-03	0.439
		67.20		1.396E-01	1.236E-01	1.952E-01	1.775E-02	0.715
	+	162.32	*	9.561E-02	1.597E-01	2.042E-01	1.690E-02	0.468
RE-184	+	208.81		3.061E+00	1.353E+00	1.988E+00	1.576E-01	1.540
		291.72		-3.657E-01	1.166E+00	1.645E+00	1.247E-01	-0.222
		57.98		1.038E-01	2.804E-01	4.625E-01	4.308E-02	0.225
		59.32		1.222E-01	1.770E-01	2.783E-01	2.664E-02	0.439
		67.20		5.179E-01	4.586E-01	7.241E-01	6.586E-02	0.715
		161.27		-1.297E-01	4.585E-01	6.413E-01	5.390E-02	-0.202
		216.55		5.512E-02	2.965E-01	5.027E-01	3.987E-02	0.110
		252.85	*	-1.283E-01	2.496E-01	4.045E-01	3.176E-02	-0.317
		318.01		6.146E-02	5.418E-01	8.913E-01	6.481E-02	0.069
		792.07		1.105E+00	1.623E+00	2.487E+00	1.991E-01	0.444
OS-185		903.28		1.306E+00	1.491E+00	2.329E+00	1.746E-01	0.561
		920.93		-5.331E-02	6.235E-01	9.733E-01	7.220E-02	-0.055
		59.72		6.483E-02	1.316E-01	2.054E-01	1.971E-02	0.316
		61.14		4.775E-02	8.003E-02	1.250E-01	1.187E-02	0.382
		69.30		-1.889E-01	1.894E-01	2.937E-01	2.632E-02	-0.643
		592.07		-3.370E+00	3.308E+00	5.016E+00	3.838E-01	-0.672
		646.12	*	2.235E-02	5.622E-02	9.418E-02	7.580E-03	0.237
		717.42		-1.859E-01	1.311E+00	2.093E+00	1.706E-01	-0.089
		874.81		-9.883E-02	7.580E-01	1.243E+00	9.516E-02	-0.079
		880.27		-4.622E-02	1.036E+00	1.711E+00	1.304E-01	-0.027
RE-188		155.03	*	-9.761E-02	1.974E-01	3.097E-01	2.834E-02	-0.315
		477.96		9.454E-01	3.951E+00	6.695E+00	4.473E-01	0.141
		633.10		1.284E+00	3.593E+00	6.014E+00	4.785E-01	0.213
W-188	+	63.58		6.783E+01	5.041E+01	5.979E+01	5.578E+00	1.135
		227.08		-3.524E+00	1.385E+01	2.298E+01	1.821E+00	-0.153
IR-192		290.67	*	7.864E-01	9.210E+00	1.339E+01	1.016E+00	0.059
	+	295.96		9.690E-01	2.018E-01	3.091E-01	2.351E-02	3.135
		308.46		1.130E-01	1.161E-01	1.930E-01	1.437E-02	0.586
		316.51	*	-5.624E-03	4.113E-02	6.678E-02	4.885E-03	-0.084
		468.07		-1.169E-01	8.725E-02	1.341E-01	9.898E-03	-0.872
		604.41		-1.084E-01	6.979E-01	9.748E-01	1.214E-01	-0.111
AU-195		612.46		2.933E+00	1.156E+00	1.926E+00	1.772E-01	1.522
		65.12		5.776E-02	1.029E-01	1.597E-01	1.474E-02	0.362
		66.83		8.620E-02	5.738E-02	9.156E-02	8.349E-03	0.941
	+	75.70		1.308E+00	2.283E-01	3.677E-01	3.154E-02	3.557
		98.88	*	9.578E-02	2.187E-01	3.566E-01	3.314E-02	0.269
TL-200		129.76		4.741E+00	3.235E+00	5.467E+00	6.500E-01	0.867
		367.94	*	7.738E-05	3.235E+00	Half-Life too short		
		579.30		-2.591E-04	3.235E+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			-5.579E-04	3.235E+00	Half-Life	too short	
	1205.75			-4.905E-05	3.235E+00	Half-Life	too short	
TL-201	68.90			-2.393E+00	2.196E+00	3.568E+00	3.207E-01	-0.671
	70.82			5.773E-01	1.442E+00	2.217E+00	1.966E-01	0.260
	80.30			-4.719E+00	3.336E+00	4.681E+00	3.891E-01	-1.008
	135.34			1.572E+01	2.094E+01	3.485E+01	3.945E+00	0.451
	167.43	*		2.393E+00	6.539E+00	9.483E+00	7.431E-01	0.252
TL-202	68.90			-2.658E-01	2.439E-01	3.963E-01	3.562E-02	-0.671
	70.82			6.394E-02	1.598E-01	2.455E-01	2.178E-02	0.260
	80.30			-5.228E-01	3.696E-01	5.187E-01	4.312E-02	-1.008
	439.56	*		7.412E-02	8.216E-02	1.448E-01	9.148E-03	0.512
HG-203	70.83			2.969E-01	7.300E-01	1.121E+00	1.543E-01	0.265
	72.87			9.019E-01	4.882E-01	7.629E-01	1.013E-01	1.182
	82.60			1.757E+00	1.095E+00	1.398E+00	1.883E-01	1.257
	279.20	*		-4.016E-03	4.629E-02	7.616E-02	6.063E-03	-0.053
BI-207	72.80			2.396E-01	1.420E-01	2.251E-01	1.969E-02	1.064
	74.97			7.288E-01	1.272E-01	1.825E-01	1.573E-02	3.993
	84.90			1.287E+00	3.385E-01	2.849E-01	2.295E-02	4.516
	569.67			-1.166E-02	4.346E-02	6.773E-02	5.062E-03	-0.172
	1063.62	*		5.419E-02	7.508E-02	1.292E-01	8.402E-03	0.420
	1770.23			-4.129E-01	6.659E-01	7.839E-01	4.449E-02	-0.527
TL-207	81.07			-3.627E-01	1.916E-01	2.609E-01	2.158E-02	-1.390
	83.78			-2.500E-01	1.365E-01	1.786E-01	1.450E-02	-1.400
	94.90			3.212E-01	2.245E-01	3.532E-01	3.096E-02	0.909
	122.32			9.779E-02	1.823E+00	2.979E+00	3.893E-01	0.033
	144.24			3.014E-01	8.355E-01	1.338E+00	1.503E-01	0.225
	154.21			6.744E-02	4.617E-01	7.453E-01	7.492E-02	0.090
	269.46			5.762E-01	2.605E-01	3.990E-01	3.175E-02	1.444
	323.87	*		5.658E-01	9.011E-01	1.341E+00	2.287E-01	0.422
	338.28			7.135E+00	1.966E+00	2.894E+00	3.246E-01	2.465
	445.03			8.525E-01	2.649E+00	4.537E+00	4.811E-01	0.188
PO-209	260.50			3.978E+00	1.048E+01	1.773E+01	1.385E+00	0.224
	262.80			-9.140E+00	2.807E+01	4.577E+01	3.570E+00	-0.200
	896.60	*		-4.483E-01	1.031E+01	1.700E+01	1.280E+00	-0.026
PB-211	404.84	*		-2.258E-01	1.188E+00	1.867E+00	1.164E+00	-0.121
	427.08			-1.280E+00	2.697E+00	3.971E+00	2.456E+00	-0.322
	831.96			-4.113E-01	1.547E+00	2.487E+00	1.556E+00	-0.165
BI-212	727.18	*		1.678E+00	6.595E-01	8.909E-01	8.552E-02	1.883
	785.46			1.957E+00	2.619E+00	4.408E+00	3.537E-01	0.444
	1620.62			5.064E-01	1.702E+00	2.876E+00	1.655E-01	0.176
PO-215	81.07			-3.627E-01	1.916E-01	2.609E-01	2.158E-02	-1.390
	83.78			-2.500E-01	1.365E-01	1.786E-01	1.450E-02	-1.400
	94.90			3.212E-01	2.245E-01	3.532E-01	3.096E-02	0.909
	122.32			9.779E-02	1.823E+00	2.979E+00	3.893E-01	0.033
	144.24			3.014E-01	8.355E-01	1.338E+00	1.503E-01	0.225
	154.21			6.744E-02	4.617E-01	7.453E-01	7.492E-02	0.090
	269.46			5.762E-01	2.605E-01	3.990E-01	3.175E-02	1.444
	323.87	*		5.658E-01	9.011E-01	1.341E+00	2.287E-01	0.422
	338.28			7.135E+00	1.966E+00	2.894E+00	3.246E-01	2.465

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	445.03		8.525E-01	2.649E+00	4.537E+00	4.811E-01	0.188
		271.23		7.392E-01	3.366E-01	5.064E-01	4.859E-02	1.460
		401.81	*	-4.447E-01	5.290E-01	7.692E-01	1.051E-01	-0.578
		549.76	*	3.352E+00	3.420E+01	5.686E+01	4.156E+00	0.059
		81.07		-3.627E-01	1.916E-01	2.609E-01	2.158E-02	-1.390
RN-220		83.78		-2.500E-01	1.365E-01	1.786E-01	1.450E-02	-1.400
		94.90		3.212E-01	2.245E-01	3.532E-01	3.096E-02	0.909
		122.32		9.779E-02	1.823E+00	2.979E+00	3.893E-01	0.033
		144.24		3.014E-01	8.355E-01	1.338E+00	1.503E-01	0.225
		154.21		6.744E-02	4.617E-01	7.453E-01	7.492E-02	0.090
RA-223		269.46		5.762E-01	2.605E-01	3.990E-01	3.175E-02	1.444
		323.87	*	5.658E-01	9.011E-01	1.341E+00	2.287E-01	0.422
		338.28		7.135E+00	1.966E+00	2.894E+00	3.246E-01	2.465
		445.03		8.525E-01	2.649E+00	4.537E+00	4.811E-01	0.188
		79.80		-2.297E+00	1.498E+00	1.982E+00	4.239E-01	-1.159
AC-227		236.00		9.389E-01	3.278E-01	5.230E-01	6.147E-02	1.795
		256.20	*	7.996E-02	4.326E-01	7.253E-01	1.082E-01	0.110
		286.10		-1.376E+00	1.729E+00	2.715E+00	3.415E-01	-0.507
		299.80		3.058E+00	2.276E+00	3.113E+00	5.281E-01	0.982
		304.40		6.608E-02	2.434E+00	3.508E+00	6.286E-01	0.019
TH-227		334.20		-1.394E+00	3.155E+00	4.329E+00	8.122E-01	-0.322
		79.80		-2.297E+00	1.500E+00	1.982E+00	4.294E-01	-1.159
		94.00		8.810E+00	3.649E+00	3.808E+00	8.299E-01	2.313
		236.00		9.389E-01	3.242E-01	5.230E-01	5.508E-02	1.795
		256.20	*	7.996E-02	4.327E-01	7.253E-01	1.284E-01	0.110
TH-229		286.10		-1.376E+00	2.205E+00	2.715E+00	2.723E+00	-0.507
		299.80		3.058E+00	2.276E+00	3.113E+00	5.281E-01	0.982
		304.40		6.608E-02	2.434E+00	3.508E+00	6.286E-01	0.019
		334.20		-1.394E+00	3.155E+00	4.329E+00	8.122E-01	-0.322
		85.43		1.270E+00	3.342E-01	2.889E-01	2.319E-02	4.396
PA-231		88.47		1.654E-01	1.369E-01	1.734E-01	1.378E-02	0.954
		100.00		1.178E-02	1.763E-01	2.918E-01	2.756E-02	0.040
		193.63	*	-7.222E-02	5.489E-01	9.262E-01	7.327E-02	-0.078
		210.97		3.875E-01	9.626E-01	1.462E+00	1.160E-01	0.265
		283.67	*	7.882E-01	1.649E+00	2.784E+00	4.080E-01	0.283
TH-231		301.29		1.223E+00	8.973E-01	1.210E+00	1.388E-01	1.011
		81.07		-3.627E-01	1.916E-01	2.609E-01	2.158E-02	-1.390
		83.78		-2.500E-01	1.365E-01	1.786E-01	1.450E-02	-1.400
		94.90		3.212E-01	2.245E-01	3.532E-01	3.096E-02	0.909
		122.32		9.779E-02	1.823E+00	2.979E+00	3.893E-01	0.033
U-231		144.24		3.014E-01	8.355E-01	1.338E+00	1.503E-01	0.225
		154.21		6.744E-02	4.617E-01	7.453E-01	7.492E-02	0.090
		269.46		5.762E-01	2.605E-01	3.990E-01	3.175E-02	1.444
		323.87	*	5.658E-01	9.011E-01	1.341E+00	2.287E-01	0.422
		338.28		7.135E+00	1.966E+00	2.894E+00	3.246E-01	2.465
U-231		445.03		8.525E-01	2.649E+00	4.537E+00	4.811E-01	0.188
		84.21		2.980E+01	7.842E+00	6.461E+00	5.230E-01	4.612
		92.29		7.098E+00	2.575E+00	3.670E+00	3.093E-01	1.934
		95.87	*	-2.892E-01	8.701E-01	1.268E+00	1.128E-01	-0.228

## ---- 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		-4.926E-01	1.729E+00	2.809E+00	2.964E-01	-0.175
	+	75.28		2.127E+01	4.590E+00	5.630E+00	8.636E-01	3.777
	+	86.59		1.109E+01	4.055E+00	2.708E+00	7.207E-01	4.095
	+	300.12		8.526E-01	6.295E-01	8.647E-01	1.232E-01	0.986
		311.98	*	-2.831E-02	7.519E-02	1.205E-01	9.206E-03	-0.235
		340.50		1.375E+00	9.540E-01	1.407E+00	3.275E-01	0.978
		398.62		1.169E+00	2.572E+00	4.218E+00	1.092E+00	0.277
PA-234		415.76		-1.179E-01	2.085E+00	3.322E+00	6.865E-01	-0.035
	+	63.00		1.992E+00	1.502E+00	1.761E+00	2.805E-01	1.131
		94.67		3.820E-01	1.706E-01	2.687E-01	3.355E-02	1.421
		98.44		2.598E-02	8.997E-02	1.442E-01	8.057E-02	0.180
		99.86		-5.938E-02	4.515E-01	7.419E-01	6.993E-02	-0.080
		111.00		-4.483E-02	1.902E-01	3.091E-01	4.287E-02	-0.145
		131.20		-4.211E-02	1.185E-01	1.894E-01	2.224E-02	-0.222
		152.70		2.770E-01	3.771E-01	6.191E-01	1.081E-01	0.447
	+	186.00		3.402E+00	3.147E+00	3.068E+00	9.517E-01	1.109
		226.40		-9.318E-02	4.434E-01	7.370E-01	9.403E-02	-0.126
		227.20		-8.283E-02	4.718E-01	7.854E-01	6.223E-02	-0.105
		248.90		-2.761E-01	8.956E-01	1.415E+00	3.132E-01	-0.195
	+	293.70		6.171E+00	1.582E+00	1.836E+00	3.084E-01	3.361
		369.80		-2.497E-01	1.038E+00	1.649E+00	3.461E-01	-0.151
		568.70		-1.451E+00	1.434E+00	2.117E+00	1.581E-01	-0.685
		569.50		-1.598E-01	3.823E-01	5.890E-01	4.401E-02	-0.271
		574.00		1.114E+00	2.013E+00	3.426E+00	2.573E-01	0.325
		699.00		1.828E-01	9.691E-01	1.587E+00	2.996E-01	0.115
		706.10		-3.706E-01	1.464E+00	2.306E+00	1.026E+00	-0.161
		733.00		4.244E-02	6.036E-01	8.435E-01	1.857E-01	0.050
		742.81		-2.073E-01	1.944E+00	3.091E+00	2.076E+00	-0.067
	+	796.30		3.074E+00	2.189E+00	2.309E+00	6.200E-01	1.331
		805.60		8.153E-01	1.369E+00	2.345E+00	7.145E-01	0.348
		819.60		7.466E-01	1.592E+00	2.711E+00	1.027E+00	0.275
		826.30		-4.134E-01	1.076E+00	1.712E+00	7.636E-01	-0.241
		831.60		-4.941E-01	8.139E-01	1.269E+00	3.760E-01	-0.389
		876.40		-5.230E-01	1.216E+00	1.735E+00	1.782E+00	-0.301
		880.51		3.539E-02	3.823E-01	6.382E-01	4.864E-02	0.055
		883.24		9.801E-03	3.892E-01	6.460E-01	4.335E-01	0.015
		899.00		-4.426E-01	1.170E+00	1.850E+00	8.051E-01	-0.239
		925.00		-1.031E-01	1.564E+00	2.565E+00	1.898E-01	-0.040
		926.50		-5.735E-03	2.318E-01	3.816E-01	9.496E-02	-0.015
		946.00	*	8.600E-02	4.187E-01	7.001E-01	1.274E-01	0.123
		949.00		3.010E-01	6.200E-01	1.059E+00	7.701E-02	0.284
		980.50		-1.387E+00	1.030E+00	1.484E+00	1.052E-01	-0.935
PA-234M		1394.10		-1.604E+00	1.880E+00	2.265E+00	1.467E+00	-0.708
		766.42		1.924E+01	1.903E+01	2.929E+01	1.483E+01	0.657
NP-236		1001.03	*	-7.097E+00	7.030E+00	1.000E+01	8.572E-01	-0.710
		94.67		2.930E-01	1.270E-01	2.042E-01	1.784E-02	1.435
		98.44		1.963E-02	6.715E-02	1.090E-01	1.006E-02	0.180
		111.00		-3.391E-02	1.439E-01	2.338E-01	2.567E-02	-0.145
		160.31	*	-4.503E-02	1.046E-01	1.450E-01	1.236E-02	-0.310



---- 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		-1.169E-02	1.557E-01	2.493E-01	2.339E-02	-0.047
		117.00	*	-6.977E-02	1.993E-01	3.210E-01	3.809E-02	-0.217
	+	209.75		2.445E+00	1.081E+00	1.586E+00	1.257E-01	1.542
		228.18		-3.482E-02	2.459E-01	4.098E-01	3.246E-02	-0.085
		277.60		2.764E-01	2.201E-01	3.667E-01	2.824E-02	0.754
AM-241		334.30		-8.239E-01	1.781E+00	2.447E+00	1.720E-01	-0.337
		59.54	*	4.412E-02	6.882E-02	1.080E-01	1.098E-02	0.408
CM-243		99.55		-1.203E-02	1.602E-01	2.565E-01	2.407E-02	-0.047
		103.76	*	-5.507E-02	9.676E-02	1.557E-01	1.550E-02	-0.354
		117.00		-7.178E-02	2.050E-01	3.302E-01	3.918E-02	-0.217
	+	209.75		2.410E+00	1.065E+00	1.563E+00	1.239E-01	1.542
		228.18		-3.518E-02	2.484E-01	4.140E-01	3.280E-02	-0.085
AM-246		277.60		2.786E-01	2.219E-01	3.696E-01	2.846E-02	0.754
		798.80		-4.081E-02	2.150E-01	3.037E-01	2.424E-02	-0.134
		1036.00		2.766E-01	3.681E-01	6.420E-01	4.312E-02	0.431
		1062.04		3.272E-01	3.312E-01	5.802E-01	3.780E-02	0.564
		1078.86	*	-1.598E-02	1.841E-01	2.969E-01	1.894E-02	-0.054
CM-247		278.00		9.016E-01	8.667E-01	1.497E+00	1.152E-01	0.602
		287.40		3.186E-01	1.363E+00	2.274E+00	1.732E-01	0.140
CF-249		402.60	*	-1.690E-02	4.514E-02	7.059E-02	4.203E-03	-0.239
		252.85		-4.837E-01	9.415E-01	1.526E+00	1.198E-01	-0.317
		333.44		1.107E-01	2.381E-01	3.288E-01	2.316E-02	0.337
CF-251		387.95	*	3.064E-04	4.981E-02	8.015E-02	4.760E-03	0.004
		176.60	*	-6.345E-02	1.474E-01	2.293E-01	1.804E-02	-0.277
		227.00		-1.070E-01	4.208E-01	6.980E-01	5.531E-02	-0.153
		285.00		-1.473E+00	1.928E+00	3.044E+00	2.325E-01	-0.484

# 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]G244132001      *
* Acquisition date   : 19-JAN-2010 09:11:36 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 02:00:01.62 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132001 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.2522E+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	1.981E+01	1.942E+00	5.488E-01	0.000E+00
TL-208	5.386E-01	1.158E-01	7.866E-02	0.000E+00
BI-210	4.899E-01	8.162E-01	8.700E-01	0.000E+00
PB-210	4.899E-01	8.162E-01	8.700E-01	0.000E+00
PO-210	4.899E-01	8.160E-01	8.700E-01	0.000E+00
BI-211	4.479E+00	5.883E-01	4.271E-01	0.000E+00
PB-212	1.748E+00	2.029E-01	1.070E-01	0.000E+00
PO-212	1.748E+00	2.029E-01	1.070E-01	0.000E+00
BI-214	1.391E+00	2.446E-01	1.595E-01	0.000E+00
PB-214	1.558E+00	2.196E-01	1.464E-01	0.000E+00
PO-214	1.558E+00	2.196E-01	1.464E-01	0.000E+00
PO-216	1.748E+00	2.029E-01	1.070E-01	0.000E+00
PO-218	1.558E+00	2.196E-01	1.464E-01	0.000E+00
RA-224	4.767E+00	1.622E+00	1.218E+00	0.000E+00
RA-226	1.391E+00	2.446E-01	1.595E-01	0.000E+00
AC-228	1.817E+00	4.044E-01	2.782E-01	0.000E+00
RA-228	1.817E+00	4.044E-01	2.782E-01	0.000E+00
TH-228	1.773E+00	2.057E-01	1.085E-01	0.000E+00
TH-230	1.391E+00	2.446E-01	1.595E-01	0.000E+00
TH-232	1.817E+00	4.044E-01	2.782E-01	0.000E+00
TH-234	1.709E+00	1.272E+00	1.148E+00	0.000E+00
U-234	1.391E+00	2.446E-01	1.595E-01	0.000E+00
U-235	-2.414E-02	2.518E-01	4.175E-01	0.000E+00
NP-237	1.663E+00	5.450E-01	3.803E-01	0.000E+00
U-238	1.709E+00	1.272E+00	1.148E+00	0.000E+00
AM-243	4.060E-01	6.945E-02	6.927E-02	0.000E+00
ANH-511	2.262E-01	7.963E-02	6.022E-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	9.792E-02	3.895E-01	6.844E-01	0.000E+00	NOT IDENT.
NA-22	-5.382E-02	5.293E-02	8.104E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.545E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	9.708E-03	4.151E-02	7.250E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.571E-02	6.052E-02	0.000E+00	FAIL ABUN
SC-46	1.185E-02	5.514E-02	9.519E-02	0.000E+00	FAIL ABUN
V-48	4.124E-02	8.768E-02	1.532E-01	0.000E+00	NOT IDENT.
CR-51	-7.603E-02	4.386E-01	7.401E-01	0.000E+00	NOT IDENT.
MN-52	1.794E-01	2.605E-01	4.704E-01	0.000E+00	NOT IDENT.
MN-54	4.490E-03	4.782E-02	8.240E-02	0.000E+00	NOT IDENT.
CO-56	-4.791E-03	5.133E-02	8.711E-02	0.000E+00	NOT IDENT.
CO-57	2.547E-03	2.610E-02	4.512E-02	0.000E+00	NOT IDENT.
CO-58	-1.805E-02	4.966E-02	8.288E-02	0.000E+00	NOT IDENT.
FE-59	7.227E-02	1.094E-01	1.924E-01	0.000E+00	NOT IDENT.
CO-60	2.427E-02	5.905E-02	9.997E-02	0.000E+00	NOT IDENT.
ZN-65	-3.989E-02	1.388E-01	1.900E-01	0.000E+00	NOT IDENT.
GE-68	3.630E-01	1.592E+00	2.703E+00	0.000E+00	NOT IDENT.
AS-73	3.501E-02	2.372E-01	4.135E-01	0.000E+00	NOT IDENT.
AS-74	3.681E-02	1.132E-01	1.959E-01	0.000E+00	NOT IDENT.
SE-75	-5.055E-02	4.885E-02	7.292E-02	0.000E+00	NOT IDENT.
BR-77	-3.388E+00	9.085E+00	1.522E+01	0.000E+00	FAIL ABUN
SR-82	-1.641E-01	4.896E-01	8.247E-01	0.000E+00	NOT IDENT.
RB-83	-5.175E-03	8.439E-02	1.444E-01	0.000E+00	NOT IDENT.
RB-84	5.692E-02	9.146E-02	1.627E-01	0.000E+00	NOT IDENT.
KR-85	1.184E+01	1.039E+01	1.684E+01	0.000E+00	NOT IDENT.
SR-85	5.991E-02	5.259E-02	8.524E-02	0.000E+00	NOT IDENT.
RB-86	4.722E-01	9.650E-01	1.675E+00	0.000E+00	NOT IDENT.
Y-88	2.109E-02	4.753E-02	8.046E-02	0.000E+00	NOT IDENT.
ZR-88	-1.546E-02	3.682E-02	5.982E-02	0.000E+00	NOT IDENT.
Y-91	-1.037E+01	2.321E+01	3.829E+01	0.000E+00	NOT IDENT.
NB-94	-2.729E-02	4.622E-02	7.363E-02	0.000E+00	NOT IDENT.
NB-95	5.341E-02	5.843E-02	1.060E-01	0.000E+00	NOT IDENT.
NB-95M	2.436E-01	1.567E-01	2.574E-01	0.000E+00	NOT IDENT.
ZR-95	1.456E-02	1.034E-01	1.724E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.773E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.580E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.591E+00	1.222E+01	2.004E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.402E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.259E-02	3.659E-02	6.217E-02	0.000E+00	NOT IDENT.
RH-102	-4.045E-02	3.743E-02	5.848E-02	0.000E+00	NOT IDENT.
RU-103	-7.249E-02	4.846E-02	7.368E-02	0.000E+00	FAIL ABUN
RH-106	5.568E-01	4.362E-01	7.868E-01	0.000E+00	FAIL ABUN
RU-106	5.568E-01	4.326E-01	7.868E-01	0.000E+00	FAIL ABUN
AG-108M	-2.843E-03	4.034E-02	7.023E-02	0.000E+00	NOT IDENT.
CD-109	6.423E-01	9.241E-01	1.376E+00	0.000E+00	NOT IDENT.
AG-110M	-8.218E-03	4.414E-02	7.298E-02	0.000E+00	NOT IDENT.
IN-111	2.877E-01	9.177E-01	1.437E+00	0.000E+00	NOT IDENT.
IN-113M	-9.597E-03	5.420E-02	8.952E-02	0.000E+00	NOT IDENT.
SN-113	-9.597E-03	5.420E-02	8.952E-02	0.000E+00	NOT IDENT.
IN-114M	1.030E-01	2.258E-01	3.413E-01	0.000E+00	NOT IDENT.
CD-115	-1.663E+00	8.833E+00	1.496E+01	0.000E+00	NOT IDENT.
SN-117M	4.707E-02	5.723E-02	9.958E-02	0.000E+00	NOT IDENT.
SB-122	8.004E-01	1.925E+00	3.365E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.390E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	3.628E-02	3.255E-02	5.479E-02	0.000E+00	NOT IDENT.
I-124	-5.715E-01	8.813E-01	1.215E+00	0.000E+00	FAIL ABUN
SB-124	0.000E+00	1.046E-01	1.857E-01	0.000E+00	FAIL ABUN
SB-125	-7.199E-02	1.072E-01	1.803E-01	0.000E+00	NOT IDENT.
TE-125M	-5.153E+00	9.306E+00	1.579E+01	0.000E+00	NOT IDENT.
I-126	-1.287E-01	2.262E-01	3.629E-01	0.000E+00	NOT IDENT.
SB-126	2.559E-01	2.140E-01	3.413E-01	0.000E+00	FAIL ABUN
SN-126	5.579E-02	8.579E-02	1.387E-01	0.000E+00	FAIL ABUN
SB-127	-6.354E-01	1.452E+00	2.342E+00	0.000E+00	NOT IDENT.
XE-127	-3.943E-02	4.842E-02	8.290E-02	0.000E+00	NOT IDENT.
I-131	-1.252E-01	1.194E-01	1.867E-01	0.000E+00	NOT IDENT.
TE-132	-9.554E-02	5.673E-01	9.882E-01	0.000E+00	NOT IDENT.
BA-133	9.822E-03	5.960E-02	8.956E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.774E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.029E-01	1.211E-01	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.899E-01	3.260E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.929E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.315E-03	1.316E-01	2.189E-01	0.000E+00	FAIL ABUN
BA-137M	3.488E-02	4.577E-02	8.070E-02	0.000E+00	NOT IDENT.
CS-137	3.687E-02	4.839E-02	8.531E-02	0.000E+00	NOT IDENT.
CE-139	1.522E-03	3.600E-02	5.386E-02	0.000E+00	NOT IDENT.
BA-140	-1.670E-01	3.183E-01	5.188E-01	0.000E+00	FAIL ABUN
LA-140	-7.468E-02	1.095E-01	1.649E-01	0.000E+00	FAIL ABUN
CE-141	3.679E-02	6.897E-02	1.194E-01	0.000E+00	NOT IDENT.

CE-143	0.000E+00	1.305E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.677E-01	2.223E-01	3.649E-01	0.000E+00	NOT IDENT.
PM-144	-5.213E-03	4.704E-02	7.778E-02	0.000E+00	NOT IDENT.
PR-144	-3.530E-01	3.185E+00	5.267E+00	0.000E+00	NOT IDENT.
PM-146	1.921E-02	5.209E-02	9.251E-02	0.000E+00	NOT IDENT.
ND-147	-3.500E-01	6.428E-01	1.059E+00	0.000E+00	NOT IDENT.
PM-149	-6.237E+01	6.858E+01	1.113E+02	0.000E+00	NOT IDENT.
EU-152	-6.268E-02	1.275E-01	2.020E-01	0.000E+00	FAIL ABUN
GD-153	-3.618E-02	8.233E-02	1.238E-01	0.000E+00	NOT IDENT.
EU-154	-1.517E-01	1.482E-01	2.260E-01	0.000E+00	NOT IDENT.
EU-155	9.591E-02	1.112E-01	1.949E-01	0.000E+00	FAIL ABUN
TB-160	-3.674E-02	1.793E-01	3.001E-01	0.000E+00	FAIL ABUN
HO-166M	-1.252E-02	8.134E-02	1.337E-01	0.000E+00	NOT IDENT.
TM-171	2.619E+01	1.701E+01	2.890E+01	0.000E+00	NOT IDENT.
LU-176	-1.552E-02	3.006E-02	4.830E-02	0.000E+00	NOT IDENT.
LU-177	0.000E+00	1.315E+00	2.006E+00	0.000E+00	FAIL ABUN
LU-177M	-1.440E-01	2.169E-01	3.446E-01	0.000E+00	FAIL ABUN
HF-181	-2.308E-02	5.277E-02	8.892E-02	0.000E+00	NOT IDENT.
W-181	6.635E-02	2.158E-01	3.537E-01	0.000E+00	NOT IDENT.
TA-182	-3.183E-05	2.432E-01	4.150E-01	0.000E+00	FAIL ABUN
RE-183	9.561E-02	1.565E-01	2.104E-01	0.000E+00	FAIL ABUN
RE-184	-1.283E-01	2.446E-01	4.144E-01	0.000E+00	NOT IDENT.
OS-185	2.235E-02	5.510E-02	9.521E-02	0.000E+00	NOT IDENT.
RE-188	-9.761E-02	1.935E-01	3.194E-01	0.000E+00	NOT IDENT.
W-188	7.864E-01	9.026E+00	1.369E+01	0.000E+00	FAIL ABUN
IR-192	-5.624E-03	4.030E-02	6.819E-02	0.000E+00	FAIL ABUN
AU-195	9.578E-02	2.143E-01	3.700E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.405E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	2.393E+00	6.408E+00	9.768E+00	0.000E+00	NOT IDENT.
TL-202	7.412E-02	8.052E-02	1.472E-01	0.000E+00	NOT IDENT.
HG-203	-4.016E-03	4.537E-02	7.790E-02	0.000E+00	NOT IDENT.
BI-207	5.419E-02	7.358E-02	1.297E-01	0.000E+00	FAIL ABUN
TL-207	5.658E-01	8.831E-01	1.369E+00	0.000E+00	FAIL ABUN
PO-209	-4.483E-01	1.010E+01	1.710E+01	0.000E+00	NOT IDENT.
PB-211	-2.258E-01	1.164E+00	1.900E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.463E-01	8.991E-01	0.000E+00	FAIL ABUN
PO-215	5.658E-01	8.831E-01	1.369E+00	0.000E+00	FAIL ABUN
RN-219	-4.447E-01	5.184E-01	7.829E-01	0.000E+00	FAIL ABUN
RN-220	3.352E+00	3.351E+01	5.761E+01	0.000E+00	NOT IDENT.
RA-223	5.658E-01	8.831E-01	1.369E+00	0.000E+00	FAIL ABUN
AC-227	7.996E-02	4.239E-01	7.427E-01	0.000E+00	FAIL ABUN
TH-227	7.996E-02	4.240E-01	7.427E-01	0.000E+00	FAIL ABUN
TH-229	-7.222E-02	5.379E-01	9.522E-01	0.000E+00	FAIL ABUN
PA-231	7.882E-01	1.616E+00	2.847E+00	0.000E+00	FAIL ABUN
TH-231	5.658E-01	8.831E-01	1.369E+00	0.000E+00	FAIL ABUN
U-231	-2.892E-01	8.527E-01	1.316E+00	0.000E+00	FAIL ABUN
PA-233	-2.831E-02	7.368E-02	1.231E-01	0.000E+00	FAIL ABUN
PA-234	8.600E-02	4.104E-01	7.039E-01	0.000E+00	FAIL ABUN
PA-234M	-7.097E+00	6.890E+00	1.005E+01	0.000E+00	NOT IDENT.
NP-236	-4.503E-02	1.025E-01	1.495E-01	0.000E+00	NOT IDENT.
NP-239	-6.977E-02	1.953E-01	3.322E-01	0.000E+00	FAIL ABUN
AM-241	4.412E-02	6.744E-02	1.128E-01	0.000E+00	NOT IDENT.
CM-243	-5.507E-02	9.482E-02	1.614E-01	0.000E+00	FAIL ABUN
AM-246	-1.598E-02	1.804E-01	2.980E-01	0.000E+00	NOT IDENT.
CM-247	-1.690E-02	4.424E-02	7.184E-02	0.000E+00	NOT IDENT.
CF-249	3.064E-04	4.882E-02	8.161E-02	0.000E+00	NOT IDENT.
CF-251	-6.345E-02	1.444E-01	2.360E-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]G244132001.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:11:36
Sample ID          : G244132001           Sample quantity  : 1.25220E+02 GRAM
Detector name      : GAM13                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time  : 0 02:00:01.62  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity        : 5.00000
Batch ID           : 940270                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	734	10.67*	1.041E+00	1.981E+01	1.981E+01	10.01
TL-208	277.35	-----	6.80	4.225E+00	-----	Line Not Found	-----
	510.84	191	21.60	2.537E+00	1.047E+00	1.047E+00	36.88
	583.14	341	84.20*	2.257E+00	5.386E-01	5.386E-01	21.95
	860.37	41	12.46	1.605E+00	6.076E-01	6.076E-01	97.68
BI-210	46.50	48	4.05*	7.296E+00	4.893E-01	4.899E-01	170.00
PB-210	46.50	48	4.05*	7.296E+00	4.893E-01	4.899E-01	170.00
PO-210	46.50	48	4.05*	7.296E+00	4.893E-01	4.899E-01	169.96
BI-211	72.87	-----	1.27	7.369E+00	-----	Line Not Found	-----
	351.07	676	12.94*	3.497E+00	4.479E+00	4.479E+00	13.40
PB-212	74.81	658	10.70	7.359E+00	2.504E+00	2.504E+00	19.80
	77.11	966	18.00	7.344E+00	2.190E+00	2.190E+00	14.07
	87.30	-----	8.00	7.246E+00	-----	Line Not Found	-----
	238.63	1226	44.60*	4.715E+00	1.748E+00	1.748E+00	11.84
	300.09	75	3.41	3.977E+00	1.650E+00	1.650E+00	73.07
PO-212	74.81	658	10.70	7.359E+00	2.504E+00	2.504E+00	19.80
	77.11	966	18.00	7.344E+00	2.190E+00	2.190E+00	14.07
	87.30	-----	8.00	7.246E+00	-----	Line Not Found	-----
	115.19	-----	0.60	6.822E+00	-----	Line Not Found	-----
	238.63	1226	44.60*	4.715E+00	1.748E+00	1.748E+00	11.84
	300.09	75	3.41	3.977E+00	1.650E+00	1.650E+00	73.07
BI-214	609.31	466	46.30*	2.170E+00	1.391E+00	1.391E+00	17.95
	1120.29	107	15.10	1.287E+00	1.649E+00	1.649E+00	44.58
	1764.49	77	15.80	8.987E-01	1.635E+00	1.635E+00	27.62
PB-214	74.81	658	6.21	7.359E+00	4.315E+00	4.315E+00	18.96
	77.11	966	10.50	7.344E+00	3.755E+00	3.755E+00	16.00
	87.30	-----	4.67	7.246E+00	-----	Line Not Found	-----
	241.98	294	7.49	4.675E+00	2.514E+00	2.514E+00	35.18
	295.21	332	19.20	4.028E+00	1.286E+00	1.286E+00	21.71
	351.92	676	37.20*	3.497E+00	1.558E+00	1.558E+00	14.38
PO-214	74.81	658	6.21	7.359E+00	4.315E+00	4.315E+00	18.96
	77.11	966	10.50	7.344E+00	3.755E+00	3.755E+00	16.00

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	87.30	-----	4.67	7.246E+00	-----	Line Not Found	-----
	241.98	294	7.49	4.675E+00	2.514E+00	2.514E+00	35.18
	295.21	332	19.20	4.028E+00	1.286E+00	1.286E+00	21.71
	351.92	676	37.20*	3.497E+00	1.558E+00	1.558E+00	14.38
PO-216	74.81	658	10.70	7.359E+00	2.504E+00	2.504E+00	19.80
	77.11	966	18.00	7.344E+00	2.190E+00	2.190E+00	14.07
	87.30	-----	8.00	7.246E+00	-----	Line Not Found	-----
	238.63	1226	44.60*	4.715E+00	1.748E+00	1.748E+00	11.84
	300.09	75	3.41	3.977E+00	1.650E+00	1.650E+00	73.07
PO-218	74.81	658	6.21	7.359E+00	4.315E+00	4.315E+00	18.96
	77.11	966	10.50	7.344E+00	3.755E+00	3.755E+00	16.00
	87.30	-----	4.67	7.246E+00	-----	Line Not Found	-----
	241.98	294	7.49	4.675E+00	2.514E+00	2.514E+00	35.18
	295.21	332	19.20	4.028E+00	1.286E+00	1.286E+00	21.71
	351.92	676	37.20*	3.497E+00	1.558E+00	1.558E+00	14.38
RA-224	240.98	294	3.95*	4.675E+00	4.767E+00	4.767E+00	34.73
RA-226	609.31	466	46.30*	2.170E+00	1.391E+00	1.391E+00	17.95
	1120.29	107	15.10	1.287E+00	1.649E+00	1.649E+00	44.58
	1764.49	77	15.80	8.987E-01	1.635E+00	1.635E+00	27.62
AC-228	338.32	235	11.40	3.614E+00	1.709E+00	1.709E+00	48.06
	911.07	257	27.70*	1.529E+00	1.817E+00	1.817E+00	22.71
	969.11	152	16.60	1.452E+00	1.885E+00	1.885E+00	36.40
RA-228	338.32	235	11.40	3.614E+00	1.709E+00	1.709E+00	48.06
	911.07	257	27.70*	1.529E+00	1.817E+00	1.817E+00	22.71
	969.11	152	16.60	1.452E+00	1.885E+00	1.885E+00	36.40
TH-228	74.81	658	10.70	7.359E+00	2.504E+00	2.539E+00	17.49
	77.11	966	18.00	7.344E+00	2.190E+00	2.221E+00	14.07
	87.30	-----	8.00	7.246E+00	-----	Line Not Found	-----
	238.63	1226	44.60*	4.715E+00	1.748E+00	1.773E+00	11.84
	300.09	75	3.41	3.977E+00	1.650E+00	1.673E+00	93.52
TH-230	609.31	466	46.30*	2.170E+00	1.391E+00	1.391E+00	17.95
	1120.29	107	15.10	1.287E+00	1.649E+00	1.649E+00	44.58
	1764.49	77	15.80	8.987E-01	1.635E+00	1.635E+00	27.62
TH-232	338.32	235	11.40	3.614E+00	1.709E+00	1.709E+00	26.11
	911.07	257	27.70*	1.529E+00	1.817E+00	1.817E+00	22.71
	969.11	152	16.60	1.452E+00	1.885E+00	1.885E+00	36.40
TH-234	63.29	160	3.80*	7.391E+00	1.709E+00	1.709E+00	75.97
	92.38	295	5.41	7.179E+00	2.280E+00	2.280E+00	39.60
U-234	609.31	466	46.30*	2.170E+00	1.391E+00	1.391E+00	17.95
	1120.29	107	15.10	1.287E+00	1.649E+00	1.649E+00	44.58
	1764.49	77	15.80	8.987E-01	1.635E+00	1.635E+00	27.62
U-235	89.95	-----	2.70	7.214E+00	-----	Line Not Found	-----
	93.35	295	4.50	7.179E+00	2.741E+00	2.741E+00	45.02
	105.00	-----	2.10	6.995E+00	-----	Line Not Found	-----
	143.76	-----	10.50*	6.293E+00	-----	Line Not Found	-----
	163.35	39	4.70	5.930E+00	4.147E-01	4.147E-01	167.84
	185.71	125	54.00	5.527E+00	1.260E-01	1.260E-01	87.51
	205.31	-----	4.70	5.207E+00	-----	Line Not Found	-----
NP-237	86.50	508	12.60*	7.265E+00	1.663E+00	1.663E+00	33.44

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	95.87	-----	2.60	7.135E+00	-----	Line Not Found	-----
U-238	63.29	160	3.80*	7.391E+00	1.709E+00	1.709E+00	75.97
	92.38	295	5.41	7.179E+00	2.280E+00	2.280E+00	36.27
AM-243	74.67	658	66.00*	7.359E+00	4.060E-01	4.060E-01	17.45
	86.72	508	0.34	7.265E+00	6.236E+01	6.236E+01	26.32
	117.66	-----	0.55	6.778E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.323E+00	-----	Line Not Found	-----
ANH-511	511.00	191	100.00*	2.537E+00	2.262E-01	2.262E-01	35.93

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	1.981E+01	1.981E+01	0.198E+01	10.01	
TL-208	1.41E+10Y	1.00	5.386E-01	5.386E-01	1.182E-01	21.95	
BI-210	22.26Y	1.00	4.893E-01	4.899E-01	8.329E-01	170.00	
PB-210	22.26Y	1.00	4.893E-01	4.899E-01	8.329E-01	170.00	
PO-210	22.26Y	1.00	4.893E-01	4.899E-01	8.326E-01	169.96	
BI-211	7.04E+08Y	1.00	4.479E+00	4.479E+00	0.600E+00	13.40	
PB-212	1.41E+10Y	1.00	1.748E+00	1.748E+00	0.207E+00	11.84	
PO-212	1.41E+10Y	1.00	1.748E+00	1.748E+00	0.207E+00	11.84	
BI-214	1600.00Y	1.00	1.391E+00	1.391E+00	0.250E+00	17.95	
PB-214	1600.00Y	1.00	1.558E+00	1.558E+00	0.224E+00	14.38	
PO-214	1600.00Y	1.00	1.558E+00	1.558E+00	0.224E+00	14.38	
PO-216	1.41E+10Y	1.00	1.748E+00	1.748E+00	0.207E+00	11.84	
PO-218	1600.00Y	1.00	1.558E+00	1.558E+00	0.224E+00	14.38	
RA-224	1.41E+10Y	1.00	4.767E+00	4.767E+00	1.655E+00	34.73	
RA-226	1600.00Y	1.00	1.391E+00	1.391E+00	0.250E+00	17.95	
AC-228	1.41E+10Y	1.00	1.817E+00	1.817E+00	0.413E+00	22.71	
RA-228	1.41E+10Y	1.00	1.817E+00	1.817E+00	0.413E+00	22.71	
TH-228	1.91Y	1.01	1.748E+00	1.773E+00	0.210E+00	11.84	
TH-230	4.47E+09Y	1.00	1.391E+00	1.391E+00	0.250E+00	17.95	
TH-232	1.41E+10Y	1.00	1.817E+00	1.817E+00	0.413E+00	22.71	
TH-234	4.47E+09Y	1.00	1.709E+00	1.709E+00	1.298E+00	75.97	
U-234	4.47E+09Y	1.00	1.391E+00	1.391E+00	0.250E+00	17.95	
U-235	7.04E+08Y	1.00	1.260E-01	1.260E-01	1.102E-01	87.51	K
NP-237	2.14E+06Y	1.00	1.663E+00	1.663E+00	0.556E+00	33.44	
U-238	4.47E+09Y	1.00	1.709E+00	1.709E+00	1.298E+00	75.97	
AM-243	7380.00Y	1.00	4.060E-01	4.060E-01	0.709E-01	17.45	
ANH-511	1.00E+09Y	1.00	2.262E-01	2.262E-01	0.813E-01	35.93	

Total Activity : 5.958E+01 5.960E+01

Grand Total Activity : 5.958E+01 5.960E+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	209.06	136	247	1.56	417.96	414	8	1.89E-02	43.5	5.15E+00	T
0	270.02	113	172	1.62	539.91	536	8	1.57E-02	44.5	4.31E+00	T
0	327.93	70	106	1.55	655.76	653	7	9.66E-03	54.8	3.70E+00	T
0	727.72	123	92	3.09	1455.60	1448	14	1.70E-02	38.1	1.86E+00	T
0	794.89	69	93	1.46	1589.99	1582	15	9.55E-03	65.9	1.72E+00	T
1	964.63	71	71	2.11	1929.60	1921	24	9.86E-03	53.6	1.46E+00	T
0	1509.33	29	11	1.55	3019.48	3014	11	4.00E-03	58.2	1.01E+00	T
0	1690.17	25	4	4.43	3381.37	3372	17	3.44E-03	55.5	9.29E-01	T
0	1846.77	15	12	5.06	3694.73	3686	16	2.05E-03	****	8.68E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132001.CNF;1  *
* Acquisition date   : 19-JAN-2010 09:11:36  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 02:00:01.62             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID          *
* Sample ID          : G244132001             Analyst initials: MXR1          *
* Batch Number       : 940270                 Sample Quantity : 1.25220E+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	1.981E+01	1.982E+00	5.492E-01	3.358E-02	36.062
TL-208	5.386E-01	1.182E-01	7.770E-02	6.432E-03	6.932
BI-210	4.899E-01	8.329E-01	8.302E-01	6.767E-02	0.590
PB-210	4.899E-01	8.329E-01	8.302E-01	6.767E-02	0.590
PO-210	4.899E-01	8.326E-01	8.302E-01	5.919E-02	0.590
BI-211	4.479E+00	6.003E-01	4.189E-01	3.053E-02	10.693
PB-212	1.748E+00	2.070E-01	1.044E-01	9.481E-03	16.752
PO-212	1.748E+00	2.070E-01	1.044E-01	9.481E-03	16.752
BI-214	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
PB-214	1.558E+00	2.241E-01	1.435E-01	1.285E-02	10.854
PO-214	1.558E+00	2.241E-01	1.435E-01	1.285E-02	10.854
PO-216	1.748E+00	2.070E-01	1.044E-01	9.481E-03	16.752
PO-218	1.558E+00	2.241E-01	1.435E-01	1.285E-02	10.854
RA-224	4.767E+00	1.655E+00	1.188E+00	9.380E-02	4.012
RA-226	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
AC-228	1.817E+00	4.126E-01	2.766E-01	2.872E-02	6.571
RA-228	1.817E+00	4.126E-01	2.766E-01	2.872E-02	6.571
TH-228	1.773E+00	2.099E-01	1.058E-01	9.613E-03	16.752

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
TH-232	1.817E+00	4.126E-01	2.766E-01	2.872E-02	6.571
TH-234	1.709E+00	1.298E+00	1.099E+00	2.017E-01	1.554
U-234	1.391E+00	2.496E-01	1.576E-01	1.474E-02	8.822
U-235	1.260E-01	1.102E-01	4.045E-01	7.468E-02	0.311
NP-237	1.663E+00	5.561E-01	3.659E-01	8.094E-02	4.545
U-238	1.709E+00	1.298E+00	1.099E+00	2.017E-01	1.554
AM-243	4.060E-01	7.086E-02	6.652E-02	5.746E-03	6.104
ANH-511	2.262E-01	8.126E-02	5.937E-02	4.144E-03	3.809

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	9.792E-02		3.975E-01	6.741E-01	5.069E-02	0.145
NA-22	-5.382E-02		5.401E-02	8.094E-02	4.569E-03	-0.665
NA-24	-1.201E-01		1.298E-01	Half-Life too short		
AL-26	9.708E-03		4.236E-02	7.279E-02	4.107E-03	0.133
TI-44	4.042E-01	+	5.685E-02	5.815E-02	4.897E-03	6.951
SC-46	1.185E-02		5.626E-02	9.459E-02	7.163E-03	0.125
V-48	4.124E-02		8.947E-02	1.524E-01	1.078E-02	0.271
CR-51	-7.603E-02		4.476E-01	7.249E-01	5.642E-02	-0.105
MN-52	1.794E-01		2.658E-01	4.707E-01	2.705E-02	0.381
MN-54	4.490E-03		4.880E-02	8.180E-02	6.419E-03	0.055
CO-56	-4.791E-03		5.238E-02	8.650E-02	6.742E-03	-0.055
CO-57	2.547E-03		2.664E-02	4.361E-02	5.516E-03	0.058
CO-58	-1.805E-02		5.067E-02	8.225E-02	6.551E-03	-0.219
FE-59	7.227E-02		1.116E-01	1.918E-01	1.370E-02	0.377
CO-60	2.427E-02		6.026E-02	9.991E-02	5.683E-03	0.243
ZN-65	-3.989E-02		1.416E-01	1.894E-01	1.150E-02	-0.211
GE-68	3.630E-01		1.624E+00	2.694E+00	1.722E-01	0.135
AS-73	3.501E-02		2.420E-01	3.953E-01	3.339E-02	0.089
AS-74	3.681E-02		1.156E-01	1.936E-01	1.486E-02	0.190
SE-75	-5.055E-02		4.985E-02	7.124E-02	5.581E-03	-0.710
BR-77	-3.388E+00		9.270E+00	1.501E+01	1.060E+00	-0.226
SR-82	-1.641E-01		4.996E-01	8.179E-01	6.583E-02	-0.201
RB-83	-5.175E-03		8.611E-02	1.424E-01	1.005E-02	-0.036
RB-84	5.692E-02		9.332E-02	1.617E-01	1.232E-02	0.352
KR-85	1.184E+01		1.060E+01	1.661E+01	1.163E+00	0.713
SR-85	5.991E-02		5.366E-02	8.404E-02	5.887E-03	0.713
RB-86	4.722E-01		9.847E-01	1.669E+00	1.068E-01	0.283
Y-88	2.109E-02		4.850E-02	8.079E-02	4.550E-03	0.261
ZR-88	-1.546E-02		3.757E-02	5.876E-02	3.441E-03	-0.263
Y-91	-1.037E+01		2.368E+01	3.822E+01	2.118E+00	-0.271
NB-94	-2.729E-02		4.716E-02	7.292E-02	5.952E-03	-0.374
NB-95	5.341E-02		5.962E-02	1.051E-01	8.486E-03	0.508
NB-95M	2.436E-01		1.598E-01	2.510E-01	2.322E-02	0.971
ZR-95	1.456E-02		1.055E-01	1.710E-01	1.542E-02	0.085

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	-2.076E-02		1.925E-02	Half-Life too short		
ZR-97	1.558E+00		3.867E-01	Half-Life too short		
MO-99	-1.591E+00		1.247E+01	1.986E+01	2.961E+00	-0.080
TC-99M	-9.574E+07		7.151E+08	Half-Life too short		
RH-101	-1.259E-02		3.734E-02	6.049E-02	4.790E-03	-0.208
RH-102	-4.045E-02		3.820E-02	5.760E-02	3.833E-03	-0.702
RU-103	-7.249E-02		4.945E-02	7.261E-02	9.558E-03	-0.998
RH-106	5.568E-01		4.451E-01	7.779E-01	1.003E-01	0.716
RU-106	5.568E-01		4.415E-01	7.779E-01	6.126E-02	0.716
AG-108M	-2.843E-03		4.116E-02	6.908E-02	4.647E-03	-0.041
CD-109	6.423E-01		9.430E-01	1.324E+00	1.045E-01	0.485
AG-110M	-8.218E-03		4.504E-02	7.221E-02	6.066E-03	-0.114
IN-111	2.877E-01		9.364E-01	1.402E+00	1.105E-01	0.205
IN-113M	-9.597E-03		5.531E-02	8.792E-02	5.478E-03	-0.109
SN-113	-9.597E-03		5.531E-02	8.792E-02	5.478E-03	-0.109
IN-114M	1.030E-01		2.304E-01	3.319E-01	2.623E-02	0.310
CD-115	-1.663E+00		9.013E+00	1.475E+01	1.051E+00	-0.113
SN-117M	4.707E-02		5.840E-02	9.659E-02	8.435E-03	0.487
SB-122	8.004E-01		1.965E+00	3.323E+00	2.468E-01	0.241
I-123	1.549E+00		7.092E-01	Half-Life too short		
TE-123M	3.628E-02		3.322E-02	5.315E-02	4.641E-03	0.683
I-124	-5.715E-01		8.993E-01	1.201E+00	9.282E-02	-0.476
SB-124	1.912E-01	+	1.067E-01	1.862E-01	1.160E-02	1.027
SB-125	-7.199E-02		1.094E-01	1.773E-01	1.141E-02	-0.406
TE-125M	-5.153E+00		9.496E+00	1.524E+01	1.850E+00	-0.338
I-126	-1.287E-01		2.308E-01	3.592E-01	2.931E-02	-0.358
SB-126	2.559E-01		2.184E-01	3.381E-01	2.755E-02	0.757
SN-126	5.579E-02		8.754E-02	1.335E-01	1.056E-02	0.418
SB-127	-6.354E-01		1.482E+00	2.319E+00	2.477E-01	-0.274
XE-127	-3.943E-02		4.940E-02	8.069E-02	6.394E-03	-0.489
I-131	-1.252E-01		1.218E-01	1.832E-01	1.296E-02	-0.683
TE-132	-9.554E-02		5.788E-01	9.634E-01	1.457E-01	-0.099
BA-133	9.822E-03		6.082E-02	8.785E-02	1.055E-02	0.112
I-133	-4.623E-04		1.416E-03	Half-Life too short		
CS-134	1.580E-01	+	1.049E-01	1.201E-01	9.680E-03	1.315
CS-135	4.486E-01		1.938E-01	3.186E-01	2.943E-02	1.408
I-135	-1.818E+08		1.494E+08	Half-Life too short		
CS-136	-6.315E-03		1.343E-01	2.181E-01	1.547E-02	-0.029
BA-137M	3.488E-02		4.671E-02	7.986E-02	6.513E-03	0.437
CS-137	3.687E-02		4.938E-02	8.442E-02	6.900E-03	0.437
CE-139	1.522E-03		3.673E-02	5.228E-02	4.099E-03	0.029
BA-140	-1.670E-01		3.248E-01	5.119E-01	1.679E-01	-0.326
LA-140	-7.468E-02		1.118E-01	1.652E-01	9.523E-03	-0.452
CE-141	3.679E-02		7.038E-02	1.156E-01	1.200E-02	0.318
CE-143	3.838E-04		6.658E-05	Half-Life too short		
CE-144	-1.677E-01		2.268E-01	3.531E-01	6.120E-02	-0.475
PM-144	-5.213E-03		4.800E-02	7.702E-02	6.290E-03	-0.068
PR-144	-3.530E-01		3.250E+00	5.216E+00	4.258E-01	-0.068

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146	1.921E-02		5.315E-02	9.105E-02	8.264E-03	0.211
ND-147	-3.500E-01		6.559E-01	1.044E+00	1.478E-01	-0.335
PM-149	-6.237E+01		6.998E+01	1.088E+02	1.634E+01	-0.573
EU-152	-6.268E-02		1.301E-01	1.981E-01	1.485E-02	-0.316
GD-153	-3.618E-02		8.401E-02	1.193E-01	1.086E-02	-0.303
EU-154	-1.517E-01		1.512E-01	2.258E-01	2.086E-02	-0.672
EU-155	9.591E-02		1.135E-01	1.880E-01	1.929E-02	0.510
TB-160	-3.674E-02		1.829E-01	2.982E-01	2.275E-02	-0.123
HO-166M	-1.252E-02		8.300E-02	1.324E-01	1.080E-02	-0.095
TM-171	2.619E+01		1.736E+01	2.770E+01	2.528E+00	0.945
LU-176	-1.552E-02		3.067E-02	4.728E-02	3.505E-03	-0.328
LU-177	3.034E+00	+	1.342E+00	1.953E+00	1.549E-01	1.553
LU-177M	-1.440E-01		2.214E-01	3.387E-01	2.054E-02	-0.425
HF-181	-2.308E-02		5.385E-02	8.759E-02	5.885E-03	-0.263
W-181	6.635E-02		2.202E-01	3.390E-01	3.127E-02	0.196
TA-182	-3.183E-05		2.482E-01	4.143E-01	2.306E-02	0.000
RE-183	9.561E-02	+	1.597E-01	2.042E-01	1.690E-02	0.468
RE-184	-1.283E-01		2.496E-01	4.045E-01	3.176E-02	-0.317
OS-185	2.235E-02		5.622E-02	9.418E-02	7.580E-03	0.237
RE-188	-9.761E-02		1.974E-01	3.097E-01	2.834E-02	-0.315
W-188	7.864E-01		9.210E+00	1.339E+01	1.016E+00	0.059
IR-192	-5.624E-03		4.113E-02	6.678E-02	4.885E-03	-0.084
AU-195	9.578E-02		2.187E-01	3.566E-01	3.314E-02	0.269
TL-200	7.738E-05		1.227E-04	Half-Life	too short	
TL-201	2.393E+00		6.539E+00	9.483E+00	7.431E-01	0.252
TL-202	7.412E-02		8.216E-02	1.448E-01	9.148E-03	0.512
HG-203	-4.016E-03		4.629E-02	7.616E-02	6.063E-03	-0.053
BI-207	5.419E-02		7.508E-02	1.292E-01	8.402E-03	0.420
TL-207	5.658E-01		9.011E-01	1.341E+00	2.287E-01	0.422
PO-209	-4.483E-01		1.031E+01	1.700E+01	1.280E+00	-0.026
PB-211	-2.258E-01		1.188E+00	1.867E+00	1.164E+00	-0.121
BI-212	1.678E+00	+	6.595E-01	8.909E-01	8.552E-02	1.883
PO-215	5.658E-01		9.011E-01	1.341E+00	2.287E-01	0.422
RN-219	-4.447E-01		5.290E-01	7.692E-01	1.051E-01	-0.578
RN-220	3.352E+00		3.420E+01	5.686E+01	4.156E+00	0.059
RA-223	5.658E-01		9.011E-01	1.341E+00	2.287E-01	0.422
AC-227	7.996E-02		4.326E-01	7.253E-01	1.082E-01	0.110
TH-227	7.996E-02		4.327E-01	7.253E-01	1.284E-01	0.110
TH-229	-7.222E-02		5.489E-01	9.262E-01	7.327E-02	-0.078
PA-231	7.882E-01		1.649E+00	2.784E+00	4.080E-01	0.283
TH-231	5.658E-01		9.011E-01	1.341E+00	2.287E-01	0.422
U-231	-2.892E-01		8.701E-01	1.268E+00	1.128E-01	-0.228
PA-233	-2.831E-02		7.519E-02	1.205E-01	9.206E-03	-0.235
PA-234	8.600E-02		4.187E-01	7.001E-01	1.274E-01	0.123
PA-234M	-7.097E+00		7.030E+00	1.000E+01	8.572E-01	-0.710
NP-236	-4.503E-02		1.046E-01	1.450E-01	1.236E-02	-0.310
NP-239	-6.977E-02		1.993E-01	3.210E-01	3.809E-02	-0.217
AM-241	4.412E-02		6.882E-02	1.080E-01	1.098E-02	0.408

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-5.507E-02		9.676E-02	1.557E-01	1.550E-02	-0.354
AM-246	-1.598E-02		1.841E-01	2.969E-01	1.894E-02	-0.054
CM-247	-1.690E-02		4.514E-02	7.059E-02	4.203E-03	-0.239
CF-249	3.064E-04		4.981E-02	8.015E-02	4.760E-03	0.004
CF-251	-6.345E-02		1.474E-01	2.293E-01	1.804E-02	-0.277

# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G244132001          *
* Acquisition date   : 19-JAN-2010 09:11:36 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 02:00:01.62                Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132001                Analyst initials: MXR1      *
* Batch Number       : 940270                      Sample Quantity : 1.2522E+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	1.981E+01	1.942E+00	2.746E-01	9.909E-01
TL-208	5.386E-01	1.158E-01	3.936E-02	5.911E-02
BI-210	4.899E-01	8.162E-01	4.353E-01	4.164E-01
PB-210	4.899E-01	8.162E-01	4.353E-01	4.164E-01
PO-210	4.899E-01	8.160E-01	4.353E-01	4.163E-01
BI-211	4.479E+00	5.883E-01	2.137E-01	3.002E-01
PB-212	1.748E+00	2.029E-01	5.352E-02	1.035E-01
PO-212	1.748E+00	2.029E-01	5.352E-02	1.035E-01
BI-214	1.391E+00	2.446E-01	7.980E-02	1.248E-01
PB-214	1.558E+00	2.196E-01	7.322E-02	1.120E-01
PO-214	1.558E+00	2.196E-01	7.322E-02	1.120E-01
PO-216	1.748E+00	2.029E-01	5.352E-02	1.035E-01
PO-218	1.558E+00	2.196E-01	7.322E-02	1.120E-01
RA-224	4.767E+00	1.622E+00	6.093E-01	8.276E-01
RA-226	1.391E+00	2.446E-01	7.980E-02	1.248E-01
AC-228	1.817E+00	4.044E-01	1.392E-01	2.063E-01
RA-228	1.817E+00	4.044E-01	1.392E-01	2.063E-01
TH-228	1.773E+00	2.057E-01	5.427E-02	1.050E-01
TH-230	1.391E+00	2.446E-01	7.980E-02	1.248E-01
TH-232	1.817E+00	4.044E-01	1.392E-01	2.063E-01
TH-234	1.709E+00	1.272E+00	5.741E-01	6.490E-01
U-234	1.391E+00	2.446E-01	7.980E-02	1.248E-01
U-235	-2.414E-02	2.518E-01	2.089E-01	1.285E-01
NP-237	1.663E+00	5.450E-01	1.903E-01	2.781E-01
U-238	1.709E+00	1.272E+00	5.741E-01	6.490E-01
AM-243	4.060E-01	6.945E-02	3.466E-02	3.543E-02
ANH-511	2.262E-01	7.963E-02	3.013E-02	4.063E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	9.792E-02	3.895E-01	3.424E-01	1.987E-01	NOT IDENT.
NA-22	-5.382E-02	5.293E-02	4.054E-02	2.700E-02	NOT IDENT.
NA-24	-1.201E+05	2.545E+05	0.000E+00	1.298E+05	SHORT HLIF
AL-26	9.708E-03	4.151E-02	3.627E-02	2.118E-02	NOT IDENT.
TI-44	4.042E-01	5.571E-02	3.028E-02	2.843E-02	FAIL ABUN
SC-46	1.185E-02	5.514E-02	4.762E-02	2.813E-02	FAIL ABUN
V-48	4.124E-02	8.768E-02	7.662E-02	4.474E-02	NOT IDENT.
CR-51	-7.603E-02	4.386E-01	3.703E-01	2.238E-01	NOT IDENT.
MN-52	1.794E-01	2.605E-01	2.354E-01	1.329E-01	NOT IDENT.
MN-54	4.490E-03	4.782E-02	4.122E-02	2.440E-02	NOT IDENT.
CO-56	-4.791E-03	5.133E-02	4.358E-02	2.619E-02	NOT IDENT.
CO-57	2.547E-03	2.610E-02	2.257E-02	1.332E-02	NOT IDENT.
CO-58	-1.805E-02	4.966E-02	4.146E-02	2.534E-02	NOT IDENT.
FE-59	7.227E-02	1.094E-01	9.625E-02	5.581E-02	NOT IDENT.
CO-60	2.427E-02	5.905E-02	5.001E-02	3.013E-02	NOT IDENT.
ZN-65	-3.989E-02	1.388E-01	9.505E-02	7.082E-02	NOT IDENT.
GE-68	3.630E-01	1.592E+00	1.352E+00	8.120E-01	NOT IDENT.
AS-73	3.501E-02	2.372E-01	2.069E-01	1.210E-01	NOT IDENT.
AS-74	3.681E-02	1.132E-01	9.801E-02	5.778E-02	NOT IDENT.
SE-75	-5.055E-02	4.885E-02	3.648E-02	2.492E-02	NOT IDENT.
BR-77	-3.388E+00	9.085E+00	7.616E+00	4.635E+00	FAIL ABUN
SR-82	-1.641E-01	4.896E-01	4.126E-01	2.498E-01	NOT IDENT.
RB-83	-5.175E-03	8.439E-02	7.222E-02	4.306E-02	NOT IDENT.
RB-84	5.692E-02	9.146E-02	8.142E-02	4.666E-02	NOT IDENT.
KR-85	1.184E+01	1.039E+01	8.426E+00	5.301E+00	NOT IDENT.
SR-85	5.991E-02	5.259E-02	4.264E-02	2.683E-02	NOT IDENT.
RB-86	4.722E-01	9.650E-01	8.380E-01	4.923E-01	NOT IDENT.
Y-88	2.109E-02	4.753E-02	4.025E-02	2.425E-02	NOT IDENT.
ZR-88	-1.546E-02	3.682E-02	2.993E-02	1.879E-02	NOT IDENT.
Y-91	-1.037E+01	2.321E+01	1.916E+01	1.184E+01	NOT IDENT.
NB-94	-2.729E-02	4.622E-02	3.684E-02	2.358E-02	NOT IDENT.
NB-95	5.341E-02	5.843E-02	5.302E-02	2.981E-02	NOT IDENT.
NB-95M	2.436E-01	1.567E-01	1.288E-01	7.992E-02	NOT IDENT.
ZR-95	1.456E-02	1.034E-01	8.627E-02	5.273E-02	NOT IDENT.
NB-97	-2.076E+04	3.773E+04	0.000E+00	1.925E+04	SHORT HLIF
ZR-97	1.558E+06	7.580E+05	0.000E+00	3.867E+05	SHORT HLIF
MO-99	-1.591E+00	1.222E+01	1.003E+01	6.235E+00	NOT IDENT.
TC-99M	-9.574E+13	1.402E+15	0.000E+00	7.151E+14	SHORT HLIF
RH-101	-1.259E-02	3.659E-02	3.110E-02	1.867E-02	NOT IDENT.
RH-102	-4.045E-02	3.743E-02	2.926E-02	1.910E-02	NOT IDENT.
RU-103	-7.249E-02	4.846E-02	3.686E-02	2.473E-02	FAIL ABUN
RH-106	5.568E-01	4.362E-01	3.936E-01	2.226E-01	FAIL ABUN
RU-106	5.568E-01	4.326E-01	3.936E-01	2.207E-01	FAIL ABUN
AG-108M	-2.843E-03	4.034E-02	3.513E-02	2.058E-02	NOT IDENT.
CD-109	6.423E-01	9.241E-01	6.885E-01	4.715E-01	NOT IDENT.
AG-110M	-8.218E-03	4.414E-02	3.651E-02	2.252E-02	NOT IDENT.
IN-111	2.877E-01	9.177E-01	7.190E-01	4.682E-01	NOT IDENT.
IN-113M	-9.597E-03	5.420E-02	4.478E-02	2.766E-02	NOT IDENT.
SN-113	-9.597E-03	5.420E-02	4.478E-02	2.766E-02	NOT IDENT.
IN-114M	1.030E-01	2.258E-01	1.708E-01	1.152E-01	NOT IDENT.
CD-115	-1.663E+00	8.833E+00	7.482E+00	4.507E+00	NOT IDENT.
SN-117M	4.707E-02	5.723E-02	4.982E-02	2.920E-02	NOT IDENT.
SB-122	8.004E-01	1.925E+00	1.684E+00	9.823E-01	NOT IDENT.
I-123	1.549E+06	1.390E+06	0.000E+00	7.092E+05	SHORT HLIF
TE-123M	3.628E-02	3.255E-02	2.741E-02	1.661E-02	NOT IDENT.
I-124	-5.715E-01	8.813E-01	6.078E-01	4.496E-01	FAIL ABUN
SB-124	1.912E-01	1.046E-01	9.290E-02	5.336E-02	FAIL ABUN
SB-125	-7.199E-02	1.072E-01	9.019E-02	5.471E-02	NOT IDENT.
TE-125M	-5.153E+00	9.306E+00	7.897E+00	4.748E+00	NOT IDENT.
I-126	-1.287E-01	2.262E-01	1.816E-01	1.154E-01	NOT IDENT.
SB-126	2.559E-01	2.140E-01	1.707E-01	1.092E-01	FAIL ABUN
SN-126	5.579E-02	8.579E-02	6.941E-02	4.377E-02	FAIL ABUN
SB-127	-6.354E-01	1.452E+00	1.172E+00	7.409E-01	NOT IDENT.
XE-127	-3.943E-02	4.842E-02	4.148E-02	2.470E-02	NOT IDENT.
I-131	-1.252E-01	1.194E-01	9.341E-02	6.092E-02	NOT IDENT.
TE-132	-9.554E-02	5.673E-01	4.944E-01	2.894E-01	NOT IDENT.
BA-133	9.822E-03	5.960E-02	4.481E-02	3.041E-02	NOT IDENT.
I-133	-4.623E+02	2.774E+03	0.000E+00	1.416E+03	SHORT HLIF
CS-134	1.580E-01	1.029E-01	6.057E-02	5.247E-02	FAIL ABUN
CS-135	4.486E-01	1.899E-01	1.631E-01	9.690E-02	NOT IDENT.
I-135	-1.818E+14	2.929E+14	0.000E+00	1.494E+14	SHORT HLIF
CS-136	-6.315E-03	1.316E-01	1.095E-01	6.716E-02	FAIL ABUN
BA-137M	3.488E-02	4.577E-02	4.038E-02	2.335E-02	NOT IDENT.
CS-137	3.687E-02	4.839E-02	4.268E-02	2.469E-02	NOT IDENT.
CE-139	1.522E-03	3.600E-02	2.695E-02	1.837E-02	NOT IDENT.
BA-140	-1.670E-01	3.183E-01	2.596E-01	1.624E-01	FAIL ABUN
LA-140	-7.468E-02	1.095E-01	8.250E-02	5.588E-02	FAIL ABUN
CE-141	3.679E-02	6.897E-02	5.971E-02	3.519E-02	NOT IDENT.



CE-143	3.838E+02	1.305E+02	0.000E+00	6.658E+01	SHORT HLIF
CE-144	-1.677E-01	2.223E-01	1.825E-01	1.134E-01	NOT IDENT.
PM-144	-5.213E-03	4.704E-02	3.891E-02	2.400E-02	NOT IDENT.
PR-144	-3.530E-01	3.185E+00	2.635E+00	1.625E+00	NOT IDENT.
PM-146	1.921E-02	5.209E-02	4.628E-02	2.657E-02	NOT IDENT.
ND-147	-3.500E-01	6.428E-01	5.296E-01	3.279E-01	NOT IDENT.
PM-149	-6.237E+01	6.858E+01	5.568E+01	3.499E+01	NOT IDENT.
EU-152	-6.268E-02	1.275E-01	1.011E-01	6.506E-02	FAIL ABUN
GD-153	-3.618E-02	8.233E-02	6.194E-02	4.201E-02	NOT IDENT.
EU-154	-1.517E-01	1.482E-01	1.131E-01	7.562E-02	NOT IDENT.
EU-155	9.591E-02	1.112E-01	9.750E-02	5.673E-02	FAIL ABUN
TB-160	-3.674E-02	1.793E-01	1.502E-01	9.147E-02	FAIL ABUN
HO-166M	-1.252E-02	8.134E-02	6.688E-02	4.150E-02	NOT IDENT.
TM-171	2.619E+01	1.701E+01	1.446E+01	8.680E+00	NOT IDENT.
LU-176	-1.552E-02	3.006E-02	2.416E-02	1.534E-02	NOT IDENT.
LU-177	3.034E+00	1.315E+00	1.004E+00	6.708E-01	FAIL ABUN
LU-177M	-1.440E-01	2.169E-01	1.724E-01	1.107E-01	FAIL ABUN
HF-181	-2.308E-02	5.277E-02	4.449E-02	2.692E-02	NOT IDENT.
W-181	6.635E-02	2.158E-01	1.770E-01	1.101E-01	NOT IDENT.
TA-182	-3.183E-05	2.432E-01	2.076E-01	1.241E-01	FAIL ABUN
RE-183	9.561E-02	1.565E-01	1.053E-01	7.983E-02	FAIL ABUN
RE-184	-1.283E-01	2.446E-01	2.073E-01	1.248E-01	NOT IDENT.
OS-185	2.235E-02	5.510E-02	4.763E-02	2.811E-02	NOT IDENT.
RE-188	-9.761E-02	1.935E-01	1.598E-01	9.872E-02	NOT IDENT.
W-188	7.864E-01	9.026E+00	6.849E+00	4.605E+00	FAIL ABUN
IR-192	-5.624E-03	4.030E-02	3.411E-02	2.056E-02	FAIL ABUN
AU-195	9.578E-02	2.143E-01	1.851E-01	1.093E-01	FAIL ABUN
TL-200	7.738E+01	2.405E+02	0.000E+00	1.227E+02	SHORT HLIF
TL-201	2.393E+00	6.408E+00	4.887E+00	3.270E+00	NOT IDENT.
TL-202	7.412E-02	8.052E-02	7.362E-02	4.108E-02	NOT IDENT.
HG-203	-4.016E-03	4.537E-02	3.897E-02	2.315E-02	NOT IDENT.
BI-207	5.419E-02	7.358E-02	6.487E-02	3.754E-02	FAIL ABUN
TL-207	5.658E-01	8.831E-01	6.848E-01	4.506E-01	FAIL ABUN
PO-209	-4.483E-01	1.010E+01	8.556E+00	5.154E+00	NOT IDENT.
PB-211	-2.258E-01	1.164E+00	9.507E-01	5.939E-01	NOT IDENT.
BI-212	1.678E+00	6.463E-01	4.498E-01	3.297E-01	FAIL ABUN
PO-215	5.658E-01	8.831E-01	6.848E-01	4.506E-01	FAIL ABUN
RN-219	-4.447E-01	5.184E-01	3.917E-01	2.645E-01	FAIL ABUN
RN-220	3.352E+00	3.351E+01	2.882E+01	1.710E+01	NOT IDENT.
RA-223	5.658E-01	8.831E-01	6.848E-01	4.506E-01	FAIL ABUN
AC-227	7.996E-02	4.239E-01	3.716E-01	2.163E-01	FAIL ABUN
TH-227	7.996E-02	4.240E-01	3.716E-01	2.163E-01	FAIL ABUN
TH-229	-7.222E-02	5.379E-01	4.764E-01	2.744E-01	FAIL ABUN
PA-231	7.882E-01	1.616E+00	1.424E+00	8.246E-01	FAIL ABUN
TH-231	5.658E-01	8.831E-01	6.848E-01	4.506E-01	FAIL ABUN
U-231	-2.892E-01	8.527E-01	6.586E-01	4.351E-01	FAIL ABUN
PA-233	-2.831E-02	7.368E-02	6.159E-02	3.759E-02	FAIL ABUN
PA-234	8.600E-02	4.104E-01	3.522E-01	2.094E-01	FAIL ABUN
PA-234M	-7.097E+00	6.890E+00	5.026E+00	3.515E+00	NOT IDENT.
NP-236	-4.503E-02	1.025E-01	7.478E-02	5.228E-02	NOT IDENT.
NP-239	-6.977E-02	1.953E-01	1.662E-01	9.966E-02	FAIL ABUN
AM-241	4.412E-02	6.744E-02	5.644E-02	3.441E-02	NOT IDENT.
CM-243	-5.507E-02	9.482E-02	8.075E-02	4.838E-02	FAIL ABUN
AM-246	-1.598E-02	1.804E-01	1.491E-01	9.207E-02	NOT IDENT.
CM-247	-1.690E-02	4.424E-02	3.594E-02	2.257E-02	NOT IDENT.
CF-249	3.064E-04	4.882E-02	4.083E-02	2.491E-02	NOT IDENT.
CF-251	-6.345E-02	1.444E-01	1.181E-01	7.368E-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	309.0634
46.50	309.0634
46.50	309.0634
48.70	335.7586
49.72	364.8552
51.35	366.4325
52.39	384.0620
52.97	345.0013
53.15	326.5371
53.44	326.9072
54.07	343.0693
56.28	391.5815
56.28	391.5861
57.37	0.0000
57.53	388.2276
57.53	388.2310
57.60	372.5874
57.98	365.8349
57.98	365.8349
59.32	382.5115
59.32	382.5115
59.40	382.6222
59.54	382.8155
59.72	394.8313
60.01	395.2437
61.10	434.8845
61.14	434.9464
61.30	431.2482
63.00	490.2562
63.29	490.7483
63.29	490.7483
63.58	491.2404
64.28	526.0765
65.12	503.6001
65.20	503.7364
65.20	503.7364
66.05	471.7691
66.72	423.2628
66.83	423.4220
66.91	423.5329
67.20	444.0641
67.20	444.0641
67.75	504.2752
67.85	504.4441
68.90	540.5356
68.90	540.5356
69.30	538.1737
69.67	538.2817
70.82	496.8276
70.82	496.8276
70.83	496.8443
72.80	543.6517
72.87	543.7702
72.87	543.7702
74.67	537.1895
74.81	537.4192
74.81	537.4192
74.81	537.4192
74.81	537.4192
74.81	537.4192
74.81	537.4192
74.81	537.4192
74.97	537.6847
75.28	538.1918
75.70	538.8809
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77.11	541.1779

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77.11	541.1779
77.11	541.1779
77.11	541.1779
78.38	543.2272
79.62	545.2140
79.80	545.5004
79.80	545.5004
80.11	545.9926
80.18	546.1060
80.30	546.2939
80.30	546.2939
80.57	546.7234
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81.07	547.5154
81.07	547.5154
81.07	547.5154
81.07	547.5154
82.60	258.7879
83.37	259.3508
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83.78	618.0895
83.78	618.0895
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85.43	574.1661
86.29	575.5349
86.50	575.8687
86.54	575.9304
86.59	576.0108
86.72	576.2147
86.79	576.3229
86.94	576.5639
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87.30	577.1324
87.30	577.1324
87.30	577.1324
87.30	577.1324
87.30	577.1324
87.30	577.1324
87.57	608.9324
87.88	609.4471
88.03	571.1426
88.36	571.6553
88.47	486.0522
89.95	487.9900
91.11	489.4997
92.29	616.6696
92.38	488.2526
92.38	488.2526
93.35	489.4904
94.00	330.7454
94.67	325.5017
94.67	325.5068
94.90	325.6982
94.90	325.6982
94.90	325.6982
94.90	325.6982
95.87	352.7456
95.87	352.7456
96.73	359.3643
97.43	346.8262
98.44	317.8754
98.44	317.8754
98.88	314.3092
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99.55	336.4107
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100.10	333.9249
103.18	365.1394
103.76	353.7588
105.00	322.0142
105.31	322.2515
108.00	354.3277
109.28	357.3906

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111.00	337.6410
111.76	344.2832
112.95	321.9287
115.19	334.7397
116.30	313.1241
117.00	318.7142
117.00	318.7142
117.66	333.4980
121.11	283.4329
121.62	305.4096
121.78	305.5135
122.06	294.3353
122.32	287.2644
122.32	287.2644
122.32	287.2644
122.32	287.2644
123.07	296.0009
127.23	364.3538
129.76	310.6248
131.20	346.2626
133.02	326.4014
133.54	332.0247
135.34	284.3956
136.00	278.3883
136.25	278.5243
136.48	314.8101
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140.51	0.0000
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142.65	339.0102
143.76	331.0937
144.24	319.5164
144.24	319.5164
144.24	319.5164
144.24	319.5164
145.22	324.4263
145.44	321.3149
147.16	341.8748
152.43	307.9126
152.70	303.6760
153.22	277.6221
154.21	323.1805
154.21	323.1805
154.21	323.1805
154.21	323.1805
155.03	336.8633
156.02	334.1433
158.56	273.6036
159.00	0.0000
159.00	259.4009
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161.27	308.8311
162.32	307.7148
162.64	321.2695
163.35	293.1763
163.89	297.3586
165.85	270.8645
167.43	259.7740
171.28	275.0139
171.86	278.6744
172.10	276.5155
176.55	287.6426
176.60	295.6564
181.06	289.7062
184.41	284.2874
185.71	298.7534
186.00	298.8873
190.27	264.1071
192.34	282.1238
193.63	276.8675
197.04	278.2662
198.01	279.5450
198.60	275.3590
200.40	255.6628
201.83	294.4433
202.84	287.7433
205.31	270.3448

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208.81	273.1204
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209.75	286.4342
210.97	285.4806
215.65	288.4156
216.55	262.4354
218.09	280.2764
222.10	266.2386
223.80	240.2480
226.40	249.3567
227.00	247.7114
227.08	247.7381
227.20	244.0907
228.16	240.7089
228.18	239.7926
228.18	239.7926
231.56	0.0000
235.69	248.8325
236.00	248.9303
236.00	248.9303
238.63	247.7036
238.63	247.7036
238.63	247.7036
238.63	247.7036
239.00	247.8188
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241.98	248.7468
241.98	248.7468
241.98	248.7468
244.69	191.3806
245.39	194.5613
247.94	180.0427
248.90	193.6695
249.79	195.2326
252.40	196.8010
252.85	202.6159
252.85	202.6159
254.15	0.0000
256.20	208.2045
256.20	208.2045
260.50	183.3496
260.90	188.2361
262.80	180.9546
264.65	192.9199
268.24	147.2268
268.79	170.5833
269.46	197.8709
269.46	197.8709
269.46	197.8709
269.46	197.8709
271.23	208.3805
273.65	252.6148
276.40	191.6096
277.35	179.0907
277.60	187.9512
277.60	187.9512
278.00	193.9123
278.60	195.0222
279.20	211.8241
279.53	219.7480
280.46	223.9052
281.68	206.5041
283.67	158.6686
284.30	179.4867
285.00	188.5082
285.90	195.6072
286.10	195.6495
286.10	195.6495
287.40	171.1891
288.45	0.0000
290.67	181.1281
290.80	190.6890
291.72	189.2873
293.26	0.0000
293.70	184.9062
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295.21	189.5941

295.21	189.5941
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296.50	189.8521
297.23	190.0000
298.57	190.2696
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299.80	190.5132
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300.09	190.5711
300.09	190.5711
300.09	190.5711
300.12	190.5769
301.29	194.4272
302.84	196.3497
303.76	191.7045
303.91	198.1783
304.40	177.3240
304.40	177.3240
304.84	199.9833
306.84	189.8933
308.46	152.7741
311.98	179.7224
316.51	181.5662
318.01	178.7731
319.02	192.2485
319.41	197.4380
320.08	192.4493
323.87	167.6924
323.87	167.6924
323.87	167.6924
323.87	167.6924
325.23	177.7939
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334.30	189.3302
338.28	185.4637
338.28	185.4637
338.28	185.4637
338.28	185.4637
338.32	185.4719
338.32	185.4719
338.32	185.4719
340.50	192.1196
340.57	192.1337
344.27	198.7895
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351.92	179.4006
351.92	179.4006
355.39	0.0000
356.01	137.2808
364.48	153.7031
366.43	131.5171
367.43	139.1248
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374.96	145.4356
383.85	153.0720
387.95	149.2501
388.63	135.1652
391.69	150.8154
391.69	150.8154
392.90	149.8751
398.62	130.8063
400.65	153.0451
401.10	152.0019
401.81	150.9893
402.60	144.4706
404.84	152.4705
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411.60	153.3106
413.65	153.5633
414.70	142.5566
415.30	157.1104

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427.89	140.4514
432.53	127.4060
433.93	142.0168
439.47	129.9062
439.56	126.2810
439.89	126.3132
443.98	139.4687
444.90	122.2341
445.03	111.2982
445.03	111.2982
445.03	111.2982
445.03	111.2982
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477.59	120.5328
477.96	128.9758
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511.85	116.7295
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513.99	126.1594
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555.20	95.4607
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569.50	114.1858
569.67	114.1970
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574.00	109.5220
574.64	108.4582
578.91	111.5140
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595.88	104.9191
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602.71	146.8691
603.60	148.6361
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604.70	126.7578
609.31	129.1332

609.31	129.1332
609.31	129.1332
609.31	129.1332
610.33	129.2107
612.46	96.7720
614.37	117.2742
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661.65	86.9048
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666.33	113.3657
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696.49	109.8499
697.00	108.8133
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717.42	112.1098
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722.78	120.6987
722.89	135.1166
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723.30	135.1440
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727.18	103.9922
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735.90	100.0927
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744.21	96.1318
747.13	109.3945
751.79	97.5828
752.31	89.9297
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766.84	105.8378
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896.60	79.9480
898.02	85.8480
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903.28	62.0116
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911.07	70.6187
911.07	70.6187
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969.11	86.0386
969.11	86.0386
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1046.59	65.1046
1048.07	67.2085

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1050.47	69.3364
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1077.35	61.6456
1078.86	63.7700
1085.78	53.4467
1099.22	52.6449
1112.02	61.6416
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1120.29	68.9382
1120.51	68.9435
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1173.22	62.6139
1175.09	72.3734
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1274.54	64.9714
1291.56	53.7832
1298.22	0.0000
1312.09	54.1133
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1325.50	48.5073
1332.49	52.4971
1333.61	55.4315
1360.21	49.0008
1362.66	0.0000
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1368.53	0.0000
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1384.27	68.0879
1394.10	47.4961
1395.20	50.4806
1407.95	42.7151
1434.06	29.0162
1436.60	41.0515
1457.56	0.0000
1460.81	19.1498
1489.15	37.5755
1509.49	27.5678
1596.49	37.5833
1620.62	25.2054
1678.03	0.0000
1691.02	20.5632
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1706.46	0.0000
1750.46	0.0000
1764.49	15.2129
1764.49	15.2129
1764.49	15.2129
1764.49	15.2129
1770.23	20.3099
1771.40	15.2368
1791.20	0.0000
1808.65	18.2456

1836.01

15.4580

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132001

Total Uranium Activity	5.0718E+00	ug/g
Total Uranium Counting Unc.	3.7863E+00	ug/g
Total Uranium Tpu	1.9318E-06	ug/g
Total Uranium Mda	1.7107E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940270                      SAMPLE ID : G244132001
*  ANALYST       : MXR1                        DETECTOR  : GAM13
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00    COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 09:11:36.05    SAMPLE ALQT: 125.220 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.943E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.488E+00
GROSS GAMMA MDA (pCi/GRAM ) : 4.172E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.029E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 11:13:12.83

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132002.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:12:04
Sample ID        : G244132002          Sample quantity  : 1.09500E+02 GRAM
Detector name    : GAM23              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00      Elapsed real time: 0 02:00:01.54  0.0%
Energy tolerance : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit  : 75.00000           Sensitivity     : 5.00000
Batch ID        : 940270              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	63.27*	79	290	1.32	126.54	123	8	1.09E-02	40.5	
2	1	74.63	264	368	1.38	149.25	141	17	3.66E-02	14.3	1.75E+00
3	1	76.96*	538	322	1.14	153.91	141	17	7.47E-02	7.3	
4	2	86.95	182	332	1.09	173.91	170	12	2.52E-02	17.9	2.15E+00
5	2	89.67*	93	259	1.04	179.33	170	12	1.30E-02	30.1	
6	0	92.84*	224	380	1.44	185.68	182	10	3.11E-02	18.3	
7	0	185.85*	102	302	1.26	371.69	367	10	1.41E-02	34.9	
8	0	208.88	51	279	1.07	417.75	413	11	7.04E-03	65.4	
9	3	238.30*	937	145	1.14	476.59	468	20	1.30E-01	4.0	1.43E+00
10	3	241.26	213	191	1.74	482.51	468	20	2.96E-02	17.7	
11	0	277.25	54	111	1.04	554.49	552	8	7.53E-03	36.0	
12	0	295.15	249	156	1.22	590.31	585	11	3.47E-02	11.7	
13	0	299.35	83	99	1.65	598.70	595	8	1.15E-02	23.4	
14	0	337.86	173	139	1.35	675.73	671	11	2.40E-02	15.2	
15	0	351.53*	395	153	1.30	703.06	697	13	5.48E-02	8.3	
16	0	463.68	78	138	2.12	927.35	919	21	1.08E-02	39.3	
17	0	510.04*	122	86	1.89	1020.09	1012	17	1.70E-02	22.7	
18	0	582.56*	214	96	1.53	1165.12	1160	12	2.97E-02	11.5	
19	0	608.54*	306	63	1.90	1217.09	1209	18	4.25E-02	8.6	
20	0	726.88	53	77	1.66	1453.75	1445	14	7.36E-03	37.7	
21	0	767.76	72	57	1.46	1535.53	1528	16	1.01E-02	25.9	
22	0	909.98	197	67	1.59	1819.96	1811	18	2.73E-02	12.1	
23	0	968.92	94	91	1.73	1937.83	1929	14	1.31E-02	24.3	
24	0	1119.43	88	42	1.52	2238.86	2230	17	1.22E-02	20.1	
25	0	1459.45*	973	21	2.18	2918.90	2908	21	1.35E-01	3.4	
26	0	1763.31*	31	10	1.25	3526.63	3520	13	4.37E-03	28.0	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 11:13:16

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 09:12:04
Sample ID        : G244132002             Sample quantity  : 109.50 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA23                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.54   0.0%
Peak Width (FWHM): 3.00                    Confidence level  : 5.00 %
Energy tolerance : 1.50 keV                 Half life ratio   : 8.00
Errors propagated: Yes                       Systematic Error  : 0.00 %
Efficiency type   : Empirical                 Efficiencies at   : Peak Energy
Abundance limit  : 75.00                     WTM error limit   : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.133E+01	3.183E+00	6.589E-01	4.928E-02	47.559
CD-109	+	88.03	*	3.285E+00	1.216E+00	1.665E+00	1.625E-01	1.973
SN-126	+	64.28		1.085E+00	8.946E-01	1.138E+00	1.732E-01	0.954
	+	86.94		1.345E+00	7.373E-01	6.915E-01	2.876E-01	1.945
	+	87.57	*	3.235E-01	1.197E-01	1.649E-01	1.605E-02	1.962
TL-208	+	277.35		6.603E-01	4.804E-01	7.232E-01	7.641E-02	0.913
	+	510.84		7.619E-01	3.545E-01	2.310E-01	2.347E-02	3.298
	+	583.14	*	3.823E-01	9.157E-02	6.822E-02	4.429E-03	5.604
		860.37		5.964E-01	3.532E-01	6.680E-01	6.039E-02	0.893
BI-211		72.87		1.266E+01	4.223E+00	7.452E+00	6.573E-01	1.699
	+	351.07	*	3.040E+00	5.425E-01	3.697E-01	2.409E-02	8.224
PB-212	+	74.81		2.094E+00	6.552E-01	6.755E-01	8.714E-02	3.100
	+	77.11		2.386E+00	4.080E-01	3.779E-01	3.400E-02	6.315
	+	87.30		1.496E+00	5.735E-01	7.656E-01	1.067E-01	1.954
	+	238.63	*	1.552E+00	1.665E-01	1.047E-01	7.530E-03	14.819
	+	300.09		2.140E+00	1.017E+00	1.419E+00	1.178E-01	1.508
PO-212	+	74.81		2.094E+00	6.552E-01	6.755E-01	8.714E-02	3.100
	+	77.11		2.386E+00	4.080E-01	3.779E-01	3.400E-02	6.315
	+	87.30		1.496E+00	5.735E-01	7.656E-01	1.067E-01	1.954
		115.19		-2.790E+00	4.068E+00	6.490E+00	4.140E-01	-0.430
	+	238.63	*	1.552E+00	1.665E-01	1.047E-01	7.530E-03	14.819
	+	300.09		2.140E+00	1.017E+00	1.419E+00	1.178E-01	1.508
BI-214	+	609.31	*	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743
	+	1120.29		1.583E+00	6.526E-01	5.716E-01	5.312E-02	2.769
	+	1764.49		7.806E-01	4.400E-01	3.361E-01	2.090E-02	2.323
PB-214	+	74.81		3.608E+00	1.110E+00	1.164E+00	1.347E-01	3.100
	+	77.11		4.091E+00	7.657E-01	6.478E-01	7.637E-02	6.315
	+	87.30		2.563E+00	9.688E-01	1.311E+00	1.626E-01	1.954
	+	241.98		2.120E+00	7.682E-01	6.094E-01	4.847E-02	3.478
	+	295.21		1.129E+00	2.812E-01	2.512E-01	2.153E-02	4.495
	+	351.92	*	1.057E+00	1.966E-01	1.289E-01	1.076E-02	8.206
PO-214	+	74.81		3.608E+00	1.110E+00	1.164E+00	1.347E-01	3.100
	+	77.11		4.091E+00	7.657E-01	6.478E-01	7.637E-02	6.315
	+	87.30		2.563E+00	9.688E-01	1.311E+00	1.626E-01	1.954

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.120E+00	7.682E-01	6.094E-01	4.847E-02	3.478
	+	295.21		1.129E+00	2.812E-01	2.512E-01	2.153E-02	4.495
	+	351.92	*	1.057E+00	1.966E-01	1.289E-01	1.076E-02	8.206
	+	74.81		2.094E+00	6.552E-01	6.755E-01	8.714E-02	3.100
	+	77.11		2.386E+00	4.080E-01	3.779E-01	3.400E-02	6.315
	+	87.30		1.496E+00	5.735E-01	7.656E-01	1.067E-01	1.954
PO-218	+	238.63	*	1.552E+00	1.665E-01	1.047E-01	7.530E-03	14.819
	+	300.09		2.140E+00	1.017E+00	1.419E+00	1.178E-01	1.508
	+	74.81		3.608E+00	1.110E+00	1.164E+00	1.347E-01	3.100
	+	77.11		4.091E+00	7.657E-01	6.478E-01	7.637E-02	6.315
	+	87.30		2.563E+00	9.688E-01	1.311E+00	1.626E-01	1.954
	+	241.98		2.120E+00	7.682E-01	6.094E-01	4.847E-02	3.478
RA-224	+	295.21		1.129E+00	2.812E-01	2.512E-01	2.153E-02	4.495
	+	351.92	*	1.057E+00	1.966E-01	1.289E-01	1.076E-02	8.206
	+	240.98	*	4.019E+00	1.439E+00	1.192E+00	6.716E-02	3.372
RA-226	+	609.31	*	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743
	+	1120.29		1.583E+00	6.526E-01	5.716E-01	5.312E-02	2.769
	+	1764.49		7.806E-01	4.400E-01	3.361E-01	2.090E-02	2.323
AC-228	+	338.32		1.464E+00	7.447E-01	4.675E-01	1.906E-01	3.133
	+	911.07	*	1.595E+00	4.278E-01	2.577E-01	2.974E-02	6.187
	+	969.11		1.353E+00	7.304E-01	4.623E-01	1.076E-01	2.927
RA-228	+	338.32		1.464E+00	7.447E-01	4.675E-01	1.906E-01	3.133
	+	911.07	*	1.595E+00	4.278E-01	2.577E-01	2.974E-02	6.187
	+	969.11		1.353E+00	7.304E-01	4.623E-01	1.076E-01	2.927
TH-228	+	74.81		2.123E+00	6.345E-01	6.849E-01	6.139E-02	3.100
	+	77.11		2.420E+00	4.136E-01	3.831E-01	3.447E-02	6.315
	+	87.30		1.517E+00	5.613E-01	7.762E-01	7.535E-02	1.954
TH-230	+	238.63	*	1.574E+00	1.688E-01	1.062E-01	7.635E-03	14.819
	+	300.09		2.169E+00	1.633E+00	1.439E+00	8.480E-01	1.508
	+	609.31	*	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743
TH-232	+	1120.29		1.583E+00	6.526E-01	5.716E-01	5.312E-02	2.769
	+	1764.49		7.806E-01	4.400E-01	3.361E-01	2.089E-02	2.323
	+	338.32		1.464E+00	4.533E-01	4.675E-01	2.761E-02	3.133
TH-234	+	911.07	*	1.595E+00	4.278E-01	2.577E-01	2.974E-02	6.187
	+	969.11		1.353E+00	7.304E-01	4.623E-01	1.076E-01	2.927
	+	63.29	*	2.742E+00	2.276E+00	2.862E+00	5.158E-01	0.958
U-234	+	92.38		2.535E+00	1.035E+00	9.419E-01	1.718E-01	2.691
	+	609.31	*	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743
	+	1120.29		1.583E+00	6.526E-01	5.716E-01	5.312E-02	2.769
NP-237	+	1764.49		7.806E-01	4.400E-01	3.361E-01	2.089E-02	2.323
	+	86.50	*	9.500E-01	4.025E-01	4.821E-01	1.098E-01	1.971
	+	95.87		5.771E-02	1.275E+00	1.861E+00	4.569E-01	0.031
U-238	+	63.29	*	2.742E+00	2.276E+00	2.862E+00	5.158E-01	0.958
	+	92.38		2.535E+00	9.539E-01	9.419E-01	8.417E-02	2.691
	+	74.67	*	3.395E-01	1.014E-01	1.099E-01	9.770E-03	3.088
AM-243	+	86.72		3.563E+01	1.318E+01	1.837E+01	1.774E+00	1.939
	+	117.66		-2.083E+00	4.359E+00	7.018E+00	4.346E-01	-0.297
	+	142.18		-1.841E+00	2.077E+01	3.386E+01	1.844E+00	-0.054
ANH-511	+	511.00	*	1.646E-01	7.532E-02	4.992E-02	2.899E-03	3.297



## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-1.455E-01	3.803E-01	6.075E-01	4.128E-02	-0.239
NA-22		1274.54	*	-1.589E-02	5.365E-02	8.426E-02	5.659E-03	-0.189
NA-24		1368.53	*	-1.373E-01	5.365E-02	Half-Life too short		
AL-26		1129.67		2.970E+00	2.349E+00	4.281E+00	2.727E-01	0.694
		1808.65	*	6.205E-03	3.638E-02	6.233E-02	3.746E-03	0.100
TI-44		67.85		2.622E-02	9.168E-02	1.010E-01	8.796E-03	0.260
	+	78.38	*	4.403E-01	7.528E-02	1.026E-01	9.304E-03	4.290
SC-46		889.25	*	-4.806E-03	5.098E-02	8.419E-02	7.522E-03	-0.057
	+	1120.51		2.682E-01	1.091E-01	1.441E-01	9.385E-03	1.862
V-48		944.10		-2.034E-01	1.064E+00	1.733E+00	1.510E-01	-0.117
		983.50	*	1.577E-02	8.184E-02	1.382E-01	1.150E-02	0.114
		1312.09		1.241E-01	1.021E-01	1.884E-01	1.340E-02	0.659
CR-51		320.08	*	-7.398E-02	4.155E-01	6.894E-01	4.520E-02	-0.107
MN-52		744.21		-2.015E-01	2.401E-01	3.495E-01	2.225E-02	-0.576
		848.13		7.084E+00	7.002E+00	1.274E+01	1.040E+00	0.556
		935.52		-8.679E-02	2.725E-01	4.383E-01	3.854E-02	-0.198
		1246.25		4.729E+00	9.033E+00	1.542E+01	9.871E-01	0.307
		1333.61		6.248E-01	5.655E+00	9.319E+00	6.841E-01	0.067
		1434.06	*	9.408E-02	2.418E-01	4.157E-01	3.007E-02	0.226
MN-54		834.83	*	1.077E-02	4.867E-02	8.283E-02	6.558E-03	0.130
CO-56		846.75	*	2.430E-02	4.687E-02	8.200E-02	6.671E-03	0.296
		977.42		1.100E+00	3.581E+00	6.117E+00	5.128E-01	0.180
		1037.82		-2.915E-01	3.910E-01	5.926E-01	4.858E-02	-0.492
		1175.09		-1.928E-01	3.262E+00	5.317E+00	3.009E-01	-0.036
		1238.25		-1.330E-02	1.215E-01	1.965E-01	1.307E-02	-0.068
		1360.21		-2.063E-01	9.696E-01	1.510E+00	1.105E-01	-0.137
		1771.40		-3.968E-01	2.725E-01	2.850E-01	1.763E-02	-1.392
CO-57		122.06	*	1.509E-03	3.091E-02	5.094E-02	3.003E-03	0.030
		136.48		-9.509E-02	2.463E-01	3.966E-01	2.579E-02	-0.240
CO-58		810.76	*	-5.818E-03	4.594E-02	7.601E-02	5.711E-03	-0.077
FE-59		142.65		-1.063E+00	3.235E+00	5.105E+00	2.776E-01	-0.208
		192.34		2.438E-01	1.125E+00	1.779E+00	2.058E-01	0.137
		1099.22	*	1.860E-02	1.205E-01	2.011E-01	1.549E-02	0.092
		1291.56		-5.186E-02	1.427E-01	2.211E-01	1.835E-02	-0.235
CO-60		1173.22		3.760E-02	6.248E-02	1.079E-01	6.085E-03	0.349
		1332.49	*	1.267E-02	5.210E-02	8.725E-02	6.405E-03	0.145
ZN-65		1115.52	*	1.065E-01	1.298E-01	2.038E-01	1.346E-02	0.522
GE-68		1077.35	*	-1.906E-01	1.656E+00	2.697E+00	1.930E-01	-0.071
AS-73		53.44	*	-5.052E-01	1.245E+00	2.053E+00	1.813E-01	-0.246
AS-74		595.88	*	-3.466E-03	1.032E-01	1.675E-01	9.240E-03	-0.021
		634.78		9.984E-02	3.972E-01	6.597E-01	3.492E-02	0.151
SE-75		66.05		-2.336E+00	7.111E+00	1.025E+01	1.076E+00	-0.228
		96.73		3.347E-01	1.024E+00	1.515E+00	2.031E-01	0.221
		121.11		6.169E-02	1.600E-01	2.675E-01	2.495E-02	0.231
		136.00		-3.616E-02	4.664E-02	7.374E-02	4.164E-03	-0.490
		198.60		1.378E+00	2.112E+00	3.476E+00	2.347E-01	0.396
		264.65	*	-8.759E-03	5.104E-02	8.068E-02	4.696E-03	-0.109
		279.53		1.582E-01	1.370E-01	2.184E-01	1.374E-02	0.724
		303.91		8.983E-02	2.673E+00	3.924E+00	3.765E-01	0.023

## ---- 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		-3.432E-01	3.050E-01	4.644E-01	4.225E-02	-0.739
		87.88		4.963E+02	1.836E+02	2.978E+02	2.906E+01	1.666
	+	200.40		-2.020E+01	1.386E+02	2.225E+02	1.190E+01	-0.091
		239.00		1.739E+02	1.695E+01	3.013E+01	1.694E+00	5.774
		249.79		-3.616E+01	5.584E+01	8.593E+01	4.885E+00	-0.421
		281.68		-5.821E+01	8.521E+01	1.185E+02	6.908E+00	-0.491
		297.23		2.760E+02	5.839E+01	9.501E+01	5.580E+00	2.905
		303.76		1.849E+01	1.608E+02	2.376E+02	1.398E+01	0.078
		439.47		-3.671E+01	1.212E+02	1.959E+02	1.146E+01	-0.187
		484.57		1.160E+02	1.827E+02	3.157E+02	1.846E+01	0.367
		520.65	*	1.013E-01	7.972E+00	1.309E+01	7.575E-01	0.008
		574.64		-1.497E+01	1.667E+02	2.698E+02	1.514E+01	-0.055
		578.91		-1.185E+01	8.250E+01	1.142E+02	6.389E+00	-0.104
		585.48		4.910E+02	1.730E+02	3.089E+02	1.719E+01	1.589
		755.35		-6.737E+01	1.457E+02	2.230E+02	1.460E+01	-0.302
		817.79		-2.297E+00	1.039E+02	1.735E+02	1.321E+01	-0.013
SR-82		698.33		1.076E+00	4.205E+01	6.802E+01	3.842E+00	0.016
	*	776.49		-2.492E-01	4.395E-01	6.372E-01	4.396E-02	-0.391
		1395.20		1.777E+00	1.351E+01	2.230E+01	1.625E+00	0.080
RB-83	*	520.41		1.053E-02	7.563E-02	1.255E-01	7.267E-03	0.084
		529.64		-2.853E-02	1.202E-01	1.928E-01	1.112E-02	-0.148
RB-84	*	552.65		-1.919E-01	2.392E-01	3.632E-01	2.069E-02	-0.528
		881.50		4.383E-02	9.039E-02	1.570E-01	1.379E-02	0.279
KR-85	*	513.99		9.962E+00	8.833E+00	1.410E+01	8.184E-01	0.706
SR-85	*	513.99		5.042E-02	4.470E-02	7.138E-02	4.142E-03	0.706
RB-86	*	1076.63		4.473E-01	9.628E-01	1.660E+00	1.189E-01	0.270
Y-88	*	898.02		-6.252E-02	5.507E-02	8.128E-02	7.433E-03	-0.769
		1836.01		1.446E-02	4.380E-02	7.693E-02	4.530E-03	0.188
ZR-88	*	392.90		-4.093E-02	3.604E-02	5.505E-02	3.178E-03	-0.744
Y-91	*	1204.90		1.559E+01	2.584E+01	4.448E+01	2.654E+00	0.350
NB-94	*	702.63		3.446E-02	4.461E-02	7.651E-02	4.372E-03	0.450
		871.10		-8.011E-03	4.347E-02	7.066E-02	6.069E-03	-0.113
NB-95	*	765.79		4.849E-02	6.524E-02	9.809E-02	6.592E-03	0.494
NB-95M	*	235.69		7.283E-01	1.977E-01	3.244E-01	2.393E-02	2.245
ZR-95	*	724.18		1.382E-01	1.461E-01	2.241E-01	1.584E-02	0.616
		756.15		-8.922E-02	9.065E-02	1.307E-01	1.002E-02	-0.683
NB-97	*	657.90		3.061E-04	9.065E-02	Half-Life	too short	
		1024.50		-1.375E+00	9.065E-02	Half-Life	too short	
ZR-97	*	254.15		7.057E-01	9.065E-02	Half-Life	too short	
		355.39		8.762E-01	9.065E-02	Half-Life	too short	
		507.63		2.700E+00	9.065E-02	Half-Life	too short	
		602.52		-1.617E+00	9.065E-02	Half-Life	too short	
		1021.30		-9.945E-01	9.065E-02	Half-Life	too short	
		1147.95		8.654E-01	9.065E-02	Half-Life	too short	
		1362.66		8.219E-01	9.065E-02	Half-Life	too short	
		1750.46		1.027E+00	9.065E-02	Half-Life	too short	
MO-99		140.51		-7.612E+00	2.352E+01	3.699E+01	9.942E+00	-0.206
		181.06		-3.745E+00	1.666E+01	2.327E+01	3.943E+00	-0.161
		366.43		1.793E+01	7.326E+01	1.241E+02	7.270E+00	0.145

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	739.58	*		1.066E+01	1.051E+01	1.839E+01	2.573E+00	0.580
	778.00			-3.384E+00	2.830E+01	4.697E+01	3.253E+00	-0.072
TC-99M	140.51	*		-4.994E+08	2.830E+01	Half-Life	too short	
RH-101	127.23			1.251E-02	4.027E-02	6.696E-02	3.845E-03	0.187
	198.01	*		2.730E-02	3.873E-02	6.394E-02	3.408E-03	0.427
	325.23			-1.238E-02	2.753E-01	4.602E-01	2.719E-02	-0.027
RH-102	418.52			-1.897E-01	3.129E-01	4.937E-01	2.877E-02	-0.384
	475.06	*		3.188E-02	3.309E-02	5.852E-02	3.426E-03	0.545
	631.29			-1.103E-02	6.519E-02	1.041E-01	5.534E-03	-0.106
	697.49			-6.295E-02	9.808E-02	1.489E-01	8.393E-03	-0.423
	766.84	+		4.126E-01	2.158E-01	2.614E-01	1.761E-02	1.579
	1046.59			1.719E-01	1.408E-01	2.599E-01	1.968E-02	0.661
	1112.84			-7.165E-02	3.222E-01	4.389E-01	2.912E-02	-0.163
RU-103	497.08	*		-1.696E-02	4.988E-02	7.888E-02	9.986E-03	-0.215
	610.33			7.900E+00	1.880E+00	2.913E+00	4.452E-01	2.712
RH-106	511.85			3.177E-01	2.732E-01	5.011E-01	2.910E-02	0.634
	621.84	*		-2.752E-01	3.841E-01	5.795E-01	6.683E-02	-0.475
	1050.47			3.586E-01	2.929E+00	4.893E+00	3.681E-01	0.073
RU-106	511.85			3.177E-01	2.732E-01	5.011E-01	2.910E-02	0.634
	621.84	*		-2.752E-01	3.831E-01	5.795E-01	3.114E-02	-0.475
	1050.47			3.586E-01	2.929E+00	4.893E+00	3.681E-01	0.073
AG-108M	433.93	*		-2.185E-02	3.834E-02	6.067E-02	3.846E-03	-0.360
	614.37			1.318E-02	5.004E-02	7.267E-02	4.317E-03	0.181
	722.95			-1.757E-02	6.265E-02	8.376E-02	5.446E-03	-0.210
AG-110M	657.75	*		-1.840E-03	4.202E-02	6.776E-02	3.766E-03	-0.027
	677.61			-1.529E-01	3.843E-01	5.976E-01	3.420E-02	-0.256
	706.67			-2.115E-01	2.713E-01	4.058E-01	2.486E-02	-0.521
	763.93			6.986E-02	2.203E-01	3.185E-01	2.229E-02	0.219
	884.67			2.548E-02	6.441E-02	1.111E-01	1.013E-02	0.229
	937.48			-4.187E-02	1.398E-01	2.254E-01	2.046E-02	-0.186
	1384.27			-6.705E-02	1.989E-01	3.054E-01	2.317E-02	-0.220
IN-111	171.28			6.312E-01	8.839E-01	1.484E+00	7.613E-02	0.425
	245.39	*		6.655E-01	1.046E+00	1.536E+00	8.694E-02	0.433
IN-113M	391.69	*		-6.582E-02	5.155E-02	7.767E-02	4.785E-03	-0.848
SN-113	391.69	*		-6.582E-02	5.155E-02	7.767E-02	4.785E-03	-0.848
IN-114M	190.27	*		8.146E-03	2.393E-01	3.396E-01	1.790E-02	0.024
CD-115	260.90			7.967E+01	1.014E+02	1.700E+02	9.764E+00	0.469
	492.35			2.809E+01	2.776E+01	4.931E+01	2.879E+00	0.570
	527.90	*		-4.241E+00	8.436E+00	1.320E+01	7.616E-01	-0.321
SN-117M	156.02			-9.927E-01	2.503E+00	4.009E+00	2.098E-01	-0.248
	158.56	*		3.863E-02	6.020E-02	1.010E-01	5.248E-03	0.383
SB-122	563.90	*		1.276E+00	1.817E+00	3.135E+00	1.773E-01	0.407
	692.80			-1.109E+00	3.860E+01	6.215E+01	3.459E+00	-0.018
I-123	159.00	*		6.941E-01	3.860E+01	Half-Life	too short	
	528.96			-1.891E+01	3.860E+01	Half-Life	too short	
TE-123M	159.00	*		1.625E-02	3.307E-02	5.511E-02	2.908E-03	0.295
I-124	602.71	*		-4.213E-01	7.901E-01	1.032E+00	5.656E-02	-0.408
	722.78			-1.817E+00	5.311E+00	7.039E+00	4.241E-01	-0.258
	1325.50			-5.612E+00	3.824E+01	6.101E+01	4.431E+00	-0.092

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25	6.934E+01	3.467E+01	6.826E+01	4.988E+00	1.016
		1509.49	-8.911E-02	1.320E+01	2.124E+01	1.506E+00	-0.004
		1691.02	-1.833E-02	3.455E+00	5.736E+00	3.744E-01	-0.003
		602.71	-2.962E-02	5.555E-02	7.256E-02	3.978E-03	-0.408
		645.85	-6.202E-01	6.002E-01	8.715E-01	5.261E-02	-0.712
		709.31	6.428E-01	3.369E+00	5.530E+00	3.216E-01	0.116
		713.82	-1.587E+00	2.117E+00	3.162E+00	3.244E-01	-0.502
		722.78	-1.852E-01	5.413E-01	7.174E-01	4.512E-02	-0.258
	+	968.20	1.374E+01	6.788E+00	8.723E+00	7.396E-01	1.575
		1045.16	2.278E+00	3.037E+00	5.384E+00	4.087E-01	0.423
		1325.50	-6.109E-01	4.163E+00	6.641E+00	4.824E-01	-0.092
		1368.21	-1.183E+00	2.085E+00	3.189E+00	4.044E-01	-0.371
		1436.60	-1.910E+00	4.710E+00	7.104E+00	5.137E-01	-0.269
		1691.02	* -4.405E-04	8.307E-02	1.379E-01	9.614E-03	-0.003
SB-125		427.89	* 4.079E-02	1.050E-01	1.788E-01	1.088E-02	0.228
	+	463.38	9.442E-01	7.440E-01	6.073E-01	4.137E-02	1.555
		600.56	-9.787E-03	2.446E-01	3.591E-01	2.314E-02	-0.027
		635.90	-6.648E-02	3.268E-01	5.200E-01	3.307E-02	-0.128
TE-125M		109.28	* -7.936E+00	1.076E+01	1.716E+01	1.530E+00	-0.462
I-126		388.63	-3.771E-02	2.287E-01	3.715E-01	2.148E-02	-0.102
		666.33	* -4.866E-02	2.080E-01	3.293E-01	1.704E-02	-0.148
SB-126		753.82	8.977E-01	1.639E+00	2.778E+00	1.812E-01	0.323
		223.80	2.636E+00	4.591E+00	7.604E+00	4.199E-01	0.347
	+	278.60	4.075E+00	2.943E+00	4.858E+00	2.826E-01	0.839
	+	296.50	1.049E+01	2.530E+00	3.745E+00	2.199E-01	2.801
		414.70	2.862E-02	7.949E-02	1.351E-01	7.865E-03	0.212
		415.30	2.073E+00	6.535E+00	1.108E+01	6.451E-01	0.187
		555.20	2.950E+00	4.380E+00	7.561E+00	4.301E-01	0.390
		573.80	3.091E-01	1.119E+00	1.869E+00	1.050E-01	0.165
		593.00	2.046E-01	9.848E-01	1.635E+00	9.038E-02	0.125
		656.30	-2.707E+00	3.870E+00	5.818E+00	2.995E-01	-0.465
		666.33	-2.028E-02	8.668E-02	1.372E-01	7.101E-03	-0.148
		675.00	1.654E+00	2.384E+00	4.086E+00	2.166E-01	0.405
		695.00	-5.495E-02	8.850E-02	1.342E-01	7.515E-03	-0.409
		697.00	-7.390E-02	3.195E-01	5.049E-01	2.842E-02	-0.146
SB-127		720.50	* -1.650E-01	2.181E-01	2.732E-01	1.637E-02	-0.604
		856.80	-4.527E-01	5.389E-01	8.254E-01	6.868E-02	-0.548
		989.30	3.562E-01	1.450E+00	2.461E+00	2.032E-01	0.145
		1034.80	-2.638E+00	1.159E+01	1.837E+01	1.419E+00	-0.144
		1213.00	1.677E-01	5.765E+00	9.451E+00	5.718E-01	0.018
		61.10	6.023E+01	7.069E+01	1.086E+02	1.179E+01	0.555
		252.40	-8.265E-01	4.217E+00	6.653E+00	2.757E+00	-0.124
		290.80	-9.061E+00	2.245E+01	3.186E+01	2.790E+00	-0.284
		411.60	-3.324E+00	1.172E+01	1.905E+01	2.687E+00	-0.175
		444.90	3.751E+00	9.298E+00	1.580E+01	1.651E+00	0.237
		473.00	1.147E-01	1.770E+00	2.546E+00	2.762E-01	0.045
		543.00	1.078E+00	1.679E+01	2.760E+01	3.468E+00	0.039
		603.60	-2.284E+00	1.299E+01	1.775E+01	1.813E+00	-0.129
		685.20	* 2.586E-01	1.374E+00	2.258E+00	1.983E-01	0.115

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	698.50			-1.759E+00	1.581E+01	2.526E+01	3.573E+00	-0.070
	722.20			-3.075E+01	3.779E+01	4.682E+01	4.151E+00	-0.657
	783.80			1.972E-02	3.418E+00	5.737E+00	6.320E-01	0.003
XE-127	57.60			3.936E+00	8.737E+00	1.445E+01	1.266E+00	0.272
	145.22			-2.572E-02	8.074E-01	1.289E+00	6.953E-02	-0.020
	172.10			1.286E-02	1.372E-01	2.240E-01	1.150E-02	0.057
	202.84	*		-9.927E-03	6.094E-02	9.005E-02	4.834E-03	-0.110
	374.96			1.296E-02	2.135E-01	3.571E-01	2.083E-02	0.036
I-131	80.18			-4.465E+00	5.743E+00	8.052E+00	7.419E-01	-0.555
	284.30			-2.289E-01	1.602E+00	2.609E+00	1.688E-01	-0.088
	364.48	*		4.111E-02	1.231E-01	2.096E-01	1.367E-02	0.196
	636.97			-9.865E-01	1.666E+00	2.546E+00	1.533E-01	-0.387
	722.89			-2.862E+00	9.473E+00	1.263E+01	7.694E-01	-0.227
TE-132	49.72			-2.064E+01	2.476E+01	4.003E+01	4.145E+00	-0.516
	111.76			5.137E+00	2.605E+01	4.332E+01	3.900E+00	0.119
	116.30			-2.520E+01	2.438E+01	3.811E+01	3.330E+00	-0.661
	228.16	*		-1.332E-01	6.556E-01	1.043E+00	1.462E-01	-0.128
BA-133	53.15			-7.860E-01	5.428E+00	9.065E+00	7.996E-01	-0.087
	79.62			-8.498E-02	1.784E+00	2.606E+00	4.045E-01	-0.033
	81.00			-1.863E-01	1.507E-01	1.864E-01	3.022E-02	-1.000
	276.40	+		6.524E-01	4.771E-01	7.542E-01	9.781E-02	0.865
	302.84			9.586E-02	1.807E-01	2.756E-01	3.224E-02	0.348
	356.01	*		1.252E-02	5.731E-02	8.481E-02	9.839E-03	0.148
	383.85			6.491E-02	3.646E-01	6.134E-01	6.669E-02	0.106
I-133	510.53	+		6.243E-01	3.646E-01	Half-Life	too short	
	529.87	*		-3.831E-04	3.646E-01	Half-Life	too short	
	706.58			-1.549E-01	3.646E-01	Half-Life	too short	
	856.28			-2.505E-01	3.646E-01	Half-Life	too short	
	875.33			4.867E-03	3.646E-01	Half-Life	too short	
	1236.41			1.869E-01	3.646E-01	Half-Life	too short	
	1298.22			-3.327E-02	3.646E-01	Half-Life	too short	
CS-134	475.35			1.786E+00	2.180E+00	3.816E+00	2.233E-01	0.468
	563.23			2.325E-01	4.310E-01	7.348E-01	4.250E-02	0.316
	569.32			-2.857E-03	2.341E-01	3.816E-01	2.218E-02	-0.007
	604.70			4.562E-02	4.341E-02	6.868E-02	3.780E-03	0.664
	795.84	*		7.665E-02	5.957E-02	1.094E-01	7.988E-03	0.701
	801.93			-2.921E-01	4.869E-01	7.709E-01	5.697E-02	-0.379
	1038.57			-1.438E+00	4.666E+00	7.438E+00	5.710E-01	-0.193
	1167.94			-1.856E-01	3.326E+00	5.421E+00	3.108E-01	-0.034
	1365.15			-8.743E-01	1.365E+00	1.960E+00	1.524E-01	-0.446
CS-135	268.24	*		2.684E-01	1.916E-01	3.288E-01	2.512E-02	0.816
I-135	288.45			-7.571E+08	1.916E-01	Half-Life	too short	
	417.63			-3.142E+08	1.916E-01	Half-Life	too short	
	546.56			-3.408E+08	1.916E-01	Half-Life	too short	
	836.80			1.222E+09	1.916E-01	Half-Life	too short	
	1038.76			-1.942E+08	1.916E-01	Half-Life	too short	
	1124.00			-2.395E+09	1.916E-01	Half-Life	too short	
	1131.51			1.081E+08	1.916E-01	Half-Life	too short	
	1260.41	*		1.582E+08	1.916E-01	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1457.56		5.795E+10	1.916E-01	Half-Life	too short	
		1678.03		-3.072E+07	1.916E-01	Half-Life	too short	
		1706.46		1.997E+08	1.916E-01	Half-Life	too short	
		1791.20		-7.559E+08	1.916E-01	Half-Life	too short	
		66.91		2.457E-02	1.257E+00	1.569E+00	2.429E-01	0.016
	+	86.29		3.956E+00	1.512E+00	2.357E+00	3.191E-01	1.679
		153.22		2.972E-01	7.352E-01	1.221E+00	8.310E-02	0.243
		163.89		8.908E-01	1.161E+00	1.956E+00	1.315E-01	0.455
		176.55		-3.801E-02	4.004E-01	6.473E-01	3.858E-02	-0.059
		273.65		-1.126E+00	6.361E-01	7.489E-01	4.952E-02	-1.503
		340.57		2.114E-01	1.589E-01	2.543E-01	1.593E-02	0.831
		818.51		1.262E-02	7.937E-02	1.349E-01	1.030E-02	0.093
		1048.07	*	4.913E-02	1.336E-01	2.282E-01	1.818E-02	0.215
		1235.34		4.279E-01	7.028E-01	1.208E+00	1.241E-01	0.354
BA-137M		661.65	*	8.239E-03	4.324E-02	7.120E-02	3.637E-03	0.116
CS-137		661.65	*	8.709E-03	4.571E-02	7.527E-02	3.866E-03	0.116
CE-139		165.85	*	-4.567E-02	3.531E-02	5.381E-02	2.743E-03	-0.849
BA-140		162.64		1.901E-01	8.306E-01	1.367E+00	8.127E-02	0.139
		304.84		-3.974E-01	1.493E+00	2.235E+00	6.103E-01	-0.178
		423.70		2.274E+00	2.061E+00	3.476E+00	1.105E+00	0.654
LA-140		537.32	*	-1.842E-01	3.187E-01	4.884E-01	1.588E-01	-0.377
		328.77		3.623E-01	3.401E-01	5.999E-01	3.956E-02	0.604
		432.53		-1.359E+00	2.236E+00	3.527E+00	2.274E-01	-0.385
		487.03		-6.509E-02	1.506E-01	2.389E-01	1.578E-02	-0.272
		751.79		1.749E+00	1.881E+00	3.299E+00	2.531E-01	0.530
		815.85		-1.763E-01	3.359E-01	5.309E-01	4.614E-02	-0.332
		867.82		-7.925E-01	1.562E+00	2.500E+00	2.247E-01	-0.317
		919.63		-1.427E+00	3.205E+00	4.950E+00	5.395E-01	-0.288
		925.24		-8.146E-02	1.328E+00	2.193E+00	2.064E-01	-0.037
		1596.49	*	-4.773E-02	7.627E-02	1.098E-01	7.533E-03	-0.435
CE-141		145.44	*	-1.789E-02	7.196E-02	1.164E-01	6.563E-03	-0.154
CE-143		57.37		-1.764E-06	7.196E-02	Half-Life	too short	
		231.56		6.666E-04	7.196E-02	Half-Life	too short	
		293.26	*	4.875E-04	7.196E-02	Half-Life	too short	
	+	350.59		1.294E-02	7.196E-02	Half-Life	too short	
		490.36		2.475E-04	7.196E-02	Half-Life	too short	
		664.57		3.256E-04	7.196E-02	Half-Life	too short	
		721.93		-7.963E-04	7.196E-02	Half-Life	too short	
CE-144		80.11		-2.252E+00	2.933E+00	4.116E+00	3.773E-01	-0.547
		133.54	*	-1.150E-01	2.453E-01	3.931E-01	5.552E-02	-0.292
PM-144		476.78		-3.740E-02	8.074E-02	1.281E-01	8.949E-03	-0.292
		618.01		1.123E-02	3.942E-02	6.400E-02	3.691E-03	0.175
		696.49	*	-1.894E-02	4.383E-02	6.794E-02	3.822E-03	-0.279
		778.57		-1.371E+00	2.607E+00	4.153E+00	2.881E-01	-0.330
PR-144		696.49	*	-1.282E+00	2.968E+00	4.601E+00	2.586E-01	-0.279
		1489.15		2.517E+00	1.440E+01	2.394E+01	1.708E+00	0.105
PM-146		453.90	*	6.075E-02	5.041E-02	9.014E-02	7.807E-03	0.674
		633.02		1.650E+00	1.739E+00	2.888E+00	1.061E+00	0.571
		735.90		-1.061E-01	1.967E-01	2.963E-01	8.290E-02	-0.358

---- 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		-6.900E-02	1.051E-01	1.558E-01	1.995E-02	-0.443
		91.11		5.097E-01	3.116E-01	6.136E-01	6.033E-02	0.831
		319.41		7.134E-01	3.479E+00	5.907E+00	3.490E-01	0.121
		439.89		-4.920E+00	6.671E+00	1.043E+01	6.106E-01	-0.472
PM-149	*	531.02		4.436E-01	5.996E-01	1.039E+00	1.403E-01	0.427
		285.90		1.942E+01	7.299E+01	1.246E+02	1.768E+01	0.156
		121.78		-1.165E-02	8.929E-02	1.460E-01	1.123E-02	-0.080
		244.69		3.268E-01	4.287E-01	6.359E-01	3.597E-02	0.514
EU-152	*	344.27		3.198E-02	1.357E-01	1.907E-01	1.264E-02	0.168
		443.98		4.944E-01	1.125E+00	1.918E+00	1.123E-01	0.258
		778.89		-1.880E-01	2.987E-01	4.703E-01	3.263E-02	-0.400
		867.32		-4.165E-01	9.942E-01	1.607E+00	1.369E-01	-0.259
		964.01		3.115E-01	4.860E-01	7.407E-01	6.312E-02	0.421
		1085.78		-2.471E-01	5.508E-01	8.665E-01	6.097E-02	-0.285
		1112.02		-2.179E-01	4.716E-01	6.179E-01	4.107E-02	-0.353
		1407.95		-1.233E-01	2.061E-01	2.982E-01	2.169E-02	-0.413
GD-153		69.67		5.684E-01	2.343E+00	3.487E+00	3.047E-01	0.163
		83.37		7.516E+00	2.027E+01	3.007E+01	2.823E+00	0.250
		97.43	*	4.176E-02	1.042E-01	1.549E-01	1.266E-02	0.270
		103.18		-8.401E-02	1.258E-01	2.018E-01	1.508E-02	-0.416
EU-154		123.07		1.816E-03	6.337E-02	1.043E-01	9.847E-03	0.017
		247.94		8.915E-02	4.502E-01	7.048E-01	6.671E-02	0.126
		591.81		-2.956E-01	7.294E-01	1.143E+00	1.099E-01	-0.259
		723.30		6.176E-02	2.615E-01	3.737E-01	2.718E-02	0.165
		756.87		-7.792E-01	9.917E-01	1.461E+00	1.548E-01	-0.533
		873.19		2.097E-01	3.654E-01	6.412E-01	7.854E-02	0.327
		996.32		-4.336E-01	4.839E-01	7.180E-01	1.261E-01	-0.604
		1004.76		-4.107E-01	2.763E-01	3.775E-01	4.246E-02	-1.088
EU-155	*	1274.45		-4.597E-02	1.498E-01	2.349E-01	2.332E-02	-0.196
		48.70		-2.082E+00	4.137E+00	6.810E+00	5.493E-01	-0.306
		60.01		-9.997E-01	7.708E+00	1.130E+01	9.813E-01	-0.088
		86.54		3.894E-01	1.442E-01	2.300E-01	2.235E-02	1.693
TB-160	+	105.31	*	1.104E-01	1.282E-01	2.188E-01	1.614E-02	0.505
		86.79		1.029E+00	3.806E-01	6.016E-01	5.813E-02	1.710
		197.04		-1.752E-01	6.480E-01	1.034E+00	5.504E-02	-0.169
		215.65		-6.341E-02	8.391E-01	1.299E+00	7.097E-02	-0.049
	+	298.57		3.077E-01	1.452E-01	2.452E-01	1.441E-02	1.255
		879.36	*	-1.065E-01	1.792E-01	2.816E-01	2.462E-02	-0.378
		962.29		7.818E-01	8.370E-01	1.317E+00	1.124E-01	0.594
		966.15		1.100E+00	4.213E-01	7.138E-01	6.067E-02	1.540
HO-166M		1177.93		2.052E-01	5.281E-01	8.937E-01	5.084E-02	0.230
		1271.85		-7.321E-02	8.238E-01	1.328E+00	8.861E-02	-0.055
		80.57		-4.881E-01	3.869E-01	5.265E-01	4.841E-02	-0.927
		184.41		8.808E-02	6.157E-02	7.850E-02	4.102E-03	1.122
	+	280.46		6.984E-02	1.101E-01	1.696E-01	9.875E-03	0.412
		410.95		1.346E-01	2.898E-01	4.953E-01	2.879E-02	0.272
		711.68	*	-3.787E-03	7.725E-02	1.240E-01	7.255E-03	-0.031
		752.31		3.072E-01	3.258E-01	5.719E-01	3.716E-02	0.537
		810.29		-2.283E-02	7.050E-02	1.144E-01	8.560E-03	-0.200

## ----- 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		-7.754E+00	4.768E+01	7.961E+01	6.920E+00	-0.097
		52.39		4.176E+00	2.393E+01	4.053E+01	3.560E+00	0.103
		59.40		1.268E+01	4.136E+01	6.212E+01	5.397E+00	0.204
		66.72	*	-9.898E+00	4.457E+01	6.029E+01	5.243E+00	-0.164
LU-176	+	88.36		3.798E-01	2.318E-01	4.641E-01	4.499E-02	0.818
		201.83		-2.742E-02	3.501E-02	5.434E-02	2.913E-03	-0.505
		306.84	*	2.036E-03	2.828E-02	4.771E-02	2.811E-03	0.043
		401.10		-9.967E+00	8.192E+00	1.245E+01	7.211E-01	-0.801
LU-177		112.95		1.908E+00	1.599E+00	2.765E+00	1.813E-01	0.690
	+	208.36	*	1.308E+00	1.714E+00	1.984E+00	1.074E-01	0.659
LU-177M		52.97		-7.420E-01	2.460E+00	4.079E+00	3.595E-01	-0.182
		54.07		-7.344E-01	1.285E+00	2.104E+00	1.859E-01	-0.349
		61.30		1.845E+00	2.307E+00	3.543E+00	3.078E-01	0.521
		121.62		6.967E-02	4.486E-01	7.427E-01	4.390E-02	0.094
		147.16		-1.813E-01	7.692E-01	1.244E+00	6.675E-02	-0.146
		171.86		8.371E-02	5.643E-01	9.239E-01	4.743E-02	0.091
		218.09		-9.584E-01	9.731E-01	1.479E+00	8.106E-02	-0.648
		268.79		1.031E+00	9.740E-01	1.646E+00	9.511E-02	0.627
		319.02		2.410E-02	2.926E-01	4.932E-01	2.912E-02	0.049
		367.43		-1.513E-01	1.084E+00	1.791E+00	1.049E-01	-0.084
		413.65	*	-1.617E-01	2.110E-01	3.310E-01	1.926E-02	-0.488
HF-181		56.28		-1.389E-02	1.367E+00	2.293E+00	2.019E-01	-0.006
		57.53		1.226E-01	7.452E-01	1.218E+00	1.067E-01	0.101
		65.20		-5.412E-01	1.419E+00	2.042E+00	1.774E-01	-0.265
		133.02		-3.840E-02	7.806E-02	1.253E-01	7.033E-03	-0.306
		136.25		-3.329E-01	5.333E-01	8.492E-01	4.713E-02	-0.392
		345.85		-1.551E-01	2.543E-01	3.490E-01	2.059E-02	-0.444
		482.03	*	-8.851E-04	4.964E-02	8.159E-02	4.772E-03	-0.011
W-181		56.28		-4.282E-03	5.420E-01	9.094E-01	8.007E-02	-0.005
		57.53		4.832E-02	2.958E-01	4.835E-01	4.236E-02	0.100
		65.20	*	-2.131E-01	5.589E-01	8.041E-01	6.985E-02	-0.265
TA-182		67.75		5.775E-02	2.173E-01	2.391E-01	2.081E-02	0.242
		100.10		-1.583E-02	2.079E-01	3.428E-01	2.683E-02	-0.046
		152.43		3.358E-01	3.940E-01	6.667E-01	3.524E-02	0.504
		222.10		2.242E-01	4.138E-01	6.847E-01	3.773E-02	0.327
		1001.68		6.204E-01	2.561E+00	4.264E+00	3.462E-01	0.145
		1121.28		3.760E-01	2.345E-01	3.895E-01	2.533E-02	0.965
		1189.05		-3.560E-01	4.196E-01	6.294E-01	3.652E-02	-0.566
		1221.42	*	4.803E-02	2.770E-01	4.594E-01	2.820E-02	0.105
		1230.97		-2.495E-01	6.421E-01	1.011E+00	6.308E-02	-0.247
RE-183		57.98		2.472E-01	2.946E-01	4.769E-01	4.171E-02	0.518
		59.32		4.959E-02	1.684E-01	2.528E-01	2.197E-02	0.196
		67.20		2.128E-01	3.280E-01	4.278E-01	3.722E-02	0.497
		162.32	*	6.181E-02	1.289E-01	2.145E-01	1.103E-02	0.288
	+	208.81		1.320E+00	1.729E+00	1.975E+00	1.069E-01	0.668
		291.72		6.275E-02	1.206E+00	1.777E+00	1.041E-01	0.035
RE-184		57.98		9.173E-01	1.093E+00	1.770E+00	1.548E-01	0.518
		59.32		1.839E-01	6.245E-01	9.375E-01	8.147E-02	0.196
		67.20		7.896E-01	1.217E+00	1.587E+00	1.381E-01	0.497



## ---- 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		8.992E-02	4.175E-01	6.870E-01	3.544E-02	0.131
		216.55		4.250E-02	2.866E-01	4.658E-01	2.548E-02	0.091
		252.85	*	-4.444E-02	2.812E-01	4.460E-01	2.543E-02	-0.100
		318.01		-2.814E-01	5.154E-01	8.358E-01	4.935E-02	-0.337
		792.07		2.799E-01	1.243E+00	2.122E+00	1.520E-01	0.132
		903.28		3.459E-02	1.404E+00	2.020E+00	1.831E-01	0.017
		920.93		2.030E-01	5.356E-01	9.242E-01	8.243E-02	0.220
		59.72		-3.443E-02	4.584E-01	6.741E-01	5.854E-02	-0.051
		61.14		2.711E-01	2.465E-01	3.836E-01	3.332E-02	0.707
		69.30		1.962E-01	4.173E-01	6.280E-01	5.482E-02	0.312
		592.07		-4.072E-01	2.876E+00	4.621E+00	2.557E-01	-0.088
		646.12	*	-4.798E-02	5.174E-02	7.619E-02	3.976E-03	-0.630
		717.42		7.685E-01	1.195E+00	1.986E+00	1.180E-01	0.387
		874.81		4.223E-01	7.192E-01	1.264E+00	1.094E-01	0.334
		880.27		2.866E-01	9.998E-01	1.710E+00	1.498E-01	0.168
RE-188		155.03	*	6.355E-02	2.002E-01	3.312E-01	1.738E-02	0.192
		477.96		-1.798E+00	3.692E+00	5.849E+00	3.422E-01	-0.307
		633.10		3.343E+00	3.264E+00	5.782E+00	3.067E-01	0.578
W-188	+	63.58		1.088E+02	8.869E+01	1.226E+02	1.065E+01	0.888
		227.08		-4.406E+00	1.554E+01	2.462E+01	1.365E+00	-0.179
IR-192		290.67	*	-3.870E+00	9.584E+00	1.361E+01	7.968E-01	-0.284
	+	295.96		8.509E-01	2.054E-01	3.075E-01	1.833E-02	2.767
		308.46		-4.530E-02	1.130E-01	1.854E-01	1.105E-02	-0.244
		316.51	*	-3.154E-02	3.998E-02	6.386E-02	3.788E-03	-0.494
		468.07		6.333E-02	8.327E-02	1.290E-01	8.690E-03	0.491
AU-195		604.41		5.811E-01	5.813E-01	9.116E-01	1.020E-01	0.637
		612.46		5.860E-02	8.957E-01	1.268E+00	9.247E-02	0.046
		65.12		-7.941E-02	2.604E-01	3.763E-01	3.269E-02	-0.211
		66.83		-2.301E-02	1.469E-01	1.996E-01	1.736E-02	-0.115
	+	75.70		1.094E+00	3.265E-01	6.084E-01	5.434E-02	1.797
		98.88	*	2.160E-01	2.841E-01	4.516E-01	3.603E-02	0.478
TL-200		129.76		5.180E+00	3.506E+00	6.071E+00	3.450E-01	0.853
		367.94	*	-2.992E-05	3.506E+00	Half-Life	too short	
		579.30		1.992E-03	3.506E+00	Half-Life	too short	
		828.27		9.838E-04	3.506E+00	Half-Life	too short	
TL-201		1205.75		1.241E-03	3.506E+00	Half-Life	too short	
		68.90		1.336E+00	5.561E+00	7.735E+00	6.747E-01	0.173
		70.82		4.859E-01	2.872E+00	4.257E+00	3.730E-01	0.114
		80.30		-3.856E+00	5.257E+00	7.391E+00	6.783E-01	-0.522
		135.34		-2.893E+01	2.310E+01	3.568E+01	1.986E+00	-0.811
TL-202		167.43	*	-5.180E+00	6.224E+00	9.715E+00	4.958E-01	-0.533
		68.90		1.484E-01	6.176E-01	8.591E-01	7.494E-02	0.173
		70.82		5.381E-02	3.181E-01	4.715E-01	4.131E-02	0.114
		80.30		-4.273E-01	5.824E-01	8.188E-01	7.515E-02	-0.522
HG-203		439.56	*	-2.890E-02	7.801E-02	1.255E-01	7.342E-03	-0.230
		70.83		2.510E-01	1.452E+00	2.152E+00	2.947E-01	0.117
		72.87		2.472E+00	8.610E-01	1.455E+00	1.941E-01	1.699
		82.60		-2.978E-02	1.616E+00	2.200E+00	3.125E-01	-0.014
		279.20	*	6.623E-02	5.209E-02	8.346E-02	5.155E-03	0.793

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-207		72.80		6.859E-01	2.437E-01	4.299E-01	3.791E-02	1.596
	+	74.97		6.094E-01	1.820E-01	3.052E-01	2.716E-02	1.996
		84.90		3.707E-01	2.687E-01	4.134E-01	3.929E-02	0.897
		569.67		8.894E-03	3.574E-02	5.957E-02	3.356E-03	0.149
		1063.62	*	5.988E-02	6.673E-02	1.195E-01	8.780E-03	0.501
		1770.23		-1.221E+00	7.126E-01	7.943E-01	4.918E-02	-1.537
TL-207		81.07		-4.165E-01	3.279E-01	4.105E-01	3.788E-02	-1.015
		83.78		4.925E-02	1.714E-01	2.533E-01	2.386E-02	0.194
		94.90		4.358E-01	3.175E-01	4.913E-01	4.192E-02	0.887
		122.32		5.215E-01	2.146E+00	3.565E+00	2.412E-01	0.146
		144.24		1.588E-01	8.118E-01	1.309E+00	9.066E-02	0.121
		154.21		-3.227E-02	4.720E-01	7.679E-01	5.048E-02	-0.042
		269.46		2.104E-01	2.367E-01	3.925E-01	2.373E-02	0.536
		323.87	*	-9.247E-01	8.197E-01	1.261E+00	2.088E-01	-0.733
	+	338.28		6.115E+00	1.968E+00	2.812E+00	2.978E-01	2.175
		445.03		1.064E+00	2.702E+00	4.590E+00	4.728E-01	0.232
PO-209		260.50		7.560E+00	1.123E+01	1.870E+01	1.073E+00	0.404
		262.80		-4.420E+01	3.263E+01	4.753E+01	2.734E+00	-0.930
		896.60	*	-1.157E+01	9.877E+00	1.449E+01	1.316E+00	-0.798
BI-210		46.50	*	-6.829E-01	6.825E+00	1.106E+01	8.613E-01	-0.062
PB-210		46.50	*	-6.829E-01	6.825E+00	1.106E+01	8.613E-01	-0.062
PO-210		46.50	*	-6.829E-01	6.825E+00	1.106E+01	7.421E-01	-0.062
PB-211		404.84	*	-2.134E-01	1.175E+00	1.914E+00	1.193E+00	-0.111
		427.08		9.525E-02	2.360E+00	3.917E+00	2.421E+00	0.024
		831.96		5.994E-01	1.583E+00	2.657E+00	1.662E+00	0.226
BI-212	+	727.18	*	8.204E-01	6.222E-01	7.740E-01	6.144E-02	1.060
		785.46		8.001E-01	2.125E+00	3.678E+00	2.594E-01	0.218
		1620.62		6.280E-01	1.399E+00	2.514E+00	1.705E-01	0.250
PO-215		81.07		-4.165E-01	3.279E-01	4.105E-01	3.788E-02	-1.015
		83.78		4.925E-02	1.714E-01	2.533E-01	2.386E-02	0.194
		94.90		4.358E-01	3.175E-01	4.913E-01	4.192E-02	0.887
		122.32		5.215E-01	2.146E+00	3.565E+00	2.412E-01	0.146
		144.24		1.588E-01	8.118E-01	1.309E+00	9.066E-02	0.121
		154.21		-3.227E-02	4.720E-01	7.679E-01	5.048E-02	-0.042
		269.46		2.104E-01	2.367E-01	3.925E-01	2.373E-02	0.536
		323.87	*	-9.247E-01	8.197E-01	1.261E+00	2.088E-01	-0.733
	+	338.28		6.115E+00	1.968E+00	2.812E+00	2.978E-01	2.175
		445.03		1.064E+00	2.702E+00	4.590E+00	4.728E-01	0.232
RN-219		271.23		3.329E-01	3.010E-01	5.038E-01	4.079E-02	0.661
		401.81	*	-3.019E-01	4.961E-01	7.869E-01	1.070E-01	-0.384
RN-220		549.76	*	1.448E+01	2.959E+01	5.045E+01	2.879E+00	0.287
RA-223		81.07		-4.165E-01	3.279E-01	4.105E-01	3.788E-02	-1.015
		83.78		4.925E-02	1.714E-01	2.533E-01	2.386E-02	0.194
		94.90		4.358E-01	3.175E-01	4.913E-01	4.192E-02	0.887
		122.32		5.215E-01	2.146E+00	3.565E+00	2.412E-01	0.146
		144.24		1.588E-01	8.118E-01	1.309E+00	9.066E-02	0.121
		154.21		-3.227E-02	4.720E-01	7.679E-01	5.048E-02	-0.042
		269.46		2.104E-01	2.367E-01	3.925E-01	2.373E-02	0.536
		323.87	*	-9.247E-01	8.197E-01	1.261E+00	2.088E-01	-0.733

## ---- 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		6.115E+00	1.968E+00	2.812E+00	2.978E-01	2.175
		445.03		1.064E+00	2.702E+00	4.590E+00	4.728E-01	0.232
		79.80		-5.615E-01	2.248E+00	3.245E+00	7.049E-01	-0.173
		236.00		2.716E+00	4.594E-01	7.327E-01	7.579E-02	3.707
		256.20	*	3.723E-01	4.636E-01	7.721E-01	1.075E-01	0.482
TH-227		286.10		1.468E+00	1.774E+00	3.107E+00	3.598E-01	0.473
	+	299.80		3.965E+00	1.966E+00	3.182E+00	5.190E-01	1.246
		304.40		-8.687E-01	2.478E+00	3.515E+00	6.091E-01	-0.247
		334.20		7.967E-01	3.131E+00	4.649E+00	8.540E-01	0.171
		79.80		-5.615E-01	2.249E+00	3.245E+00	7.137E-01	-0.173
TH-229	+	94.00		9.796E+00	4.174E+00	4.735E+00	1.032E+00	2.069
		236.00		2.716E+00	4.370E-01	7.327E-01	6.545E-02	3.707
		256.20	*	3.723E-01	4.650E-01	7.721E-01	1.303E-01	0.482
		286.10		1.468E+00	2.298E+00	3.107E+00	3.112E+00	0.473
	+	299.80		3.965E+00	1.966E+00	3.182E+00	5.190E-01	1.246
PA-231		304.40		-8.687E-01	2.478E+00	3.515E+00	6.091E-01	-0.247
		334.20		7.967E-01	3.131E+00	4.649E+00	8.540E-01	0.171
		85.43		6.661E-01	2.775E-01	4.365E-01	4.168E-02	1.526
	+	88.47		2.186E-01	1.334E-01	2.644E-01	2.556E-02	0.827
		100.00		-6.867E-03	2.178E-01	3.599E-01	2.821E-02	-0.019
TH-231		193.63	*	-2.668E-01	5.868E-01	9.274E-01	4.912E-02	-0.288
		210.97		1.438E+00	9.712E-01	1.506E+00	8.179E-02	0.955
		283.67	*	-2.006E-01	1.900E+00	3.008E+00	4.149E-01	-0.067
		301.29		9.758E-01	7.814E-01	1.237E+00	1.299E-01	0.789
		81.07		-4.165E-01	3.279E-01	4.105E-01	3.788E-02	-1.015
U-231		83.78		4.925E-02	1.714E-01	2.533E-01	2.386E-02	0.194
		94.90		4.358E-01	3.175E-01	4.913E-01	4.192E-02	0.887
		122.32		5.215E-01	2.146E+00	3.565E+00	2.412E-01	0.146
		144.24		1.588E-01	8.118E-01	1.309E+00	9.066E-02	0.121
		154.21		-3.227E-02	4.720E-01	7.679E-01	5.048E-02	-0.042
PA-233		269.46		2.104E-01	2.367E-01	3.925E-01	2.373E-02	0.536
		323.87	*	-9.247E-01	8.197E-01	1.261E+00	2.088E-01	-0.733
	+	338.28		6.115E+00	1.968E+00	2.812E+00	2.978E-01	2.175
		445.03		1.064E+00	2.702E+00	4.590E+00	4.728E-01	0.232
		84.21		1.310E+00	6.039E+00	8.894E+00	8.406E-01	0.147
PA-234	+	92.29		7.892E+00	2.970E+00	3.977E+00	3.560E-01	1.984
		95.87	*	5.335E-02	1.179E+00	1.720E+00	1.443E-01	0.031
		108.00		-3.530E-01	1.971E+00	3.228E+00	2.256E-01	-0.109
	+	75.28		1.778E+01	5.771E+00	9.532E+00	1.479E+00	1.866
	+	86.59		6.333E+00	2.842E+00	3.733E+00	1.014E+00	1.697
PA-234	+	300.12		1.105E+00	5.385E-01	8.961E-01	1.207E-01	1.234
		311.98	*	1.787E-02	7.569E-02	1.288E-01	8.050E-03	0.139
		340.50		1.248E+00	8.757E-01	1.343E+00	3.088E-01	0.929
		398.62		1.014E+00	2.418E+00	4.107E+00	1.062E+00	0.247
		415.76		9.765E-01	1.823E+00	3.123E+00	6.431E-01	0.313
PA-234	+	63.00		3.196E+00	2.636E+00	3.741E+00	5.813E-01	0.854
		94.67		4.695E-01	2.374E-01	3.687E-01	4.559E-02	1.273
		98.44		7.489E-02	1.296E-01	1.847E-01	1.029E-01	0.406
		99.86		1.566E-02	5.531E-01	9.162E-01	7.197E-02	0.017

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00		-1.128E-02	2.123E-01	3.494E-01	3.779E-02	-0.032
		131.20		7.594E-02	1.297E-01	2.178E-01	1.231E-02	0.349
		152.70		2.150E-01	3.898E-01	6.492E-01	1.014E-01	0.331
	+	186.00		3.171E+00	2.412E+00	2.923E+00	8.901E-01	1.085
		226.40		3.144E-03	4.936E-01	7.943E-01	9.080E-02	0.004
		227.20		-1.357E-01	5.321E-01	8.444E-01	4.682E-02	-0.161
		248.90		-5.883E-01	1.002E+00	1.537E+00	3.298E-01	-0.383
	+	293.70		5.419E+00	1.539E+00	1.965E+00	3.165E-01	2.757
		369.80		3.590E-01	9.762E-01	1.662E+00	3.463E-01	0.216
		568.70		-1.693E-01	1.183E+00	1.907E+00	1.075E-01	-0.089
		569.50		7.893E-02	3.172E-01	5.287E-01	2.979E-02	0.149
		574.00		7.268E-01	1.676E+00	2.839E+00	1.594E-01	0.256
		699.00		1.530E-01	9.444E-01	1.544E+00	2.770E-01	0.099
		706.10		-8.834E-01	1.427E+00	2.085E+00	9.200E-01	-0.424
		733.00		-1.633E-01	5.282E-01	7.370E-01	1.575E-01	-0.222
		742.81		1.506E-01	1.641E+00	2.659E+00	1.781E+00	0.057
		796.30		1.350E+00	1.190E+00	2.080E+00	5.542E-01	0.649
		805.60		1.480E-01	1.235E+00	2.089E+00	6.337E-01	0.071
		819.60		5.020E-01	1.451E+00	2.489E+00	9.413E-01	0.202
		826.30		6.189E-02	1.029E+00	1.730E+00	7.714E-01	0.036
		831.60		-2.719E-02	8.017E-01	1.337E+00	3.961E-01	-0.020
		876.40		-4.587E-01	1.156E+00	1.685E+00	1.733E+00	-0.272
		880.51		1.135E-01	3.689E-01	6.318E-01	5.539E-02	0.180
		883.24		5.227E-02	3.793E-01	6.374E-01	4.287E-01	0.082
		899.00		-3.595E-01	1.052E+00	1.673E+00	7.331E-01	-0.215
		925.00		-3.086E-01	1.467E+00	2.387E+00	2.121E-01	-0.129
		926.50		-1.400E-01	2.307E-01	3.562E-01	9.035E-02	-0.393
		946.00	*	-1.379E-01	3.967E-01	6.352E-01	1.194E-01	-0.217
		949.00		1.491E-01	6.027E-01	1.023E+00	8.862E-02	0.146
		980.50		-5.929E-01	8.894E-01	1.364E+00	1.139E-01	-0.435
PA-234M	+	1394.10		1.092E+00	1.662E+00	2.688E+00	1.745E+00	0.406
		766.42		4.344E+01	3.144E+01	2.749E+01	1.387E+01	1.581
U-235	+	1001.03	*	1.389E+00	5.852E+00	9.738E+00	9.291E-01	0.143
	+	89.95		2.194E+00	1.489E+00	2.259E+00	7.022E-01	0.971
	+	93.35		3.048E+00	1.406E+00	1.536E+00	4.311E-01	1.985
		105.00		9.680E-01	1.290E+00	2.143E+00	6.319E-01	0.452
		143.76	*	-1.756E-02	2.533E-01	4.040E-01	6.534E-02	-0.043
		163.35		2.545E-01	5.515E-01	9.145E-01	1.626E-01	0.278
	+	185.71		1.174E-01	8.210E-02	1.077E-01	5.639E-03	1.090
NP-236		205.31		4.711E-01	6.999E-01	1.026E+00	1.831E-01	0.459
		94.67		3.593E-01	1.774E-01	2.800E-01	2.399E-02	1.283
		98.44		5.661E-02	9.289E-02	1.396E-01	1.122E-02	0.406
		111.00		-8.536E-03	1.606E-01	2.643E-01	1.776E-02	-0.032
		160.31	*	-3.902E-02	9.565E-02	1.530E-01	7.911E-03	-0.255
NP-239		99.55		7.902E-02	1.906E-01	3.105E-01	2.451E-02	0.255
		117.00	*	-1.964E-01	2.172E-01	3.422E-01	2.136E-02	-0.574
	+	209.75		1.054E+00	1.381E+00	1.588E+00	8.610E-02	0.663
		228.18		-5.663E-02	2.787E-01	4.434E-01	2.462E-02	-0.128
	+	277.60		3.185E-01	2.300E-01	3.658E-01	2.127E-02	0.870

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		3.855E-01	1.769E+00	2.622E+00	1.549E-01	0.147
AM-241		59.54 *		5.456E-02	2.411E-01	3.605E-01	3.354E-02	0.151
CM-243		99.55		8.131E-02	1.962E-01	3.195E-01	2.522E-02	0.255
		103.76 *		3.192E-02	1.161E-01	1.941E-01	1.438E-02	0.165
		117.00		-2.021E-01	2.234E-01	3.521E-01	2.198E-02	-0.574
	+	209.75		1.039E+00	1.361E+00	1.566E+00	8.487E-02	0.663
		228.18		-5.722E-02	2.816E-01	4.480E-01	2.488E-02	-0.128
	+	277.60		3.210E-01	2.318E-01	3.688E-01	2.144E-02	0.870
AM-246		798.80		-1.417E-01	1.768E-01	2.752E-01	2.003E-02	-0.515
		1036.00		-2.499E-01	4.087E-01	6.195E-01	4.776E-02	-0.403
		1062.04		2.922E-01	2.949E-01	5.317E-01	3.918E-02	0.550
		1078.86 *		-8.351E-02	1.913E-01	3.010E-01	2.148E-02	-0.277
CM-247	+	278.00		1.321E+00	9.537E-01	1.539E+00	8.951E-02	0.858
		287.40		5.672E-01	1.386E+00	2.387E+00	1.395E-01	0.238
		402.60 *		2.584E-03	4.400E-02	7.334E-02	4.251E-03	0.035
CF-249		252.85		-1.676E-01	1.060E+00	1.682E+00	9.592E-02	-0.100
		333.44		-1.736E-02	2.340E-01	3.387E-01	2.001E-02	-0.051
		387.95 *		-6.387E-03	4.864E-02	7.926E-02	4.586E-03	-0.081
CF-251		176.60 *		-1.604E-02	1.473E-01	2.379E-01	1.229E-02	-0.067
		227.00		-6.096E-02	4.680E-01	7.477E-01	4.145E-02	-0.082
		285.00		-9.780E-01	1.990E+00	3.260E+00	1.904E-01	-0.300

# 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]G244132002      *
* Acquisition date   : 19-JAN-2010 09:12:04 Detector SN#      :             *
* Detector ID        : GAM23                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time   : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time   : 0 02:00:01.54           Half life ratio  : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G244132002           Analyst initials: MXR1             *
* Batch Number       : 940270              Sample Quantity : 1.0950E+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	3.133E+01	3.120E+00	6.551E-01	0.000E+00
CD-109	3.285E+00	1.191E+00	1.688E+00	0.000E+00
SN-126	3.235E-01	1.173E-01	1.672E-01	0.000E+00
TL-208	3.823E-01	8.974E-02	6.827E-02	0.000E+00
BI-211	3.040E+00	5.316E-01	3.713E-01	0.000E+00
PB-212	1.552E+00	1.632E-01	1.055E-01	0.000E+00
PO-212	1.552E+00	1.632E-01	1.055E-01	0.000E+00
BI-214	1.032E+00	1.897E-01	1.334E-01	0.000E+00
PB-214	1.057E+00	1.927E-01	1.294E-01	0.000E+00
PO-214	1.057E+00	1.927E-01	1.294E-01	0.000E+00
PO-216	1.552E+00	1.632E-01	1.055E-01	0.000E+00
PO-218	1.057E+00	1.927E-01	1.294E-01	0.000E+00
RA-224	4.019E+00	1.410E+00	1.200E+00	0.000E+00
RA-226	1.032E+00	1.897E-01	1.334E-01	0.000E+00
AC-228	1.595E+00	4.192E-01	2.571E-01	0.000E+00
RA-228	1.595E+00	4.192E-01	2.571E-01	0.000E+00
TH-228	1.574E+00	1.654E-01	1.069E-01	0.000E+00
TH-230	1.032E+00	1.897E-01	1.334E-01	0.000E+00
TH-232	1.595E+00	4.192E-01	2.571E-01	0.000E+00
TH-234	2.742E+00	2.230E+00	2.909E+00	0.000E+00
U-234	1.032E+00	1.897E-01	1.334E-01	0.000E+00
NP-237	9.500E-01	3.944E-01	4.889E-01	0.000E+00
U-238	2.742E+00	2.230E+00	2.909E+00	0.000E+00
AM-243	3.395E-01	9.935E-02	1.116E-01	0.000E+00
ANH-511	1.646E-01	7.382E-02	5.000E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-1.455E-01	3.727E-01	6.088E-01	0.000E+00 NOT IDENT.
NA-22	-1.589E-02	5.258E-02	8.386E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.212E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	6.205E-03	3.565E-02	6.188E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	7.377E-02	1.042E-01	0.000E+00	FAIL ABUN
SC-46	-4.806E-03	4.996E-02	8.401E-02	0.000E+00	FAIL ABUN
V-48	1.577E-02	8.020E-02	1.378E-01	0.000E+00	NOT IDENT.
CR-51	-7.398E-02	4.072E-01	6.928E-01	0.000E+00	NOT IDENT.
MN-52	9.408E-02	2.370E-01	4.133E-01	0.000E+00	NOT IDENT.
MN-54	1.077E-02	4.770E-02	8.269E-02	0.000E+00	NOT IDENT.
CO-56	2.430E-02	4.593E-02	8.185E-02	0.000E+00	NOT IDENT.
CO-57	1.509E-03	3.029E-02	5.154E-02	0.000E+00	NOT IDENT.
CO-58	-5.818E-03	4.502E-02	7.590E-02	0.000E+00	NOT IDENT.
FE-59	1.860E-02	1.180E-01	2.004E-01	0.000E+00	NOT IDENT.
CO-60	1.267E-02	5.106E-02	8.681E-02	0.000E+00	NOT IDENT.
ZN-65	1.065E-01	1.272E-01	2.030E-01	0.000E+00	NOT IDENT.
GE-68	-1.906E-01	1.623E+00	2.687E+00	0.000E+00	NOT IDENT.
AS-73	-5.052E-01	1.220E+00	2.089E+00	0.000E+00	NOT IDENT.
AS-74	-3.466E-03	1.012E-01	1.677E-01	0.000E+00	NOT IDENT.
SE-75	-8.759E-03	5.002E-02	8.119E-02	0.000E+00	NOT IDENT.
BR-77	1.013E-01	7.813E+00	1.311E+01	0.000E+00	FAIL ABUN
SR-82	-2.492E-01	4.307E-01	6.364E-01	0.000E+00	NOT IDENT.
RB-83	1.053E-02	7.411E-02	1.257E-01	0.000E+00	NOT IDENT.
RB-84	4.383E-02	8.859E-02	1.567E-01	0.000E+00	NOT IDENT.
KR-85	9.962E+00	8.656E+00	1.413E+01	0.000E+00	NOT IDENT.
SR-85	5.042E-02	4.381E-02	7.150E-02	0.000E+00	NOT IDENT.
RB-86	4.473E-01	9.436E-01	1.654E+00	0.000E+00	NOT IDENT.
Y-88	1.446E-02	4.292E-02	7.637E-02	0.000E+00	NOT IDENT.
ZR-88	-4.093E-02	3.532E-02	5.525E-02	0.000E+00	NOT IDENT.
Y-91	1.559E+01	2.532E+01	4.429E+01	0.000E+00	NOT IDENT.
NB-94	3.446E-02	4.372E-02	7.647E-02	0.000E+00	NOT IDENT.
NB-95	4.849E-02	6.394E-02	9.798E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.937E-01	3.267E-01	0.000E+00	NOT IDENT.
ZR-95	-8.922E-02	8.884E-02	1.305E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.437E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.486E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.066E+01	1.030E+01	1.837E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.512E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.730E-02	3.796E-02	6.447E-02	0.000E+00	NOT IDENT.
RH-102	3.188E-02	3.243E-02	5.865E-02	0.000E+00	FAIL ABUN
RU-103	-1.696E-02	4.888E-02	7.903E-02	0.000E+00	NOT IDENT.
RH-106	-2.752E-01	3.764E-01	5.797E-01	0.000E+00	NOT IDENT.
RU-106	-2.752E-01	3.754E-01	5.797E-01	0.000E+00	NOT IDENT.
AG-108M	-2.185E-02	3.757E-02	6.084E-02	0.000E+00	NOT IDENT.
AG-110M	-1.840E-03	4.118E-02	6.776E-02	0.000E+00	NOT IDENT.
IN-111	6.655E-01	1.025E+00	1.547E+00	0.000E+00	NOT IDENT.
IN-113M	-6.582E-02	5.052E-02	7.795E-02	0.000E+00	NOT IDENT.
SN-113	-6.582E-02	5.052E-02	7.795E-02	0.000E+00	NOT IDENT.
IN-114M	8.146E-03	2.345E-01	3.425E-01	0.000E+00	NOT IDENT.
CD-115	-4.241E+00	8.267E+00	1.322E+01	0.000E+00	NOT IDENT.
SN-117M	3.863E-02	5.899E-02	1.020E-01	0.000E+00	NOT IDENT.
SB-122	1.276E+00	1.781E+00	3.138E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.384E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.625E-02	3.241E-02	5.565E-02	0.000E+00	NOT IDENT.
I-124	-4.213E-01	7.743E-01	1.033E+00	0.000E+00	NOT IDENT.
SB-124	-4.405E-04	8.140E-02	1.370E-01	0.000E+00	FAIL ABUN
SB-125	4.079E-02	1.029E-01	1.793E-01	0.000E+00	FAIL ABUN
TE-125M	-7.936E+00	1.055E+01	1.738E+01	0.000E+00	NOT IDENT.
I-126	-4.866E-02	2.038E-01	3.293E-01	0.000E+00	NOT IDENT.
SB-126	-1.650E-01	2.138E-01	2.730E-01	0.000E+00	FAIL ABUN
SB-127	2.586E-01	1.346E+00	2.257E+00	0.000E+00	NOT IDENT.
XE-127	-9.927E-03	5.972E-02	9.079E-02	0.000E+00	NOT IDENT.
I-131	4.111E-02	1.206E-01	2.104E-01	0.000E+00	NOT IDENT.
TE-132	-1.332E-01	6.425E-01	1.050E+00	0.000E+00	NOT IDENT.
BA-133	1.252E-02	5.617E-02	8.517E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.522E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.665E-02	5.838E-02	1.092E-01	0.000E+00	NOT IDENT.
CS-135	2.684E-01	1.878E-01	3.308E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.174E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.913E-02	1.309E-01	2.275E-01	0.000E+00	FAIL ABUN
BA-137M	8.239E-03	4.237E-02	7.120E-02	0.000E+00	NOT IDENT.
CS-137	8.709E-03	4.479E-02	7.526E-02	0.000E+00	NOT IDENT.
CE-139	-4.567E-02	3.460E-02	5.432E-02	0.000E+00	NOT IDENT.
BA-140	-1.842E-01	3.123E-01	4.891E-01	0.000E+00	NOT IDENT.
LA-140	-4.773E-02	7.474E-02	1.091E-01	0.000E+00	NOT IDENT.
CE-141	-1.789E-02	7.052E-02	1.176E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.496E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.150E-01	2.404E-01	3.975E-01	0.000E+00	NOT IDENT.
PM-144	-1.894E-02	4.295E-02	6.791E-02	0.000E+00	NOT IDENT.
PR-144	-1.282E+00	2.909E+00	4.599E+00	0.000E+00	NOT IDENT.

PM-146	6.075E-02	4.940E-02	9.037E-02	0.000E+00	NOT IDENT.
ND-147	4.436E-01	5.876E-01	1.040E+00	0.000E+00	FAIL ABUN
PM-149	1.942E+01	7.153E+01	1.253E+02	0.000E+00	NOT IDENT.
EU-152	3.198E-02	1.330E-01	1.916E-01	0.000E+00	NOT IDENT.
GD-153	4.176E-02	1.021E-01	1.570E-01	0.000E+00	NOT IDENT.
EU-154	-4.597E-02	1.468E-01	2.338E-01	0.000E+00	NOT IDENT.
EU-155	1.104E-01	1.256E-01	2.216E-01	0.000E+00	FAIL ABUN
TB-160	-1.065E-01	1.756E-01	2.810E-01	0.000E+00	FAIL ABUN
HO-166M	-3.787E-03	7.571E-02	1.239E-01	0.000E+00	FAIL ABUN
TM-171	-9.898E+00	4.368E+01	6.125E+01	0.000E+00	NOT IDENT.
LU-176	2.036E-03	2.772E-02	4.797E-02	0.000E+00	FAIL ABUN
LU-177	1.308E+00	1.679E+00	2.000E+00	0.000E+00	FAIL ABUN
LU-177M	-1.617E-01	2.068E-01	3.321E-01	0.000E+00	NOT IDENT.
HF-181	-8.851E-04	4.865E-02	8.176E-02	0.000E+00	NOT IDENT.
W-181	-2.131E-01	5.477E-01	8.170E-01	0.000E+00	NOT IDENT.
TA-182	4.803E-02	2.714E-01	4.573E-01	0.000E+00	NOT IDENT.
RE-183	6.181E-02	1.263E-01	2.166E-01	0.000E+00	FAIL ABUN
RE-184	-4.444E-02	2.756E-01	4.490E-01	0.000E+00	NOT IDENT.
OS-185	-4.798E-02	5.071E-02	7.619E-02	0.000E+00	NOT IDENT.
RE-188	6.355E-02	1.962E-01	3.345E-01	0.000E+00	NOT IDENT.
W-188	-3.870E+00	9.392E+00	1.368E+01	0.000E+00	FAIL ABUN
IR-192	-3.154E-02	3.918E-02	6.419E-02	0.000E+00	FAIL ABUN
AU-195	2.160E-01	2.784E-01	4.576E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.424E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-5.180E+00	6.099E+00	9.808E+00	0.000E+00	NOT IDENT.
TL-202	-2.890E-02	7.645E-02	1.258E-01	0.000E+00	NOT IDENT.
HG-203	6.623E-02	5.105E-02	8.396E-02	0.000E+00	NOT IDENT.
BI-207	5.988E-02	6.539E-02	1.191E-01	0.000E+00	FAIL ABUN
TL-207	-9.247E-01	8.033E-01	1.267E+00	0.000E+00	FAIL ABUN
PO-209	-1.157E+01	9.679E+00	1.446E+01	0.000E+00	NOT IDENT.
BI-210	-6.829E-01	6.688E+00	1.127E+01	0.000E+00	NOT IDENT.
PB-210	-6.829E-01	6.688E+00	1.127E+01	0.000E+00	NOT IDENT.
PO-210	-6.829E-01	6.688E+00	1.127E+01	0.000E+00	NOT IDENT.
PB-211	-2.134E-01	1.151E+00	1.921E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.097E-01	7.734E-01	0.000E+00	FAIL ABUN
PO-215	-9.247E-01	8.033E-01	1.267E+00	0.000E+00	FAIL ABUN
RN-219	-3.019E-01	4.861E-01	7.896E-01	0.000E+00	NOT IDENT.
RN-220	1.448E+01	2.900E+01	5.051E+01	0.000E+00	NOT IDENT.
RA-223	-9.247E-01	8.033E-01	1.267E+00	0.000E+00	FAIL ABUN
AC-227	3.723E-01	4.543E-01	7.772E-01	0.000E+00	FAIL ABUN
TH-227	3.723E-01	4.557E-01	7.772E-01	0.000E+00	FAIL ABUN
TH-229	-2.668E-01	5.750E-01	9.353E-01	0.000E+00	FAIL ABUN
PA-231	-2.006E-01	1.862E+00	3.025E+00	0.000E+00	NOT IDENT.
TH-231	-9.247E-01	8.033E-01	1.267E+00	0.000E+00	FAIL ABUN
U-231	5.335E-02	1.155E+00	1.743E+00	0.000E+00	FAIL ABUN
PA-233	1.787E-02	7.418E-02	1.294E-01	0.000E+00	FAIL ABUN
PA-234	-1.379E-01	3.887E-01	6.335E-01	0.000E+00	FAIL ABUN
PA-234M	1.389E+00	5.735E+00	9.708E+00	0.000E+00	FAIL ABUN
U-235	-1.756E-02	2.482E-01	4.083E-01	0.000E+00	FAIL ABUN
NP-236	-3.902E-02	9.374E-02	1.545E-01	0.000E+00	NOT IDENT.
NP-239	-1.964E-01	2.128E-01	3.464E-01	0.000E+00	FAIL ABUN
AM-241	5.456E-02	2.363E-01	3.665E-01	0.000E+00	NOT IDENT.
CM-243	3.192E-02	1.138E-01	1.966E-01	0.000E+00	FAIL ABUN
AM-246	-8.351E-02	1.874E-01	3.000E-01	0.000E+00	NOT IDENT.
CM-247	2.584E-03	4.312E-02	7.359E-02	0.000E+00	FAIL ABUN
CF-249	-6.387E-03	4.767E-02	7.955E-02	0.000E+00	NOT IDENT.
CF-251	-1.604E-02	1.443E-01	2.401E-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]G244132002.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:12:04
Sample ID          : G244132002           Sample quantity  : 1.09500E+02 GRAM
Detector name      : GAM23                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time: 0 02:00:01.54  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity       : 5.00000
Batch ID           : 940270                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	973	10.67*	9.974E-01	3.133E+01	3.133E+01	10.16
CD-109	88.03	182	3.72*	5.206E+00	3.218E+00	3.285E+00	37.00
SN-126	64.28	79	9.60	2.586E+00	1.085E+00	1.085E+00	82.43
	86.94	182	8.90	5.206E+00	1.345E+00	1.345E+00	54.82
	87.57	182	37.00*	5.206E+00	3.235E-01	3.235E-01	37.00
TL-208	277.35	54	6.80	4.141E+00	6.603E-01	6.603E-01	72.75
	510.84	122	21.60	2.547E+00	7.619E-01	7.619E-01	46.52
	583.14	214	84.20*	2.278E+00	3.823E-01	3.823E-01	23.96
	860.37	-----	12.46	1.609E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.829E+00	-----	Line Not Found	-----
	351.07	395	12.94*	3.441E+00	3.040E+00	3.040E+00	17.84
PB-212	74.81	264	10.70	4.035E+00	2.094E+00	2.094E+00	31.29
	77.11	538	18.00	4.293E+00	2.386E+00	2.386E+00	17.10
	87.30	182	8.00	5.206E+00	1.496E+00	1.496E+00	38.33
	238.63	937	44.60*	4.639E+00	1.552E+00	1.552E+00	10.73
	300.09	83	3.41	3.903E+00	2.140E+00	2.140E+00	47.54
PO-212	74.81	264	10.70	4.035E+00	2.094E+00	2.094E+00	31.29
	77.11	538	18.00	4.293E+00	2.386E+00	2.386E+00	17.10
	87.30	182	8.00	5.206E+00	1.496E+00	1.496E+00	38.33
	115.19	-----	0.60	6.293E+00	-----	Line Not Found	-----
	238.63	937	44.60*	4.639E+00	1.552E+00	1.552E+00	10.73
	300.09	83	3.41	3.903E+00	2.140E+00	2.140E+00	47.54
BI-214	609.31	306	46.30*	2.194E+00	1.032E+00	1.032E+00	18.75
	1120.29	88	15.10	1.259E+00	1.583E+00	1.583E+00	41.23
	1764.49	31	15.80	8.743E-01	7.806E-01	7.806E-01	56.37
PB-214	74.81	264	6.21	4.035E+00	3.608E+00	3.608E+00	30.76
	77.11	538	10.50	4.293E+00	4.091E+00	4.091E+00	18.72
	87.30	182	4.67	5.206E+00	2.563E+00	2.563E+00	37.79
	241.98	213	7.49	4.597E+00	2.120E+00	2.120E+00	36.24
	295.21	249	19.20	3.946E+00	1.129E+00	1.129E+00	24.91
	351.92	395	37.20*	3.441E+00	1.057E+00	1.057E+00	18.59
PO-214	74.81	264	6.21	4.035E+00	3.608E+00	3.608E+00	30.76

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-216	77.11	538	10.50	4.293E+00	4.091E+00	4.091E+00	18.72
	87.30	182	4.67	5.206E+00	2.563E+00	2.563E+00	37.79
	241.98	213	7.49	4.597E+00	2.120E+00	2.120E+00	36.24
	295.21	249	19.20	3.946E+00	1.129E+00	1.129E+00	24.91
	351.92	395	37.20*	3.441E+00	1.057E+00	1.057E+00	18.59
	74.81	264	10.70	4.035E+00	2.094E+00	2.094E+00	31.29
	77.11	538	18.00	4.293E+00	2.386E+00	2.386E+00	17.10
	87.30	182	8.00	5.206E+00	1.496E+00	1.496E+00	38.33
	238.63	937	44.60*	4.639E+00	1.552E+00	1.552E+00	10.73
	300.09	83	3.41	3.903E+00	2.140E+00	2.140E+00	47.54
PO-218	74.81	264	6.21	4.035E+00	3.608E+00	3.608E+00	30.76
	77.11	538	10.50	4.293E+00	4.091E+00	4.091E+00	18.72
	87.30	182	4.67	5.206E+00	2.563E+00	2.563E+00	37.79
	241.98	213	7.49	4.597E+00	2.120E+00	2.120E+00	36.24
	295.21	249	19.20	3.946E+00	1.129E+00	1.129E+00	24.91
	351.92	395	37.20*	3.441E+00	1.057E+00	1.057E+00	18.59
RA-224	240.98	213	3.95*	4.597E+00	4.019E+00	4.019E+00	35.81
RA-226	609.31	306	46.30*	2.194E+00	1.032E+00	1.032E+00	18.75
	1120.29	88	15.10	1.259E+00	1.583E+00	1.583E+00	41.23
AC-228	1764.49	31	15.80	8.743E-01	7.806E-01	7.806E-01	56.37
	338.32	173	11.40	3.551E+00	1.464E+00	1.464E+00	50.86
	911.07	197	27.70*	1.527E+00	1.595E+00	1.595E+00	26.83
	969.11	94	16.60	1.440E+00	1.353E+00	1.353E+00	53.97
RA-228	338.32	173	11.40	3.551E+00	1.464E+00	1.464E+00	50.86
	911.07	197	27.70*	1.527E+00	1.595E+00	1.595E+00	26.83
	969.11	94	16.60	1.440E+00	1.353E+00	1.353E+00	53.97
TH-228	74.81	264	10.70	4.035E+00	2.094E+00	2.123E+00	29.88
	77.11	538	18.00	4.293E+00	2.386E+00	2.420E+00	17.10
	87.30	182	8.00	5.206E+00	1.496E+00	1.517E+00	37.00
	238.63	937	44.60*	4.639E+00	1.552E+00	1.574E+00	10.73
TH-230	300.09	83	3.41	3.903E+00	2.140E+00	2.169E+00	75.27
	609.31	306	46.30*	2.194E+00	1.032E+00	1.032E+00	18.75
	1120.29	88	15.10	1.259E+00	1.583E+00	1.583E+00	41.23
	1764.49	31	15.80	8.743E-01	7.806E-01	7.806E-01	56.37
TH-232	338.32	173	11.40	3.551E+00	1.464E+00	1.464E+00	30.96
	911.07	197	27.70*	1.527E+00	1.595E+00	1.595E+00	26.83
	969.11	94	16.60	1.440E+00	1.353E+00	1.353E+00	53.97
TH-234	63.29	79	3.80*	2.586E+00	2.742E+00	2.742E+00	83.00
	92.38	224	5.41	5.596E+00	2.535E+00	2.535E+00	40.85
U-234	609.31	306	46.30*	2.194E+00	1.032E+00	1.032E+00	18.75
	1120.29	88	15.10	1.259E+00	1.583E+00	1.583E+00	41.23
	1764.49	31	15.80	8.743E-01	7.806E-01	7.806E-01	56.37
NP-237	86.50	182	12.60*	5.206E+00	9.500E-01	9.500E-01	42.37
	95.87	-----	2.60	5.757E+00	-----	Line Not Found	-----
U-238	63.29	79	3.80*	2.586E+00	2.742E+00	2.742E+00	83.00
	92.38	224	5.41	5.596E+00	2.535E+00	2.535E+00	37.63
AM-243	74.67	264	66.00*	4.035E+00	3.395E-01	3.395E-01	29.86
	86.72	182	0.34	5.206E+00	3.562E+01	3.563E+01	37.00
	117.66	-----	0.55	6.314E+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	6.209E+00	-----	Line Not Found	-----
ANH-511	511.00	122	100.00*	2.547E+00	1.646E-01	1.646E-01	45.77

Flag: "\*" = Keyline

Total number of lines in spectrum 26  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 26 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.133E+01	3.133E+01	0.318E+01	10.16	
CD-109	464.00D	1.02	3.218E+00	3.285E+00	1.216E+00	37.00	
SN-126	1.00E+05Y	1.00	3.235E-01	3.235E-01	1.197E-01	37.00	
TL-208	1.41E+10Y	1.00	3.823E-01	3.823E-01	0.916E-01	23.96	
BI-211	7.04E+08Y	1.00	3.040E+00	3.040E+00	0.542E+00	17.84	
PB-212	1.41E+10Y	1.00	1.552E+00	1.552E+00	0.167E+00	10.73	
PO-212	1.41E+10Y	1.00	1.552E+00	1.552E+00	0.167E+00	10.73	
BI-214	1600.00Y	1.00	1.032E+00	1.032E+00	0.194E+00	18.75	
PB-214	1600.00Y	1.00	1.057E+00	1.057E+00	0.197E+00	18.59	
PO-214	1600.00Y	1.00	1.057E+00	1.057E+00	0.197E+00	18.59	
PO-216	1.41E+10Y	1.00	1.552E+00	1.552E+00	0.167E+00	10.73	
PO-218	1600.00Y	1.00	1.057E+00	1.057E+00	0.197E+00	18.59	
RA-224	1.41E+10Y	1.00	4.019E+00	4.019E+00	1.439E+00	35.81	
RA-226	1600.00Y	1.00	1.032E+00	1.032E+00	0.194E+00	18.75	
AC-228	1.41E+10Y	1.00	1.595E+00	1.595E+00	0.428E+00	26.83	
RA-228	1.41E+10Y	1.00	1.595E+00	1.595E+00	0.428E+00	26.83	
TH-228	1.91Y	1.01	1.552E+00	1.574E+00	0.169E+00	10.73	
TH-230	4.47E+09Y	1.00	1.032E+00	1.032E+00	0.194E+00	18.75	
TH-232	1.41E+10Y	1.00	1.595E+00	1.595E+00	0.428E+00	26.83	
TH-234	4.47E+09Y	1.00	2.742E+00	2.742E+00	2.276E+00	83.00	
U-234	4.47E+09Y	1.00	1.032E+00	1.032E+00	0.194E+00	18.75	
NP-237	2.14E+06Y	1.00	9.500E-01	9.500E-01	4.025E-01	42.37	
U-238	4.47E+09Y	1.00	2.742E+00	2.742E+00	2.276E+00	83.00	
AM-243	7380.00Y	1.00	3.395E-01	3.395E-01	1.014E-01	29.86	
ANH-511	1.00E+09Y	1.00	1.646E-01	1.646E-01	0.753E-01	45.77	

Total Activity : 6.755E+01 6.764E+01

Grand Total Activity : 6.755E+01 6.764E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244132002

Page : 5  
Acquisition date : 19-JAN-2010 09:12:04

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	89.67	93	259	1.04	179.33	170	12	1.30E-02	60.3	5.40E+00	T
0	185.85	102	302	1.26	371.69	367	10	1.41E-02	69.7	5.49E+00	T
0	208.88	51	279	1.07	417.75	413	11	7.04E-03	****	5.09E+00	T
0	463.68	78	138	2.12	927.35	919	21	1.08E-02	78.5	2.76E+00	T
0	726.88	53	77	1.66	1453.75	1445	14	7.36E-03	75.4	1.88E+00	T
0	767.76	72	57	1.46	1535.53	1528	16	1.01E-02	51.9	1.79E+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]G244132002.CNF;1
* Acquisition date   : 19-JAN-2010 09:12:04   Detector SN#      :
* Detector ID        : GAM23                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit      : 75.00000
* Elapsed real time  : 0 02:00:01.54           Half life ratio      : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library   : SOLID
* Sample ID          : G244132002             Analyst initials  : MXR1
* Batch Number       : 940270                 Sample Quantity   : 1.09500E+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	3.133E+01	3.183E+00	6.589E-01	4.928E-02	47.559
CD-109	3.285E+00	1.216E+00	1.665E+00	1.625E-01	1.973
SN-126	3.235E-01	1.197E-01	1.649E-01	1.605E-02	1.962
TL-208	3.823E-01	9.157E-02	6.822E-02	4.429E-03	5.604
BI-211	3.040E+00	5.425E-01	3.697E-01	2.409E-02	8.224
PB-212	1.552E+00	1.665E-01	1.047E-01	7.530E-03	14.819
PO-212	1.552E+00	1.665E-01	1.047E-01	7.530E-03	14.819
BI-214	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743
PB-214	1.057E+00	1.966E-01	1.289E-01	1.076E-02	8.206
PO-214	1.057E+00	1.966E-01	1.289E-01	1.076E-02	8.206
PO-216	1.552E+00	1.665E-01	1.047E-01	7.530E-03	14.819
PO-218	1.057E+00	1.966E-01	1.289E-01	1.076E-02	8.206
RA-224	4.019E+00	1.439E+00	1.192E+00	6.716E-02	3.372
RA-226	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743
AC-228	1.595E+00	4.278E-01	2.577E-01	2.974E-02	6.187
RA-228	1.595E+00	4.278E-01	2.577E-01	2.974E-02	6.187
TH-228	1.574E+00	1.688E-01	1.062E-01	7.635E-03	14.819
TH-230	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.595E+00	4.278E-01	2.577E-01	2.974E-02	6.187
TH-234	2.742E+00	2.276E+00	2.862E+00	5.158E-01	0.958
U-234	1.032E+00	1.936E-01	1.333E-01	1.002E-02	7.743
NP-237	9.500E-01	4.025E-01	4.821E-01	1.098E-01	1.971
U-238	2.742E+00	2.276E+00	2.862E+00	5.158E-01	0.958
AM-243	3.395E-01	1.014E-01	1.099E-01	9.770E-03	3.088
ANH-511	1.646E-01	7.532E-02	4.992E-02	2.899E-03	3.297

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.455E-01		3.803E-01	6.075E-01	4.128E-02	-0.239
NA-22	-1.589E-02		5.365E-02	8.426E-02	5.659E-03	-0.189
NA-24	-1.373E-01		1.128E-01	Half-Life too short		
AL-26	6.205E-03		3.638E-02	6.233E-02	3.746E-03	0.100
TI-44	4.403E-01	+	7.528E-02	1.026E-01	9.304E-03	4.290
SC-46	-4.806E-03		5.098E-02	8.419E-02	7.522E-03	-0.057
V-48	1.577E-02		8.184E-02	1.382E-01	1.150E-02	0.114
CR-51	-7.398E-02		4.155E-01	6.894E-01	4.520E-02	-0.107
MN-52	9.408E-02		2.418E-01	4.157E-01	3.007E-02	0.226
MN-54	1.077E-02		4.867E-02	8.283E-02	6.558E-03	0.130
CO-56	2.430E-02		4.687E-02	8.200E-02	6.671E-03	0.296
CO-57	1.509E-03		3.091E-02	5.094E-02	3.003E-03	0.030
CO-58	-5.818E-03		4.594E-02	7.601E-02	5.711E-03	-0.077
FE-59	1.860E-02		1.205E-01	2.011E-01	1.549E-02	0.092
CO-60	1.267E-02		5.210E-02	8.725E-02	6.405E-03	0.145
ZN-65	1.065E-01		1.298E-01	2.038E-01	1.346E-02	0.522
GE-68	-1.906E-01		1.656E+00	2.697E+00	1.930E-01	-0.071
AS-73	-5.052E-01		1.245E+00	2.053E+00	1.813E-01	-0.246
AS-74	-3.466E-03		1.032E-01	1.675E-01	9.240E-03	-0.021
SE-75	-8.759E-03		5.104E-02	8.068E-02	4.696E-03	-0.109
BR-77	1.013E-01		7.972E+00	1.309E+01	7.575E-01	0.008
SR-82	-2.492E-01		4.395E-01	6.372E-01	4.396E-02	-0.391
RB-83	1.053E-02		7.563E-02	1.255E-01	7.267E-03	0.084
RB-84	4.383E-02		9.039E-02	1.570E-01	1.379E-02	0.279
KR-85	9.962E+00		8.833E+00	1.410E+01	8.184E-01	0.706
SR-85	5.042E-02		4.470E-02	7.138E-02	4.142E-03	0.706
RB-86	4.473E-01		9.628E-01	1.660E+00	1.189E-01	0.270
Y-88	1.446E-02		4.380E-02	7.693E-02	4.530E-03	0.188
ZR-88	-4.093E-02		3.604E-02	5.505E-02	3.178E-03	-0.744
Y-91	1.559E+01		2.584E+01	4.448E+01	2.654E+00	0.350
NB-94	3.446E-02		4.461E-02	7.651E-02	4.372E-03	0.450
NB-95	4.849E-02		6.524E-02	9.809E-02	6.592E-03	0.494
NB-95M	7.283E-01		1.977E-01	3.244E-01	2.393E-02	2.245
ZR-95	-8.922E-02		9.065E-02	1.307E-01	1.002E-02	-0.683
NB-97	3.061E-04		1.754E-02	Half-Life too short		
ZR-97	2.700E+00		3.819E-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
MO-99	1.066E+01		1.051E+01	1.839E+01	2.573E+00	0.580
TC-99M	-4.994E+08		7.713E+08	Half-Life too short		
RH-101	2.730E-02		3.873E-02	6.394E-02	3.408E-03	0.427
RH-102	3.188E-02		3.309E-02	5.852E-02	3.426E-03	0.545
RU-103	-1.696E-02		4.988E-02	7.888E-02	9.986E-03	-0.215
RH-106	-2.752E-01		3.841E-01	5.795E-01	6.683E-02	-0.475
RU-106	-2.752E-01		3.831E-01	5.795E-01	3.114E-02	-0.475
AG-108M	-2.185E-02		3.834E-02	6.067E-02	3.846E-03	-0.360
AG-110M	-1.840E-03		4.202E-02	6.776E-02	3.766E-03	-0.027
IN-111	6.655E-01		1.046E+00	1.536E+00	8.694E-02	0.433
IN-113M	-6.582E-02		5.155E-02	7.767E-02	4.785E-03	-0.848
SN-113	-6.582E-02		5.155E-02	7.767E-02	4.785E-03	-0.848
IN-114M	8.146E-03		2.393E-01	3.396E-01	1.790E-02	0.024
CD-115	-4.241E+00		8.436E+00	1.320E+01	7.616E-01	-0.321
SN-117M	3.863E-02		6.020E-02	1.010E-01	5.248E-03	0.383
SB-122	1.276E+00		1.817E+00	3.135E+00	1.773E-01	0.407
I-123	6.941E-01		7.063E-01	Half-Life too short		
TE-123M	1.625E-02		3.307E-02	5.511E-02	2.908E-03	0.295
I-124	-4.213E-01		7.901E-01	1.032E+00	5.656E-02	-0.408
SB-124	-4.405E-04		8.307E-02	1.379E-01	9.614E-03	-0.003
SB-125	4.079E-02		1.050E-01	1.788E-01	1.088E-02	0.228
TE-125M	-7.936E+00		1.076E+01	1.716E+01	1.530E+00	-0.462
I-126	-4.866E-02		2.080E-01	3.293E-01	1.704E-02	-0.148
SB-126	-1.650E-01		2.181E-01	2.732E-01	1.637E-02	-0.604
SB-127	2.586E-01		1.374E+00	2.258E+00	1.983E-01	0.115
XE-127	-9.927E-03		6.094E-02	9.005E-02	4.834E-03	-0.110
I-131	4.111E-02		1.231E-01	2.096E-01	1.367E-02	0.196
TE-132	-1.332E-01		6.556E-01	1.043E+00	1.462E-01	-0.128
BA-133	1.252E-02		5.731E-02	8.481E-02	9.839E-03	0.148
I-133	-3.831E-04		1.287E-03	Half-Life too short		
CS-134	7.665E-02		5.957E-02	1.094E-01	7.988E-03	0.701
CS-135	2.684E-01		1.916E-01	3.288E-01	2.512E-02	0.816
I-135	1.582E+08		1.620E+08	Half-Life too short		
CS-136	4.913E-02		1.336E-01	2.282E-01	1.818E-02	0.215
BA-137M	8.239E-03		4.324E-02	7.120E-02	3.637E-03	0.116
CS-137	8.709E-03		4.571E-02	7.527E-02	3.866E-03	0.116
CE-139	-4.567E-02		3.531E-02	5.381E-02	2.743E-03	-0.849
BA-140	-1.842E-01		3.187E-01	4.884E-01	1.588E-01	-0.377
LA-140	-4.773E-02		7.627E-02	1.098E-01	7.533E-03	-0.435
CE-141	-1.789E-02		7.196E-02	1.164E-01	6.563E-03	-0.154
CE-143	4.875E-04		7.634E-05	Half-Life too short		
CE-144	-1.150E-01		2.453E-01	3.931E-01	5.552E-02	-0.292
PM-144	-1.894E-02		4.383E-02	6.794E-02	3.822E-03	-0.279
PR-144	-1.282E+00		2.968E+00	4.601E+00	2.586E-01	-0.279
PM-146	6.075E-02		5.041E-02	9.014E-02	7.807E-03	0.674
ND-147	4.436E-01		5.996E-01	1.039E+00	1.403E-01	0.427
PM-149	1.942E+01		7.299E+01	1.246E+02	1.768E+01	0.156
EU-152	3.198E-02		1.357E-01	1.907E-01	1.264E-02	0.168



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	4.176E-02		1.042E-01	1.549E-01	1.266E-02	0.270
EU-154	-4.597E-02		1.498E-01	2.349E-01	2.332E-02	-0.196
EU-155	1.104E-01		1.282E-01	2.188E-01	1.614E-02	0.505
TB-160	-1.065E-01		1.792E-01	2.816E-01	2.462E-02	-0.378
HO-166M	-3.787E-03		7.725E-02	1.240E-01	7.255E-03	-0.031
TM-171	-9.898E+00		4.457E+01	6.029E+01	5.243E+00	-0.164
LU-176	2.036E-03		2.828E-02	4.771E-02	2.811E-03	0.043
LU-177	1.308E+00	+	1.714E+00	1.984E+00	1.074E-01	0.659
LU-177M	-1.617E-01		2.110E-01	3.310E-01	1.926E-02	-0.488
HF-181	-8.851E-04		4.964E-02	8.159E-02	4.772E-03	-0.011
W-181	-2.131E-01		5.589E-01	8.041E-01	6.985E-02	-0.265
TA-182	4.803E-02		2.770E-01	4.594E-01	2.820E-02	0.105
RE-183	6.181E-02		1.289E-01	2.145E-01	1.103E-02	0.288
RE-184	-4.444E-02		2.812E-01	4.460E-01	2.543E-02	-0.100
OS-185	-4.798E-02		5.174E-02	7.619E-02	3.976E-03	-0.630
RE-188	6.355E-02		2.002E-01	3.312E-01	1.738E-02	0.192
W-188	-3.870E+00		9.584E+00	1.361E+01	7.968E-01	-0.284
IR-192	-3.154E-02		3.998E-02	6.386E-02	3.788E-03	-0.494
AU-195	2.160E-01		2.841E-01	4.516E-01	3.603E-02	0.478
TL-200	-2.992E-05		1.237E-04	Half-Life too short		
TL-201	-5.180E+00		6.224E+00	9.715E+00	4.958E-01	-0.533
TL-202	-2.890E-02		7.801E-02	1.255E-01	7.342E-03	-0.230
HG-203	6.623E-02		5.209E-02	8.346E-02	5.155E-03	0.793
BI-207	5.988E-02		6.673E-02	1.195E-01	8.780E-03	0.501
TL-207	-9.247E-01		8.197E-01	1.261E+00	2.088E-01	-0.733
PO-209	-1.157E+01		9.877E+00	1.449E+01	1.316E+00	-0.798
BI-210	-6.829E-01		6.825E+00	1.106E+01	8.613E-01	-0.062
PB-210	-6.829E-01		6.825E+00	1.106E+01	8.613E-01	-0.062
PO-210	-6.829E-01		6.825E+00	1.106E+01	7.421E-01	-0.062
PB-211	-2.134E-01		1.175E+00	1.914E+00	1.193E+00	-0.111
BI-212	8.204E-01	+	6.222E-01	7.740E-01	6.144E-02	1.060
PO-215	-9.247E-01		8.197E-01	1.261E+00	2.088E-01	-0.733
RN-219	-3.019E-01		4.961E-01	7.869E-01	1.070E-01	-0.384
RN-220	1.448E+01		2.959E+01	5.045E+01	2.879E+00	0.287
RA-223	-9.247E-01		8.197E-01	1.261E+00	2.088E-01	-0.733
AC-227	3.723E-01		4.636E-01	7.721E-01	1.075E-01	0.482
TH-227	3.723E-01		4.650E-01	7.721E-01	1.303E-01	0.482
TH-229	-2.668E-01		5.868E-01	9.274E-01	4.912E-02	-0.288
PA-231	-2.006E-01		1.900E+00	3.008E+00	4.149E-01	-0.067
TH-231	-9.247E-01		8.197E-01	1.261E+00	2.088E-01	-0.733
U-231	5.335E-02		1.179E+00	1.720E+00	1.443E-01	0.031
PA-233	1.787E-02		7.569E-02	1.288E-01	8.050E-03	0.139
PA-234	-1.379E-01		3.967E-01	6.352E-01	1.194E-01	-0.217
PA-234M	1.389E+00		5.852E+00	9.738E+00	9.291E-01	0.143
U-235	-1.756E-02		2.533E-01	4.040E-01	6.534E-02	-0.043
NP-236	-3.902E-02		9.565E-02	1.530E-01	7.911E-03	-0.255
NP-239	-1.964E-01		2.172E-01	3.422E-01	2.136E-02	-0.574
AM-241	5.456E-02		2.411E-01	3.605E-01	3.354E-02	0.151

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	3.192E-02		1.161E-01	1.941E-01	1.438E-02	0.165
AM-246	-8.351E-02		1.913E-01	3.010E-01	2.148E-02	-0.277
CM-247	2.584E-03		4.400E-02	7.334E-02	4.251E-03	0.035
CF-249	-6.387E-03		4.864E-02	7.926E-02	4.586E-03	-0.081
CF-251	-1.604E-02		1.473E-01	2.379E-01	1.229E-02	-0.067

# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G244132002          *
* Acquisition date   : 19-JAN-2010 09:12:04 Detector SN#                  *
* Detector ID        : GAM23 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.54 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132002 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.0950E+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	3.133E+01	3.120E+00	3.277E-01	1.592E+00
CD-109	3.285E+00	1.191E+00	8.446E-01	6.078E-01
SN-126	3.235E-01	1.173E-01	8.367E-02	5.985E-02
TL-208	3.823E-01	8.974E-02	3.415E-02	4.579E-02
BI-211	3.040E+00	5.316E-01	1.857E-01	2.712E-01
PB-212	1.552E+00	1.632E-01	5.277E-02	8.325E-02
PO-212	1.552E+00	1.632E-01	5.277E-02	8.325E-02
BI-214	1.032E+00	1.897E-01	6.674E-02	9.681E-02
PB-214	1.057E+00	1.927E-01	6.475E-02	9.830E-02
PO-214	1.057E+00	1.927E-01	6.475E-02	9.830E-02
PO-216	1.552E+00	1.632E-01	5.277E-02	8.325E-02
PO-218	1.057E+00	1.927E-01	6.475E-02	9.830E-02
RA-224	4.019E+00	1.410E+00	6.006E-01	7.195E-01
RA-226	1.032E+00	1.897E-01	6.674E-02	9.681E-02
AC-228	1.595E+00	4.192E-01	1.286E-01	2.139E-01
RA-228	1.595E+00	4.192E-01	1.286E-01	2.139E-01
TH-228	1.574E+00	1.654E-01	5.351E-02	8.441E-02
TH-230	1.032E+00	1.897E-01	6.674E-02	9.681E-02
TH-232	1.595E+00	4.192E-01	1.286E-01	2.139E-01
TH-234	2.742E+00	2.230E+00	1.455E+00	1.138E+00
U-234	1.032E+00	1.897E-01	6.674E-02	9.681E-02
NP-237	9.500E-01	3.944E-01	2.446E-01	2.012E-01
U-238	2.742E+00	2.230E+00	1.455E+00	1.138E+00
AM-243	3.395E-01	9.935E-02	5.584E-02	5.069E-02
ANH-511	1.646E-01	7.382E-02	2.502E-02	3.766E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-1.455E-01	3.727E-01	3.046E-01	1.902E-01 NOT IDENT.
NA-22	-1.589E-02	5.258E-02	4.196E-02	2.683E-02 NOT IDENT.

NA-24	-1.373E+05	2.212E+05	0.000E+00	1.128E+05	SHORT HLIF
AL-26	6.205E-03	3.565E-02	3.096E-02	1.819E-02	NOT IDENT.
TI-44	4.403E-01	7.377E-02	5.211E-02	3.764E-02	FAIL ABUN
SC-46	-4.806E-03	4.996E-02	4.203E-02	2.549E-02	FAIL ABUN
V-48	1.577E-02	8.020E-02	6.896E-02	4.092E-02	NOT IDENT.
CR-51	-7.398E-02	4.072E-01	3.466E-01	2.077E-01	NOT IDENT.
MN-52	9.408E-02	2.370E-01	2.068E-01	1.209E-01	NOT IDENT.
MN-54	1.077E-02	4.770E-02	4.137E-02	2.433E-02	NOT IDENT.
CO-56	2.430E-02	4.593E-02	4.095E-02	2.344E-02	NOT IDENT.
CO-57	1.509E-03	3.029E-02	2.578E-02	1.545E-02	NOT IDENT.
CO-58	-5.818E-03	4.502E-02	3.797E-02	2.297E-02	NOT IDENT.
FE-59	1.860E-02	1.180E-01	1.002E-01	6.023E-02	NOT IDENT.
CO-60	1.267E-02	5.106E-02	4.343E-02	2.605E-02	NOT IDENT.
ZN-65	1.065E-01	1.272E-01	1.016E-01	6.491E-02	NOT IDENT.
GE-68	-1.906E-01	1.623E+00	1.345E+00	8.282E-01	NOT IDENT.
AS-73	-5.052E-01	1.220E+00	1.045E+00	6.223E-01	NOT IDENT.
AS-74	-3.466E-03	1.012E-01	8.388E-02	5.161E-02	NOT IDENT.
SE-75	-8.759E-03	5.002E-02	4.062E-02	2.552E-02	NOT IDENT.
BR-77	1.013E-01	7.813E+00	6.558E+00	3.986E+00	FAIL ABUN
SR-82	-2.492E-01	4.307E-01	3.184E-01	2.197E-01	NOT IDENT.
RB-83	1.053E-02	7.411E-02	6.290E-02	3.781E-02	NOT IDENT.
RB-84	4.383E-02	8.859E-02	7.838E-02	4.520E-02	NOT IDENT.
KR-85	9.962E+00	8.656E+00	7.068E+00	4.416E+00	NOT IDENT.
SR-85	5.042E-02	4.381E-02	3.577E-02	2.235E-02	NOT IDENT.
RB-86	4.473E-01	9.436E-01	8.274E-01	4.814E-01	NOT IDENT.
Y-88	1.446E-02	4.292E-02	3.821E-02	2.190E-02	NOT IDENT.
ZR-88	-4.093E-02	3.532E-02	2.764E-02	1.802E-02	NOT IDENT.
Y-91	1.559E+01	2.532E+01	2.216E+01	1.292E+01	NOT IDENT.
NB-94	3.446E-02	4.372E-02	3.826E-02	2.231E-02	NOT IDENT.
NB-95	4.849E-02	6.394E-02	4.902E-02	3.262E-02	NOT IDENT.
NB-95M	7.283E-01	1.937E-01	1.635E-01	9.883E-02	NOT IDENT.
ZR-95	-8.922E-02	8.884E-02	6.530E-02	4.533E-02	NOT IDENT.
NB-97	3.061E+02	3.437E+04	0.000E+00	1.754E+04	SHORT HLIF
ZR-97	2.700E+06	7.486E+05	0.000E+00	3.819E+05	SHORT HLIF
MO-99	1.066E+01	1.030E+01	9.191E+00	5.254E+00	NOT IDENT.
TC-99M	-4.994E+14	1.512E+15	0.000E+00	7.713E+14	SHORT HLIF
RH-101	2.730E-02	3.796E-02	3.226E-02	1.937E-02	NOT IDENT.
RH-102	3.188E-02	3.243E-02	2.934E-02	1.655E-02	FAIL ABUN
RU-103	-1.696E-02	4.888E-02	3.954E-02	2.494E-02	NOT IDENT.
RH-106	-2.752E-01	3.764E-01	2.900E-01	1.921E-01	NOT IDENT.
RU-106	-2.752E-01	3.754E-01	2.900E-01	1.915E-01	NOT IDENT.
AG-108M	-2.185E-02	3.757E-02	3.044E-02	1.917E-02	NOT IDENT.
AG-110M	-1.840E-03	4.118E-02	3.390E-02	2.101E-02	NOT IDENT.
IN-111	6.655E-01	1.025E+00	7.737E-01	5.228E-01	NOT IDENT.
IN-113M	-6.582E-02	5.052E-02	3.900E-02	2.578E-02	NOT IDENT.
SN-113	-6.582E-02	5.052E-02	3.900E-02	2.578E-02	NOT IDENT.
IN-114M	8.146E-03	2.345E-01	1.714E-01	1.196E-01	NOT IDENT.
CD-115	-4.241E+00	8.267E+00	6.612E+00	4.218E+00	NOT IDENT.
SN-117M	3.863E-02	5.899E-02	5.102E-02	3.010E-02	NOT IDENT.
SB-122	1.276E+00	1.781E+00	1.570E+00	9.087E-01	NOT IDENT.
I-123	6.941E+05	1.384E+06	0.000E+00	7.063E+05	SHORT HLIF
TE-123M	1.625E-02	3.241E-02	2.784E-02	1.653E-02	NOT IDENT.
I-124	-4.213E-01	7.743E-01	5.166E-01	3.951E-01	NOT IDENT.
SB-124	-4.405E-04	8.140E-02	6.852E-02	4.153E-02	FAIL ABUN
SB-125	4.079E-02	1.029E-01	8.971E-02	5.252E-02	FAIL ABUN
TE-125M	-7.936E+00	1.055E+01	8.693E+00	5.382E+00	NOT IDENT.
I-126	-4.866E-02	2.038E-01	1.647E-01	1.040E-01	NOT IDENT.
SB-126	-1.650E-01	2.138E-01	1.366E-01	1.091E-01	FAIL ABUN
SB-127	2.586E-01	1.346E+00	1.129E+00	6.869E-01	NOT IDENT.
XE-127	-9.927E-03	5.972E-02	4.542E-02	3.047E-02	NOT IDENT.
I-131	4.111E-02	1.206E-01	1.053E-01	6.154E-02	NOT IDENT.
TE-132	-1.332E-01	6.425E-01	5.255E-01	3.278E-01	NOT IDENT.
BA-133	1.252E-02	5.617E-02	4.261E-02	2.866E-02	FAIL ABUN
I-133	-3.831E+02	2.522E+03	0.000E+00	1.287E+03	SHORT HLIF
CS-134	7.665E-02	5.838E-02	5.465E-02	2.978E-02	NOT IDENT.
CS-135	2.684E-01	1.878E-01	1.655E-01	9.582E-02	NOT IDENT.
I-135	1.582E+14	3.174E+14	0.000E+00	1.620E+14	SHORT HLIF
CS-136	4.913E-02	1.309E-01	1.138E-01	6.680E-02	FAIL ABUN
BA-137M	8.239E-03	4.237E-02	3.562E-02	2.162E-02	NOT IDENT.
CS-137	8.709E-03	4.479E-02	3.765E-02	2.285E-02	NOT IDENT.
CE-139	-4.567E-02	3.460E-02	2.718E-02	1.765E-02	NOT IDENT.
BA-140	-1.842E-01	3.123E-01	2.447E-01	1.593E-01	NOT IDENT.
LA-140	-4.773E-02	7.474E-02	5.459E-02	3.813E-02	NOT IDENT.
CE-141	-1.789E-02	7.052E-02	5.883E-02	3.598E-02	NOT IDENT.
CE-143	4.875E+02	1.496E+02	0.000E+00	7.634E+01	SHORT HLIF
CE-144	-1.150E-01	2.404E-01	1.989E-01	1.226E-01	NOT IDENT.
PM-144	-1.894E-02	4.295E-02	3.398E-02	2.191E-02	NOT IDENT.
PR-144	-1.282E+00	2.909E+00	2.301E+00	1.484E+00	NOT IDENT.

PM-146	6.075E-02	4.940E-02	4.521E-02	2.520E-02	NOT IDENT.
ND-147	4.436E-01	5.876E-01	5.204E-01	2.998E-01	FAIL ABUN
PM-149	1.942E+01	7.153E+01	6.271E+01	3.649E+01	NOT IDENT.
EU-152	3.198E-02	1.330E-01	9.586E-02	6.786E-02	NOT IDENT.
GD-153	4.176E-02	1.021E-01	7.854E-02	5.208E-02	NOT IDENT.
EU-154	-4.597E-02	1.468E-01	1.170E-01	7.491E-02	NOT IDENT.
EU-155	1.104E-01	1.256E-01	1.109E-01	6.410E-02	FAIL ABUN
TB-160	-1.065E-01	1.756E-01	1.406E-01	8.961E-02	FAIL ABUN
HO-166M	-3.787E-03	7.571E-02	6.198E-02	3.863E-02	FAIL ABUN
TM-171	-9.898E+00	4.368E+01	3.065E+01	2.229E+01	NOT IDENT.
LU-176	2.036E-03	2.772E-02	2.400E-02	1.414E-02	FAIL ABUN
LU-177	1.308E+00	1.679E+00	1.001E+00	8.568E-01	FAIL ABUN
LU-177M	-1.617E-01	2.068E-01	1.661E-01	1.055E-01	NOT IDENT.
HF-181	-8.851E-04	4.865E-02	4.091E-02	2.482E-02	NOT IDENT.
W-181	-2.131E-01	5.477E-01	4.088E-01	2.794E-01	NOT IDENT.
TA-182	4.803E-02	2.714E-01	2.288E-01	1.385E-01	NOT IDENT.
RE-183	6.181E-02	1.263E-01	1.083E-01	6.444E-02	FAIL ABUN
RE-184	-4.444E-02	2.756E-01	2.246E-01	1.406E-01	NOT IDENT.
OS-185	-4.798E-02	5.071E-02	3.812E-02	2.587E-02	NOT IDENT.
RE-188	6.355E-02	1.962E-01	1.674E-01	1.001E-01	NOT IDENT.
W-188	-3.870E+00	9.392E+00	6.846E+00	4.792E+00	FAIL ABUN
IR-192	-3.154E-02	3.918E-02	3.211E-02	1.999E-02	FAIL ABUN
AU-195	2.160E-01	2.784E-01	2.289E-01	1.420E-01	FAIL ABUN
TL-200	-2.992E+01	2.424E+02	0.000E+00	1.237E+02	SHORT HLIF
TL-201	-5.180E+00	6.099E+00	4.907E+00	3.112E+00	NOT IDENT.
TL-202	-2.890E-02	7.645E-02	6.295E-02	3.901E-02	NOT IDENT.
HG-203	6.623E-02	5.105E-02	4.200E-02	2.604E-02	NOT IDENT.
BI-207	5.988E-02	6.539E-02	5.958E-02	3.336E-02	FAIL ABUN
TL-207	-9.247E-01	8.033E-01	6.341E-01	4.098E-01	FAIL ABUN
PO-209	-1.157E+01	9.679E+00	7.235E+00	4.938E+00	NOT IDENT.
BI-210	-6.829E-01	6.688E+00	5.636E+00	3.412E+00	NOT IDENT.
PB-210	-6.829E-01	6.688E+00	5.636E+00	3.412E+00	NOT IDENT.
PO-210	-6.829E-01	6.688E+00	5.636E+00	3.412E+00	NOT IDENT.
PB-211	-2.134E-01	1.151E+00	9.610E-01	5.873E-01	NOT IDENT.
BI-212	8.204E-01	6.097E-01	3.869E-01	3.111E-01	FAIL ABUN
PO-215	-9.247E-01	8.033E-01	6.341E-01	4.098E-01	FAIL ABUN
RN-219	-3.019E-01	4.861E-01	3.950E-01	2.480E-01	NOT IDENT.
RN-220	1.448E+01	2.900E+01	2.527E+01	1.479E+01	NOT IDENT.
RA-223	-9.247E-01	8.033E-01	6.341E-01	4.098E-01	FAIL ABUN
AC-227	3.723E-01	4.543E-01	3.888E-01	2.318E-01	FAIL ABUN
TH-227	3.723E-01	4.557E-01	3.888E-01	2.325E-01	FAIL ABUN
TH-229	-2.668E-01	5.750E-01	4.679E-01	2.934E-01	FAIL ABUN
PA-231	-2.006E-01	1.862E+00	1.514E+00	9.501E-01	NOT IDENT.
TH-231	-9.247E-01	8.033E-01	6.341E-01	4.098E-01	FAIL ABUN
U-231	5.335E-02	1.155E+00	8.721E-01	5.895E-01	FAIL ABUN
PA-233	1.787E-02	7.418E-02	6.475E-02	3.785E-02	FAIL ABUN
PA-234	-1.379E-01	3.887E-01	3.170E-01	1.983E-01	FAIL ABUN
PA-234M	1.389E+00	5.735E+00	4.857E+00	2.926E+00	FAIL ABUN
U-235	-1.756E-02	2.482E-01	2.043E-01	1.266E-01	FAIL ABUN
NP-236	-3.902E-02	9.374E-02	7.728E-02	4.783E-02	NOT IDENT.
NP-239	-1.964E-01	2.128E-01	1.733E-01	1.086E-01	FAIL ABUN
AM-241	5.456E-02	2.363E-01	1.834E-01	1.205E-01	NOT IDENT.
CM-243	3.192E-02	1.138E-01	9.834E-02	5.807E-02	FAIL ABUN
AM-246	-8.351E-02	1.874E-01	1.501E-01	9.563E-02	NOT IDENT.
CM-247	2.584E-03	4.312E-02	3.682E-02	2.200E-02	FAIL ABUN
CF-249	-6.387E-03	4.767E-02	3.980E-02	2.432E-02	NOT IDENT.
CF-251	-1.604E-02	1.443E-01	1.201E-01	7.363E-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	256.5739
46.50	256.5739
46.50	256.5739
48.70	256.6857
49.72	262.6008
51.35	235.0979
52.39	227.3014
52.97	245.8002
53.15	241.3049
53.44	250.5676
54.07	260.9025
56.28	264.6118
56.28	264.6129
57.37	0.0000
57.53	266.2023
57.53	266.2028
57.60	254.6568
57.98	238.3162
57.98	238.3162
59.32	268.8633
59.32	268.8633
59.40	268.8971
59.54	273.3899
59.72	288.2498
60.01	288.3814
61.10	279.9845
61.14	269.6314
61.30	269.6986
63.00	309.2201
63.29	312.1433
63.29	312.1433
63.58	317.8579
64.28	348.3392
65.12	347.2886
65.20	347.3298
65.20	347.3298
66.05	329.8598
66.72	326.8232
66.83	326.8780
66.91	318.8216
67.20	286.5630
67.20	286.5630
67.75	314.2258
67.85	314.2720
68.90	331.6144
68.90	331.6144
69.30	320.9334
69.67	330.1088
70.82	338.1647
70.82	338.1647
70.83	338.1702
72.80	337.2283
72.87	337.2611
72.87	337.2611
74.67	338.1050
74.81	338.1706
74.81	338.1706
74.81	338.1706
74.81	338.1706
74.81	338.1706
74.81	338.1706
74.97	338.2444
75.28	338.3891
75.70	338.5830
77.11	338.0960
77.11	338.0960

77.11	338.0960
77.11	338.0960
77.11	338.0960
77.11	338.0960
77.11	338.0960
78.38	341.7119
79.62	363.5735
79.80	363.6595
79.80	363.6595
80.11	386.6431
80.18	386.6787
80.30	386.7392
80.30	386.7392
80.57	418.8631
81.00	411.4797
81.07	411.5176
81.07	411.5176
81.07	411.5176
81.07	411.5176
82.60	374.1603
83.37	339.3711
83.78	338.0218
83.78	338.0218
83.78	338.0218
83.78	338.0218
84.21	347.3915
84.90	343.1025
85.43	343.3336
86.29	388.2061
86.50	388.3096
86.54	388.3281
86.59	388.3528
86.72	403.7702
86.79	403.8039
86.94	403.8809
87.30	404.0639
87.30	404.0639
87.30	404.0639
87.30	404.0639
87.30	404.0639
87.30	404.0639
87.30	404.0639
87.57	404.2003
87.88	404.3577
88.03	404.4331
88.36	404.5984
88.47	404.6546
89.95	315.9933
91.11	316.4437
92.29	316.8979
92.38	316.9330
92.38	316.9330
93.35	290.9915
94.00	286.5716
94.67	305.4023
94.67	305.4041
94.90	307.0390
94.90	307.0390
94.90	307.0390
94.90	307.0390
95.87	302.7356
95.87	302.7356
96.73	282.8409
97.43	269.0750
98.44	266.2774
98.44	266.2784
98.88	259.6629
99.55	267.2900
99.55	267.2900
99.86	277.8300
100.00	277.8746
100.10	277.9083
103.18	298.4577
103.76	275.1526
105.00	260.8280
105.31	257.9756
108.00	279.4065
109.28	290.6360

111.00	262.5561
111.00	262.5561
111.76	254.8683
112.95	219.5856
115.19	268.6926
116.30	274.9627
117.00	266.2242
117.00	266.2242
117.66	258.4557
121.11	250.4006
121.62	261.5113
121.78	276.5277
122.06	276.6069
122.32	272.6844
122.32	272.6844
122.32	272.6844
122.32	272.6844
123.07	278.8904
127.23	306.1559
129.76	268.6826
131.20	281.1541
133.02	293.7641
133.54	284.8228
135.34	303.5271
136.00	287.5188
136.25	280.4997
136.48	272.4581
140.51	274.5113
140.51	0.0000
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142.65	276.0759
143.76	263.1021
144.24	249.9553
144.24	249.9553
144.24	249.9553
144.24	249.9553
145.22	253.2430
145.44	273.7210
147.16	275.1733
152.43	240.5038
152.70	255.9815
153.22	257.1278
154.21	266.6156
154.21	266.6156
154.21	266.6156
154.21	266.6156
155.03	252.3871
156.02	263.9473
158.56	229.3982
159.00	0.0000
159.00	233.6194
160.31	265.9646
161.27	243.3980
162.32	240.5049
162.64	243.6813
163.35	231.3775
163.89	221.1034
165.85	276.5773
167.43	258.2021
171.28	222.4709
171.86	228.8479
172.10	228.8930
176.55	227.6255
176.60	227.6338
181.06	239.1864
184.41	226.3082
185.71	231.3993
186.00	231.4528
190.27	225.6454
192.34	216.0497
193.63	223.2484
197.04	228.0885
198.01	190.9236
198.60	194.2081
200.40	238.2799
201.83	253.5068
202.84	242.6353
205.31	209.3316



208.36	271.7052
208.81	225.7782
209.75	180.7443
209.75	180.7443
210.97	174.0117
215.65	176.5705
216.55	167.5706
218.09	206.7146
222.10	192.1016
223.80	194.5016
226.40	206.8239
227.00	206.9094
227.08	213.4554
227.20	213.4733
228.16	211.4326
228.18	211.4356
228.18	211.4356
231.56	0.0000
235.69	205.0628
236.00	184.0692
236.00	184.0692
238.63	184.3922
238.63	184.3922
238.63	184.3922
238.63	184.3922
239.00	184.4370
240.98	184.6793
241.98	172.4810
241.98	172.4810
241.98	172.4810
244.69	151.6296
245.39	156.9907
247.94	164.0654
248.90	180.1106
249.79	178.0026
252.40	168.3339
252.85	169.4904
252.85	169.4904
254.15	0.0000
256.20	149.8686
256.20	149.8686
260.50	138.0298
260.90	129.1583
262.80	183.9331
264.65	149.5477
268.24	143.1680
268.79	155.5245
269.46	154.4688
269.46	154.4688
269.46	154.4688
269.46	154.4688
271.23	144.5522
273.65	226.2371
276.40	134.8883
277.35	163.0830
277.60	160.8575
277.60	160.8575
278.00	154.8210
278.60	139.5681
279.20	133.6141
279.53	127.6332
280.46	139.7233
281.68	171.3989
283.67	154.6664
284.30	151.5878
285.00	150.9462
285.90	146.5060
286.10	131.1461
286.10	131.1461
287.40	132.1521
288.45	0.0000
290.67	155.6819
290.80	155.6924
291.72	148.2142
293.26	0.0000
293.70	140.8150
295.21	142.4515
295.21	142.4515

295.21	142.4515
295.96	54.5801
296.50	54.5969
297.23	54.6196
298.57	135.1351
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299.80	133.7116
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300.09	139.8118
300.09	139.8118
300.09	139.8118
300.12	139.8137
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302.84	121.7659
303.76	132.4895
303.91	132.5001
304.40	144.7246
304.40	144.7246
304.84	139.7527
306.84	129.0584
308.46	146.5820
311.98	131.2643
316.51	143.5554
318.01	135.3864
319.02	121.6376
319.41	118.8983
320.08	129.0847
323.87	165.3849
323.87	165.3849
323.87	165.3849
323.87	165.3849
325.23	154.4098
328.77	136.1778
333.44	142.3986
334.20	134.7144
334.20	134.7144
334.30	134.7215
338.28	140.5911
338.28	140.5911
338.28	140.5911
338.28	140.5911
338.32	140.5929
338.32	140.5929
338.32	140.5929
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340.57	121.1831
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350.59	0.0000
351.07	106.8486
351.92	106.8945
351.92	106.8945
351.92	106.8945
355.39	0.0000
356.01	98.6605
364.48	105.6877
366.43	105.7916
367.43	115.2939
367.94	0.0000
369.80	96.5065
374.96	93.9062
383.85	109.5560
387.95	105.9541
388.63	102.1685
391.69	120.4860
391.69	120.4860
392.90	121.5120
398.62	92.1000
400.65	122.9172
401.10	129.6672
401.81	116.2587
402.60	104.7675
404.84	120.2713
410.95	98.4190
411.60	110.9963
413.65	115.9307
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415.30	84.1134

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427.08	87.4786
427.89	81.6765
432.53	95.4866
433.93	96.5202
439.47	98.7117
439.56	98.7154
439.89	108.5055
443.98	81.2796
444.90	83.2714
445.03	83.2766
445.03	83.2766
445.03	83.2766
445.03	83.2766
453.90	66.8769
463.38	55.2986
468.07	65.9619
473.00	76.0134
475.06	63.5086
475.35	66.4937
476.78	90.3657
477.59	89.4034
477.96	92.3972
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484.57	66.7473
487.03	82.7710
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510.53	0.0000
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511.00	63.4341
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511.85	60.4343
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513.99	62.1650
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520.65	62.6645
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529.64	70.9980
529.87	0.0000
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537.32	92.5685
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546.56	0.0000
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552.65	82.8747
555.20	60.4231
563.23	66.7662
563.90	65.7562
568.70	73.0766
569.32	72.0645
569.50	65.8922
569.67	65.8953
573.80	62.9018
574.00	57.7500
574.64	66.0156
578.91	74.0375
579.30	0.0000
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591.81	69.5387
592.07	63.3173
593.00	58.1465
595.88	67.5597
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602.71	81.6151
603.60	72.9565
604.41	55.6016
604.70	55.6068
609.31	72.0575

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609.31	72.0575
609.31	72.0575
610.33	72.0828
612.46	64.4700
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618.01	62.8491
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621.84	72.3708
631.29	63.1362
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634.78	55.8363
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646.12	72.9705
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657.90	0.0000
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661.65	62.7178
664.57	0.0000
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666.33	69.2021
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677.61	68.3875
685.20	62.1277
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695.00	70.9194
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696.49	75.2534
697.00	73.1149
697.49	78.5035
698.33	70.9935
698.50	75.3013
699.00	74.2373
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717.42	60.1183
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721.93	0.0000
722.20	86.6982
722.78	74.0673
722.78	74.0673
722.89	74.0706
722.95	74.0723
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724.18	70.4860
727.18	65.1240
733.00	65.2397
735.90	69.6516
739.58	44.6696
742.81	52.3477
744.21	58.9162
747.13	54.6008
751.79	41.5541
752.31	42.6543
753.82	47.0512
755.35	63.4927
756.15	72.2681
756.87	68.9985
763.93	51.2171
765.79	67.7174
766.42	62.2379
766.84	51.6277
776.49	53.8554
778.00	51.4302
778.57	56.0308
778.89	56.0358
783.80	57.0364
785.46	55.2234
792.07	62.7069

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796.30	50.7803
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810.76	51.9178
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818.51	43.6695
819.60	43.6829
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836.80	0.0000
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867.82	49.9193
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880.51	51.9810
881.50	51.0491
883.24	53.9095
884.67	50.1458
889.25	55.8911
896.60	68.3394
898.02	69.3138
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911.07	46.6852
911.07	46.6852
911.07	46.6852
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920.93	40.1184
925.00	49.7223
925.24	48.7692
926.50	58.3516
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937.48	53.7191
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946.00	56.7205
949.00	53.8774
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968.20	70.5717
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969.11	48.0717
969.11	48.0717
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980.50	49.4540
983.50	41.7280
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996.32	60.3551
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1004.76	64.3806
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1036.00	55.0361
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1038.76	0.0000
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1048.07	46.3230

1050.47	45.3636
1050.47	45.3636
1062.04	37.5763
1063.62	37.5903
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1077.35	51.6022
1078.86	55.5898
1085.78	58.6615
1099.22	50.8630
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1115.52	42.8990
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1120.29	46.3818
1120.51	46.3837
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1167.94	54.6812
1173.22	52.7173
1175.09	66.9373
1177.93	62.9183
1189.05	68.1559
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1205.75	0.0000
1213.00	57.2555
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1230.97	68.7612
1235.34	54.4427
1236.41	0.0000
1238.25	72.9761
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1260.41	0.0000
1271.85	34.1534
1274.45	39.3483
1274.54	39.3499
1291.56	34.2891
1298.22	0.0000
1312.09	26.0834
1325.50	35.5675
1325.50	35.5675
1332.49	30.3794
1333.61	30.3853
1360.21	16.8516
1362.66	0.0000
1365.15	23.1924
1368.21	21.0970
1368.53	0.0000
1376.25	17.9601
1384.27	26.4526
1394.10	19.0811
1395.20	23.3267
1407.95	23.3822
1434.06	17.0885
1436.60	24.5760
1457.56	0.0000
1460.81	19.3198
1489.15	16.1829
1509.49	14.0759
1596.49	14.1342
1620.62	11.3538
1678.03	0.0000
1691.02	10.5300
1691.02	10.5300
1706.46	0.0000
1750.46	0.0000
1764.49	8.4756
1764.49	8.4756
1764.49	8.4756
1764.49	8.4756
1770.23	30.0550
1771.40	18.4241
1791.20	0.0000
1808.65	9.7538



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132002

Total Uranium Activity	8.1486E+00	ug/g
Total Uranium Counting Unc.	6.6353E+00	ug/g
Total Uranium Tpu	3.3854E-06	ug/g
Total Uranium Mda	4.3311E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940270                      SAMPLE ID   : G244132002
*  ANALYST       : MXR1                        DETECTOR    : GAM23
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 09:12:04.35    SAMPLE ALQT  : 109.500 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.587E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.410E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.777E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.340E+00

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## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 11:23:57.58

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132003.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:23:33
Sample ID        : G244132003           Sample quantity  : 1.27720E+02 GRAM
Detector name    : GAM18                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.63 0.0%
Energy tolerance : 1.50000 keV          Analyst Initials : MXR1
Abundance limit  : 75.00000             Sensitivity       : 5.00000
Batch ID        : 940270                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	64.35*	285	769	1.42	127.82	122	14	3.96E-02	21.7	
2	3	75.09*	346	452	1.06	149.29	144	17	4.81E-02	11.2	1.08E+00
3	3	77.27*	539	424	1.02	153.66	144	17	7.49E-02	7.6	
4	2	87.30	289	465	1.19	173.70	170	23	4.01E-02	13.4	1.26E+00
5	2	90.15	187	442	1.24	179.41	170	23	2.59E-02	19.9	
6	2	92.86*	668	415	1.25	184.83	170	23	9.28E-02	6.8	
7	0	128.52	125	395	1.79	256.11	252	9	1.74E-02	29.9	
8	0	143.70*	95	309	1.44	286.47	283	7	1.32E-02	33.2	
9	0	186.02*	543	471	1.31	371.07	366	12	7.54E-02	9.3	
10	0	209.39	167	397	1.11	417.80	412	12	2.32E-02	25.2	
11	3	238.78*	1529	214	1.22	476.56	470	19	2.12E-01	3.1	1.47E+00
12	3	241.67	345	250	1.57	482.34	470	19	4.79E-02	11.1	
13	0	270.41	133	270	0.84	539.80	535	10	1.85E-02	24.7	
14	0	277.88	48	318	1.35	554.73	548	12	6.72E-03	75.1	
15	0	295.17*	515	265	1.46	589.31	582	12	7.16E-02	8.0	
16	0	300.95	136	285	1.24	600.87	595	13	1.89E-02	27.2	
17	0	328.55	78	226	1.37	656.04	651	11	1.08E-02	39.0	
18	0	338.48*	400	256	1.40	675.89	669	15	5.55E-02	10.1	
19	0	351.96*	897	245	1.29	702.86	697	11	1.25E-01	4.8	
20	0	463.02	85	222	1.43	924.89	918	15	1.18E-02	39.8	
21	0	510.95*	196	261	2.43	1020.73	1012	21	2.72E-02	23.9	
22	0	583.08*	520	202	1.65	1164.95	1157	17	7.23E-02	7.8	
23	0	609.05*	670	167	1.49	1216.88	1210	15	9.31E-02	5.8	
24	0	661.63	491	122	1.72	1322.01	1315	14	6.82E-02	6.6	
25	0	727.66*	111	133	1.82	1454.04	1445	17	1.55E-02	26.2	
26	0	768.21	70	123	1.91	1535.13	1527	14	9.76E-03	36.2	
27	0	785.45	59	63	2.75	1569.59	1565	10	8.17E-03	28.4	
28	0	795.49	85	94	1.52	1589.68	1582	17	1.17E-02	28.4	
29	0	860.62	65	106	1.47	1719.90	1712	16	9.09E-03	37.0	
30	0	910.90*	414	68	1.66	1820.45	1811	18	5.74E-02	7.0	
31	0	968.91*	152	128	1.52	1936.44	1930	12	2.11E-02	17.6	
32	0	1119.55*	179	42	2.09	2237.67	2231	13	2.49E-02	10.8	
33	0	1237.59	54	62	1.65	2473.71	2467	13	7.52E-03	32.9	
34	0	1377.63	49	36	0.70	2753.76	2748	15	6.84E-03	30.5	
35	0	1460.17*	1413	45	2.15	2918.82	2907	23	1.96E-01	3.0	
36	0	1587.77	30	12	1.82	3174.01	3170	9	4.23E-03	27.9	
37	0	1729.74	43	11	2.45	3457.92	3450	14	6.04E-03	21.9	
38	0	1763.86*	135	26	2.20	3526.18	3517	18	1.88E-02	13.0	

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 19-JAN-2010 11:24:00

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 09:23:33
Sample ID        : G244132003           Sample quantity  : 127.72 GRAM
Sample type       : SOLID                Sample geometry   :
Detector name     : GAMMA18             Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.63    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	*	2.056E+01	1.978E+00	3.751E-01	2.846E-02	54.827
CD-109	+	88.03	*	3.612E+00	1.021E+00	1.181E+00	1.092E-01	3.059
SN-126	+	64.28		2.678E+00	1.226E+00	8.165E-01	1.207E-01	3.279
	+	86.94		1.479E+00	7.298E-01	4.910E-01	2.036E-01	3.012
	+	87.57	*	3.557E-01	1.006E-01	1.170E-01	1.078E-02	3.039
BA-137M	+	661.65	*	4.478E-01	6.802E-02	4.545E-02	3.465E-03	9.853
CS-137	+	661.65	*	4.734E-01	7.194E-02	4.805E-02	3.672E-03	9.853
HG-203		70.83		8.891E-01	1.207E+00	1.698E+00	2.263E-01	0.524
		72.87		6.287E-01	6.583E-01	1.008E+00	1.308E-01	0.623
		82.60		-9.823E-02	1.259E+00	1.683E+00	2.335E-01	-0.058
	+	279.20	*	3.619E-02	5.441E-02	5.148E-02	3.122E-03	0.703
TL-208	+	277.35		3.344E-01	5.036E-01	4.882E-01	5.127E-02	0.685
	+	510.84		6.174E-01	3.024E-01	1.636E-01	1.740E-02	3.773
	+	583.14	*	4.616E-01	8.040E-02	4.529E-02	3.550E-03	10.192
	+	860.37		5.299E-01	3.967E-01	3.255E-01	3.641E-02	1.628
BI-211		72.87		3.219E+00	3.355E+00	5.163E+00	4.263E-01	0.623
	+	351.07	*	3.739E+00	4.346E-01	2.742E-01	1.760E-02	13.635
BI-212	+	727.18	*	8.308E-01	4.439E-01	3.567E-01	3.553E-02	2.329
	+	785.46		2.796E+00	1.607E+00	2.027E+00	1.916E-01	1.379
		1620.62		1.356E+00	1.041E+00	1.956E+00	1.322E-01	0.693
PB-212	+	74.81		1.923E+00	4.939E-01	5.496E-01	6.889E-02	3.498
	+	77.11		1.675E+00	2.916E-01	3.075E-01	2.606E-02	5.449
	+	87.30		1.645E+00	4.933E-01	5.434E-01	7.381E-02	3.027
	+	238.63	*	1.484E+00	1.397E-01	6.986E-02	4.991E-03	21.241
	+	300.09		1.966E+00	1.081E+00	9.404E-01	7.721E-02	2.091
PO-212	+	74.81		1.923E+00	4.939E-01	5.496E-01	6.889E-02	3.498
	+	77.11		1.675E+00	2.916E-01	3.075E-01	2.606E-02	5.449
	+	87.30		1.645E+00	4.933E-01	5.434E-01	7.381E-02	3.027
		115.19		1.186E+00	3.142E+00	5.139E+00	3.237E-01	0.231
	+	238.63	*	1.484E+00	1.397E-01	6.986E-02	4.991E-03	21.241
	+	300.09		1.966E+00	1.081E+00	9.404E-01	7.721E-02	2.091
BI-214	+	609.31	*	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110
	+	1120.29		1.492E+00	3.536E-01	3.721E-01	3.562E-02	4.010
	+	1764.49		1.486E+00	3.959E-01	2.452E-01	1.491E-02	6.060

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-214	+	74.81		3.313E+00	8.298E-01	9.470E-01	1.057E-01	3.498
	+	77.11		2.872E+00	5.457E-01	5.271E-01	6.007E-02	5.449
	+	87.30		2.818E+00	8.259E-01	9.309E-01	1.117E-01	3.027
	+	241.98		2.008E+00	4.717E-01	4.199E-01	3.321E-02	4.780
	+	295.21		1.306E+00	2.355E-01	1.780E-01	1.511E-02	7.333
	+	351.92	*	1.300E+00	1.657E-01	9.556E-02	7.905E-03	13.610
PO-214	+	74.81		3.313E+00	8.298E-01	9.470E-01	1.057E-01	3.498
	+	77.11		2.872E+00	5.457E-01	5.271E-01	6.007E-02	5.449
	+	87.30		2.818E+00	8.259E-01	9.309E-01	1.117E-01	3.027
	+	241.98		2.008E+00	4.717E-01	4.199E-01	3.321E-02	4.780
	+	295.21		1.306E+00	2.355E-01	1.780E-01	1.511E-02	7.333
	+	351.92	*	1.300E+00	1.657E-01	9.556E-02	7.905E-03	13.610
PO-216	+	74.81		1.923E+00	4.939E-01	5.496E-01	6.889E-02	3.498
	+	77.11		1.675E+00	2.916E-01	3.075E-01	2.606E-02	5.449
	+	87.30		1.645E+00	4.933E-01	5.434E-01	7.381E-02	3.027
	+	238.63	*	1.484E+00	1.397E-01	6.986E-02	4.991E-03	21.241
	+	300.09		1.966E+00	1.081E+00	9.404E-01	7.721E-02	2.091
	+	74.81		3.313E+00	8.298E-01	9.470E-01	1.057E-01	3.498
PO-218	+	77.11		2.872E+00	5.457E-01	5.271E-01	6.007E-02	5.449
	+	87.30		2.818E+00	8.259E-01	9.309E-01	1.117E-01	3.027
	+	241.98		2.008E+00	4.717E-01	4.199E-01	3.321E-02	4.780
	+	295.21		1.306E+00	2.355E-01	1.780E-01	1.511E-02	7.333
	+	351.92	*	1.300E+00	1.657E-01	9.556E-02	7.905E-03	13.610
	+	240.98	*	3.807E+00	8.685E-01	7.941E-01	4.423E-02	4.794
RA-224	+	609.31	*	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110
RA-226	+	1120.29		1.492E+00	3.536E-01	3.721E-01	3.562E-02	4.010
	+	1764.49		1.486E+00	3.959E-01	2.452E-01	1.491E-02	6.060
	+	338.32		1.847E+00	8.408E-01	2.933E-01	1.196E-01	6.296
AC-228	+	911.07	*	1.579E+00	3.034E-01	1.509E-01	2.000E-02	10.458
	+	969.11		1.019E+00	4.339E-01	3.755E-01	8.990E-02	2.713
	+	338.32		1.847E+00	8.408E-01	2.933E-01	1.196E-01	6.296
RA-228	+	911.07	*	1.579E+00	3.034E-01	1.509E-01	2.000E-02	10.458
	+	969.11		1.019E+00	4.339E-01	3.755E-01	8.990E-02	2.713
	+	74.81		1.949E+00	4.669E-01	5.573E-01	4.696E-02	3.498
TH-228	+	77.11		1.699E+00	2.957E-01	3.118E-01	2.642E-02	5.449
	+	87.30		1.668E+00	4.716E-01	5.510E-01	5.064E-02	3.027
	+	238.63	*	1.505E+00	1.416E-01	7.084E-02	5.060E-03	21.241
TH-230	+	300.09		1.994E+00	1.598E+00	9.535E-01	5.619E-01	2.091
	+	609.31	*	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110
	+	1120.29		1.492E+00	3.536E-01	3.721E-01	3.562E-02	4.010
TH-232	+	1764.49		1.486E+00	3.959E-01	2.452E-01	1.491E-02	6.060
	+	338.32		1.847E+00	3.896E-01	2.933E-01	1.697E-02	6.296
	+	911.07	*	1.579E+00	3.034E-01	1.509E-01	2.000E-02	10.458
TH-234	+	969.11		1.019E+00	4.339E-01	3.755E-01	8.990E-02	2.713
	+	63.29	*	6.764E+00	3.166E+00	2.169E+00	3.825E-01	3.118
	+	92.38		5.221E+00	1.177E+00	7.545E-01	1.360E-01	6.920
U-234	+	609.31	*	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110
	+	1120.29		1.492E+00	3.536E-01	3.721E-01	3.562E-02	4.010
	+	1764.49		1.486E+00	3.959E-01	2.452E-01	1.491E-02	6.060

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	+	89.95		3.025E+00	1.525E+00	1.555E+00	4.809E-01	1.946
	+	93.35		6.277E+00	1.952E+00	8.980E-01	2.510E-01	6.990
		105.00		1.171E+00	1.034E+00	1.653E+00	4.863E-01	0.708
	+	143.76	*	3.229E-01	2.208E-01	3.028E-01	4.905E-02	1.066
		163.35		1.790E-01	3.836E-01	6.573E-01	1.171E-01	0.272
	+	185.71		3.864E-01	7.467E-02	5.726E-02	3.046E-03	6.748
		205.31		-1.947E-01	4.852E-01	6.936E-01	1.239E-01	-0.281
NP-237	+	86.50	*	1.045E+00	3.656E-01	3.898E-01	8.795E-02	2.680
		95.87		-1.034E-01	9.668E-01	1.398E+00	3.416E-01	-0.074
U-238	+	63.29	*	6.764E+00	3.166E+00	2.169E+00	3.825E-01	3.118
	+	92.38		5.221E+00	8.351E-01	7.545E-01	6.413E-02	6.920
AM-243	+	74.67	*	3.117E-01	7.458E-02	8.945E-02	7.465E-03	3.484
	+	86.72		3.917E+01	1.107E+01	1.305E+01	1.193E+00	3.002
		117.66		-4.261E+00	3.379E+00	5.120E+00	3.149E-01	-0.832
		142.18		1.055E+01	1.821E+01	2.647E+01	1.458E+00	0.398
ANH-511	+	511.00	*	1.334E-01	6.436E-02	3.535E-02	2.335E-03	3.772

## ---- 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	*	1.534E-01	2.562E-01	4.365E-01	3.163E-02	0.351
NA-22		1274.54	*	-1.865E-02	3.376E-02	5.274E-02	3.589E-03	-0.354
NA-24		1368.53	*	-6.518E-02	3.376E-02	Half-Life too short		
AL-26		1129.67		1.309E-01	1.278E+00	2.139E+00	1.428E-01	0.061
		1808.65	*	1.772E-03	1.969E-02	3.281E-02	1.916E-03	0.054
TI-44		67.85		-9.871E-03	5.109E-02	7.540E-02	6.064E-03	-0.131
	+	78.38	*	3.091E-01	5.381E-02	7.511E-02	6.422E-03	4.116
SC-46		889.25	*	3.048E-02	3.044E-02	5.322E-02	5.936E-03	0.573
	+	1120.51		2.528E-01	5.754E-02	9.854E-02	6.808E-03	2.566
V-48		944.10		1.094E-01	6.603E-01	1.087E+00	1.151E-01	0.101
		983.50	*	-1.614E-02	5.097E-02	8.019E-02	7.932E-03	-0.201
		1312.09		2.661E-02	5.386E-02	9.246E-02	6.735E-03	0.288
CR-51		320.08	*	-2.306E-01	3.057E-01	4.721E-01	3.039E-02	-0.489
MN-52		744.21		1.174E-01	1.511E-01	2.639E-01	2.327E-02	0.445
		848.13		2.693E+00	4.189E+00	7.211E+00	7.545E-01	0.373
		935.52		3.158E-01	1.911E-01	3.302E-01	3.542E-02	0.956
		1246.25		6.577E-01	5.035E+00	7.867E+00	5.058E-01	0.084
		1333.61		-4.450E-02	3.303E+00	5.393E+00	4.074E-01	-0.008
		1434.06	*	1.188E-01	1.488E-01	2.636E-01	1.942E-02	0.451
MN-54		834.83	*	4.582E-03	2.903E-02	4.825E-02	4.942E-03	0.095
CO-56		846.75	*	5.202E-03	2.829E-02	4.711E-02	4.918E-03	0.110
		977.42		9.247E-02	2.264E+00	3.598E+00	3.599E-01	0.026
		1037.82		-1.874E-01	2.168E-01	3.352E-01	3.105E-02	-0.559
		1175.09		1.255E+00	1.583E+00	2.779E+00	1.542E-01	0.452
	+	1238.25		1.250E-01	8.255E-02	1.190E-01	7.932E-03	1.050
		1360.21		4.199E-01	6.855E-01	1.195E+00	8.979E-02	0.351
		1771.40		-1.689E-02	1.928E-01	2.634E-01	1.592E-02	-0.064
CO-57		122.06	*	-1.258E-02	2.240E-02	3.504E-02	2.076E-03	-0.359

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.48		-8.543E-02	1.825E-01	2.846E-01	1.863E-02	-0.300
CO-58		810.76	*	-3.101E-02	2.895E-02	4.338E-02	4.283E-03	-0.715
FE-59	+	142.65		4.087E+00	2.725E+00	4.059E+00	2.233E-01	1.007
		192.34		-2.414E-01	7.939E-01	1.214E+00	1.407E-01	-0.199
		1099.22	*	-2.644E-02	6.282E-02	1.008E-01	8.301E-03	-0.262
		1291.56		-1.954E-03	8.961E-02	1.467E-01	1.233E-02	-0.013
CO-60		1173.22		2.580E-02	3.165E-02	5.569E-02	3.078E-03	0.463
		1332.49	*	-6.004E-03	2.905E-02	4.647E-02	3.511E-03	-0.129
ZN-65		1115.52	*	5.292E-02	7.892E-02	1.201E-01	8.458E-03	0.441
GE-68		1077.35	*	2.584E-01	9.078E-01	1.548E+00	1.230E-01	0.167
AS-73		53.44	*	4.426E-01	1.013E+00	1.731E+00	1.372E-01	0.256
AS-74		595.88	*	-1.365E-02	6.820E-02	1.088E-01	7.819E-03	-0.125
		634.78		1.246E-01	2.735E-01	4.538E-01	3.379E-02	0.275
SE-75		66.05		1.913E+00	5.079E+00	8.326E+00	8.246E-01	0.230
		96.73		-5.842E-01	7.775E-01	1.080E+00	1.424E-01	-0.541
		121.11		6.137E-02	1.181E-01	1.936E-01	1.808E-02	0.317
		136.00		1.236E-02	3.392E-02	5.486E-02	3.124E-03	0.225
		198.60		-5.644E-01	1.496E+00	2.431E+00	1.650E-01	-0.232
		264.65	*	-2.156E-03	3.660E-02	5.516E-02	3.155E-03	-0.039
		279.53		8.635E-02	1.014E-01	1.523E-01	9.406E-03	0.567
		303.91		3.652E-01	1.864E+00	2.672E+00	2.542E-01	0.137
		400.65		-8.666E-02	1.977E-01	3.229E-01	2.941E-02	-0.268
BR-77	+	87.88		5.469E+02	1.546E+02	2.258E+02	2.086E+01	2.422
		200.40		5.553E+01	9.538E+01	1.625E+02	8.753E+00	0.342
	+	239.00		1.667E+02	1.379E+01	2.194E+01	1.220E+00	7.599
		249.79		2.989E+00	3.691E+01	6.084E+01	3.410E+00	0.049
		281.68		8.421E+00	5.777E+01	8.308E+01	4.741E+00	0.101
		297.23		1.926E+02	5.447E+01	7.238E+01	4.155E+00	2.661
		303.76		2.906E+01	1.122E+02	1.615E+02	9.293E+00	0.180
		439.47		4.917E+01	7.761E+01	1.334E+02	8.130E+00	0.369
		484.57		-7.776E+01	1.292E+02	2.050E+02	1.316E+01	-0.379
		520.65	*	5.275E-01	5.856E+00	8.765E+00	5.847E-01	0.060
		574.64		-4.250E+01	1.243E+02	1.849E+02	1.302E+01	-0.230
		578.91		1.342E+01	5.676E+01	8.115E+01	5.738E+00	0.165
		585.48		1.015E+03	1.616E+02	2.824E+02	2.009E+01	3.595
		755.35		2.019E+01	8.091E+01	1.367E+02	1.228E+01	0.148
		817.79		1.552E+01	6.455E+01	1.084E+02	1.080E+01	0.143
SR-82		698.33		-9.097E+00	2.654E+01	4.340E+01	3.533E+00	-0.210
		776.49	*	-2.565E-01	2.778E-01	4.145E-01	3.860E-02	-0.619
		1395.20		-1.351E+01	8.082E+00	1.028E+01	7.665E-01	-1.314
RB-83		520.41	*	3.319E-03	5.470E-02	8.167E-02	5.447E-03	0.041
		529.64		-3.428E-02	8.006E-02	1.255E-01	8.449E-03	-0.273
		552.65		-1.400E-01	1.536E-01	2.342E-01	1.614E-02	-0.598
RB-84		881.50	*	-1.680E-02	5.238E-02	8.341E-02	9.193E-03	-0.201
KR-85		513.99	*	2.129E+01	6.366E+00	1.184E+01	7.843E-01	1.799
SR-85		513.99	*	1.078E-01	3.222E-02	5.992E-02	3.970E-03	1.799
RB-86		1076.63	*	-2.035E-02	5.685E-01	9.458E-01	7.529E-02	-0.022
Y-88		898.02		-1.501E-02	3.149E-02	4.935E-02	5.594E-03	-0.304
		1836.01	*	2.787E-02	2.427E-02	4.650E-02	2.649E-03	0.599

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-88		392.90	*	-1.454E-02	2.328E-02	3.767E-02	2.167E-03	-0.386
Y-91		1204.90	*	8.742E+00	1.407E+01	2.425E+01	1.433E+00	0.361
NB-94		702.63	*	-2.367E-03	2.686E-02	4.460E-02	3.659E-03	-0.053
		871.10		1.602E-02	2.592E-02	4.440E-02	4.815E-03	0.361
NB-95		765.79	*	9.806E-02	3.964E-02	6.664E-02	6.096E-03	1.471
NB-95M		235.69	*	8.529E-02	1.077E-01	1.628E-01	1.194E-02	0.524
ZR-95		724.18		7.933E-02	8.512E-02	1.314E-01	1.219E-02	0.604
		756.15	*	1.528E-02	4.914E-02	8.335E-02	8.201E-03	0.183
NB-97		657.90	*	4.699E-02	4.914E-02	Half-Life too short		
		1024.50		-8.791E-02	4.914E-02	Half-Life too short		
ZR-97		254.15		-6.437E-01	4.914E-02	Half-Life too short		
		355.39		-1.026E-02	4.914E-02	Half-Life too short		
		507.63	*	1.332E+00	4.914E-02	Half-Life too short		
		602.52		1.478E+00	4.914E-02	Half-Life too short		
		1021.30		-8.930E-01	4.914E-02	Half-Life too short		
		1147.95		-1.227E+00	4.914E-02	Half-Life too short		
		1362.66		-3.270E-01	4.914E-02	Half-Life too short		
		1750.46		1.153E-02	4.914E-02	Half-Life too short		
MO-99		140.51		1.751E+01	1.953E+01	2.797E+01	7.522E+00	0.626
		181.06		-1.953E+00	1.094E+01	1.603E+01	2.722E+00	-0.122
		366.43		-1.046E+01	4.709E+01	7.841E+01	4.529E+00	-0.133
		739.58	*	5.330E+00	6.384E+00	1.113E+01	1.698E+00	0.479
		778.00		-2.308E+01	1.995E+01	2.700E+01	2.521E+00	-0.855
TC-99M		140.51	*	1.172E+09	1.995E+01	Half-Life too short		
RH-101	+	127.23		6.615E-02	3.974E-02	4.564E-02	2.637E-03	1.449
		198.01	*	-6.770E-03	2.784E-02	4.551E-02	2.446E-03	-0.149
		325.23		-4.274E-02	2.034E-01	2.810E-01	1.624E-02	-0.152
RH-102		418.52		7.540E-02	2.154E-01	3.661E-01	2.175E-02	0.206
		475.06	*	-6.141E-03	2.377E-02	3.864E-02	2.454E-03	-0.159
		631.29		-1.371E-03	4.411E-02	7.085E-02	5.258E-03	-0.019
		697.49		-2.809E-02	6.311E-02	1.026E-01	8.339E-03	-0.274
	+	766.84		1.917E-01	1.399E-01	1.701E-01	1.558E-02	1.127
		1046.59		-2.727E-03	8.014E-02	1.337E-01	1.153E-02	-0.020
		1112.84		-6.560E-02	1.901E-01	2.593E-01	1.841E-02	-0.253
RU-103		497.08	*	-4.527E-04	3.217E-02	5.284E-02	6.860E-03	-0.009
	+	610.33		1.179E+01	2.338E+00	2.325E+00	3.728E-01	5.073
RH-106	+	511.85		6.645E-01	3.207E-01	3.649E-01	2.412E-02	1.821
		621.84	*	-1.230E-01	2.598E-01	4.043E-01	5.086E-02	-0.304
		1050.47		-7.716E-01	1.615E+00	2.589E+00	2.213E-01	-0.298
RU-106	+	511.85		6.645E-01	3.207E-01	3.649E-01	2.412E-02	1.821
		621.84	*	-1.230E-01	2.595E-01	4.043E-01	2.975E-02	-0.304
		1050.47		-7.716E-01	1.615E+00	2.589E+00	2.213E-01	-0.298
AG-108M		433.93	*	-6.314E-03	2.695E-02	4.423E-02	2.889E-03	-0.143
		614.37		-3.593E-02	3.809E-02	4.817E-02	3.712E-03	-0.746
		722.95		1.344E-02	3.591E-02	5.331E-02	4.714E-03	0.252
AG-110M		657.75	*	4.316E-02	3.063E-02	4.958E-02	3.911E-03	0.871
		677.61		6.447E-02	2.231E-01	3.807E-01	3.088E-02	0.169
		706.67		-1.287E-01	1.639E-01	2.593E-01	2.206E-02	-0.496
		763.93		2.060E-01	1.415E-01	2.276E-01	2.127E-02	0.905



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		884.67		5.719E-03	3.843E-02	6.356E-02	7.178E-03	0.090
		937.48		-7.324E-02	9.288E-02	1.414E-01	1.547E-02	-0.518
		1384.27		8.631E-02	1.217E-01	1.898E-01	1.472E-02	0.455
IN-111		171.28		-3.465E-01	5.931E-01	9.769E-01	5.140E-02	-0.355
		245.39	*	5.232E-02	6.884E-01	9.978E-01	5.576E-02	0.052
IN-113M		391.69	*	5.909E-03	3.387E-02	5.729E-02	3.514E-03	0.103
SN-113		391.69	*	5.909E-03	3.387E-02	5.729E-02	3.514E-03	0.103
IN-114M		190.27	*	4.174E-02	1.603E-01	2.398E-01	1.280E-02	0.174
CD-115		260.90		5.553E+00	7.100E+01	1.166E+02	6.584E+00	0.048
		492.35		-6.753E+00	2.063E+01	3.328E+01	2.154E+00	-0.203
		527.90	*	1.088E+00	5.680E+00	9.295E+00	6.248E-01	0.117
SN-117M		156.02		3.274E-01	1.701E+00	2.904E+00	1.551E-01	0.113
		158.56	*	6.761E-03	4.035E-02	6.878E-02	3.656E-03	0.098
SB-122		563.90	*	4.785E-01	1.118E+00	1.871E+00	1.303E-01	0.256
		692.80		-3.330E+00	2.405E+01	3.983E+01	3.211E+00	-0.084
I-123		159.00	*	-3.902E-02	2.405E+01	Half-Life too short		
		528.96		-6.302E+00	2.405E+01	Half-Life too short		
TE-123M		159.00	*	-9.042E-04	2.232E-02	3.775E-02	2.037E-03	-0.024
I-124		602.71	*	4.171E-01	5.022E-01	7.437E-01	5.378E-02	0.561
		722.78		1.146E+00	3.061E+00	4.544E+00	3.862E-01	0.252
		1325.50		6.531E+00	2.004E+01	3.389E+01	2.529E+00	0.193
	+	1376.25		4.559E+01	2.802E+01	4.207E+01	3.151E+00	1.083
		1509.49		1.124E+01	8.720E+00	1.658E+01	1.188E+00	0.678
		1691.02		-4.589E-01	2.250E+00	3.602E+00	2.323E-01	-0.127
SB-124		602.71		2.929E-02	3.526E-02	5.222E-02	3.777E-03	0.561
		645.85		3.083E-02	3.843E-01	6.209E-01	5.033E-02	0.050
		709.31		8.312E-01	2.069E+00	3.538E+00	2.937E-01	0.235
		713.82		-7.782E-01	1.217E+00	1.934E+00	2.293E-01	-0.402
		722.78		1.166E-01	3.116E-01	4.626E-01	4.019E-02	0.252
	+	968.20		1.034E+01	3.791E+00	5.514E+00	5.607E-01	1.875
		1045.16		-9.233E-01	1.722E+00	2.749E+00	2.381E-01	-0.336
		1325.50		7.101E-01	2.179E+00	3.685E+00	2.750E-01	0.193
		1368.21		-5.073E-01	1.397E+00	2.088E+00	2.671E-01	-0.243
		1436.60		6.621E-01	2.823E+00	4.706E+00	3.465E-01	0.141
		1691.02	*	-1.102E-02	5.402E-02	8.647E-02	5.966E-03	-0.127
SB-125		427.89	*	2.399E-02	7.762E-02	1.312E-01	8.197E-03	0.183
	+	463.38		5.285E-01	4.221E-01	4.490E-01	3.219E-02	1.177
		600.56		1.221E-01	1.484E-01	2.458E-01	1.958E-02	0.497
		635.90		1.918E-02	2.226E-01	3.602E-01	2.971E-02	0.053
TE-125M		109.28	*	-6.416E+00	8.410E+00	1.314E+01	1.155E+00	-0.488
I-126		388.63		1.454E-01	1.505E-01	2.642E-01	1.518E-02	0.551
		666.33	*	1.262E-01	1.435E-01	2.240E-01	1.722E-02	0.564
		753.82		1.180E+00	9.715E-01	1.743E+00	1.562E-01	0.677
SB-126		223.80		-1.810E+00	3.267E+00	5.286E+00	2.906E-01	-0.342
	+	278.60		2.065E+00	3.104E+00	3.320E+00	1.892E-01	0.622
	+	296.50		1.214E+01	2.054E+00	2.912E+00	1.671E-01	4.168
		414.70		9.041E-03	5.236E-02	8.820E-02	5.216E-03	0.103
		415.30		1.288E+00	4.343E+00	7.364E+00	4.358E-01	0.175
		555.20		6.275E-01	2.831E+00	4.679E+00	3.232E-01	0.134

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		573.80		-2.117E-01	7.890E-01	1.222E+00	8.596E-02	-0.173
		593.00		-3.484E-01	6.727E-01	1.048E+00	7.511E-02	-0.332
		656.30		-3.241E-01	2.567E+00	3.674E+00	2.788E-01	-0.088
		666.33		5.259E-02	5.981E-02	9.333E-02	7.175E-03	0.564
		675.00		5.662E-01	1.345E+00	2.315E+00	1.808E-01	0.245
		695.00		2.732E-02	5.631E-02	9.679E-02	7.834E-03	0.282
		697.00		-1.017E-02	2.006E-01	3.341E-01	2.714E-02	-0.030
		720.50	*	4.428E-02	1.152E-01	1.715E-01	1.452E-02	0.258
		856.80		2.869E-01	3.717E-01	5.661E-01	6.004E-02	0.507
		989.30		-3.079E-02	9.052E-01	1.460E+00	1.429E-01	-0.021
		1034.80		-1.996E+00	6.147E+00	9.603E+00	8.526E-01	-0.208
		1213.00		-1.564E-01	3.387E+00	5.569E+00	3.349E-01	-0.028
		61.10		-2.538E+01	5.223E+01	7.628E+01	7.702E+00	-0.333
		252.40		-7.670E-01	2.805E+00	4.514E+00	1.870E+00	-0.170
		290.80		-2.207E+00	1.544E+01	2.170E+01	1.882E+00	-0.102
		411.60		-8.969E-01	7.430E+00	1.232E+01	1.742E+00	-0.073
		444.90		-7.884E+00	6.241E+00	9.094E+00	9.650E-01	-0.867
		473.00		-3.345E-01	1.104E+00	1.789E+00	1.989E-01	-0.187
		543.00		6.152E+00	1.029E+01	1.740E+01	2.279E+00	0.354
		603.60		2.575E+00	8.665E+00	1.227E+01	1.381E+00	0.210
		685.20	*	1.977E-01	7.917E-01	1.346E+00	1.417E-01	0.147
		698.50		-2.626E+00	9.857E+00	1.619E+01	2.479E+00	-0.162
		722.20		1.189E+01	2.031E+01	3.071E+01	3.287E+00	0.387
		783.80		5.669E+00	2.518E+00	4.214E+00	5.345E-01	1.345
XE-127		57.60		5.038E-01	6.780E+00	1.139E+01	8.780E-01	0.044
		145.22		8.163E-01	6.835E-01	1.018E+00	5.562E-02	0.802
		172.10		-2.229E-02	9.263E-02	1.547E-01	8.142E-03	-0.144
		202.84	*	-6.152E-03	3.978E-02	6.371E-02	3.439E-03	-0.097
I-131		374.96		-6.502E-02	1.516E-01	2.493E-01	1.438E-02	-0.261
		80.18		2.131E+00	4.228E+00	6.367E+00	5.545E-01	0.335
		284.30		-1.436E+00	1.171E+00	1.708E+00	1.086E-01	-0.841
		364.48	*	-2.690E-02	7.551E-02	1.248E-01	8.039E-03	-0.216
TE-132		636.97		2.007E-01	1.108E+00	1.806E+00	1.445E-01	0.111
		722.89		2.037E+00	5.441E+00	8.078E+00	6.905E-01	0.252
		49.72		-7.054E-01	2.022E+01	3.409E+01	3.363E+00	-0.021
		111.76		1.463E+01	2.089E+01	3.458E+01	3.080E+00	0.423
BA-133		116.30		-1.110E+01	1.916E+01	3.006E+01	2.614E+00	-0.369
		228.16	*	-1.300E-01	4.479E-01	7.310E-01	1.024E-01	-0.178
		53.15		-8.077E-02	4.431E+00	7.450E+00	5.912E-01	-0.011
		79.62		-3.087E-01	1.347E+00	1.963E+00	2.989E-01	-0.157
+ I-133		81.00		-8.027E-02	1.048E-01	1.478E-01	2.354E-02	-0.543
		276.40		3.304E-01	4.982E-01	5.122E-01	6.616E-02	0.645
		302.84		1.094E-01	1.306E-01	1.947E-01	2.265E-02	0.562
		356.01	*	-2.067E-02	4.057E-02	5.397E-02	6.235E-03	-0.383
I-133		383.85		-7.748E-02	2.400E-01	3.960E-01	4.295E-02	-0.196
		510.53		5.091E-01	2.400E-01	Half-Life	too short	
		529.87	*	-6.194E-04	2.400E-01	Half-Life	too short	
		706.58		-9.504E-02	2.400E-01	Half-Life	too short	
		856.28		5.497E-02	2.400E-01	Half-Life	too short	

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Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134		875.33	-7.595E-03	2.400E-01	Half-Life	too short	
	+	1236.41	3.435E-01	2.400E-01	Half-Life	too short	
		1298.22	-6.442E-03	2.400E-01	Half-Life	too short	
		475.35	-9.828E-01	1.572E+00	2.498E+00	1.587E-01	-0.393
		563.23	1.271E-01	2.687E-01	4.506E-01	3.184E-02	0.282
		569.32	1.422E-02	1.524E-01	2.492E-01	1.781E-02	0.057
		604.70	-6.722E-03	3.271E-02	4.432E-02	3.222E-03	-0.152
	+	795.84	* 1.053E-01	6.065E-02	6.984E-02	6.755E-03	1.508
		801.93	5.856E-02	3.651E-01	5.390E-01	5.258E-02	0.109
		1038.57	-8.417E-01	2.722E+00	4.437E+00	3.904E-01	-0.190
CS-135 I-135		1167.94	-9.588E-01	1.703E+00	2.681E+00	1.520E-01	-0.358
		1365.15	-4.178E-01	9.130E-01	1.410E+00	1.122E-01	-0.296
		268.24	* 2.304E-01	1.428E-01	2.236E-01	1.690E-02	1.030
		288.45	9.386E+08	1.428E-01	Half-Life	too short	
		417.63	8.380E+07	1.428E-01	Half-Life	too short	
		546.56	1.441E+08	1.428E-01	Half-Life	too short	
		836.80	8.077E+08	1.428E-01	Half-Life	too short	
		1038.76	-1.062E+08	1.428E-01	Half-Life	too short	
		1124.00	5.219E+08	1.428E-01	Half-Life	too short	
		1131.51	-5.001E+07	1.428E-01	Half-Life	too short	
CS-136		1260.41	* -7.267E+07	1.428E-01	Half-Life	too short	
		1457.56	3.625E+10	1.428E-01	Half-Life	too short	
		1678.03	5.843E+07	1.428E-01	Half-Life	too short	
		1706.46	5.728E+08	1.428E-01	Half-Life	too short	
		1791.20	1.089E+08	1.428E-01	Half-Life	too short	
	+	66.91	7.150E-02	8.539E-01	1.263E+00	1.907E-01	0.057
		86.29	4.352E+00	1.298E+00	1.806E+00	2.381E-01	2.410
		153.22	3.343E-01	5.025E-01	8.721E-01	6.001E-02	0.383
		163.89	6.034E-01	8.164E-01	1.415E+00	9.664E-02	0.426
		176.55	-5.290E-02	2.761E-01	4.611E-01	2.794E-02	-0.115
CE-139 BA-140		273.65	1.566E-01	4.993E-01	5.323E-01	3.467E-02	0.294
		340.57	5.047E-01	1.226E-01	2.081E-01	1.280E-02	2.425
		818.51	1.046E-02	4.949E-02	8.287E-02	8.274E-03	0.126
		1048.07	* -3.596E-02	7.232E-02	1.159E-01	1.039E-02	-0.310
		1235.34	5.404E-01	4.969E-01	7.493E-01	7.702E-02	0.721
		165.85	* -3.608E-03	2.383E-02	4.003E-02	2.101E-03	-0.090
		162.64	4.024E-01	5.650E-01	9.795E-01	5.938E-02	0.411
		304.84	4.057E-01	1.052E+00	1.521E+00	4.150E-01	0.267
		423.70	-7.270E-01	1.448E+00	2.315E+00	7.365E-01	-0.314
		537.32	* -1.402E-01	1.905E-01	2.863E-01	9.366E-02	-0.490
LA-140	+	328.77	4.194E-01	3.278E-01	4.066E-01	2.635E-02	1.031
		432.53	3.253E-01	1.615E+00	2.713E+00	1.799E-01	0.120
		487.03	3.976E-02	1.042E-01	1.754E-01	1.251E-02	0.227
		751.79	1.027E-01	1.142E+00	1.908E+00	1.874E-01	0.054
		815.85	9.038E-02	2.119E-01	3.608E-01	3.899E-02	0.251
		867.82	-1.474E-01	1.151E+00	1.593E+00	1.777E-01	-0.093
		919.63	-1.594E+00	2.027E+00	2.768E+00	3.497E-01	-0.576
		925.24	3.859E-01	7.596E-01	1.289E+00	1.460E-01	0.299
		1596.49	* -1.996E-02	6.437E-02	9.699E-02	6.655E-03	-0.206

## ---- 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	*	5.856E-02	6.131E-02	9.026E-02	5.152E-03	0.649
CE-143		57.37		3.065E-05	6.131E-02	Half-Life too short		
		231.56		6.333E-05	6.131E-02	Half-Life too short		
		293.26	*	3.457E-04	6.131E-02	Half-Life too short		
	+	350.59		1.598E-02	6.131E-02	Half-Life too short		
		490.36		4.879E-04	6.131E-02	Half-Life too short		
		664.57		3.642E-03	6.131E-02	Half-Life too short		
		721.93		3.348E-04	6.131E-02	Half-Life too short		
CE-144		80.11		9.744E-01	2.154E+00	3.237E+00	2.803E-01	0.301
		133.54	*	6.913E-04	1.944E-01	2.948E-01	4.169E-02	0.002
PM-144		476.78		5.334E-03	5.494E-02	9.112E-02	6.761E-03	0.059
		618.01		7.471E-03	2.718E-02	4.345E-02	3.307E-03	0.172
		696.49	*	1.678E-02	2.690E-02	4.656E-02	3.780E-03	0.360
		778.57		-1.240E+00	1.840E+00	2.529E+00	2.364E-01	-0.490
PR-144		696.49	*	1.137E+00	1.821E+00	3.153E+00	2.559E-01	0.360
		1489.15		-2.315E+00	8.542E+00	1.329E+01	9.604E-01	-0.174
PM-146		453.90	*	-6.085E-03	3.481E-02	5.708E-02	5.078E-03	-0.107
		633.02		5.767E-01	1.144E+00	1.872E+00	6.947E-01	0.308
		735.90		-1.208E-01	1.244E-01	1.673E-01	4.790E-02	-0.722
		747.13		-8.663E-02	6.834E-02	1.008E-01	1.430E-02	-0.859
ND-147	+	91.11		7.029E-01	2.879E-01	4.886E-01	4.596E-02	1.439
		319.41		-1.132E+00	2.580E+00	4.057E+00	2.343E-01	-0.279
		439.89		2.950E+00	4.132E+00	7.132E+00	4.351E-01	0.414
		531.02	*	-1.757E-02	3.893E-01	6.343E-01	8.851E-02	-0.028
PM-149		285.90	*	-2.899E+01	5.127E+01	8.069E+01	1.141E+01	-0.359
EU-152		121.78		-5.898E-03	6.476E-02	1.035E-01	7.978E-03	-0.057
		244.69		1.278E-02	2.922E-01	4.227E-01	2.361E-02	0.030
		344.27	*	-8.254E-02	9.577E-02	1.230E-01	8.026E-03	-0.671
		443.98		-7.870E-01	7.587E-01	1.133E+00	6.943E-02	-0.695
		778.89		-2.262E-02	2.081E-01	3.047E-01	2.849E-02	-0.074
		867.32		2.175E-01	7.231E-01	1.051E+00	1.133E-01	0.207
		964.01		4.853E-01	2.959E-01	4.647E-01	4.760E-02	1.044
		1085.78		-2.408E-01	2.721E-01	4.167E-01	3.229E-02	-0.578
		1112.02		-4.423E-02	2.785E-01	3.891E-01	2.770E-02	-0.114
		1407.95		1.957E-01	1.614E-01	2.902E-01	2.155E-02	0.674
GD-153		69.67		-1.102E+00	1.998E+00	2.627E+00	2.133E-01	-0.420
		83.37		7.471E-01	1.731E+01	2.308E+01	2.050E+00	0.032
		97.43	*	-6.116E-02	8.171E-02	1.139E-01	8.904E-03	-0.537
		103.18		-1.022E-01	9.954E-02	1.545E-01	1.114E-02	-0.662
EU-154		123.07		-1.097E-02	4.741E-02	7.148E-02	6.760E-03	-0.153
		247.94		-5.235E-02	3.088E-01	4.650E-01	4.380E-02	-0.113
		591.81		-4.184E-01	5.172E-01	7.319E-01	7.785E-02	-0.572
		723.30		3.264E-02	1.521E-01	2.225E-01	2.097E-02	0.147
		756.87		1.676E-01	5.420E-01	9.188E-01	1.126E-01	0.182
		873.19		-1.023E-01	2.248E-01	3.535E-01	4.923E-02	-0.290
		996.32		-2.099E-01	3.127E-01	4.751E-01	8.689E-02	-0.442
		1004.76		-2.710E-01	1.908E-01	2.694E-01	3.313E-02	-1.006
		1274.45	*	-3.609E-02	9.300E-02	1.474E-01	1.473E-02	-0.245
EU-155		48.70		-6.784E-01	3.401E+00	5.703E+00	4.326E-01	-0.119

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	60.01		1.143E+00	5.847E+00	8.861E+00	6.762E-01	0.129
		86.54		4.282E-01	1.212E-01	1.798E-01	1.656E-02	2.381
	+	105.31	*	8.293E-02	1.005E-01	1.677E-01	1.199E-02	0.494
		86.79		1.131E+00	3.197E-01	4.771E-01	4.365E-02	2.370
		197.04		-6.180E-02	4.589E-01	7.530E-01	4.044E-02	-0.082
		215.65		7.413E-01	6.307E-01	1.026E+00	5.599E-02	0.723
		298.57		9.987E-02	1.487E-01	1.624E-01	9.327E-03	0.615
		879.36	*	3.723E-02	1.020E-01	1.717E-01	1.886E-02	0.217
		962.29		5.354E-01	5.077E-01	7.716E-01	7.927E-02	0.694
		966.15		9.988E-01	2.559E-01	4.231E-01	4.318E-02	2.360
HO-166M		1177.93		-1.508E-02	2.639E-01	4.347E-01	2.427E-02	-0.035
		1271.85		4.194E-01	5.071E-01	8.918E-01	6.027E-02	0.470
		80.57		7.361E-02	2.780E-01	4.143E-01	3.599E-02	0.178
		184.41		1.702E-01	3.782E-02	6.529E-02	3.469E-03	2.607
		280.46		2.097E-02	7.877E-02	1.142E-01	6.513E-03	0.184
		410.95		9.123E-02	1.903E-01	3.255E-01	1.916E-02	0.280
		711.68	*	1.834E-02	4.496E-02	7.695E-02	6.414E-03	0.238
		752.31		1.101E-01	1.940E-01	3.348E-01	2.993E-02	0.329
		810.29		-5.415E-02	4.515E-02	6.693E-02	6.590E-03	-0.809
		51.35		-1.905E+01	3.977E+01	6.574E+01	5.210E+00	-0.290
TM-171		52.39		5.389E-01	1.973E+01	3.326E+01	2.642E+00	0.016
		59.40		2.880E+01	3.150E+01	4.935E+01	3.747E+00	0.584
	+	66.72	*	1.500E+01	2.992E+01	4.924E+01	3.937E+00	0.305
		88.36		8.437E-01	2.385E-01	3.472E-01	3.188E-02	2.430
LU-176		201.83		4.679E-03	2.407E-02	4.043E-02	2.180E-03	0.116
		306.84	*	1.328E-02	2.195E-02	3.240E-02	1.865E-03	0.410
		401.10		-2.594E+00	5.229E+00	8.514E+00	4.949E-01	-0.305
		112.95		-1.007E-01	1.311E+00	2.108E+00	1.358E-01	-0.048
LU-177	+	208.36	*	2.590E+00	1.314E+00	1.454E+00	7.885E-02	1.782
		52.97		-1.935E-01	1.991E+00	3.337E+00	2.649E-01	-0.058
		54.07		-1.902E-02	1.039E+00	1.745E+00	1.379E-01	-0.011
		61.30		-7.062E-01	1.671E+00	2.449E+00	1.893E-01	-0.288
LU-177M		121.62		7.193E-03	3.319E-01	5.332E-01	3.163E-02	0.013
		147.16		2.354E-01	6.119E-01	8.802E-01	4.790E-02	0.267
		171.86		-2.766E-01	3.831E-01	6.272E-01	3.302E-02	-0.441
		218.09		-1.249E+00	7.072E-01	1.081E+00	5.913E-02	-1.155
		268.79		1.758E+00	7.477E-01	1.210E+00	6.860E-02	1.453
		319.02		-7.276E-02	2.166E-01	3.427E-01	1.978E-02	-0.212
		367.43		-1.219E-01	6.720E-01	1.121E+00	6.473E-02	-0.109
		413.65	*	-8.236E-02	1.348E-01	2.174E-01	1.284E-02	-0.379
		56.28		-5.704E-01	1.084E+00	1.781E+00	1.388E-01	-0.320
		57.53		3.430E-02	5.728E-01	9.620E-01	7.418E-02	0.036
	+	65.20		5.124E+00	2.258E+00	1.711E+00	1.357E-01	2.995
		133.02		2.699E-02	6.366E-02	9.243E-02	5.229E-03	0.292
		136.25		1.374E-02	3.896E-01	6.215E-01	3.480E-02	0.022
		345.85		-6.824E-02	2.193E-01	2.476E-01	1.433E-02	-0.276
HF-181		482.03	*	-1.748E-02	3.297E-02	5.256E-02	3.364E-03	-0.333
		56.28		-2.268E-01	4.299E-01	7.062E-01	5.501E-02	-0.321
		57.53		1.357E-02	2.273E-01	3.818E-01	2.944E-02	0.036
W-181		56.28		-2.268E-01	4.299E-01	7.062E-01	5.501E-02	-0.321
		57.53		1.357E-02	2.273E-01	3.818E-01	2.944E-02	0.036

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TA-182	+	65.20	*	2.018E+00	8.890E-01	6.737E-01	5.343E-02	2.995
		67.75		-1.144E-01	1.274E-01	1.791E-01	1.440E-02	-0.639
		100.10		1.009E-01	1.606E-01	2.671E-01	2.008E-02	0.378
		152.43		1.992E-01	2.904E-01	4.722E-01	2.540E-02	0.422
		222.10		3.181E-01	2.869E-01	4.951E-01	2.717E-02	0.642
		1001.68		2.050E+00	1.793E+00	3.038E+00	2.901E-01	0.675
		1121.28		4.696E-01	1.596E-01	2.703E-01	1.862E-02	1.738
		1189.05		-3.739E-02	2.140E-01	3.487E-01	1.994E-02	-0.107
		1221.42	*	-5.473E-02	1.476E-01	2.366E-01	1.448E-02	-0.231
		1230.97		1.103E-01	4.040E-01	5.848E-01	3.647E-02	0.189
RE-183		57.98		5.304E-02	2.231E-01	3.770E-01	2.897E-02	0.141
		59.32		1.192E-01	1.284E-01	2.013E-01	1.529E-02	0.592
		67.20		-1.046E-02	2.287E-01	3.362E-01	2.694E-02	-0.031
		162.32	*	6.017E-02	8.722E-02	1.511E-01	7.978E-03	0.398
RE-184	+	208.81		2.611E+00	1.325E+00	1.459E+00	7.917E-02	1.790
		291.72		-5.837E-01	8.515E-01	1.148E+00	6.580E-02	-0.508
		57.98		1.968E-01	8.281E-01	1.399E+00	1.075E-01	0.141
		59.32		4.420E-01	4.761E-01	7.465E-01	5.671E-02	0.592
		67.20		-3.881E-02	8.486E-01	1.247E+00	9.996E-02	-0.031
		161.27		-9.167E-02	2.812E-01	4.701E-01	2.486E-02	-0.195
		216.55		1.370E-02	2.115E-01	3.518E-01	1.922E-02	0.039
		252.85	*	-4.732E-02	1.837E-01	2.976E-01	1.672E-02	-0.159
		318.01		1.579E-01	3.708E-01	6.108E-01	3.525E-02	0.258
		792.07		4.104E-01	1.183E+00	1.312E+00	1.254E-01	0.313
OS-185		903.28		3.833E-01	8.797E-01	1.290E+00	1.448E-01	0.297
		920.93		-3.006E-01	3.314E-01	4.783E-01	5.242E-02	-0.628
		59.72		2.390E-01	3.438E-01	5.334E-01	4.057E-02	0.448
		61.14		-8.809E-02	1.834E-01	2.680E-01	2.068E-02	-0.329
		69.30		-1.917E-01	3.552E-01	4.677E-01	3.789E-02	-0.410
		592.07		-1.594E+00	2.000E+00	2.950E+00	2.112E-01	-0.540
		646.12	*	1.093E-02	3.257E-02	5.359E-02	4.030E-03	0.204
		717.42		-1.983E-01	6.764E-01	1.079E+00	9.083E-02	-0.184
		874.81		-7.775E-02	4.410E-01	7.114E-01	7.760E-02	-0.109
		880.27		1.812E-01	5.564E-01	9.343E-01	1.028E-01	0.194
RE-188		155.03	*	4.167E-02	1.362E-01	2.336E-01	1.250E-02	0.178
		477.96		2.419E+00	2.455E+00	4.267E+00	2.719E-01	0.567
		633.10		1.653E+00	2.227E+00	3.761E+00	2.796E-01	0.440
W-188	+	63.58		2.686E+02	1.183E+02	1.064E+02	8.357E+00	2.525
IR-192		227.08		1.278E-01	1.045E+01	1.729E+01	9.527E-01	0.007
		290.67	*	-1.054E-01	6.622E+00	9.389E+00	5.378E-01	-0.011
	+	295.96		9.841E-01	1.668E-01	2.399E-01	1.399E-02	4.102
		308.46		5.181E-03	7.511E-02	1.218E-01	7.096E-03	0.043
		316.51	*	1.112E-02	2.872E-02	4.722E-02	2.738E-03	0.236
AU-195		468.07		-2.627E-02	6.486E-02	8.993E-02	6.409E-03	-0.292
		604.41		6.512E-02	4.192E-01	5.863E-01	7.124E-02	0.111
		612.46		2.074E+00	7.538E-01	1.230E+00	1.079E-01	1.687
	+	65.12		9.344E-01	4.118E-01	3.158E-01	2.503E-02	2.959
		66.83		1.185E-02	1.091E-01	1.616E-01	1.293E-02	0.073
	+	75.70		1.004E+00	2.402E-01	4.191E-01	3.519E-02	2.396

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-200	+	98.88	*	9.074E-02	2.280E-01	3.376E-01	2.583E-02	0.269
		129.76		5.807E+00	3.489E+00	4.342E+00	2.484E-01	1.337
		367.94	*	-4.022E-06	3.489E+00	Half-Life	too short	
		579.30		1.193E-03	3.489E+00	Half-Life	too short	
		828.27		3.125E-04	3.489E+00	Half-Life	too short	
TL-201		1205.75		9.384E-04	3.489E+00	Half-Life	too short	
		68.90		-2.042E+00	3.982E+00	5.778E+00	4.671E-01	-0.353
		70.82		1.760E+00	2.386E+00	3.366E+00	2.749E-01	0.523
		80.30		1.194E+00	3.900E+00	5.824E+00	5.050E-01	0.205
		135.34		1.026E+01	1.665E+01	2.722E+01	1.529E+00	0.377
TL-202		167.43	*	-2.643E+00	4.243E+00	6.992E+00	3.671E-01	-0.378
		68.90		-2.265E-01	4.416E-01	6.408E-01	5.180E-02	-0.353
		70.82		1.946E-01	2.639E-01	3.723E-01	3.040E-02	0.523
		80.30		1.321E-01	4.315E-01	6.444E-01	5.587E-02	0.205
		439.56	*	3.121E-02	5.007E-02	8.600E-02	5.243E-03	0.363
BI-207	+	72.80		1.655E-01	1.952E-01	2.993E-01	2.470E-02	0.553
		74.97		5.594E-01	1.339E-01	2.168E-01	1.813E-02	2.580
		84.90		2.441E-01	1.975E-01	3.003E-01	2.702E-02	0.813
		569.67		5.353E-04	2.379E-02	3.871E-02	2.712E-03	0.014
		1063.62	*	1.176E-02	4.121E-02	7.024E-02	5.798E-03	0.167
TL-207		1770.23		1.371E-01	3.762E-01	5.688E-01	3.441E-02	0.241
		81.07		-1.834E-01	2.299E-01	3.253E-01	2.837E-02	-0.564
		83.78		-1.028E-02	1.358E-01	1.964E-01	1.751E-02	-0.052
		94.90		3.755E-01	2.324E-01	3.954E-01	3.218E-02	0.950
		122.32		-9.503E-01	1.550E+00	2.419E+00	1.643E-01	-0.393
PO-209	+	144.24		1.046E+00	6.992E-01	1.039E+00	7.248E-02	1.007
		154.21		1.480E-01	3.235E-01	5.575E-01	3.710E-02	0.265
		269.46		4.528E-01	2.252E-01	2.958E-01	1.757E-02	1.531
		323.87	*	1.836E-02	6.151E-01	8.658E-01	1.429E-01	0.021
		338.28		7.711E+00	1.763E+00	2.074E+00	2.183E-01	3.717
PO-215	+	445.03		-1.970E+00	1.798E+00	2.656E+00	2.779E-01	-0.742
		260.50		2.150E+00	7.675E+00	1.273E+01	7.184E-01	0.169
		262.80		-8.956E+00	2.095E+01	3.353E+01	1.895E+00	-0.267
		896.60	*	-4.362E+00	5.736E+00	8.746E+00	9.865E-01	-0.499
		46.50	*	1.164E+00	5.111E+00	8.724E+00	6.750E-01	0.133
BI-210		46.50	*	1.164E+00	5.111E+00	8.724E+00	6.750E-01	0.133
PB-210		46.50	*	1.164E+00	5.111E+00	8.724E+00	6.750E-01	0.133
PO-210		46.50	*	1.164E+00	5.111E+00	8.724E+00	5.803E-01	0.133
PB-211		404.84	*	-2.723E-01	7.933E-01	1.273E+00	7.936E-01	-0.214
PO-215	+	427.08		1.101E+00	1.810E+00	2.886E+00	1.785E+00	0.381
		831.96		-3.050E-01	9.488E-01	1.491E+00	9.379E-01	-0.205
		81.07		-1.834E-01	2.299E-01	3.253E-01	2.837E-02	-0.564
		83.78		-1.028E-02	1.358E-01	1.964E-01	1.751E-02	-0.052
		94.90		3.755E-01	2.324E-01	3.954E-01	3.218E-02	0.950
PO-215	+	122.32		-9.503E-01	1.550E+00	2.419E+00	1.643E-01	-0.393
		144.24		1.046E+00	6.992E-01	1.039E+00	7.248E-02	1.007
		154.21		1.480E-01	3.235E-01	5.575E-01	3.710E-02	0.265
		269.46		4.528E-01	2.252E-01	2.958E-01	1.757E-02	1.531
		323.87	*	1.836E-02	6.151E-01	8.658E-01	1.429E-01	0.021
	+	338.28		7.711E+00	1.763E+00	2.074E+00	2.183E-01	3.717

---- 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		-1.970E+00	1.798E+00	2.656E+00	2.779E-01	-0.742
		271.23		5.809E-01	2.906E-01	3.787E-01	3.036E-02	1.534
		401.81	*	1.052E-01	3.246E-01	5.514E-01	7.506E-02	0.191
		549.76	*	4.823E+00	2.008E+01	3.324E+01	2.284E+00	0.145
RN-220		81.07		-1.834E-01	2.299E-01	3.253E-01	2.837E-02	-0.564
RA-223		83.78		-1.028E-02	1.358E-01	1.964E-01	1.751E-02	-0.052
		94.90		3.755E-01	2.324E-01	3.954E-01	3.218E-02	0.950
		122.32		-9.503E-01	1.550E+00	2.419E+00	1.643E-01	-0.393
		144.24		1.046E+00	6.992E-01	1.039E+00	7.248E-02	1.007
	+	154.21		1.480E-01	3.235E-01	5.575E-01	3.710E-02	0.265
		269.46		4.528E-01	2.252E-01	2.958E-01	1.757E-02	1.531
		323.87	*	1.836E-02	6.151E-01	8.658E-01	1.429E-01	0.021
		338.28		7.711E+00	1.763E+00	2.074E+00	2.183E-01	3.717
AC-227		445.03		-1.970E+00	1.798E+00	2.656E+00	2.779E-01	-0.742
		79.80		3.673E-01	1.664E+00	2.475E+00	5.324E-01	0.148
		236.00		5.468E-01	2.194E-01	3.481E-01	3.591E-02	1.570
		256.20	*	-3.204E-02	3.094E-01	5.046E-01	7.009E-02	-0.063
	+	286.10		-6.298E-01	1.264E+00	1.999E+00	2.303E-01	-0.315
		299.80		3.644E+00	2.067E+00	2.192E+00	3.566E-01	1.663
		304.40		6.032E-01	1.654E+00	2.396E+00	4.141E-01	0.252
		334.20		1.698E-01	2.806E+00	2.833E+00	5.192E-01	0.060
TH-227	+	79.80		3.673E-01	1.664E+00	2.475E+00	5.392E-01	0.148
		94.00		2.018E+01	5.167E+00	4.344E+00	9.401E-01	4.644
		236.00		5.468E-01	2.175E-01	3.481E-01	3.098E-02	1.570
		256.20	*	-3.204E-02	3.094E-01	5.046E-01	8.499E-02	-0.063
	+	286.10		-6.298E-01	1.411E+00	1.999E+00	2.002E+00	-0.315
		299.80		3.644E+00	2.067E+00	2.192E+00	3.566E-01	1.663
		304.40		6.032E-01	1.654E+00	2.396E+00	4.141E-01	0.252
		334.20		1.698E-01	2.806E+00	2.833E+00	5.192E-01	0.060
TH-229	+	85.43		2.782E-01	1.975E-01	3.015E-01	2.726E-02	0.923
		88.47		4.857E-01	1.373E-01	1.993E-01	1.826E-02	2.437
		100.00		1.234E-01	1.687E-01	2.816E-01	2.120E-02	0.438
		193.63	*	-1.800E-01	4.037E-01	6.630E-01	3.550E-02	-0.272
PA-231	+	210.97		6.775E-01	7.180E-01	1.100E+00	5.978E-02	0.616
		283.67	*	-6.662E-01	1.351E+00	1.963E+00	2.698E-01	-0.339
		301.29		1.458E+00	8.066E-01	8.807E-01	9.180E-02	1.655
		81.07		-1.834E-01	2.299E-01	3.253E-01	2.837E-02	-0.564
TH-231		83.78		-1.028E-02	1.358E-01	1.964E-01	1.751E-02	-0.052
		94.90		3.755E-01	2.324E-01	3.954E-01	3.218E-02	0.950
		122.32		-9.503E-01	1.550E+00	2.419E+00	1.643E-01	-0.393
		144.24		1.046E+00	6.992E-01	1.039E+00	7.248E-02	1.007
	+	154.21		1.480E-01	3.235E-01	5.575E-01	3.710E-02	0.265
		269.46		4.528E-01	2.252E-01	2.958E-01	1.757E-02	1.531
		323.87	*	1.836E-02	6.151E-01	8.658E-01	1.429E-01	0.021
		338.28		7.711E+00	1.763E+00	2.074E+00	2.183E-01	3.717
U-231	+	445.03		-1.970E+00	1.798E+00	2.656E+00	2.779E-01	-0.742
		84.21		2.148E+00	4.670E+00	6.907E+00	6.179E-01	0.311
		92.29		1.628E+01	2.603E+00	3.832E+00	3.263E-01	4.247
		95.87	*	-9.573E-02	8.946E-01	1.294E+00	1.037E-01	-0.074



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233		108.00		-1.693E+00	1.544E+00	2.380E+00	1.618E-01	-0.712
	+	75.28		1.633E+01	4.423E+00	6.416E+00	9.760E-01	2.545
	+	86.59		6.964E+00	2.646E+00	2.931E+00	7.911E-01	2.376
	+	300.12		1.016E+00	5.687E-01	6.112E-01	8.199E-02	1.662
		311.98	*	-2.751E-02	5.182E-02	8.116E-02	4.972E-03	-0.339
		340.50		2.814E+00	8.966E-01	1.100E+00	2.527E-01	2.557
PA-234		398.62		-1.100E+00	1.600E+00	2.533E+00	6.548E-01	-0.434
		415.76		-1.470E-03	1.246E+00	2.078E+00	4.284E-01	-0.001
	+	63.00		7.885E+00	3.620E+00	3.156E+00	4.757E-01	2.499
		94.67		5.240E-01	1.839E-01	3.074E-01	3.717E-02	1.705
		98.44		4.084E-02	9.485E-02	1.368E-01	7.615E-02	0.298
		99.86		3.735E-01	4.299E-01	7.207E-01	5.437E-02	0.518
		111.00		-7.174E-02	1.694E-01	2.685E-01	2.881E-02	-0.267
		131.20		-2.986E-02	1.074E-01	1.502E-01	8.549E-03	-0.199
		152.70		5.148E-02	2.879E-01	4.581E-01	7.173E-02	0.112
	+	186.00		1.043E+01	3.723E+00	2.670E+00	8.134E-01	3.908
		226.40		1.796E-01	3.378E-01	5.696E-01	6.503E-02	0.315
		227.20		-9.566E-02	3.593E-01	5.875E-01	3.238E-02	-0.163
		248.90		1.193E-01	6.509E-01	1.077E+00	2.309E-01	0.111
	+	293.70		6.266E+00	1.417E+00	1.436E+00	2.306E-01	4.364
		369.80		1.525E-01	6.577E-01	1.119E+00	2.329E-01	0.136
		568.70		3.039E-02	7.805E-01	1.271E+00	8.901E-02	0.024
		569.50		4.755E-03	2.111E-01	3.435E-01	2.407E-02	0.014
		574.00		-5.327E-01	1.230E+00	1.881E+00	1.323E-01	-0.283
		699.00		-2.483E-02	5.806E-01	9.670E-01	1.825E-01	-0.026
		706.10		-5.014E-01	8.429E-01	1.303E+00	5.801E-01	-0.385
		733.00		4.064E-02	2.927E-01	4.255E-01	9.450E-02	0.096
		742.81		9.574E-01	1.207E+00	1.804E+00	1.213E+00	0.531
	+	796.30		2.049E+00	1.292E+00	1.364E+00	3.736E-01	1.502
		805.60		1.128E+00	8.666E-01	1.411E+00	4.374E-01	0.800
		819.60		-6.275E-01	9.414E-01	1.415E+00	5.430E-01	-0.443
		826.30		4.289E-01	6.519E-01	1.077E+00	4.851E-01	0.398
		831.60		-4.314E-01	5.013E-01	7.428E-01	2.253E-01	-0.581
		876.40		-3.030E-01	7.019E-01	9.879E-01	1.018E+00	-0.307
		880.51		-7.613E-02	2.112E-01	3.349E-01	3.685E-02	-0.227
		883.24		-6.921E-02	2.257E-01	3.520E-01	2.379E-01	-0.197
		899.00		1.602E-01	6.473E-01	1.071E+00	4.747E-01	0.150
		925.00		4.107E-01	8.352E-01	1.416E+00	1.543E-01	0.290
		926.50		5.799E-02	1.304E-01	2.187E-01	5.715E-02	0.265
		946.00	*	1.526E-01	2.339E-01	3.967E-01	7.826E-02	0.385
		949.00		2.363E-01	3.396E-01	5.811E-01	6.103E-02	0.407
		980.50		-1.811E-01	5.545E-01	8.718E-01	8.671E-02	-0.208
		1394.10		-8.000E-01	9.853E-01	1.196E+00	7.767E-01	-0.669
PA-234M		766.42		2.551E+01	1.683E+01	1.824E+01	9.273E+00	1.399
NP-236		1001.03	*	4.802E+00	4.115E+00	6.970E+00	7.519E-01	0.689
		94.67		4.034E-01	1.352E-01	2.337E-01	1.910E-02	1.726
		98.44		3.086E-02	6.965E-02	1.034E-01	7.966E-03	0.298
		111.00		-5.426E-02	1.280E-01	2.031E-01	1.336E-02	-0.267
		160.31	*	-5.091E-02	6.359E-02	1.043E-01	5.528E-03	-0.488

----- 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		1.573E-01	1.504E-01	2.428E-01	1.840E-02	0.648
		117.00	*	-1.736E-01	1.678E-01	2.572E-01	1.592E-02	-0.675
	+	209.75		2.085E+00	1.058E+00	1.163E+00	6.315E-02	1.793
		228.18		-5.329E-02	1.901E-01	3.106E-01	1.713E-02	-0.172
	+	277.60		1.613E-01	2.424E-01	2.567E-01	1.462E-02	0.628
AM-241		334.30		3.962E-02	1.588E+00	1.595E+00	9.226E-02	0.025
		59.54	*	1.624E-01	1.826E-01	2.856E-01	2.369E-02	0.568
CM-243		99.55		1.619E-01	1.547E-01	2.499E-01	1.893E-02	0.648
		103.76	*	-1.435E-02	9.086E-02	1.464E-01	1.048E-02	-0.098
		117.00		-1.785E-01	1.726E-01	2.646E-01	1.638E-02	-0.675
	+	209.75		2.055E+00	1.043E+00	1.146E+00	6.225E-02	1.793
		228.18		-5.384E-02	1.921E-01	3.138E-01	1.731E-02	-0.172
AM-246	+	277.60		1.626E-01	2.444E-01	2.587E-01	1.474E-02	0.628
		798.80		-1.910E-01	1.376E-01	1.657E-01	1.601E-02	-1.153
		1036.00		-1.207E-01	2.136E-01	3.404E-01	3.014E-02	-0.355
		1062.04		1.842E-01	1.791E-01	3.200E-01	2.652E-02	0.576
		1078.86	*	5.657E-02	1.030E-01	1.791E-01	1.416E-02	0.316
CM-247	+	278.00		6.688E-01	1.005E+00	1.062E+00	6.051E-02	0.630
		287.40		9.025E-01	1.028E+00	1.687E+00	9.651E-02	0.535
CF-249		402.60	*	1.979E-02	3.006E-02	5.187E-02	3.021E-03	0.382
		252.85		-1.784E-01	6.927E-01	1.122E+00	6.304E-02	-0.159
		333.44		1.948E-02	2.080E-01	2.110E-01	1.220E-02	0.092
CF-251		387.95	*	2.857E-02	3.155E-02	5.523E-02	3.175E-03	0.517
		176.60	*	-1.860E-02	1.016E-01	1.697E-01	8.964E-03	-0.110
		227.00		2.030E-02	3.181E-01	5.274E-01	2.906E-02	0.038
		285.00		-1.042E+00	1.437E+00	2.249E+00	1.285E-01	-0.463

# 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]G244132003      *
* Acquisition date   : 19-JAN-2010 09:23:33 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 02:00:01.63           Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132003           Analyst initials: MXR1          *
* Batch Number       : 940270              Sample Quantity : 1.2772E+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	2.056E+01	1.939E+00	3.750E-01	0.000E+00
CD-109	3.612E+00	1.001E+00	1.232E+00	0.000E+00
SN-126	3.557E-01	9.855E-02	1.221E-01	0.000E+00
BA-137M	4.478E-01	6.665E-02	4.601E-02	0.000E+00
CS-137	4.734E-01	7.050E-02	4.864E-02	0.000E+00
HG-203	3.619E-02	5.332E-02	5.280E-02	0.000E+00
TL-208	4.616E-01	7.879E-02	4.593E-02	0.000E+00
BI-211	3.739E+00	4.259E-01	2.802E-01	0.000E+00
BI-212	8.308E-01	4.350E-01	3.606E-01	0.000E+00
PB-212	1.484E+00	1.369E-01	7.182E-02	0.000E+00
PO-212	1.484E+00	1.369E-01	7.182E-02	0.000E+00
BI-214	1.116E+00	1.607E-01	9.341E-02	0.000E+00
PB-214	1.300E+00	1.624E-01	9.766E-02	0.000E+00
PO-214	1.300E+00	1.624E-01	9.766E-02	0.000E+00
PO-216	1.484E+00	1.369E-01	7.182E-02	0.000E+00
PO-218	1.300E+00	1.624E-01	9.766E-02	0.000E+00
RA-224	3.807E+00	8.511E-01	8.161E-01	0.000E+00
RA-226	1.116E+00	1.607E-01	9.341E-02	0.000E+00
AC-228	1.579E+00	2.973E-01	1.521E-01	0.000E+00
RA-228	1.579E+00	2.973E-01	1.521E-01	0.000E+00
TH-228	1.505E+00	1.388E-01	7.282E-02	0.000E+00
TH-230	1.116E+00	1.607E-01	9.341E-02	0.000E+00
TH-232	1.579E+00	2.973E-01	1.521E-01	0.000E+00
TH-234	6.764E+00	3.103E+00	2.274E+00	0.000E+00
U-234	1.116E+00	1.607E-01	9.341E-02	0.000E+00
U-235	3.229E-01	2.164E-01	3.136E-01	0.000E+00
NP-237	1.045E+00	3.583E-01	4.067E-01	0.000E+00
U-238	6.764E+00	3.103E+00	2.274E+00	0.000E+00
AM-243	3.117E-01	7.309E-02	9.353E-02	0.000E+00
ANH-511	1.334E-01	6.308E-02	3.593E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	1.534E-01	2.510E-01	4.440E-01	0.000E+00	NOT IDENT.
NA-22	-1.865E-02	3.308E-02	5.285E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.544E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.772E-03	1.929E-02	3.270E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.273E-02	7.848E-02	0.000E+00	FAIL ABUN
SC-46	3.048E-02	2.983E-02	5.363E-02	0.000E+00	FAIL ABUN
V-48	-1.614E-02	4.995E-02	8.069E-02	0.000E+00	NOT IDENT.
CR-51	-2.306E-01	2.996E-01	4.832E-01	0.000E+00	NOT IDENT.
MN-52	1.188E-01	1.458E-01	2.636E-01	0.000E+00	NOT IDENT.
MN-54	4.582E-03	2.845E-02	4.867E-02	0.000E+00	NOT IDENT.
CO-56	5.202E-03	2.772E-02	4.751E-02	0.000E+00	FAIL ABUN
CO-57	-1.258E-02	2.195E-02	3.638E-02	0.000E+00	NOT IDENT.
CO-58	-3.101E-02	2.837E-02	4.378E-02	0.000E+00	NOT IDENT.
FE-59	-2.644E-02	6.156E-02	1.013E-01	0.000E+00	FAIL ABUN
CO-60	-6.004E-03	2.846E-02	4.653E-02	0.000E+00	NOT IDENT.
ZN-65	5.292E-02	7.734E-02	1.206E-01	0.000E+00	NOT IDENT.
GE-68	2.584E-01	8.896E-01	1.555E+00	0.000E+00	NOT IDENT.
AS-73	4.426E-01	9.928E-01	1.818E+00	0.000E+00	NOT IDENT.
AS-74	-1.365E-02	6.683E-02	1.103E-01	0.000E+00	NOT IDENT.
SE-75	-2.156E-03	3.587E-02	5.661E-02	0.000E+00	NOT IDENT.
BR-77	5.275E-01	5.739E+00	8.905E+00	0.000E+00	FAIL ABUN
SR-82	-2.565E-01	2.722E-01	4.186E-01	0.000E+00	NOT IDENT.
RB-83	3.319E-03	5.361E-02	8.297E-02	0.000E+00	NOT IDENT.
RB-84	-1.680E-02	5.133E-02	8.407E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	6.238E+00	1.203E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.158E-02	6.089E-02	0.000E+00	NOT IDENT.
RB-86	-2.035E-02	5.571E-01	9.503E-01	0.000E+00	NOT IDENT.
Y-88	2.787E-02	2.378E-02	4.633E-02	0.000E+00	NOT IDENT.
ZR-88	-1.454E-02	2.282E-02	3.844E-02	0.000E+00	NOT IDENT.
Y-91	8.742E+00	1.378E+01	2.432E+01	0.000E+00	NOT IDENT.
NB-94	-2.367E-03	2.633E-02	4.511E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	3.884E-02	6.731E-02	0.000E+00	NOT IDENT.
NB-95M	8.529E-02	1.056E-01	1.674E-01	0.000E+00	NOT IDENT.
ZR-95	1.528E-02	4.816E-02	8.420E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.584E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	4.858E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	5.330E+00	6.256E+00	1.125E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.279E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.770E-03	2.728E-02	4.691E-02	0.000E+00	FAIL ABUN
RH-102	-6.141E-03	2.330E-02	3.931E-02	0.000E+00	FAIL ABUN
RU-103	-4.527E-04	3.153E-02	5.372E-02	0.000E+00	FAIL ABUN
RH-106	-1.230E-01	2.546E-01	4.097E-01	0.000E+00	FAIL ABUN
RU-106	-1.230E-01	2.543E-01	4.097E-01	0.000E+00	FAIL ABUN
AG-108M	-6.314E-03	2.641E-02	4.506E-02	0.000E+00	NOT IDENT.
AG-110M	4.316E-02	3.002E-02	5.020E-02	0.000E+00	NOT IDENT.
IN-111	5.232E-02	6.747E-01	1.025E+00	0.000E+00	NOT IDENT.
IN-113M	5.909E-03	3.320E-02	5.845E-02	0.000E+00	NOT IDENT.
SN-113	5.909E-03	3.320E-02	5.845E-02	0.000E+00	NOT IDENT.
IN-114M	4.174E-02	1.571E-01	2.473E-01	0.000E+00	NOT IDENT.
CD-115	1.088E+00	5.567E+00	9.442E+00	0.000E+00	NOT IDENT.
SN-117M	6.761E-03	3.954E-02	7.114E-02	0.000E+00	NOT IDENT.
SB-122	4.785E-01	1.096E+00	1.898E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	9.437E+05	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-9.042E-04	2.187E-02	3.904E-02	0.000E+00	NOT IDENT.
I-124	4.171E-01	4.921E-01	7.539E-01	0.000E+00	FAIL ABUN
SB-124	-1.102E-02	5.294E-02	8.627E-02	0.000E+00	FAIL ABUN
SB-125	2.399E-02	7.606E-02	1.337E-01	0.000E+00	FAIL ABUN
TE-125M	-6.416E+00	8.242E+00	1.367E+01	0.000E+00	NOT IDENT.
I-126	1.262E-01	1.407E-01	2.267E-01	0.000E+00	NOT IDENT.
SB-126	4.428E-02	1.129E-01	1.734E-01	0.000E+00	FAIL ABUN
SB-127	1.977E-01	7.759E-01	1.362E+00	0.000E+00	NOT IDENT.
XE-127	-6.152E-03	3.899E-02	6.565E-02	0.000E+00	NOT IDENT.
I-131	-2.690E-02	7.400E-02	1.274E-01	0.000E+00	NOT IDENT.
TE-132	-1.300E-01	4.390E-01	7.519E-01	0.000E+00	NOT IDENT.
BA-133	-2.067E-02	3.975E-02	5.515E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.689E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.944E-02	7.050E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.399E-01	2.295E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.816E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.596E-02	7.087E-02	1.165E-01	0.000E+00	FAIL ABUN
CE-139	-3.608E-03	2.335E-02	4.137E-02	0.000E+00	NOT IDENT.
BA-140	-1.402E-01	1.867E-01	2.908E-01	0.000E+00	NOT IDENT.
LA-140	-1.996E-02	6.309E-02	9.686E-02	0.000E+00	FAIL ABUN
CE-141	5.856E-02	6.009E-02	9.346E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.064E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	6.913E-04	1.905E-01	3.057E-01	0.000E+00	NOT IDENT.
PM-144	1.678E-02	2.636E-02	4.709E-02	0.000E+00	NOT IDENT.
PR-144	1.137E+00	1.785E+00	3.189E+00	0.000E+00	NOT IDENT.
PM-146	-6.085E-03	3.411E-02	5.811E-02	0.000E+00	NOT IDENT.
ND-147	-1.757E-02	3.815E-01	6.443E-01	0.000E+00	FAIL ABUN
PM-149	-2.899E+01	5.025E+01	8.272E+01	0.000E+00	NOT IDENT.
EU-152	-8.254E-02	9.386E-02	1.257E-01	0.000E+00	NOT IDENT.
GD-153	-6.116E-02	8.008E-02	1.186E-01	0.000E+00	NOT IDENT.
EU-154	-3.609E-02	9.114E-02	1.478E-01	0.000E+00	NOT IDENT.
EU-155	8.293E-02	9.851E-02	1.745E-01	0.000E+00	FAIL ABUN
TB-160	3.723E-02	9.995E-02	1.730E-01	0.000E+00	FAIL ABUN
HO-166M	1.834E-02	4.406E-02	7.781E-02	0.000E+00	NOT IDENT.
TM-171	1.500E+01	2.932E+01	5.156E+01	0.000E+00	NOT IDENT.
LU-176	1.328E-02	2.151E-02	3.318E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.288E+00	1.497E+00	0.000E+00	FAIL ABUN
LU-177M	-8.236E-02	1.321E-01	2.216E-01	0.000E+00	NOT IDENT.
HF-181	-1.748E-02	3.231E-02	5.346E-02	0.000E+00	FAIL ABUN
W-181	0.000E+00	8.712E-01	7.057E-01	0.000E+00	FAIL ABUN
TA-182	-5.473E-02	1.446E-01	2.373E-01	0.000E+00	NOT IDENT.
RE-183	6.017E-02	8.547E-02	1.562E-01	0.000E+00	FAIL ABUN
RE-184	-4.732E-02	1.800E-01	3.057E-01	0.000E+00	NOT IDENT.
OS-185	1.093E-02	3.192E-02	5.427E-02	0.000E+00	NOT IDENT.
RE-188	4.167E-02	1.335E-01	2.416E-01	0.000E+00	NOT IDENT.
W-188	-1.054E-01	6.490E+00	9.624E+00	0.000E+00	FAIL ABUN
IR-192	1.112E-02	2.815E-02	4.833E-02	0.000E+00	FAIL ABUN
AU-195	9.074E-02	2.234E-01	3.516E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.534E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-2.643E+00	4.159E+00	7.225E+00	0.000E+00	NOT IDENT.
TL-202	3.121E-02	4.907E-02	8.760E-02	0.000E+00	NOT IDENT.
BI-207	1.176E-02	4.039E-02	7.058E-02	0.000E+00	FAIL ABUN
TL-207	1.836E-02	6.028E-01	8.860E-01	0.000E+00	FAIL ABUN
PO-209	-4.362E+00	5.621E+00	8.813E+00	0.000E+00	NOT IDENT.
BI-210	1.164E+00	5.009E+00	9.183E+00	0.000E+00	NOT IDENT.
PB-210	1.164E+00	5.009E+00	9.183E+00	0.000E+00	NOT IDENT.
PO-210	1.164E+00	5.009E+00	9.183E+00	0.000E+00	NOT IDENT.
PB-211	-2.723E-01	7.774E-01	1.298E+00	0.000E+00	NOT IDENT.
PO-215	1.836E-02	6.028E-01	8.860E-01	0.000E+00	FAIL ABUN
RN-219	1.052E-01	3.181E-01	5.624E-01	0.000E+00	FAIL ABUN
RN-220	4.823E+00	1.967E+01	3.374E+01	0.000E+00	NOT IDENT.
RA-223	1.836E-02	6.028E-01	8.860E-01	0.000E+00	FAIL ABUN
AC-227	-3.204E-02	3.032E-01	5.182E-01	0.000E+00	FAIL ABUN
TH-227	-3.204E-02	3.033E-01	5.182E-01	0.000E+00	FAIL ABUN
TH-229	-1.800E-01	3.957E-01	6.836E-01	0.000E+00	FAIL ABUN
PA-231	-6.662E-01	1.324E+00	2.013E+00	0.000E+00	FAIL ABUN
TH-231	1.836E-02	6.028E-01	8.860E-01	0.000E+00	FAIL ABUN
U-231	-9.573E-02	8.768E-01	1.348E+00	0.000E+00	FAIL ABUN
PA-233	-2.751E-02	5.078E-02	8.310E-02	0.000E+00	FAIL ABUN
PA-234	1.526E-01	2.292E-01	3.994E-01	0.000E+00	FAIL ABUN
PA-234M	4.802E+00	4.033E+00	7.011E+00	0.000E+00	NOT IDENT.
NP-236	-5.091E-02	6.232E-02	1.079E-01	0.000E+00	NOT IDENT.
NP-239	-1.736E-01	1.644E-01	2.672E-01	0.000E+00	FAIL ABUN
AM-241	1.624E-01	1.789E-01	2.996E-01	0.000E+00	NOT IDENT.
CM-243	-1.435E-02	8.904E-02	1.524E-01	0.000E+00	FAIL ABUN
AM-246	5.657E-02	1.009E-01	1.799E-01	0.000E+00	NOT IDENT.
CM-247	1.979E-02	2.946E-02	5.290E-02	0.000E+00	FAIL ABUN
CF-249	2.857E-02	3.092E-02	5.636E-02	0.000E+00	NOT IDENT.
CF-251	-1.860E-02	9.957E-02	1.753E-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]G244132003.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:23:33
Sample ID          : G244132003          Sample quantity   : 1.27720E+02 GRAM
Detector name      : GAM18              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time  : 0 02:00:01.63  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940270             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	1413	10.67*	1.893E+00	2.056E+01	2.056E+01	9.62
CD-109	88.03	289	3.72*	6.447E+00	3.538E+00	3.612E+00	28.27
SN-126	64.28	285	9.60	3.256E+00	2.678E+00	2.678E+00	45.80
	86.94	289	8.90	6.447E+00	1.479E+00	1.479E+00	49.35
	87.57	289	37.00*	6.447E+00	3.557E-01	3.557E-01	28.27
BA-137M	661.65	491	89.98*	3.587E+00	4.474E-01	4.478E-01	15.19
CS-137	661.65	491	85.12*	3.587E+00	4.730E-01	4.734E-01	15.20
HG-203	70.83	-----	4.75	4.309E+00	-----	Line Not Found	-----
	72.87	-----	8.00	4.622E+00	-----	Line Not Found	-----
	82.60	-----	3.55	5.935E+00	-----	Line Not Found	-----
	279.20	48	77.30*	6.252E+00	2.942E-02	3.619E-02	150.34
TL-208	277.35	48	6.80	6.252E+00	3.344E-01	3.344E-01	150.59
	510.84	196	21.60	4.309E+00	6.174E-01	6.174E-01	48.98
	583.14	520	84.20*	3.934E+00	4.616E-01	4.616E-01	17.42
	860.37	65	12.46	2.914E+00	5.299E-01	5.299E-01	74.86
BI-211	72.87	-----	1.27	4.622E+00	-----	Line Not Found	-----
	351.07	897	12.94*	5.451E+00	3.739E+00	3.739E+00	11.62
BI-212	727.18	111	11.80*	3.335E+00	8.308E-01	8.308E-01	53.43
	785.46	59	1.97	3.140E+00	2.796E+00	2.796E+00	57.49
	1620.62	-----	2.75	1.770E+00	-----	Line Not Found	-----
PB-212	74.81	346	10.70	4.949E+00	1.923E+00	1.923E+00	25.69
	77.11	539	18.00	5.256E+00	1.675E+00	1.675E+00	17.41
	87.30	289	8.00	6.447E+00	1.645E+00	1.645E+00	29.99
	238.63	1529	44.60*	6.791E+00	1.484E+00	1.484E+00	9.41
	300.09	136	3.41	5.975E+00	1.966E+00	1.966E+00	54.96
PO-212	74.81	346	10.70	4.949E+00	1.923E+00	1.923E+00	25.69
	77.11	539	18.00	5.256E+00	1.675E+00	1.675E+00	17.41
	87.30	289	8.00	6.447E+00	1.645E+00	1.645E+00	29.99
	115.19	-----	0.60	8.058E+00	-----	Line Not Found	-----
	238.63	1529	44.60*	6.791E+00	1.484E+00	1.484E+00	9.41
	300.09	136	3.41	5.975E+00	1.966E+00	1.966E+00	54.96
BI-214	609.31	670	46.30*	3.813E+00	1.116E+00	1.116E+00	14.69

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-214	1120.29	179	15.10	2.335E+00	1.492E+00	1.492E+00	23.70
	1764.49	135	15.80	1.695E+00	1.486E+00	1.486E+00	26.64
	74.81	346	6.21	4.949E+00	3.313E+00	3.313E+00	25.05
	77.11	539	10.50	5.256E+00	2.872E+00	2.872E+00	19.00
	87.30	289	4.67	6.447E+00	2.818E+00	2.818E+00	29.30
PO-214	241.98	345	7.49	6.748E+00	2.007E+00	2.008E+00	23.49
	295.21	515	19.20	6.041E+00	1.305E+00	1.306E+00	18.04
	351.92	897	37.20*	5.451E+00	1.300E+00	1.300E+00	12.74
	74.81	346	6.21	4.949E+00	3.313E+00	3.313E+00	25.05
	77.11	539	10.50	5.256E+00	2.872E+00	2.872E+00	19.00
PO-216	87.30	289	4.67	6.447E+00	2.818E+00	2.818E+00	29.30
	241.98	345	7.49	6.748E+00	2.007E+00	2.008E+00	23.49
	295.21	515	19.20	6.041E+00	1.305E+00	1.306E+00	18.04
	351.92	897	37.20*	5.451E+00	1.300E+00	1.300E+00	12.74
	74.81	346	10.70	4.949E+00	1.923E+00	1.923E+00	25.69
PO-218	77.11	539	18.00	5.256E+00	1.675E+00	1.675E+00	17.41
	87.30	289	8.00	6.447E+00	1.645E+00	1.645E+00	29.99
	238.63	1529	44.60*	6.791E+00	1.484E+00	1.484E+00	9.41
	300.09	136	3.41	5.975E+00	1.966E+00	1.966E+00	54.96
	74.81	346	6.21	4.949E+00	3.313E+00	3.313E+00	25.05
RA-224	77.11	539	10.50	5.256E+00	2.872E+00	2.872E+00	19.00
	87.30	289	4.67	6.447E+00	2.818E+00	2.818E+00	29.30
	241.98	345	7.49	6.748E+00	2.007E+00	2.008E+00	23.49
	295.21	515	19.20	6.041E+00	1.305E+00	1.306E+00	18.04
	351.92	897	37.20*	5.451E+00	1.300E+00	1.300E+00	12.74
RA-226	240.98	345	3.95*	6.748E+00	3.807E+00	3.807E+00	22.82
AC-228	609.31	670	46.30*	3.813E+00	1.116E+00	1.116E+00	14.69
	1120.29	179	15.10	2.335E+00	1.492E+00	1.492E+00	23.70
	1764.49	135	15.80	1.695E+00	1.486E+00	1.486E+00	26.64
	338.32	400	11.40	5.579E+00	1.847E+00	1.847E+00	45.53
	911.07	414	27.70*	2.780E+00	1.579E+00	1.579E+00	19.22
RA-228	969.11	152	16.60	2.639E+00	1.019E+00	1.019E+00	42.60
	338.32	400	11.40	5.579E+00	1.847E+00	1.847E+00	45.53
	911.07	414	27.70*	2.780E+00	1.579E+00	1.579E+00	19.22
	969.11	152	16.60	2.639E+00	1.019E+00	1.019E+00	42.60
	74.81	346	10.70	4.949E+00	1.923E+00	1.949E+00	23.95
TH-228	77.11	539	18.00	5.256E+00	1.675E+00	1.699E+00	17.41
	87.30	289	8.00	6.447E+00	1.645E+00	1.668E+00	28.27
	238.63	1529	44.60*	6.791E+00	1.484E+00	1.505E+00	9.41
	300.09	136	3.41	5.975E+00	1.966E+00	1.994E+00	80.16
	609.31	670	46.30*	3.813E+00	1.116E+00	1.116E+00	14.69
TH-230	1120.29	179	15.10	2.335E+00	1.492E+00	1.492E+00	23.70
	1764.49	135	15.80	1.695E+00	1.486E+00	1.486E+00	26.64
	338.32	400	11.40	5.579E+00	1.847E+00	1.847E+00	21.10
	911.07	414	27.70*	2.780E+00	1.579E+00	1.579E+00	19.22
	969.11	152	16.60	2.639E+00	1.019E+00	1.019E+00	42.60
TH-232	63.29	285	3.80*	3.256E+00	6.764E+00	6.764E+00	46.81
	92.38	668	5.41	6.951E+00	5.221E+00	5.221E+00	22.55
	609.31	670	46.30*	3.813E+00	1.116E+00	1.116E+00	14.69
	1120.29	179	15.10	2.335E+00	1.492E+00	1.492E+00	23.70
	1764.49	135	15.80	1.695E+00	1.486E+00	1.486E+00	26.64
TH-234	338.32	400	11.40	5.579E+00	1.847E+00	1.847E+00	21.10
	911.07	414	27.70*	2.780E+00	1.579E+00	1.579E+00	19.22
	969.11	152	16.60	2.639E+00	1.019E+00	1.019E+00	42.60
	63.29	285	3.80*	3.256E+00	6.764E+00	6.764E+00	46.81
	92.38	668	5.41	6.951E+00	5.221E+00	5.221E+00	22.55
U-234	609.31	670	46.30*	3.813E+00	1.116E+00	1.116E+00	14.69

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	179	15.10	2.335E+00	1.492E+00	1.492E+00	23.70
	1764.49	135	15.80	1.695E+00	1.486E+00	1.486E+00	26.64
U-235	89.95	187	2.70	6.719E+00	3.025E+00	3.025E+00	50.42
	93.35	668	4.50	6.951E+00	6.277E+00	6.277E+00	31.10
	105.00	-----	2.10	7.709E+00	-----	Line Not Found	-----
	143.76	95	10.50*	8.222E+00	3.229E-01	3.229E-01	68.39
	163.35	-----	4.70	8.004E+00	-----	Line Not Found	-----
	185.71	543	54.00	7.647E+00	3.864E-01	3.864E-01	19.32
	205.31	-----	4.70	7.323E+00	-----	Line Not Found	-----
NP-237	86.50	289	12.60*	6.447E+00	1.045E+00	1.045E+00	35.00
	95.87	-----	2.60	7.180E+00	-----	Line Not Found	-----
U-238	63.29	285	3.80*	3.256E+00	6.764E+00	6.764E+00	46.81
	92.38	668	5.41	6.951E+00	5.221E+00	5.221E+00	15.99
AM-243	74.67	346	66.00*	4.949E+00	3.117E-01	3.117E-01	23.93
	86.72	289	0.34	6.447E+00	3.917E+01	3.917E+01	28.27
	117.66	-----	0.55	8.112E+00	-----	Line Not Found	-----
	142.18	-----	0.13	8.232E+00	-----	Line Not Found	-----
ANH-511	511.00	196	100.00*	4.309E+00	1.334E-01	1.334E-01	48.27

Flag: "\*" = Keyline



Total number of lines in spectrum 38  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 36 94.74%

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	2.056E+01	2.056E+01	0.198E+01	9.62	
CD-109	464.00D	1.02	3.538E+00	3.612E+00	1.021E+00	28.27	
SN-126	1.00E+05Y	1.00	3.557E-01	3.557E-01	1.006E-01	28.27	
BA-137M	30.17Y	1.00	4.474E-01	4.478E-01	0.680E-01	15.19	
CS-137	30.17Y	1.00	4.730E-01	4.734E-01	0.719E-01	15.20	
HG-203	46.60D	1.23	2.942E-02	3.619E-02	5.441E-02	150.34	
TL-208	1.41E+10Y	1.00	4.616E-01	4.616E-01	0.804E-01	17.42	
BI-211	7.04E+08Y	1.00	3.739E+00	3.739E+00	0.435E+00	11.62	
BI-212	1.41E+10Y	1.00	8.308E-01	8.308E-01	4.439E-01	53.43	
PB-212	1.41E+10Y	1.00	1.484E+00	1.484E+00	0.140E+00	9.41	
PO-212	1.41E+10Y	1.00	1.484E+00	1.484E+00	0.140E+00	9.41	
BI-214	1600.00Y	1.00	1.116E+00	1.116E+00	0.164E+00	14.69	
PB-214	1600.00Y	1.00	1.300E+00	1.300E+00	0.166E+00	12.74	
PO-214	1600.00Y	1.00	1.300E+00	1.300E+00	0.166E+00	12.74	
PO-216	1.41E+10Y	1.00	1.484E+00	1.484E+00	0.140E+00	9.41	
PO-218	1600.00Y	1.00	1.300E+00	1.300E+00	0.166E+00	12.74	
RA-224	1.41E+10Y	1.00	3.807E+00	3.807E+00	0.868E+00	22.82	
RA-226	1600.00Y	1.00	1.116E+00	1.116E+00	0.164E+00	14.69	
AC-228	1.41E+10Y	1.00	1.579E+00	1.579E+00	0.303E+00	19.22	
RA-228	1.41E+10Y	1.00	1.579E+00	1.579E+00	0.303E+00	19.22	
TH-228	1.91Y	1.01	1.484E+00	1.505E+00	0.142E+00	9.41	
TH-230	4.47E+09Y	1.00	1.116E+00	1.116E+00	0.164E+00	14.69	
TH-232	1.41E+10Y	1.00	1.579E+00	1.579E+00	0.303E+00	19.22	
TH-234	4.47E+09Y	1.00	6.764E+00	6.764E+00	3.166E+00	46.81	
U-234	4.47E+09Y	1.00	1.116E+00	1.116E+00	0.164E+00	14.69	
U-235	7.04E+08Y	1.00	3.229E-01	3.229E-01	2.208E-01	68.39	
NP-237	2.14E+06Y	1.00	1.045E+00	1.045E+00	0.366E+00	35.00	
U-238	4.47E+09Y	1.00	6.764E+00	6.764E+00	3.166E+00	46.81	
AM-243	7380.00Y	1.00	3.117E-01	3.117E-01	0.746E-01	23.93	
ANH-511	1.00E+09Y	1.00	1.334E-01	1.334E-01	0.644E-01	48.27	
Total Activity :			6.862E+01	6.873E+01			

Grand Total Activity : 6.862E+01 6.873E+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	128.52	125	395	1.79	256.11	252	9	1.74E-02	59.8	8.24E+00	T
0	209.39	167	397	1.11	417.80	412	12	2.32E-02	50.5	7.26E+00	T
0	270.41	133	270	0.84	539.80	535	10	1.85E-02	49.4	6.35E+00	T
0	328.55	78	226	1.37	656.04	651	11	1.08E-02	77.9	5.68E+00	T
0	463.02	85	222	1.43	924.89	918	15	1.18E-02	79.5	4.60E+00	T
0	768.21	70	123	1.91	1535.13	1527	14	9.76E-03	72.4	3.20E+00	T
0	795.49	85	94	1.52	1589.68	1582	17	1.17E-02	56.8	3.11E+00	T
0	1237.59	54	62	1.65	2473.71	2467	13	7.52E-03	65.7	2.15E+00	T
0	1377.63	49	36	0.70	2753.76	2748	15	6.84E-03	61.0	1.98E+00	T
0	1587.77	30	12	1.82	3174.01	3170	9	4.23E-03	55.9	1.79E+00	
0	1729.74	43	11	2.45	3457.92	3450	14	6.04E-03	43.8	1.71E+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]G244132003.CNF;1
* Acquisition date   : 19-JAN-2010 09:23:33  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 02:00:01.63             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244132003             Analyst initials: MXR1
* Batch Number       : 940270                 Sample Quantity : 1.27720E+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	2.056E+01	1.978E+00	3.751E-01	2.846E-02	54.827
CD-109	3.612E+00	1.021E+00	1.181E+00	1.092E-01	3.059
SN-126	3.557E-01	1.006E-01	1.170E-01	1.078E-02	3.039
BA-137M	4.478E-01	6.802E-02	4.545E-02	3.465E-03	9.853
CS-137	4.734E-01	7.194E-02	4.805E-02	3.672E-03	9.853
HG-203	3.619E-02	5.441E-02	5.148E-02	3.122E-03	0.703
TL-208	4.616E-01	8.040E-02	4.529E-02	3.550E-03	10.192
BI-211	3.739E+00	4.346E-01	2.742E-01	1.760E-02	13.635
BI-212	8.308E-01	4.439E-01	3.567E-01	3.553E-02	2.329
PB-212	1.484E+00	1.397E-01	6.986E-02	4.991E-03	21.241
PO-212	1.484E+00	1.397E-01	6.986E-02	4.991E-03	21.241
BI-214	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110
PB-214	1.300E+00	1.657E-01	9.556E-02	7.905E-03	13.610
PO-214	1.300E+00	1.657E-01	9.556E-02	7.905E-03	13.610
PO-216	1.484E+00	1.397E-01	6.986E-02	4.991E-03	21.241
PO-218	1.300E+00	1.657E-01	9.556E-02	7.905E-03	13.610
RA-224	3.807E+00	8.685E-01	7.941E-01	4.423E-02	4.794
RA-226	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.579E+00	3.034E-01	1.509E-01	2.000E-02	10.458
RA-228	1.579E+00	3.034E-01	1.509E-01	2.000E-02	10.458
TH-228	1.505E+00	1.416E-01	7.084E-02	5.060E-03	21.241
TH-230	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110
TH-232	1.579E+00	3.034E-01	1.509E-01	2.000E-02	10.458
TH-234	6.764E+00	3.166E+00	2.169E+00	3.825E-01	3.118
U-234	1.116E+00	1.640E-01	9.216E-02	8.232E-03	12.110
U-235	3.229E-01	2.208E-01	3.028E-01	4.905E-02	1.066
NP-237	1.045E+00	3.656E-01	3.898E-01	8.795E-02	2.680
U-238	6.764E+00	3.166E+00	2.169E+00	3.825E-01	3.118
AM-243	3.117E-01	7.458E-02	8.945E-02	7.465E-03	3.484
ANH-511	1.334E-01	6.436E-02	3.535E-02	2.335E-03	3.772

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.534E-01		2.562E-01	4.365E-01	3.163E-02	0.351
NA-22	-1.865E-02		3.376E-02	5.274E-02	3.589E-03	-0.354
NA-24	-6.518E-02		7.875E-02	Half-Life too short		
AL-26	1.772E-03		1.969E-02	3.281E-02	1.916E-03	0.054
TI-44	3.091E-01	+	5.381E-02	7.511E-02	6.422E-03	4.116
SC-46	3.048E-02		3.044E-02	5.322E-02	5.936E-03	0.573
V-48	-1.614E-02		5.097E-02	8.019E-02	7.932E-03	-0.201
CR-51	-2.306E-01		3.057E-01	4.721E-01	3.039E-02	-0.489
MN-52	1.188E-01		1.488E-01	2.636E-01	1.942E-02	0.451
MN-54	4.582E-03		2.903E-02	4.825E-02	4.942E-03	0.095
CO-56	5.202E-03		2.829E-02	4.711E-02	4.918E-03	0.110
CO-57	-1.258E-02		2.240E-02	3.504E-02	2.076E-03	-0.359
CO-58	-3.101E-02		2.895E-02	4.338E-02	4.283E-03	-0.715
FE-59	-2.644E-02		6.282E-02	1.008E-01	8.301E-03	-0.262
CO-60	-6.004E-03		2.905E-02	4.647E-02	3.511E-03	-0.129
ZN-65	5.292E-02		7.892E-02	1.201E-01	8.458E-03	0.441
GE-68	2.584E-01		9.078E-01	1.548E+00	1.230E-01	0.167
AS-73	4.426E-01		1.013E+00	1.731E+00	1.372E-01	0.256
AS-74	-1.365E-02		6.820E-02	1.088E-01	7.819E-03	-0.125
SE-75	-2.156E-03		3.660E-02	5.516E-02	3.155E-03	-0.039
BR-77	5.275E-01		5.856E+00	8.765E+00	5.847E-01	0.060
SR-82	-2.565E-01		2.778E-01	4.145E-01	3.860E-02	-0.619
RB-83	3.319E-03		5.470E-02	8.167E-02	5.447E-03	0.041
RB-84	-1.680E-02		5.238E-02	8.341E-02	9.193E-03	-0.201
KR-85	2.129E+01		6.366E+00	1.184E+01	7.843E-01	1.799
SR-85	1.078E-01		3.222E-02	5.992E-02	3.970E-03	1.799
RB-86	-2.035E-02		5.685E-01	9.458E-01	7.529E-02	-0.022
Y-88	2.787E-02		2.427E-02	4.650E-02	2.649E-03	0.599
ZR-88	-1.454E-02		2.328E-02	3.767E-02	2.167E-03	-0.386
Y-91	8.742E+00		1.407E+01	2.425E+01	1.433E+00	0.361
NB-94	-2.367E-03		2.686E-02	4.460E-02	3.659E-03	-0.053

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	9.806E-02		3.964E-02	6.664E-02	6.096E-03	1.471
NB-95M	8.529E-02		1.077E-01	1.628E-01	1.194E-02	0.524
ZR-95	1.528E-02		4.914E-02	8.335E-02	8.201E-03	0.183
NB-97	4.699E-02		1.318E-02	Half-Life	too short	
ZR-97	1.332E+00		2.478E-01	Half-Life	too short	
MO-99	5.330E+00		6.384E+00	1.113E+01	1.698E+00	0.479
TC-99M	1.172E+09		6.527E+08	Half-Life	too short	
RH-101	-6.770E-03		2.784E-02	4.551E-02	2.446E-03	-0.149
RH-102	-6.141E-03		2.377E-02	3.864E-02	2.454E-03	-0.159
RU-103	-4.527E-04		3.217E-02	5.284E-02	6.860E-03	-0.009
RH-106	-1.230E-01		2.598E-01	4.043E-01	5.086E-02	-0.304
RU-106	-1.230E-01		2.595E-01	4.043E-01	2.975E-02	-0.304
AG-108M	-6.314E-03		2.695E-02	4.423E-02	2.889E-03	-0.143
AG-110M	4.316E-02		3.063E-02	4.958E-02	3.911E-03	0.871
IN-111	5.232E-02		6.884E-01	9.978E-01	5.576E-02	0.052
IN-113M	5.909E-03		3.387E-02	5.729E-02	3.514E-03	0.103
SN-113	5.909E-03		3.387E-02	5.729E-02	3.514E-03	0.103
IN-114M	4.174E-02		1.603E-01	2.398E-01	1.280E-02	0.174
CD-115	1.088E+00		5.680E+00	9.295E+00	6.248E-01	0.117
SN-117M	6.761E-03		4.035E-02	6.878E-02	3.656E-03	0.098
SB-122	4.785E-01		1.118E+00	1.871E+00	1.303E-01	0.256
I-123	-3.902E-02		4.815E-01	Half-Life	too short	
TE-123M	-9.042E-04		2.232E-02	3.775E-02	2.037E-03	-0.024
I-124	4.171E-01		5.022E-01	7.437E-01	5.378E-02	0.561
SB-124	-1.102E-02		5.402E-02	8.647E-02	5.966E-03	-0.127
SB-125	2.399E-02		7.762E-02	1.312E-01	8.197E-03	0.183
TE-125M	-6.416E+00		8.410E+00	1.314E+01	1.155E+00	-0.488
I-126	1.262E-01		1.435E-01	2.240E-01	1.722E-02	0.564
SB-126	4.428E-02		1.152E-01	1.715E-01	1.452E-02	0.258
SB-127	1.977E-01		7.917E-01	1.346E+00	1.417E-01	0.147
XE-127	-6.152E-03		3.978E-02	6.371E-02	3.439E-03	-0.097
I-131	-2.690E-02		7.551E-02	1.248E-01	8.039E-03	-0.216
TE-132	-1.300E-01		4.479E-01	7.310E-01	1.024E-01	-0.178
BA-133	-2.067E-02		4.057E-02	5.397E-02	6.235E-03	-0.383
I-133	-6.194E-04		8.619E-04	Half-Life	too short	
CS-134	1.053E-01	+	6.065E-02	6.984E-02	6.755E-03	1.508
CS-135	2.304E-01		1.428E-01	2.236E-01	1.690E-02	1.030
I-135	-7.267E+07		9.266E+07	Half-Life	too short	
CS-136	-3.596E-02		7.232E-02	1.159E-01	1.039E-02	-0.310
CE-139	-3.608E-03		2.383E-02	4.003E-02	2.101E-03	-0.090
BA-140	-1.402E-01		1.905E-01	2.863E-01	9.366E-02	-0.490
LA-140	-1.996E-02		6.437E-02	9.699E-02	6.655E-03	-0.206
CE-141	5.856E-02		6.131E-02	9.026E-02	5.152E-03	0.649
CE-143	3.457E-04		5.426E-05	Half-Life	too short	
CE-144	6.913E-04		1.944E-01	2.948E-01	4.169E-02	0.002
PM-144	1.678E-02		2.690E-02	4.656E-02	3.780E-03	0.360
PR-144	1.137E+00		1.821E+00	3.153E+00	2.559E-01	0.360
PM-146	-6.085E-03		3.481E-02	5.708E-02	5.078E-03	-0.107

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-1.757E-02		3.893E-01	6.343E-01	8.851E-02	-0.028
PM-149	-2.899E+01		5.127E+01	8.069E+01	1.141E+01	-0.359
EU-152	-8.254E-02		9.577E-02	1.230E-01	8.026E-03	-0.671
GD-153	-6.116E-02		8.171E-02	1.139E-01	8.904E-03	-0.537
EU-154	-3.609E-02		9.300E-02	1.474E-01	1.473E-02	-0.245
EU-155	8.293E-02		1.005E-01	1.677E-01	1.199E-02	0.494
TB-160	3.723E-02		1.020E-01	1.717E-01	1.886E-02	0.217
HO-166M	1.834E-02		4.496E-02	7.695E-02	6.414E-03	0.238
TM-171	1.500E+01		2.992E+01	4.924E+01	3.937E+00	0.305
LU-176	1.328E-02		2.195E-02	3.240E-02	1.865E-03	0.410
LU-177	2.590E+00	+	1.314E+00	1.454E+00	7.885E-02	1.782
LU-177M	-8.236E-02		1.348E-01	2.174E-01	1.284E-02	-0.379
HF-181	-1.748E-02		3.297E-02	5.256E-02	3.364E-03	-0.333
W-181	2.018E+00	+	8.890E-01	6.737E-01	5.343E-02	2.995
TA-182	-5.473E-02		1.476E-01	2.366E-01	1.448E-02	-0.231
RE-183	6.017E-02		8.722E-02	1.511E-01	7.978E-03	0.398
RE-184	-4.732E-02		1.837E-01	2.976E-01	1.672E-02	-0.159
OS-185	1.093E-02		3.257E-02	5.359E-02	4.030E-03	0.204
RE-188	4.167E-02		1.362E-01	2.336E-01	1.250E-02	0.178
W-188	-1.054E-01		6.622E+00	9.389E+00	5.378E-01	-0.011
IR-192	1.112E-02		2.872E-02	4.722E-02	2.738E-03	0.236
AU-195	9.074E-02		2.280E-01	3.376E-01	2.583E-02	0.269
TL-200	-4.022E-06		7.827E-05	Half-Life too short		
TL-201	-2.643E+00		4.243E+00	6.992E+00	3.671E-01	-0.378
TL-202	3.121E-02		5.007E-02	8.600E-02	5.243E-03	0.363
BI-207	1.176E-02		4.121E-02	7.024E-02	5.798E-03	0.167
TL-207	1.836E-02		6.151E-01	8.658E-01	1.429E-01	0.021
PO-209	-4.362E+00		5.736E+00	8.746E+00	9.865E-01	-0.499
BI-210	1.164E+00		5.111E+00	8.724E+00	6.750E-01	0.133
PB-210	1.164E+00		5.111E+00	8.724E+00	6.750E-01	0.133
PO-210	1.164E+00		5.111E+00	8.724E+00	5.803E-01	0.133
PB-211	-2.723E-01		7.933E-01	1.273E+00	7.936E-01	-0.214
PO-215	1.836E-02		6.151E-01	8.658E-01	1.429E-01	0.021
RN-219	1.052E-01		3.246E-01	5.514E-01	7.506E-02	0.191
RN-220	4.823E+00		2.008E+01	3.324E+01	2.284E+00	0.145
RA-223	1.836E-02		6.151E-01	8.658E-01	1.429E-01	0.021
AC-227	-3.204E-02		3.094E-01	5.046E-01	7.009E-02	-0.063
TH-227	-3.204E-02		3.094E-01	5.046E-01	8.499E-02	-0.063
TH-229	-1.800E-01		4.037E-01	6.630E-01	3.550E-02	-0.272
PA-231	-6.662E-01		1.351E+00	1.963E+00	2.698E-01	-0.339
TH-231	1.836E-02		6.151E-01	8.658E-01	1.429E-01	0.021
U-231	-9.573E-02		8.946E-01	1.294E+00	1.037E-01	-0.074
PA-233	-2.751E-02		5.182E-02	8.116E-02	4.972E-03	-0.339
PA-234	1.526E-01		2.339E-01	3.967E-01	7.826E-02	0.385
PA-234M	4.802E+00		4.115E+00	6.970E+00	7.519E-01	0.689
NP-236	-5.091E-02		6.359E-02	1.043E-01	5.528E-03	-0.488
NP-239	-1.736E-01		1.678E-01	2.572E-01	1.592E-02	-0.675
AM-241	1.624E-01		1.826E-01	2.856E-01	2.369E-02	0.568

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.435E-02		9.086E-02	1.464E-01	1.048E-02	-0.098
AM-246	5.657E-02		1.030E-01	1.791E-01	1.416E-02	0.316
CM-247	1.979E-02		3.006E-02	5.187E-02	3.021E-03	0.382
CF-249	2.857E-02		3.155E-02	5.523E-02	3.175E-03	0.517
CF-251	-1.860E-02		1.016E-01	1.697E-01	8.964E-03	-0.110

# 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]G244132003            *
* Acquisition date   : 19-JAN-2010 09:23:33 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 02:00:01.63 Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244132003 Analyst initials: MXR1            *
* Batch Number      : 940270 Sample Quantity : 1.2772E+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	2.056E+01	1.939E+00	1.876E-01	9.891E-01
CD-109	3.612E+00	1.001E+00	6.164E-01	5.106E-01
SN-126	3.557E-01	9.855E-02	6.109E-02	5.028E-02
BA-137M	4.478E-01	6.665E-02	2.302E-02	3.401E-02
CS-137	4.734E-01	7.050E-02	2.433E-02	3.597E-02
HG-203	3.619E-02	5.332E-02	2.642E-02	2.721E-02
TL-208	4.616E-01	7.879E-02	2.298E-02	4.020E-02
BI-211	3.739E+00	4.259E-01	1.402E-01	2.173E-01
BI-212	8.308E-01	4.350E-01	1.804E-01	2.219E-01
PB-212	1.484E+00	1.369E-01	3.593E-02	6.983E-02
PO-212	1.484E+00	1.369E-01	3.593E-02	6.983E-02
BI-214	1.116E+00	1.607E-01	4.673E-02	8.200E-02
PB-214	1.300E+00	1.624E-01	4.886E-02	8.285E-02
PO-214	1.300E+00	1.624E-01	4.886E-02	8.285E-02
PO-216	1.484E+00	1.369E-01	3.593E-02	6.983E-02
PO-218	1.300E+00	1.624E-01	4.886E-02	8.285E-02
RA-224	3.807E+00	8.511E-01	4.083E-01	4.342E-01
RA-226	1.116E+00	1.607E-01	4.673E-02	8.200E-02
AC-228	1.579E+00	2.973E-01	7.607E-02	1.517E-01
RA-228	1.579E+00	2.973E-01	7.607E-02	1.517E-01
TH-228	1.505E+00	1.388E-01	3.643E-02	7.080E-02
TH-230	1.116E+00	1.607E-01	4.673E-02	8.200E-02
TH-232	1.579E+00	2.973E-01	7.607E-02	1.517E-01
TH-234	6.764E+00	3.103E+00	1.137E+00	1.583E+00
U-234	1.116E+00	1.607E-01	4.673E-02	8.200E-02
U-235	3.229E-01	2.164E-01	1.569E-01	1.104E-01
NP-237	1.045E+00	3.583E-01	2.035E-01	1.828E-01
U-238	6.764E+00	3.103E+00	1.137E+00	1.583E+00
AM-243	3.117E-01	7.309E-02	4.679E-02	3.729E-02
ANH-511	1.334E-01	6.308E-02	1.797E-02	3.218E-02

### ---- Non-Identified Nuclides ----

Key-Line



Nuclide	Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	1.534E-01	2.510E-01	2.221E-01	1.281E-01 NOT IDENT.
NA-22	-1.865E-02	3.308E-02	2.644E-02	1.688E-02 NOT IDENT.
NA-24	-6.518E+04	1.544E+05	0.000E+00	7.875E+04 SHORT HLIF
AL-26	1.772E-03	1.929E-02	1.636E-02	9.843E-03 NOT IDENT.
TI-44	3.091E-01	5.273E-02	3.926E-02	2.690E-02 FAIL ABUN
SC-46	3.048E-02	2.983E-02	2.683E-02	1.522E-02 FAIL ABUN
V-48	-1.614E-02	4.995E-02	4.037E-02	2.549E-02 NOT IDENT.
CR-51	-2.306E-01	2.996E-01	2.417E-01	1.529E-01 NOT IDENT.
MN-52	1.188E-01	1.458E-01	1.319E-01	7.439E-02 NOT IDENT.
MN-54	4.582E-03	2.845E-02	2.435E-02	1.452E-02 NOT IDENT.
CO-56	5.202E-03	2.772E-02	2.377E-02	1.414E-02 FAIL ABUN
CO-57	-1.258E-02	2.195E-02	1.820E-02	1.120E-02 NOT IDENT.
CO-58	-3.101E-02	2.837E-02	1.247E-02	1.447E-02 NOT IDENT.
FE-59	-2.644E-02	6.156E-02	5.067E-02	3.141E-02 FAIL ABUN
CO-60	-6.004E-03	2.846E-02	2.328E-02	1.452E-02 NOT IDENT.
ZN-65	5.292E-02	7.734E-02	6.033E-02	3.946E-02 NOT IDENT.
GE-68	2.584E-01	8.896E-01	7.780E-01	4.539E-01 NOT IDENT.
AS-73	4.426E-01	9.928E-01	9.098E-01	5.065E-01 NOT IDENT.
AS-74	-1.365E-02	6.683E-02	5.520E-02	3.410E-02 NOT IDENT.
SE-75	-2.156E-03	3.587E-02	2.832E-02	1.830E-02 NOT IDENT.
BR-77	5.275E-01	5.739E+00	4.455E+00	2.928E+00 FAIL ABUN
SR-82	-2.565E-01	2.722E-01	2.094E-01	1.389E-01 NOT IDENT.
RB-83	3.319E-03	5.361E-02	4.151E-02	2.735E-02 NOT IDENT.
RB-84	-1.680E-02	5.133E-02	4.206E-02	2.619E-02 NOT IDENT.
KR-85	2.129E+01	6.238E+00	6.019E+00	3.183E+00 NOT IDENT.
SR-85	1.078E-01	3.158E-02	3.046E-02	1.611E-02 NOT IDENT.
RB-86	-2.035E-02	5.571E-01	4.754E-01	2.843E-01 NOT IDENT.
Y-88	2.787E-02	2.378E-02	2.318E-02	1.213E-02 NOT IDENT.
ZR-88	-1.454E-02	2.282E-02	1.923E-02	1.164E-02 NOT IDENT.
Y-91	8.742E+00	1.378E+01	1.217E+01	7.033E+00 NOT IDENT.
NB-94	-2.367E-03	2.633E-02	2.257E-02	1.343E-02 NOT IDENT.
NB-95	9.806E-02	3.884E-02	3.368E-02	1.982E-02 NOT IDENT.
NB-95M	8.529E-02	1.056E-01	8.373E-02	5.387E-02 NOT IDENT.
ZR-95	1.528E-02	4.816E-02	4.213E-02	2.457E-02 NOT IDENT.
NB-97	4.699E+04	2.584E+04	0.000E+00	1.318E+04 SHORT HLIF
ZR-97	1.332E+06	4.858E+05	0.000E+00	2.478E+05 SHORT HLIF
MO-99	5.330E+00	6.256E+00	5.627E+00	3.192E+00 NOT IDENT.
TC-99M	1.172E+15	1.279E+15	0.000E+00	6.527E+14 SHORT HLIF
RH-101	-6.770E-03	2.728E-02	2.347E-02	1.392E-02 FAIL ABUN
RH-102	-6.141E-03	2.330E-02	1.967E-02	1.189E-02 FAIL ABUN
RU-103	-4.527E-04	3.153E-02	2.688E-02	1.608E-02 FAIL ABUN
RH-106	-1.230E-01	2.546E-01	2.050E-01	1.299E-01 FAIL ABUN
RU-106	-1.230E-01	2.543E-01	2.050E-01	1.298E-01 FAIL ABUN
AG-108M	-6.314E-03	2.641E-02	2.254E-02	1.347E-02 NOT IDENT.
AG-110M	4.316E-02	3.002E-02	2.511E-02	1.532E-02 NOT IDENT.
IN-111	5.232E-02	6.747E-01	5.129E-01	3.442E-01 NOT IDENT.
IN-113M	5.909E-03	3.320E-02	2.924E-02	1.694E-02 NOT IDENT.
SN-113	5.909E-03	3.320E-02	2.924E-02	1.694E-02 NOT IDENT.
IN-114M	4.174E-02	1.571E-01	1.237E-01	8.017E-02 NOT IDENT.
CD-115	1.088E+00	5.567E+00	4.724E+00	2.840E+00 NOT IDENT.
SN-117M	6.761E-03	3.954E-02	3.559E-02	2.017E-02 NOT IDENT.
SB-122	4.785E-01	1.096E+00	9.497E-01	5.591E-01 NOT IDENT.
I-123	-3.902E+04	9.437E+05	0.000E+00	4.815E+05 SHORT HLIF
TE-123M	-9.042E-04	2.187E-02	1.953E-02	1.116E-02 NOT IDENT.
I-124	4.171E-01	4.921E-01	3.772E-01	2.511E-01 FAIL ABUN
SB-124	-1.102E-02	5.294E-02	4.316E-02	2.701E-02 FAIL ABUN
SB-125	2.399E-02	7.606E-02	6.688E-02	3.881E-02 FAIL ABUN
TE-125M	-6.416E+00	8.242E+00	6.837E+00	4.205E+00 NOT IDENT.
I-126	1.262E-01	1.407E-01	1.134E-01	7.176E-02 NOT IDENT.
SB-126	4.428E-02	1.129E-01	8.674E-02	5.762E-02 FAIL ABUN
SB-127	1.977E-01	7.759E-01	6.815E-01	3.959E-01 NOT IDENT.
XE-127	-6.152E-03	3.899E-02	3.284E-02	1.989E-02 NOT IDENT.
I-131	-2.690E-02	7.400E-02	6.375E-02	3.776E-02 NOT IDENT.
TE-132	-1.300E-01	4.390E-01	3.762E-01	2.240E-01 NOT IDENT.
BA-133	-2.067E-02	3.975E-02	2.759E-02	2.028E-02 FAIL ABUN
I-133	-6.194E+02	1.689E+03	0.000E+00	8.619E+02 SHORT HLIF
CS-134	1.053E-01	5.944E-02	3.527E-02	3.033E-02 FAIL ABUN
CS-135	2.304E-01	1.399E-01	1.148E-01	7.140E-02 NOT IDENT.
I-135	-7.267E+13	1.816E+14	0.000E+00	9.266E+13 SHORT HLIF
CS-136	-3.596E-02	7.087E-02	5.828E-02	3.616E-02 FAIL ABUN
CS-139	-3.608E-03	2.335E-02	2.070E-02	1.191E-02 NOT IDENT.
BA-140	-1.402E-01	1.867E-01	1.455E-01	9.527E-02 NOT IDENT.
LA-140	-1.996E-02	6.309E-02	4.846E-02	3.219E-02 FAIL ABUN
CE-141	5.856E-02	6.009E-02	4.676E-02	3.066E-02 NOT IDENT.
CE-143	3.457E+02	1.064E+02	0.000E+00	5.426E+01 SHORT HLIF

CE-144	6.913E-04	1.905E-01	1.529E-01	9.719E-02	NOT IDENT.
PM-144	1.678E-02	2.636E-02	2.356E-02	1.345E-02	NOT IDENT.
PR-144	1.137E+00	1.785E+00	1.596E+00	9.107E-01	NOT IDENT.
PM-146	-6.085E-03	3.411E-02	2.907E-02	1.740E-02	NOT IDENT.
ND-147	-1.757E-02	3.815E-01	3.223E-01	1.946E-01	FAIL ABUN
PM-149	-2.899E+01	5.025E+01	4.139E+01	2.564E+01	NOT IDENT.
EU-152	-8.254E-02	9.386E-02	6.291E-02	4.789E-02	NOT IDENT.
GD-153	-6.116E-02	8.008E-02	5.934E-02	4.086E-02	NOT IDENT.
EU-154	-3.609E-02	9.114E-02	7.392E-02	4.650E-02	NOT IDENT.
EU-155	8.293E-02	9.851E-02	8.730E-02	5.026E-02	FAIL ABUN
TB-160	3.723E-02	9.995E-02	8.657E-02	5.100E-02	FAIL ABUN
HO-166M	1.834E-02	4.406E-02	3.893E-02	2.248E-02	NOT IDENT.
TM-171	1.500E+01	2.932E+01	2.580E+01	1.496E+01	NOT IDENT.
LU-176	1.328E-02	2.151E-02	1.660E-02	1.097E-02	FAIL ABUN
LU-177	2.590E+00	1.288E+00	7.492E-01	6.572E-01	FAIL ABUN
LU-177M	-8.236E-02	1.321E-01	1.109E-01	6.742E-02	NOT IDENT.
HF-181	-1.748E-02	3.231E-02	2.675E-02	1.649E-02	FAIL ABUN
W-181	2.018E+00	8.712E-01	3.531E-01	4.445E-01	FAIL ABUN
TA-182	-5.473E-02	1.446E-01	1.187E-01	7.380E-02	NOT IDENT.
RE-183	6.017E-02	8.547E-02	7.817E-02	4.361E-02	FAIL ABUN
RE-184	-4.732E-02	1.800E-01	1.529E-01	9.184E-02	NOT IDENT.
OS-185	1.093E-02	3.192E-02	2.715E-02	1.628E-02	NOT IDENT.
RE-188	4.167E-02	1.335E-01	1.209E-01	6.810E-02	NOT IDENT.
W-188	-1.054E-01	6.490E+00	4.815E+00	3.311E+00	FAIL ABUN
IR-192	1.112E-02	2.815E-02	2.418E-02	1.436E-02	FAIL ABUN
AU-195	9.074E-02	2.234E-01	1.759E-01	1.140E-01	FAIL ABUN
TL-200	-4.022E+00	1.534E+02	0.000E+00	7.827E+01	SHORT HLIF
TL-201	-2.643E+00	4.159E+00	3.615E+00	2.122E+00	NOT IDENT.
TL-202	3.121E-02	4.907E-02	4.383E-02	2.504E-02	NOT IDENT.
BI-207	1.176E-02	4.039E-02	3.531E-02	2.061E-02	FAIL ABUN
TL-207	1.836E-02	6.028E-01	4.433E-01	3.076E-01	FAIL ABUN
PO-209	-4.362E+00	5.621E+00	4.409E+00	2.868E+00	NOT IDENT.
BI-210	1.164E+00	5.009E+00	4.594E+00	2.555E+00	NOT IDENT.
PB-210	1.164E+00	5.009E+00	4.594E+00	2.555E+00	NOT IDENT.
PO-210	1.164E+00	5.009E+00	4.594E+00	2.555E+00	NOT IDENT.
PB-211	-2.723E-01	7.774E-01	6.495E-01	3.966E-01	NOT IDENT.
PO-215	1.836E-02	6.028E-01	4.433E-01	3.076E-01	FAIL ABUN
RN-219	1.052E-01	3.181E-01	2.814E-01	1.623E-01	FAIL ABUN
RN-220	4.823E+00	1.967E+01	1.688E+01	1.004E+01	NOT IDENT.
RA-223	1.836E-02	6.028E-01	4.433E-01	3.076E-01	FAIL ABUN
AC-227	-3.204E-02	3.032E-01	2.592E-01	1.547E-01	FAIL ABUN
TH-227	-3.204E-02	3.033E-01	2.592E-01	1.547E-01	FAIL ABUN
TH-229	-1.800E-01	3.957E-01	3.420E-01	2.019E-01	FAIL ABUN
PA-231	-6.662E-01	1.324E+00	1.007E+00	6.753E-01	FAIL ABUN
TH-231	1.836E-02	6.028E-01	4.433E-01	3.076E-01	FAIL ABUN
U-231	-9.573E-02	8.768E-01	6.746E-01	4.473E-01	FAIL ABUN
PA-233	-2.751E-02	5.078E-02	4.157E-02	2.591E-02	FAIL ABUN
PA-234	1.526E-01	2.292E-01	1.998E-01	1.169E-01	FAIL ABUN
PA-234M	4.802E+00	4.033E+00	3.507E+00	2.058E+00	NOT IDENT.
NP-236	-5.091E-02	6.232E-02	5.398E-02	3.180E-02	NOT IDENT.
NP-239	-1.736E-01	1.644E-01	1.337E-01	8.388E-02	FAIL ABUN
AM-241	1.624E-01	1.789E-01	1.499E-01	9.129E-02	NOT IDENT.
CM-243	-1.435E-02	8.904E-02	7.622E-02	4.543E-02	FAIL ABUN
AM-246	5.657E-02	1.009E-01	9.001E-02	5.150E-02	NOT IDENT.
CM-247	1.979E-02	2.946E-02	2.647E-02	1.503E-02	FAIL ABUN
CF-249	2.857E-02	3.092E-02	2.820E-02	1.578E-02	NOT IDENT.
CF-251	-1.860E-02	9.957E-02	8.768E-02	5.080E-02	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
*****

```

ENERGY	MDA COUNTS
46.50	295.9381
46.50	295.9381
46.50	295.9381
48.70	311.1447
49.72	302.5472
51.35	310.8227
52.39	292.1188
52.97	294.5866
53.15	296.6081
53.44	287.8272
54.07	304.0339
56.28	325.8630
56.28	325.8666
57.37	0.0000
57.53	319.9499
57.53	319.9516
57.60	320.0299
57.98	317.6887
57.98	317.6887
59.32	291.7504
59.32	291.7504
59.40	291.8326
59.54	291.9760
59.72	300.5476
60.01	319.0438
61.10	334.2998
61.14	334.3461
61.30	334.5304
63.00	344.9568
63.29	345.2937
63.29	345.2937
63.58	345.6298
64.28	346.4395
65.12	347.4043
65.20	347.4960
65.20	347.4960
66.05	348.4659
66.72	349.2235
66.83	369.3948
66.91	369.4893
67.20	369.8357
67.20	369.8357
67.75	394.9013
67.85	389.2834
68.90	409.3225
68.90	409.3225
69.30	415.6128
69.67	421.8798
70.82	376.9933
70.82	376.9933
70.83	377.0052
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72.87	427.5271
72.87	427.5271
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74.81	446.1765
74.81	446.1765
74.81	446.1765
74.81	446.1765
74.81	446.1765
74.81	446.1765
74.81	446.1765
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77.11	449.2136

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77.11	449.2136
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77.11	449.2136
77.11	449.2136
78.38	450.8719
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79.80	396.1223
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80.18	396.5505
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80.30	408.6148
80.57	408.9284
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81.07	469.2871
81.07	469.2871
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81.07	469.2871
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83.78	457.7789
83.78	457.7789
83.78	457.7789
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85.43	408.4133
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86.54	523.4249
86.59	523.4960
86.72	419.9540
86.79	420.0300
86.94	420.2010
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87.30	420.6063
87.30	420.6063
87.30	420.6063
87.30	420.6063
87.30	420.6063
87.57	420.9081
87.88	421.2543
88.03	421.4232
88.36	421.7904
88.47	421.9128
89.95	423.5551
91.11	424.8321
92.29	426.1239
92.38	426.2231
92.38	426.2231
93.35	427.2764
94.00	427.9814
94.67	428.6970
94.67	428.7033
94.90	428.9503
94.90	428.9503
94.90	428.9503
94.90	428.9503
95.87	371.4500
95.87	371.4500
96.73	369.1318
97.43	379.1276
98.44	323.7597
98.44	323.7597
98.88	331.9358
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99.55	317.4205
99.86	323.3083
100.00	323.4184
100.10	323.4985
103.18	394.4303
103.76	363.2867
105.00	318.7975
105.31	335.9870
108.00	380.7288
109.28	371.1407

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111.00	361.8403
111.76	332.3375
112.95	354.7801
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116.30	347.6033
117.00	339.4235
117.00	339.4235
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121.62	313.0944
121.78	313.1988
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122.32	328.9520
122.32	328.9520
122.32	328.9520
123.07	312.0547
127.23	290.0427
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144.24	335.8347
144.24	335.8347
144.24	335.8347
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145.44	308.9564
147.16	297.7981
152.43	307.5945
152.70	334.5501
153.22	312.3968
154.21	319.0721
154.21	319.0721
154.21	319.0721
154.21	319.0721
155.03	312.5049
156.02	309.5227
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162.64	292.5638
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163.89	299.4115
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167.43	319.9850
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172.10	296.2165
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176.60	302.8813
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186.00	299.9020
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193.63	301.4448
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205.31	327.9472

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209.75	297.8844
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228.18	299.3744
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236.00	254.5262
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238.63	239.8952
238.63	239.8952
238.63	239.8952
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241.98	240.8848
241.98	240.8848
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249.79	225.0801
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252.85	228.9241
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256.20	235.9020
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268.79	203.7917
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269.46	223.6795
269.46	223.6795
269.46	223.6795
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273.65	202.4211
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277.60	231.1612
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280.46	219.7561
281.68	213.3781
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284.30	251.9534
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285.90	228.1655
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286.10	228.2121
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290.80	212.1021
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295.21	228.3069

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300.09	197.1689
300.09	197.1689
300.09	197.1689
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304.40	180.9660
304.84	177.6328
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319.41	212.2905
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323.87	196.6796
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334.30	175.7935
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338.28	186.3755
338.28	186.3755
338.28	186.3755
338.32	186.3833
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338.32	186.3833
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340.57	166.2189
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351.92	201.0114
351.92	201.0114
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388.63	152.1779
391.69	157.1877
391.69	157.1877
392.90	170.3033
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439.89	128.7018
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445.03	151.3731
445.03	151.3731
445.03	151.3731
453.90	153.3383
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511.85	124.2875
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513.99	124.4624
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520.65	107.4409
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569.32	120.5114
569.50	121.5706
569.67	121.5848
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574.64	132.7259
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592.07	125.1073
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595.88	121.3643
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602.71	112.2264
602.71	112.2264
603.60	124.7587
604.41	128.3848
604.70	146.2393
609.31	141.6196



609.31	141.6196
609.31	141.6196
609.31	141.6196
610.33	137.7672
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614.37	157.8099
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621.84	127.5011
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646.12	97.4676
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661.65	115.0360
664.57	0.0000
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666.33	94.8926
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696.49	110.5842
696.49	110.5842
697.00	127.4862
697.49	141.5840
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698.50	135.0879
699.00	132.3080
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722.78	102.5596
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742.81	82.4709
744.21	81.5656
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756.15	80.1040
756.87	80.1310
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766.84	115.4289
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778.00	104.0061
778.57	93.6309
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798.80	136.6931
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880.27	68.3345
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884.67	81.7432
889.25	70.6382
896.60	91.3883
898.02	87.3329
899.00	79.1446
903.28	77.6645
911.07	72.3043
911.07	72.3043
911.07	72.3043
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920.93	79.1912
925.00	61.2843
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935.52	66.7565
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964.01	104.8721
966.15	110.3880
968.20	138.3933
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969.11	144.7849
969.11	144.7849
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983.50	77.5714
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1001.68	78.1031
1004.76	123.1819
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1038.76	0.0000
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1048.07	75.5533

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1078.86	64.1224
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1115.52	80.2148
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1120.29	92.0605
1120.29	92.0605
1120.29	92.0605
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1124.00	0.0000
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1147.95	0.0000
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1173.22	63.2703
1175.09	65.2568
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1189.05	76.3133
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1271.85	52.2049
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1274.54	77.3652
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1298.22	0.0000
1312.09	44.7059
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1325.50	42.8408
1332.49	51.1056
1333.61	52.1437
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1368.53	0.0000
1376.25	39.8468
1384.27	27.2296
1394.10	44.7277
1395.20	57.2271
1407.95	45.9428
1434.06	29.4463
1436.60	36.8335
1457.56	0.0000
1460.81	30.7184
1489.15	32.0173
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1596.49	37.7981
1620.62	26.0664
1678.03	0.0000
1691.02	23.5635
1691.02	23.5635
1706.46	0.0000
1750.46	0.0000
1764.49	23.0773
1764.49	23.0773
1764.49	23.0773
1764.49	23.0773
1770.23	17.7745
1771.40	21.3353
1791.20	0.0000
1808.65	15.1263

1836.01

12.1740

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132003

Total Uranium Activity	2.0274E+01	ug/g
Total Uranium Counting Unc.	9.2321E+00	ug/g
Total Uranium Tpu	4.7102E-06	ug/g
Total Uranium Mda	3.3848E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270          SAMPLE ID   : G244132003
*  ANALYST       : MXR1            DETECTOR    : GAM18
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 09:23:33.35  SAMPLE ALQT: 127.720 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.955E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.266E+00
GROSS GAMMA MDA (pCi/GRAM ) : 2.608E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.263E+00

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## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 11:53:38.66

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132004.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:53:06
Sample ID          : G244132004          Sample quantity   : 1.27670E+02 GRAM
Detector name      : GAM11              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time  : 0 02:00:01.67  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940270             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	63.09*	80	491	0.90	125.06	122	8	1.11E-02	50.6	
2	3	74.77*	535	406	0.86	148.43	145	13	7.43E-02	7.1	2.11E+00
3	3	77.10*	684	366	0.78	153.10	145	13	9.50E-02	5.8	
4	7	84.35*	185	333	1.54	167.61	164	27	2.57E-02	18.4	1.10E+00
5	7	87.17*	372	335	1.25	173.26	164	27	5.17E-02	9.9	
6	7	89.91	190	240	0.87	178.74	164	27	2.63E-02	14.3	
7	7	92.79*	343	386	1.30	184.51	164	27	4.76E-02	11.9	
8	0	129.29	107	331	1.14	257.55	254	8	1.49E-02	31.1	
9	0	144.30*	36	347	1.42	287.61	283	8	4.98E-03	93.5	
10	0	185.64*	242	282	1.16	370.34	366	9	3.36E-02	14.7	
11	0	209.20	147	245	1.00	417.49	414	8	2.04E-02	20.2	
12	7	238.61*	1376	184	0.96	476.35	471	18	1.91E-01	3.2	7.57E-01
13	7	241.64*	303	239	1.47	482.43	471	18	4.21E-02	11.7	
14	0	270.13*	116	229	1.56	539.45	535	11	1.62E-02	27.1	
15	0	277.12	45	133	0.77	553.44	552	6	6.29E-03	42.4	
16	0	295.29*	457	186	1.05	589.79	585	11	6.34E-02	7.6	
17	0	300.27	100	160	1.66	599.76	596	10	1.38E-02	25.6	
18	0	328.31	91	125	1.16	655.88	652	8	1.27E-02	23.6	
19	0	338.25	257	262	1.11	675.78	670	13	3.58E-02	14.3	
20	0	351.96*	721	192	1.11	703.21	698	12	1.00E-01	5.4	
21	0	463.32	75	112	1.09	926.09	921	10	1.03E-02	29.2	
22	0	510.66*	83	142	1.90	1020.82	1013	14	1.15E-02	37.9	
23	0	583.21*	427	140	1.41	1165.99	1161	13	5.93E-02	7.6	
24	0	609.40*	474	105	1.25	1218.40	1213	12	6.59E-02	6.5	
25	0	661.43	78	84	1.31	1322.53	1319	9	1.09E-02	23.6	
26	0	727.38	92	90	1.11	1454.50	1448	12	1.28E-02	23.0	
27	0	768.34	41	65	1.50	1536.45	1532	9	5.69E-03	38.8	
28	0	795.28*	59	76	1.29	1590.37	1583	15	8.20E-03	34.9	
29	0	861.12	57	55	2.22	1722.11	1716	12	7.87E-03	29.7	
30	0	911.38*	301	50	1.63	1822.67	1815	13	4.18E-02	7.5	
31	0	969.25*	174	43	1.26	1938.47	1934	11	2.41E-02	10.8	
32	0	1120.72*	161	51	2.10	2241.53	2234	19	2.24E-02	13.1	
33	0	1378.14	41	24	1.61	2756.52	2751	15	5.68E-03	29.9	
34	0	1461.16*	862	37	1.66	2922.62	2916	16	1.20E-01	3.8	
35	0	1730.42	18	13	1.86	3461.22	3458	13	2.44E-03	55.4	
36	0	1765.08*	93	8	1.78	3530.55	3523	16	1.29E-02	12.8	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 09:53:06
Sample ID        : G244132004             Sample quantity  : 127.67 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA11                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.67   0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance : 1.50 keV               Half life ratio   : 8.00
Errors propagated: Yes                    Systematic Error  : 0.00 %
Efficiency type   : Empirical              Efficiencies at   : Peak Energy
Abundance limit  : 75.00                  WTM error limit   : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.940E+01	2.225E+00	4.647E-01	4.018E-02	41.738
CD-109	+	88.03	*	4.424E+00	9.657E-01	8.563E-01	8.120E-02	5.167
SN-126	+	64.28		5.760E-01	5.883E-01	5.528E-01	8.018E-02	1.042
	+	86.94		1.811E+00	8.324E-01	3.533E-01	1.467E-01	5.127
	+	87.57	*	4.356E-01	9.509E-02	8.459E-02	7.979E-03	5.150
BA-137M	+	661.65	*	1.068E-01	5.148E-02	5.632E-02	5.329E-03	1.896
CS-137	+	661.65	*	1.129E-01	5.443E-02	5.953E-02	5.642E-03	1.896
CE-141	+	145.44	*	4.180E-02	7.826E-02	7.797E-02	7.146E-03	0.536
TL-208	+	277.35		4.186E-01	3.628E-01	5.413E-01	9.597E-02	0.773
	+	510.84		3.811E-01	2.935E-01	2.035E-01	2.759E-02	1.872
	+	583.14	*	5.603E-01	1.049E-01	4.995E-02	5.395E-03	11.216
	+	860.37		6.940E-01	4.186E-01	3.562E-01	3.710E-02	1.948
BI-211		72.87		-1.335E+00	2.727E+00	3.850E+00	3.058E-01	-0.347
	+	351.07	*	4.176E+00	7.121E-01	2.818E-01	3.718E-02	14.817
PB-212	+	74.81		2.540E+00	4.788E-01	4.242E-01	5.247E-02	5.987
	+	77.11		1.856E+00	2.659E-01	2.431E-01	2.020E-02	7.632
	+	87.30		2.015E+00	4.837E-01	3.920E-01	5.380E-02	5.140
	+	238.63	*	1.741E+00	2.675E-01	7.571E-02	1.060E-02	23.002
	+	300.09		1.949E+00	1.047E+00	9.597E-01	1.538E-01	2.031
PO-212	+	74.81		2.540E+00	4.788E-01	4.242E-01	5.247E-02	5.987
	+	77.11		1.856E+00	2.659E-01	2.431E-01	2.020E-02	7.632
	+	87.30		2.015E+00	4.837E-01	3.920E-01	5.380E-02	5.140
		115.19		-1.609E-02	2.846E+00	4.847E+00	4.107E-01	-0.003
	+	238.63	*	1.741E+00	2.675E-01	7.571E-02	1.060E-02	23.002
	+	300.09		1.949E+00	1.047E+00	9.597E-01	1.538E-01	2.031
BI-214	+	609.31	*	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
	+	1120.29		2.052E+00	5.815E-01	3.011E-01	3.252E-02	6.816
	+	1764.49		1.613E+00	4.338E-01	2.655E-01	2.187E-02	6.076
PB-214	+	74.81		4.376E+00	7.864E-01	7.309E-01	8.025E-02	5.987
	+	77.11		3.181E+00	5.163E-01	4.168E-01	4.699E-02	7.632
	+	87.30		3.452E+00	7.990E-01	6.715E-01	8.163E-02	5.140
	+	241.98		2.304E+00	6.348E-01	4.561E-01	6.645E-02	5.052
	+	295.21		1.566E+00	3.485E-01	1.823E-01	2.972E-02	8.594
	+	351.92	*	1.453E+00	2.591E-01	9.825E-02	1.390E-02	14.785



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		4.376E+00	7.864E-01	7.309E-01	8.025E-02	5.987
	+	77.11		3.181E+00	5.163E-01	4.168E-01	4.699E-02	7.632
	+	87.30		3.452E+00	7.990E-01	6.715E-01	8.163E-02	5.140
	+	241.98		2.304E+00	6.348E-01	4.561E-01	6.645E-02	5.052
	+	295.21		1.566E+00	3.485E-01	1.823E-01	2.972E-02	8.594
PO-216	+	351.92	*	1.453E+00	2.591E-01	9.825E-02	1.390E-02	14.785
	+	74.81		2.540E+00	4.788E-01	4.242E-01	5.247E-02	5.987
	+	77.11		1.856E+00	2.659E-01	2.431E-01	2.020E-02	7.632
	+	87.30		2.015E+00	4.837E-01	3.920E-01	5.380E-02	5.140
	+	238.63	*	1.741E+00	2.675E-01	7.571E-02	1.060E-02	23.002
PO-218	+	300.09		1.949E+00	1.047E+00	9.597E-01	1.538E-01	2.031
	+	74.81		4.376E+00	7.864E-01	7.309E-01	8.025E-02	5.987
	+	77.11		3.181E+00	5.163E-01	4.168E-01	4.699E-02	7.632
	+	87.30		3.452E+00	7.990E-01	6.715E-01	8.163E-02	5.140
	+	241.98		2.304E+00	6.348E-01	4.561E-01	6.645E-02	5.052
RA-224	+	295.21		1.566E+00	3.485E-01	1.823E-01	2.972E-02	8.594
	+	351.92	*	1.453E+00	2.591E-01	9.825E-02	1.390E-02	14.785
	+	240.98	*	4.369E+00	1.179E+00	8.619E-01	1.154E-01	5.070
	+	609.31	*	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
	+	1120.29		2.052E+00	5.815E-01	3.011E-01	3.252E-02	6.816
AC-228	+	1764.49		1.613E+00	4.338E-01	2.655E-01	2.187E-02	6.076
	+	338.32		1.644E+00	8.437E-01	3.144E-01	1.337E-01	5.230
	+	911.07	*	1.741E+00	3.360E-01	1.870E-01	2.276E-02	9.311
	+	969.11		1.771E+00	5.685E-01	4.765E-01	1.129E-01	3.717
	+	338.32		1.644E+00	8.437E-01	3.144E-01	1.337E-01	5.230
RA-228	+	911.07	*	1.741E+00	3.360E-01	1.870E-01	2.276E-02	9.311
	+	969.11		1.771E+00	5.685E-01	4.765E-01	1.129E-01	3.717
	+	74.81		2.575E+00	4.226E-01	4.301E-01	3.519E-02	5.987
	+	77.11		1.881E+00	2.696E-01	2.465E-01	2.049E-02	7.632
	+	87.30		2.043E+00	4.459E-01	3.975E-01	3.736E-02	5.140
TH-228	+	238.63	*	1.766E+00	2.712E-01	7.676E-02	1.075E-02	23.002
	+	300.09		1.976E+00	1.567E+00	9.731E-01	5.889E-01	2.031
	+	609.31	*	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
	+	1120.29		2.052E+00	5.815E-01	3.011E-01	3.252E-02	6.816
	+	1764.49		1.613E+00	4.338E-01	2.655E-01	2.187E-02	6.076
TH-232	+	338.32		1.644E+00	5.212E-01	3.144E-01	4.239E-02	5.230
	+	911.07	*	1.741E+00	3.360E-01	1.870E-01	2.276E-02	9.311
	+	969.11		1.771E+00	5.685E-01	4.765E-01	1.129E-01	3.717
	+	63.29	*	1.455E+00	1.493E+00	1.394E+00	2.425E-01	1.044
	+	92.38		2.640E+00	7.946E-01	5.625E-01	1.032E-01	4.693
U-234	+	609.31	*	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
	+	1120.29		2.052E+00	5.815E-01	3.011E-01	3.252E-02	6.816
	+	1764.49		1.613E+00	4.338E-01	2.655E-01	2.187E-02	6.076
	+	89.95		2.980E+00	1.258E+00	1.142E+00	3.546E-01	2.610
	+	93.35		3.174E+00	1.172E+00	6.733E-01	1.897E-01	4.714
U-235	+	105.00		8.323E-01	8.382E-01	1.426E+00	4.257E-01	0.584
	+	143.76	*	1.431E-01	2.688E-01	2.798E-01	4.947E-02	0.511
	+	163.35		3.853E-01	4.032E-01	6.902E-01	1.349E-01	0.558
	+	185.71		2.135E-01	6.691E-02	6.135E-02	6.506E-03	3.481

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		205.31		1.431E-01	4.903E-01	7.358E-01	1.514E-01	0.194
NP-237	+	86.50	*	1.279E+00	3.843E-01	2.504E-01	5.667E-02	5.110
		95.87		2.495E-01	7.936E-01	1.151E+00	2.850E-01	0.217
U-238	+	63.29	*	1.455E+00	1.493E+00	1.394E+00	2.425E-01	1.044
	+	92.38		2.640E+00	6.748E-01	5.625E-01	5.150E-02	4.693
AM-243	+	74.67	*	4.117E-01	6.741E-02	6.893E-02	5.578E-03	5.973
	+	86.72		4.797E+01	1.047E+01	9.373E+00	8.746E-01	5.118
		117.66		-1.507E+00	2.859E+00	4.748E+00	4.016E-01	-0.317
		142.18		-6.155E+00	1.608E+01	2.381E+01	2.123E+00	-0.258
ANH-511	+	511.00	*	8.232E-02	6.301E-02	4.398E-02	4.702E-03	1.872

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-6.353E-02	2.656E-01	4.349E-01	4.922E-02	-0.146
NA-22		1274.54	*	-7.204E-03	3.774E-02	5.994E-02	4.922E-03	-0.120
NA-24		1368.53	*	3.505E-02	3.774E-02	Half-Life too short		
AL-26		1129.67		-1.635E+00	1.800E+00	2.195E+00	1.854E-01	-0.745
		1808.65	*	-8.328E-03	2.773E-02	4.286E-02	3.499E-03	-0.194
TI-44		67.85		2.859E-02	3.319E-02	5.438E-02	4.121E-03	0.526
	+	78.38	*	3.424E-01	4.907E-02	5.587E-02	4.710E-03	6.128
SC-46		889.25	*	-1.472E-02	3.258E-02	5.210E-02	5.131E-03	-0.282
	+	1120.51		3.478E-01	9.583E-02	1.386E-01	1.182E-02	2.510
V-48		944.10		-7.212E-02	6.497E-01	1.071E+00	1.036E-01	-0.067
		983.50	*	-1.180E-02	5.281E-02	8.559E-02	8.118E-03	-0.138
		1312.09		-6.186E-02	7.125E-02	1.022E-01	8.427E-03	-0.605
CR-51		320.08	*	6.004E-02	3.224E-01	5.220E-01	7.575E-02	0.115
MN-52		744.21		-1.249E-03	1.794E-01	2.888E-01	2.806E-02	-0.004
		848.13		3.221E+00	5.056E+00	8.984E+00	8.852E-01	0.358
		935.52		2.328E-01	2.006E-01	3.670E-01	3.563E-02	0.634
		1246.25		2.354E+00	5.372E+00	9.156E+00	7.474E-01	0.257
		1333.61		8.100E-01	3.401E+00	5.706E+00	4.716E-01	0.142
		1434.06	*	1.396E-02	1.633E-01	2.666E-01	2.234E-02	0.052
MN-54		834.83	*	-9.835E-03	3.293E-02	5.410E-02	5.328E-03	-0.182
CO-56		846.75	*	2.105E-03	3.425E-02	5.802E-02	5.716E-03	0.036
		977.42		6.161E-01	2.170E+00	3.732E+00	3.551E-01	0.165
		1037.82		5.983E-02	2.375E-01	4.048E-01	3.884E-02	0.148
		1175.09		9.926E-02	1.806E+00	2.976E+00	2.392E-01	0.033
		1238.25		1.453E-01	8.989E-02	1.635E-01	1.376E-02	0.889
		1360.21		4.138E-01	8.732E-01	1.505E+00	1.249E-01	0.275
		1771.40		9.176E-02	2.093E-01	3.363E-01	2.767E-02	0.273
CO-57		122.06	*	5.689E-04	1.852E-02	3.149E-02	2.664E-03	0.018
		136.48		-1.857E-01	1.655E-01	2.638E-01	2.478E-02	-0.704
CO-58		810.76	*	-9.520E-04	3.865E-02	6.131E-02	6.036E-03	-0.016
FE-59		142.65		1.567E+00	2.464E+00	3.796E+00	3.390E-01	0.413
		192.34		2.620E-01	7.721E-01	1.298E+00	1.947E-01	0.202
		1099.22	*	-1.030E-01	8.253E-02	1.168E-01	1.098E-02	-0.882
		1291.56		8.827E-03	9.964E-02	1.637E-01	1.545E-02	0.054

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1173.22			7.582E-03	3.578E-02	6.002E-02	4.822E-03	0.126
	1332.49	*		1.148E-02	2.988E-02	5.124E-02	4.234E-03	0.224
ZN-65	1115.52	*		-5.851E-02	6.737E-02	7.796E-02	6.689E-03	-0.751
GE-68	1077.35	*		1.123E+00	1.096E+00	1.987E+00	1.765E-01	0.565
AS-73	53.44	*		5.529E-02	5.507E-01	8.850E-01	6.646E-02	0.062
AS-74	595.88	*		8.855E-02	7.886E-02	1.401E-01	1.425E-02	0.632
	634.78			-9.836E-02	2.874E-01	4.534E-01	4.435E-02	-0.217
SE-75	66.05			-2.267E+00	3.802E+00	5.328E+00	5.063E-01	-0.426
	96.73			-4.687E-01	6.654E-01	8.991E-01	1.242E-01	-0.521
	121.11			1.543E-04	1.014E-01	1.723E-01	1.911E-02	0.001
	136.00			-1.494E-02	3.033E-02	5.004E-02	4.405E-03	-0.299
	198.60			-1.394E+00	1.510E+00	2.312E+00	2.766E-01	-0.603
	264.65	*		2.065E-02	3.666E-02	5.878E-02	8.640E-03	0.351
	279.53			6.241E-02	1.035E-01	1.558E-01	2.439E-02	0.401
	303.91			-9.392E-01	2.083E+00	2.848E+00	4.734E-01	-0.330
	400.65			3.025E-02	2.239E-01	3.817E-01	4.882E-02	0.079
BR-77	87.88	+		6.739E+02	1.471E+02	1.968E+02	1.864E+01	3.424
	200.40			-1.127E+01	9.391E+01	1.541E+02	1.743E+01	-0.073
	239.00	+		1.968E+02	2.891E+01	2.659E+01	3.533E+00	7.400
	249.79			3.778E+00	3.784E+01	6.197E+01	8.592E+00	0.061
	281.68			-6.259E+01	6.571E+01	8.592E+01	1.325E+01	-0.729
	297.23			8.795E+01	4.255E+01	5.853E+01	8.780E+00	1.503
	303.76			-6.142E+01	1.255E+02	1.709E+02	2.530E+01	-0.359
	439.47			3.513E+01	8.466E+01	1.462E+02	1.577E+01	0.240
	484.57			-8.648E+01	1.338E+02	2.108E+02	2.270E+01	-0.410
	520.65	*		-3.724E-01	6.715E+00	1.109E+01	1.182E+00	-0.034
	574.64			-2.065E-01	1.230E+02	2.024E+02	2.093E+01	-0.001
	578.91			-1.715E+01	6.009E+01	8.375E+01	8.633E+00	-0.205
	585.48			6.484E+02	1.585E+02	2.804E+02	2.876E+01	2.312
	755.35			1.303E+02	1.078E+02	1.915E+02	1.865E+01	0.680
	817.79			-3.597E+01	8.522E+01	1.297E+02	1.275E+01	-0.277
SR-82	698.33			3.060E+01	2.772E+01	4.921E+01	4.719E+00	0.622
	776.49	*		-2.687E-01	3.665E-01	5.458E-01	5.338E-02	-0.492
	1395.20			-1.594E+00	8.932E+00	1.398E+01	1.166E+00	-0.114
RB-83	520.41	*		-2.626E-03	6.254E-02	1.034E-01	1.102E-02	-0.025
	529.64			-1.520E-02	9.290E-02	1.518E-01	1.612E-02	-0.100
	552.65			-2.871E-02	1.651E-01	2.684E-01	2.816E-02	-0.107
RB-84	881.50	*		3.486E-02	6.108E-02	1.077E-01	1.061E-02	0.324
KR-85	513.99	*		-1.577E+00	7.265E+00	1.037E+01	1.108E+00	-0.152
SR-85	513.99	*		-7.982E-03	3.678E-02	5.250E-02	5.608E-03	-0.152
RB-86	1076.63	*		8.217E-01	6.823E-01	1.252E+00	1.112E-01	0.656
Y-88	898.02			1.791E-02	3.518E-02	6.176E-02	6.103E-03	0.290
	1836.01	*		9.760E-03	3.100E-02	5.411E-02	4.392E-03	0.180
ZR-88	392.90	*		1.606E-02	2.626E-02	4.605E-02	4.911E-03	0.349
Y-91	1204.90	*		1.382E+01	1.474E+01	2.643E+01	2.139E+00	0.523
NB-94	702.63	*		-1.126E-02	2.901E-02	4.518E-02	4.339E-03	-0.249
	871.10			1.153E-02	2.894E-02	5.046E-02	4.973E-03	0.228
NB-95	765.79	*		2.096E-02	4.342E-02	6.451E-02	6.297E-03	0.325
NB-95M	235.69	*		3.418E-02	1.152E-01	1.715E-01	2.394E-02	0.199

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95		724.18		1.073E-01	8.720E-02	1.415E-01	1.463E-02	0.758
		756.15	*	4.816E-02	6.414E-02	1.102E-01	1.159E-02	0.437
NB-97		657.90	*	2.243E-02	6.414E-02	Half-Life	too short	
	1024.50			4.960E-01	6.414E-02	Half-Life	too short	
ZR-97		254.15		-2.832E-01	6.414E-02	Half-Life	too short	
		355.39		-1.460E-01	6.414E-02	Half-Life	too short	
		507.63	*	1.808E-01	6.414E-02	Half-Life	too short	
		602.52		9.971E-02	6.414E-02	Half-Life	too short	
		1021.30		-8.549E-01	6.414E-02	Half-Life	too short	
		1147.95		1.303E+00	6.414E-02	Half-Life	too short	
		1362.66		-6.496E-02	6.414E-02	Half-Life	too short	
		1750.46		2.194E-01	6.414E-02	Half-Life	too short	
MO-99		140.51		5.293E+00	1.742E+01	2.652E+01	7.366E+00	0.200
		181.06		-4.691E+00	1.141E+01	1.648E+01	3.161E+00	-0.285
		366.43		-7.231E+00	5.678E+01	8.896E+01	1.078E+01	-0.081
		739.58	*	-6.121E-01	7.863E+00	1.258E+01	1.990E+00	-0.049
		778.00		-1.365E+01	2.327E+01	3.505E+01	3.429E+00	-0.390
TC-99M		140.51	*	3.731E+08	2.327E+01	Half-Life	too short	
RH-101		127.23		1.469E-02	2.721E-02	4.274E-02	3.651E-03	0.344
		198.01	*	-1.478E-02	2.791E-02	4.391E-02	4.914E-03	-0.337
		325.23		-5.489E-03	2.230E-01	3.161E-01	4.436E-02	-0.017
RH-102		418.52		-4.660E-02	2.357E-01	3.916E-01	4.210E-02	-0.119
		475.06	*	1.424E-03	2.348E-02	3.939E-02	4.247E-03	0.036
		631.29		2.687E-02	4.791E-02	8.203E-02	8.055E-03	0.328
		697.49		5.491E-02	6.818E-02	1.180E-01	1.131E-02	0.465
	+	766.84		1.685E-01	1.318E-01	1.927E-01	1.882E-02	0.874
		1046.59		-4.091E-02	9.888E-02	1.562E-01	1.422E-02	-0.262
		1112.84		-1.321E-01	1.930E-01	2.566E-01	2.205E-02	-0.515
RU-103		497.08	*	1.647E-02	3.430E-02	5.902E-02	9.172E-03	0.279
	+	610.33		1.240E+01	2.694E+00	2.843E+00	4.964E-01	4.360
RH-106		511.85		4.102E-01	3.140E-01	3.974E-01	4.248E-02	1.032
		621.84	*	9.535E-02	2.908E-01	4.881E-01	6.947E-02	0.195
		1050.47		8.910E-01	1.923E+00	3.336E+00	3.028E-01	0.267
RU-106		511.85		4.102E-01	3.140E-01	3.974E-01	4.248E-02	1.032
		621.84	*	9.535E-02	2.906E-01	4.881E-01	4.843E-02	0.195
		1050.47		8.910E-01	1.923E+00	3.336E+00	3.028E-01	0.267
AG-108M		433.93	*	1.470E-02	2.533E-02	4.437E-02	4.905E-03	0.331
		614.37		6.109E-03	3.678E-02	5.382E-02	5.538E-03	0.114
		722.95		7.088E-03	3.977E-02	5.746E-02	5.726E-03	0.123
AG-110M		657.75	*	2.522E-02	3.115E-02	4.912E-02	4.786E-03	0.513
		677.61		1.927E-01	2.536E-01	4.411E-01	4.297E-02	0.437
		706.67		9.754E-02	1.828E-01	3.099E-01	3.046E-02	0.315
		763.93		7.892E-02	1.586E-01	2.373E-01	2.367E-02	0.333
		884.67		1.282E-02	4.378E-02	7.545E-02	7.617E-03	0.170
		937.48		-2.190E-02	9.385E-02	1.530E-01	1.527E-02	-0.143
		1384.27		-4.640E-03	1.702E-01	2.354E-01	2.020E-02	-0.020
IN-111		171.28		4.285E-01	6.051E-01	1.040E+00	1.035E-01	0.412
		245.39	*	3.776E-01	6.923E-01	1.050E+00	1.430E-01	0.360
IN-113M		391.69	*	-3.031E-02	3.880E-02	6.218E-02	6.763E-03	-0.488

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-113		391.69	*	-3.031E-02	3.880E-02	6.218E-02	6.763E-03	-0.488
IN-114M		190.27	*	-5.929E-02	1.560E-01	2.411E-01	2.609E-02	-0.246
CD-115		260.90		1.037E+01	7.472E+01	1.223E+02	1.769E+01	0.085
		492.35		1.278E+01	2.104E+01	3.661E+01	3.935E+00	0.349
		527.90	*	1.961E+00	6.277E+00	1.066E+01	1.133E+00	0.184
SN-117M		156.02		-1.484E+00	1.780E+00	2.864E+00	2.681E-01	-0.518
		158.56	*	3.390E-02	4.110E-02	7.122E-02	6.731E-03	0.476
SB-122		563.90	*	2.595E-01	1.291E+00	2.162E+00	2.252E-01	0.120
		692.80		-9.586E-01	3.148E+01	5.088E+01	4.871E+00	-0.019
I-123		159.00	*	1.277E-01	3.148E+01	Half-Life	too short	
		528.96		2.990E+01	3.148E+01	Half-Life	too short	
TE-123M		159.00	*	2.883E-03	2.288E-02	3.853E-02	3.665E-03	0.075
I-124		602.71	*	3.617E-03	5.247E-01	8.313E-01	8.402E-02	0.004
		722.78		5.129E-01	3.394E+00	4.887E+00	4.722E-01	0.105
		1325.50		1.268E+01	2.350E+01	4.091E+01	3.378E+00	0.310
		1376.25		5.213E+01	2.534E+01	4.734E+01	3.939E+00	1.101
		1509.49		1.435E+01	1.265E+01	2.394E+01	2.014E+00	0.600
		1691.02		3.652E-01	2.827E+00	4.798E+00	4.000E-01	0.076
SB-124		602.71		2.532E-04	3.673E-02	5.819E-02	5.882E-03	0.004
		645.85		-1.821E-01	4.044E-01	6.284E-01	6.360E-02	-0.290
		709.31		-1.185E+00	2.445E+00	3.767E+00	3.626E-01	-0.315
		713.82		-2.166E-01	1.534E+00	2.449E+00	3.131E-01	-0.088
		722.78		5.204E-02	3.444E-01	4.959E-01	4.874E-02	0.105
	+	968.20		1.798E+01	4.255E+00	7.148E+00	6.836E-01	2.516
		1045.16		-6.165E-01	2.103E+00	3.370E+00	3.071E-01	-0.183
		1325.50		1.374E+00	2.547E+00	4.433E+00	3.661E-01	0.310
		1368.21		0.000E+00	1.419E+00	2.292E+00	3.045E-01	0.000
		1436.60		-3.489E-01	3.158E+00	4.982E+00	4.175E-01	-0.070
		1691.02	*	8.740E-03	6.767E-02	1.148E-01	9.979E-03	0.076
SB-125		427.89	*	9.432E-02	8.070E-02	1.451E-01	1.582E-02	0.650
	+	463.38		6.708E-01	3.996E-01	5.269E-01	5.974E-02	1.273
		600.56		1.003E-02	1.653E-01	2.724E-01	2.907E-02	0.037
		635.90		-1.122E-01	2.285E-01	3.547E-01	3.685E-02	-0.316
TE-125M		109.28	*	3.199E+00	7.062E+00	1.227E+01	1.258E+00	0.261
I-126		388.63		6.356E-02	1.670E-01	2.892E-01	3.137E-02	0.220
		666.33	*	-7.348E-02	1.904E-01	2.585E-01	2.450E-02	-0.284
		753.82		3.018E-01	1.290E+00	2.120E+00	2.064E-01	0.142
SB-126		223.80		1.653E+00	3.279E+00	5.505E+00	6.876E-01	0.300
	+	278.60		2.587E+00	2.231E+00	3.678E+00	5.681E-01	0.703
	+	296.50		1.458E+01	3.113E+00	3.209E+00	4.821E-01	4.543
		414.70		4.645E-02	5.783E-02	1.025E-01	1.100E-02	0.453
		415.30		4.054E+00	4.912E+00	8.704E+00	9.350E-01	0.466
		555.20		1.309E+00	3.140E+00	5.360E+00	5.614E-01	0.244
		573.80		-4.225E-01	8.564E-01	1.349E+00	1.396E-01	-0.313
		593.00		-2.850E-01	7.092E-01	1.119E+00	1.141E-01	-0.255
		656.30		-2.482E-01	2.832E+00	4.218E+00	4.020E-01	-0.059
		666.33		-3.062E-02	7.933E-02	1.077E-01	1.021E-02	-0.284
		675.00		-6.770E-01	1.606E+00	2.499E+00	2.376E-01	-0.271
		695.00		-5.024E-02	7.358E-02	1.044E-01	9.997E-03	-0.481

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		697.00		-4.321E-02	2.533E-01	3.788E-01	3.631E-02	-0.114
		720.50	*	-2.040E-01	1.359E-01	1.625E-01	1.569E-02	-1.255
		856.80		-1.275E-01	4.111E-01	5.760E-01	5.676E-02	-0.221
		989.30		8.764E-02	1.098E+00	1.839E+00	1.739E-01	0.048
		1034.80		-4.145E+00	6.352E+00	9.648E+00	8.859E-01	-0.430
		1213.00		1.658E+00	3.394E+00	5.839E+00	4.735E-01	0.284
		61.10		2.005E+00	3.479E+01	5.111E+01	4.963E+00	0.039
		252.40		-3.787E-01	2.988E+00	4.814E+00	2.088E+00	-0.079
		290.80		7.221E+00	1.664E+01	2.469E+01	4.081E+00	0.292
		411.60		-1.310E+01	8.872E+00	1.303E+01	2.182E+00	-1.005
		444.90		-3.250E+00	6.401E+00	1.029E+01	1.424E+00	-0.316
		473.00		-6.722E-01	1.126E+00	1.785E+00	2.524E-01	-0.376
		543.00		4.628E+00	1.177E+01	2.002E+01	3.079E+00	0.231
		603.60		-3.183E+00	1.014E+01	1.406E+01	1.868E+00	-0.226
		685.20	*	8.029E-01	1.008E+00	1.744E+00	2.054E-01	0.461
		698.50		1.024E+01	1.025E+01	1.793E+01	2.893E+00	0.571
		722.20		-8.368E+00	2.338E+01	3.130E+01	3.649E+00	-0.267
		783.80		3.149E+00	2.782E+00	4.868E+00	6.311E-01	0.647
		57.60		-8.858E-01	4.147E+00	6.541E+00	4.709E-01	-0.135
	+	145.22		4.621E-01	8.652E-01	9.824E-01	8.850E-02	0.470
XE-127		172.10		-4.016E-02	9.419E-02	1.535E-01	1.533E-02	-0.262
		202.84	*	1.248E-03	3.919E-02	6.476E-02	7.401E-03	0.019
		374.96		-2.068E-02	1.851E-01	2.899E-01	3.377E-02	-0.071
		80.18		1.470E+00	3.778E+00	4.899E+00	4.239E-01	0.300
I-131		284.30		7.165E-01	1.213E+00	2.019E+00	3.152E-01	0.355
		364.48	*	4.429E-03	9.382E-02	1.491E-01	1.871E-02	0.030
		636.97		-4.217E-01	1.159E+00	1.823E+00	1.856E-01	-0.231
		722.89		1.017E+00	6.033E+00	8.705E+00	8.448E-01	0.117
TE-132		49.72		3.175E+00	9.465E+00	1.543E+01	1.543E+00	0.206
		111.76		-5.172E+00	1.863E+01	3.114E+01	3.255E+00	-0.166
		116.30		-1.732E+01	1.656E+01	2.677E+01	2.790E+00	-0.647
		228.16	*	-1.596E-01	4.583E-01	7.348E-01	1.330E-01	-0.217
BA-133		53.15		2.567E+00	2.372E+00	3.981E+00	3.001E-01	0.645
		79.62		3.144E-01	1.026E+00	1.505E+00	2.285E-01	0.209
		81.00		1.760E-03	8.804E-02	1.111E-01	1.768E-02	0.016
	+	276.40		4.136E-01	3.598E-01	5.796E-01	1.114E-01	0.714
I-133		302.84		-8.921E-02	1.467E-01	1.973E-01	3.541E-02	-0.452
		356.01	*	-1.562E-03	4.013E-02	5.630E-02	9.080E-03	-0.028
		383.85		-2.124E-01	2.486E-01	3.939E-01	5.688E-02	-0.539
	+	510.53		3.195E-01	2.486E-01	Half-Life too short		
		529.87	*	-2.968E-04	2.486E-01	Half-Life too short		
		706.58		7.596E-02	2.486E-01	Half-Life too short		
		856.28		-2.329E-02	2.486E-01	Half-Life too short		
		875.33		-4.714E-02	2.486E-01	Half-Life too short		
CS-134		1236.41		3.651E-01	2.486E-01	Half-Life too short		
		1298.22		1.204E-02	2.486E-01	Half-Life too short		
		475.35		2.600E-01	1.508E+00	2.553E+00	2.752E-01	0.102
		563.23		-1.285E-01	3.074E-01	4.882E-01	5.121E-02	-0.263
		569.32		-2.392E-01	1.825E-01	2.640E-01	2.766E-02	-0.906

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135		604.70		8.774E-03	3.465E-02	5.113E-02	5.168E-03	0.172
	+	795.84	*	1.110E-01	7.828E-02	8.960E-02	8.839E-03	1.239
		801.93		-1.683E-01	3.838E-01	5.150E-01	5.078E-02	-0.327
		1038.57		1.490E+00	3.119E+00	5.434E+00	4.976E-01	0.274
		1167.94		-7.501E-01	1.965E+00	3.073E+00	2.485E-01	-0.244
		1365.15		8.198E-02	1.093E+00	1.785E+00	1.556E-01	0.046
		268.24	*	1.659E-01	1.513E-01	2.340E-01	3.672E-02	0.709
		288.45		-6.186E+08	1.513E-01	Half-Life	too short	
		417.63		5.375E+08	1.513E-01	Half-Life	too short	
		546.56		-4.624E+07	1.513E-01	Half-Life	too short	
		836.80		-8.072E+07	1.513E-01	Half-Life	too short	
		1038.76		2.904E+08	1.513E-01	Half-Life	too short	
		1124.00		1.974E+09	1.513E-01	Half-Life	too short	
		1131.51		6.166E+06	1.513E-01	Half-Life	too short	
		1260.41	*	1.029E+08	1.513E-01	Half-Life	too short	
		1457.56		5.741E+09	1.513E-01	Half-Life	too short	
		1678.03		-2.342E+08	1.513E-01	Half-Life	too short	
		1706.46		4.438E+08	1.513E-01	Half-Life	too short	
		1791.20		2.377E+07	1.513E-01	Half-Life	too short	
CS-136		66.91		-2.016E-02	5.807E-01	8.408E-01	1.248E-01	-0.024
	+	86.29		5.336E+00	1.271E+00	1.562E+00	2.078E-01	3.416
		153.22		6.693E-01	5.170E-01	9.070E-01	9.266E-02	0.738
		163.89		5.682E-01	8.497E-01	1.458E+00	1.543E-01	0.390
		176.55		1.966E-01	2.874E-01	4.922E-01	5.222E-02	0.399
		273.65		2.377E-01	4.814E-01	5.802E-01	8.994E-02	0.410
		340.57		1.672E-01	1.171E-01	1.833E-01	2.483E-02	0.913
		818.51		4.360E-03	6.144E-02	9.891E-02	9.734E-03	0.044
		1048.07	*	-6.073E-02	8.785E-02	1.340E-01	1.265E-02	-0.453
		1235.34		1.870E-01	5.443E-01	9.122E-01	1.050E-01	0.205
		165.85	*	-7.373E-03	2.454E-02	4.040E-02	3.926E-03	-0.182
		162.64		6.256E-01	5.874E-01	1.022E+00	1.028E-01	0.612
		304.84		1.125E+00	1.145E+00	1.708E+00	5.206E-01	0.659
CE-139 BA-140		423.70		-3.646E-01	1.432E+00	2.357E+00	7.789E-01	-0.155
		537.32	*	-2.027E-01	2.295E-01	3.352E-01	1.130E-01	-0.605
	+	328.77		6.765E-01	3.329E-01	4.864E-01	6.905E-02	1.391
		432.53		-8.759E-01	1.531E+00	2.455E+00	2.729E-01	-0.357
LA-140		487.03		-7.716E-02	1.056E-01	1.648E-01	1.844E-02	-0.468
		751.79		-3.155E-01	1.483E+00	2.337E+00	2.467E-01	-0.135
		815.85		7.524E-02	2.710E-01	4.457E-01	4.775E-02	0.169
		867.82		1.646E-01	1.093E+00	1.768E+00	1.814E-01	0.093
		919.63		1.648E+00	2.127E+00	3.823E+00	4.434E-01	0.431
		925.24		-1.501E-01	8.528E-01	1.399E+00	1.431E-01	-0.107
		1596.49	*	-4.106E-02	7.305E-02	1.110E-01	9.337E-03	-0.370
		57.37		7.657E-05	7.305E-02	Half-Life	too short	
		231.56		3.489E-04	7.305E-02	Half-Life	too short	
		293.26	*	1.713E-04	7.305E-02	Half-Life	too short	
CE-143	+	350.59		1.803E-02	7.305E-02	Half-Life	too short	
		490.36		1.934E-04	7.305E-02	Half-Life	too short	
		664.57		6.599E-05	7.305E-02	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
		721.93		-6.857E-04	7.305E-02	Half-Life too short		
CE-144		80.11		7.696E-01	1.924E+00	2.497E+00	2.148E-01	0.308
		133.54	*	1.320E-01	1.751E-01	2.763E-01	4.310E-02	0.478
PM-144		476.78		-8.254E-03	5.644E-02	9.313E-02	1.065E-02	-0.089
		618.01		2.564E-03	2.790E-02	4.601E-02	4.678E-03	0.056
		696.49	*	-1.798E-02	3.494E-02	5.053E-02	4.844E-03	-0.356
		778.57		-1.625E+00	2.106E+00	3.099E+00	3.033E-01	-0.524
PR-144		696.49	*	-1.218E+00	2.366E+00	3.422E+00	3.280E-01	-0.356
		1489.15		-9.832E-01	9.827E+00	1.622E+01	1.364E+00	-0.061
PM-146		453.90	*	-1.091E-02	3.848E-02	6.313E-02	7.915E-03	-0.173
		633.02		-1.090E+00	1.295E+00	1.837E+00	6.919E-01	-0.594
		735.90		1.571E-01	1.412E-01	2.392E-01	6.924E-02	0.657
		747.13		-4.924E-02	8.295E-02	1.250E-01	1.842E-02	-0.394
ND-147	+	91.11		6.933E-01	2.101E-01	3.495E-01	3.464E-02	1.984
		319.41		-2.227E+00	2.819E+00	4.229E+00	6.029E-01	-0.527
		439.89		2.473E+00	4.542E+00	7.908E+00	8.531E-01	0.313
		531.02	*	-3.045E-01	4.808E-01	7.521E-01	1.217E-01	-0.405
PM-149		285.90	*	1.841E+01	5.758E+01	9.446E+01	1.893E+01	0.195
EU-152		121.78		-2.401E-02	5.520E-02	9.185E-02	8.985E-03	-0.261
		244.69		1.990E-01	2.859E-01	4.378E-01	5.950E-02	0.455
		344.27	*	-3.904E-02	9.374E-02	1.265E-01	1.715E-02	-0.309
		443.98		-8.629E-01	8.113E-01	1.243E+00	1.341E-01	-0.694
		778.89		-2.021E-01	2.425E-01	3.538E-01	3.462E-02	-0.571
		867.32		-2.199E-01	7.483E-01	1.102E+00	1.086E-01	-0.200
		964.01		4.998E-01	2.894E-01	4.984E-01	4.776E-02	1.003
		1085.78		8.337E-02	3.069E-01	5.224E-01	4.606E-02	0.160
		1112.02		3.178E-02	2.439E-01	3.975E-01	3.419E-02	0.080
		1407.95		2.050E-01	1.600E-01	3.028E-01	2.530E-02	0.677
GD-153		69.67		-8.297E-01	1.258E+00	1.927E+00	1.484E-01	-0.430
	+	83.37		3.896E+01	1.474E+01	1.866E+01	1.669E+00	2.088
		97.43	*	-3.998E-02	6.937E-02	9.489E-02	8.430E-03	-0.421
		103.18		-6.830E-02	7.707E-02	1.267E-01	1.099E-02	-0.539
EU-154		123.07		-7.059E-04	3.918E-02	6.646E-02	7.476E-03	-0.011
		247.94		-1.872E-01	2.905E-01	4.509E-01	7.085E-02	-0.415
		591.81		-4.300E-01	5.043E-01	7.543E-01	9.719E-02	-0.570
		723.30		6.059E-02	1.663E-01	2.460E-01	2.579E-02	0.246
		756.87		2.905E-01	7.230E-01	1.205E+00	1.544E-01	0.241
		873.19		8.214E-02	2.486E-01	4.308E-01	5.662E-02	0.191
		996.32		-3.228E-01	3.344E-01	4.917E-01	8.932E-02	-0.657
		1004.76		-4.744E-02	1.907E-01	3.086E-01	3.767E-02	-0.154
		1274.45	*	-2.123E-02	1.054E-01	1.671E-01	1.837E-02	-0.127
EU-155		48.70		-1.779E+00	1.578E+00	2.381E+00	1.925E-01	-0.747
		60.01		2.096E-01	3.707E+00	5.452E+00	3.890E-01	0.038
	+	86.54		5.244E-01	1.147E-01	1.593E-01	1.496E-02	3.291
		105.31	*	2.596E-02	8.388E-02	1.452E-01	1.267E-02	0.179
TB-160	+	86.79		1.385E+00	3.024E-01	4.237E-01	3.957E-02	3.270
		197.04		2.842E-01	4.640E-01	7.728E-01	8.613E-02	0.368
		215.65		5.368E-01	6.532E-01	1.111E+00	1.342E-01	0.483
		298.57		1.712E-01	1.202E-01	1.593E-01	2.383E-02	1.075



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		879.36	*	3.073E-02	1.224E-01	2.103E-01	2.072E-02	0.146
		962.29		-2.568E-01	4.839E-01	7.449E-01	7.145E-02	-0.345
		966.15		4.006E-01	2.314E-01	3.891E-01	3.725E-02	1.030
		1177.93		-9.746E-02	3.057E-01	4.833E-01	3.887E-02	-0.202
		1271.85		-4.256E-01	6.248E-01	9.301E-01	7.626E-02	-0.458
		80.57		1.511E-01	2.412E-01	3.179E-01	2.749E-02	0.475
	+	184.41		1.602E-01	5.018E-02	5.829E-02	6.146E-03	2.748
		280.46		-6.062E-02	8.607E-02	1.158E-01	1.789E-02	-0.524
		410.95		2.208E-02	2.168E-01	3.681E-01	3.950E-02	0.060
		711.68	*	-7.142E-03	5.465E-02	8.727E-02	8.405E-03	-0.082
TM-171		752.31		-5.980E-02	2.529E-01	3.974E-01	3.869E-02	-0.150
		810.29		1.513E-02	5.875E-02	9.572E-02	9.406E-03	0.158
		51.35		8.372E-01	2.083E+01	3.344E+01	2.587E+00	0.025
		52.39		1.085E+01	1.055E+01	1.766E+01	1.345E+00	0.615
		59.40		2.926E+00	1.995E+01	2.950E+01	2.099E+00	0.099
LU-176		66.72	*	-1.839E+00	2.242E+01	3.238E+01	2.430E+00	-0.057
	+	88.36		1.033E+00	2.255E-01	2.794E-01	2.641E-02	3.698
		201.83		5.624E-03	2.412E-02	4.025E-02	4.580E-03	0.140
		306.84	*	5.870E-03	2.120E-02	3.464E-02	5.091E-03	0.169
LU-177		401.10		2.971E+00	5.882E+00	1.024E+01	1.095E+00	0.290
		112.95		2.569E-01	1.175E+00	2.002E+00	1.700E-01	0.128
LU-177M	+	208.36	*	2.908E+00	1.221E+00	1.595E+00	1.866E-01	1.824
		52.97		1.292E+00	1.074E+00	1.810E+00	1.368E-01	0.713
		54.07		-4.154E-01	5.734E-01	8.820E-01	6.571E-02	-0.471
		61.30		1.396E-01	1.114E+00	1.643E+00	1.183E-01	0.085
		121.62		-9.940E-02	2.826E-01	4.724E-01	3.991E-02	-0.210
		147.16		-1.679E-01	5.703E-01	8.461E-01	7.673E-02	-0.198
		171.86		-6.035E-02	3.913E-01	6.472E-01	6.456E-02	-0.093
		218.09		1.103E-01	7.381E-01	1.221E+00	1.489E-01	0.090
	+	268.79		2.245E+00	1.263E+00	1.293E+00	1.928E-01	1.735
		319.02		-1.986E-01	2.343E-01	3.494E-01	4.987E-02	-0.568
HF-181		367.43		-3.909E-01	8.483E-01	1.293E+00	1.559E-01	-0.302
		413.65	*	-1.126E-01	1.482E-01	2.361E-01	2.535E-02	-0.477
		56.28		1.925E-01	6.178E-01	1.001E+00	7.283E-02	0.192
		57.53		-8.374E-02	3.496E-01	5.508E-01	3.967E-02	-0.152
		65.20		-5.241E-01	7.192E-01	9.999E-01	7.412E-02	-0.524
		133.02		2.873E-02	5.595E-02	8.755E-02	7.591E-03	0.328
		136.25		-2.176E-01	3.488E-01	5.715E-01	5.002E-02	-0.381
		345.85		-1.148E-01	1.663E-01	2.493E-01	3.277E-02	-0.460
		482.03	*	2.208E-03	3.492E-02	5.853E-02	6.304E-03	0.038
		56.28		7.678E-02	2.450E-01	3.968E-01	2.888E-02	0.194
W-181		57.53		-3.333E-02	1.387E-01	2.185E-01	1.574E-02	-0.153
		65.20	*	-2.063E-01	2.831E-01	3.936E-01	2.918E-02	-0.524
TA-182		67.75		7.084E-02	7.876E-02	1.292E-01	9.784E-03	0.548
		100.10		4.947E-02	1.285E-01	2.237E-01	1.963E-02	0.221
		152.43		3.115E-03	2.782E-01	4.671E-01	4.316E-02	0.007
		222.10		-1.165E-01	2.992E-01	4.802E-01	5.955E-02	-0.243
		1001.68		7.681E-01	1.935E+00	3.300E+00	3.097E-01	0.233
	+	1121.28		9.633E-01	2.654E-01	3.789E-01	3.229E-02	2.542

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		1189.05	1.531E-01	2.671E-01	4.617E-01	3.724E-02	0.332
		1221.42 *	2.539E-02	1.564E-01	2.598E-01	2.110E-02	0.098
		1230.97	-3.211E-01	4.051E-01	6.045E-01	4.920E-02	-0.531
		57.98	4.196E-02	1.371E-01	2.216E-01	1.591E-02	0.189
		59.32	1.240E-02	8.116E-02	1.201E-01	8.547E-03	0.103
		67.20	4.502E-02	1.555E-01	2.291E-01	1.726E-02	0.197
		162.32 *	4.423E-02	9.061E-02	1.546E-01	1.482E-02	0.286
	+	208.81	2.926E+00	1.228E+00	1.655E+00	1.941E-01	1.768
		291.72	7.059E-01	8.811E-01	1.340E+00	2.032E-01	0.527
		57.98	1.557E-01	5.089E-01	8.224E-01	5.903E-02	0.189
RE-184		59.32	4.598E-02	3.009E-01	4.453E-01	3.169E-02	0.103
		67.20	1.670E-01	5.769E-01	8.497E-01	6.402E-02	0.197
		161.27	-3.211E-01	2.965E-01	4.687E-01	4.475E-02	-0.685
		216.55	1.910E-01	2.334E-01	3.970E-01	4.811E-02	0.481
		252.85 *	7.658E-02	1.937E-01	3.222E-01	4.520E-02	0.238
		318.01	-1.038E-01	4.026E-01	6.269E-01	8.969E-02	-0.166
		792.07	6.808E-01	7.421E-01	1.201E+00	1.177E-01	0.567
		903.28	-1.077E-01	9.349E-01	1.461E+00	1.436E-01	-0.074
		920.93	2.742E-01	3.615E-01	6.503E-01	6.351E-02	0.422
		59.72	2.138E-02	2.185E-01	3.222E-01	2.294E-02	0.066
OS-185		61.14	1.103E-02	1.220E-01	1.796E-01	1.291E-02	0.061
		69.30	-1.197E-01	2.182E-01	3.359E-01	2.578E-02	-0.356
		592.07	-2.029E+00	2.082E+00	3.082E+00	3.144E-01	-0.658
		646.12 *	-2.005E-02	3.484E-02	5.339E-02	5.153E-03	-0.376
		717.42	4.466E-01	7.978E-01	1.354E+00	1.307E-01	0.330
		874.81	-4.843E-01	4.910E-01	7.368E-01	7.261E-02	-0.657
		880.27	6.770E-01	6.829E-01	1.244E+00	1.225E-01	0.544
		155.03 *	-1.855E-03	1.433E-01	2.400E-01	2.239E-02	-0.008
		477.96	-1.503E-01	2.575E+00	4.279E+00	4.611E-01	-0.035
		633.10	-2.213E+00	2.459E+00	3.659E+00	3.586E-01	-0.605
W-188	+	63.58	5.779E+01	5.858E+01	6.569E+01	4.809E+00	0.880
		227.08	-4.907E+00	1.087E+01	1.735E+01	2.196E+00	-0.283
IR-192		290.67 *	2.339E+00	7.110E+00	1.047E+01	1.591E+00	0.223
	+	295.96	1.181E+00	2.524E-01	2.844E-01	4.287E-02	4.153
		308.46	-6.481E-02	8.251E-02	1.239E-01	1.818E-02	-0.523
		316.51 *	-1.547E-02	3.045E-02	4.643E-02	6.674E-03	-0.333
		468.07	-2.650E-04	6.254E-02	9.202E-02	1.039E-02	-0.003
		604.41	1.516E-01	4.665E-01	6.929E-01	9.725E-02	0.219
		612.46	7.321E-01	6.461E-01	1.042E+00	1.160E-01	0.703
		65.12	-8.012E-02	1.303E-01	1.824E-01	1.351E-02	-0.439
		66.83	-4.024E-03	7.395E-02	1.070E-01	8.034E-03	-0.038
	+	75.70	1.326E+00	2.172E-01	3.514E-01	2.875E-02	3.774
AU-195		98.88 *	1.356E-01	1.644E-01	2.906E-01	2.564E-02	0.467
	+	129.76	5.628E+00	3.529E+00	4.421E+00	3.800E-01	1.273
		367.94 *	-2.414E-05	3.529E+00	Half-Life	too short	
		579.30	-1.213E-03	3.529E+00	Half-Life	too short	
		828.27	1.064E-04	3.529E+00	Half-Life	too short	
		1205.75	4.116E-04	3.529E+00	Half-Life	too short	
		68.90	-2.223E+00	2.731E+00	4.152E+00	3.175E-01	-0.535
TL-200							
TL-201							

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		70.82		-5.654E-02	1.713E+00	2.483E+00	1.933E-01	-0.023
		80.30		1.285E+00	3.470E+00	4.493E+00	3.873E-01	0.286
		135.34		-3.445E+00	1.498E+01	2.504E+01	2.185E+00	-0.138
		167.43	*	-3.233E+00	4.344E+00	6.975E+00	6.824E-01	-0.463
		68.90		-2.457E-01	3.019E-01	4.589E-01	3.509E-02	-0.535
		70.82		-6.232E-03	1.888E-01	2.737E-01	2.131E-02	-0.023
HG-203		80.30		1.417E-01	3.826E-01	4.954E-01	4.270E-02	0.286
		439.56	*	2.411E-02	5.452E-02	9.433E-02	1.017E-02	0.256
		70.83		-2.182E-02	8.605E-01	1.248E+00	1.634E-01	-0.017
		72.87		-2.607E-01	5.335E-01	7.521E-01	9.605E-02	-0.347
BI-207		82.60		-5.290E-01	8.818E-01	1.218E+00	1.693E-01	-0.434
		279.20	*	3.168E-02	3.888E-02	5.921E-02	9.248E-03	0.535
		72.80		-8.539E-02	1.590E-01	2.239E-01	1.777E-02	-0.381
	+	74.97		7.390E-01	1.210E-01	1.934E-01	1.570E-02	3.822
	+	84.90		5.056E-01	1.913E-01	2.548E-01	2.323E-02	1.984
TL-207		569.67		-3.205E-02	2.831E-02	4.179E-02	4.337E-03	-0.767
		1063.62	*	4.158E-02	4.683E-02	8.392E-02	7.539E-03	0.496
		1770.23		2.173E-01	4.264E-01	6.958E-01	5.727E-02	0.312
		81.07		-4.722E-04	1.942E-01	2.447E-01	2.128E-02	-0.002
	+	83.78		3.334E-01	1.261E-01	1.658E-01	1.491E-02	2.011
		94.90		2.839E-01	1.928E-01	2.974E-01	2.679E-02	0.955
PO-209		122.32		2.549E-01	1.288E+00	2.206E+00	2.007E-01	0.116
	+	144.24		4.636E-01	8.683E-01	1.022E+00	1.018E-01	0.454
		154.21		4.549E-01	3.361E-01	5.901E-01	5.960E-02	0.771
	+	269.46		5.283E-01	2.973E-01	3.255E-01	4.897E-02	1.623
		323.87	*	-2.695E-01	7.148E-01	9.793E-01	2.048E-01	-0.275
	+	338.28		6.865E+00	2.259E+00	2.452E+00	3.948E-01	2.799
BI-210		445.03		-9.404E-01	1.852E+00	2.979E+00	4.087E-01	-0.316
		260.50		3.384E+00	8.089E+00	1.344E+01	1.942E+00	0.252
		262.80		-1.683E+01	2.204E+01	3.371E+01	4.912E+00	-0.499
		896.60	*	-1.538E+00	6.554E+00	1.074E+01	1.057E+00	-0.143
PB-210		46.50	*	4.313E-01	2.165E+00	3.522E+00	3.279E-01	0.122
PB-211		46.50	*	4.313E-01	2.165E+00	3.522E+00	3.279E-01	0.122
PO-210		46.50	*	4.313E-01	2.165E+00	3.522E+00	2.969E-01	0.122
PB-211		404.84	*	-2.063E-01	8.420E-01	1.384E+00	8.715E-01	-0.149
BI-212		427.08		1.718E+00	2.095E+00	3.218E+00	2.010E+00	0.534
		831.96		-5.559E-01	1.175E+00	1.697E+00	1.066E+00	-0.328
	+	727.18	*	1.034E+00	4.900E-01	6.510E-01	7.115E-02	1.589
		785.46		2.271E+00	1.658E+00	2.963E+00	2.903E-01	0.766
PO-215		1620.62		6.771E-01	1.025E+00	1.891E+00	1.587E-01	0.358
		81.07		-4.722E-04	1.942E-01	2.447E-01	2.128E-02	-0.002
	+	83.78		3.334E-01	1.261E-01	1.658E-01	1.491E-02	2.011
		94.90		2.839E-01	1.928E-01	2.974E-01	2.679E-02	0.955
		122.32		2.549E-01	1.288E+00	2.206E+00	2.007E-01	0.116
	+	144.24		4.636E-01	8.683E-01	1.022E+00	1.018E-01	0.454
PO-215		154.21		4.549E-01	3.361E-01	5.901E-01	5.960E-02	0.771
	+	269.46		5.283E-01	2.973E-01	3.255E-01	4.897E-02	1.623
		323.87	*	-2.695E-01	7.148E-01	9.793E-01	2.048E-01	-0.275
	+	338.28		6.865E+00	2.259E+00	2.452E+00	3.948E-01	2.799

## ----- 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		-9.404E-01	1.852E+00	2.979E+00	4.087E-01	-0.316
		271.23		6.778E-01	3.832E-01	4.075E-01	6.547E-02	1.663
		401.81	*	2.106E-01	3.534E-01	6.170E-01	1.006E-01	0.341
RN-220		549.76	*	-2.509E+00	2.248E+01	3.678E+01	3.865E+00	-0.068
RA-223	+	81.07		-4.722E-04	1.942E-01	2.447E-01	2.128E-02	-0.002
		83.78		3.334E-01	1.261E-01	1.658E-01	1.491E-02	2.011
		94.90		2.839E-01	1.928E-01	2.974E-01	2.679E-02	0.955
AC-227	+	122.32		2.549E-01	1.288E+00	2.206E+00	2.007E-01	0.116
		144.24		4.636E-01	8.683E-01	1.022E+00	1.018E-01	0.454
		154.21		4.549E-01	3.361E-01	5.901E-01	5.960E-02	0.771
	+	269.46		5.283E-01	2.973E-01	3.255E-01	4.897E-02	1.623
		323.87	*	-2.695E-01	7.148E-01	9.793E-01	2.048E-01	-0.275
	+	338.28		6.865E+00	2.259E+00	2.452E+00	3.948E-01	2.799
		445.03		-9.404E-01	1.852E+00	2.979E+00	4.087E-01	-0.316
	+	79.80		4.838E-01	1.308E+00	1.921E+00	4.127E-01	0.252
		236.00		1.241E-01	2.173E-01	3.281E-01	5.167E-02	0.378
		256.20	*	-2.057E-01	3.357E-01	5.215E-01	9.940E-02	-0.394
		286.10		5.283E-01	1.387E+00	2.283E+00	4.176E-01	0.231
299.80			3.612E+00	2.006E+00	2.345E+00	4.998E-01	1.540	
TH-227	+	304.40		-3.984E-01	1.868E+00	2.615E+00	5.752E-01	-0.152
		334.20		-9.592E-01	2.354E+00	3.196E+00	7.070E-01	-0.300
		79.80		4.838E-01	1.309E+00	1.921E+00	4.179E-01	0.252
	+	94.00		1.020E+01	3.311E+00	3.085E+00	6.774E-01	3.306
		236.00		1.241E-01	2.172E-01	3.281E-01	4.875E-02	0.378
		256.20	*	-2.057E-01	3.363E-01	5.215E-01	1.111E-01	-0.394
	+	286.10		5.283E-01	1.483E+00	2.283E+00	2.310E+00	0.231
		299.80		3.612E+00	2.006E+00	2.345E+00	4.998E-01	1.540
		304.40		-3.984E-01	1.868E+00	2.615E+00	5.752E-01	-0.152
	+	334.20		-9.592E-01	2.354E+00	3.196E+00	7.070E-01	-0.300
		85.43		4.991E-01	1.888E-01	2.483E-01	2.279E-02	2.010
TH-229	+	88.47		5.948E-01	1.298E-01	1.578E-01	1.491E-02	3.768
		100.00		8.958E-02	1.337E-01	2.351E-01	2.064E-02	0.381
	+	193.63	*	-2.005E-01	4.248E-01	6.855E-01	7.527E-02	-0.292
		210.97		1.219E+00	7.283E-01	1.164E+00	1.378E-01	1.047
		283.67	*	-4.030E-01	1.424E+00	2.254E+00	4.466E-01	-0.179
PA-231	+	301.29		1.445E+00	7.817E-01	9.451E-01	1.629E-01	1.529
		81.07		-4.722E-04	1.942E-01	2.447E-01	2.128E-02	-0.002
TH-231	+	83.78		3.334E-01	1.261E-01	1.658E-01	1.491E-02	2.011
		94.90		2.839E-01	1.928E-01	2.974E-01	2.679E-02	0.955
		122.32		2.549E-01	1.288E+00	2.206E+00	2.007E-01	0.116
	+	144.24		4.636E-01	8.683E-01	1.022E+00	1.018E-01	0.454
		154.21		4.549E-01	3.361E-01	5.901E-01	5.960E-02	0.771
U-231	+	269.46		5.283E-01	2.973E-01	3.255E-01	4.897E-02	1.623
		323.87	*	-2.695E-01	7.148E-01	9.793E-01	2.048E-01	-0.275
		338.28		6.865E+00	2.259E+00	2.452E+00	3.948E-01	2.799
	+	445.03		-9.404E-01	1.852E+00	2.979E+00	4.087E-01	-0.316
		84.21		1.177E+01	4.451E+00	5.994E+00	5.418E-01	1.963
	+	92.29		8.257E+00	2.111E+00	2.825E+00	2.588E-01	2.923
		95.87	*	2.317E-01	7.351E-01	1.069E+00	9.579E-02	0.217

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233		108.00		4.707E-01	1.344E+00	2.327E+00	1.993E-01	0.202
	+	75.28		2.157E+01	4.469E+00	5.689E+00	8.583E-01	3.791
	+	86.59		8.529E+00	2.856E+00	2.604E+00	7.045E-01	3.275
	+	300.12		1.007E+00	5.514E-01	6.676E-01	1.283E-01	1.508
		311.98	*	8.760E-03	5.481E-02	8.878E-02	1.303E-02	0.099
		340.50		1.001E+00	6.548E-01	9.719E-01	2.522E-01	1.030
		398.62		3.559E-02	1.837E+00	3.111E+00	8.514E-01	0.011
		415.76		1.292E+00	1.393E+00	2.444E+00	5.495E-01	0.529
	+	63.00		1.696E+00	1.733E+00	2.014E+00	2.982E-01	0.842
		94.67		2.835E-01	1.441E-01	2.229E-01	2.827E-02	1.272
PA-234		98.44		4.225E-02	7.327E-02	1.172E-01	6.542E-02	0.361
		99.86		2.591E-01	3.400E-01	5.999E-01	5.270E-02	0.432
		111.00		-1.961E-01	1.508E-01	2.385E-01	2.866E-02	-0.822
		131.20		3.610E-03	9.094E-02	1.388E-01	1.197E-02	0.026
		152.70		2.577E-02	2.726E-01	4.592E-01	7.977E-02	0.056
	+	186.00		5.766E+00	2.501E+00	2.425E+00	7.718E-01	2.377
		226.40		2.079E-02	3.517E-01	5.778E-01	9.306E-02	0.036
		227.20		-2.471E-01	3.746E-01	5.895E-01	7.467E-02	-0.419
		248.90		-2.494E-02	6.645E-01	1.079E+00	2.685E-01	-0.023
		293.70		4.253E+00	1.223E+00	1.524E+00	3.244E-01	2.791
		369.80		1.799E-01	7.754E-01	1.246E+00	2.903E-01	0.144
		568.70		-1.177E+00	9.277E-01	1.350E+00	1.402E-01	-0.872
		569.50		-2.911E-01	2.508E-01	3.689E-01	3.829E-02	-0.789
		574.00		-2.310E-01	1.276E+00	2.068E+00	2.139E-01	-0.112
		699.00		4.149E-01	6.186E-01	1.055E+00	2.060E-01	0.393
		706.10		5.855E-01	9.448E-01	1.556E+00	6.969E-01	0.376
		733.00		-9.196E-02	3.870E-01	5.266E-01	1.192E-01	-0.175
		742.81		2.410E-01	1.236E+00	2.013E+00	1.356E+00	0.120
	+	796.30		2.160E+00	1.620E+00	1.730E+00	4.750E-01	1.249
		805.60		-1.276E-01	8.705E-01	1.369E+00	4.244E-01	-0.093
		819.60		5.153E-01	1.074E+00	1.778E+00	6.815E-01	0.290
		826.30		-5.935E-02	6.959E-01	1.099E+00	4.944E-01	-0.054
		831.60		-2.878E-01	5.874E-01	8.784E-01	2.655E-01	-0.328
		876.40		-3.315E-01	7.861E-01	1.134E+00	1.167E+00	-0.292
		880.51		2.470E-01	2.491E-01	4.537E-01	4.470E-02	0.544
		883.24		4.883E-03	2.634E-01	4.429E-01	2.985E-01	0.011
		899.00		5.813E-01	7.800E-01	1.324E+00	5.823E-01	0.439
		925.00		-3.059E-01	9.525E-01	1.537E+00	1.499E-01	-0.199
		926.50		-3.518E-02	1.463E-01	2.381E-01	6.115E-02	-0.148
		946.00	*	-1.234E-01	2.373E-01	3.708E-01	7.143E-02	-0.333
		949.00		2.502E-01	3.688E-01	6.562E-01	6.333E-02	0.381
		980.50		-2.747E-01	5.649E-01	8.848E-01	8.406E-02	-0.310
PA-234M		1394.10		-2.173E-01	1.050E+00	1.622E+00	1.055E+00	-0.134
		766.42		1.196E+01	1.368E+01	1.913E+01	9.746E+00	0.625
NP-236		1001.03	*	1.560E+00	4.367E+00	7.424E+00	7.897E-01	0.210
		94.67		2.164E-01	1.077E-01	1.692E-01	1.526E-02	1.279
		98.44		3.190E-02	5.252E-02	8.858E-02	7.831E-03	0.360
		111.00		-1.483E-01	1.134E-01	1.804E-01	1.536E-02	-0.822
		160.31	*	-5.939E-02	6.497E-02	1.037E-01	9.861E-03	-0.573

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		1.103E-01	1.147E-01	2.036E-01	1.791E-02	0.542
		117.00	*	-1.601E-01	1.457E-01	2.350E-01	1.988E-02	-0.681
	+	209.75		2.336E+00	9.808E-01	1.357E+00	1.598E-01	1.721
		228.18		-4.863E-02	1.922E-01	3.102E-01	3.945E-02	-0.157
	+	277.60		2.019E-01	1.741E-01	2.839E-01	4.370E-02	0.711
AM-241		334.30		-5.080E-01	1.332E+00	1.819E+00	2.484E-01	-0.279
		59.54	*	5.675E-03	1.166E-01	1.714E-01	1.347E-02	0.033
		99.55		1.135E-01	1.180E-01	2.095E-01	1.843E-02	0.542
		103.76	*	2.022E-02	7.105E-02	1.230E-01	1.066E-02	0.164
		117.00		-1.647E-01	1.499E-01	2.417E-01	2.045E-02	-0.681
CM-243		209.75		2.303E+00	9.667E-01	1.338E+00	1.575E-01	1.721
		228.18		-4.913E-02	1.942E-01	3.134E-01	3.986E-02	-0.157
	+	277.60		2.035E-01	1.755E-01	2.862E-01	4.405E-02	0.711
		798.80		-7.183E-03	1.325E-01	1.834E-01	1.800E-02	-0.039
		1036.00		-2.332E-01	2.396E-01	3.482E-01	3.194E-02	-0.670
AM-246		1062.04		-8.765E-02	2.085E-01	3.294E-01	2.963E-02	-0.266
		1078.86	*	2.292E-02	1.265E-01	2.150E-01	1.907E-02	0.107
	+	278.00		8.372E-01	7.219E-01	1.216E+00	1.875E-01	0.688
		287.40		3.197E-01	1.107E+00	1.814E+00	2.771E-01	0.176
		402.60	*	-2.140E-03	3.253E-02	5.474E-02	5.859E-03	-0.039
CF-249		252.85		2.888E-01	7.306E-01	1.215E+00	1.704E-01	0.238
		333.44		6.345E-02	1.649E-01	2.418E-01	3.312E-02	0.262
		387.95	*	4.331E-02	3.461E-02	6.255E-02	6.811E-03	0.692
CF-251		176.60	*	7.251E-02	1.056E-01	1.809E-01	1.843E-02	0.401
		227.00		-1.362E-01	3.308E-01	5.291E-01	6.696E-02	-0.258
		285.00		1.005E+00	1.595E+00	2.658E+00	4.078E-01	0.378

# 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]G244132004      *
* Acquisition date   : 19-JAN-2010 09:53:06 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 02:00:01.67 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132004 Analyst initials: MXR1                  *
* Batch Number       : 940270 Sample Quantity : 1.2767E+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	1.940E+01	2.180E+00	4.647E-01	0.000E+00
CD-109	4.424E+00	9.464E-01	8.931E-01	0.000E+00
SN-126	4.356E-01	9.319E-02	8.823E-02	0.000E+00
BA-137M	1.068E-01	5.045E-02	5.701E-02	0.000E+00
CS-137	1.129E-01	5.334E-02	6.026E-02	0.000E+00
CE-141	4.180E-02	7.669E-02	8.073E-02	0.000E+00
TL-208	5.603E-01	1.028E-01	5.066E-02	0.000E+00
BI-211	4.176E+00	6.979E-01	2.881E-01	0.000E+00
PB-212	1.741E+00	2.622E-01	7.782E-02	0.000E+00
PO-212	1.741E+00	2.622E-01	7.782E-02	0.000E+00
BI-214	1.173E+00	1.974E-01	1.056E-01	0.000E+00
PB-214	1.453E+00	2.539E-01	1.004E-01	0.000E+00
PO-214	1.453E+00	2.539E-01	1.004E-01	0.000E+00
PO-216	1.741E+00	2.622E-01	7.782E-02	0.000E+00
PO-218	1.453E+00	2.539E-01	1.004E-01	0.000E+00
RA-224	4.369E+00	1.155E+00	8.858E-01	0.000E+00
RA-226	1.173E+00	1.974E-01	1.056E-01	0.000E+00
AC-228	1.741E+00	3.293E-01	1.883E-01	0.000E+00
RA-228	1.741E+00	3.293E-01	1.883E-01	0.000E+00
TH-228	1.766E+00	2.658E-01	7.891E-02	0.000E+00
TH-230	1.173E+00	1.974E-01	1.056E-01	0.000E+00
TH-232	1.741E+00	3.293E-01	1.883E-01	0.000E+00
TH-234	1.455E+00	1.463E+00	1.461E+00	0.000E+00
U-234	1.173E+00	1.974E-01	1.056E-01	0.000E+00
U-235	1.431E-01	2.634E-01	2.898E-01	0.000E+00
NP-237	1.279E+00	3.766E-01	2.612E-01	0.000E+00
U-238	1.455E+00	1.463E+00	1.461E+00	0.000E+00
AM-243	4.117E-01	6.606E-02	7.207E-02	0.000E+00
ANH-511	8.232E-02	6.175E-02	4.469E-02	0.000E+00

---- Non-Identified Nuclides ----

Key-Line			
Activity	K.L.	Act error	MDA

Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)	
BE-7	-6.353E-02	2.602E-01	4.424E-01	0.000E+00	NOT IDENT.
NA-22	-7.204E-03	3.698E-02	6.006E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.496E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-8.328E-03	2.718E-02	4.271E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.809E-02	5.837E-02	0.000E+00	FAIL ABUN
SC-46	-1.472E-02	3.193E-02	5.250E-02	0.000E+00	FAIL ABUN
V-48	-1.180E-02	5.175E-02	8.611E-02	0.000E+00	NOT IDENT.
CR-51	6.004E-02	3.160E-01	5.342E-01	0.000E+00	NOT IDENT.
MN-52	1.396E-02	1.601E-01	2.667E-01	0.000E+00	NOT IDENT.
MN-54	-9.835E-03	3.227E-02	5.457E-02	0.000E+00	NOT IDENT.
CO-56	2.105E-03	3.357E-02	5.851E-02	0.000E+00	NOT IDENT.
CO-57	5.689E-04	1.815E-02	3.269E-02	0.000E+00	NOT IDENT.
CO-58	-9.520E-04	3.787E-02	6.186E-02	0.000E+00	NOT IDENT.
FE-59	-1.030E-01	8.088E-02	1.173E-01	0.000E+00	NOT IDENT.
CO-60	1.148E-02	2.928E-02	5.131E-02	0.000E+00	NOT IDENT.
ZN-65	-5.851E-02	6.602E-02	7.828E-02	0.000E+00	NOT IDENT.
GE-68	1.123E+00	1.074E+00	1.997E+00	0.000E+00	NOT IDENT.
AS-73	5.529E-02	5.396E-01	9.296E-01	0.000E+00	NOT IDENT.
AS-74	8.855E-02	7.728E-02	1.421E-01	0.000E+00	NOT IDENT.
SE-75	2.065E-02	3.592E-02	6.033E-02	0.000E+00	NOT IDENT.
BR-77	-3.724E-01	6.581E+00	1.127E+01	0.000E+00	FAIL ABUN
SR-82	-2.687E-01	3.592E-01	5.512E-01	0.000E+00	NOT IDENT.
RB-83	-2.626E-03	6.129E-02	1.050E-01	0.000E+00	NOT IDENT.
RB-84	3.486E-02	5.985E-02	1.085E-01	0.000E+00	NOT IDENT.
KR-85	-1.577E+00	7.119E+00	1.054E+01	0.000E+00	NOT IDENT.
SR-85	-7.982E-03	3.604E-02	5.335E-02	0.000E+00	NOT IDENT.
RB-86	8.217E-01	6.686E-01	1.258E+00	0.000E+00	NOT IDENT.
Y-88	9.760E-03	3.038E-02	5.391E-02	0.000E+00	NOT IDENT.
ZR-88	1.606E-02	2.573E-02	4.698E-02	0.000E+00	NOT IDENT.
Y-91	1.382E+01	1.444E+01	2.651E+01	0.000E+00	NOT IDENT.
NB-94	-1.126E-02	2.843E-02	4.570E-02	0.000E+00	NOT IDENT.
NB-95	2.096E-02	4.255E-02	6.516E-02	0.000E+00	NOT IDENT.
NB-95M	3.418E-02	1.129E-01	1.763E-01	0.000E+00	NOT IDENT.
ZR-95	4.816E-02	6.286E-02	1.113E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.616E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.061E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-6.121E-01	7.705E+00	1.271E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.203E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.478E-02	2.735E-02	4.526E-02	0.000E+00	NOT IDENT.
RH-102	1.424E-03	2.301E-02	4.008E-02	0.000E+00	FAIL ABUN
RU-103	1.647E-02	3.361E-02	6.000E-02	0.000E+00	FAIL ABUN
RH-106	9.535E-02	2.849E-01	4.946E-01	0.000E+00	FAIL ABUN
RU-106	9.535E-02	2.848E-01	4.946E-01	0.000E+00	FAIL ABUN
AG-108M	1.470E-02	2.482E-02	4.520E-02	0.000E+00	NOT IDENT.
AG-110M	2.522E-02	3.052E-02	4.973E-02	0.000E+00	NOT IDENT.
IN-111	3.776E-01	6.785E-01	1.078E+00	0.000E+00	NOT IDENT.
IN-113M	-3.031E-02	3.803E-02	6.344E-02	0.000E+00	NOT IDENT.
SN-113	-3.031E-02	3.803E-02	6.344E-02	0.000E+00	NOT IDENT.
IN-114M	-5.929E-02	1.529E-01	2.487E-01	0.000E+00	NOT IDENT.
CD-115	1.961E+00	6.152E+00	1.083E+01	0.000E+00	NOT IDENT.
SN-117M	3.390E-02	4.028E-02	7.365E-02	0.000E+00	NOT IDENT.
SB-122	2.595E-01	1.265E+00	2.194E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	9.930E+05	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	2.883E-03	2.242E-02	3.984E-02	0.000E+00	NOT IDENT.
I-124	3.617E-03	5.142E-01	8.427E-01	0.000E+00	NOT IDENT.
SB-124	8.740E-03	6.631E-02	1.146E-01	0.000E+00	FAIL ABUN
SB-125	9.432E-02	7.908E-02	1.478E-01	0.000E+00	FAIL ABUN
TE-125M	3.199E+00	6.921E+00	1.275E+01	0.000E+00	NOT IDENT.
I-126	-7.348E-02	1.866E-01	2.616E-01	0.000E+00	NOT IDENT.
SB-126	-2.040E-01	1.332E-01	1.643E-01	0.000E+00	FAIL ABUN
SB-127	8.029E-01	9.882E-01	1.764E+00	0.000E+00	NOT IDENT.
XE-127	1.248E-03	3.841E-02	6.672E-02	0.000E+00	FAIL ABUN
I-131	4.429E-03	9.194E-02	1.523E-01	0.000E+00	NOT IDENT.
TE-132	-1.596E-01	4.492E-01	7.558E-01	0.000E+00	NOT IDENT.
BA-133	-1.562E-03	3.933E-02	5.753E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.011E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.671E-02	9.045E-02	0.000E+00	FAIL ABUN
CS-135	1.659E-01	1.482E-01	2.401E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.291E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.073E-02	8.609E-02	1.347E-01	0.000E+00	FAIL ABUN
CE-139	-7.373E-03	2.405E-02	4.175E-02	0.000E+00	NOT IDENT.
BA-140	-2.027E-01	2.249E-01	3.403E-01	0.000E+00	NOT IDENT.
LA-140	-4.106E-02	7.159E-02	1.109E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	8.793E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.320E-01	1.716E-01	2.864E-01	0.000E+00	NOT IDENT.
PM-144	-1.798E-02	3.424E-02	5.111E-02	0.000E+00	NOT IDENT.



PR-144	-1.218E+00	2.319E+00	3.461E+00	0.000E+00	NOT IDENT.
PM-146	-1.091E-02	3.771E-02	6.427E-02	0.000E+00	NOT IDENT.
ND-147	-3.045E-01	4.711E-01	7.639E-01	0.000E+00	FAIL ABUN
PM-149	1.841E+01	5.643E+01	9.684E+01	0.000E+00	NOT IDENT.
EU-152	-3.904E-02	9.186E-02	1.294E-01	0.000E+00	NOT IDENT.
GD-153	-3.998E-02	6.798E-02	9.883E-02	0.000E+00	FAIL ABUN
EU-154	-2.123E-02	1.033E-01	1.674E-01	0.000E+00	NOT IDENT.
EU-155	2.596E-02	8.220E-02	1.511E-01	0.000E+00	FAIL ABUN
TB-160	3.073E-02	1.200E-01	2.120E-01	0.000E+00	FAIL ABUN
HO-166M	-7.142E-03	5.355E-02	8.824E-02	0.000E+00	FAIL ABUN
TM-171	-1.839E+00	2.197E+01	3.390E+01	0.000E+00	NOT IDENT.
LU-176	5.870E-03	2.078E-02	3.547E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.197E+00	1.642E+00	0.000E+00	FAIL ABUN
LU-177M	-1.126E-01	1.452E-01	2.407E-01	0.000E+00	FAIL ABUN
HF-181	2.208E-03	3.422E-02	5.954E-02	0.000E+00	NOT IDENT.
W-181	-2.063E-01	2.774E-01	4.123E-01	0.000E+00	NOT IDENT.
TA-182	2.539E-02	1.533E-01	2.605E-01	0.000E+00	FAIL ABUN
RE-183	4.423E-02	8.880E-02	1.598E-01	0.000E+00	FAIL ABUN
RE-184	7.658E-02	1.899E-01	3.309E-01	0.000E+00	NOT IDENT.
OS-185	-2.005E-02	3.414E-02	5.406E-02	0.000E+00	NOT IDENT.
RE-188	-1.855E-03	1.404E-01	2.483E-01	0.000E+00	NOT IDENT.
W-188	2.339E+00	6.968E+00	1.073E+01	0.000E+00	FAIL ABUN
IR-192	-1.547E-02	2.984E-02	4.752E-02	0.000E+00	FAIL ABUN
AU-195	1.356E-01	1.611E-01	3.026E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.888E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.233E+00	4.257E+00	7.207E+00	0.000E+00	NOT IDENT.
TL-202	2.411E-02	5.343E-02	9.608E-02	0.000E+00	NOT IDENT.
HG-203	3.168E-02	3.810E-02	6.072E-02	0.000E+00	NOT IDENT.
BI-207	4.158E-02	4.589E-02	8.433E-02	0.000E+00	FAIL ABUN
TL-207	-2.695E-01	7.005E-01	1.002E+00	0.000E+00	FAIL ABUN
PO-209	-1.538E+00	6.423E+00	1.082E+01	0.000E+00	NOT IDENT.
BI-210	4.313E-01	2.122E+00	3.707E+00	0.000E+00	NOT IDENT.
PB-210	4.313E-01	2.122E+00	3.707E+00	0.000E+00	NOT IDENT.
PO-210	4.313E-01	2.122E+00	3.707E+00	0.000E+00	NOT IDENT.
PB-211	-2.063E-01	8.252E-01	1.411E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.802E-01	6.581E-01	0.000E+00	FAIL ABUN
PO-215	-2.695E-01	7.005E-01	1.002E+00	0.000E+00	FAIL ABUN
RN-219	2.106E-01	3.463E-01	6.294E-01	0.000E+00	FAIL ABUN
RN-220	-2.509E+00	2.203E+01	3.733E+01	0.000E+00	NOT IDENT.
RA-223	-2.695E-01	7.005E-01	1.002E+00	0.000E+00	FAIL ABUN
AC-227	-2.057E-01	3.290E-01	5.355E-01	0.000E+00	FAIL ABUN
TH-227	-2.057E-01	3.296E-01	5.355E-01	0.000E+00	FAIL ABUN
TH-229	-2.005E-01	4.163E-01	7.068E-01	0.000E+00	FAIL ABUN
PA-231	-4.030E-01	1.396E+00	2.311E+00	0.000E+00	FAIL ABUN
TH-231	-2.695E-01	7.005E-01	1.002E+00	0.000E+00	FAIL ABUN
U-231	2.317E-01	7.204E-01	1.114E+00	0.000E+00	FAIL ABUN
PA-233	8.760E-03	5.371E-02	9.089E-02	0.000E+00	FAIL ABUN
PA-234	-1.234E-01	2.325E-01	3.733E-01	0.000E+00	FAIL ABUN
PA-234M	1.560E+00	4.280E+00	7.468E+00	0.000E+00	NOT IDENT.
NP-236	-5.939E-02	6.367E-02	1.072E-01	0.000E+00	NOT IDENT.
NP-239	-1.601E-01	1.428E-01	2.441E-01	0.000E+00	FAIL ABUN
AM-241	5.675E-03	1.142E-01	1.798E-01	0.000E+00	NOT IDENT.
CM-243	2.022E-02	6.962E-02	1.280E-01	0.000E+00	FAIL ABUN
AM-246	2.292E-02	1.240E-01	2.160E-01	0.000E+00	NOT IDENT.
CM-247	-2.140E-03	3.188E-02	5.583E-02	0.000E+00	FAIL ABUN
CF-249	4.331E-02	3.392E-02	6.383E-02	0.000E+00	NOT IDENT.
CF-251	7.251E-02	1.035E-01	1.868E-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]G244132004.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:53:06
Sample ID          : G244132004           Sample quantity  : 1.27670E+02 GRAM
Detector name      : GAM11                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time: 0 02:00:01.67  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity       : 5.00000
Batch ID           : 940270                 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	862	10.67*	1.225E+00	1.940E+01	1.940E+01	11.47
CD-109	88.03	372	3.72*	6.787E+00	4.333E+00	4.424E+00	21.83
SN-126	64.28	80	9.60	4.252E+00	5.760E-01	5.760E-01	102.14
	86.94	372	8.90	6.787E+00	1.811E+00	1.811E+00	45.96
	87.57	372	37.00*	6.787E+00	4.356E-01	4.356E-01	21.83
BA-137M	661.65	78	89.98*	2.404E+00	1.067E-01	1.068E-01	48.22
CS-137	661.65	78	85.12*	2.404E+00	1.128E-01	1.129E-01	48.22
CE-141	145.44	36	48.40*	7.024E+00	3.104E-02	4.180E-02	187.24
TL-208	277.35	45	6.80	4.679E+00	4.186E-01	4.186E-01	86.68
	510.84	83	21.60	2.955E+00	3.811E-01	3.811E-01	77.00
	583.14	427	84.20*	2.661E+00	5.603E-01	5.603E-01	18.72
	860.37	57	12.46	1.926E+00	6.940E-01	6.940E-01	60.32
BI-211	72.87	-----	1.27	5.576E+00	-----	Line Not Found	-----
	351.07	721	12.94*	3.921E+00	4.176E+00	4.176E+00	17.05
PB-212	74.81	535	10.70	5.785E+00	2.540E+00	2.540E+00	18.85
	77.11	684	18.00	6.021E+00	1.856E+00	1.856E+00	14.33
	87.30	372	8.00	6.787E+00	2.015E+00	2.015E+00	24.01
	238.63	1376	44.60*	5.210E+00	1.741E+00	1.741E+00	15.36
	300.09	100	3.41	4.412E+00	1.949E+00	1.949E+00	53.73
PO-212	74.81	535	10.70	5.785E+00	2.540E+00	2.540E+00	18.85
	77.11	684	18.00	6.021E+00	1.856E+00	1.856E+00	14.33
	87.30	372	8.00	6.787E+00	2.015E+00	2.015E+00	24.01
	115.19	-----	0.60	7.407E+00	-----	Line Not Found	-----
	238.63	1376	44.60*	5.210E+00	1.741E+00	1.741E+00	15.36
	300.09	100	3.41	4.412E+00	1.949E+00	1.949E+00	53.73
BI-214	609.31	474	46.30*	2.569E+00	1.173E+00	1.173E+00	17.18
	1120.29	161	15.10	1.531E+00	2.052E+00	2.052E+00	28.34
	1764.49	93	15.80	1.071E+00	1.613E+00	1.613E+00	26.90
PB-214	74.81	535	6.21	5.785E+00	4.376E+00	4.376E+00	17.97
	77.11	684	10.50	6.021E+00	3.181E+00	3.181E+00	16.23
	87.30	372	4.67	6.787E+00	3.452E+00	3.452E+00	23.15
	241.98	303	7.49	5.164E+00	2.304E+00	2.304E+00	27.55

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	457	19.20	4.466E+00	1.566E+00	1.566E+00	22.25
	351.92	721	37.20*	3.921E+00	1.453E+00	1.453E+00	17.83
	74.81	535	6.21	5.785E+00	4.376E+00	4.376E+00	17.97
	77.11	684	10.50	6.021E+00	3.181E+00	3.181E+00	16.23
	87.30	372	4.67	6.787E+00	3.452E+00	3.452E+00	23.15
PO-216	241.98	303	7.49	5.164E+00	2.304E+00	2.304E+00	27.55
	295.21	457	19.20	4.466E+00	1.566E+00	1.566E+00	22.25
	351.92	721	37.20*	3.921E+00	1.453E+00	1.453E+00	17.83
	74.81	535	10.70	5.785E+00	2.540E+00	2.540E+00	18.85
	77.11	684	18.00	6.021E+00	1.856E+00	1.856E+00	14.33
PO-218	87.30	372	8.00	6.787E+00	2.015E+00	2.015E+00	24.01
	238.63	1376	44.60*	5.210E+00	1.741E+00	1.741E+00	15.36
	300.09	100	3.41	4.412E+00	1.949E+00	1.949E+00	53.73
	74.81	535	6.21	5.785E+00	4.376E+00	4.376E+00	17.97
	77.11	684	10.50	6.021E+00	3.181E+00	3.181E+00	16.23
RA-224	87.30	372	4.67	6.787E+00	3.452E+00	3.452E+00	23.15
	241.98	303	7.49	5.164E+00	2.304E+00	2.304E+00	27.55
	295.21	457	19.20	4.466E+00	1.566E+00	1.566E+00	22.25
	351.92	721	37.20*	3.921E+00	1.453E+00	1.453E+00	17.83
	240.98	303	3.95*	5.164E+00	4.369E+00	4.369E+00	26.97
AC-228	RA-226	609.31	474	46.30*	2.569E+00	1.173E+00	17.18
	1120.29	161	15.10	1.531E+00	2.052E+00	2.052E+00	28.34
	1764.49	93	15.80	1.071E+00	1.613E+00	1.613E+00	26.90
	338.32	257	11.40	4.039E+00	1.644E+00	1.644E+00	51.31
	911.07	301	27.70*	1.833E+00	1.741E+00	1.741E+00	19.30
RA-228	969.11	174	16.60	1.738E+00	1.771E+00	1.771E+00	32.09
	338.32	257	11.40	4.039E+00	1.644E+00	1.644E+00	51.31
	911.07	301	27.70*	1.833E+00	1.741E+00	1.741E+00	19.30
	969.11	174	16.60	1.738E+00	1.771E+00	1.771E+00	32.09
	74.81	535	10.70	5.785E+00	2.540E+00	2.540E+00	16.41
TH-228	77.11	684	18.00	6.021E+00	1.856E+00	1.881E+00	14.33
	87.30	372	8.00	6.787E+00	2.015E+00	2.043E+00	21.83
	238.63	1376	44.60*	5.210E+00	1.741E+00	1.766E+00	15.36
	300.09	100	3.41	4.412E+00	1.949E+00	1.976E+00	79.32
	609.31	474	46.30*	2.569E+00	1.173E+00	1.173E+00	17.18
TH-230	1120.29	161	15.10	1.531E+00	2.052E+00	2.052E+00	28.34
	1764.49	93	15.80	1.071E+00	1.613E+00	1.613E+00	26.90
	338.32	257	11.40	4.039E+00	1.644E+00	1.644E+00	31.70
	911.07	301	27.70*	1.833E+00	1.741E+00	1.741E+00	19.30
	969.11	174	16.60	1.738E+00	1.771E+00	1.771E+00	32.09
TH-234	63.29	80	3.80*	4.252E+00	1.455E+00	1.455E+00	102.59
	92.38	343	5.41	7.060E+00	2.640E+00	2.640E+00	30.10
	609.31	474	46.30*	2.569E+00	1.173E+00	1.173E+00	17.18
	1120.29	161	15.10	1.531E+00	2.052E+00	2.052E+00	28.34
	1764.49	93	15.80	1.071E+00	1.613E+00	1.613E+00	26.90
U-235	89.95	190	2.70	6.932E+00	2.980E+00	2.980E+00	42.23
	93.35	343	4.50	7.060E+00	3.174E+00	3.174E+00	36.94
	105.00	-----	2.10	7.364E+00	-----	Line Not Found	-----
	143.76	36	10.50*	7.024E+00	1.431E-01	1.431E-01	187.85

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	163.35	-----	4.70	6.629E+00	-----	Line Not Found	-----
	185.71	242	54.00	6.161E+00	2.135E-01	2.135E-01	31.33
	205.31	-----	4.70	5.777E+00	-----	Line Not Found	-----
NP-237	86.50	372	12.60*	6.787E+00	1.279E+00	1.279E+00	30.04
	95.87	-----	2.60	7.169E+00	-----	Line Not Found	-----
U-238	63.29	80	3.80*	4.252E+00	1.455E+00	1.455E+00	102.59
	92.38	343	5.41	7.060E+00	2.640E+00	2.640E+00	25.56
AM-243	74.67	535	66.00*	5.785E+00	4.117E-01	4.117E-01	16.37
	86.72	372	0.34	6.787E+00	4.797E+01	4.797E+01	21.83
	117.66	-----	0.55	7.397E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.065E+00	-----	Line Not Found	-----
ANH-511	511.00	83	100.00*	2.955E+00	8.232E-02	8.232E-02	76.55

Flag: "\*" = Keyline

Total number of lines in spectrum 36  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 34 94.44%

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	1.940E+01	1.940E+01	0.222E+01	11.47	
CD-109	464.00D	1.02	4.333E+00	4.424E+00	0.966E+00	21.83	
SN-126	1.00E+05Y	1.00	4.356E-01	4.356E-01	0.951E-01	21.83	
BA-137M	30.17Y	1.00	1.067E-01	1.068E-01	0.515E-01	48.22	
CS-137	30.17Y	1.00	1.128E-01	1.129E-01	0.544E-01	48.22	
CE-141	32.50D	1.35	3.104E-02	4.180E-02	7.826E-02	187.24	
TL-208	1.41E+10Y	1.00	5.603E-01	5.603E-01	1.049E-01	18.72	
BI-211	7.04E+08Y	1.00	4.176E+00	4.176E+00	0.712E+00	17.05	
PB-212	1.41E+10Y	1.00	1.741E+00	1.741E+00	0.268E+00	15.36	
PO-212	1.41E+10Y	1.00	1.741E+00	1.741E+00	0.268E+00	15.36	
BI-214	1600.00Y	1.00	1.173E+00	1.173E+00	0.201E+00	17.18	
PB-214	1600.00Y	1.00	1.453E+00	1.453E+00	0.259E+00	17.83	
PO-214	1600.00Y	1.00	1.453E+00	1.453E+00	0.259E+00	17.83	
PO-216	1.41E+10Y	1.00	1.741E+00	1.741E+00	0.268E+00	15.36	
PO-218	1600.00Y	1.00	1.453E+00	1.453E+00	0.259E+00	17.83	
RA-224	1.41E+10Y	1.00	4.369E+00	4.369E+00	1.179E+00	26.97	
RA-226	1600.00Y	1.00	1.173E+00	1.173E+00	0.201E+00	17.18	
AC-228	1.41E+10Y	1.00	1.741E+00	1.741E+00	0.336E+00	19.30	
RA-228	1.41E+10Y	1.00	1.741E+00	1.741E+00	0.336E+00	19.30	
TH-228	1.91Y	1.01	1.741E+00	1.766E+00	0.271E+00	15.36	
TH-230	4.47E+09Y	1.00	1.173E+00	1.173E+00	0.201E+00	17.18	
TH-232	1.41E+10Y	1.00	1.741E+00	1.741E+00	0.336E+00	19.30	
TH-234	4.47E+09Y	1.00	1.455E+00	1.455E+00	1.493E+00	102.59	
U-234	4.47E+09Y	1.00	1.173E+00	1.173E+00	0.201E+00	17.18	
U-235	7.04E+08Y	1.00	1.431E-01	1.431E-01	2.688E-01	187.85	
NP-237	2.14E+06Y	1.00	1.279E+00	1.279E+00	0.384E+00	30.04	
U-238	4.47E+09Y	1.00	1.455E+00	1.455E+00	1.493E+00	102.59	
AM-243	7380.00Y	1.00	4.117E-01	4.117E-01	0.674E-01	16.37	
ANH-511	1.00E+09Y	1.00	8.232E-02	8.232E-02	6.301E-02	76.55	

Total Activity : 5.958E+01 5.971E+01

Grand Total Activity : 5.958E+01 5.971E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
7	84.35	185	333	1.54	167.61	164	27	2.57E-02	36.7	6.61E+00	T
0	129.29	107	331	1.14	257.55	254	8	1.49E-02	62.1	7.28E+00	T
0	209.20	147	245	1.00	417.49	414	8	2.04E-02	40.3	5.70E+00	T
0	270.13	116	229	1.56	539.45	535	11	1.62E-02	54.2	4.77E+00	T
0	328.31	91	125	1.16	655.88	652	8	1.27E-02	47.1	4.13E+00	T
0	463.32	75	112	1.09	926.09	921	10	1.03E-02	58.5	3.19E+00	T
0	727.38	92	90	1.11	1454.50	1448	12	1.28E-02	46.1	2.22E+00	T
0	768.34	41	65	1.50	1536.45	1532	9	5.69E-03	77.6	2.12E+00	T
0	795.28	59	76	1.29	1590.37	1583	15	8.20E-03	69.8	2.06E+00	T
0	1378.14	41	24	1.61	2756.52	2751	15	5.68E-03	59.8	1.28E+00	
0	1730.42	18	13	1.86	3461.22	3458	13	2.44E-03	****	1.08E+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]G244132004.CNF;1 *
* Acquisition date   : 19-JAN-2010 09:53:06   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 02:00:01.67          Half life ratio      : 8.00000    *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library   : SOLID      *
* Sample ID          : G244132004            Analyst initials  : MXR1       *
* Batch Number       : 940270                Sample Quantity   : 1.27670E+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	1.940E+01	2.225E+00	4.647E-01	4.018E-02	41.738
CD-109	4.424E+00	9.657E-01	8.563E-01	8.120E-02	5.167
SN-126	4.356E-01	9.509E-02	8.459E-02	7.979E-03	5.150
BA-137M	1.068E-01	5.148E-02	5.632E-02	5.329E-03	1.896
CS-137	1.129E-01	5.443E-02	5.953E-02	5.642E-03	1.896
CE-141	4.180E-02	7.826E-02	7.797E-02	7.146E-03	0.536
TL-208	5.603E-01	1.049E-01	4.995E-02	5.395E-03	11.216
BI-211	4.176E+00	7.121E-01	2.818E-01	3.718E-02	14.817
PB-212	1.741E+00	2.675E-01	7.571E-02	1.060E-02	23.002
PO-212	1.741E+00	2.675E-01	7.571E-02	1.060E-02	23.002
BI-214	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
PB-214	1.453E+00	2.591E-01	9.825E-02	1.390E-02	14.785
PO-214	1.453E+00	2.591E-01	9.825E-02	1.390E-02	14.785
PO-216	1.741E+00	2.675E-01	7.571E-02	1.060E-02	23.002
PO-218	1.453E+00	2.591E-01	9.825E-02	1.390E-02	14.785
RA-224	4.369E+00	1.179E+00	8.619E-01	1.154E-01	5.070
RA-226	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
AC-228	1.741E+00	3.360E-01	1.870E-01	2.276E-02	9.311

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.741E+00	3.360E-01	1.870E-01	2.276E-02	9.311
TH-228	1.766E+00	2.712E-01	7.676E-02	1.075E-02	23.002
TH-230	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
TH-232	1.741E+00	3.360E-01	1.870E-01	2.276E-02	9.311
TH-234	1.455E+00	1.493E+00	1.394E+00	2.425E-01	1.044
U-234	1.173E+00	2.014E-01	1.042E-01	1.178E-02	11.255
U-235	1.431E-01	2.688E-01	2.798E-01	4.947E-02	0.511
NP-237	1.279E+00	3.843E-01	2.504E-01	5.667E-02	5.110
U-238	1.455E+00	1.493E+00	1.394E+00	2.425E-01	1.044
AM-243	4.117E-01	6.741E-02	6.893E-02	5.578E-03	5.973
ANH-511	8.232E-02	6.301E-02	4.398E-02	4.702E-03	1.872

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.353E-02		2.656E-01	4.349E-01	4.922E-02	-0.146
NA-22	-7.204E-03		3.774E-02	5.994E-02	4.922E-03	-0.120
NA-24	3.505E-02		7.632E-02	Half-Life too short		
AL-26	-8.328E-03		2.773E-02	4.286E-02	3.499E-03	-0.194
TI-44	3.424E-01	+	4.907E-02	5.587E-02	4.710E-03	6.128
SC-46	-1.472E-02		3.258E-02	5.210E-02	5.131E-03	-0.282
V-48	-1.180E-02		5.281E-02	8.559E-02	8.118E-03	-0.138
CR-51	6.004E-02		3.224E-01	5.220E-01	7.575E-02	0.115
MN-52	1.396E-02		1.633E-01	2.666E-01	2.234E-02	0.052
MN-54	-9.835E-03		3.293E-02	5.410E-02	5.328E-03	-0.182
CO-56	2.105E-03		3.425E-02	5.802E-02	5.716E-03	0.036
CO-57	5.689E-04		1.852E-02	3.149E-02	2.664E-03	0.018
CO-58	-9.520E-04		3.865E-02	6.131E-02	6.036E-03	-0.016
FE-59	-1.030E-01		8.253E-02	1.168E-01	1.098E-02	-0.882
CO-60	1.148E-02		2.988E-02	5.124E-02	4.234E-03	0.224
ZN-65	-5.851E-02		6.737E-02	7.796E-02	6.689E-03	-0.751
GE-68	1.123E+00		1.096E+00	1.987E+00	1.765E-01	0.565
AS-73	5.529E-02		5.507E-01	8.850E-01	6.646E-02	0.062
AS-74	8.855E-02		7.886E-02	1.401E-01	1.425E-02	0.632
SE-75	2.065E-02		3.666E-02	5.878E-02	8.640E-03	0.351
BR-77	-3.724E-01		6.715E+00	1.109E+01	1.182E+00	-0.034
SR-82	-2.687E-01		3.665E-01	5.458E-01	5.338E-02	-0.492
RB-83	-2.626E-03		6.254E-02	1.034E-01	1.102E-02	-0.025
RB-84	3.486E-02		6.108E-02	1.077E-01	1.061E-02	0.324
KR-85	-1.577E+00		7.265E+00	1.037E+01	1.108E+00	-0.152
SR-85	-7.982E-03		3.678E-02	5.250E-02	5.608E-03	-0.152
RB-86	8.217E-01		6.823E-01	1.252E+00	1.112E-01	0.656
Y-88	9.760E-03		3.100E-02	5.411E-02	4.392E-03	0.180
ZR-88	1.606E-02		2.626E-02	4.605E-02	4.911E-03	0.349
Y-91	1.382E+01		1.474E+01	2.643E+01	2.139E+00	0.523
NB-94	-1.126E-02		2.901E-02	4.518E-02	4.339E-03	-0.249
NB-95	2.096E-02		4.342E-02	6.451E-02	6.297E-03	0.325



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	3.418E-02		1.152E-01	1.715E-01	2.394E-02	0.199
ZR-95	4.816E-02		6.414E-02	1.102E-01	1.159E-02	0.437
NB-97	2.243E-02		1.334E-02	Half-Life too short		
ZR-97	1.808E-01		2.582E-01	Half-Life too short		
MO-99	-6.121E-01		7.863E+00	1.258E+01	1.990E+00	-0.049
TC-99M	3.731E+08		6.139E+08	Half-Life too short		
RH-101	-1.478E-02		2.791E-02	4.391E-02	4.914E-03	-0.337
RH-102	1.424E-03		2.348E-02	3.939E-02	4.247E-03	0.036
RU-103	1.647E-02		3.430E-02	5.902E-02	9.172E-03	0.279
RH-106	9.535E-02		2.908E-01	4.881E-01	6.947E-02	0.195
RU-106	9.535E-02		2.906E-01	4.881E-01	4.843E-02	0.195
AG-108M	1.470E-02		2.533E-02	4.437E-02	4.905E-03	0.331
AG-110M	2.522E-02		3.115E-02	4.912E-02	4.786E-03	0.513
IN-111	3.776E-01		6.923E-01	1.050E+00	1.430E-01	0.360
IN-113M	-3.031E-02		3.880E-02	6.218E-02	6.763E-03	-0.488
SN-113	-3.031E-02		3.880E-02	6.218E-02	6.763E-03	-0.488
IN-114M	-5.929E-02		1.560E-01	2.411E-01	2.609E-02	-0.246
CD-115	1.961E+00		6.277E+00	1.066E+01	1.133E+00	0.184
SN-117M	3.390E-02		4.110E-02	7.122E-02	6.731E-03	0.476
SB-122	2.595E-01		1.291E+00	2.162E+00	2.252E-01	0.120
I-123	1.277E-01		5.066E-01	Half-Life too short		
TE-123M	2.883E-03		2.288E-02	3.853E-02	3.665E-03	0.075
I-124	3.617E-03		5.247E-01	8.313E-01	8.402E-02	0.004
SB-124	8.740E-03		6.767E-02	1.148E-01	9.979E-03	0.076
SB-125	9.432E-02		8.070E-02	1.451E-01	1.582E-02	0.650
TE-125M	3.199E+00		7.062E+00	1.227E+01	1.258E+00	0.261
I-126	-7.348E-02		1.904E-01	2.585E-01	2.450E-02	-0.284
SB-126	-2.040E-01		1.359E-01	1.625E-01	1.569E-02	-1.255
SB-127	8.029E-01		1.008E+00	1.744E+00	2.054E-01	0.461
XE-127	1.248E-03		3.919E-02	6.476E-02	7.401E-03	0.019
I-131	4.429E-03		9.382E-02	1.491E-01	1.871E-02	0.030
TE-132	-1.596E-01		4.583E-01	7.348E-01	1.330E-01	-0.217
BA-133	-1.562E-03		4.013E-02	5.630E-02	9.080E-03	-0.028
I-133	-2.968E-04		1.026E-03	Half-Life too short		
CS-134	1.110E-01	+	7.828E-02	8.960E-02	8.839E-03	1.239
CS-135	1.659E-01		1.513E-01	2.340E-01	3.672E-02	0.709
I-135	1.029E+08		1.169E+08	Half-Life too short		
CS-136	-6.073E-02		8.785E-02	1.340E-01	1.265E-02	-0.453
CE-139	-7.373E-03		2.454E-02	4.040E-02	3.926E-03	-0.182
BA-140	-2.027E-01		2.295E-01	3.352E-01	1.130E-01	-0.605
LA-140	-4.106E-02		7.305E-02	1.110E-01	9.337E-03	-0.370
CE-143	1.713E-04		4.486E-05	Half-Life too short		
CE-144	1.320E-01		1.751E-01	2.763E-01	4.310E-02	0.478
PM-144	-1.798E-02		3.494E-02	5.053E-02	4.844E-03	-0.356
PR-144	-1.218E+00		2.366E+00	3.422E+00	3.280E-01	-0.356
PM-146	-1.091E-02		3.848E-02	6.313E-02	7.915E-03	-0.173
ND-147	-3.045E-01		4.808E-01	7.521E-01	1.217E-01	-0.405
PM-149	1.841E+01		5.758E+01	9.446E+01	1.893E+01	0.195

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	-3.904E-02		9.374E-02	1.265E-01	1.715E-02	-0.309
GD-153	-3.998E-02		6.937E-02	9.489E-02	8.430E-03	-0.421
EU-154	-2.123E-02		1.054E-01	1.671E-01	1.837E-02	-0.127
EU-155	2.596E-02		8.388E-02	1.452E-01	1.267E-02	0.179
TB-160	3.073E-02		1.224E-01	2.103E-01	2.072E-02	0.146
HO-166M	-7.142E-03		5.465E-02	8.727E-02	8.405E-03	-0.082
TM-171	-1.839E+00		2.242E+01	3.238E+01	2.430E+00	-0.057
LU-176	5.870E-03		2.120E-02	3.464E-02	5.091E-03	0.169
LU-177	2.908E+00	+	1.221E+00	1.595E+00	1.866E-01	1.824
LU-177M	-1.126E-01		1.482E-01	2.361E-01	2.535E-02	-0.477
HF-181	2.208E-03		3.492E-02	5.853E-02	6.304E-03	0.038
W-181	-2.063E-01		2.831E-01	3.936E-01	2.918E-02	-0.524
TA-182	2.539E-02		1.564E-01	2.598E-01	2.110E-02	0.098
RE-183	4.423E-02		9.061E-02	1.546E-01	1.482E-02	0.286
RE-184	7.658E-02		1.937E-01	3.222E-01	4.520E-02	0.238
OS-185	-2.005E-02		3.484E-02	5.339E-02	5.153E-03	-0.376
RE-188	-1.855E-03		1.433E-01	2.400E-01	2.239E-02	-0.008
W-188	2.339E+00		7.110E+00	1.047E+01	1.591E+00	0.223
IR-192	-1.547E-02		3.045E-02	4.643E-02	6.674E-03	-0.333
AU-195	1.356E-01		1.644E-01	2.906E-01	2.564E-02	0.467
TL-200	-2.414E-05		9.632E-05	Half-Life too short		
TL-201	-3.233E+00		4.344E+00	6.975E+00	6.824E-01	-0.463
TL-202	2.411E-02		5.452E-02	9.433E-02	1.017E-02	0.256
HG-203	3.168E-02		3.888E-02	5.921E-02	9.248E-03	0.535
BI-207	4.158E-02		4.683E-02	8.392E-02	7.539E-03	0.496
TL-207	-2.695E-01		7.148E-01	9.793E-01	2.048E-01	-0.275
PO-209	-1.538E+00		6.554E+00	1.074E+01	1.057E+00	-0.143
BI-210	4.313E-01		2.165E+00	3.522E+00	3.279E-01	0.122
PB-210	4.313E-01		2.165E+00	3.522E+00	3.279E-01	0.122
PO-210	4.313E-01		2.165E+00	3.522E+00	2.969E-01	0.122
PB-211	-2.063E-01		8.420E-01	1.384E+00	8.715E-01	-0.149
BI-212	1.034E+00	+	4.900E-01	6.510E-01	7.115E-02	1.589
PO-215	-2.695E-01		7.148E-01	9.793E-01	2.048E-01	-0.275
RN-219	2.106E-01		3.534E-01	6.170E-01	1.006E-01	0.341
RN-220	-2.509E+00		2.248E+01	3.678E+01	3.865E+00	-0.068
RA-223	-2.695E-01		7.148E-01	9.793E-01	2.048E-01	-0.275
AC-227	-2.057E-01		3.357E-01	5.215E-01	9.940E-02	-0.394
TH-227	-2.057E-01		3.363E-01	5.215E-01	1.111E-01	-0.394
TH-229	-2.005E-01		4.248E-01	6.855E-01	7.527E-02	-0.292
PA-231	-4.030E-01		1.424E+00	2.254E+00	4.466E-01	-0.179
TH-231	-2.695E-01		7.148E-01	9.793E-01	2.048E-01	-0.275
U-231	2.317E-01		7.351E-01	1.069E+00	9.579E-02	0.217
PA-233	8.760E-03		5.481E-02	8.878E-02	1.303E-02	0.099
PA-234	-1.234E-01		2.373E-01	3.708E-01	7.143E-02	-0.333
PA-234M	1.560E+00		4.367E+00	7.424E+00	7.897E-01	0.210
NP-236	-5.939E-02		6.497E-02	1.037E-01	9.861E-03	-0.573
NP-239	-1.601E-01		1.457E-01	2.350E-01	1.988E-02	-0.681
AM-241	5.675E-03		1.166E-01	1.714E-01	1.347E-02	0.033

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.022E-02		7.105E-02	1.230E-01	1.066E-02	0.164
AM-246	2.292E-02		1.265E-01	2.150E-01	1.907E-02	0.107
CM-247	-2.140E-03		3.253E-02	5.474E-02	5.859E-03	-0.039
CF-249	4.331E-02		3.461E-02	6.255E-02	6.811E-03	0.692
CF-251	7.251E-02		1.056E-01	1.809E-01	1.843E-02	0.401

# 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]G244132004          *
* Acquisition date   : 19-JAN-2010 09:53:06 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 02:00:01.67 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID         : G244132004 Analyst initials: MXR1                   *
* Batch Number      : 940270 Sample Quantity : 1.2767E+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	1.940E+01	2.180E+00	2.325E-01	1.112E+00
CD-109	4.424E+00	9.464E-01	4.468E-01	4.829E-01
SN-126	4.356E-01	9.319E-02	4.414E-02	4.754E-02
BA-137M	1.068E-01	5.045E-02	2.852E-02	2.574E-02
CS-137	1.129E-01	5.334E-02	3.015E-02	2.721E-02
CE-141	4.180E-02	7.669E-02	4.039E-02	3.913E-02
TL-208	5.603E-01	1.028E-01	2.535E-02	5.245E-02
BI-211	4.176E+00	6.979E-01	1.441E-01	3.561E-01
PB-212	1.741E+00	2.622E-01	3.893E-02	1.338E-01
PO-212	1.741E+00	2.622E-01	3.893E-02	1.338E-01
BI-214	1.173E+00	1.974E-01	5.283E-02	1.007E-01
PB-214	1.453E+00	2.539E-01	5.024E-02	1.295E-01
PO-214	1.453E+00	2.539E-01	5.024E-02	1.295E-01
PO-216	1.741E+00	2.622E-01	3.893E-02	1.338E-01
PO-218	1.453E+00	2.539E-01	5.024E-02	1.295E-01
RA-224	4.369E+00	1.155E+00	4.432E-01	5.893E-01
RA-226	1.173E+00	1.974E-01	5.283E-02	1.007E-01
AC-228	1.741E+00	3.293E-01	9.421E-02	1.680E-01
RA-228	1.741E+00	3.293E-01	9.421E-02	1.680E-01
TH-228	1.766E+00	2.658E-01	3.948E-02	1.356E-01
TH-230	1.173E+00	1.974E-01	5.283E-02	1.007E-01
TH-232	1.741E+00	3.293E-01	9.421E-02	1.680E-01
TH-234	1.455E+00	1.463E+00	7.309E-01	7.465E-01
U-234	1.173E+00	1.974E-01	5.283E-02	1.007E-01
U-235	1.431E-01	2.634E-01	1.450E-01	1.344E-01
NP-237	1.279E+00	3.766E-01	1.307E-01	1.921E-01
U-238	1.455E+00	1.463E+00	7.309E-01	7.465E-01
AM-243	4.117E-01	6.606E-02	3.606E-02	3.371E-02
ANH-511	8.232E-02	6.175E-02	2.236E-02	3.151E-02

### ---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )		
BE-7	-6.353E-02	2.602E-01	2.213E-01	1.328E-01	NOT IDENT.
NA-22	-7.204E-03	3.698E-02	3.005E-02	1.887E-02	NOT IDENT.
NA-24	3.505E+04	1.496E+05	0.000E+00	7.632E+04	SHORT HLIF
AL-26	-8.328E-03	2.718E-02	2.137E-02	1.387E-02	NOT IDENT.
TI-44	3.424E-01	4.809E-02	2.920E-02	2.453E-02	FAIL ABUN
SC-46	-1.472E-02	3.193E-02	2.626E-02	1.629E-02	FAIL ABUN
V-48	-1.180E-02	5.175E-02	4.308E-02	2.640E-02	NOT IDENT.
CR-51	6.004E-02	3.160E-01	2.673E-01	1.612E-01	NOT IDENT.
MN-52	1.396E-02	1.601E-01	1.334E-01	8.166E-02	NOT IDENT.
MN-54	-9.835E-03	3.227E-02	2.730E-02	1.647E-02	NOT IDENT.
CO-56	2.105E-03	3.357E-02	2.927E-02	1.713E-02	NOT IDENT.
CO-57	5.689E-04	1.815E-02	1.636E-02	9.258E-03	NOT IDENT.
CO-58	-9.520E-04	3.787E-02	3.095E-02	1.932E-02	NOT IDENT.
FE-59	-1.030E-01	8.088E-02	5.869E-02	4.127E-02	NOT IDENT.
CO-60	1.148E-02	2.928E-02	2.567E-02	1.494E-02	NOT IDENT.
ZN-65	-5.851E-02	6.602E-02	3.916E-02	3.368E-02	NOT IDENT.
GE-68	1.123E+00	1.074E+00	9.989E-01	5.481E-01	NOT IDENT.
AS-73	5.529E-02	5.396E-01	4.651E-01	2.753E-01	NOT IDENT.
AS-74	8.855E-02	7.728E-02	7.107E-02	3.943E-02	NOT IDENT.
SE-75	2.065E-02	3.592E-02	3.018E-02	1.833E-02	NOT IDENT.
BR-77	-3.724E-01	6.581E+00	5.636E+00	3.358E+00	FAIL ABUN
SR-82	-2.687E-01	3.592E-01	2.757E-01	1.833E-01	NOT IDENT.
RB-83	-2.626E-03	6.129E-02	5.255E-02	3.127E-02	NOT IDENT.
RB-84	3.486E-02	5.985E-02	5.430E-02	3.054E-02	NOT IDENT.
KR-85	-1.577E+00	7.119E+00	5.272E+00	3.632E+00	NOT IDENT.
SR-85	-7.982E-03	3.604E-02	2.669E-02	1.839E-02	NOT IDENT.
RB-86	8.217E-01	6.686E-01	6.292E-01	3.411E-01	NOT IDENT.
Y-88	9.760E-03	3.038E-02	2.697E-02	1.550E-02	NOT IDENT.
ZR-88	1.606E-02	2.573E-02	2.351E-02	1.313E-02	NOT IDENT.
Y-91	1.382E+01	1.444E+01	1.326E+01	7.369E+00	NOT IDENT.
NB-94	-1.126E-02	2.843E-02	2.286E-02	1.451E-02	NOT IDENT.
NB-95	2.096E-02	4.255E-02	3.260E-02	2.171E-02	NOT IDENT.
NB-95M	3.418E-02	1.129E-01	8.819E-02	5.761E-02	NOT IDENT.
ZR-95	4.816E-02	6.286E-02	5.568E-02	3.207E-02	NOT IDENT.
NB-97	2.243E+04	2.616E+04	0.000E+00	1.334E+04	SHORT HLIF
ZR-97	1.808E+05	5.061E+05	0.000E+00	2.582E+05	SHORT HLIF
MO-99	-6.121E-01	7.705E+00	6.358E+00	3.931E+00	NOT IDENT.
TC-99M	3.731E+14	1.203E+15	0.000E+00	6.139E+14	SHORT HLIF
RH-101	-1.478E-02	2.735E-02	2.264E-02	1.395E-02	NOT IDENT.
RH-102	1.424E-03	2.301E-02	2.005E-02	1.174E-02	FAIL ABUN
RU-103	1.647E-02	3.361E-02	3.002E-02	1.715E-02	FAIL ABUN
RH-106	9.535E-02	2.849E-01	2.474E-01	1.454E-01	FAIL ABUN
RU-106	9.535E-02	2.848E-01	2.474E-01	1.453E-01	FAIL ABUN
AG-108M	1.470E-02	2.482E-02	2.261E-02	1.266E-02	NOT IDENT.
AG-110M	2.522E-02	3.052E-02	2.488E-02	1.557E-02	NOT IDENT.
IN-111	3.776E-01	6.785E-01	5.395E-01	3.462E-01	NOT IDENT.
IN-113M	-3.031E-02	3.803E-02	3.174E-02	1.940E-02	NOT IDENT.
SN-113	-3.031E-02	3.803E-02	3.174E-02	1.940E-02	NOT IDENT.
IN-114M	-5.929E-02	1.529E-01	1.244E-01	7.802E-02	NOT IDENT.
CD-115	1.961E+00	6.152E+00	5.417E+00	3.139E+00	NOT IDENT.
SN-117M	3.390E-02	4.028E-02	3.684E-02	2.055E-02	NOT IDENT.
SB-122	2.595E-01	1.265E+00	1.098E+00	6.453E-01	NOT IDENT.
I-123	1.277E+05	9.930E+05	0.000E+00	5.066E+05	SHORT HLIF
TE-123M	2.883E-03	2.242E-02	1.993E-02	1.144E-02	NOT IDENT.
I-124	3.617E-03	5.142E-01	4.216E-01	2.623E-01	NOT IDENT.
SB-124	8.740E-03	6.631E-02	5.731E-02	3.383E-02	FAIL ABUN
SB-125	9.432E-02	7.908E-02	7.395E-02	4.035E-02	FAIL ABUN
TE-125M	3.199E+00	6.921E+00	6.381E+00	3.531E+00	NOT IDENT.
I-126	-7.348E-02	1.866E-01	1.309E-01	9.518E-02	NOT IDENT.
SB-126	-2.040E-01	1.332E-01	8.220E-02	6.794E-02	FAIL ABUN
SB-127	8.029E-01	9.882E-01	8.825E-01	5.042E-01	NOT IDENT.
XE-127	1.248E-03	3.841E-02	3.338E-02	1.959E-02	FAIL ABUN
I-131	4.429E-03	9.194E-02	7.619E-02	4.691E-02	NOT IDENT.
TE-132	-1.596E-01	4.492E-01	3.781E-01	2.292E-01	NOT IDENT.
BA-133	-1.562E-03	3.933E-02	2.878E-02	2.006E-02	FAIL ABUN
I-133	-2.968E+02	2.011E+03	0.000E+00	1.026E+03	SHORT HLIF
CS-134	1.110E-01	7.671E-02	4.525E-02	3.914E-02	FAIL ABUN
CS-135	1.659E-01	1.482E-01	1.201E-01	7.564E-02	NOT IDENT.
I-135	1.029E+14	2.291E+14	0.000E+00	1.169E+14	SHORT HLIF
CS-136	-6.073E-02	8.609E-02	6.740E-02	4.392E-02	FAIL ABUN
CE-139	-7.373E-03	2.405E-02	2.089E-02	1.227E-02	NOT IDENT.
BA-140	-2.027E-01	2.249E-01	1.703E-01	1.148E-01	NOT IDENT.
LA-140	-4.106E-02	7.159E-02	5.547E-02	3.652E-02	FAIL ABUN
CE-143	1.713E+02	8.793E+01	0.000E+00	4.486E+01	SHORT HLIF
CE-144	1.320E-01	1.716E-01	1.433E-01	8.756E-02	NOT IDENT.
PM-144	-1.798E-02	3.424E-02	2.557E-02	1.747E-02	NOT IDENT.

PR-144	-1.218E+00	2.319E+00	1.732E+00	1.183E+00	NOT IDENT.
PM-146	-1.091E-02	3.771E-02	3.215E-02	1.924E-02	NOT IDENT.
ND-147	-3.045E-01	4.711E-01	3.822E-01	2.404E-01	FAIL ABUN
PM-149	1.841E+01	5.643E+01	4.845E+01	2.879E+01	NOT IDENT.
EU-152	-3.904E-02	9.186E-02	6.472E-02	4.687E-02	NOT IDENT.
GD-153	-3.998E-02	6.798E-02	4.944E-02	3.468E-02	FAIL ABUN
EU-154	-2.123E-02	1.033E-01	8.377E-02	5.268E-02	NOT IDENT.
EU-155	2.596E-02	8.220E-02	7.558E-02	4.194E-02	FAIL ABUN
TB-160	3.073E-02	1.200E-01	1.060E-01	6.122E-02	FAIL ABUN
HO-166M	-7.142E-03	5.355E-02	4.415E-02	2.732E-02	FAIL ABUN
TM-171	-1.839E+00	2.197E+01	1.696E+01	1.121E+01	NOT IDENT.
LU-176	5.870E-03	2.078E-02	1.775E-02	1.060E-02	FAIL ABUN
LU-177	2.908E+00	1.197E+00	8.217E-01	6.105E-01	FAIL ABUN
LU-177M	-1.126E-01	1.452E-01	1.204E-01	7.409E-02	FAIL ABUN
HF-181	2.208E-03	3.422E-02	2.979E-02	1.746E-02	NOT IDENT.
W-181	-2.063E-01	2.774E-01	2.063E-01	1.415E-01	NOT IDENT.
TA-182	2.539E-02	1.533E-01	1.303E-01	7.819E-02	FAIL ABUN
RE-183	4.423E-02	8.880E-02	7.997E-02	4.530E-02	FAIL ABUN
RE-184	7.658E-02	1.899E-01	1.655E-01	9.687E-02	NOT IDENT.
OS-185	-2.005E-02	3.414E-02	2.705E-02	1.742E-02	NOT IDENT.
RE-188	-1.855E-03	1.404E-01	1.242E-01	7.163E-02	NOT IDENT.
W-188	2.339E+00	6.968E+00	5.369E+00	3.555E+00	FAIL ABUN
IR-192	-1.547E-02	2.984E-02	2.378E-02	1.522E-02	FAIL ABUN
AU-195	1.356E-01	1.611E-01	1.514E-01	8.222E-02	FAIL ABUN
TL-200	-2.414E+01	1.888E+02	0.000E+00	9.632E+01	SHORT HLIF
TL-201	-3.233E+00	4.257E+00	3.606E+00	2.172E+00	NOT IDENT.
TL-202	2.411E-02	5.343E-02	4.807E-02	2.726E-02	NOT IDENT.
HG-203	3.168E-02	3.810E-02	3.038E-02	1.944E-02	NOT IDENT.
BI-207	4.158E-02	4.589E-02	4.219E-02	2.341E-02	FAIL ABUN
TL-207	-2.695E-01	7.005E-01	5.013E-01	3.574E-01	FAIL ABUN
PO-209	-1.538E+00	6.423E+00	5.413E+00	3.277E+00	NOT IDENT.
BI-210	4.313E-01	2.122E+00	1.855E+00	1.083E+00	NOT IDENT.
PB-210	4.313E-01	2.122E+00	1.855E+00	1.083E+00	NOT IDENT.
PO-210	4.313E-01	2.122E+00	1.855E+00	1.083E+00	NOT IDENT.
PB-211	-2.063E-01	8.252E-01	7.059E-01	4.210E-01	NOT IDENT.
BI-212	1.034E+00	4.802E-01	3.292E-01	2.450E-01	FAIL ABUN
PO-215	-2.695E-01	7.005E-01	5.013E-01	3.574E-01	FAIL ABUN
RN-219	2.106E-01	3.463E-01	3.149E-01	1.767E-01	FAIL ABUN
RN-220	-2.509E+00	2.203E+01	1.868E+01	1.124E+01	NOT IDENT.
RA-223	-2.695E-01	7.005E-01	5.013E-01	3.574E-01	FAIL ABUN
AC-227	-2.057E-01	3.290E-01	2.679E-01	1.679E-01	FAIL ABUN
TH-227	-2.057E-01	3.296E-01	2.679E-01	1.681E-01	FAIL ABUN
TH-229	-2.005E-01	4.163E-01	3.536E-01	2.124E-01	FAIL ABUN
PA-231	-4.030E-01	1.396E+00	1.156E+00	7.121E-01	FAIL ABUN
TH-231	-2.695E-01	7.005E-01	5.013E-01	3.574E-01	FAIL ABUN
U-231	2.317E-01	7.204E-01	5.573E-01	3.676E-01	FAIL ABUN
PA-233	8.760E-03	5.371E-02	4.547E-02	2.740E-02	FAIL ABUN
PA-234	-1.234E-01	2.325E-01	1.867E-01	1.186E-01	FAIL ABUN
PA-234M	1.560E+00	4.280E+00	3.736E+00	2.184E+00	NOT IDENT.
NP-236	-5.939E-02	6.367E-02	5.362E-02	3.248E-02	NOT IDENT.
NP-239	-1.601E-01	1.428E-01	1.221E-01	7.284E-02	FAIL ABUN
AM-241	5.675E-03	1.142E-01	8.996E-02	5.828E-02	NOT IDENT.
CM-243	2.022E-02	6.962E-02	6.405E-02	3.552E-02	FAIL ABUN
AM-246	2.292E-02	1.240E-01	1.081E-01	6.326E-02	NOT IDENT.
CM-247	-2.140E-03	3.188E-02	2.793E-02	1.627E-02	FAIL ABUN
CF-249	4.331E-02	3.392E-02	3.193E-02	1.731E-02	NOT IDENT.
CF-251	7.251E-02	1.035E-01	9.345E-02	5.281E-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	206.6217
46.50	206.6217
46.50	206.6217
48.70	269.5890
49.72	221.0445
51.35	255.4329
52.39	220.8059
52.97	212.3322
53.15	212.4568
53.44	240.4910
54.07	259.9465
56.28	232.5615
56.28	232.5639
57.37	0.0000
57.53	270.6876
57.53	270.6894
57.60	270.7462
57.98	258.6392
57.98	258.6392
59.32	267.6336
59.32	267.6336
59.40	267.6985
59.54	272.3502
59.72	269.4698
60.01	271.2199
61.10	284.2627
61.14	284.2960
61.30	284.4301
63.00	275.1480
63.29	275.3787
63.29	275.3787
63.58	275.6094
64.28	296.1089
65.12	304.5068
65.20	312.2671
65.20	312.2671
66.05	320.7259
66.72	307.4212
66.83	307.5184
66.91	307.5852
67.20	295.4590
67.20	295.4590
67.75	282.3518
67.85	282.4297
68.90	355.5114
68.90	355.5114
69.30	340.7283
69.67	362.0987
70.82	354.6252
70.82	354.6252
70.83	354.6344
72.80	408.3156
72.87	408.3897
72.87	408.3897
74.67	369.2741
74.81	369.4074
74.81	369.4074
74.81	369.4074
74.81	369.4074
74.81	369.4074
74.81	369.4074
74.97	369.5598
75.28	369.8549
75.70	370.2524
77.11	371.5783
77.11	371.5783

77.11	371.5783
77.11	371.5783
77.11	371.5783
77.11	371.5783
77.11	371.5783
78.38	302.6714
79.62	289.2218
79.80	289.3507
79.80	289.3507
80.11	290.3716
80.18	290.4214
80.30	290.5063
80.30	290.5063
80.57	271.4786
81.00	288.5999
81.07	288.6493
81.07	288.6493
81.07	288.6493
81.07	288.6493
82.60	291.3282
83.37	293.4765
83.78	240.9037
83.78	240.9037
83.78	240.9037
83.78	240.9037
84.21	241.1496
84.90	241.5444
85.43	241.8450
86.29	242.3324
86.50	242.4508
86.54	242.4736
86.59	242.5024
86.72	242.5753
86.79	242.6132
86.94	242.6983
87.30	242.9017
87.30	242.9017
87.30	242.9017
87.30	242.9017
87.30	242.9017
87.30	242.9017
87.57	243.0520
87.88	243.2266
88.03	243.3101
88.36	243.4953
88.47	243.5561
89.95	244.3790
91.11	245.0181
92.29	245.6649
92.38	245.7135
92.38	245.7135
93.35	246.2419
94.00	246.5941
94.67	225.0300
94.67	225.0328
94.90	225.1449
94.90	225.1449
94.90	225.1449
94.90	225.1449
95.87	230.5977
95.87	230.5977
96.73	257.6207
97.43	256.3408
98.44	222.1951
98.44	222.1965
98.88	219.5653
99.55	213.1874
99.55	213.1874
99.86	213.3275
100.00	213.3897
100.10	222.6435
103.18	246.8134
103.76	219.2771
105.00	216.4492
105.31	246.1973
108.00	256.0356
109.28	233.6598



111.00	282.3668
111.00	282.3668
111.76	261.3616
112.95	251.6568
115.19	250.1480
116.30	252.4034
117.00	244.0807
117.00	244.0807
117.66	223.5848
121.11	204.9568
121.62	213.8778
121.78	213.9401
122.06	194.8290
122.32	192.2986
122.32	192.2986
122.32	192.2986
122.32	192.2986
123.07	209.1906
127.23	212.9572
129.76	237.3769
131.20	223.7633
133.02	212.4408
133.54	197.9197
135.34	220.8814
136.00	225.6039
136.25	227.4900
136.48	246.3933
140.51	212.4205
140.51	0.0000
142.18	255.0576
142.65	222.6697
143.76	228.5109
144.24	228.6877
144.24	228.6877
144.24	228.6877
144.24	228.6877
145.22	216.7787
145.44	205.9430
147.16	227.0240
152.43	238.1017
152.70	240.9609
153.22	208.0196
154.21	211.1001
154.21	211.1001
154.21	211.1001
154.21	211.1001
155.03	243.6718
156.02	252.3606
158.56	188.3755
159.00	0.0000
159.00	210.7850
160.31	233.5277
161.27	248.7698
162.32	214.6306
162.64	199.7934
163.35	206.5445
163.89	215.1266
165.85	224.1865
167.43	223.7593
171.28	183.4025
171.86	204.3677
172.10	204.4380
176.55	193.3357
176.60	193.3501
181.06	211.3103
184.41	196.3861
185.71	222.7685
186.00	222.8531
190.27	211.8927
192.34	191.6494
193.63	209.5104
197.04	175.1980
198.01	203.8338
198.60	208.8897
200.40	191.6754
201.83	195.9595
202.84	206.0682
205.31	200.2753

208.36	187.6273
208.81	198.6572
209.75	204.3544
209.75	204.3544
210.97	171.7946
215.65	184.2826
216.55	182.4758
218.09	189.8421
222.10	195.7860
223.80	175.9506
226.40	185.6081
227.00	188.7814
227.08	188.7984
227.20	194.9160
228.16	183.9515
228.18	179.8899
228.18	179.8899
231.56	0.0000
235.69	187.5739
236.00	184.5630
236.00	184.5630
238.63	165.5645
238.63	165.5645
238.63	165.5645
238.63	165.5645
239.00	165.6316
240.98	165.9936
241.98	166.1770
241.98	166.1770
241.98	166.1770
244.69	124.2249
245.39	125.8728
247.94	142.3223
248.90	135.1892
249.79	132.1948
252.40	148.2200
252.85	133.6706
252.85	133.6706
254.15	0.0000
256.20	163.4871
256.20	163.4871
260.50	130.5340
260.90	132.6932
262.80	141.3963
264.65	112.9079
268.24	128.9182
268.79	132.1749
269.46	141.2963
269.46	141.2963
269.46	141.2963
269.46	141.2963
271.23	141.5479
273.65	124.8195
276.40	139.6041
277.35	158.4725
277.60	149.9435
277.60	149.9435
278.00	140.3602
278.60	133.4743
279.20	128.7256
279.53	128.7671
280.46	161.1053
281.68	167.7495
283.67	157.2993
284.30	131.5213
285.00	133.7682
285.90	141.4423
286.10	136.0693
286.10	136.0693
287.40	136.2411
288.45	0.0000
290.67	131.7857
290.80	128.5486
291.72	118.8879
293.26	0.0000
293.70	140.3221
295.21	130.7178
295.21	130.7178

295.21	130.7178
295.96	130.8105
296.50	130.8765
297.23	88.4026
298.57	88.5130
299.80	111.5874
299.80	111.5874
300.09	111.6185
300.09	111.6185
300.09	111.6185
300.09	111.6185
300.12	111.6206
301.29	111.7410
302.84	149.7495
303.76	139.9953
303.91	140.0134
304.40	135.1343
304.40	135.1343
304.84	97.2704
306.84	112.3116
308.46	129.0185
311.98	110.6242
316.51	118.8490
318.01	117.8935
319.02	136.9236
319.41	138.0847
320.08	118.1092
323.87	149.2477
323.87	149.2477
323.87	149.2477
323.87	149.2477
325.23	127.5983
328.77	121.2539
333.44	111.5966
334.20	135.3564
334.20	135.3564
334.30	135.3687
338.28	112.0558
338.28	112.0558
338.28	112.0558
338.28	112.0558
338.32	112.0598
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338.32	112.0598
340.50	103.7603
340.57	103.7678
344.27	109.2090
345.85	119.6033
350.59	0.0000
351.07	109.8242
351.92	109.9004
351.92	109.9004
351.92	109.9004
355.39	0.0000
356.01	93.0383
364.48	101.7679
366.43	105.4002
367.43	117.0751
367.94	0.0000
369.80	99.8749
374.96	115.4376
383.85	107.4276
387.95	85.6802
388.63	101.6322
391.69	118.6976
391.69	118.6976
392.90	93.9792
398.62	105.9571
400.65	105.2234
401.10	99.0152
401.81	91.9277
402.60	108.0555
404.84	114.4941
410.95	107.8162
411.60	128.5420
413.65	106.2263
414.70	77.4782
415.30	80.2149

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417.63	0.0000
418.52	89.4348
423.70	84.3238
427.08	81.7973
427.89	77.2971
432.53	83.0214
433.93	64.8378
439.47	78.8377
439.56	78.8416
439.89	77.0261
443.98	97.4713
444.90	83.7309
445.03	83.7379
445.03	83.7379
445.03	83.7379
453.90	94.4235
463.38	78.2501
468.07	80.7337
473.00	83.4294
475.06	70.3995
475.35	66.6568
476.78	78.9346
477.59	79.9158
477.96	78.9948
482.03	74.4856
484.57	81.2168
487.03	79.4511
490.36	0.0000
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497.08	70.4353
507.63	0.0000
510.53	0.0000
510.84	90.2313
511.00	90.2399
511.85	82.9874
511.85	82.9874
513.99	100.0208
513.99	100.0208
520.41	83.0291
520.65	83.0422
527.90	64.9758
528.96	0.0000
529.64	78.6319
529.87	0.0000
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537.32	89.7146
543.00	68.4875
546.56	0.0000
549.76	70.7190
552.65	67.8840
555.20	61.0861
563.23	75.2184
563.90	67.3256
568.70	84.3852
569.32	84.4138
569.50	81.4420
569.67	81.4495
573.80	78.6504
574.00	70.6923
574.64	65.7382
578.91	76.6758
579.30	0.0000
583.14	67.0470
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591.81	67.3619
592.07	71.3943
593.00	63.3807
595.88	59.4483
600.56	81.8207
602.52	0.0000
602.71	84.3706
602.71	84.3706
603.60	93.8903
604.41	79.3570
604.70	79.3690
609.31	82.2014

609.31	82.2014
609.31	82.2014
609.31	82.2014
610.33	82.2434
612.46	53.6717
614.37	63.4931
618.01	65.2441
621.84	66.3965
621.84	66.3965
631.29	56.4552
633.02	73.9709
633.10	73.9731
634.78	61.6974
635.90	62.7610
636.97	59.7063
645.85	57.9072
646.12	59.9824
656.30	58.2097
657.75	43.2720
657.90	0.0000
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661.65	79.2076
664.57	0.0000
666.33	85.2382
666.33	85.2382
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677.61	45.1639
685.20	55.8709
692.80	79.3488
695.00	77.3130
696.49	76.3066
696.49	76.3066
697.00	71.0260
697.49	56.1977
698.33	46.6735
698.50	46.6761
699.00	54.1143
702.63	65.8996
706.10	54.2949
706.58	0.0000
706.67	56.4387
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711.68	64.0430
713.82	70.5157
717.42	54.5813
720.50	81.4504
721.93	0.0000
722.20	61.7801
722.78	54.9297
722.78	54.9297
722.89	54.9328
722.95	54.9344
723.30	53.2252
724.18	44.6583
727.18	58.0490
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735.90	45.3287
739.58	60.5374
742.81	55.2132
744.21	54.1641
747.13	63.9965
751.79	63.0410
752.31	63.0569
753.82	59.8340
755.35	46.8108
756.15	51.1839
756.87	57.7358
763.93	50.7033
765.79	61.2432
766.42	63.0105
766.84	59.5199
776.49	76.9086
778.00	64.8661
778.57	65.9821
778.89	65.9912
783.80	51.8021
785.46	47.4262
792.07	24.7755

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798.80	47.9171
801.93	44.4263
805.60	51.1688
810.29	55.7266
810.76	59.0815
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817.79	54.7811
818.51	46.9693
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828.27	0.0000
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831.96	61.8481
834.83	63.9468
836.80	0.0000
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848.13	44.3692
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860.37	39.1262
867.32	46.9235
867.82	39.9251
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873.19	41.1526
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880.51	39.4354
881.50	44.9553
883.24	53.2479
884.67	46.8475
889.25	48.7701
896.60	51.6770
898.02	41.5481
899.00	41.5635
903.28	53.1959
911.07	48.2498
911.07	48.2498
911.07	48.2498
919.63	33.5109
920.93	32.5955
925.00	42.9049
925.24	41.0438
926.50	44.7961
935.52	41.1995
937.48	47.7888
944.10	36.6330
946.00	42.2985
949.00	35.7577
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964.01	40.9985
966.15	59.9657
968.20	105.8080
969.11	101.1042
969.11	101.1042
969.11	101.1042
977.42	30.4211
980.50	39.0191
983.50	38.1084
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996.32	58.3774
1001.03	43.1356
1001.68	44.1043
1004.76	50.8702
1021.30	0.0000
1024.50	0.0000
1034.80	38.7891
1036.00	44.6254
1037.82	32.0332
1038.57	33.0122
1038.76	0.0000
1045.16	45.7378
1046.59	46.7320
1048.07	49.6777

1050.47	36.0696
1050.47	36.0696
1062.04	51.8665
1063.62	37.2059
1076.63	34.4155
1077.35	34.4241
1078.86	39.3613
1085.78	31.5594
1099.22	61.4127
1112.02	33.1527
1112.84	42.6374
1115.52	33.1901
1120.29	25.9276
1120.29	25.9276
1120.29	25.9276
1120.29	25.9276
1120.51	25.9289
1121.28	25.9353
1124.00	0.0000
1129.67	58.3419
1131.51	0.0000
1147.95	0.0000
1167.94	41.4945
1173.22	37.5059
1175.09	40.5703
1177.93	48.7266
1189.05	42.7793
1204.90	32.7484
1205.75	0.0000
1213.00	35.9041
1221.42	42.1631
1230.97	59.8125
1235.34	70.2147
1236.41	0.0000
1238.25	57.8730
1246.25	40.3978
1260.41	0.0000
1271.85	44.8687
1274.45	38.6368
1274.54	38.6368
1291.56	30.4288
1298.22	0.0000
1312.09	43.2662
1325.50	22.2428
1325.50	22.2428
1332.49	19.1013
1333.61	21.2305
1360.21	22.4520
1362.66	0.0000
1365.15	24.6228
1368.21	21.4287
1368.53	0.0000
1376.25	14.3164
1384.27	26.8994
1394.10	24.8115
1395.20	22.6611
1407.95	15.1573
1434.06	17.4398
1436.60	20.7228
1457.56	0.0000
1460.81	19.7534
1489.15	18.4196
1509.49	19.4380
1596.49	24.5707
1620.62	11.4038
1678.03	0.0000
1691.02	13.5169
1691.02	13.5169
1706.46	0.0000
1750.46	0.0000
1764.49	10.7914
1764.49	10.7914
1764.49	10.7914
1764.49	10.7914
1770.23	8.4194
1771.40	8.4215
1791.20	0.0000
1808.65	13.8633

1836.01

10.9543



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132004

Total Uranium Activity	4.3954E+00	ug/g
Total Uranium Counting Unc.	4.3544E+00	ug/g
Total Uranium Tpu	2.2216E-06	ug/g
Total Uranium Mda	2.1754E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132004
*  ANALYST       : MXR1                             DETECTOR    : GAM11
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 09:53:06.87          SAMPLE ALQT  : 127.670 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.750E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.305E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 2.945E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.422E+00

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## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 11:54:40.06

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132005.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:53:31
Sample ID          : G244132005          Sample quantity   : 1.23700E+02 GRAM
Detector name      : GAM15              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           : 940270             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	62.45*	47	355	1.31	125.39	122	9	6.49E-03	76.4	
2	4	74.36	327	437	1.79	149.21	144	16	4.54E-02	14.6	1.78E+00
3	4	76.55*	467	302	1.36	153.59	144	16	6.49E-02	8.4	
4	1	83.85*	95	350	1.46	168.18	163	27	1.32E-02	37.6	2.05E+00
5	1	86.72*	221	299	1.37	173.91	163	27	3.06E-02	15.4	
6	1	89.40	132	252	1.20	179.27	163	27	1.83E-02	22.6	
7	1	92.16*	231	310	1.45	184.79	163	27	3.21E-02	17.3	
8	0	128.49	62	319	1.15	257.41	253	9	8.68E-03	53.0	
9	0	185.25*	215	478	1.70	370.88	364	16	2.98E-02	24.5	
10	0	209.14	78	297	1.31	418.65	414	10	1.08E-02	43.3	
11	2	238.00*	1066	172	1.35	476.34	469	21	1.48E-01	4.0	1.41E+00
12	2	241.01	256	237	1.84	482.36	469	21	3.56E-02	15.8	
13	0	269.84	100	257	1.50	540.00	532	14	1.38E-02	35.7	
14	1	294.50*	335	149	1.72	589.30	583	23	4.65E-02	9.1	2.00E+00
15	1	299.34	121	171	1.73	598.97	583	23	1.68E-02	21.3	
16	0	337.59	212	143	1.44	675.43	671	10	2.94E-02	12.6	
17	0	351.23*	529	241	1.50	702.72	694	18	7.35E-02	8.3	
18	0	463.18	73	109	1.93	926.52	917	15	1.01E-02	33.8	
19	0	510.26*	106	83	2.07	1020.67	1014	15	1.47E-02	26.0	
20	0	582.43*	331	70	1.63	1164.95	1156	15	4.60E-02	8.1	
21	0	608.61*	375	128	1.55	1217.29	1209	17	5.21E-02	8.9	
22	0	661.02	134	115	1.49	1322.07	1315	16	1.86E-02	19.7	
23	0	727.28*	77	62	1.58	1454.56	1447	15	1.07E-02	25.6	
24	0	794.86*	64	23	1.61	1589.69	1583	14	8.96E-03	21.0	
25	0	840.01	50	94	9.33	1679.96	1662	29	7.00E-03	57.1	
26	0	860.03*	44	59	1.67	1719.99	1712	14	6.10E-03	40.8	
27	0	910.63*	246	32	1.76	1821.17	1813	16	3.42E-02	8.3	
28	5	963.09	40	26	3.20	1926.05	1919	37	5.56E-03	32.4	1.74E+00
29	5	968.26*	111	26	2.10	1936.41	1919	37	1.55E-02	14.0	
30	0	1119.17	88	32	1.71	2238.15	2232	11	1.22E-02	16.5	
31	0	1460.02*	689	26	1.81	2919.76	2911	18	9.57E-02	4.2	
32	0	1587.65	20	7	1.54	3175.02	3166	13	2.72E-03	35.4	
33	0	1728.60	23	3	1.06	3456.90	3450	13	3.17E-03	26.5	
34	0	1763.84*	68	16	1.53	3527.38	3520	13	9.39E-03	18.2	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 09:53:31
Sample ID        : G244132005             Sample quantity  : 123.70 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA15                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.18   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

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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	*	1.961E+01	2.241E+00	6.166E-01	4.714E-02	31.796
CD-109	+	88.03	*	4.162E+00	1.367E+00	1.498E+00	1.732E-01	2.778
SN-126		64.28		9.934E-02	9.978E-01	1.453E+00	2.491E-01	0.068
	+	86.94		1.704E+00	8.876E-01	6.250E-01	2.628E-01	2.726
	+	87.57	*	4.098E-01	1.346E-01	1.487E-01	1.716E-02	2.756
BA-137M	+	661.65	*	2.238E-01	8.895E-02	6.247E-02	3.143E-03	3.582
CS-137	+	661.65	*	2.366E-01	9.404E-02	6.604E-02	3.341E-03	3.582
TL-208		277.35		2.826E-01	4.916E-01	8.224E-01	9.215E-02	0.344
	+	510.84		6.022E-01	3.186E-01	2.580E-01	2.597E-02	2.334
	+	583.14	*	5.347E-01	9.292E-02	5.756E-02	3.665E-03	9.290
	+	860.37		6.630E-01	5.436E-01	4.949E-01	4.254E-02	1.340
BI-211	+	72.87		2.464E+01	7.706E+00	7.122E+00	7.941E-01	3.460
	+	351.07	*	3.869E+00	6.970E-01	4.149E-01	2.851E-02	9.324
PB-212	+	74.81		2.925E+00	9.546E-01	7.694E-01	1.117E-01	3.801
	+	77.11		2.303E+00	4.648E-01	4.238E-01	4.706E-02	5.435
	+	87.30		1.895E+00	6.506E-01	6.909E-01	1.054E-01	2.744
	+	238.63	*	1.718E+00	1.966E-01	1.083E-01	8.963E-03	15.866
	+	300.09		2.997E+00	1.305E+00	1.444E+00	1.295E-01	2.075
PO-212	+	74.81		2.925E+00	9.546E-01	7.694E-01	1.117E-01	3.801
	+	77.11		2.303E+00	4.648E-01	4.238E-01	4.706E-02	5.435
	+	87.30		1.895E+00	6.506E-01	6.909E-01	1.054E-01	2.744
		115.19		-9.069E-01	4.385E+00	7.096E+00	5.429E-01	-0.128
	+	238.63	*	1.718E+00	1.966E-01	1.083E-01	8.963E-03	15.866
	+	300.09		2.997E+00	1.305E+00	1.444E+00	1.295E-01	2.075
BI-214	+	609.31	*	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
	+	1120.29		1.400E+00	4.793E-01	4.050E-01	3.737E-02	3.457
	+	1764.49		1.473E+00	5.453E-01	2.670E-01	1.661E-02	5.518
PB-214	+	74.81		5.040E+00	1.620E+00	1.326E+00	1.770E-01	3.801
	+	77.11		3.949E+00	8.517E-01	7.265E-01	9.784E-02	5.435
	+	87.30		3.247E+00	1.095E+00	1.184E+00	1.640E-01	2.744
	+	241.98		2.480E+00	8.155E-01	6.518E-01	5.826E-02	3.804
	+	295.21		1.457E+00	2.973E-01	2.532E-01	2.342E-02	5.753
	+	351.92	*	1.346E+00	2.524E-01	1.446E-01	1.247E-02	9.306
PO-214	+	74.81		5.040E+00	1.620E+00	1.326E+00	1.770E-01	3.801

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		3.949E+00	8.517E-01	7.265E-01	9.784E-02	5.435
	+	87.30		3.247E+00	1.095E+00	1.184E+00	1.640E-01	2.744
	+	241.98		2.480E+00	8.155E-01	6.518E-01	5.826E-02	3.804
	+	295.21		1.457E+00	2.973E-01	2.532E-01	2.342E-02	5.753
	+	351.92	*	1.346E+00	2.524E-01	1.446E-01	1.247E-02	9.306
PO-216	+	74.81		2.925E+00	9.546E-01	7.694E-01	1.117E-01	3.801
	+	77.11		2.303E+00	4.648E-01	4.238E-01	4.706E-02	5.435
	+	87.30		1.895E+00	6.506E-01	6.909E-01	1.054E-01	2.744
	+	238.63	*	1.718E+00	1.966E-01	1.083E-01	8.963E-03	15.866
	+	300.09		2.997E+00	1.305E+00	1.444E+00	1.295E-01	2.075
PO-218	+	74.81		5.040E+00	1.620E+00	1.326E+00	1.770E-01	3.801
	+	77.11		3.949E+00	8.517E-01	7.265E-01	9.784E-02	5.435
	+	87.30		3.247E+00	1.095E+00	1.184E+00	1.640E-01	2.744
	+	241.98		2.480E+00	8.155E-01	6.518E-01	5.826E-02	3.804
	+	295.21		1.457E+00	2.973E-01	2.532E-01	2.342E-02	5.753
	+	351.92	*	1.346E+00	2.524E-01	1.446E-01	1.247E-02	9.306
RA-224	+	240.98	*	4.702E+00	1.524E+00	1.232E+00	8.574E-02	3.817
RA-226	+	609.31	*	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
	+	1120.29		1.400E+00	4.793E-01	4.050E-01	3.737E-02	3.457
	+	1764.49		1.473E+00	5.453E-01	2.670E-01	1.661E-02	5.518
AC-228	+	338.32		1.709E+00	8.206E-01	5.058E-01	2.067E-01	3.379
	+	911.07	*	1.761E+00	3.526E-01	2.507E-01	2.787E-02	7.025
	+	969.11		1.405E+00	5.113E-01	4.182E-01	9.671E-02	3.360
RA-228	+	338.32		1.709E+00	8.206E-01	5.058E-01	2.067E-01	3.379
	+	911.07	*	1.761E+00	3.526E-01	2.507E-01	2.787E-02	7.025
	+	969.11		1.405E+00	5.113E-01	4.182E-01	9.671E-02	3.360
TH-228	+	74.81		2.966E+00	9.280E-01	7.802E-01	8.713E-02	3.801
	+	77.11		2.336E+00	4.713E-01	4.297E-01	4.772E-02	5.435
	+	87.30		1.922E+00	6.310E-01	7.005E-01	8.070E-02	2.744
	+	238.63	*	1.742E+00	1.993E-01	1.098E-01	9.088E-03	15.866
	+	300.09		3.039E+00	2.212E+00	1.464E+00	8.646E-01	2.075
TH-230	+	609.31	*	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
	+	1120.29		1.400E+00	4.793E-01	4.050E-01	3.737E-02	3.457
	+	1764.49		1.473E+00	5.453E-01	2.670E-01	1.661E-02	5.518
TH-232	+	338.32		1.709E+00	4.445E-01	5.058E-01	3.256E-02	3.379
	+	911.07	*	1.761E+00	3.526E-01	2.507E-01	2.787E-02	7.025
	+	969.11		1.405E+00	5.113E-01	4.182E-01	9.671E-02	3.360
TH-234	+	63.29	*	2.188E+00	3.370E+00	3.872E+00	7.642E-01	0.565
	+	92.38		2.689E+00	1.064E+00	9.462E-01	1.804E-01	2.842
U-234	+	609.31	*	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
	+	1120.29		1.400E+00	4.793E-01	4.050E-01	3.737E-02	3.457
	+	1764.49		1.473E+00	5.453E-01	2.670E-01	1.661E-02	5.518
NP-237	+	86.50	*	1.203E+00	4.667E-01	4.450E-01	1.050E-01	2.705
		95.87		-1.050E+00	1.402E+00	1.898E+00	4.762E-01	-0.553
U-238	+	63.29	*	2.188E+00	3.370E+00	3.872E+00	7.642E-01	0.565
	+	92.38		2.689E+00	9.743E-01	9.462E-01	9.954E-02	2.842
AM-243	+	74.67	*	4.742E-01	1.483E-01	1.254E-01	1.393E-02	3.783
	+	86.72		4.513E+01	1.482E+01	1.662E+01	1.908E+00	2.715
		117.66		1.458E-01	4.622E+00	7.551E+00	5.641E-01	0.019

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		142.18		2.338E+00	2.265E+01	3.629E+01	2.472E+00	0.064
ANH-511	+	511.00	*	1.301E-01	6.795E-02	5.574E-02	3.148E-03	2.333

---- 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	*	2.462E-01	3.947E-01	6.722E-01	4.479E-02	0.366
NA-22		1274.54	*	-1.395E-02	5.471E-02	8.613E-02	5.911E-03	-0.162
NA-24		1368.53	*	-9.055E-02	5.471E-02	Half-Life too short		
AL-26		1129.67		5.733E-01	1.791E+00	3.024E+00	1.905E-01	0.190
		1808.65	*	-1.714E-03	3.080E-02	5.002E-02	2.993E-03	-0.034
TI-44		67.85		-4.908E-02	9.183E-02	1.202E-01	1.372E-02	-0.408
		78.38	*	2.562E-01	7.707E-02	9.686E-02	1.077E-02	2.645
SC-46		889.25	*	-1.724E-02	3.997E-02	6.302E-02	5.286E-03	-0.274
	+	1120.51		2.374E-01	7.970E-02	1.447E-01	9.287E-03	1.641
V-48		944.10		-4.267E-01	9.341E-01	1.466E+00	1.205E-01	-0.291
		983.50	*	1.749E-02	7.332E-02	1.212E-01	9.573E-03	0.144
		1312.09		2.457E-02	8.525E-02	1.428E-01	1.043E-02	0.172
CR-51		320.08	*	2.621E-01	4.708E-01	8.050E-01	5.805E-02	0.326
MN-52		744.21		-1.443E-01	2.328E-01	3.681E-01	2.258E-02	-0.392
		848.13		7.258E-01	6.537E+00	9.499E+00	7.322E-01	0.076
		935.52		1.450E-01	2.473E-01	4.301E-01	3.563E-02	0.337
		1246.25		3.100E+00	7.026E+00	1.191E+01	7.767E-01	0.260
		1333.61		2.108E+00	4.865E+00	8.306E+00	6.269E-01	0.254
		1434.06	*	7.989E-03	2.197E-01	3.687E-01	2.734E-02	0.022
MN-54		834.63	*	2.939E-02	3.995E-02	7.055E-02	5.288E-03	0.417
CO-56		846.75	*	1.028E-02	4.219E-02	6.261E-02	4.812E-03	0.164
		977.42		-2.642E+00	3.595E+00	4.434E+00	3.526E-01	-0.596
		1037.82		-6.468E-04	3.519E-01	5.771E-01	4.567E-02	-0.001
		1175.09		-3.475E+00	2.741E+00	3.840E+00	2.195E-01	-0.905
		1238.25		1.682E-01	1.143E-01	2.057E-01	1.390E-02	0.818
		1360.21		-1.894E-01	1.034E+00	1.618E+00	1.217E-01	-0.117
		1771.40		-6.738E-01	3.303E-01	3.298E-01	2.040E-02	-2.043
CO-57		122.06	*	4.476E-03	3.217E-02	5.095E-02	3.663E-03	0.088
		136.48		2.279E-01	2.571E-01	4.321E-01	3.317E-02	0.527
CO-58		810.76	*	-1.122E-02	4.389E-02	7.132E-02	5.095E-03	-0.157
FE-59		142.65		1.616E+00	3.381E+00	5.497E+00	3.743E-01	0.294
		192.34		-1.691E+00	1.436E+00	1.814E+00	2.237E-01	-0.932
		1099.22	*	-2.181E-02	1.002E-01	1.599E-01	1.210E-02	-0.136
		1291.56		-6.887E-02	1.383E-01	2.096E-01	1.769E-02	-0.329
CO-60		1173.22		-9.000E-03	5.201E-02	8.249E-02	4.698E-03	-0.109
		1332.49	*	1.483E-02	4.336E-02	7.325E-02	5.528E-03	0.202
ZN-65		1115.52	*	8.005E-02	1.112E-01	1.719E-01	1.117E-02	0.466
GE-68		1077.35	*	1.272E-01	1.429E+00	2.360E+00	1.640E-01	0.054
AS-73		53.44	*	-8.025E-01	2.101E+00	3.437E+00	4.697E-01	-0.233
AS-74		595.88	*	-1.838E-02	1.135E-01	1.770E-01	9.515E-03	-0.104
		634.78		1.293E-01	3.808E-01	6.321E-01	3.278E-02	0.205
SE-75		66.05		-2.474E+00	8.969E+00	1.279E+01	1.658E+00	-0.194

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77		96.73		1.099E+00	1.095E+00	1.645E+00	2.360E-01	0.668
		121.11		6.684E-03	1.656E-01	2.705E-01	2.759E-02	0.025
		136.00		2.249E-02	4.764E-02	7.888E-02	5.493E-03	0.285
		198.60		9.097E-02	2.389E+00	3.767E+00	3.006E-01	0.024
		264.65	*	1.363E-02	6.169E-02	9.140E-02	6.392E-03	0.149
		279.53		8.819E-02	1.361E-01	2.344E-01	1.710E-02	0.376
		303.91		-1.603E+00	2.904E+00	4.021E+00	4.082E-01	-0.399
		400.65		-3.887E-01	3.334E-01	4.876E-01	4.403E-02	-0.797
	+	87.88		6.340E+02	2.082E+02	3.233E+02	3.738E+01	1.961
		200.40		-4.282E+01	1.487E+02	2.350E+02	1.606E+01	-0.182
	+	239.00		1.941E+02	2.044E+01	3.292E+01	2.291E+00	5.897
		249.79		3.546E+01	5.659E+01	9.777E+01	6.807E+00	0.363
		281.68		-2.206E+01	7.977E+01	1.316E+02	9.065E+00	-0.168
		297.23		2.115E+02	5.391E+01	1.007E+02	6.853E+00	2.100
		303.76		-8.787E+01	1.755E+02	2.444E+02	1.652E+01	-0.359
		439.47		6.580E+01	1.216E+02	2.068E+02	1.182E+01	0.318
		484.57		-6.229E+01	1.899E+02	3.023E+02	1.720E+01	-0.206
		520.65	*	-1.829E+00	8.438E+00	1.349E+01	7.588E-01	-0.136
		574.64		-7.667E+01	1.938E+02	2.574E+02	1.406E+01	-0.298
		578.91		1.575E+02	7.740E+01	1.318E+02	7.177E+00	1.195
SR-82		585.48		5.500E+02	1.672E+02	3.024E+02	1.639E+01	1.819
		755.35		3.739E+01	1.332E+02	2.275E+02	1.432E+01	0.164
		817.79		5.061E+01	1.048E+02	1.817E+02	1.313E+01	0.278
		698.33		-2.257E+01	3.600E+01	5.726E+01	3.152E+00	-0.394
RB-83		776.49	*	-4.616E-01	4.154E-01	6.217E-01	4.104E-02	-0.742
		1395.20		-7.090E-01	1.253E+01	2.081E+01	1.556E+00	-0.034
		520.41	*	-3.052E-03	7.706E-02	1.250E-01	7.033E-03	-0.024
RB-84		529.64		-1.007E-01	1.177E-01	1.770E-01	9.919E-03	-0.569
		552.65		4.419E-01	2.299E-01	4.258E-01	2.358E-02	1.038
		881.50	*	2.106E-02	7.817E-02	1.327E-01	1.095E-02	0.159
KR-85		513.99	*	1.282E+01	8.959E+00	1.442E+01	8.137E-01	0.888
SR-85		513.99	*	6.488E-02	4.535E-02	7.303E-02	4.119E-03	0.888
RB-86		1076.63	*	4.845E-01	8.459E-01	1.465E+00	1.019E-01	0.331
Y-88		898.02		2.548E-03	4.831E-02	8.030E-02	6.889E-03	0.032
ZR-88		1836.01	*	3.797E-03	2.788E-02	4.750E-02	2.775E-03	0.080
		392.90	*	-8.345E-03	3.821E-02	6.217E-02	3.526E-03	-0.134
Y-91		1204.90	*	9.884E-02	2.115E+01	3.438E+01	2.079E+00	0.003
NB-94		702.63	*	4.010E-02	3.755E-02	6.786E-02	3.775E-03	0.591
NB-95		871.10		6.064E-03	3.921E-02	6.591E-02	5.328E-03	0.092
		765.79	*	2.201E-02	5.190E-02	8.918E-02	5.747E-03	0.247
NB-95M		235.69	*	1.808E+00	2.751E-01	4.368E-01	3.691E-02	4.140
ZR-95		724.18		1.543E-01	1.288E-01	2.078E-01	1.435E-02	0.742
NB-97		756.15	*	1.242E-02	7.970E-02	1.348E-01	1.005E-02	0.092
		657.90	*	6.980E-02	7.970E-02	Half-Life	too short	
ZR-97		1024.50		5.640E-01	7.970E-02	Half-Life	too short	
		254.15		-4.035E-01	7.970E-02	Half-Life	too short	
		355.39		-3.382E-01	7.970E-02	Half-Life	too short	
		507.63	*	2.910E+00	7.970E-02	Half-Life	too short	
		602.52		2.562E-01	7.970E-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			1.407E-01	7.970E-02	Half-Life	too short	
	1147.95			-1.932E+00	7.970E-02	Half-Life	too short	
	1362.66			1.073E+00	7.970E-02	Half-Life	too short	
	1750.46			-6.640E-01	7.970E-02	Half-Life	too short	
MO-99	140.51			-6.771E+00	2.394E+01	3.826E+01	1.040E+01	-0.177
	181.06			3.609E+00	1.795E+01	2.550E+01	4.456E+00	0.142
	366.43			-5.789E+01	7.479E+01	1.175E+02	7.133E+00	-0.493
	739.58	*		8.605E+00	9.954E+00	1.766E+01	2.454E+00	0.487
	778.00			-5.040E+00	2.744E+01	4.500E+01	2.981E+00	-0.112
TC-99M	140.51	*		-4.776E+08	2.744E+01	Half-Life	too short	
RH-101	127.23	+		4.903E-02	5.205E-02	6.752E-02	4.757E-03	0.726
	198.01	*		2.310E-02	4.393E-02	7.075E-02	4.827E-03	0.327
	325.23			2.414E-01	2.926E-01	5.055E-01	3.324E-02	0.478
RH-102	418.52			-5.109E-02	3.462E-01	5.637E-01	3.215E-02	-0.091
	475.06	*		1.433E-02	3.623E-02	6.084E-02	3.468E-03	0.236
	631.29			-2.426E-02	6.413E-02	9.977E-02	5.193E-03	-0.243
	697.49			-3.724E-02	8.200E-02	1.323E-01	7.270E-03	-0.281
	766.84			6.076E-02	1.327E-01	2.286E-01	1.476E-02	0.266
	1046.59			-6.455E-02	1.212E-01	1.863E-01	1.358E-02	-0.346
	1112.84			-3.860E-02	2.871E-01	3.933E-01	2.563E-02	-0.098
RU-103	497.08	*		-6.683E-02	4.915E-02	7.046E-02	8.868E-03	-0.949
	610.33			1.167E+01	2.384E+00	3.177E+00	4.842E-01	3.673
RH-106	511.85			1.261E+00	2.708E-01	4.915E-01	2.774E-02	2.566
	621.84	*		2.054E-01	3.343E-01	5.689E-01	6.530E-02	0.361
	1050.47			3.211E-01	2.398E+00	3.990E+00	2.892E-01	0.080
RU-106	511.85			1.261E+00	2.708E-01	4.915E-01	2.774E-02	2.566
	621.84	*		2.054E-01	3.337E-01	5.689E-01	2.989E-02	0.361
	1050.47			3.211E-01	2.398E+00	3.990E+00	2.892E-01	0.080
AG-108M	433.93	*		-7.764E-03	3.901E-02	6.316E-02	3.927E-03	-0.123
	614.37			-3.124E-04	5.078E-02	7.056E-02	4.111E-03	-0.004
	722.95			-8.221E-03	5.372E-02	7.617E-02	4.818E-03	-0.108
AG-110M	657.75	*		6.141E-02	4.750E-02	7.560E-02	4.143E-03	0.812
	677.61			-1.123E-01	3.354E-01	5.202E-01	2.926E-02	-0.216
	706.67			-1.285E-02	2.334E-01	3.894E-01	2.327E-02	-0.033
	763.93			-1.267E-01	1.985E-01	3.148E-01	2.122E-02	-0.402
	884.67			8.996E-03	5.394E-02	9.076E-02	7.803E-03	0.099
	937.48			-1.205E-01	1.276E-01	1.898E-01	1.631E-02	-0.635
	1384.27			-2.720E-03	1.793E-01	2.996E-01	2.328E-02	-0.009
IN-111	171.28			1.469E-02	9.211E-01	1.485E+00	9.915E-02	0.010
	245.39	*		-8.441E-01	1.080E+00	1.495E+00	1.041E-01	-0.565
IN-113M	391.69	*		-3.122E-02	5.565E-02	8.856E-02	5.372E-03	-0.352
SN-113	391.69	*		-3.122E-02	5.565E-02	8.856E-02	5.372E-03	-0.352
IN-114M	190.27	*		1.678E-01	2.512E-01	3.667E-01	2.486E-02	0.458
CD-115	260.90			-4.820E+01	1.144E+02	1.829E+02	1.271E+01	-0.264
	492.35			3.638E+01	3.194E+01	5.603E+01	3.182E+00	0.649
	527.90	*		1.365E+00	8.498E+00	1.400E+01	7.852E-01	0.098
SN-117M	156.02			-7.332E-01	2.712E+00	4.334E+00	2.904E-01	-0.169
	158.56	*		-8.254E-04	6.668E-02	1.077E-01	7.200E-03	-0.008
SB-122	563.90	*		-3.053E-01	1.727E+00	2.757E+00	1.517E-01	-0.111



## ---- 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		-2.933E+00	3.372E+01	5.617E+01	3.051E+00	-0.052
		159.00	*	2.997E-01	3.372E+01	Half-Life	too short	
		528.96		-6.759E+01	3.372E+01	Half-Life	too short	
TE-123M		159.00	*	6.765E-03	3.662E-02	5.963E-02	4.026E-03	0.113
I-124		602.71	*	8.539E-02	8.191E-01	1.153E+00	6.163E-02	0.074
		722.78		-1.219E+00	4.558E+00	6.370E+00	3.717E-01	-0.191
		1325.50		-1.817E+01	3.360E+01	5.028E+01	3.752E+00	-0.361
		1376.25		2.270E+01	2.905E+01	5.142E+01	3.858E+00	0.441
		1509.49		8.818E+00	1.829E+01	3.105E+01	2.249E+00	0.284
		1691.02		-3.488E+00	3.399E+00	4.654E+00	3.064E-01	-0.749
SB-124		602.71		5.977E-03	5.733E-02	8.070E-02	4.316E-03	0.074
		645.85		1.983E-01	5.873E-01	9.724E-01	5.790E-02	0.204
		709.31		-1.642E+00	3.124E+00	5.013E+00	2.834E-01	-0.328
		713.82		-9.676E-01	1.794E+00	2.866E+00	2.912E-01	-0.338
		722.78		-1.237E-01	4.625E-01	6.463E-01	3.947E-02	-0.191
	+	968.20		1.427E+01	4.168E+00	7.250E+00	5.821E-01	1.968
		1045.16		-1.100E+00	2.656E+00	4.092E+00	2.989E-01	-0.269
		1325.50		-1.970E+00	3.642E+00	5.449E+00	4.067E-01	-0.361
		1368.21		-8.923E-01	1.721E+00	2.512E+00	3.214E-01	-0.355
		1436.60		-6.371E-01	4.238E+00	6.929E+00	5.135E-01	-0.092
		1691.02	*	-8.348E-02	8.138E-02	1.114E-01	7.823E-03	-0.749
SB-125		427.89	*	-5.182E-03	1.148E-01	1.881E-01	1.121E-02	-0.028
	+	463.38		8.147E-01	5.537E-01	6.183E-01	4.134E-02	1.318
		600.56		1.155E-01	2.661E-01	3.872E-01	2.450E-02	0.298
		635.90		1.898E-01	2.964E-01	5.051E-01	3.168E-02	0.376
TE-125M		109.28	*	2.260E+00	1.152E+01	1.898E+01	1.886E+00	0.119
I-126		388.63		3.837E-02	2.394E-01	3.988E-01	2.282E-02	0.096
		666.33	*	6.085E-02	2.435E-01	3.466E-01	1.764E-02	0.176
		753.82		1.041E+00	1.547E+00	2.725E+00	1.709E-01	0.382
SB-126		223.80		2.141E+00	4.765E+00	7.770E+00	5.383E-01	0.276
		278.60		2.393E+00	2.943E+00	5.099E+00	3.519E-01	0.469
		296.50		1.135E+01	2.110E+00	3.948E+00	2.688E-01	2.876
		414.70		-1.716E-02	8.347E-02	1.354E-01	7.721E-03	-0.127
		415.30		-3.884E+00	7.047E+00	1.116E+01	6.363E-01	-0.348
		555.20		-4.404E-01	4.426E+00	7.121E+00	3.938E-01	-0.062
		573.80		-3.149E-01	1.199E+00	1.706E+00	9.323E-02	-0.185
		593.00		4.082E-01	1.017E+00	1.698E+00	9.151E-02	0.240
		656.30		5.265E-01	3.913E+00	5.517E+00	2.794E-01	0.095
		666.33		2.536E-02	1.015E-01	1.445E-01	7.352E-03	0.176
		675.00		3.378E-01	1.985E+00	3.239E+00	1.684E-01	0.104
		695.00		2.447E-02	7.356E-02	1.268E-01	6.927E-03	0.193
		697.00		-5.559E-02	2.653E-01	4.372E-01	2.399E-02	-0.127
		720.50	*	8.903E-02	1.666E-01	2.560E-01	1.486E-02	0.348
		856.80		5.816E-01	5.671E-01	9.126E-01	7.162E-02	0.637
		989.30		2.798E-01	1.163E+00	1.967E+00	1.544E-01	0.142
		1034.80		6.039E-01	9.252E+00	1.528E+01	1.133E+00	0.040
		1213.00		-1.774E+00	4.871E+00	7.521E+00	4.617E-01	-0.236
SB-127	+	61.10		7.220E+01	1.107E+02	1.527E+02	2.099E+01	0.473
		252.40		-2.560E+00	4.464E+00	7.079E+00	2.947E+00	-0.362

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		290.80		-5.802E+00	2.381E+01	3.396E+01	3.211E+00	-0.171
		411.60		-2.724E+00	1.196E+01	1.939E+01	2.726E+00	-0.141
		444.90		-9.593E+00	1.029E+01	1.574E+01	1.634E+00	-0.609
		473.00		-2.273E-01	1.614E+00	2.611E+00	2.813E-01	-0.087
		543.00		1.372E+00	1.573E+01	2.572E+01	3.214E+00	0.053
		603.60		-5.028E+00	1.434E+01	1.923E+01	1.951E+00	-0.262
		685.20	*	1.377E-01	1.130E+00	1.917E+00	1.671E-01	0.072
		698.50		-6.837E+00	1.333E+01	2.136E+01	3.010E+00	-0.320
		722.20		-2.442E+00	2.907E+01	4.154E+01	3.634E+00	-0.059
		783.80		2.599E+00	3.510E+00	6.163E+00	6.672E-01	0.422
XE-127		57.60		1.777E+01	1.424E+01	2.198E+01	2.800E+00	0.808
		145.22		-1.613E-01	8.470E-01	1.362E+00	9.236E-02	-0.118
		172.10		-2.077E-02	1.442E-01	2.308E-01	1.541E-02	-0.090
		202.84	*	-6.329E-02	6.428E-02	9.152E-02	6.265E-03	-0.692
		374.96		-2.223E-01	2.392E-01	3.717E-01	2.209E-02	-0.598
I-131		80.18		3.533E+00	7.654E+00	8.364E+00	9.363E-01	0.422
		284.30		-1.949E+00	1.677E+00	2.624E+00	1.948E-01	-0.743
		364.48	*	-9.645E-02	1.238E-01	1.944E-01	1.309E-02	-0.496
		636.97		9.195E-01	1.548E+00	2.626E+00	1.557E-01	0.350
		722.89		-1.571E+00	8.132E+00	1.147E+01	6.775E-01	-0.137
TE-132		49.72		-2.702E+01	4.715E+01	7.647E+01	1.130E+01	-0.353
		111.76		-2.024E-01	2.932E+01	4.750E+01	4.744E+00	-0.004
		116.30		-2.825E+01	2.670E+01	4.138E+01	4.015E+00	-0.683
		228.16	*	-7.165E-01	6.540E-01	1.035E+00	1.515E-01	-0.692
BA-133		53.15		-4.121E+00	9.331E+00	1.522E+01	2.087E+00	-0.271
		79.62		1.622E+00	2.428E+00	2.692E+00	4.518E-01	0.602
		81.00		1.012E-01	1.803E-01	1.982E-01	3.449E-02	0.511
		276.40		2.385E-01	5.135E-01	8.026E-01	1.083E-01	0.297
		302.84		2.682E-02	1.935E-01	2.835E-01	3.449E-02	0.095
		356.01	*	-2.596E-02	6.101E-02	8.436E-02	9.934E-03	-0.308
		383.85		-3.068E-01	3.813E-01	5.959E-01	6.479E-02	-0.515
I-133	+	510.53		5.049E-01	3.813E-01	Half-Life	too short	
		529.87	*	-1.697E-03	3.813E-01	Half-Life	too short	
		706.58		-1.654E-03	3.813E-01	Half-Life	too short	
		856.28		2.356E-01	3.813E-01	Half-Life	too short	
		875.33		1.795E-02	3.813E-01	Half-Life	too short	
		1236.41		5.922E-01	3.813E-01	Half-Life	too short	
		1298.22		2.266E-02	3.813E-01	Half-Life	too short	
CS-134		475.35		1.563E+00	2.331E+00	3.985E+00	2.272E-01	0.392
		563.23		2.368E-01	3.954E-01	6.726E-01	3.788E-02	0.352
		569.32		7.036E-02	2.242E-01	3.725E-01	2.110E-02	0.189
		604.70		9.883E-03	5.127E-02	7.276E-02	3.909E-03	0.136
	+	795.84	*	1.490E-01	6.348E-02	9.433E-02	6.573E-03	1.580
		801.93		1.700E-01	5.022E-01	7.660E-01	5.394E-02	0.222
		1038.57		1.139E+00	4.356E+00	7.336E+00	5.410E-01	0.155
		1167.94		1.819E+00	2.719E+00	4.732E+00	2.731E-01	0.384
		1365.15		-1.739E-01	1.290E+00	2.034E+00	1.620E-01	-0.086
CS-135		268.24	*	2.810E-01	2.070E-01	3.646E-01	3.117E-02	0.771
I-135		288.45		1.033E+09	2.070E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		417.63		-1.104E+08	2.070E-01	Half-Life	too short	
		546.56		-7.175E+08	2.070E-01	Half-Life	too short	
		836.80		8.094E+08	2.070E-01	Half-Life	too short	
		1038.76		2.919E+08	2.070E-01	Half-Life	too short	
		1124.00		-5.636E+08	2.070E-01	Half-Life	too short	
		1131.51		9.733E+07	2.070E-01	Half-Life	too short	
		1260.41	*	-7.544E+07	2.070E-01	Half-Life	too short	
		1457.56		3.708E+10	2.070E-01	Half-Life	too short	
		1678.03		6.191E+07	2.070E-01	Half-Life	too short	
		1706.46		-9.910E+08	2.070E-01	Half-Life	too short	
		1791.20		-2.760E+08	2.070E-01	Half-Life	too short	
CS-136		66.91		-6.374E-01	1.384E+00	1.949E+00	3.352E-01	-0.327
	+	86.29		5.019E+00	1.716E+00	2.497E+00	3.720E-01	2.010
		153.22		3.136E-01	7.806E-01	1.283E+00	1.024E-01	0.244
		163.89		3.598E-01	1.283E+00	2.095E+00	1.666E-01	0.172
		176.55		1.322E-02	4.363E-01	7.033E-01	5.156E-02	0.019
		273.65		-2.325E-01	6.084E-01	8.633E-01	6.573E-02	-0.269
		340.57		2.639E-01	1.684E-01	2.687E-01	1.812E-02	0.982
		818.51		6.185E-02	7.628E-02	1.360E-01	9.854E-03	0.455
		1048.07	*	-4.135E-02	1.048E-01	1.638E-01	1.262E-02	-0.252
		1235.34		1.076E+00	6.936E-01	1.251E+00	1.294E-01	0.860
CE-139		165.85	*	-1.005E-02	3.743E-02	5.966E-02	3.967E-03	-0.169
BA-140		162.64		2.486E-01	8.974E-01	1.466E+00	1.070E-01	0.170
		304.84		-1.668E+00	1.756E+00	2.267E+00	6.236E-01	-0.736
		423.70		9.222E-02	2.279E+00	3.755E+00	1.193E+00	0.025
		537.32	*	-1.306E-01	2.967E-01	4.603E-01	1.495E-01	-0.284
LA-140		328.77		1.947E-01	3.506E-01	5.987E-01	4.290E-02	0.325
		432.53		-2.092E-01	2.326E+00	3.796E+00	2.402E-01	-0.055
		487.03		-4.721E-02	1.594E-01	2.546E-01	1.646E-02	-0.185
		751.79		1.547E+00	1.769E+00	3.163E+00	2.361E-01	0.489
		815.85		3.679E-03	3.416E-01	5.687E-01	4.755E-02	0.006
		867.82		2.475E-01	1.548E+00	2.490E+00	2.121E-01	0.099
		919.63		1.345E+00	2.826E+00	4.701E+00	4.921E-01	0.286
		925.24		-2.585E-01	1.116E+00	1.796E+00	1.601E-01	-0.144
		1596.49	*	3.643E-02	9.282E-02	1.627E-01	1.134E-02	0.224
CE-141		145.44	*	-4.553E-02	7.743E-02	1.223E-01	8.536E-03	-0.372
CE-143		57.37		1.486E-03	7.743E-02	Half-Life	too short	
		231.56		1.434E-03	7.743E-02	Half-Life	too short	
	+	293.26	*	7.557E-04	7.743E-02	Half-Life	too short	
	+	350.59		1.671E-02	7.743E-02	Half-Life	too short	
		490.36		1.184E-03	7.743E-02	Half-Life	too short	
		664.57		1.105E-03	7.743E-02	Half-Life	too short	
		721.93		2.557E-04	7.743E-02	Half-Life	too short	
CE-144		80.11		1.815E+00	3.902E+00	4.265E+00	4.758E-01	0.426
		133.54	*	-1.053E-01	2.898E-01	4.025E-01	5.916E-02	-0.262
PM-144		476.78		2.008E-02	8.479E-02	1.408E-01	9.657E-03	0.143
		618.01		1.880E-02	3.573E-02	6.025E-02	3.406E-03	0.312
		696.49	*	-9.271E-03	3.649E-02	5.992E-02	3.286E-03	-0.155
		778.57		-6.379E-01	2.461E+00	4.005E+00	2.657E-01	-0.159

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144		696.49	*	-6.279E-01	2.471E+00	4.057E+00	2.224E-01	-0.155
		1489.15		-1.108E+01	1.207E+01	1.669E+01	1.217E+00	-0.664
PM-146		453.90	*	-1.934E-02	5.654E-02	8.480E-02	7.262E-03	-0.228
		633.02		-1.529E+00	1.687E+00	2.330E+00	8.557E-01	-0.656
		735.90		-4.690E-02	1.872E-01	2.914E-01	8.137E-02	-0.161
		747.13		-2.955E-02	9.854E-02	1.601E-01	2.031E-02	-0.185
ND-147	+	91.11		1.254E+00	4.565E-01	6.869E-01	7.812E-02	1.825
		319.41		4.789E+00	3.939E+00	6.942E+00	4.605E-01	0.690
		439.89		4.028E+00	6.590E+00	1.125E+01	6.431E-01	0.358
		531.02	*	-4.464E-01	6.070E-01	9.214E-01	1.238E-01	-0.485
PM-149		285.90	*	6.626E+00	7.714E+01	1.295E+02	1.896E+01	0.051
EU-152		121.78		5.908E-03	9.044E-02	1.478E-01	1.289E-02	0.040
		244.69		-5.701E-02	4.416E-01	6.412E-01	4.464E-02	-0.089
		344.27	*	-1.251E-01	1.727E-01	2.010E-01	1.416E-02	-0.622
		443.98		-3.490E-01	1.213E+00	1.952E+00	1.115E-01	-0.179
		778.89		-6.847E-02	2.898E-01	4.730E-01	3.139E-02	-0.145
		867.32		1.075E-01	1.002E+00	1.559E+00	1.251E-01	0.069
	+	964.01		5.813E-01	3.797E-01	6.140E-01	4.951E-02	0.947
		1085.78		2.157E-01	4.221E-01	7.288E-01	4.992E-02	0.296
		1112.02		-1.013E-01	4.105E-01	5.521E-01	3.605E-02	-0.184
		1407.95		1.230E-02	2.186E-01	3.680E-01	2.745E-02	0.033
GD-153		69.67		4.487E-03	2.867E+00	4.168E+00	4.705E-01	0.001
	+	83.37		3.267E+01	2.481E+01	3.345E+01	3.774E+00	0.976
		97.43	*	1.342E-01	1.146E-01	1.742E-01	1.672E-02	0.770
		103.18		5.684E-02	1.276E-01	2.127E-01	1.872E-02	0.267
EU-154		123.07		-2.826E-02	7.439E-02	1.036E-01	1.067E-02	-0.273
		247.94		-2.684E-02	4.699E-01	7.171E-01	7.379E-02	-0.037
		591.81		-3.104E-01	7.226E-01	1.124E+00	1.072E-01	-0.276
		723.30		9.101E-02	2.264E-01	3.416E-01	2.431E-02	0.266
		756.87		-2.628E-01	8.874E-01	1.445E+00	1.508E-01	-0.182
		873.19		-1.244E-01	3.505E-01	5.609E-01	6.673E-02	-0.222
		996.32		-5.658E-01	3.898E-01	5.064E-01	8.800E-02	-1.117
		1004.76		-6.091E-02	2.472E-01	3.961E-01	4.349E-02	-0.154
		1274.45	*	-4.448E-02	1.524E-01	2.388E-01	2.395E-02	-0.186
EU-155		48.70		-3.931E+00	8.096E+00	1.321E+01	1.699E+00	-0.298
		60.01		-1.673E+00	1.124E+01	1.627E+01	1.989E+00	-0.103
	+	86.54		4.934E-01	1.621E-01	2.419E-01	2.790E-02	2.039
		105.31	*	-6.168E-02	1.335E-01	2.141E-01	1.854E-02	-0.288
TB-160	+	86.79		1.303E+00	4.279E-01	6.417E-01	7.369E-02	2.031
		197.04		7.939E-01	7.380E-01	1.215E+00	8.280E-02	0.654
		215.65		-8.793E-03	9.776E-01	1.505E+00	1.039E-01	-0.006
	+	298.57		4.311E-01	1.860E-01	2.629E-01	1.787E-02	1.639
		879.36	*	4.286E-03	1.612E-01	2.676E-01	2.200E-02	0.016
	+	962.29		1.061E+00	6.931E-01	1.103E+00	8.910E-02	0.962
		966.15		1.165E+00	3.070E-01	5.965E-01	4.800E-02	1.953
		1177.93		-1.154E-02	4.109E-01	6.668E-01	3.832E-02	-0.017
		1271.85		3.588E-01	8.328E-01	1.412E+00	9.628E-02	0.254
HO-166M		80.57		2.226E-01	4.979E-01	5.433E-01	6.068E-02	0.410
	+	184.41		1.813E-01	8.953E-02	9.151E-02	6.174E-03	1.982

## ----- 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		-1.907E-02	1.077E-01	1.787E-01	1.231E-02	-0.107
		410.95		2.566E-01	2.960E-01	5.127E-01	2.921E-02	0.500
		711.68	*	2.222E-02	6.557E-02	1.129E-01	6.417E-03	0.197
		752.31		2.655E-01	3.044E-01	5.442E-01	3.401E-02	0.488
		810.29		1.767E-02	6.516E-02	1.111E-01	7.897E-03	0.159
		51.35		6.091E+01	8.679E+01	1.480E+02	2.045E+01	0.411
		52.39		2.398E+01	4.193E+01	7.125E+01	9.829E+00	0.337
		59.40		4.500E+01	5.968E+01	9.034E+01	1.112E+01	0.498
		66.72	*	-2.978E+01	5.356E+01	7.514E+01	8.640E+00	-0.396
		88.36		5.534E-01	2.574E-01	4.836E-01	5.549E-02	1.144
LU-176	+	201.83		-4.621E-02	3.762E-02	5.658E-02	3.871E-03	-0.817
		306.84	*	-1.322E-02	3.248E-02	4.978E-02	3.354E-03	-0.266
		401.10		-8.193E+00	8.645E+00	1.288E+01	7.322E-01	-0.636
LU-177		112.95		9.088E-02	1.816E+00	2.948E+00	2.308E-01	0.031
	+	208.36	*	1.971E+00	1.710E+00	2.187E+00	1.503E-01	0.901
LU-177M		52.97		-5.138E-01	4.176E+00	6.916E+00	9.498E-01	-0.074
		54.07		-1.627E+00	2.135E+00	3.422E+00	4.638E-01	-0.475
	+	61.30		2.324E+00	3.561E+00	4.885E+00	5.897E-01	0.476
		121.62		1.794E-02	4.610E-01	7.527E-01	5.423E-02	0.024
		147.16		-1.431E-01	8.078E-01	1.299E+00	8.786E-02	-0.110
		171.86		-3.398E-01	5.968E-01	9.355E-01	6.247E-02	-0.363
		218.09		-1.442E-01	1.091E+00	1.731E+00	1.196E-01	-0.083
	+	268.79		2.447E+00	1.753E+00	1.855E+00	1.286E-01	1.319
		319.02		2.774E-01	3.362E-01	5.821E-01	3.862E-02	0.477
		367.43		1.455E-02	1.070E+00	1.771E+00	1.073E-01	0.008
HF-181		413.65	*	-1.018E-01	2.121E-01	3.378E-01	1.926E-02	-0.301
		56.28		4.156E-02	2.126E+00	3.538E+00	4.620E-01	0.012
		57.53		1.447E+00	1.151E+00	1.860E+00	2.372E-01	0.778
		65.20		-3.951E-01	1.767E+00	2.528E+00	2.942E-01	-0.156
		133.02		-6.108E-03	8.987E-02	1.272E-01	8.824E-03	-0.048
		136.25		4.338E-01	5.494E-01	9.207E-01	6.339E-02	0.471
		345.85		-2.508E-01	2.850E-01	3.807E-01	2.417E-02	-0.659
		482.03	*	-3.305E-02	5.102E-02	7.930E-02	4.514E-03	-0.417
		56.28		1.752E-02	8.428E-01	1.403E+00	1.832E-01	0.012
		57.53		5.739E-01	4.569E-01	7.381E-01	9.413E-02	0.778
W-181		65.20	*	-1.555E-01	6.956E-01	9.952E-01	1.158E-01	-0.156
		67.75		-1.119E-01	2.182E-01	2.862E-01	3.267E-02	-0.391
		100.10		5.336E-02	2.287E-01	3.782E-01	3.479E-02	0.141
TA-182		152.43		9.936E-02	4.189E-01	6.845E-01	4.603E-02	0.145
		222.10		2.513E-01	4.389E-01	7.197E-01	4.983E-02	0.349
		1001.68		3.491E+00	2.278E+00	4.285E+00	3.315E-01	0.815
		1121.28		6.553E-01	2.166E-01	3.914E-01	2.509E-02	1.674
		1189.05		1.880E-01	3.256E-01	5.615E-01	3.296E-02	0.335
		1221.42	*	-9.206E-02	2.146E-01	3.327E-01	2.074E-02	-0.277
		1230.97		-5.208E-01	5.716E-01	8.353E-01	5.299E-02	-0.624
		57.98		4.187E-01	4.696E-01	7.154E-01	9.046E-02	0.585
		59.32		1.836E-01	2.436E-01	3.687E-01	4.544E-02	0.498
		67.20		1.533E-02	3.584E-01	5.227E-01	5.989E-02	0.029
RE-183		162.32	*	3.179E-02	1.393E-01	2.271E-01	1.514E-02	0.140

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	208.81		1.983E+00	1.721E+00	2.193E+00	1.507E-01	0.904
		291.72		1.343E+00	1.371E+00	2.116E+00	1.447E-01	0.635
		57.98		1.554E+00	1.743E+00	2.655E+00	3.357E-01	0.585
		59.32		6.809E-01	9.031E-01	1.367E+00	1.685E-01	0.498
		67.20		5.687E-02	1.330E+00	1.939E+00	2.222E-01	0.029
		161.27		2.367E-01	4.577E-01	7.548E-01	5.035E-02	0.314
		216.55		3.039E-03	3.431E-01	5.483E-01	3.786E-02	0.006
		252.85	*	-1.847E-01	2.851E-01	4.637E-01	3.228E-02	-0.398
		318.01		2.401E-01	5.745E-01	9.767E-01	6.489E-02	0.246
		792.07		7.309E-01	1.354E+00	2.062E+00	1.409E-01	0.355
		903.28		-7.593E-01	1.384E+00	1.817E+00	1.545E-01	-0.418
		920.93		-2.174E-01	4.813E-01	7.561E-01	6.341E-02	-0.288
	OS-185	59.72		1.774E-01	6.571E-01	9.727E-01	1.192E-01	0.182
	+	61.14		2.532E-01	3.881E-01	5.351E-01	6.470E-02	0.473
RE-188		69.30		5.707E-02	5.117E-01	7.481E-01	8.461E-02	0.076
		592.07		-7.595E-01	2.880E+00	4.549E+00	2.453E-01	-0.167
		646.12	*	5.010E-03	5.074E-02	8.234E-02	4.218E-03	0.061
		717.42		-1.901E-01	9.811E-01	1.616E+00	9.313E-02	-0.118
		874.81		-2.201E-01	6.786E-01	1.090E+00	8.874E-02	-0.202
		880.27		4.231E-01	8.847E-01	1.529E+00	1.259E-01	0.277
		155.03	*	6.687E-02	2.103E-01	3.446E-01	2.312E-02	0.194
		477.96		1.451E+00	3.823E+00	6.410E+00	3.652E-01	0.226
		633.10		-2.906E+00	3.194E+00	4.699E+00	2.442E-01	-0.618
	W-188	63.58	+	8.688E+01	1.331E+02	1.546E+02	1.825E+01	0.562
IR-192		227.08		-1.374E+01	1.513E+01	2.444E+01	1.696E+00	-0.562
		290.67	*	-2.564E+00	1.012E+01	1.442E+01	9.864E-01	-0.178
	+	295.96		1.098E+00	2.137E-01	3.338E-01	2.300E-02	3.290
		308.46		6.456E-02	1.148E-01	1.970E-01	1.336E-02	0.328
		316.51	*	-8.398E-03	4.273E-02	7.038E-02	4.703E-03	-0.119
		468.07		-3.120E-02	8.275E-02	1.120E-01	7.396E-03	-0.279
AU-195		604.41		1.403E-02	6.795E-01	9.480E-01	1.054E-01	0.015
		612.46		7.328E-01	9.361E-01	1.413E+00	1.017E-01	0.519
		65.12		-6.027E-02	3.241E-01	4.647E-01	5.412E-02	-0.130
		66.83		-8.826E-02	1.762E-01	2.481E-01	2.850E-02	-0.356
	+	75.70		2.024E+00	4.084E-01	6.545E-01	7.267E-02	3.092
		98.88	*	4.252E-01	2.940E-01	5.042E-01	4.726E-02	0.843
	+	129.76		4.305E+00	4.570E+00	6.155E+00	4.304E-01	0.699
TL-200		367.94	*	3.816E-05	4.570E+00	Half-Life	too short	
		579.30		7.543E-03	4.570E+00	Half-Life	too short	
		828.27		6.044E-04	4.570E+00	Half-Life	too short	
		1205.75		1.567E-04	4.570E+00	Half-Life	too short	
TL-201		68.90		2.858E-01	6.837E+00	9.284E+00	1.052E+00	0.031
		70.82		2.664E-01	3.446E+00	5.026E+00	5.643E-01	0.053
		80.30		3.197E+00	7.021E+00	7.668E+00	8.559E-01	0.417
		135.34		-6.396E+00	2.401E+01	3.855E+01	2.660E+00	-0.166
TL-202		167.43	*	-7.841E-01	6.612E+00	1.061E+01	7.058E-01	-0.074
		68.90		3.159E-02	7.556E-01	1.026E+00	1.163E-01	0.031
		70.82		2.936E-02	3.798E-01	5.539E-01	6.219E-02	0.053
		80.30		3.524E-01	7.741E-01	8.454E-01	9.435E-02	0.417

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HG-203		439.56	*	4.275E-02	7.819E-02	1.330E-01	7.599E-03	0.322
		70.83		1.303E-01	1.730E+00	2.523E+00	3.883E-01	0.052
	+	72.87		4.814E+00	1.581E+00	1.711E+00	2.562E-01	2.814
	+	82.60		2.394E+00	1.836E+00	2.449E+00	3.802E-01	0.977
BI-207		279.20	*	4.163E-02	5.070E-02	8.791E-02	6.332E-03	0.474
		72.80		8.373E-01	3.266E-01	5.078E-01	5.664E-02	1.649
	+	74.97		8.511E-01	2.662E-01	3.660E-01	4.066E-02	2.326
	+	84.90		4.239E-01	3.220E-01	4.791E-01	5.444E-02	0.885
TL-207		569.67		1.145E-02	3.527E-02	5.862E-02	3.213E-03	0.195
		1063.62	*	-2.264E-02	6.025E-02	9.473E-02	6.730E-03	-0.239
		1770.23		-3.362E+00	9.674E-01	7.708E-01	4.773E-02	-4.361
		81.07		2.448E-01	3.973E-01	4.398E-01	4.920E-02	0.557
PO-209	+	83.78		2.795E-01	2.123E-01	2.885E-01	3.261E-02	0.969
		94.90		-3.622E-01	3.441E-01	4.651E-01	4.664E-02	-0.779
		122.32		4.668E-01	2.214E+00	3.518E+00	2.785E-01	0.133
		144.24		6.193E-01	8.681E-01	1.423E+00	1.145E-01	0.435
BI-210		154.21		3.301E-01	4.962E-01	8.240E-01	6.415E-02	0.401
	+	269.46		5.758E-01	4.127E-01	4.375E-01	3.129E-02	1.316
		323.87	*	-5.337E-01	8.999E-01	1.445E+00	2.429E-01	-0.369
	+	338.28		7.138E+00	1.959E+00	2.960E+00	3.226E-01	2.411
PB-210		445.03		-2.826E+00	2.974E+00	4.544E+00	4.645E-01	-0.622
		260.50		-5.158E+00	1.200E+01	1.971E+01	1.370E+00	-0.262
		262.80		3.089E-01	3.873E+01	5.658E+01	3.931E+00	0.005
		896.60	*	6.833E+00	8.141E+00	1.452E+01	1.236E+00	0.471
BI-210		46.50	*	-3.764E-01	1.373E+01	2.225E+01	2.311E+00	-0.017
PB-210		46.50	*	-3.764E-01	1.373E+01	2.225E+01	2.311E+00	-0.017
PO-210		46.50	*	-3.764E-01	1.373E+01	2.225E+01	2.137E+00	-0.017
PB-211		404.84	*	-1.230E+00	1.404E+00	1.811E+00	1.129E+00	-0.679
BI-212		427.08		1.243E+00	2.665E+00	4.325E+00	2.673E+00	0.287
		831.96		2.108E-02	1.532E+00	2.195E+00	1.372E+00	0.010
	+	727.18	*	1.064E+00	5.510E-01	7.229E-01	5.628E-02	1.471
		785.46		9.894E-01	2.142E+00	3.626E+00	2.442E-01	0.273
PO-215		1620.62		8.137E-01	1.420E+00	2.561E+00	1.762E-01	0.318
		81.07		2.448E-01	3.973E-01	4.398E-01	4.920E-02	0.557
	+	83.78		2.795E-01	2.123E-01	2.885E-01	3.261E-02	0.969
		94.90		-3.622E-01	3.441E-01	4.651E-01	4.664E-02	-0.779
RN-219		122.32		4.668E-01	2.214E+00	3.518E+00	2.785E-01	0.133
		144.24		6.193E-01	8.681E-01	1.423E+00	1.145E-01	0.435
		154.21		3.301E-01	4.962E-01	8.240E-01	6.415E-02	0.401
	+	269.46		5.758E-01	4.127E-01	4.375E-01	3.129E-02	1.316
RN-220		323.87	*	-5.337E-01	8.999E-01	1.445E+00	2.429E-01	-0.369
	+	338.28		7.138E+00	1.959E+00	2.960E+00	3.226E-01	2.411
		445.03		-2.826E+00	2.974E+00	4.544E+00	4.645E-01	-0.622
	+	271.23		7.387E-01	5.310E-01	5.457E-01	4.882E-02	1.354
RA-223		401.81	*	-3.956E-02	4.959E-01	8.128E-01	1.102E-01	-0.049
		549.76	*	-1.337E+01	3.187E+01	4.997E+01	2.772E+00	-0.268
		81.07		2.448E-01	3.973E-01	4.398E-01	4.920E-02	0.557
	+	83.78		2.795E-01	2.123E-01	2.885E-01	3.261E-02	0.969
		94.90		-3.622E-01	3.441E-01	4.651E-01	4.664E-02	-0.779

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		4.668E-01	2.214E+00	3.518E+00	2.785E-01	0.133
		144.24		6.193E-01	8.681E-01	1.423E+00	1.145E-01	0.435
		154.21		3.301E-01	4.962E-01	8.240E-01	6.415E-02	0.401
	+	269.46		5.758E-01	4.127E-01	4.375E-01	3.129E-02	1.316
		323.87	*	-5.337E-01	8.999E-01	1.445E+00	2.429E-01	-0.369
	+	338.28		7.138E+00	1.959E+00	2.960E+00	3.226E-01	2.411
		445.03		-2.826E+00	2.974E+00	4.544E+00	4.645E-01	-0.622
		79.80		1.763E+00	3.072E+00	3.370E+00	7.629E-01	0.523
		236.00		4.854E+00	7.101E-01	9.215E-01	1.026E-01	5.268
		256.20	*	2.784E-01	4.707E-01	8.090E-01	1.171E-01	0.344
		286.10		1.091E+00	1.855E+00	3.186E+00	3.865E-01	0.342
	+	299.80		5.554E+00	2.541E+00	3.405E+00	5.674E-01	1.631
TH-227		304.40		-2.287E+00	2.682E+00	3.585E+00	6.325E-01	-0.638
		334.20		5.546E-02	3.274E+00	4.728E+00	8.776E-01	0.012
		79.80		1.763E+00	3.073E+00	3.370E+00	7.717E-01	0.523
		94.00		7.731E+00	3.327E+00	4.608E+00	1.034E+00	1.678
		236.00		4.854E+00	6.634E-01	9.215E-01	9.064E-02	5.268
		256.20	*	2.784E-01	4.715E-01	8.090E-01	1.402E-01	0.344
		286.10		1.091E+00	2.150E+00	3.186E+00	3.194E+00	0.342
	+	299.80		5.554E+00	2.541E+00	3.405E+00	5.674E-01	1.631
		304.40		-2.287E+00	2.682E+00	3.585E+00	6.325E-01	-0.638
		334.20		5.546E-02	3.274E+00	4.728E+00	8.776E-01	0.012
	+	85.43		9.190E-01	3.017E-01	4.746E-01	5.408E-02	1.936
	+	88.47		3.186E-01	1.482E-01	2.757E-01	3.156E-02	1.155
PA-231		100.00		1.570E-01	2.372E-01	3.983E-01	3.669E-02	0.394
		193.63	*	-4.199E-01	6.931E-01	1.022E+00	6.951E-02	-0.411
		210.97		1.164E+00	1.077E+00	1.603E+00	1.103E-01	0.726
		283.67	*	-2.371E+00	1.953E+00	3.015E+00	4.301E-01	-0.787
		301.29		1.533E+00	8.189E-01	1.313E+00	1.448E-01	1.168
		81.07		2.448E-01	3.973E-01	4.398E-01	4.920E-02	0.557
	+	83.78		2.795E-01	2.123E-01	2.885E-01	3.261E-02	0.969
		94.90		-3.622E-01	3.441E-01	4.651E-01	4.664E-02	-0.779
		122.32		4.668E-01	2.214E+00	3.518E+00	2.785E-01	0.133
		144.24		6.193E-01	8.681E-01	1.423E+00	1.145E-01	0.435
		154.21		3.301E-01	4.962E-01	8.240E-01	6.415E-02	0.401
	+	269.46		5.758E-01	4.127E-01	4.375E-01	3.129E-02	1.316
U-231		323.87	*	-5.337E-01	8.999E-01	1.445E+00	2.429E-01	-0.369
	+	338.28		7.138E+00	1.959E+00	2.960E+00	3.226E-01	2.411
		445.03		-2.826E+00	2.974E+00	4.544E+00	4.645E-01	-0.622
	+	84.21		9.866E+00	7.494E+00	1.044E+01	1.182E+00	0.945
	+	92.29		8.412E+00	3.048E+00	4.308E+00	4.540E-01	1.953
		95.87	*	-9.752E-01	1.283E+00	1.763E+00	1.737E-01	-0.553
		108.00		-1.123E+00	2.102E+00	3.359E+00	2.779E-01	-0.334
	+	75.28		2.484E+01	8.383E+00	1.078E+01	1.818E+00	2.304
	+	86.59		8.023E+00	3.330E+00	3.937E+00	1.097E+00	2.038
	+	300.12		1.548E+00	6.938E-01	9.447E-01	1.312E-01	1.639
		311.98	*	4.827E-03	7.878E-02	1.317E-01	9.229E-03	0.037
		340.50		1.491E+00	9.370E-01	1.409E+00	3.258E-01	1.058
		398.62		-2.342E-01	2.701E+00	4.275E+00	1.104E+00	-0.055



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		-7.962E-01	1.952E+00	3.111E+00	6.396E-01	-0.256
		63.00		2.550E+00	3.922E+00	4.750E+00	8.321E-01	0.537
		94.67		-1.163E-01	2.497E-01	3.502E-01	4.710E-02	-0.332
		98.44		1.718E-01	1.555E-01	2.052E-01	1.147E-01	0.837
		99.86		5.479E-01	6.013E-01	1.017E+00	9.392E-02	0.539
		111.00		1.487E-01	2.301E-01	3.848E-01	4.483E-02	0.386
		131.20		2.594E-02	1.462E-01	2.102E-01	1.464E-02	0.123
		152.70		2.062E-01	4.078E-01	6.716E-01	1.086E-01	0.307
		186.00		6.528E+00	3.772E+00	3.286E+00	1.011E+00	1.987
		226.40		-3.751E-01	4.829E-01	7.828E-01	9.527E-02	-0.479
	+	227.20		-4.991E-01	5.162E-01	8.310E-01	5.765E-02	-0.601
		248.90		-2.873E-01	1.010E+00	1.626E+00	3.549E-01	-0.177
		293.70		6.993E+00	1.716E+00	2.149E+00	3.541E-01	3.255
		369.80		9.887E-01	1.059E+00	1.815E+00	3.791E-01	0.545
		568.70		1.202E-01	1.149E+00	1.877E+00	1.030E-01	0.064
		569.50		8.043E-02	3.134E-01	5.182E-01	2.840E-02	0.155
		574.00		-6.360E-01	1.850E+00	2.606E+00	1.424E-01	-0.244
		699.00		-4.000E-01	7.914E-01	1.268E+00	2.269E-01	-0.315
		706.10		3.153E-01	1.195E+00	2.029E+00	8.949E-01	0.155
		733.00		-1.896E-01	5.014E-01	6.877E-01	1.466E-01	-0.276
	+	742.81		-1.870E-01	1.562E+00	2.576E+00	1.725E+00	-0.073
		796.30		2.900E+00	1.441E+00	1.814E+00	4.815E-01	1.599
		805.60		2.063E-01	1.114E+00	1.881E+00	5.690E-01	0.110
		819.60		8.165E-01	1.333E+00	2.286E+00	8.627E-01	0.357
		826.30		-5.107E-01	9.696E-01	1.355E+00	6.031E-01	-0.377
		831.60		2.590E-01	7.334E-01	1.096E+00	3.236E-01	0.236
		876.40		2.809E-01	1.017E+00	1.658E+00	1.704E+00	0.169
		880.51		1.864E-01	3.201E-01	5.582E-01	4.600E-02	0.334
		883.24		-1.008E-01	3.386E-01	5.334E-01	3.584E-01	-0.189
		899.00		1.625E-02	9.703E-01	1.607E+00	7.024E-01	0.010
	PA-234M	925.00		-3.510E-01	1.231E+00	1.969E+00	1.645E-01	-0.178
		926.50		-2.764E-02	1.920E-01	3.121E-01	7.860E-02	-0.089
		946.00	*	4.381E-02	3.225E-01	5.392E-01	1.002E-01	0.081
949.00			8.137E-02	4.981E-01	8.345E-01	6.829E-02	0.098	
980.50			7.256E-02	9.186E-01	1.314E+00	1.042E-01	0.055	
1394.10			1.009E-01	1.378E+00	2.325E+00	1.510E+00	0.043	
766.42			3.793E+00	1.419E+01	2.391E+01	1.205E+01	0.159	
1001.03		*	5.975E+00	5.102E+00	9.360E+00	8.627E-01	0.638	
U-235		89.95		3.198E+00	1.763E+00	2.660E+00	8.412E-01	1.202
		93.35		3.233E+00	1.454E+00	1.590E+00	4.546E-01	2.034
		105.00		-3.480E-01	1.313E+00	2.119E+00	6.323E-01	-0.164
		143.76	*	1.911E-01	2.690E-01	4.385E-01	7.316E-02	0.436
NP-236		163.35		-5.523E-02	6.082E-01	9.779E-01	1.787E-01	-0.056
	185.71		2.418E-01	1.194E-01	1.219E-01	8.233E-03	1.984	
	205.31		6.696E-02	7.887E-01	1.086E+00	1.994E-01	0.062	
	94.67		-8.588E-02	1.893E-01	2.659E-01	2.678E-02	-0.323	
	98.44		1.298E-01	9.323E-02	1.551E-01	1.464E-02	0.837	
	111.00		1.125E-01	1.738E-01	2.911E-01	2.327E-02	0.386	
	160.31	*	5.268E-02	1.019E-01	1.681E-01	1.122E-02	0.313	

---- 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		2.319E-01	2.033E-01	3.461E-01	3.210E-02	0.670
		117.00	*	-1.230E-01	2.340E-01	3.729E-01	2.803E-02	-0.330
	+	209.75		1.583E+00	1.374E+00	1.724E+00	1.186E-01	0.918
		228.18		-2.999E-01	2.737E-01	4.379E-01	3.038E-02	-0.685
		277.60		1.947E-01	2.299E-01	3.989E-01	2.754E-02	0.488
AM-241		334.30		2.673E-01	1.867E+00	2.722E+00	1.764E-01	0.098
		59.54	*	1.033E-01	3.522E-01	5.220E-01	6.642E-02	0.198
CM-243		99.55		2.387E-01	2.091E-01	3.561E-01	3.303E-02	0.670
		103.76	*	8.775E-02	1.186E-01	1.998E-01	1.744E-02	0.439
		117.00		-1.265E-01	2.407E-01	3.836E-01	2.883E-02	-0.330
	+	209.75		1.560E+00	1.354E+00	1.700E+00	1.169E-01	0.918
		228.18		-3.031E-01	2.766E-01	4.424E-01	3.070E-02	-0.685
AM-246		277.60		1.963E-01	2.318E-01	4.021E-01	2.776E-02	0.488
		798.80		-6.982E-02	1.707E-01	2.307E-01	1.600E-02	-0.303
		1036.00		-8.288E-02	3.421E-01	5.467E-01	4.046E-02	-0.152
		1062.04		-7.368E-02	2.545E-01	4.037E-01	2.875E-02	-0.183
		1078.86	*	-1.978E-02	1.655E-01	2.675E-01	1.854E-02	-0.074
CM-247		278.00		5.755E-01	9.569E-01	1.644E+00	1.135E-01	0.350
		287.40		7.687E-01	1.617E+00	2.536E+00	1.740E-01	0.303
CF-249		402.60	*	2.120E-02	4.462E-02	7.568E-02	4.304E-03	0.280
		252.85		-6.966E-01	1.075E+00	1.748E+00	1.217E-01	-0.398
		333.44		3.029E-02	2.366E-01	3.447E-01	2.237E-02	0.088
CF-251		387.95	*	2.168E-02	4.981E-02	8.432E-02	4.834E-03	0.257
		176.60	*	-1.152E-03	1.601E-01	2.576E-01	1.727E-02	-0.004
		227.00		-3.992E-01	4.604E-01	7.453E-01	5.170E-02	-0.536
		285.00		-1.649E+00	2.138E+00	3.425E+00	2.354E-01	-0.482

# 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]G244132005      *
* Acquisition date   : 19-JAN-2010 09:53:31 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 02:00:01.18                               Half life ratio  : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID           : G244132005                               Analyst initials: MXR1        *
* Batch Number        : 940270                                   Sample Quantity : 1.2370E+02 GRAM *
* Recovery            : 1.00000                                Carrier Weight   : 0.00000      *
*****
*                                     QC DATA                                *
*
* Standard Weight     : 0.00000                                         *
* CALIB. DATE/TIME    : 16-FEB-2009 10:54:12 MS Isotope                  *
* MSD DPM              : 0.000                                         MSD Isotope       :              *
* LCS DPM               : 0.000                                         LCS Isotope       :              *
* LCSD DPM              : 0.000                                         LCSD Isotope      :              *
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	1.961E+01	2.196E+00	6.159E-01	0.000E+00
CD-109	4.162E+00	1.339E+00	1.553E+00	0.000E+00
SN-126	4.098E-01	1.319E-01	1.542E-01	0.000E+00
BA-137M	2.238E-01	8.717E-02	6.307E-02	0.000E+00
CS-137	2.366E-01	9.216E-02	6.667E-02	0.000E+00
TL-208	5.347E-01	9.106E-02	5.821E-02	0.000E+00
BI-211	3.869E+00	6.830E-01	4.225E-01	0.000E+00
PB-212	1.718E+00	1.927E-01	1.108E-01	0.000E+00
PO-212	1.718E+00	1.927E-01	1.108E-01	0.000E+00
BI-214	1.141E+00	2.147E-01	1.359E-01	0.000E+00
PB-214	1.346E+00	2.474E-01	1.472E-01	0.000E+00
PO-214	1.346E+00	2.474E-01	1.472E-01	0.000E+00
PO-216	1.718E+00	1.927E-01	1.108E-01	0.000E+00
PO-218	1.346E+00	2.474E-01	1.472E-01	0.000E+00
RA-224	4.702E+00	1.493E+00	1.261E+00	0.000E+00
RA-226	1.141E+00	2.147E-01	1.359E-01	0.000E+00
AC-228	1.761E+00	3.456E-01	2.520E-01	0.000E+00
RA-228	1.761E+00	3.456E-01	2.520E-01	0.000E+00
TH-228	1.742E+00	1.953E-01	1.124E-01	0.000E+00
TH-230	1.141E+00	2.147E-01	1.359E-01	0.000E+00
TH-232	1.761E+00	3.456E-01	2.520E-01	0.000E+00
TH-234	2.188E+00	3.303E+00	4.031E+00	0.000E+00
U-234	1.141E+00	2.147E-01	1.359E-01	0.000E+00
NP-237	1.203E+00	4.574E-01	4.614E-01	0.000E+00
U-238	2.188E+00	3.303E+00	4.031E+00	0.000E+00
AM-243	4.742E-01	1.453E-01	1.302E-01	0.000E+00
ANH-511	1.301E-01	6.659E-02	5.647E-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	2.462E-01	3.869E-01	6.816E-01	0.000E+00	NOT IDENT.
NA-22	-1.395E-02	5.361E-02	8.618E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.909E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.714E-03	3.019E-02	4.981E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	7.553E-02	1.006E-01	0.000E+00	NOT IDENT.
SC-46	-1.724E-02	3.918E-02	6.337E-02	0.000E+00	FAIL ABUN
V-48	1.749E-02	7.185E-02	1.217E-01	0.000E+00	NOT IDENT.
CR-51	2.621E-01	4.614E-01	8.207E-01	0.000E+00	NOT IDENT.
MN-52	7.989E-03	2.153E-01	3.684E-01	0.000E+00	NOT IDENT.
MN-54	2.939E-02	3.915E-02	7.100E-02	0.000E+00	NOT IDENT.
CO-56	1.028E-02	4.135E-02	6.300E-02	0.000E+00	NOT IDENT.
CO-57	4.476E-03	3.153E-02	5.260E-02	0.000E+00	NOT IDENT.
CO-58	-1.122E-02	4.302E-02	7.181E-02	0.000E+00	NOT IDENT.
FE-59	-2.181E-02	9.816E-02	1.603E-01	0.000E+00	NOT IDENT.
CO-60	1.483E-02	4.249E-02	7.325E-02	0.000E+00	NOT IDENT.
ZN-65	8.005E-02	1.090E-01	1.724E-01	0.000E+00	NOT IDENT.
GE-68	1.272E-01	1.401E+00	2.367E+00	0.000E+00	NOT IDENT.
AS-73	-8.025E-01	2.059E+00	3.586E+00	0.000E+00	NOT IDENT.
AS-74	-1.838E-02	1.112E-01	1.789E-01	0.000E+00	NOT IDENT.
SE-75	1.363E-02	6.045E-02	9.341E-02	0.000E+00	NOT IDENT.
BR-77	-1.829E+00	8.269E+00	1.366E+01	0.000E+00	FAIL ABUN
SR-82	-4.616E-01	4.071E-01	6.263E-01	0.000E+00	NOT IDENT.
RB-83	-3.052E-03	7.552E-02	1.266E-01	0.000E+00	NOT IDENT.
RB-84	2.106E-02	7.660E-02	1.334E-01	0.000E+00	NOT IDENT.
KR-85	1.282E+01	8.779E+00	1.461E+01	0.000E+00	NOT IDENT.
SR-85	6.488E-02	4.445E-02	7.398E-02	0.000E+00	NOT IDENT.
RB-86	4.845E-01	8.289E-01	1.470E+00	0.000E+00	NOT IDENT.
Y-88	3.797E-03	2.732E-02	4.729E-02	0.000E+00	NOT IDENT.
ZR-88	-8.345E-03	3.744E-02	6.321E-02	0.000E+00	NOT IDENT.
Y-91	9.884E-02	2.073E+01	3.443E+01	0.000E+00	NOT IDENT.
NB-94	4.010E-02	3.680E-02	6.846E-02	0.000E+00	NOT IDENT.
NB-95	2.201E-02	5.086E-02	8.985E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.696E-01	4.471E-01	0.000E+00	NOT IDENT.
ZR-95	1.242E-02	7.810E-02	1.358E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	4.099E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.286E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	8.605E+00	9.755E+00	1.780E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.654E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.310E-02	4.305E-02	7.258E-02	0.000E+00	FAIL ABUN
RH-102	1.433E-02	3.551E-02	6.170E-02	0.000E+00	NOT IDENT.
RU-103	-6.683E-02	4.817E-02	7.141E-02	0.000E+00	NOT IDENT.
RH-106	2.054E-01	3.276E-01	5.748E-01	0.000E+00	NOT IDENT.
RU-106	2.054E-01	3.270E-01	5.748E-01	0.000E+00	NOT IDENT.
AG-108M	-7.764E-03	3.823E-02	6.413E-02	0.000E+00	NOT IDENT.
AG-110M	6.141E-02	4.655E-02	7.633E-02	0.000E+00	NOT IDENT.
IN-111	-8.441E-01	1.059E+00	1.529E+00	0.000E+00	NOT IDENT.
IN-113M	-3.122E-02	5.454E-02	9.004E-02	0.000E+00	NOT IDENT.
SN-113	-3.122E-02	5.454E-02	9.004E-02	0.000E+00	NOT IDENT.
IN-114M	1.678E-01	2.462E-01	3.763E-01	0.000E+00	NOT IDENT.
CD-115	1.365E+00	8.328E+00	1.418E+01	0.000E+00	NOT IDENT.
SN-117M	-8.254E-04	6.535E-02	1.108E-01	0.000E+00	NOT IDENT.
SB-122	-3.053E-01	1.692E+00	2.790E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.590E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	6.765E-03	3.589E-02	6.135E-02	0.000E+00	NOT IDENT.
I-124	8.539E-02	8.027E-01	1.165E+00	0.000E+00	NOT IDENT.
SB-124	-8.348E-02	7.975E-02	1.110E-01	0.000E+00	FAIL ABUN
SB-125	-5.182E-03	1.125E-01	1.910E-01	0.000E+00	FAIL ABUN
TE-125M	2.260E+00	1.129E+01	1.962E+01	0.000E+00	NOT IDENT.
I-126	6.085E-02	2.386E-01	3.499E-01	0.000E+00	NOT IDENT.
SB-126	8.903E-02	1.632E-01	2.582E-01	0.000E+00	NOT IDENT.
SB-127	1.377E-01	1.107E+00	1.934E+00	0.000E+00	FAIL ABUN
XE-127	-6.329E-02	6.300E-02	9.386E-02	0.000E+00	NOT IDENT.
I-131	-9.645E-02	1.214E-01	1.978E-01	0.000E+00	NOT IDENT.
TE-132	-7.165E-01	6.409E-01	1.060E+00	0.000E+00	NOT IDENT.
BA-133	-2.596E-02	5.979E-02	8.588E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.555E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.221E-02	9.500E-02	0.000E+00	FAIL ABUN
CS-135	2.810E-01	2.028E-01	3.726E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.975E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.135E-02	1.027E-01	1.644E-01	0.000E+00	FAIL ABUN
CE-139	-1.005E-02	3.668E-02	6.134E-02	0.000E+00	NOT IDENT.
BA-140	-1.306E-01	2.908E-01	4.660E-01	0.000E+00	NOT IDENT.
LA-140	3.643E-02	9.096E-02	1.623E-01	0.000E+00	NOT IDENT.
CE-141	-4.553E-02	7.588E-02	1.260E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.111E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.053E-01	2.840E-01	4.151E-01	0.000E+00	NOT IDENT.
PM-144	-9.271E-03	3.576E-02	6.045E-02	0.000E+00	NOT IDENT.
PR-144	-6.279E-01	2.422E+00	4.094E+00	0.000E+00	NOT IDENT.

PM-146	-1.934E-02	5.541E-02	8.605E-02	0.000E+00	NOT IDENT.
ND-147	-4.464E-01	5.949E-01	9.330E-01	0.000E+00	FAIL ABUN
PM-149	6.626E+00	7.560E+01	1.322E+02	0.000E+00	NOT IDENT.
EU-152	-1.251E-01	1.692E-01	2.047E-01	0.000E+00	FAIL ABUN
GD-153	1.342E-01	1.123E-01	1.804E-01	0.000E+00	FAIL ABUN
EU-154	-4.448E-02	1.493E-01	2.390E-01	0.000E+00	NOT IDENT.
EU-155	-6.168E-02	1.308E-01	2.215E-01	0.000E+00	FAIL ABUN
TB-160	4.286E-03	1.579E-01	2.691E-01	0.000E+00	FAIL ABUN
HO-166M	2.222E-02	6.426E-02	1.139E-01	0.000E+00	FAIL ABUN
TM-171	-2.978E+01	5.249E+01	7.818E+01	0.000E+00	NOT IDENT.
LU-176	-1.322E-02	3.183E-02	5.078E-02	0.000E+00	FAIL ABUN
LU-177	1.971E+00	1.676E+00	2.242E+00	0.000E+00	FAIL ABUN
LU-177M	-1.018E-01	2.078E-01	3.432E-01	0.000E+00	FAIL ABUN
HF-181	-3.305E-02	5.000E-02	8.040E-02	0.000E+00	NOT IDENT.
W-181	-1.555E-01	6.817E-01	1.036E+00	0.000E+00	NOT IDENT.
TA-182	-9.206E-02	2.103E-01	3.331E-01	0.000E+00	NOT IDENT.
RE-183	3.179E-02	1.365E-01	2.336E-01	0.000E+00	FAIL ABUN
RE-184	-1.847E-01	2.794E-01	4.742E-01	0.000E+00	NOT IDENT.
OS-185	5.010E-03	4.973E-02	8.315E-02	0.000E+00	FAIL ABUN
RE-188	6.687E-02	2.061E-01	3.547E-01	0.000E+00	NOT IDENT.
W-188	-2.564E+00	9.913E+00	1.471E+01	0.000E+00	FAIL ABUN
IR-192	-8.398E-03	4.188E-02	7.175E-02	0.000E+00	FAIL ABUN
AU-195	4.252E-01	2.881E-01	5.219E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.545E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-7.841E-01	6.479E+00	1.090E+01	0.000E+00	NOT IDENT.
TL-202	4.275E-02	7.662E-02	1.350E-01	0.000E+00	NOT IDENT.
HG-203	4.163E-02	4.969E-02	8.978E-02	0.000E+00	FAIL ABUN
BI-207	-2.264E-02	5.904E-02	9.502E-02	0.000E+00	FAIL ABUN
TL-207	-5.337E-01	8.819E-01	1.473E+00	0.000E+00	FAIL ABUN
PO-209	6.833E+00	7.978E+00	1.460E+01	0.000E+00	NOT IDENT.
BI-210	-3.764E-01	1.346E+01	2.326E+01	0.000E+00	NOT IDENT.
PB-210	-3.764E-01	1.346E+01	2.326E+01	0.000E+00	NOT IDENT.
PO-210	-3.764E-01	1.346E+01	2.326E+01	0.000E+00	NOT IDENT.
PB-211	-1.230E+00	1.376E+00	1.840E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.400E-01	7.289E-01	0.000E+00	FAIL ABUN
PO-215	-5.337E-01	8.819E-01	1.473E+00	0.000E+00	FAIL ABUN
RN-219	-3.956E-02	4.860E-01	8.261E-01	0.000E+00	FAIL ABUN
RN-220	-1.337E+01	3.123E+01	5.057E+01	0.000E+00	NOT IDENT.
RA-223	-5.337E-01	8.819E-01	1.473E+00	0.000E+00	FAIL ABUN
AC-227	2.784E-01	4.613E-01	8.272E-01	0.000E+00	FAIL ABUN
TH-227	2.784E-01	4.620E-01	8.272E-01	0.000E+00	FAIL ABUN
TH-229	-4.199E-01	6.792E-01	1.049E+00	0.000E+00	FAIL ABUN
PA-231	-2.371E+00	1.914E+00	3.078E+00	0.000E+00	NOT IDENT.
TH-231	-5.337E-01	8.819E-01	1.473E+00	0.000E+00	FAIL ABUN
U-231	-9.752E-01	1.257E+00	1.825E+00	0.000E+00	FAIL ABUN
PA-233	4.827E-03	7.721E-02	1.343E-01	0.000E+00	FAIL ABUN
PA-234	4.381E-02	3.161E-01	5.418E-01	0.000E+00	FAIL ABUN
PA-234M	5.975E+00	5.000E+00	9.396E+00	0.000E+00	NOT IDENT.
U-235	1.911E-01	2.636E-01	4.517E-01	0.000E+00	FAIL ABUN
NP-236	5.268E-02	9.987E-02	1.730E-01	0.000E+00	NOT IDENT.
NP-239	-1.230E-01	2.293E-01	3.852E-01	0.000E+00	FAIL ABUN
AM-241	1.033E-01	3.452E-01	5.438E-01	0.000E+00	NOT IDENT.
CM-243	8.775E-02	1.162E-01	2.067E-01	0.000E+00	FAIL ABUN
AM-246	-1.978E-02	1.622E-01	2.683E-01	0.000E+00	NOT IDENT.
CM-247	2.120E-02	4.373E-02	7.692E-02	0.000E+00	NOT IDENT.
CF-249	2.168E-02	4.881E-02	8.574E-02	0.000E+00	NOT IDENT.
CF-251	-1.152E-03	1.569E-01	2.647E-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]G244132005.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:53:31
Sample ID          : G244132005          Sample quantity  : 1.23700E+02 GRAM
Detector name      : GAM15              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           : 940270             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	689	10.67*	9.992E-01	1.961E+01	1.961E+01	11.43
CD-109	88.03	221	3.72*	4.413E+00	4.076E+00	4.162E+00	32.83
SN-126	64.28	-----	9.60	1.930E+00	-----	Line Not Found	-----
	86.94	221	8.90	4.413E+00	1.704E+00	1.704E+00	52.10
	87.57	221	37.00*	4.413E+00	4.098E-01	4.098E-01	32.83
BA-137M	661.65	134	89.98*	2.020E+00	2.236E-01	2.238E-01	39.75
CS-137	661.65	134	85.12*	2.020E+00	2.363E-01	2.366E-01	39.75
TL-208	277.35	-----	6.80	3.788E+00	-----	Line Not Found	-----
	510.84	106	21.60	2.462E+00	6.022E-01	6.022E-01	52.90
	583.14	331	84.20*	2.231E+00	5.347E-01	5.347E-01	17.38
	860.37	44	12.46	1.614E+00	6.630E-01	6.630E-01	81.99
BI-211	72.87	327	1.27	3.169E+00	2.464E+01	2.464E+01	31.27
	351.07	529	12.94*	3.207E+00	3.869E+00	3.869E+00	18.02
PB-212	74.81	327	10.70	3.169E+00	2.925E+00	2.925E+00	32.64
	77.11	467	18.00	3.420E+00	2.303E+00	2.303E+00	20.18
	87.30	221	8.00	4.413E+00	1.895E+00	1.895E+00	34.32
	238.63	1066	44.60*	4.221E+00	1.718E+00	1.718E+00	11.44
	300.09	121	3.41	3.589E+00	2.997E+00	2.997E+00	43.53
PO-212	74.81	327	10.70	3.169E+00	2.925E+00	2.925E+00	32.64
	77.11	467	18.00	3.420E+00	2.303E+00	2.303E+00	20.18
	87.30	221	8.00	4.413E+00	1.895E+00	1.895E+00	34.32
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	1066	44.60*	4.221E+00	1.718E+00	1.718E+00	11.44
	300.09	121	3.41	3.589E+00	2.997E+00	2.997E+00	43.53
BI-214	609.31	375	46.30*	2.156E+00	1.141E+00	1.141E+00	19.21
	1120.29	88	15.10	1.264E+00	1.400E+00	1.400E+00	34.23
	1764.49	68	15.80	8.817E-01	1.473E+00	1.473E+00	37.01
PB-214	74.81	327	6.21	3.169E+00	5.040E+00	5.040E+00	32.14
	77.11	467	10.50	3.420E+00	3.949E+00	3.949E+00	21.57
	87.30	221	4.67	4.413E+00	3.247E+00	3.247E+00	33.73
	241.98	256	7.49	4.184E+00	2.480E+00	2.480E+00	32.89
	295.21	335	19.20	3.631E+00	1.457E+00	1.457E+00	20.40

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	529	37.20*	3.207E+00	1.346E+00	1.346E+00	18.76
	74.81	327	6.21	3.169E+00	5.040E+00	5.040E+00	32.14
	77.11	467	10.50	3.420E+00	3.949E+00	3.949E+00	21.57
	87.30	221	4.67	4.413E+00	3.247E+00	3.247E+00	33.73
	241.98	256	7.49	4.184E+00	2.480E+00	2.480E+00	32.89
PO-216	295.21	335	19.20	3.631E+00	1.457E+00	1.457E+00	20.40
	351.92	529	37.20*	3.207E+00	1.346E+00	1.346E+00	18.76
	74.81	327	10.70	3.169E+00	2.925E+00	2.925E+00	32.64
	77.11	467	18.00	3.420E+00	2.303E+00	2.303E+00	20.18
	87.30	221	8.00	4.413E+00	1.895E+00	1.895E+00	34.32
PO-218	238.63	1066	44.60*	4.221E+00	1.718E+00	1.718E+00	11.44
	300.09	121	3.41	3.589E+00	2.997E+00	2.997E+00	43.53
	74.81	327	6.21	3.169E+00	5.040E+00	5.040E+00	32.14
	77.11	467	10.50	3.420E+00	3.949E+00	3.949E+00	21.57
	87.30	221	4.67	4.413E+00	3.247E+00	3.247E+00	33.73
RA-224	241.98	256	7.49	4.184E+00	2.480E+00	2.480E+00	32.89
	295.21	335	19.20	3.631E+00	1.457E+00	1.457E+00	20.40
	351.92	529	37.20*	3.207E+00	1.346E+00	1.346E+00	18.76
	240.98	256	3.95*	4.184E+00	4.702E+00	4.702E+00	32.41
	609.31	375	46.30*	2.156E+00	1.141E+00	1.141E+00	19.21
AC-228	1120.29	88	15.10	1.264E+00	1.400E+00	1.400E+00	34.23
	1764.49	68	15.80	8.817E-01	1.473E+00	1.473E+00	37.01
	338.32	212	11.40	3.297E+00	1.709E+00	1.709E+00	48.00
	911.07	246	27.70*	1.532E+00	1.761E+00	1.761E+00	20.02
	969.11	111	16.60	1.448E+00	1.405E+00	1.405E+00	36.38
TH-228	338.32	212	11.40	3.297E+00	1.709E+00	1.709E+00	48.00
	911.07	246	27.70*	1.532E+00	1.761E+00	1.761E+00	20.02
	969.11	111	16.60	1.448E+00	1.405E+00	1.405E+00	36.38
	74.81	327	10.70	3.169E+00	2.925E+00	2.925E+00	31.29
	77.11	467	18.00	3.420E+00	2.303E+00	2.303E+00	20.18
TH-230	87.30	221	8.00	4.413E+00	1.895E+00	1.922E+00	32.83
	238.63	1066	44.60*	4.221E+00	1.718E+00	1.742E+00	11.44
	300.09	121	3.41	3.589E+00	2.997E+00	3.039E+00	72.81
	609.31	375	46.30*	2.156E+00	1.141E+00	1.141E+00	19.21
	1120.29	88	15.10	1.264E+00	1.400E+00	1.400E+00	34.23
TH-232	1764.49	68	15.80	8.817E-01	1.473E+00	1.473E+00	37.01
	338.32	212	11.40	3.297E+00	1.709E+00	1.709E+00	26.00
	911.07	246	27.70*	1.532E+00	1.761E+00	1.761E+00	20.02
	969.11	111	16.60	1.448E+00	1.405E+00	1.405E+00	36.38
	63.29	47	3.80*	1.705E+00	2.188E+00	2.188E+00	154.06
U-234	92.38	231	5.41	4.817E+00	2.689E+00	2.689E+00	39.56
	609.31	375	46.30*	2.156E+00	1.141E+00	1.141E+00	19.21
	1120.29	88	15.10	1.264E+00	1.400E+00	1.400E+00	34.23
	1764.49	68	15.80	8.817E-01	1.473E+00	1.473E+00	37.01
	86.50	221	12.60*	4.413E+00	1.203E+00	1.203E+00	38.78
NP-237	95.87	-----	2.60	5.041E+00	-----	Line Not Found	-----
U-238	63.29	47	3.80*	1.705E+00	2.188E+00	2.188E+00	154.06
	92.38	231	5.41	4.817E+00	2.689E+00	2.689E+00	36.23
AM-243	74.67	327	66.00*	3.169E+00	4.742E-01	4.742E-01	31.27

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	221	0.34	4.413E+00	4.513E+01	4.513E+01	32.83
	117.66	-----	0.55	5.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.637E+00	-----	Line Not Found	-----
ANH-511	511.00	106	100.00*	2.462E+00	1.301E-01	1.301E-01	52.24

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	1.961E+01	1.961E+01	0.224E+01	11.43	
CD-109	464.00D	1.02	4.076E+00	4.162E+00	1.367E+00	32.83	
SN-126	1.00E+05Y	1.00	4.098E-01	4.098E-01	1.346E-01	32.83	
BA-137M	30.17Y	1.00	2.236E-01	2.238E-01	0.889E-01	39.75	
CS-137	30.17Y	1.00	2.363E-01	2.366E-01	0.940E-01	39.75	
TL-208	1.41E+10Y	1.00	5.347E-01	5.347E-01	0.929E-01	17.38	
BI-211	7.04E+08Y	1.00	3.869E+00	3.869E+00	0.697E+00	18.02	
PB-212	1.41E+10Y	1.00	1.718E+00	1.718E+00	0.197E+00	11.44	
PO-212	1.41E+10Y	1.00	1.718E+00	1.718E+00	0.197E+00	11.44	
BI-214	1600.00Y	1.00	1.141E+00	1.141E+00	0.219E+00	19.21	
PB-214	1600.00Y	1.00	1.346E+00	1.346E+00	0.252E+00	18.76	
PO-214	1600.00Y	1.00	1.346E+00	1.346E+00	0.252E+00	18.76	
PO-216	1.41E+10Y	1.00	1.718E+00	1.718E+00	0.197E+00	11.44	
PO-218	1600.00Y	1.00	1.346E+00	1.346E+00	0.252E+00	18.76	
RA-224	1.41E+10Y	1.00	4.702E+00	4.702E+00	1.524E+00	32.41	
RA-226	1600.00Y	1.00	1.141E+00	1.141E+00	0.219E+00	19.21	
AC-228	1.41E+10Y	1.00	1.761E+00	1.761E+00	0.353E+00	20.02	
RA-228	1.41E+10Y	1.00	1.761E+00	1.761E+00	0.353E+00	20.02	
TH-228	1.91Y	1.01	1.718E+00	1.742E+00	0.199E+00	11.44	
TH-230	4.47E+09Y	1.00	1.141E+00	1.141E+00	0.219E+00	19.21	
TH-232	1.41E+10Y	1.00	1.761E+00	1.761E+00	0.353E+00	20.02	
TH-234	4.47E+09Y	1.00	2.188E+00	2.188E+00	3.370E+00	154.06	
U-234	4.47E+09Y	1.00	1.141E+00	1.141E+00	0.219E+00	19.21	
NP-237	2.14E+06Y	1.00	1.203E+00	1.203E+00	0.467E+00	38.78	
U-238	4.47E+09Y	1.00	2.188E+00	2.188E+00	3.370E+00	154.06	
AM-243	7380.00Y	1.00	4.742E-01	4.742E-01	1.483E-01	31.27	
ANH-511	1.00E+09Y	1.00	1.301E-01	1.301E-01	0.680E-01	52.24	

Total Activity : 6.060E+01 6.071E+01

Grand Total Activity : 6.060E+01 6.071E+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
1	83.85	95	350	1.46	168.18	163	27	1.32E-02	75.1	4.16E+00	T
1	89.40	132	252	1.20	179.27	163	27	1.83E-02	45.1	4.62E+00	T
0	128.49	62	319	1.15	257.41	253	9	8.68E-03	****	5.73E+00	T
0	185.25	215	478	1.70	370.88	364	16	2.98E-02	48.9	4.99E+00	T
0	209.14	78	297	1.31	418.65	414	10	1.08E-02	86.5	4.61E+00	T
0	269.84	100	257	1.50	540.00	532	14	1.38E-02	71.3	3.86E+00	T
0	463.18	73	109	1.93	926.52	917	15	1.01E-02	67.6	2.64E+00	T
0	727.28	77	62	1.58	1454.56	1447	15	1.07E-02	51.2	1.87E+00	T
0	794.86	64	23	1.61	1589.69	1583	14	8.96E-03	42.0	1.73E+00	T
0	840.01	50	94	9.33	1679.96	1662	29	7.00E-03	****	1.65E+00	
5	963.09	40	26	3.20	1926.05	1919	37	5.56E-03	64.8	1.45E+00	T
0	1587.65	20	7	1.54	3175.02	3166	13	2.72E-03	70.8	9.39E-01	
0	1728.60	23	3	1.06	3456.90	3450	13	3.17E-03	52.9	8.91E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132005.CNF;1
* Acquisition date   : 19-JAN-2010 09:53:31  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 02:00:01.18             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244132005             Analyst initials: MXR1
* Batch Number       : 940270                 Sample Quantity : 1.23700E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-FEB-2009 10:54:12.9MS Isotope      :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A                 LCS Isotope     :
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.961E+01	2.241E+00	6.166E-01	4.714E-02	31.796
CD-109	4.162E+00	1.367E+00	1.498E+00	1.732E-01	2.778
SN-126	4.098E-01	1.346E-01	1.487E-01	1.716E-02	2.756
BA-137M	2.238E-01	8.895E-02	6.247E-02	3.143E-03	3.582
CS-137	2.366E-01	9.404E-02	6.604E-02	3.341E-03	3.582
TL-208	5.347E-01	9.292E-02	5.756E-02	3.665E-03	9.290
BI-211	3.869E+00	6.970E-01	4.149E-01	2.851E-02	9.324
PB-212	1.718E+00	1.966E-01	1.083E-01	8.963E-03	15.866
PO-212	1.718E+00	1.966E-01	1.083E-01	8.963E-03	15.866
BI-214	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
PB-214	1.346E+00	2.524E-01	1.446E-01	1.247E-02	9.306
PO-214	1.346E+00	2.524E-01	1.446E-01	1.247E-02	9.306
PO-216	1.718E+00	1.966E-01	1.083E-01	8.963E-03	15.866
PO-218	1.346E+00	2.524E-01	1.446E-01	1.247E-02	9.306
RA-224	4.702E+00	1.524E+00	1.232E+00	8.574E-02	3.817
RA-226	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
AC-228	1.761E+00	3.526E-01	2.507E-01	2.787E-02	7.025
RA-228	1.761E+00	3.526E-01	2.507E-01	2.787E-02	7.025

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.742E+00	1.993E-01	1.098E-01	9.088E-03	15.866
TH-230	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
TH-232	1.761E+00	3.526E-01	2.507E-01	2.787E-02	7.025
TH-234	2.188E+00	3.370E+00	3.872E+00	7.642E-01	0.565
U-234	1.141E+00	2.191E-01	1.344E-01	9.980E-03	8.486
NP-237	1.203E+00	4.667E-01	4.450E-01	1.050E-01	2.705
U-238	2.188E+00	3.370E+00	3.872E+00	7.642E-01	0.565
AM-243	4.742E-01	1.483E-01	1.254E-01	1.393E-02	3.783
ANH-511	1.301E-01	6.795E-02	5.574E-02	3.148E-03	2.333

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.462E-01		3.947E-01	6.722E-01	4.479E-02	0.366
NA-22	-1.395E-02		5.471E-02	8.613E-02	5.911E-03	-0.162
NA-24	-9.055E-02		9.739E-02	Half-Life too short		
AL-26	-1.714E-03		3.080E-02	5.002E-02	2.993E-03	-0.034
TI-44	2.562E-01		7.707E-02	9.686E-02	1.077E-02	2.645
SC-46	-1.724E-02		3.997E-02	6.302E-02	5.286E-03	-0.274
V-48	1.749E-02		7.332E-02	1.212E-01	9.573E-03	0.144
CR-51	2.621E-01		4.708E-01	8.050E-01	5.805E-02	0.326
MN-52	7.989E-03		2.197E-01	3.687E-01	2.734E-02	0.022
MN-54	2.939E-02		3.995E-02	7.055E-02	5.288E-03	0.417
CO-56	1.028E-02		4.219E-02	6.261E-02	4.812E-03	0.164
CO-57	4.476E-03		3.217E-02	5.095E-02	3.663E-03	0.088
CO-58	-1.122E-02		4.389E-02	7.132E-02	5.095E-03	-0.157
FE-59	-2.181E-02		1.002E-01	1.599E-01	1.210E-02	-0.136
CO-60	1.483E-02		4.336E-02	7.325E-02	5.528E-03	0.202
ZN-65	8.005E-02		1.112E-01	1.719E-01	1.117E-02	0.466
GE-68	1.272E-01		1.429E+00	2.360E+00	1.640E-01	0.054
AS-73	-8.025E-01		2.101E+00	3.437E+00	4.697E-01	-0.233
AS-74	-1.838E-02		1.135E-01	1.770E-01	9.515E-03	-0.104
SE-75	1.363E-02		6.169E-02	9.140E-02	6.392E-03	0.149
BR-77	-1.829E+00		8.438E+00	1.349E+01	7.588E-01	-0.136
SR-82	-4.616E-01		4.154E-01	6.217E-01	4.104E-02	-0.742
RB-83	-3.052E-03		7.706E-02	1.250E-01	7.033E-03	-0.024
RB-84	2.106E-02		7.817E-02	1.327E-01	1.095E-02	0.159
KR-85	1.282E+01		8.959E+00	1.442E+01	8.137E-01	0.888
SR-85	6.488E-02		4.535E-02	7.303E-02	4.119E-03	0.888
RB-86	4.845E-01		8.459E-01	1.465E+00	1.019E-01	0.331
Y-88	3.797E-03		2.788E-02	4.750E-02	2.775E-03	0.080
ZR-88	-8.345E-03		3.821E-02	6.217E-02	3.526E-03	-0.134
Y-91	9.884E-02		2.115E+01	3.438E+01	2.079E+00	0.003
NB-94	4.010E-02		3.755E-02	6.786E-02	3.775E-03	0.591
NB-95	2.201E-02		5.190E-02	8.918E-02	5.747E-03	0.247
NB-95M	1.808E+00		2.751E-01	4.368E-01	3.691E-02	4.140
ZR-95	1.242E-02		7.970E-02	1.348E-01	1.005E-02	0.092

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	6.980E-02		2.092E-02	Half-Life too short		
ZR-97	2.910E+00		4.228E-01	Half-Life too short		
MO-99	8.605E+00		9.954E+00	1.766E+01	2.454E+00	0.487
TC-99M	-4.776E+08		8.441E+08	Half-Life too short		
RH-101	2.310E-02		4.393E-02	7.075E-02	4.827E-03	0.327
RH-102	1.433E-02		3.623E-02	6.084E-02	3.468E-03	0.236
RU-103	-6.683E-02		4.915E-02	7.046E-02	8.868E-03	-0.949
RH-106	2.054E-01		3.343E-01	5.689E-01	6.530E-02	0.361
RU-106	2.054E-01		3.337E-01	5.689E-01	2.989E-02	0.361
AG-108M	-7.764E-03		3.901E-02	6.316E-02	3.927E-03	-0.123
AG-110M	6.141E-02		4.750E-02	7.560E-02	4.143E-03	0.812
IN-111	-8.441E-01		1.080E+00	1.495E+00	1.041E-01	-0.565
IN-113M	-3.122E-02		5.565E-02	8.856E-02	5.372E-03	-0.352
SN-113	-3.122E-02		5.565E-02	8.856E-02	5.372E-03	-0.352
IN-114M	1.678E-01		2.512E-01	3.667E-01	2.486E-02	0.458
CD-115	1.365E+00		8.498E+00	1.400E+01	7.852E-01	0.098
SN-117M	-8.254E-04		6.668E-02	1.077E-01	7.200E-03	-0.008
SB-122	-3.053E-01		1.727E+00	2.757E+00	1.517E-01	-0.111
I-123	2.997E-01		8.111E-01	Half-Life too short		
TE-123M	6.765E-03		3.662E-02	5.963E-02	4.026E-03	0.113
I-124	8.539E-02		8.191E-01	1.153E+00	6.163E-02	0.074
SB-124	-8.348E-02		8.138E-02	1.114E-01	7.823E-03	-0.749
SB-125	-5.182E-03		1.148E-01	1.881E-01	1.121E-02	-0.028
TE-125M	2.260E+00		1.152E+01	1.898E+01	1.886E+00	0.119
I-126	6.085E-02		2.435E-01	3.466E-01	1.764E-02	0.176
SB-126	8.903E-02		1.666E-01	2.560E-01	1.486E-02	0.348
SB-127	1.377E-01		1.130E+00	1.917E+00	1.671E-01	0.072
XE-127	-6.329E-02		6.428E-02	9.152E-02	6.265E-03	-0.692
I-131	-9.645E-02		1.238E-01	1.944E-01	1.309E-02	-0.496
TE-132	-7.165E-01		6.540E-01	1.035E+00	1.515E-01	-0.692
BA-133	-2.596E-02		6.101E-02	8.436E-02	9.934E-03	-0.308
I-133	-1.697E-03		1.304E-03	Half-Life too short		
CS-134	1.490E-01	+	6.348E-02	9.433E-02	6.573E-03	1.580
CS-135	2.810E-01		2.070E-01	3.646E-01	3.117E-02	0.771
I-135	-7.544E+07		1.518E+08	Half-Life too short		
CS-136	-4.135E-02		1.048E-01	1.638E-01	1.262E-02	-0.252
CE-139	-1.005E-02		3.743E-02	5.966E-02	3.967E-03	-0.169
BA-140	-1.306E-01		2.967E-01	4.603E-01	1.495E-01	-0.284
LA-140	3.643E-02		9.282E-02	1.627E-01	1.134E-02	0.224
CE-141	-4.553E-02		7.743E-02	1.223E-01	8.536E-03	-0.372
CE-143	7.557E-04	+	1.077E-04	Half-Life too short		
CE-144	-1.053E-01		2.898E-01	4.025E-01	5.916E-02	-0.262
PM-144	-9.271E-03		3.649E-02	5.992E-02	3.286E-03	-0.155
PR-144	-6.279E-01		2.471E+00	4.057E+00	2.224E-01	-0.155
PM-146	-1.934E-02		5.654E-02	8.480E-02	7.262E-03	-0.228
ND-147	-4.464E-01		6.070E-01	9.214E-01	1.238E-01	-0.485
PM-149	6.626E+00		7.714E+01	1.295E+02	1.896E+01	0.051
EU-152	-1.251E-01		1.727E-01	2.010E-01	1.416E-02	-0.622

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	1.342E-01		1.146E-01	1.742E-01	1.672E-02	0.770
EU-154	-4.448E-02		1.524E-01	2.388E-01	2.395E-02	-0.186
EU-155	-6.168E-02		1.335E-01	2.141E-01	1.854E-02	-0.288
TB-160	4.286E-03		1.612E-01	2.676E-01	2.200E-02	0.016
HO-166M	2.222E-02		6.557E-02	1.129E-01	6.417E-03	0.197
TM-171	-2.978E+01		5.356E+01	7.514E+01	8.640E+00	-0.396
LU-176	-1.322E-02		3.248E-02	4.978E-02	3.354E-03	-0.266
LU-177	1.971E+00	+	1.710E+00	2.187E+00	1.503E-01	0.901
LU-177M	-1.018E-01		2.121E-01	3.378E-01	1.926E-02	-0.301
HF-181	-3.305E-02		5.102E-02	7.930E-02	4.514E-03	-0.417
W-181	-1.555E-01		6.956E-01	9.952E-01	1.158E-01	-0.156
TA-182	-9.206E-02		2.146E-01	3.327E-01	2.074E-02	-0.277
RE-183	3.179E-02		1.393E-01	2.271E-01	1.514E-02	0.140
RE-184	-1.847E-01		2.851E-01	4.637E-01	3.228E-02	-0.398
OS-185	5.010E-03		5.074E-02	8.234E-02	4.218E-03	0.061
RE-188	6.687E-02		2.103E-01	3.446E-01	2.312E-02	0.194
W-188	-2.564E+00		1.012E+01	1.442E+01	9.864E-01	-0.178
IR-192	-8.398E-03		4.273E-02	7.038E-02	4.703E-03	-0.119
AU-195	4.252E-01		2.940E-01	5.042E-01	4.726E-02	0.843
TL-200	3.816E-05		1.298E-04	Half-Life	too short	
TL-201	-7.841E-01		6.612E+00	1.061E+01	7.058E-01	-0.074
TL-202	4.275E-02		7.819E-02	1.330E-01	7.599E-03	0.322
HG-203	4.163E-02		5.070E-02	8.791E-02	6.332E-03	0.474
BI-207	-2.264E-02		6.025E-02	9.473E-02	6.730E-03	-0.239
TL-207	-5.337E-01		8.999E-01	1.445E+00	2.429E-01	-0.369
PO-209	6.833E+00		8.141E+00	1.452E+01	1.236E+00	0.471
BI-210	-3.764E-01		1.373E+01	2.225E+01	2.311E+00	-0.017
PB-210	-3.764E-01		1.373E+01	2.225E+01	2.311E+00	-0.017
PO-210	-3.764E-01		1.373E+01	2.225E+01	2.137E+00	-0.017
PB-211	-1.230E+00		1.404E+00	1.811E+00	1.129E+00	-0.679
BI-212	1.064E+00	+	5.510E-01	7.229E-01	5.628E-02	1.471
PO-215	-5.337E-01		8.999E-01	1.445E+00	2.429E-01	-0.369
RN-219	-3.956E-02		4.959E-01	8.128E-01	1.102E-01	-0.049
RN-220	-1.337E+01		3.187E+01	4.997E+01	2.772E+00	-0.268
RA-223	-5.337E-01		8.999E-01	1.445E+00	2.429E-01	-0.369
AC-227	2.784E-01		4.707E-01	8.090E-01	1.171E-01	0.344
TH-227	2.784E-01		4.715E-01	8.090E-01	1.402E-01	0.344
TH-229	-4.199E-01		6.931E-01	1.022E+00	6.951E-02	-0.411
PA-231	-2.371E+00		1.953E+00	3.015E+00	4.301E-01	-0.787
TH-231	-5.337E-01		8.999E-01	1.445E+00	2.429E-01	-0.369
U-231	-9.752E-01		1.283E+00	1.763E+00	1.737E-01	-0.553
PA-233	4.827E-03		7.878E-02	1.317E-01	9.229E-03	0.037
PA-234	4.381E-02		3.225E-01	5.392E-01	1.002E-01	0.081
PA-234M	5.975E+00		5.102E+00	9.360E+00	8.627E-01	0.638
U-235	1.911E-01		2.690E-01	4.385E-01	7.316E-02	0.436
NP-236	5.268E-02		1.019E-01	1.681E-01	1.122E-02	0.313
NP-239	-1.230E-01		2.340E-01	3.729E-01	2.803E-02	-0.330
AM-241	1.033E-01		3.522E-01	5.220E-01	6.642E-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	8.775E-02		1.186E-01	1.998E-01	1.744E-02	0.439
AM-246	-1.978E-02		1.655E-01	2.675E-01	1.854E-02	-0.074
CM-247	2.120E-02		4.462E-02	7.568E-02	4.304E-03	0.280
CF-249	2.168E-02		4.981E-02	8.432E-02	4.834E-03	0.257
CF-251	-1.152E-03		1.601E-01	2.576E-01	1.727E-02	-0.004

# 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]G244132005          *
* Acquisition date   : 19-JAN-2010 09:53:31 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 02:00:01.18 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132005 Analyst initials: MXR1         *
* Batch Number       : 940270 Sample Quantity : 1.2370E+02 GRAM  *
* Recovery           : 1.00000 Carrier Weight : 0.00000         *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-FEB-2009 10:54:12 MS Isotope        :             *
* MSD DPM             : 0.000 MSD Isotope                      :             *
* LCS DPM             : 0.000 LCS Isotope                      :             *
* LCSD DPM            : 0.000 LCSD Isotope                     :             *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	1.961E+01	2.196E+00	3.081E-01	1.121E+00
CD-109	4.162E+00	1.339E+00	7.771E-01	6.833E-01
SN-126	4.098E-01	1.319E-01	7.712E-02	6.728E-02
BA-137M	2.238E-01	8.717E-02	3.155E-02	4.447E-02
CS-137	2.366E-01	9.216E-02	3.336E-02	4.702E-02
TL-208	5.347E-01	9.106E-02	2.912E-02	4.646E-02
BI-211	3.869E+00	6.830E-01	2.114E-01	3.485E-01
PB-212	1.718E+00	1.927E-01	5.544E-02	9.829E-02
PO-212	1.718E+00	1.927E-01	5.544E-02	9.829E-02
BI-214	1.141E+00	2.147E-01	6.797E-02	1.095E-01
PB-214	1.346E+00	2.474E-01	7.366E-02	1.262E-01
PO-214	1.346E+00	2.474E-01	7.366E-02	1.262E-01
PO-216	1.718E+00	1.927E-01	5.544E-02	9.829E-02
PO-218	1.346E+00	2.474E-01	7.366E-02	1.262E-01
RA-224	4.702E+00	1.493E+00	6.307E-01	7.619E-01
RA-226	1.141E+00	2.147E-01	6.797E-02	1.095E-01
AC-228	1.761E+00	3.456E-01	1.261E-01	1.763E-01
RA-228	1.761E+00	3.456E-01	1.261E-01	1.763E-01
TH-228	1.742E+00	1.953E-01	5.621E-02	9.967E-02
TH-230	1.141E+00	2.147E-01	6.797E-02	1.095E-01
TH-232	1.761E+00	3.456E-01	1.261E-01	1.763E-01
TH-234	2.188E+00	3.303E+00	2.017E+00	1.685E+00
U-234	1.141E+00	2.147E-01	6.797E-02	1.095E-01
NP-237	1.203E+00	4.574E-01	2.308E-01	2.333E-01
U-238	2.188E+00	3.303E+00	2.017E+00	1.685E+00
AM-243	4.742E-01	1.453E-01	6.516E-02	7.414E-02
ANH-511	1.301E-01	6.659E-02	2.825E-02	3.398E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	2.462E-01	3.869E-01	3.410E-01	1.974E-01	NOT IDENT.
NA-22	-1.395E-02	5.361E-02	4.312E-02	2.735E-02	NOT IDENT.
NA-24	-9.055E+04	1.909E+05	0.000E+00	9.739E+04	SHORT HLIF
AL-26	-1.714E-03	3.019E-02	2.492E-02	1.540E-02	NOT IDENT.
TI-44	2.562E-01	7.553E-02	5.031E-02	3.853E-02	NOT IDENT.
SC-46	-1.724E-02	3.918E-02	3.170E-02	1.999E-02	FAIL ABUN
V-48	1.749E-02	7.185E-02	6.088E-02	3.666E-02	NOT IDENT.
CR-51	2.621E-01	4.614E-01	4.106E-01	2.354E-01	NOT IDENT.
MN-52	7.989E-03	2.153E-01	1.843E-01	1.098E-01	NOT IDENT.
MN-54	2.939E-02	3.915E-02	3.552E-02	1.998E-02	NOT IDENT.
CO-56	1.028E-02	4.135E-02	3.152E-02	2.110E-02	NOT IDENT.
CO-57	4.476E-03	3.153E-02	2.631E-02	1.609E-02	NOT IDENT.
CO-58	-1.122E-02	4.302E-02	3.593E-02	2.195E-02	NOT IDENT.
FE-59	-2.181E-02	9.816E-02	8.019E-02	5.008E-02	NOT IDENT.
CO-60	1.483E-02	4.249E-02	3.664E-02	2.168E-02	NOT IDENT.
ZN-65	8.005E-02	1.090E-01	8.623E-02	5.560E-02	NOT IDENT.
GE-68	1.272E-01	1.401E+00	1.184E+00	7.146E-01	NOT IDENT.
AS-73	-8.025E-01	2.059E+00	1.794E+00	1.050E+00	NOT IDENT.
AS-74	-1.838E-02	1.112E-01	8.952E-02	5.675E-02	NOT IDENT.
SE-75	1.363E-02	6.045E-02	4.673E-02	3.084E-02	NOT IDENT.
BR-77	-1.829E+00	8.269E+00	6.834E+00	4.219E+00	FAIL ABUN
SR-82	-4.616E-01	4.071E-01	3.133E-01	2.077E-01	NOT IDENT.
RB-83	-3.052E-03	7.552E-02	6.334E-02	3.853E-02	NOT IDENT.
RB-84	2.106E-02	7.660E-02	6.675E-02	3.908E-02	NOT IDENT.
KR-85	1.282E+01	8.779E+00	7.311E+00	4.479E+00	NOT IDENT.
SR-85	6.488E-02	4.445E-02	3.701E-02	2.268E-02	NOT IDENT.
RB-86	4.845E-01	8.289E-01	7.352E-01	4.229E-01	NOT IDENT.
Y-88	3.797E-03	2.732E-02	2.366E-02	1.394E-02	NOT IDENT.
ZR-88	-8.345E-03	3.744E-02	3.162E-02	1.910E-02	NOT IDENT.
Y-91	9.884E-02	2.073E+01	1.722E+01	1.057E+01	NOT IDENT.
NB-94	4.010E-02	3.680E-02	3.425E-02	1.877E-02	NOT IDENT.
NB-95	2.201E-02	5.086E-02	4.495E-02	2.595E-02	NOT IDENT.
NB-95M	1.808E+00	2.696E-01	2.237E-01	1.375E-01	NOT IDENT.
ZR-95	1.242E-02	7.810E-02	6.796E-02	3.985E-02	NOT IDENT.
NB-97	6.980E+04	4.099E+04	0.000E+00	2.092E+04	SHORT HLIF
ZR-97	2.910E+06	8.286E+05	0.000E+00	4.228E+05	SHORT HLIF
MO-99	8.605E+00	9.755E+00	8.907E+00	4.977E+00	NOT IDENT.
TC-99M	-4.776E+14	1.654E+15	0.000E+00	8.441E+14	SHORT HLIF
RH-101	2.310E-02	4.305E-02	3.631E-02	2.196E-02	FAIL ABUN
RH-102	1.433E-02	3.551E-02	3.087E-02	1.812E-02	NOT IDENT.
RU-103	-6.683E-02	4.817E-02	3.572E-02	2.458E-02	NOT IDENT.
RH-106	2.054E-01	3.276E-01	2.876E-01	1.672E-01	NOT IDENT.
RU-106	2.054E-01	3.270E-01	2.876E-01	1.668E-01	NOT IDENT.
AG-108M	-7.764E-03	3.823E-02	3.208E-02	1.951E-02	NOT IDENT.
AG-110M	6.141E-02	4.655E-02	3.819E-02	2.375E-02	NOT IDENT.
IN-111	-8.441E-01	1.059E+00	7.650E-01	5.401E-01	NOT IDENT.
IN-113M	-3.122E-02	5.454E-02	4.505E-02	2.782E-02	NOT IDENT.
SN-113	-3.122E-02	5.454E-02	4.505E-02	2.782E-02	NOT IDENT.
IN-114M	1.678E-01	2.462E-01	1.883E-01	1.256E-01	NOT IDENT.
CD-115	1.365E+00	8.328E+00	7.093E+00	4.249E+00	NOT IDENT.
SN-117M	-8.254E-04	6.535E-02	5.543E-02	3.334E-02	NOT IDENT.
SB-122	-3.053E-01	1.692E+00	1.396E+00	8.635E-01	NOT IDENT.
I-123	2.997E+05	1.590E+06	0.000E+00	8.111E+05	SHORT HLIF
TE-123M	6.765E-03	3.589E-02	3.069E-02	1.831E-02	NOT IDENT.
I-124	8.539E-02	8.027E-01	5.831E-01	4.095E-01	NOT IDENT.
SB-124	-8.348E-02	7.975E-02	5.555E-02	4.069E-02	FAIL ABUN
SB-125	-5.182E-03	1.125E-01	9.556E-02	5.741E-02	FAIL ABUN
TE-125M	2.260E+00	1.129E+01	9.818E+00	5.760E+00	NOT IDENT.
I-126	6.085E-02	2.386E-01	1.751E-01	1.218E-01	NOT IDENT.
SB-126	8.903E-02	1.632E-01	1.292E-01	8.329E-02	NOT IDENT.
SB-127	1.377E-01	1.107E+00	9.677E-01	5.650E-01	FAIL ABUN
XE-127	-6.329E-02	6.300E-02	4.696E-02	3.214E-02	NOT IDENT.
I-131	-9.645E-02	1.214E-01	9.897E-02	6.192E-02	NOT IDENT.
TE-132	-7.165E-01	6.409E-01	5.302E-01	3.270E-01	NOT IDENT.
BA-133	-2.596E-02	5.979E-02	4.297E-02	3.050E-02	NOT IDENT.
I-133	-1.697E+03	2.555E+03	0.000E+00	1.304E+03	SHORT HLIF
CS-134	1.490E-01	6.221E-02	4.753E-02	3.174E-02	FAIL ABUN
CS-135	2.810E-01	2.028E-01	1.864E-01	1.035E-01	NOT IDENT.
I-135	-7.544E+13	2.975E+14	0.000E+00	1.518E+14	SHORT HLIF
CS-136	-4.135E-02	1.027E-01	8.224E-02	5.242E-02	FAIL ABUN
CE-139	-1.005E-02	3.668E-02	3.069E-02	1.871E-02	NOT IDENT.
BA-140	-1.306E-01	2.908E-01	2.331E-01	1.484E-01	NOT IDENT.
LA-140	3.643E-02	9.096E-02	8.121E-02	4.641E-02	NOT IDENT.
CE-141	-4.553E-02	7.588E-02	6.302E-02	3.871E-02	NOT IDENT.
CE-143	7.557E+02	2.111E+02	0.000E+00	1.077E+02	SHORT HLIF
CE-144	-1.053E-01	2.840E-01	2.077E-01	1.449E-01	NOT IDENT.
PM-144	-9.271E-03	3.576E-02	3.024E-02	1.825E-02	NOT IDENT.
PR-144	-6.279E-01	2.422E+00	2.048E+00	1.236E+00	NOT IDENT.

PM-146	-1.934E-02	5.541E-02	4.305E-02	2.827E-02	NOT IDENT.
ND-147	-4.464E-01	5.949E-01	4.668E-01	3.035E-01	FAIL ABUN
PM-149	6.626E+00	7.560E+01	6.615E+01	3.857E+01	NOT IDENT.
EU-152	-1.251E-01	1.692E-01	1.024E-01	8.635E-02	FAIL ABUN
GD-153	1.342E-01	1.123E-01	9.024E-02	5.730E-02	FAIL ABUN
EU-154	-4.448E-02	1.493E-01	1.196E-01	7.619E-02	NOT IDENT.
EU-155	-6.168E-02	1.308E-01	1.108E-01	6.674E-02	FAIL ABUN
TB-160	4.286E-03	1.579E-01	1.346E-01	8.058E-02	FAIL ABUN
HO-166M	2.222E-02	6.426E-02	5.696E-02	3.279E-02	FAIL ABUN
TM-171	-2.978E+01	5.249E+01	3.911E+01	2.678E+01	NOT IDENT.
LU-176	-1.322E-02	3.183E-02	2.540E-02	1.624E-02	FAIL ABUN
LU-177	1.971E+00	1.676E+00	1.122E+00	8.551E-01	FAIL ABUN
LU-177M	-1.018E-01	2.078E-01	1.717E-01	1.060E-01	FAIL ABUN
HF-181	-3.305E-02	5.000E-02	4.022E-02	2.551E-02	NOT IDENT.
W-181	-1.555E-01	6.817E-01	5.181E-01	3.478E-01	NOT IDENT.
TA-182	-9.206E-02	2.103E-01	1.666E-01	1.073E-01	NOT IDENT.
RE-183	3.179E-02	1.365E-01	1.169E-01	6.965E-02	FAIL ABUN
RE-184	-1.847E-01	2.794E-01	2.372E-01	1.426E-01	NOT IDENT.
OS-185	5.010E-03	4.973E-02	4.160E-02	2.537E-02	FAIL ABUN
RE-188	6.687E-02	2.061E-01	1.774E-01	1.051E-01	NOT IDENT.
W-188	-2.564E+00	9.913E+00	7.361E+00	5.058E+00	FAIL ABUN
IR-192	-8.398E-03	4.188E-02	3.590E-02	2.136E-02	FAIL ABUN
AU-195	4.252E-01	2.881E-01	2.611E-01	1.470E-01	FAIL ABUN
TL-200	3.816E+01	2.545E+02	0.000E+00	1.298E+02	SHORT HLIF
TL-201	-7.841E-01	6.479E+00	5.456E+00	3.306E+00	NOT IDENT.
TL-202	4.275E-02	7.662E-02	6.753E-02	3.909E-02	NOT IDENT.
HG-203	4.163E-02	4.969E-02	4.492E-02	2.535E-02	FAIL ABUN
BI-207	-2.264E-02	5.904E-02	4.754E-02	3.012E-02	FAIL ABUN
TL-207	-5.337E-01	8.819E-01	7.369E-01	4.499E-01	FAIL ABUN
PO-209	6.833E+00	7.978E+00	7.302E+00	4.070E+00	NOT IDENT.
BI-210	-3.764E-01	1.346E+01	1.163E+01	6.866E+00	NOT IDENT.
PB-210	-3.764E-01	1.346E+01	1.163E+01	6.866E+00	NOT IDENT.
PO-210	-3.764E-01	1.346E+01	1.163E+01	6.866E+00	NOT IDENT.
PB-211	-1.230E+00	1.376E+00	9.206E-01	7.021E-01	NOT IDENT.
BI-212	1.064E+00	5.400E-01	3.646E-01	2.755E-01	FAIL ABUN
PO-215	-5.337E-01	8.819E-01	7.369E-01	4.499E-01	FAIL ABUN
RN-219	-3.956E-02	4.860E-01	4.133E-01	2.479E-01	FAIL ABUN
RN-220	-1.337E+01	3.123E+01	2.530E+01	1.593E+01	NOT IDENT.
RA-223	-5.337E-01	8.819E-01	7.369E-01	4.499E-01	FAIL ABUN
AC-227	2.784E-01	4.613E-01	4.138E-01	2.354E-01	FAIL ABUN
TH-227	2.784E-01	4.620E-01	4.138E-01	2.357E-01	FAIL ABUN
TH-229	-4.199E-01	6.792E-01	5.249E-01	3.465E-01	FAIL ABUN
PA-231	-2.371E+00	1.914E+00	1.540E+00	9.766E-01	NOT IDENT.
TH-231	-5.337E-01	8.819E-01	7.369E-01	4.499E-01	FAIL ABUN
U-231	-9.752E-01	1.257E+00	9.132E-01	6.413E-01	FAIL ABUN
PA-233	4.827E-03	7.721E-02	6.718E-02	3.939E-02	FAIL ABUN
PA-234	4.381E-02	3.161E-01	2.710E-01	1.613E-01	FAIL ABUN
PA-234M	5.975E+00	5.000E+00	4.701E+00	2.551E+00	NOT IDENT.
U-235	1.911E-01	2.636E-01	2.260E-01	1.345E-01	FAIL ABUN
NP-236	5.268E-02	9.987E-02	8.653E-02	5.095E-02	NOT IDENT.
NP-239	-1.230E-01	2.293E-01	1.927E-01	1.170E-01	FAIL ABUN
AM-241	1.033E-01	3.452E-01	2.721E-01	1.761E-01	NOT IDENT.
CM-243	8.775E-02	1.162E-01	1.034E-01	5.931E-02	FAIL ABUN
AM-246	-1.978E-02	1.622E-01	1.342E-01	8.277E-02	NOT IDENT.
CM-247	2.120E-02	4.373E-02	3.848E-02	2.231E-02	NOT IDENT.
CF-249	2.168E-02	4.881E-02	4.290E-02	2.491E-02	NOT IDENT.
CF-251	-1.152E-03	1.569E-01	1.324E-01	8.004E-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	265.9381
46.50	265.9381
46.50	265.9381
48.70	288.6557
49.72	291.9937
51.35	253.9454
52.39	254.3830
52.97	273.6271
53.15	288.9139
53.44	286.1977
54.07	301.7192
56.28	298.0088
56.28	298.0100
57.37	0.0000
57.53	256.4854
57.53	256.4864
57.60	254.2164
57.98	272.7542
57.98	272.7542
59.32	285.6021
59.32	285.6021
59.40	285.6373
59.54	310.2742
59.72	310.3599
60.01	333.5534
61.10	352.5795
61.14	352.6005
61.30	352.6850
63.00	337.7531
63.29	355.2745
63.29	355.2745
63.58	343.0638
64.28	349.6034
65.12	342.2867
65.20	342.3261
65.20	342.3261
66.05	344.2965
66.72	369.4636
66.83	369.5232
66.91	369.5653
67.20	347.9697
67.20	347.9697
67.75	380.8880
67.85	380.9418
68.90	352.3087
68.90	352.3087
69.30	352.1167
69.67	360.0930
70.82	354.4201
70.82	354.4201
70.83	354.4257
72.80	367.9047
72.87	367.9391
72.87	367.9391
74.67	353.1363
74.81	353.2022
74.81	353.2022
74.81	353.2022
74.81	353.2022
74.81	353.2022
74.81	353.2022
74.81	353.2022
74.97	353.2777
75.28	353.4233
75.70	353.6197
77.11	354.2761
77.11	354.2761

77.11	354.2761
77.11	354.2761
77.11	354.2761
77.11	354.2761
77.11	354.2761
78.38	279.9471
79.62	280.3956
79.80	280.4606
79.80	280.4606
80.11	280.5722
80.18	280.5971
80.30	280.6405
80.30	280.6405
80.57	280.7369
81.00	280.8907
81.07	280.9156
81.07	280.9156
81.07	280.9156
81.07	280.9156
82.60	319.7790
83.37	303.8368
83.78	303.9933
83.78	303.9933
83.78	303.9933
83.78	303.9933
84.21	304.1557
84.90	304.4163
85.43	304.6149
86.29	304.9362
86.50	305.0145
86.54	305.0297
86.59	305.0484
86.72	305.0963
86.79	305.1220
86.94	305.1781
87.30	305.3124
87.30	305.3124
87.30	305.3124
87.30	305.3124
87.30	305.3124
87.30	305.3124
87.57	305.4117
87.88	305.5262
88.03	305.5823
88.36	305.7039
88.47	305.7448
89.95	306.2869
91.11	306.7098
92.29	307.1363
92.38	307.1690
92.38	307.1690
93.35	305.2223
94.00	332.7844
94.67	405.4410
94.67	405.4425
94.90	405.5502
94.90	405.5502
94.90	405.5502
94.90	405.5502
95.87	356.0590
95.87	356.0590
96.73	290.2890
97.43	293.7472
98.44	290.8521
98.44	290.8521
98.88	293.0168
99.55	296.2715
99.55	296.2715
99.86	296.3744
100.00	303.5019
100.10	320.7378
103.18	277.1615
103.76	272.2581
105.00	307.2130
105.31	312.4035
108.00	323.5143
109.28	310.6693

111.00	291.7808
111.00	291.7808
111.76	313.5302
112.95	305.7108
115.19	304.3614
116.30	328.3834
117.00	303.8941
117.00	303.8941
117.66	283.4805
121.11	283.4279
121.62	285.6421
121.78	285.6873
122.06	283.9913
122.32	278.1456
122.32	278.1456
122.32	278.1456
122.32	278.1456
123.07	310.0954
127.23	294.7044
129.76	277.0606
131.20	292.4799
133.02	296.3303
133.54	309.8750
135.34	309.3458
136.00	279.1060
136.25	271.8243
136.48	273.9811
140.51	313.9763
140.51	0.0000
142.18	303.8972
142.65	287.1354
143.76	280.0239
144.24	280.1432
144.24	280.1432
144.24	280.1432
144.24	280.1432
145.22	318.4783
145.44	334.4144
147.16	311.6057
152.43	298.1302
152.70	291.8107
153.22	299.3986
154.21	285.7887
154.21	285.7887
154.21	285.7887
154.21	285.7887
155.03	288.1233
156.02	315.0670
158.56	308.2522
159.00	0.0000
159.00	305.1521
160.31	288.3369
161.27	295.0031
162.32	297.4064
162.64	292.1169
163.35	307.3313
163.89	292.4178
165.85	295.0404
167.43	279.2472
171.28	262.8094
171.86	280.2441
172.10	266.2285
176.55	274.7692
176.60	274.7789
181.06	272.0288
184.41	287.3693
185.71	287.6542
186.00	287.7165
190.27	242.3288
192.34	309.5340
193.63	286.6928
197.04	244.8670
198.01	260.4945
198.60	273.8554
200.40	280.8492
201.83	308.8089
202.84	296.2154
205.31	271.6310

208.36	311.3599
208.81	290.3235
209.75	243.9894
209.75	243.9894
210.97	231.7196
215.65	245.2483
216.55	251.6298
218.09	247.4178
222.10	223.3968
223.80	219.1578
226.40	244.0836
227.00	246.8843
227.08	246.8977
227.20	246.9161
228.16	254.2888
228.18	254.2923
228.18	254.2923
231.56	0.0000
235.69	255.2484
236.00	235.6615
236.00	235.6615
238.63	207.9170
238.63	207.9170
238.63	207.9170
238.63	207.9170
239.00	207.9659
240.98	208.2315
241.98	208.3643
241.98	208.3643
241.98	208.3643
244.69	203.5599
245.39	217.3279
247.94	190.4958
248.90	198.0085
249.79	182.8796
252.40	214.3177
252.85	212.5454
252.85	212.5454
254.15	0.0000
256.20	186.3625
256.20	186.3625
260.50	208.0251
260.90	205.6210
262.80	201.2494
264.65	186.0936
268.24	199.7499
268.79	199.8158
269.46	199.8976
269.46	199.8976
269.46	199.8976
269.46	199.8976
271.23	220.7958
273.65	219.5667
276.40	200.4521
277.35	201.4482
277.60	193.4182
277.60	193.4182
278.00	199.9747
278.60	192.6020
279.20	185.2240
279.53	186.1890
280.46	202.1236
281.68	197.6062
283.67	209.0320
284.30	201.6404
285.00	187.7137
285.90	173.7937
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286.10	157.9279
287.40	157.6447
288.45	0.0000
290.67	179.5752
290.80	179.5892
291.72	184.3702
293.26	0.0000
293.70	155.7952
295.21	155.9269
295.21	155.9269

295.21	155.9269
295.96	155.9918
296.50	156.0404
297.23	156.1032
298.57	156.2207
299.80	156.3261
299.80	156.3261
300.09	156.3525
300.09	156.3525
300.09	156.3525
300.09	156.3525
300.12	156.3545
301.29	150.8008
302.84	155.6462
303.76	174.6005
303.91	174.6163
304.40	184.1027
304.40	184.1027
304.84	185.7218
306.84	170.1694
308.46	143.8248
311.98	155.4757
316.51	163.4588
318.01	160.7357
319.02	157.9675
319.41	143.7228
320.08	162.8174
323.87	205.1240
323.87	205.1240
323.87	205.1240
323.87	205.1240
325.23	169.9452
328.77	167.3907
333.44	153.4141
334.20	163.0668
334.20	163.0668
334.30	163.0751
338.28	181.0317
338.28	181.0317
338.28	181.0317
338.28	181.0317
338.32	181.0363
338.32	181.0363
338.32	181.0363
340.50	144.3475
340.57	144.3530
344.27	185.6008
345.85	180.1201
350.59	0.0000
351.07	148.9901
351.92	149.0521
351.92	149.0521
351.92	149.0521
355.39	0.0000
356.01	145.4755
364.48	134.3950
366.43	135.4978
367.43	120.9348
367.94	0.0000
369.80	112.2850
374.96	145.8425
383.85	148.4250
387.95	125.0730
388.63	130.0390
391.69	142.0629
391.69	142.0629
392.90	135.2323
398.62	121.7328
400.65	143.6389
401.10	136.7332
401.81	121.9099
402.60	114.0229
404.84	150.8607
410.95	109.4777
411.60	127.4281
413.65	126.5489
414.70	115.6418
415.30	123.6503

415.76	115.6970
417.63	0.0000
418.52	115.8386
423.70	125.1114
427.08	109.2595
427.89	118.3227
432.53	108.5142
433.93	107.5734
439.47	98.7608
439.56	98.7644
439.89	99.7867
443.98	120.1548
444.90	136.3629
445.03	136.3711
445.03	136.3711
445.03	136.3711
445.03	136.3711
453.90	111.5334
463.38	76.3458
468.07	88.3922
473.00	99.1313
475.06	99.2142
475.35	92.0654
476.78	104.4018
477.59	96.2444
477.96	101.3795
482.03	108.7251
484.57	96.5152
487.03	104.8326
490.36	0.0000
492.35	89.6051
497.08	114.5379
507.63	0.0000
510.53	0.0000
510.84	94.4047
511.00	94.4108
511.85	89.9447
511.85	89.9447
513.99	72.7070
513.99	72.7070
520.41	79.1339
520.65	84.3480
527.90	77.2700
528.96	0.0000
529.64	87.7693
529.87	0.0000
531.02	90.9507
537.32	94.3088
543.00	81.9076
546.56	0.0000
549.76	93.6912
552.65	55.8532
555.20	84.3848
563.23	66.6468
563.90	81.4760
568.70	79.4971
569.32	75.2746
569.50	77.3985
569.67	76.3436
573.80	77.3662
574.00	78.8887
574.64	81.4359
578.91	53.1909
579.30	0.0000
583.14	58.5973
585.48	55.0913
591.81	82.2862
592.07	78.0170
593.00	72.6982
595.88	90.9620
600.56	96.4688
602.52	0.0000
602.71	103.6925
602.71	103.6925
603.60	116.2415
604.41	109.1192
604.70	109.1303
609.31	90.3082



609.31	90.3082
609.31	90.3082
609.31	90.3082
610.33	87.8315
612.46	77.1309
614.37	77.1816
618.01	63.6180
621.84	52.9035
621.84	52.9035
631.29	76.8988
633.02	80.1950
633.10	80.1968
634.78	61.8080
635.90	55.3218
636.97	57.5120
645.85	68.5633
646.12	72.9230
656.30	60.0609
657.75	60.0891
657.90	0.0000
661.65	64.5399
661.65	64.5399
664.57	0.0000
666.33	80.3390
666.33	80.3390
675.00	56.0265
677.61	63.7703
685.20	56.9418
692.80	65.3636
695.00	56.1959
696.49	69.1254
696.49	69.1254
697.00	68.2142
697.49	72.8346
698.33	78.3853
698.50	76.5460
699.00	78.4026
702.63	60.0224
706.10	71.1786
706.58	0.0000
706.67	73.0403
709.31	79.5769
711.68	60.1890
713.82	73.1994
717.42	67.7142
720.50	57.2997
721.93	0.0000
722.20	63.6984
722.78	73.2660
722.78	73.2660
722.89	73.2692
722.95	73.2708
723.30	68.4998
724.18	71.7046
727.18	72.5664
733.00	73.4922
735.90	76.1132
739.58	56.9616
742.81	67.2979
744.21	72.0011
747.13	61.7676
751.79	51.5435
752.31	52.4886
753.82	56.2634
755.35	62.8548
756.15	63.8081
756.87	70.3918
763.93	89.3466
765.79	82.8079
766.42	86.5869
766.84	82.8330
776.49	75.5127
778.00	60.4362
778.57	59.5009
778.89	61.3964
783.80	65.2659
785.46	67.1034
792.07	66.6379

795.84	52.0647
796.30	53.6987
798.80	58.6218
801.93	47.2646
805.60	56.1503
810.29	52.4118
810.76	60.9974
815.85	56.3112
817.79	49.6567
818.51	43.9355
819.60	42.0378
826.30	54.8780
828.27	0.0000
831.60	44.3675
831.96	55.8761
834.83	48.9300
836.80	0.0000
846.75	36.3002
848.13	39.6152
856.28	0.0000
856.80	46.3252
860.37	49.6812
867.32	51.6157
867.82	52.2686
871.10	52.3136
873.19	60.0966
874.81	59.1521
875.33	0.0000
876.40	52.3861
879.36	55.3394
880.27	48.5555
880.51	46.6162
881.50	50.5136
883.24	57.3399
884.67	46.6670
889.25	46.7227
896.60	39.9848
898.02	55.6084
899.00	54.6476
903.28	65.3133
911.07	56.7740
911.07	56.7740
911.07	56.7740
919.63	37.6703
920.93	49.0662
925.00	45.1877
925.24	45.1905
926.50	48.1526
935.52	46.2924
937.48	63.0664
944.10	51.3261
946.00	43.4504
949.00	47.4355
962.29	50.5663
964.01	50.5870
966.15	50.6140
968.20	50.6389
969.11	50.6503
969.11	50.6503
969.11	50.6503
977.42	47.7676
980.50	42.6810
983.50	40.2273
989.30	33.9322
996.32	53.9835
1001.03	30.0244
1001.68	28.0273
1004.76	54.0923
1021.30	0.0000
1024.50	0.0000
1034.80	44.3867
1036.00	49.4446
1037.82	47.4475
1038.57	43.4164
1038.76	0.0000
1045.16	44.4941
1046.59	45.5200
1048.07	42.4990

1050.47	38.4731
1050.47	38.4731
1062.04	47.7114
1063.62	51.7906
1076.63	39.7220
1077.35	46.8591
1078.86	49.9311
1085.78	35.7206
1099.22	48.1130
1112.02	49.2754
1112.84	47.5250
1115.52	40.5067
1120.29	29.9718
1120.29	29.9718
1120.29	29.9718
1120.29	29.9718
1120.51	29.9729
1121.28	35.2679
1124.00	0.0000
1129.67	39.1612
1131.51	0.0000
1147.95	0.0000
1167.94	39.4844
1173.22	49.9316
1175.09	68.6829
1177.93	52.0630
1189.05	39.6606
1204.90	53.4052
1205.75	0.0000
1213.00	51.3966
1221.42	55.6892
1230.97	71.5887
1235.34	54.7930
1236.41	0.0000
1238.25	56.9355
1246.25	43.2989
1260.41	0.0000
1271.85	39.2764
1274.45	50.9785
1274.54	50.9785
1291.56	41.5613
1298.22	0.0000
1312.09	29.9585
1325.50	37.5450
1325.50	37.5450
1332.49	25.7803
1333.61	25.7861
1360.21	23.7572
1362.66	0.0000
1365.15	22.6987
1368.21	22.7115
1368.53	0.0000
1376.25	24.9120
1384.27	26.9640
1394.10	27.0135
1395.20	28.8830
1407.95	29.8850
1434.06	21.5826
1436.60	25.3483
1457.56	0.0000
1460.81	21.6868
1489.15	21.7967
1509.49	26.6309
1596.49	18.3420
1620.62	14.5386
1678.03	0.0000
1691.02	14.7065
1691.02	14.7065
1706.46	0.0000
1750.46	0.0000
1764.49	6.9431
1764.49	6.9431
1764.49	6.9431
1764.49	6.9431
1770.23	77.4342
1771.40	34.7522
1791.20	0.0000
1808.65	9.9860

1836.01

6.0165

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132005

Total Uranium Activity	6.5968E+00	ug/g
Total Uranium Counting Unc.	9.8269E+00	ug/g
Total Uranium Tpu	5.0137E-06	ug/g
Total Uranium Mda	6.0010E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132005
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 09:53:31.01          SAMPLE ALQT: 123.700 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.875E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.592E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.135E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.002E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 11:56:36.18

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132006.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:54:05
Sample ID          : G244132006      Sample quantity   : 1.29360E+02 GRAM
Detector name      : GAM22           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:02.15  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 940270          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	62.94*	91	574	1.15	126.13	122	8	1.26E-02	48.5	
2	2	74.82*	573	571	1.22	149.87	144	15	7.95E-02	8.2	1.40E+00
3	2	77.18*	803	461	1.00	154.59	144	15	1.12E-01	5.7	
4	0	86.92*	201	629	1.11	174.06	172	7	2.80E-02	22.1	
5	5	89.95*	134	419	0.86	180.10	178	15	1.86E-02	24.4	1.06E+00
6	5	92.78*	401	681	1.48	185.76	178	15	5.58E-02	13.5	
7	0	128.92	158	663	0.98	257.96	253	11	2.20E-02	32.5	
8	0	186.08*	388	565	1.51	372.17	367	12	5.39E-02	13.8	
9	0	209.26	197	481	1.39	418.50	413	12	2.73E-02	23.6	
10	4	238.69*	1776	251	1.23	477.30	471	19	2.47E-01	2.9	1.14E+00
11	4	241.65	502	392	1.92	483.22	471	19	6.97E-02	11.7	
12	0	270.76	155	324	1.08	541.38	536	11	2.16E-02	23.9	
13	1	295.24*	646	247	1.66	590.30	584	21	8.98E-02	6.0	4.33E+00
14	1	300.16	125	249	1.67	600.13	584	21	1.73E-02	25.5	
15	0	338.55*	358	329	1.19	676.85	671	13	4.97E-02	11.9	
16	0	352.03*	1091	231	1.50	703.79	699	13	1.52E-01	4.3	
17	0	462.66	178	193	1.62	924.90	918	15	2.48E-02	18.5	
18	0	510.86*	219	258	2.09	1021.22	1011	21	3.05E-02	21.8	
19	0	583.20*	596	208	1.60	1165.81	1159	16	8.27E-02	7.0	
20	0	609.40*	697	184	1.67	1218.18	1212	14	9.68E-02	5.8	
21	0	661.29	89	206	1.18	1321.90	1319	12	1.24E-02	33.6	
22	0	727.35*	161	119	1.83	1453.97	1447	14	2.24E-02	17.0	
23	0	861.46	61	133	2.23	1722.07	1715	13	8.50E-03	41.6	
24	0	911.35*	455	153	1.95	1821.82	1812	21	6.32E-02	8.4	
25	0	969.26*	227	147	2.02	1937.60	1932	15	3.16E-02	14.0	
26	0	1120.48*	169	95	2.15	2239.99	2233	16	2.34E-02	15.1	
27	0	1239.87	185	87	3.10	2478.74	2466	28	2.57E-02	16.3	
28	0	1460.87*	1539	75	2.59	2920.76	2907	25	2.14E-01	3.0	
29	0	1510.28	34	25	1.47	3019.61	3012	13	4.76E-03	36.2	
30	0	1764.57*	163	27	2.40	3528.33	3515	21	2.26E-02	12.0	
31	0	1847.78	36	11	1.93	3694.83	3685	16	4.97E-03	24.3	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00 Acquisition date : 19-JAN-2010 09:54:05
Sample ID         : G244132006 Sample quantity : 129.36 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.15 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	*	2.192E+01	2.403E+00	4.606E-01	4.220E-02	47.593
CD-109	+	88.03	*	2.150E+00	9.696E-01	1.138E+00	1.080E-01	1.889
SN-126	+	64.28		6.435E-01	6.317E-01	6.890E-01	1.001E-01	0.934
	+	86.94		8.800E-01	5.331E-01	5.012E-01	2.081E-01	1.756
	+	87.57	*	2.117E-01	9.547E-02	1.228E-01	1.159E-02	1.724
BA-137M	+	661.65	*	8.010E-02	5.452E-02	4.910E-02	5.177E-03	1.631
CS-137	+	661.65	*	8.467E-02	5.764E-02	5.190E-02	5.480E-03	1.631
TL-208		277.35		4.628E-01	3.687E-01	5.905E-01	9.737E-02	0.784
	+	510.84		6.857E-01	3.122E-01	1.755E-01	2.287E-02	3.907
	+	583.14	*	5.223E-01	9.225E-02	4.972E-02	5.391E-03	10.505
	+	860.37		4.878E-01	4.100E-01	3.826E-01	4.458E-02	1.275
BI-211		72.87		4.352E+00	3.014E+00	4.589E+00	3.673E-01	0.948
	+	351.07	*	4.531E+00	6.541E-01	2.998E-01	3.498E-02	15.113
PB-212	+	74.81		2.519E+00	5.187E-01	4.666E-01	5.789E-02	5.398
	+	77.11		2.001E+00	2.828E-01	2.657E-01	2.222E-02	7.530
	+	87.30		9.791E-01	4.523E-01	5.693E-01	7.818E-02	1.720
	+	238.63	*	1.722E+00	2.485E-01	8.041E-02	1.062E-02	21.422
	+	300.09		1.795E+00	9.510E-01	1.097E+00	1.599E-01	1.636
PO-212	+	74.81		2.519E+00	5.187E-01	4.666E-01	5.789E-02	5.398
	+	77.11		2.001E+00	2.828E-01	2.657E-01	2.222E-02	7.530
	+	87.30		9.791E-01	4.523E-01	5.693E-01	7.818E-02	1.720
		115.19		-4.663E+00	3.407E+00	5.100E+00	4.225E-01	-0.914
	+	238.63	*	1.722E+00	2.485E-01	8.041E-02	1.062E-02	21.422
	+	300.09		1.795E+00	9.510E-01	1.097E+00	1.599E-01	1.636
BI-214	+	609.31	*	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
	+	1120.29		1.382E+00	4.436E-01	4.046E-01	4.470E-02	3.415
	+	1764.49		1.742E+00	4.426E-01	2.816E-01	2.346E-02	6.186
PB-214	+	74.81		4.340E+00	8.589E-01	8.039E-01	8.861E-02	5.398
	+	77.11		3.430E+00	5.508E-01	4.554E-01	5.152E-02	7.530
	+	87.30		1.677E+00	7.674E-01	9.753E-01	1.186E-01	1.720
	+	241.98		2.915E+00	7.910E-01	4.835E-01	6.649E-02	6.030
	+	295.21		1.637E+00	3.138E-01	1.915E-01	2.851E-02	8.547
	+	351.92	*	1.576E+00	2.420E-01	1.027E-01	1.309E-02	15.353
PO-214	+	74.81		4.340E+00	8.589E-01	8.039E-01	8.861E-02	5.398



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11	3.430E+00	5.508E-01	4.554E-01	5.152E-02	7.530
	+	87.30	1.677E+00	7.674E-01	9.753E-01	1.186E-01	1.720
	+	241.98	2.915E+00	7.910E-01	4.835E-01	6.649E-02	6.030
	+	295.21	1.637E+00	3.138E-01	1.915E-01	2.851E-02	8.547
	+	351.92 *	1.576E+00	2.420E-01	1.027E-01	1.309E-02	15.353
PO-216	+	74.81	2.519E+00	5.187E-01	4.666E-01	5.789E-02	5.398
	+	77.11	2.001E+00	2.828E-01	2.657E-01	2.222E-02	7.530
	+	87.30	9.791E-01	4.523E-01	5.693E-01	7.818E-02	1.720
	+	238.63 *	1.722E+00	2.485E-01	8.041E-02	1.062E-02	21.422
	+	300.09	1.795E+00	9.510E-01	1.097E+00	1.599E-01	1.636
PO-218	+	74.81	4.340E+00	8.589E-01	8.039E-01	8.861E-02	5.398
	+	77.11	3.430E+00	5.508E-01	4.554E-01	5.152E-02	7.530
	+	87.30	1.677E+00	7.674E-01	9.753E-01	1.186E-01	1.720
	+	241.98	2.915E+00	7.910E-01	4.835E-01	6.649E-02	6.030
	+	295.21	1.637E+00	3.138E-01	1.915E-01	2.851E-02	8.547
	+	351.92 *	1.576E+00	2.420E-01	1.027E-01	1.309E-02	15.353
RA-224	+	240.98 *	5.528E+00	1.468E+00	9.141E-01	1.144E-01	6.047
RA-226	+	609.31 *	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
	+	1120.29	1.382E+00	4.436E-01	4.046E-01	4.470E-02	3.415
	+	1764.49	1.742E+00	4.426E-01	2.816E-01	2.346E-02	6.186
AC-228	+	338.32	1.649E+00	7.974E-01	3.279E-01	1.379E-01	5.028
	+	911.07 *	1.710E+00	3.665E-01	1.749E-01	2.318E-02	9.772
	+	969.11	1.502E+00	5.545E-01	4.349E-01	1.050E-01	3.453
RA-228	+	338.32	1.649E+00	7.974E-01	3.279E-01	1.379E-01	5.028
	+	911.07 *	1.710E+00	3.665E-01	1.749E-01	2.318E-02	9.772
	+	969.11	1.502E+00	5.545E-01	4.349E-01	1.050E-01	3.453
TH-228	+	74.81	2.554E+00	4.695E-01	4.731E-01	3.898E-02	5.398
	+	77.11	2.028E+00	2.868E-01	2.694E-01	2.253E-02	7.530
	+	87.30	9.927E-01	4.477E-01	5.773E-01	5.433E-02	1.720
	+	238.63 *	1.747E+00	2.520E-01	8.153E-02	1.077E-02	21.422
	+	300.09	1.820E+00	1.434E+00	1.112E+00	6.689E-01	1.636
TH-230	+	609.31 *	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
	+	1120.29	1.381E+00	4.436E-01	4.046E-01	4.470E-02	3.415
	+	1764.49	1.742E+00	4.426E-01	2.816E-01	2.346E-02	6.186
TH-232	+	338.32	1.649E+00	4.394E-01	3.279E-01	3.900E-02	5.028
	+	911.07 *	1.710E+00	3.665E-01	1.749E-01	2.318E-02	9.772
	+	969.11	1.502E+00	5.545E-01	4.349E-01	1.050E-01	3.453
TH-234	+	63.29 *	1.626E+00	1.603E+00	1.751E+00	3.048E-01	0.928
	+	92.38	2.738E+00	8.921E-01	6.624E-01	1.214E-01	4.133
U-234	+	609.31 *	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
	+	1120.29	1.381E+00	4.436E-01	4.046E-01	4.470E-02	3.415
	+	1764.49	1.742E+00	4.426E-01	2.816E-01	2.346E-02	6.186
NP-237	+	86.50 *	6.216E-01	3.083E-01	3.514E-01	7.955E-02	1.769
	+	95.87	2.910E-01	9.450E-01	1.374E+00	3.398E-01	0.212
U-238	+	63.29 *	1.626E+00	1.603E+00	1.751E+00	3.048E-01	0.928
	+	92.38	2.738E+00	7.787E-01	6.624E-01	6.036E-02	4.133
AM-243	+	74.67 *	4.083E-01	7.494E-02	7.585E-02	6.183E-03	5.383
	+	86.72	2.331E+01	1.051E+01	1.315E+01	1.229E+00	1.773
	+	117.66	-2.370E-01	3.560E+00	5.644E+00	4.662E-01	-0.042

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		142.18		7.092E+00	1.621E+01	2.767E+01	2.443E+00	0.256
ANH-511	+	511.00	*	1.481E-01	6.629E-02	3.792E-02	3.800E-03	3.906

---- 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	*	-4.322E-02	2.768E-01	4.432E-01	4.625E-02	-0.098
NA-22		1274.54	*	-5.948E-02	4.028E-02	5.909E-02	5.092E-03	-1.007
NA-24		1368.53	*	-1.027E-01	4.028E-02	Half-Life too short		
AL-26		1129.67		-1.670E-01	1.643E+00	2.323E+00	2.023E-01	-0.072
		1808.65	*	4.957E-03	2.533E-02	4.274E-02	3.496E-03	0.116
TI-44		67.85		-2.088E-02	3.920E-02	6.290E-02	4.801E-03	-0.332
	+	78.38	*	3.692E-01	5.219E-02	6.883E-02	5.836E-03	5.363
SC-46		889.25	*	1.119E-03	3.373E-02	5.608E-02	6.277E-03	0.020
	+	1120.51		2.341E-01	7.358E-02	1.071E-01	9.464E-03	2.187
V-48		944.10		-5.926E-01	7.229E-01	1.118E+00	1.212E-01	-0.530
		983.50	*	1.256E-03	5.416E-02	8.913E-02	9.347E-03	0.014
		1312.09		4.854E-02	6.636E-02	1.154E-01	1.017E-02	0.421
CR-51		320.08	*	4.660E-02	3.116E-01	5.246E-01	6.793E-02	0.089
MN-52		744.21		3.074E-02	1.908E-01	2.880E-01	3.130E-02	0.107
		848.13		2.531E+00	4.931E+00	8.468E+00	9.428E-01	0.299
		935.52		2.453E-01	1.895E-01	3.355E-01	3.663E-02	0.731
		1246.25		-6.161E-01	6.008E+00	8.387E+00	7.090E-01	-0.073
		1333.61		1.519E+00	3.501E+00	5.985E+00	5.337E-01	0.254
		1434.06	*	6.810E-02	1.594E-01	2.723E-01	2.434E-02	0.250
MN-54		834.83	*	3.202E-02	3.223E-02	5.649E-02	6.276E-03	0.567
CO-56		846.75	*	9.383E-03	3.306E-02	5.604E-02	6.238E-03	0.167
		977.42		-1.621E+00	2.711E+00	3.524E+00	3.716E-01	-0.460
		1037.82		-4.103E-02	2.483E-01	4.004E-01	4.129E-02	-0.102
		1175.09		3.049E-01	1.808E+00	3.049E+00	2.456E-01	0.100
		1238.25		1.752E-01	8.037E-02	1.452E-01	1.258E-02	1.207
		1360.21		4.510E-01	8.478E-01	1.458E+00	1.302E-01	0.309
		1771.40		1.097E-01	2.043E-01	3.158E-01	2.624E-02	0.347
CO-57		122.06	*	5.104E-03	2.427E-02	3.780E-02	3.117E-03	0.135
		136.48		1.709E-02	1.896E-01	3.214E-01	2.982E-02	0.053
CO-58		810.76	*	-3.809E-02	3.382E-02	5.214E-02	5.773E-03	-0.731
FE-59		142.65		1.125E+00	2.559E+00	4.238E+00	3.750E-01	0.265
		192.34		8.352E-01	9.220E-01	1.452E+00	2.155E-01	0.575
		1099.22	*	4.471E-02	8.195E-02	1.378E-01	1.351E-02	0.324
		1291.56		-2.634E-02	9.597E-02	1.550E-01	1.528E-02	-0.170
CO-60		1173.22		1.427E-02	3.582E-02	6.133E-02	4.932E-03	0.233
		1332.49	*	1.991E-03	3.180E-02	5.268E-02	4.698E-03	0.038
ZN-65		1115.52	*	4.032E-02	9.203E-02	1.323E-01	1.180E-02	0.305
GE-68		1077.35	*	-6.882E-01	1.073E+00	1.659E+00	1.564E-01	-0.415
AS-73		53.44	*	-1.742E-01	6.590E-01	1.079E+00	8.150E-02	-0.161
AS-74		595.88	*	3.294E-02	7.718E-02	1.307E-01	1.355E-02	0.252
		634.78		1.071E-01	2.898E-01	4.878E-01	5.112E-02	0.220
SE-75		66.05		-2.389E+00	4.493E+00	6.468E+00	6.171E-01	-0.369

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77		96.73		-5.779E-01	7.848E-01	1.081E+00	1.489E-01	-0.534
		121.11		-2.137E-02	1.316E-01	2.022E-01	2.210E-02	-0.106
		136.00		1.100E-02	3.537E-02	6.038E-02	5.239E-03	0.182
		198.60		-1.108E+00	1.771E+00	2.759E+00	3.224E-01	-0.402
		264.65	*	-1.925E-02	4.735E-02	6.464E-02	8.699E-03	-0.298
		279.53		4.650E-02	9.966E-02	1.624E-01	2.305E-02	0.286
		303.91		4.352E-02	2.060E+00	3.017E+00	4.598E-01	0.014
		400.65		3.203E-02	2.376E-01	3.924E-01	4.592E-02	0.082
	+	87.88		3.275E+02	1.477E+02	2.111E+02	2.001E+01	1.551
		200.40		3.430E+01	1.093E+02	1.816E+02	1.997E+01	0.189
	+	239.00		1.947E+02	2.670E+01	2.439E+01	3.035E+00	7.982
		249.79		4.017E+01	4.255E+01	7.103E+01	9.132E+00	0.566
		281.68		-1.001E+02	6.109E+01	8.751E+01	1.219E+01	-1.144
		297.23		2.811E+02	5.617E+01	8.292E+01	1.115E+01	3.390
		303.76		2.638E+00	1.244E+02	1.822E+02	2.410E+01	0.014
		439.47		-2.124E+01	8.680E+01	1.394E+02	1.341E+01	-0.152
		484.57		-1.321E+02	1.479E+02	2.255E+02	2.229E+01	-0.586
		520.65	*	-3.308E+00	6.774E+00	1.020E+01	1.027E+00	-0.324
		574.64		2.882E+00	1.301E+02	2.068E+02	2.128E+01	0.014
		578.91		1.579E+01	5.786E+01	8.459E+01	8.718E+00	0.187
		585.48		1.509E+03	2.291E+02	3.371E+02	3.482E+01	4.475
		755.35		1.281E+02	1.030E+02	1.784E+02	1.945E+01	0.718
		817.79		2.225E+01	8.206E+01	1.394E+02	1.543E+01	0.160
	SR-82	698.33		5.664E+00	3.045E+01	5.024E+01	5.375E+00	0.113
		776.49	*	-1.005E-01	3.307E-01	5.237E-01	5.744E-02	-0.192
		1395.20		-1.035E+01	9.342E+00	1.359E+01	1.215E+00	-0.762
RB-83		520.41	*	-3.396E-02	6.286E-02	9.430E-02	9.490E-03	-0.360
		529.64		-6.440E-02	8.937E-02	1.435E-01	1.450E-02	-0.449
		552.65		-1.161E-02	1.631E-01	2.711E-01	2.767E-02	-0.043
RB-84		881.50	*	3.154E-03	5.368E-02	8.948E-02	1.001E-02	0.035
KR-85		513.99	*	3.120E+01	8.153E+00	1.329E+01	1.333E+00	2.349
SR-85		513.99	*	1.580E-01	4.128E-02	6.726E-02	6.749E-03	2.349
RB-86		1076.63	*	-1.065E-02	6.317E-01	1.027E+00	9.692E-02	-0.010
Y-88		898.02		-1.363E-02	3.558E-02	5.741E-02	6.450E-03	-0.237
		1836.01	*	-8.146E-03	3.062E-02	4.388E-02	3.548E-03	-0.186
ZR-88		392.90	*	-5.947E-03	2.667E-02	4.336E-02	4.038E-03	-0.137
Y-91		1204.90	*	6.273E+00	1.603E+01	2.730E+01	2.245E+00	0.230
NB-94		702.63	*	2.124E-03	3.043E-02	4.987E-02	5.345E-03	0.043
		871.10		1.932E-02	2.824E-02	4.894E-02	5.468E-03	0.395
NB-95		765.79	*	7.984E-02	4.083E-02	7.146E-02	7.814E-03	1.117
NB-95M		235.69	*	2.323E-01	1.277E-01	1.930E-01	2.551E-02	1.204
ZR-95		724.18		1.778E-01	9.921E-02	1.549E-01	1.766E-02	1.148
		756.15	*	5.073E-02	6.171E-02	1.048E-01	1.216E-02	0.484
NB-97		657.90	*	1.699E-02	6.171E-02	Half-Life too short		
		1024.50		-6.766E-01	6.171E-02	Half-Life too short		
ZR-97		254.15		-3.934E-01	6.171E-02	Half-Life too short		
		355.39		1.351E+00	6.171E-02	Half-Life too short		
		507.63	*	1.761E+00	6.171E-02	Half-Life too short		
		602.52		1.023E+00	6.171E-02	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
	1021.30			-1.825E+00	6.171E-02	Half-Life	too short	
	1147.95			-2.123E-01	6.171E-02	Half-Life	too short	
	1362.66			8.257E-01	6.171E-02	Half-Life	too short	
	1750.46			6.606E-01	6.171E-02	Half-Life	too short	
MO-99	140.51			-9.201E+00	1.847E+01	2.971E+01	8.241E+00	-0.310
	181.06			-2.073E+00	1.349E+01	1.949E+01	3.730E+00	-0.106
	366.43			6.063E+00	5.427E+01	9.025E+01	9.573E+00	0.067
	739.58	*		-3.496E+00	7.164E+00	1.121E+01	1.855E+00	-0.312
	778.00			-2.479E+01	2.316E+01	3.453E+01	3.789E+00	-0.718
TC-99M	140.51	*		-6.496E+08	2.316E+01	Half-Life	too short	
RH-101	127.23			5.626E-02	3.388E-02	5.104E-02	4.266E-03	1.102
	198.01	*		-3.231E-02	3.283E-02	5.029E-02	5.487E-03	-0.642
	325.23			-2.751E-01	2.052E-01	3.188E-01	3.963E-02	-0.863
RH-102	418.52			3.026E-02	2.580E-01	4.244E-01	4.028E-02	0.071
	475.06	*		-6.210E-03	2.654E-02	4.147E-02	4.078E-03	-0.150
	631.29			-3.886E-02	4.718E-02	7.361E-02	7.708E-03	-0.528
	697.49			-6.958E-03	7.104E-02	1.154E-01	1.234E-02	-0.060
	766.84			1.563E-01	1.050E-01	1.811E-01	1.981E-02	0.863
	1046.59			-2.869E-02	9.298E-02	1.481E-01	1.452E-02	-0.194
	1112.84			8.675E-02	2.251E-01	3.228E-01	2.889E-02	0.269
RU-103	497.08	*		1.354E-02	3.557E-02	5.841E-02	8.767E-03	0.232
+	610.33			1.212E+01	2.560E+00	2.430E+00	4.295E-01	4.989
RH-106	511.85			7.382E-01	3.304E-01	3.855E-01	3.864E-02	1.915
	621.84	*		-2.011E-01	2.812E-01	4.425E-01	6.461E-02	-0.454
	1050.47			2.495E-01	1.830E+00	3.017E+00	2.945E-01	0.083
RU-106	511.85			7.382E-01	3.304E-01	3.855E-01	3.864E-02	1.915
+	621.84	*		-2.011E-01	2.804E-01	4.425E-01	4.622E-02	-0.454
	1050.47			2.495E-01	1.830E+00	3.017E+00	2.945E-01	0.083
AG-108M	433.93	*		-3.063E-03	2.883E-02	4.672E-02	4.625E-03	-0.066
	614.37			6.773E-03	3.727E-02	5.376E-02	5.755E-03	0.126
	722.95			9.059E-03	4.301E-02	6.130E-02	6.782E-03	0.148
AG-110M	657.75	*		1.908E-02	3.490E-02	5.142E-02	5.526E-03	0.371
	677.61			4.419E-02	2.547E-01	4.217E-01	4.560E-02	0.105
	706.67			-9.143E-02	1.858E-01	2.938E-01	3.209E-02	-0.311
	763.93			-3.872E-02	1.594E-01	2.545E-01	2.831E-02	-0.152
	884.67			1.343E-02	4.058E-02	6.882E-02	7.848E-03	0.195
	937.48			4.925E-02	9.374E-02	1.599E-01	1.783E-02	0.308
	1384.27			-3.080E-01	1.586E-01	2.113E-01	1.938E-02	-1.458
IN-111	171.28			-2.652E-02	7.058E-01	1.173E+00	1.171E-01	-0.023
	245.39	*		-3.495E-01	8.194E-01	1.127E+00	1.429E-01	-0.310
IN-113M	391.69	*		2.668E-02	3.818E-02	6.483E-02	6.191E-03	0.412
SN-113	391.69	*		2.668E-02	3.818E-02	6.483E-02	6.191E-03	0.412
IN-114M	190.27	*		1.010E-01	1.844E-01	2.740E-01	2.913E-02	0.369
CD-115	260.90			-1.064E+01	8.235E+01	1.317E+02	1.750E+01	-0.081
	492.35			-9.801E+00	2.285E+01	3.588E+01	3.561E+00	-0.273
	527.90	*		-2.984E+00	6.364E+00	1.038E+01	1.049E+00	-0.287
SN-117M	156.02			-1.301E-01	2.010E+00	3.361E+00	3.151E-01	-0.039
	158.56	*		2.428E-02	4.966E-02	8.427E-02	7.992E-03	0.288
SB-122	563.90	*		-3.889E-01	1.284E+00	2.102E+00	2.155E-01	-0.185

----- 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			4.231E+00	2.793E+01	4.606E+01	4.918E+00	0.092
	159.00	*		9.197E-01	2.793E+01	Half-Life	too short	
	528.96			-6.504E+01	2.793E+01	Half-Life	too short	
TE-123M	159.00	*		2.075E-02	2.716E-02	4.640E-02	4.431E-03	0.447
I-124	602.71	*		3.536E-01	5.500E-01	8.202E-01	8.519E-02	0.431
	722.78			2.541E-01	3.653E+00	5.146E+00	5.554E-01	0.049
	1325.50			-3.619E+00	2.353E+01	3.827E+01	3.399E+00	-0.095
	1376.25			3.845E+01	2.423E+01	4.357E+01	3.894E+00	0.883
+	1509.49			1.852E+01	1.351E+01	2.043E+01	1.816E+00	0.907
	1691.02			1.795E+00	2.507E+00	4.511E+00	3.857E-01	0.398
SB-124	602.71			2.475E-02	3.849E-02	5.741E-02	5.964E-03	0.431
	645.85			2.618E-01	4.545E-01	7.663E-01	8.381E-02	0.342
	709.31			1.197E+00	2.313E+00	3.887E+00	4.175E-01	0.308
	713.82			-1.861E-01	1.353E+00	2.186E+00	2.984E-01	-0.085
	722.78			2.578E-02	3.706E-01	5.221E-01	5.713E-02	0.049
+	968.20			1.524E+01	4.556E+00	6.386E+00	6.790E-01	2.387
	1045.16			1.951E-01	1.976E+00	3.251E+00	3.194E-01	0.060
	1325.50			-3.921E-01	2.550E+00	4.147E+00	3.683E-01	-0.095
	1368.21			-7.292E-01	1.537E+00	2.411E+00	3.298E-01	-0.302
	1436.60			-4.548E-01	3.101E+00	4.994E+00	4.463E-01	-0.091
	1691.02	*		4.297E-02	6.000E-02	1.079E-01	9.602E-03	0.398
SB-125	427.89	*		-1.772E-02	8.123E-02	1.310E-01	1.271E-02	-0.135
+	463.38			1.103E+00	4.234E-01	4.962E-01	5.145E-02	2.222
	600.56			-2.327E-02	1.662E-01	2.672E-01	2.917E-02	-0.087
	635.90			1.093E-01	2.271E-01	3.845E-01	4.254E-02	0.284
TE-125M	109.28	*		-3.675E+00	9.167E+00	1.411E+01	1.428E+00	-0.260
I-126	388.63			-9.567E-02	1.680E-01	2.684E-01	2.541E-02	-0.356
	666.33	*		1.090E-01	1.787E-01	2.634E-01	2.783E-02	0.414
	753.82			2.744E-01	1.216E+00	2.000E+00	2.179E-01	0.137
SB-126	223.80			3.945E-01	3.537E+00	5.789E+00	6.868E-01	0.068
	278.60			1.049E+00	2.144E+00	3.496E+00	4.887E-01	0.300
+	296.50			1.523E+01	2.761E+00	3.116E+00	4.198E-01	4.888
	414.70			-4.918E-02	6.633E-02	1.044E-01	9.879E-03	-0.471
	415.30			-1.608E+00	5.374E+00	8.661E+00	8.201E-01	-0.186
	555.20			-2.226E+00	3.119E+00	4.979E+00	5.086E-01	-0.447
	573.80			1.644E-02	8.407E-01	1.370E+00	1.409E-01	0.012
	593.00			-9.714E-02	7.928E-01	1.277E+00	1.322E-01	-0.076
	656.30			1.654E-01	3.103E+00	4.396E+00	4.631E-01	0.038
	666.33			4.544E-02	7.446E-02	1.098E-01	1.160E-02	0.414
	675.00			-8.537E-01	1.592E+00	2.517E+00	2.669E-01	-0.339
	695.00			2.680E-02	6.592E-02	1.101E-01	1.177E-02	0.243
	697.00			-8.653E-02	2.317E-01	3.702E-01	3.959E-02	-0.234
	720.50	*		4.794E-02	1.309E-01	1.887E-01	2.034E-02	0.254
	856.80			3.456E-01	4.645E-01	7.014E-01	7.820E-02	0.493
	989.30			5.413E-01	9.943E-01	1.693E+00	1.766E-01	0.320
	1034.80			-1.909E+00	6.874E+00	1.099E+01	1.093E+00	-0.174
	1213.00			2.767E+00	3.808E+00	6.595E+00	5.453E-01	0.420
SB-127	61.10			1.986E+01	4.065E+01	6.174E+01	5.990E+00	0.322
	252.40			-1.800E+00	3.360E+00	5.149E+00	2.216E+00	-0.350

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		290.80	-2.734E+00	1.713E+01	2.494E+01	3.774E+00	-0.110
		411.60	1.437E+01	9.460E+00	1.610E+01	2.568E+00	0.893
		444.90	4.712E+00	7.008E+00	1.176E+01	1.526E+00	0.401
		473.00	8.484E-01	1.207E+00	2.020E+00	2.710E-01	0.420
		543.00	-9.993E+00	1.096E+01	1.718E+01	2.597E+00	-0.582
		603.60	2.613E+00	9.560E+00	1.389E+01	1.876E+00	0.188
		685.20	* -1.240E-01	9.041E-01	1.466E+00	1.860E-01	-0.085
		698.50	2.307E+00	1.130E+01	1.866E+01	3.138E+00	0.124
		722.20	5.731E+00	2.367E+01	3.386E+01	4.270E+00	0.169
		783.80	3.671E+00	2.598E+00	4.483E+00	6.227E-01	0.819
XE-127		57.60	-2.293E+00	4.785E+00	7.831E+00	5.625E-01	-0.293
		145.22	-4.235E-02	6.583E-01	1.073E+00	9.597E-02	-0.039
		172.10	-2.767E-02	1.099E-01	1.811E-01	1.813E-02	-0.153
		202.84	* 2.089E-02	4.655E-02	7.208E-02	7.990E-03	0.290
		374.96	-2.706E-02	1.769E-01	2.899E-01	2.952E-02	-0.093
I-131		80.18	-8.989E-02	3.824E+00	5.570E+00	4.845E-01	-0.016
		284.30	-1.983E-01	1.242E+00	1.968E+00	2.781E-01	-0.101
		364.48	* 2.623E-02	9.018E-02	1.513E-01	1.675E-02	0.173
		636.97	2.889E-01	1.182E+00	1.976E+00	2.150E-01	0.146
		722.89	1.049E+00	6.513E+00	9.245E+00	1.001E+00	0.113
TE-132		49.72	7.807E+00	1.200E+01	2.059E+01	2.069E+00	0.379
		111.76	2.292E+01	2.188E+01	3.605E+01	3.716E+00	0.636
		116.30	5.235E-01	1.982E+01	3.156E+01	3.239E+00	0.017
		228.16	* 2.697E-01	5.027E-01	8.312E-01	1.465E-01	0.324
BA-133		53.15	-1.107E+00	2.866E+00	4.668E+00	3.542E-01	-0.237
		79.62	1.676E-01	1.188E+00	1.744E+00	2.653E-01	0.096
		81.00	-3.161E-02	9.227E-02	1.322E-01	2.108E-02	-0.239
		276.40	8.572E-01	4.051E-01	5.946E-01	1.076E-01	1.442
		302.84	1.398E-01	1.451E-01	2.214E-01	3.692E-02	0.631
		356.01	* -2.097E-04	4.222E-02	6.075E-02	9.077E-03	-0.003
		383.85	2.765E-02	2.722E-01	4.506E-01	6.029E-02	0.061
I-133	+	510.53	5.751E-01	2.722E-01	Half-Life	too short	
		529.87	* -1.018E-03	2.722E-01	Half-Life	too short	
		706.58	-6.847E-02	2.722E-01	Half-Life	too short	
		856.28	-8.802E-03	2.722E-01	Half-Life	too short	
		875.33	2.194E-02	2.722E-01	Half-Life	too short	
		1236.41	4.693E-01	2.722E-01	Half-Life	too short	
		1298.22	8.486E-03	2.722E-01	Half-Life	too short	
CS-134		475.35	-1.421E+00	1.768E+00	2.664E+00	2.621E-01	-0.533
		563.23	-1.542E-02	3.086E-01	5.127E-01	5.289E-02	-0.030
		569.32	5.410E-02	1.684E-01	2.850E-01	2.956E-02	0.190
		604.70	1.715E-02	3.431E-02	5.062E-02	5.270E-03	0.339
		795.84	* 7.530E-02	4.119E-02	7.260E-02	8.035E-03	1.037
		801.93	-3.046E-01	3.775E-01	5.720E-01	6.334E-02	-0.533
		1038.57	-9.919E-01	3.144E+00	5.008E+00	4.958E-01	-0.198
		1167.94	-6.143E-01	1.959E+00	3.198E+00	2.599E-01	-0.192
		1365.15	4.778E-02	1.071E+00	1.767E+00	1.646E-01	0.027
CS-135		268.24	* 1.250E-01	1.700E-01	2.470E-01	3.573E-02	0.506
I-135		288.45	6.073E+08	1.700E-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			-6.739E+08	1.700E-01	Half-Life	too short	
	546.56			-3.988E+08	1.700E-01	Half-Life	too short	
	836.80			9.712E+08	1.700E-01	Half-Life	too short	
	1038.76			-2.375E+08	1.700E-01	Half-Life	too short	
	1124.00			4.885E+09	1.700E-01	Half-Life	too short	
	1131.51			1.670E+08	1.700E-01	Half-Life	too short	
	1260.41	*		-1.744E+08	1.700E-01	Half-Life	too short	
	1457.56			3.727E+10	1.700E-01	Half-Life	too short	
	1678.03			-1.286E+08	1.700E-01	Half-Life	too short	
	1706.46			-2.997E+08	1.700E-01	Half-Life	too short	
	1791.20			-1.875E+08	1.700E-01	Half-Life	too short	
CS-136	66.91			-6.955E-01	6.977E-01	9.730E-01	1.447E-01	-0.715
+	86.29			2.593E+00	1.195E+00	1.663E+00	2.213E-01	1.559
	153.22			5.764E-01	5.688E-01	9.794E-01	1.000E-01	0.588
	163.89			-5.818E-01	1.000E+00	1.598E+00	1.701E-01	-0.364
	176.55			1.410E-01	3.216E-01	5.413E-01	5.728E-02	0.261
	273.65			-5.206E-01	4.811E-01	6.216E-01	8.793E-02	-0.838
	340.57			6.541E-01	1.512E-01	2.337E-01	2.799E-02	2.799
	818.51			4.774E-02	6.022E-02	1.051E-01	1.165E-02	0.454
	1048.07	*		-1.189E-02	8.222E-02	1.327E-01	1.342E-02	-0.090
	1235.34			8.908E-01	5.304E-01	8.439E-01	9.860E-02	1.056
CE-139	165.85	*		-6.897E-03	2.818E-02	4.660E-02	4.570E-03	-0.148
BA-140	162.64			-2.666E-01	6.994E-01	1.127E+00	1.140E-01	-0.237
	304.84			4.805E-01	1.178E+00	1.752E+00	5.212E-01	0.274
	423.70			1.101E+00	1.616E+00	2.665E+00	8.708E-01	0.413
	537.32	*		-1.032E-02	2.062E-01	3.440E-01	1.155E-01	-0.030
LA-140	328.77			4.909E-01	2.615E-01	4.555E-01	5.754E-02	1.078
	432.53			9.612E-01	1.693E+00	2.839E+00	2.827E-01	0.339
	487.03			1.266E-01	1.136E-01	1.936E-01	2.007E-02	0.654
	751.79			-9.379E-01	1.447E+00	2.242E+00	2.608E-01	-0.418
	815.85			-3.307E-02	2.638E-01	4.377E-01	5.191E-02	-0.076
	867.82			-5.422E-01	1.289E+00	1.753E+00	2.020E-01	-0.309
	919.63			1.920E+00	2.287E+00	3.514E+00	4.459E-01	0.547
	925.24			-4.472E-01	8.779E-01	1.395E+00	1.594E-01	-0.321
	1596.49	*		-1.618E-02	7.958E-02	1.302E-01	1.141E-02	-0.124
CE-141	145.44	*		7.137E-03	5.756E-02	9.726E-02	8.854E-03	0.073
CE-143	57.37			-2.587E-04	5.756E-02	Half-Life	too short	
	231.56			-9.799E-04	5.756E-02	Half-Life	too short	
	293.26	*		4.573E-04	5.756E-02	Half-Life	too short	
+	350.59			1.957E-02	5.756E-02	Half-Life	too short	
	490.36			1.344E-04	5.756E-02	Half-Life	too short	
	664.57			1.390E-03	5.756E-02	Half-Life	too short	
	721.93			1.526E-04	5.756E-02	Half-Life	too short	
CE-144	80.11			-8.049E-02	1.946E+00	2.833E+00	2.449E-01	-0.028
	133.54	*		-8.882E-02	2.100E-01	3.074E-01	4.772E-02	-0.289
PM-144	476.78			-2.269E-02	6.124E-02	9.484E-02	1.001E-02	-0.239
	618.01			7.513E-03	2.829E-02	4.535E-02	4.821E-03	0.166
	696.49	*		4.713E-03	3.127E-02	5.152E-02	5.510E-03	0.091
	778.57			-1.832E+00	2.087E+00	3.162E+00	3.470E-01	-0.579

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144		696.49	*	3.191E-01	2.118E+00	3.489E+00	3.731E-01	0.091
		1489.15		-6.024E+00	8.967E+00	1.332E+01	1.186E+00	-0.452
PM-146		453.90	*	1.920E-02	3.962E-02	6.423E-02	7.465E-03	0.299
		633.02		-2.901E-01	1.174E+00	1.897E+00	7.180E-01	-0.153
		735.90		3.504E-02	1.297E-01	2.043E-01	5.995E-02	0.172
		747.13		6.600E-03	7.754E-02	1.265E-01	1.965E-02	0.052
ND-147	+	91.11		4.349E-01	2.166E-01	4.456E-01	4.402E-02	0.976
		319.41		3.220E-01	2.678E+00	4.503E+00	5.700E-01	0.071
		439.89		-1.908E+00	4.728E+00	7.520E+00	7.241E-01	-0.254
		531.02	*	-2.538E-02	4.471E-01	7.466E-01	1.184E-01	-0.034
PM-149		285.90	*	3.361E+01	5.863E+01	9.554E+01	1.807E+01	0.352
EU-152		121.78		2.277E-02	7.019E-02	1.098E-01	1.054E-02	0.207
		244.69		2.122E-01	3.497E-01	5.099E-01	6.456E-02	0.416
		344.27	*	-1.039E-01	1.026E-01	1.374E-01	1.651E-02	-0.756
		443.98		-3.837E-01	8.602E-01	1.364E+00	1.317E-01	-0.281
		778.89		-1.572E-01	2.366E-01	3.643E-01	3.998E-02	-0.432
		867.32		-6.467E-01	8.419E-01	1.101E+00	1.230E-01	-0.587
		964.01		6.051E-01	2.920E-01	4.722E-01	5.039E-02	1.281
		1085.78		3.445E-01	3.530E-01	6.106E-01	5.690E-02	0.564
		1112.02		-1.161E-02	3.169E-01	4.521E-01	4.051E-02	-0.026
		1407.95		5.243E-02	1.979E-01	3.150E-01	2.817E-02	0.166
GD-153		69.67		5.453E-01	1.511E+00	2.259E+00	1.754E-01	0.241
		83.37		1.285E+01	1.443E+01	2.136E+01	1.917E+00	0.602
		97.43	*	-5.625E-02	8.130E-02	1.126E-01	9.900E-03	-0.500
		103.18		-1.278E-01	9.630E-02	1.457E-01	1.245E-02	-0.877
EU-154		123.07		-2.371E-02	5.163E-02	7.600E-02	8.431E-03	-0.312
		247.94		-1.034E-02	3.596E-01	5.359E-01	7.965E-02	-0.019
		591.81		-6.160E-01	6.323E-01	8.643E-01	1.124E-01	-0.713
		723.30		1.427E-01	1.760E-01	2.625E-01	3.027E-02	0.544
		756.87		3.906E-01	6.910E-01	1.156E+00	1.586E-01	0.338
		873.19		8.082E-02	2.438E-01	4.137E-01	5.858E-02	0.195
		996.32		-2.421E-01	3.307E-01	5.100E-01	9.522E-02	-0.475
		1004.76		-1.892E-01	1.946E-01	2.952E-01	3.811E-02	-0.641
		1274.45	*	-1.649E-01	1.133E-01	1.655E-01	1.870E-02	-0.996
EU-155		48.70		-2.920E-01	2.007E+00	3.357E+00	2.734E-01	-0.087
		60.01		2.910E+00	4.337E+00	6.652E+00	4.724E-01	0.437
	+	86.54		2.548E-01	1.150E-01	1.637E-01	1.539E-02	1.557
		105.31	*	8.651E-02	1.034E-01	1.676E-01	1.439E-02	0.516
TB-160	+	86.79		6.732E-01	3.036E-01	4.315E-01	4.036E-02	1.560
		197.04		-3.434E-01	5.466E-01	8.513E-01	9.258E-02	-0.403
		215.65		5.252E-01	7.439E-01	1.158E+00	1.338E-01	0.454
		298.57		2.105E-01	1.057E-01	1.840E-01	2.466E-02	1.144
		879.36	*	-1.354E-01	1.124E-01	1.685E-01	1.884E-02	-0.804
		962.29		7.457E-01	4.949E-01	7.824E-01	8.361E-02	0.953
		966.15		1.438E+00	2.867E-01	4.666E-01	4.970E-02	3.081
		1177.93		-4.324E-02	2.968E-01	4.903E-01	3.957E-02	-0.088
		1271.85		-7.952E-03	6.010E-01	9.940E-01	8.542E-02	-0.008
HO-166M		80.57		3.253E-02	2.511E-01	3.681E-01	3.198E-02	0.088
		184.41		1.022E-01	4.244E-02	6.665E-02	6.948E-03	1.533



## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		280.46		-1.354E-01	8.170E-02	1.169E-01	1.633E-02	-1.157
		410.95		3.458E-01	2.314E-01	4.008E-01	3.783E-02	0.863
		711.68	*	-1.566E-02	5.226E-02	8.355E-02	8.982E-03	-0.187
		752.31		-2.652E-01	2.476E-01	3.706E-01	4.037E-02	-0.716
		810.29		-4.978E-02	5.096E-02	7.952E-02	8.791E-03	-0.626
		51.35		-1.746E+01	2.436E+01	3.969E+01	3.096E+00	-0.440
		52.39		-7.240E+00	1.264E+01	2.045E+01	1.570E+00	-0.354
		59.40		1.800E+01	2.334E+01	3.597E+01	2.543E+00	0.500
		66.72	*	-2.649E+01	2.679E+01	3.770E+01	2.849E+00	-0.702
		88.36		5.021E-01	2.264E-01	3.240E-01	3.064E-02	1.550
LU-176	+	201.83		-5.260E-03	2.741E-02	4.472E-02	4.941E-03	-0.118
		306.84	*	-6.948E-03	2.280E-02	3.676E-02	4.822E-03	-0.189
		401.10		-1.744E-01	6.271E+00	1.028E+01	9.633E-01	-0.017
LU-177		112.95		4.213E-01	1.367E+00	2.204E+00	1.832E-01	0.191
	+	208.36	*	3.054E+00	1.482E+00	1.648E+00	1.860E-01	1.854
LU-177M		52.97		-5.900E-01	1.293E+00	2.101E+00	1.598E-01	-0.281
		54.07		2.928E-01	6.722E-01	1.128E+00	8.447E-02	0.260
		61.30		8.823E-01	1.305E+00	1.997E+00	1.437E-01	0.442
		121.62		1.162E-01	3.581E-01	5.603E-01	4.615E-02	0.207
		147.16		1.480E-01	5.983E-01	1.014E+00	9.141E-02	0.146
		171.86		-4.425E-02	4.531E-01	7.511E-01	7.511E-02	-0.059
		218.09		-1.832E-01	8.119E-01	1.314E+00	1.531E-01	-0.139
		268.79		1.241E+00	8.857E-01	1.315E+00	1.787E-01	0.944
		319.02		-5.160E-02	2.235E-01	3.702E-01	4.691E-02	-0.139
		367.43		-3.407E-01	7.859E-01	1.271E+00	1.342E-01	-0.268
HF-181		413.65	*	-2.495E-01	1.674E-01	2.514E-01	2.377E-02	-0.993
		56.28		-3.587E-01	7.373E-01	1.207E+00	8.795E-02	-0.297
		57.53		-2.091E-01	4.050E-01	6.620E-01	4.758E-02	-0.316
		65.20		-5.782E-01	8.679E-01	1.243E+00	9.268E-02	-0.465
		133.02		-2.489E-02	6.704E-02	9.759E-02	8.318E-03	-0.255
		136.25		1.159E-01	4.070E-01	6.942E-01	5.988E-02	0.167
		345.85		-3.363E-02	2.021E-01	2.719E-01	3.144E-02	-0.124
		482.03	*	1.520E-02	3.584E-02	5.925E-02	5.849E-03	0.257
		56.28		-1.421E-01	2.923E-01	4.787E-01	3.487E-02	-0.297
		57.53		-8.303E-02	1.607E-01	2.627E-01	1.888E-02	-0.316
TA-182		65.20	*	-2.276E-01	3.417E-01	4.894E-01	3.648E-02	-0.465
		67.75		-5.420E-02	9.277E-02	1.486E-01	1.133E-02	-0.365
		100.10		2.159E-01	1.563E-01	2.625E-01	2.275E-02	0.823
W-181		152.43		1.565E-02	3.028E-01	5.089E-01	4.695E-02	0.031
		222.10		1.241E-01	3.239E-01	5.353E-01	6.317E-02	0.232
		1001.68		1.244E+00	1.848E+00	3.012E+00	3.104E-01	0.413
	+	1121.28		6.484E-01	2.038E-01	2.946E-01	2.601E-02	2.201
		1189.05		-1.499E-01	2.621E-01	4.203E-01	3.418E-02	-0.357
		1221.42	*	2.073E-02	1.599E-01	2.679E-01	2.228E-02	0.077
		1230.97		-1.144E-01	4.247E-01	5.833E-01	4.882E-02	-0.196
		57.98		4.184E-02	1.643E-01	2.637E-01	1.887E-02	0.159
		59.32		7.452E-02	9.503E-02	1.466E-01	1.037E-02	0.508
		67.20		-1.991E-01	1.759E-01	2.627E-01	1.993E-02	-0.758
RE-183		162.32	*	-7.113E-03	1.073E-01	1.747E-01	1.686E-02	-0.041

---- 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		3.073E+00	1.491E+00	1.667E+00	1.884E-01	1.844
		291.72		6.317E-02	9.283E-01	1.369E+00	1.865E-01	0.046
		57.98		1.553E-01	6.096E-01	9.786E-01	7.003E-02	0.159
		59.32		2.763E-01	3.523E-01	5.434E-01	3.844E-02	0.508
		67.20		-7.386E-01	6.525E-01	9.744E-01	7.394E-02	-0.758
		161.27		9.087E-02	3.389E-01	5.709E-01	5.481E-02	0.159
		216.55		8.575E-02	2.504E-01	4.140E-01	4.799E-02	0.207
		252.85	*	-5.864E-02	2.115E-01	3.368E-01	4.370E-02	-0.174
		318.01		-1.084E-01	3.841E-01	6.346E-01	8.066E-02	-0.171
		792.07		-1.357E-01	8.776E-01	1.402E+00	1.543E-01	-0.097
OS-185		903.28		7.221E-02	9.777E-01	1.394E+00	1.556E-01	0.052
		920.93		1.457E-01	4.098E-01	6.007E-01	6.629E-02	0.243
		59.72		1.575E-01	2.558E-01	3.917E-01	2.773E-02	0.402
		61.14		7.082E-02	1.423E-01	2.163E-01	1.554E-02	0.327
		69.30		-4.372E-02	2.740E-01	4.011E-01	3.103E-02	-0.109
		592.07		-2.228E+00	2.452E+00	3.520E+00	3.643E-01	-0.633
		646.12	*	3.030E-02	3.862E-02	6.577E-02	6.912E-03	0.461
		717.42		-6.613E-01	8.121E-01	1.187E+00	1.279E-01	-0.557
		874.81		2.404E-01	4.625E-01	7.948E-01	8.882E-02	0.302
		880.27		-4.214E-01	6.211E-01	9.778E-01	1.094E-01	-0.431
RE-188		155.03	*	8.748E-02	1.578E-01	2.688E-01	2.509E-02	0.325
		477.96		5.405E-01	2.603E+00	4.255E+00	4.191E-01	0.127
		633.10		-3.186E-01	2.325E+00	3.801E+00	3.982E-01	-0.084
W-188	+	63.58		6.456E+01	6.286E+01	7.959E+01	5.848E+00	0.811
		227.08		9.989E-01	1.195E+01	1.951E+01	2.339E+00	0.051
IR-192	+	290.67	*	-1.344E+00	7.274E+00	1.057E+01	1.444E+00	-0.127
		295.96		1.234E+00	2.240E-01	2.548E-01	3.447E-02	4.843
		308.46		-2.187E-02	8.458E-02	1.403E-01	1.837E-02	-0.156
		316.51	*	-1.473E-02	2.982E-02	4.876E-02	6.232E-03	-0.302
		468.07		4.886E-03	6.721E-02	9.441E-02	9.767E-03	0.052
		604.41		1.351E-01	4.611E-01	6.705E-01	9.557E-02	0.201
		612.46		4.980E+00	1.056E+00	1.640E+00	1.886E-01	3.036
AU-195		65.12		-1.256E-01	1.600E-01	2.280E-01	1.698E-02	-0.551
		66.83		-8.807E-02	8.822E-02	1.241E-01	9.386E-03	-0.710
	+	75.70		1.315E+00	2.414E-01	4.022E-01	3.314E-02	3.270
TL-200		98.88	*	2.728E-01	2.108E-01	3.383E-01	2.950E-02	0.806
	+	129.76		6.998E+00	4.584E+00	4.853E+00	4.090E-01	1.442
		367.94	*	-6.079E-05	4.584E+00	Half-Life	too short	
		579.30		1.685E-03	4.584E+00	Half-Life	too short	
		828.27		2.530E-04	4.584E+00	Half-Life	too short	
TL-201		1205.75		-1.699E-04	4.584E+00	Half-Life	too short	
		68.90		1.708E-01	3.137E+00	4.941E+00	3.808E-01	0.035
		70.82		3.043E-01	1.903E+00	2.819E+00	2.212E-01	0.108
		80.30		8.257E-02	3.519E+00	5.135E+00	4.448E-01	0.016
		135.34		1.365E+01	1.799E+01	3.017E+01	2.594E+00	0.452
TL-202		167.43	*	7.663E-01	5.081E+00	8.509E+00	8.387E-01	0.090
		68.90		1.887E-02	3.467E-01	5.460E-01	4.208E-02	0.035
		70.82		3.353E-02	2.097E-01	3.107E-01	2.438E-02	0.108
		80.30		9.102E-03	3.879E-01	5.661E-01	4.904E-02	0.016

---- 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	*	-2.606E-02	5.630E-02	8.923E-02	8.589E-03	-0.292
		70.83		1.539E-01	9.558E-01	1.416E+00	1.859E-01	0.109
		72.87		8.502E-01	5.950E-01	8.966E-01	1.148E-01	0.948
		82.60		-1.976E-01	9.991E-01	1.509E+00	2.099E-01	-0.131
BI-207		279.20	*	2.159E-02	3.707E-02	6.065E-02	8.584E-03	0.356
		72.80		2.131E-01	1.746E-01	2.642E-01	2.113E-02	0.806
	+	74.97		7.329E-01	1.345E-01	2.011E-01	1.644E-02	3.645
		84.90		2.464E-01	1.856E-01	2.782E-01	2.543E-02	0.886
TL-207		569.67		1.580E-02	2.596E-02	4.454E-02	4.575E-03	0.355
		1063.62	*	2.957E-02	4.530E-02	7.711E-02	7.403E-03	0.383
		1770.23		1.224E+00	5.032E-01	9.443E-01	7.850E-02	1.296
		81.07		-7.374E-02	2.033E-01	2.915E-01	2.547E-02	-0.253
		83.78		6.248E-02	1.248E-01	1.823E-01	1.644E-02	0.343
		94.90		6.334E-01	2.335E-01	3.656E-01	3.268E-02	1.733
		122.32		4.425E-01	1.686E+00	2.632E+00	2.343E-01	0.168
		144.24		1.436E-01	6.628E-01	1.090E+00	1.080E-01	0.132
		154.21		2.812E-01	3.662E-01	6.270E-01	6.334E-02	0.448
	+	269.46		5.286E-01	2.632E-01	3.181E-01	4.369E-02	1.661
PO-209		323.87	*	-1.165E+00	6.428E-01	9.187E-01	1.826E-01	-1.268
	+	338.28		6.886E+00	1.932E+00	2.200E+00	3.253E-01	3.131
		445.03		1.377E+00	2.029E+00	3.406E+00	4.376E-01	0.404
		260.50		-1.685E+00	8.882E+00	1.417E+01	1.880E+00	-0.119
		262.80		1.180E+01	2.476E+01	4.058E+01	5.422E+00	0.291
		896.60	*	-1.792E+00	6.406E+00	1.041E+01	1.167E+00	-0.172
BI-210		46.50	*	8.734E-01	2.930E+00	4.830E+00	4.488E-01	0.181
PB-210		46.50	*	8.734E-01	2.930E+00	4.830E+00	4.488E-01	0.181
PO-210		46.50	*	8.734E-01	2.930E+00	4.830E+00	4.062E-01	0.181
PB-211		404.84	*	-5.694E-01	9.591E-01	1.416E+00	8.891E-01	-0.402
BI-212		427.08		-1.752E+00	2.157E+00	2.887E+00	1.798E+00	-0.607
		831.96		-2.250E-01	1.090E+00	1.782E+00	1.124E+00	-0.126
	+	727.18	*	1.187E+00	4.280E-01	5.690E-01	6.797E-02	2.086
		785.46		1.896E+00	1.539E+00	2.656E+00	2.919E-01	0.714
		1620.62		8.821E-01	1.186E+00	2.104E+00	1.834E-01	0.419
	PO-215		81.07		-7.374E-02	2.033E-01	2.915E-01	2.547E-02
RN-219		83.78		6.248E-02	1.248E-01	1.823E-01	1.644E-02	0.343
		94.90		6.334E-01	2.335E-01	3.656E-01	3.268E-02	1.733
		122.32		4.425E-01	1.686E+00	2.632E+00	2.343E-01	0.168
		144.24		1.436E-01	6.628E-01	1.090E+00	1.080E-01	0.132
		154.21		2.812E-01	3.662E-01	6.270E-01	6.334E-02	0.448
	+	269.46		5.286E-01	2.632E-01	3.181E-01	4.369E-02	1.661
		323.87	*	-1.165E+00	6.428E-01	9.187E-01	1.826E-01	-1.268
	+	338.28		6.886E+00	1.932E+00	2.200E+00	3.253E-01	3.131
		445.03		1.377E+00	2.029E+00	3.406E+00	4.376E-01	0.404
	+	271.23		6.781E-01	3.397E-01	4.114E-01	6.094E-02	1.648
RA-223		401.81	*	9.497E-02	3.883E-01	6.441E-01	9.965E-02	0.147
	549.76	*	3.149E+01	2.089E+01	3.742E+01	3.814E+00	0.842	
	81.07		-7.374E-02	2.033E-01	2.915E-01	2.547E-02	-0.253	
	83.78		6.248E-02	1.248E-01	1.823E-01	1.644E-02	0.343	
	94.90		6.334E-01	2.335E-01	3.656E-01	3.268E-02	1.733	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		4.425E-01	1.686E+00	2.632E+00	2.343E-01	0.168
		144.24		1.436E-01	6.628E-01	1.090E+00	1.080E-01	0.132
		154.21		2.812E-01	3.662E-01	6.270E-01	6.334E-02	0.448
	+	269.46		5.286E-01	2.632E-01	3.181E-01	4.369E-02	1.661
		323.87	*	-1.165E+00	6.428E-01	9.187E-01	1.826E-01	-1.268
	+	338.28		6.886E+00	1.932E+00	2.200E+00	3.253E-01	3.131
		445.03		1.377E+00	2.029E+00	3.406E+00	4.376E-01	0.404
		79.80		8.581E-03	1.501E+00	2.191E+00	4.710E-01	0.004
		236.00		1.097E+00	3.035E-01	4.312E-01	6.505E-02	2.545
		256.20	*	2.286E-01	3.431E-01	5.653E-01	1.031E-01	0.404
TH-227		286.10		6.283E-01	1.436E+00	2.332E+00	3.974E-01	0.269
	+	299.80		3.326E+00	1.823E+00	2.375E+00	4.811E-01	1.400
		304.40		1.666E-01	1.866E+00	2.743E+00	5.754E-01	0.061
		334.20		-1.663E+00	2.414E+00	3.312E+00	7.012E-01	-0.502
		79.80		8.581E-03	1.501E+00	2.191E+00	4.770E-01	0.004
	+	94.00		1.058E+01	3.679E+00	3.616E+00	7.930E-01	2.926
		236.00		1.097E+00	2.980E-01	4.312E-01	6.103E-02	2.545
		256.20	*	2.286E-01	3.438E-01	5.653E-01	1.164E-01	0.404
		286.10		6.283E-01	1.566E+00	2.332E+00	2.354E+00	0.269
	+	299.80		3.326E+00	1.823E+00	2.375E+00	4.811E-01	1.400
TH-229		304.40		1.666E-01	1.866E+00	2.743E+00	5.754E-01	0.061
		334.20		-1.663E+00	2.414E+00	3.312E+00	7.012E-01	-0.502
	+	85.43		4.747E-01	2.141E-01	2.882E-01	2.652E-02	1.647
	+	88.47		1.862E-01	9.252E-02	1.857E-01	1.754E-02	1.003
		100.00		2.161E-01	1.645E-01	2.758E-01	2.391E-02	0.784
		193.63	*	1.350E-01	4.744E-01	7.895E-01	8.488E-02	0.171
		210.97		9.307E-01	8.049E-01	1.211E+00	1.378E-01	0.769
	PA-231	283.67	*	5.475E-02	1.386E+00	2.218E+00	4.142E-01	0.025
	+	301.29		1.330E+00	7.102E-01	9.556E-01	1.519E-01	1.392
	TH-231	81.07		-7.374E-02	2.033E-01	2.915E-01	2.547E-02	-0.253
U-231		83.78		6.248E-02	1.248E-01	1.823E-01	1.644E-02	0.343
		94.90		6.334E-01	2.335E-01	3.656E-01	3.268E-02	1.733
		122.32		4.425E-01	1.686E+00	2.632E+00	2.343E-01	0.168
		144.24		1.436E-01	6.628E-01	1.090E+00	1.080E-01	0.132
		154.21		2.812E-01	3.662E-01	6.270E-01	6.334E-02	0.448
	+	269.46		5.286E-01	2.632E-01	3.181E-01	4.369E-02	1.661
		323.87	*	-1.165E+00	6.428E-01	9.187E-01	1.826E-01	-1.268
	+	338.28		6.886E+00	1.932E+00	2.200E+00	3.253E-01	3.131
		445.03		1.377E+00	2.029E+00	3.406E+00	4.376E-01	0.404
	+	84.21		4.810E+00	4.315E+00	6.432E+00	5.830E-01	0.748
PA-233		92.29		8.565E+00	2.436E+00	3.170E+00	2.891E-01	2.702
		95.87	*	2.703E-01	8.756E-01	1.277E+00	1.134E-01	0.212
		108.00		-7.785E-01	1.636E+00	2.571E+00	2.161E-01	-0.303
	+	75.28		2.139E+01	4.773E+00	6.084E+00	9.197E-01	3.516
	+	86.59		4.144E+00	2.145E+00	2.661E+00	7.199E-01	1.557
	+	300.12		9.272E-01	5.011E-01	6.560E-01	1.183E-01	1.413
		311.98	*	-1.507E-02	5.675E-02	9.402E-02	1.232E-02	-0.160
		340.50		3.524E+00	1.113E+00	1.222E+00	3.076E-01	2.883
		398.62		-3.210E-01	1.958E+00	3.096E+00	8.320E-01	-0.104

---- 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		6.964E-02	1.496E+00	2.453E+00	5.374E-01	0.028
		63.00		1.895E+00	1.861E+00	2.364E+00	3.502E-01	0.802
		94.67		5.979E-01	1.823E-01	2.747E-01	3.472E-02	2.176
		98.44		6.735E-02	9.928E-02	1.365E-01	7.619E-02	0.493
		99.86		5.855E-01	4.182E-01	7.025E-01	6.095E-02	0.833
		111.00		8.157E-02	1.826E-01	2.893E-01	3.441E-02	0.282
		131.20		6.854E-02	1.106E-01	1.681E-01	1.424E-02	0.408
		152.70		1.294E-01	2.964E-01	5.027E-01	8.730E-02	0.257
	+	186.00		7.399E+00	3.113E+00	2.563E+00	8.146E-01	2.887
		226.40		-2.267E-01	3.816E-01	6.043E-01	9.423E-02	-0.375
		227.20		1.724E-01	4.070E-01	6.724E-01	8.064E-02	0.256
		248.90		2.087E-01	7.783E-01	1.226E+00	2.985E-01	0.170
		293.70		5.849E+00	1.457E+00	1.562E+00	3.158E-01	3.745
		369.80		-4.948E-01	7.605E-01	1.204E+00	2.715E-01	-0.411
		568.70		-5.617E-02	8.530E-01	1.415E+00	1.453E-01	-0.040
		569.50		1.425E-01	2.305E-01	3.957E-01	4.064E-02	0.360
		574.00		1.733E-02	1.291E+00	2.103E+00	2.163E-01	0.008
		699.00		2.472E-01	6.570E-01	1.092E+00	2.196E-01	0.226
		706.10		-9.366E-02	9.322E-01	1.511E+00	6.804E-01	-0.062
		733.00		1.162E-01	3.487E-01	5.001E-01	1.157E-01	0.232
		742.81		-4.764E-01	1.313E+00	1.849E+00	1.249E+00	-0.258
		796.30		1.629E+00	9.048E-01	1.424E+00	3.975E-01	1.144
		805.60		1.550E+00	9.952E-01	1.599E+00	5.025E-01	0.969
		819.60		8.090E-01	1.143E+00	1.916E+00	7.408E-01	0.422
		826.30		-6.057E-01	7.828E-01	1.162E+00	5.263E-01	-0.521
		831.60		-3.618E-01	5.706E-01	8.986E-01	2.755E-01	-0.403
		876.40		-1.075E-01	6.650E-01	1.076E+00	1.109E+00	-0.100
		880.51		-7.435E-02	2.251E-01	3.646E-01	4.077E-02	-0.204
		883.24		7.298E-02	2.358E-01	3.912E-01	2.644E-01	0.187
		899.00		-2.727E-01	7.394E-01	1.179E+00	5.222E-01	-0.231
		925.00		-7.461E-01	9.869E-01	1.536E+00	1.690E-01	-0.486
		926.50		-5.581E-02	1.467E-01	2.345E-01	6.140E-02	-0.238
		946.00	*	1.337E-01	2.530E-01	4.301E-01	8.548E-02	0.311
		949.00		2.585E-01	3.803E-01	6.538E-01	7.064E-02	0.395
		980.50		9.869E-02	5.818E-01	9.509E-01	1.000E-01	0.104
		1394.10		-7.011E-01	1.107E+00	1.541E+00	1.004E+00	-0.455
PA-234M		766.42		2.028E+01	1.503E+01	1.933E+01	9.894E+00	1.049
		1001.03	*	9.330E-01	4.283E+00	6.795E+00	7.787E-01	0.137
U-235	+	89.95		1.869E+00	1.081E+00	1.691E+00	5.251E-01	1.106
	+	93.35		3.292E+00	1.283E+00	1.212E+00	3.414E-01	2.715
		105.00		4.597E-01	1.017E+00	1.615E+00	4.815E-01	0.285
		143.76	*	4.743E-02	2.033E-01	3.345E-01	5.901E-02	0.142
		163.35		-4.610E-01	4.783E-01	7.421E-01	1.454E-01	-0.621
NP-236	+	185.71		2.740E-01	8.083E-02	9.520E-02	9.969E-03	2.879
		205.31		4.333E-03	5.681E-01	8.025E-01	1.634E-01	0.005
		94.67		4.568E-01	1.324E-01	2.087E-01	1.869E-02	2.189
		98.44		5.086E-02	6.961E-02	1.032E-01	9.021E-03	0.493
		111.00		6.170E-02	1.380E-01	2.188E-01	1.826E-02	0.282
		160.31	*	-4.568E-03	7.698E-02	1.285E-01	1.228E-02	-0.036

---- 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		1.977E-01	1.406E-01	2.361E-01	2.052E-02	0.837
		117.00	*	1.002E-01	1.746E-01	2.837E-01	2.345E-02	0.353
	+	209.75		2.453E+00	1.190E+00	1.290E+00	1.463E-01	1.902
		228.18		1.132E-01	2.119E-01	3.512E-01	4.225E-02	0.322
		277.60		1.770E-01	1.708E-01	2.826E-01	3.939E-02	0.626
AM-241		334.30		-6.321E-01	1.335E+00	1.875E+00	2.262E-01	-0.337
		59.54	*	1.015E-01	1.356E-01	2.087E-01	1.631E-02	0.486
CM-243		99.55		2.034E-01	1.447E-01	2.430E-01	2.111E-02	0.837
		103.76	*	-2.893E-02	8.836E-02	1.399E-01	1.193E-02	-0.207
		117.00		1.031E-01	1.797E-01	2.918E-01	2.412E-02	0.353
	+	209.75		2.418E+00	1.173E+00	1.272E+00	1.442E-01	1.902
		228.18		1.144E-01	2.141E-01	3.548E-01	4.269E-02	0.322
AM-246		277.60		1.785E-01	1.721E-01	2.848E-01	3.971E-02	0.626
		798.80		-1.440E-01	1.288E-01	1.907E-01	2.103E-02	-0.755
		1036.00		-1.719E-01	2.455E-01	3.782E-01	3.756E-02	-0.454
		1062.04		1.874E-01	1.932E-01	3.356E-01	3.228E-02	0.559
		1078.86	*	-4.748E-02	1.231E-01	1.945E-01	1.830E-02	-0.244
CM-247		278.00		7.866E-01	7.032E-01	1.166E+00	1.627E-01	0.675
		287.40		7.073E-01	1.157E+00	1.892E+00	2.603E-01	0.374
CF-249		402.60	*	2.840E-02	3.417E-02	5.807E-02	5.447E-03	0.489
		252.85		-2.211E-01	7.975E-01	1.270E+00	1.648E-01	-0.174
CF-251		333.44		-2.118E-01	1.830E-01	2.440E-01	2.952E-02	-0.868
		387.95	*	-2.330E-02	3.579E-02	5.693E-02	5.411E-03	-0.409
CF-251		176.60	*	5.393E-02	1.183E-01	1.991E-01	2.023E-02	0.271
		227.00		2.942E-03	3.618E-01	5.892E-01	7.062E-02	0.005
		285.00		2.359E-01	1.635E+00	2.628E+00	3.635E-01	0.090

## 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]G244132006             *
* Acquisition date   : 19-JAN-2010 09:54:05 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 02:00:02.15             Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID                 *
* Sample ID          : G244132006              Analyst initials: MXR1              *
* Batch Number       : 940270                  Sample Quantity : 1.2936E+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	2.192E+01	2.355E+00	4.609E-01	0.000E+00
CD-109	2.150E+00	9.502E-01	1.190E+00	0.000E+00
SN-126	2.117E-01	9.356E-02	1.284E-01	0.000E+00
BA-137M	8.010E-02	5.343E-02	4.975E-02	0.000E+00
CS-137	8.467E-02	5.649E-02	5.259E-02	0.000E+00
TL-208	5.223E-01	9.041E-02	5.048E-02	0.000E+00
BI-211	4.531E+00	6.411E-01	3.069E-01	0.000E+00
PB-212	1.722E+00	2.436E-01	8.281E-02	0.000E+00
PO-212	1.722E+00	2.436E-01	8.281E-02	0.000E+00
BI-214	1.147E+00	1.842E-01	9.902E-02	0.000E+00
PB-214	1.576E+00	2.371E-01	1.051E-01	0.000E+00
PO-214	1.576E+00	2.371E-01	1.051E-01	0.000E+00
PO-216	1.722E+00	2.436E-01	8.281E-02	0.000E+00
PO-218	1.576E+00	2.371E-01	1.051E-01	0.000E+00
RA-224	5.528E+00	1.438E+00	9.412E-01	0.000E+00
RA-226	1.147E+00	1.842E-01	9.902E-02	0.000E+00
AC-228	1.710E+00	3.592E-01	1.764E-01	0.000E+00
RA-228	1.710E+00	3.592E-01	1.764E-01	0.000E+00
TH-228	1.747E+00	2.470E-01	8.396E-02	0.000E+00
TH-230	1.147E+00	1.842E-01	9.902E-02	0.000E+00
TH-232	1.710E+00	3.592E-01	1.764E-01	0.000E+00
TH-234	1.626E+00	1.571E+00	1.840E+00	0.000E+00
U-234	1.147E+00	1.842E-01	9.902E-02	0.000E+00
NP-237	6.216E-01	3.021E-01	3.675E-01	0.000E+00
U-238	1.626E+00	1.571E+00	1.840E+00	0.000E+00
AM-243	4.083E-01	7.344E-02	7.951E-02	0.000E+00
ANH-511	1.481E-01	6.497E-02	3.859E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	-4.322E-02	2.713E-01	4.515E-01	0.000E+00	NOT IDENT.
NA-22	-5.948E-02	3.947E-02	5.925E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.715E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	4.957E-03	2.483E-02	4.261E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.115E-02	7.210E-02	0.000E+00	FAIL ABUN
SC-46	1.119E-03	3.306E-02	5.656E-02	0.000E+00	FAIL ABUN
V-48	1.256E-03	5.308E-02	8.975E-02	0.000E+00	NOT IDENT.
CR-51	4.660E-02	3.053E-01	5.378E-01	0.000E+00	NOT IDENT.
MN-52	6.810E-02	1.562E-01	2.725E-01	0.000E+00	NOT IDENT.
MN-54	3.202E-02	3.158E-02	5.704E-02	0.000E+00	NOT IDENT.
CO-56	9.383E-03	3.239E-02	5.657E-02	0.000E+00	NOT IDENT.
CO-57	5.104E-03	2.378E-02	3.933E-02	0.000E+00	NOT IDENT.
CO-58	-3.809E-02	3.314E-02	5.266E-02	0.000E+00	NOT IDENT.
FE-59	4.471E-02	8.031E-02	1.385E-01	0.000E+00	NOT IDENT.
CO-60	1.991E-03	3.116E-02	5.279E-02	0.000E+00	NOT IDENT.
ZN-65	4.032E-02	9.019E-02	1.329E-01	0.000E+00	NOT IDENT.
GE-68	-6.882E-01	1.051E+00	1.668E+00	0.000E+00	NOT IDENT.
AS-73	-1.742E-01	6.458E-01	1.136E+00	0.000E+00	NOT IDENT.
AS-74	3.294E-02	7.564E-02	1.327E-01	0.000E+00	NOT IDENT.
SE-75	-1.925E-02	4.641E-02	6.646E-02	0.000E+00	NOT IDENT.
BR-77	-3.308E+00	6.639E+00	1.038E+01	0.000E+00	FAIL ABUN
SR-82	-1.005E-01	3.241E-01	5.294E-01	0.000E+00	NOT IDENT.
RB-83	-3.396E-02	6.161E-02	9.593E-02	0.000E+00	NOT IDENT.
RB-84	3.154E-03	5.260E-02	9.026E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	7.990E+00	1.352E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.045E-02	6.844E-02	0.000E+00	NOT IDENT.
RB-86	-1.065E-02	6.191E-01	1.033E+00	0.000E+00	NOT IDENT.
Y-88	-8.146E-03	3.001E-02	4.373E-02	0.000E+00	NOT IDENT.
ZR-88	-5.947E-03	2.614E-02	4.431E-02	0.000E+00	NOT IDENT.
Y-91	6.273E+00	1.571E+01	2.740E+01	0.000E+00	NOT IDENT.
NB-94	2.124E-03	2.982E-02	5.049E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.001E-02	7.225E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.251E-01	1.988E-01	0.000E+00	NOT IDENT.
ZR-95	5.073E-02	6.048E-02	1.059E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.928E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.851E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.496E+00	7.021E+00	1.134E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.277E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-3.231E-02	3.217E-02	5.194E-02	0.000E+00	NOT IDENT.
RH-102	-6.210E-03	2.601E-02	4.225E-02	0.000E+00	NOT IDENT.
RU-103	1.354E-02	3.485E-02	5.947E-02	0.000E+00	FAIL ABUN
RH-106	-2.011E-01	2.756E-01	4.489E-01	0.000E+00	FAIL ABUN
RU-106	-2.011E-01	2.748E-01	4.489E-01	0.000E+00	FAIL ABUN
AG-108M	-3.063E-03	2.825E-02	4.766E-02	0.000E+00	NOT IDENT.
AG-110M	1.908E-02	3.420E-02	5.211E-02	0.000E+00	NOT IDENT.
IN-111	-3.495E-01	8.030E-01	1.160E+00	0.000E+00	NOT IDENT.
IN-113M	2.668E-02	3.742E-02	6.625E-02	0.000E+00	NOT IDENT.
SN-113	2.668E-02	3.742E-02	6.625E-02	0.000E+00	NOT IDENT.
IN-114M	1.010E-01	1.807E-01	2.832E-01	0.000E+00	NOT IDENT.
CD-115	-2.984E+00	6.237E+00	1.056E+01	0.000E+00	NOT IDENT.
SN-117M	2.428E-02	4.867E-02	8.733E-02	0.000E+00	NOT IDENT.
SB-122	-3.889E-01	1.258E+00	2.136E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.180E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	2.075E-02	2.662E-02	4.809E-02	0.000E+00	NOT IDENT.
I-124	3.536E-01	5.390E-01	8.324E-01	0.000E+00	FAIL ABUN
SB-124	4.297E-02	5.880E-02	1.077E-01	0.000E+00	FAIL ABUN
SB-125	-1.772E-02	7.961E-02	1.337E-01	0.000E+00	FAIL ABUN
TE-125M	-3.675E+00	8.983E+00	1.470E+01	0.000E+00	NOT IDENT.
I-126	1.090E-01	1.751E-01	2.669E-01	0.000E+00	NOT IDENT.
SB-126	4.794E-02	1.283E-01	1.909E-01	0.000E+00	FAIL ABUN
SB-127	-1.240E-01	8.860E-01	1.485E+00	0.000E+00	NOT IDENT.
XE-127	2.089E-02	4.562E-02	7.441E-02	0.000E+00	NOT IDENT.
I-131	2.623E-02	8.837E-02	1.548E-01	0.000E+00	NOT IDENT.
TE-132	2.697E-01	4.926E-01	8.566E-01	0.000E+00	NOT IDENT.
BA-133	-2.097E-04	4.137E-02	6.217E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.910E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.037E-02	7.335E-02	0.000E+00	NOT IDENT.
CS-135	1.250E-01	1.666E-01	2.539E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.256E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.189E-02	8.058E-02	1.335E-01	0.000E+00	FAIL ABUN
CE-139	-6.897E-03	2.761E-02	4.826E-02	0.000E+00	NOT IDENT.
BA-140	-1.032E-02	2.021E-01	3.498E-01	0.000E+00	NOT IDENT.
LA-140	-1.618E-02	7.799E-02	1.301E-01	0.000E+00	NOT IDENT.
CE-141	7.137E-03	5.641E-02	1.009E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.392E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.882E-02	2.058E-01	3.194E-01	0.000E+00	NOT IDENT.
PM-144	4.713E-03	3.065E-02	5.217E-02	0.000E+00	NOT IDENT.
PR-144	3.191E-01	2.075E+00	3.533E+00	0.000E+00	NOT IDENT.



PM-146	1.920E-02	3.883E-02	6.549E-02	0.000E+00	NOT IDENT.
ND-147	-2.538E-02	4.382E-01	7.592E-01	0.000E+00	FAIL ABUN
PM-149	3.361E+01	5.746E+01	9.812E+01	0.000E+00	NOT IDENT.
EU-152	-1.039E-01	1.006E-01	1.407E-01	0.000E+00	NOT IDENT.
GD-153	-5.625E-02	7.968E-02	1.175E-01	0.000E+00	NOT IDENT.
EU-154	-1.649E-01	1.110E-01	1.659E-01	0.000E+00	NOT IDENT.
EU-155	8.651E-02	1.014E-01	1.748E-01	0.000E+00	FAIL ABUN
TB-160	-1.354E-01	1.102E-01	1.700E-01	0.000E+00	FAIL ABUN
HO-166M	-1.566E-02	5.121E-02	8.457E-02	0.000E+00	NOT IDENT.
TM-171	-2.649E+01	2.625E+01	3.959E+01	0.000E+00	NOT IDENT.
LU-176	-6.948E-03	2.234E-02	3.771E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.452E+00	1.701E+00	0.000E+00	FAIL ABUN
LU-177M	-2.495E-01	1.641E-01	2.566E-01	0.000E+00	NOT IDENT.
HF-181	1.520E-02	3.513E-02	6.035E-02	0.000E+00	NOT IDENT.
W-181	-2.276E-01	3.348E-01	5.140E-01	0.000E+00	NOT IDENT.
TA-182	2.073E-02	1.567E-01	2.688E-01	0.000E+00	FAIL ABUN
RE-183	-7.113E-03	1.051E-01	1.810E-01	0.000E+00	FAIL ABUN
RE-184	-5.864E-02	2.073E-01	3.466E-01	0.000E+00	NOT IDENT.
OS-185	3.030E-02	3.785E-02	6.668E-02	0.000E+00	NOT IDENT.
RE-188	8.748E-02	1.547E-01	2.786E-01	0.000E+00	NOT IDENT.
W-188	-1.344E+00	7.129E+00	1.086E+01	0.000E+00	FAIL ABUN
IR-192	-1.473E-02	2.923E-02	4.999E-02	0.000E+00	FAIL ABUN
AU-195	2.728E-01	2.066E-01	3.531E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.835E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	7.663E-01	4.980E+00	8.811E+00	0.000E+00	NOT IDENT.
TL-202	-2.606E-02	5.518E-02	9.102E-02	0.000E+00	NOT IDENT.
HG-203	2.159E-02	3.633E-02	6.230E-02	0.000E+00	NOT IDENT.
BI-207	2.957E-02	4.440E-02	7.754E-02	0.000E+00	FAIL ABUN
TL-207	-1.165E+00	6.300E-01	9.416E-01	0.000E+00	FAIL ABUN
PO-209	-1.792E+00	6.278E+00	1.050E+01	0.000E+00	NOT IDENT.
BI-210	8.734E-01	2.872E+00	5.099E+00	0.000E+00	NOT IDENT.
PB-210	8.734E-01	2.872E+00	5.099E+00	0.000E+00	NOT IDENT.
PO-210	8.734E-01	2.871E+00	5.099E+00	0.000E+00	NOT IDENT.
PB-211	-5.694E-01	9.399E-01	1.447E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.195E-01	5.758E-01	0.000E+00	FAIL ABUN
PO-215	-1.165E+00	6.300E-01	9.416E-01	0.000E+00	FAIL ABUN
RN-219	9.497E-02	3.806E-01	6.579E-01	0.000E+00	FAIL ABUN
RN-220	3.149E+01	2.047E+01	3.803E+01	0.000E+00	NOT IDENT.
RA-223	-1.165E+00	6.300E-01	9.416E-01	0.000E+00	FAIL ABUN
AC-227	2.286E-01	3.362E-01	5.815E-01	0.000E+00	FAIL ABUN
TH-227	2.286E-01	3.369E-01	5.815E-01	0.000E+00	FAIL ABUN
TH-229	1.350E-01	4.649E-01	8.157E-01	0.000E+00	FAIL ABUN
PA-231	5.475E-02	1.358E+00	2.278E+00	0.000E+00	FAIL ABUN
TH-231	-1.165E+00	6.300E-01	9.416E-01	0.000E+00	FAIL ABUN
U-231	2.703E-01	8.581E-01	1.333E+00	0.000E+00	FAIL ABUN
PA-233	-1.507E-02	5.562E-02	9.642E-02	0.000E+00	FAIL ABUN
PA-234	1.337E-01	2.479E-01	4.333E-01	0.000E+00	FAIL ABUN
PA-234M	9.330E-01	4.198E+00	6.840E+00	0.000E+00	NOT IDENT.
U-235	4.743E-02	1.993E-01	3.471E-01	0.000E+00	FAIL ABUN
NP-236	-4.568E-03	7.544E-02	1.331E-01	0.000E+00	NOT IDENT.
NP-239	1.002E-01	1.711E-01	2.954E-01	0.000E+00	FAIL ABUN
AM-241	1.015E-01	1.329E-01	2.195E-01	0.000E+00	NOT IDENT.
CM-243	-2.893E-02	8.660E-02	1.460E-01	0.000E+00	FAIL ABUN
AM-246	-4.748E-02	1.207E-01	1.956E-01	0.000E+00	NOT IDENT.
CM-247	2.840E-02	3.349E-02	5.931E-02	0.000E+00	NOT IDENT.
CF-249	-2.330E-02	3.507E-02	5.818E-02	0.000E+00	NOT IDENT.
CF-251	5.393E-02	1.159E-01	2.060E-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]G244132006.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:54:05
Sample ID          : G244132006          Sample quantity  : 1.29360E+02 GRAM
Detector name      : GAM22              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:02.15  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID          : 940270              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	1539	10.67*	1.909E+00	2.192E+01	2.192E+01	10.96
CD-109	88.03	201	3.72*	7.457E+00	2.105E+00	2.150E+00	45.10
SN-126	64.28	91	9.60	4.270E+00	6.435E-01	6.435E-01	98.16
	86.94	201	8.90	7.457E+00	8.800E-01	8.800E-01	60.58
	87.57	201	37.00*	7.457E+00	2.117E-01	2.117E-01	45.10
BA-137M	661.65	89	89.98*	3.591E+00	8.003E-02	8.010E-02	68.07
CS-137	661.65	89	85.12*	3.591E+00	8.460E-02	8.467E-02	68.07
TL-208	277.35	-----	6.80	6.182E+00	-----	Line Not Found	-----
	510.84	219	21.60	4.298E+00	6.857E-01	6.857E-01	45.53
	583.14	596	84.20*	3.930E+00	5.223E-01	5.223E-01	17.66
	860.37	61	12.46	2.920E+00	4.878E-01	4.878E-01	84.05
BI-211	72.87	-----	1.27	5.897E+00	-----	Line Not Found	-----
	351.07	1091	12.94*	5.400E+00	4.531E+00	4.531E+00	14.44
PB-212	74.81	573	10.70	6.167E+00	2.519E+00	2.519E+00	20.59
	77.11	803	18.00	6.470E+00	2.001E+00	2.001E+00	14.14
	87.30	201	8.00	7.457E+00	9.791E-01	9.791E-01	46.19
	238.63	1776	44.60*	6.709E+00	1.722E+00	1.722E+00	14.43
	300.09	125	3.41	5.915E+00	1.795E+00	1.795E+00	53.00
PO-212	74.81	573	10.70	6.167E+00	2.519E+00	2.519E+00	20.59
	77.11	803	18.00	6.470E+00	2.001E+00	2.001E+00	14.14
	87.30	201	8.00	7.457E+00	9.791E-01	9.791E-01	46.19
	115.19	-----	0.60	8.535E+00	-----	Line Not Found	-----
	238.63	1776	44.60*	6.709E+00	1.722E+00	1.722E+00	14.43
	300.09	125	3.41	5.915E+00	1.795E+00	1.795E+00	53.00
BI-214	609.31	697	46.30*	3.811E+00	1.147E+00	1.147E+00	16.39
	1120.29	169	15.10	2.345E+00	1.381E+00	1.382E+00	32.11
	1764.49	163	15.80	1.716E+00	1.742E+00	1.742E+00	25.41
PB-214	74.81	573	6.21	6.167E+00	4.340E+00	4.340E+00	19.79
	77.11	803	10.50	6.470E+00	3.430E+00	3.430E+00	16.06
	87.30	201	4.67	7.457E+00	1.677E+00	1.677E+00	45.75
	241.98	502	7.49	6.665E+00	2.915E+00	2.915E+00	27.13
	295.21	646	19.20	5.970E+00	1.637E+00	1.637E+00	19.17

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	1091	37.20*	5.400E+00	1.576E+00	1.576E+00	15.35
	74.81	573	6.21	6.167E+00	4.340E+00	4.340E+00	19.79
	77.11	803	10.50	6.470E+00	3.430E+00	3.430E+00	16.06
	87.30	201	4.67	7.457E+00	1.677E+00	1.677E+00	45.75
	241.98	502	7.49	6.665E+00	2.915E+00	2.915E+00	27.13
PO-216	295.21	646	19.20	5.970E+00	1.637E+00	1.637E+00	19.17
	351.92	1091	37.20*	5.400E+00	1.576E+00	1.576E+00	15.35
	74.81	573	10.70	6.167E+00	2.519E+00	2.519E+00	20.59
	77.11	803	18.00	6.470E+00	2.001E+00	2.001E+00	14.14
	87.30	201	8.00	7.457E+00	9.791E-01	9.791E-01	46.19
PO-218	238.63	1776	44.60*	6.709E+00	1.722E+00	1.722E+00	14.43
	300.09	125	3.41	5.915E+00	1.795E+00	1.795E+00	53.00
	74.81	573	6.21	6.167E+00	4.340E+00	4.340E+00	19.79
	77.11	803	10.50	6.470E+00	3.430E+00	3.430E+00	16.06
	87.30	201	4.67	7.457E+00	1.677E+00	1.677E+00	45.75
RA-224	241.98	502	7.49	6.665E+00	2.915E+00	2.915E+00	27.13
	295.21	646	19.20	5.970E+00	1.637E+00	1.637E+00	19.17
	351.92	1091	37.20*	5.400E+00	1.576E+00	1.576E+00	15.35
	240.98	502	3.95*	6.665E+00	5.528E+00	5.528E+00	26.55
	609.31	697	46.30*	3.811E+00	1.147E+00	1.147E+00	16.39
AC-228	1120.29	169	15.10	2.345E+00	1.381E+00	1.381E+00	32.11
	1764.49	163	15.80	1.716E+00	1.742E+00	1.742E+00	25.41
	338.32	358	11.40	5.524E+00	1.649E+00	1.649E+00	48.36
	911.07	455	27.70*	2.788E+00	1.710E+00	1.710E+00	21.44
	969.11	227	16.60	2.648E+00	1.502E+00	1.502E+00	36.93
RA-228	338.32	358	11.40	5.524E+00	1.649E+00	1.649E+00	48.36
	911.07	455	27.70*	2.788E+00	1.710E+00	1.710E+00	21.44
	969.11	227	16.60	2.648E+00	1.502E+00	1.502E+00	36.93
	74.81	573	10.70	6.167E+00	2.519E+00	2.554E+00	18.39
	77.11	803	18.00	6.470E+00	2.001E+00	2.028E+00	14.14
TH-228	87.30	201	8.00	7.457E+00	9.791E-01	9.927E-01	45.10
	238.63	1776	44.60*	6.709E+00	1.722E+00	1.747E+00	14.43
	300.09	125	3.41	5.915E+00	1.795E+00	1.820E+00	78.83
	609.31	697	46.30*	3.811E+00	1.147E+00	1.147E+00	16.39
	1120.29	169	15.10	2.345E+00	1.381E+00	1.381E+00	32.11
TH-230	1764.49	163	15.80	1.716E+00	1.742E+00	1.742E+00	25.41
	338.32	358	11.40	5.524E+00	1.649E+00	1.649E+00	26.65
	911.07	455	27.70*	2.788E+00	1.710E+00	1.710E+00	21.44
	969.11	227	16.60	2.648E+00	1.502E+00	1.502E+00	36.93
	63.29	91	3.80*	4.270E+00	1.626E+00	1.626E+00	98.63
TH-232	92.38	401	5.41	7.865E+00	2.738E+00	2.738E+00	32.58
	609.31	697	46.30*	3.811E+00	1.147E+00	1.147E+00	16.39
	1120.29	169	15.10	2.345E+00	1.381E+00	1.381E+00	32.11
	1764.49	163	15.80	1.716E+00	1.742E+00	1.742E+00	25.41
	86.50	201	12.60*	7.457E+00	6.216E-01	6.216E-01	49.60
NP-237	95.87	-----	2.60	8.032E+00	-----	Line Not Found	-----
	63.29	91	3.80*	4.270E+00	1.626E+00	1.626E+00	98.63
	92.38	401	5.41	7.865E+00	2.738E+00	2.738E+00	28.44
	74.67	573	66.00*	6.167E+00	4.083E-01	4.083E-01	18.35

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	201	0.34	7.457E+00	2.331E+01	2.331E+01	45.10
	117.66	-----	0.55	8.550E+00	-----	Line Not Found	-----
	142.18	-----	0.13	8.387E+00	-----	Line Not Found	-----
ANH-511	511.00	219	100.00*	4.298E+00	1.481E-01	1.481E-01	44.76

Flag: "\*" = Keyline

Total number of lines in spectrum 31  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 29 93.55%

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	2.192E+01	2.192E+01	0.240E+01	10.96	
CD-109	464.00D	1.02	2.105E+00	2.150E+00	0.970E+00	45.10	
SN-126	1.00E+05Y	1.00	2.117E-01	2.117E-01	0.955E-01	45.10	
BA-137M	30.17Y	1.00	8.003E-02	8.010E-02	5.452E-02	68.07	
CS-137	30.17Y	1.00	8.460E-02	8.467E-02	5.764E-02	68.07	
TL-208	1.41E+10Y	1.00	5.223E-01	5.223E-01	0.923E-01	17.66	
BI-211	7.04E+08Y	1.00	4.531E+00	4.531E+00	0.654E+00	14.44	
PB-212	1.41E+10Y	1.00	1.722E+00	1.722E+00	0.249E+00	14.43	
PO-212	1.41E+10Y	1.00	1.722E+00	1.722E+00	0.249E+00	14.43	
BI-214	1600.00Y	1.00	1.147E+00	1.147E+00	0.188E+00	16.39	
PB-214	1600.00Y	1.00	1.576E+00	1.576E+00	0.242E+00	15.35	
PO-214	1600.00Y	1.00	1.576E+00	1.576E+00	0.242E+00	15.35	
PO-216	1.41E+10Y	1.00	1.722E+00	1.722E+00	0.249E+00	14.43	
PO-218	1600.00Y	1.00	1.576E+00	1.576E+00	0.242E+00	15.35	
RA-224	1.41E+10Y	1.00	5.528E+00	5.528E+00	1.468E+00	26.55	
RA-226	1600.00Y	1.00	1.147E+00	1.147E+00	0.188E+00	16.39	
AC-228	1.41E+10Y	1.00	1.710E+00	1.710E+00	0.367E+00	21.44	
RA-228	1.41E+10Y	1.00	1.710E+00	1.710E+00	0.367E+00	21.44	
TH-228	1.91Y	1.01	1.722E+00	1.747E+00	0.252E+00	14.43	
TH-230	4.47E+09Y	1.00	1.147E+00	1.147E+00	0.188E+00	16.39	
TH-232	1.41E+10Y	1.00	1.710E+00	1.710E+00	0.367E+00	21.44	
TH-234	4.47E+09Y	1.00	1.626E+00	1.626E+00	1.603E+00	98.63	
U-234	4.47E+09Y	1.00	1.147E+00	1.147E+00	0.188E+00	16.39	
NP-237	2.14E+06Y	1.00	6.216E-01	6.216E-01	3.083E-01	49.60	
U-238	4.47E+09Y	1.00	1.626E+00	1.626E+00	1.603E+00	98.63	
AM-243	7380.00Y	1.00	4.083E-01	4.083E-01	0.749E-01	18.35	
ANH-511	1.00E+09Y	1.00	1.481E-01	1.481E-01	0.663E-01	44.76	

Total Activity : 6.075E+01 6.082E+01

Grand Total Activity : 6.075E+01 6.082E+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	89.95	134	419	0.86	180.10	178	15	1.86E-02	48.8	7.68E+00	T
0	128.92	158	663	0.98	257.96	253	11	2.20E-02	65.0	8.53E+00	T
0	186.08	388	565	1.51	372.17	367	12	5.39E-02	27.6	7.60E+00	T
0	209.26	197	481	1.39	418.50	413	12	2.73E-02	47.2	7.18E+00	T
0	270.76	155	324	1.08	541.38	536	11	2.16E-02	47.9	6.26E+00	T
0	462.66	178	193	1.62	924.90	918	15	2.48E-02	37.0	4.58E+00	T
0	727.35	161	119	1.83	1453.97	1447	14	2.24E-02	34.0	3.34E+00	T
0	1239.87	185	87	3.10	2478.74	2466	28	2.57E-02	32.6	2.16E+00	
0	1510.28	34	25	1.47	3019.61	3012	13	4.76E-03	72.4	1.87E+00	T
0	1847.78	36	11	1.93	3694.83	3685	16	4.97E-03	48.5	1.69E+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]G244132006.CNF;1
* Acquisition date   : 19-JAN-2010 09:54:05   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 02:00:02.15           Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G244132006             Analyst initials: MXR1
* Batch Number       : 940270                 Sample Quantity : 1.29360E+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	2.192E+01	2.403E+00	4.606E-01	4.220E-02	47.593
CD-109	2.150E+00	9.696E-01	1.138E+00	1.080E-01	1.889
SN-126	2.117E-01	9.547E-02	1.228E-01	1.159E-02	1.724
BA-137M	8.010E-02	5.452E-02	4.910E-02	5.177E-03	1.631
CS-137	8.467E-02	5.764E-02	5.190E-02	5.480E-03	1.631
TL-208	5.223E-01	9.225E-02	4.972E-02	5.391E-03	10.505
BI-211	4.531E+00	6.541E-01	2.998E-01	3.498E-02	15.113
PB-212	1.722E+00	2.485E-01	8.041E-02	1.062E-02	21.422
PO-212	1.722E+00	2.485E-01	8.041E-02	1.062E-02	21.422
BI-214	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
PB-214	1.576E+00	2.420E-01	1.027E-01	1.309E-02	15.353
PO-214	1.576E+00	2.420E-01	1.027E-01	1.309E-02	15.353
PO-216	1.722E+00	2.485E-01	8.041E-02	1.062E-02	21.422
PO-218	1.576E+00	2.420E-01	1.027E-01	1.309E-02	15.353
RA-224	5.528E+00	1.468E+00	9.141E-01	1.144E-01	6.047
RA-226	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
AC-228	1.710E+00	3.665E-01	1.749E-01	2.318E-02	9.772
RA-228	1.710E+00	3.665E-01	1.749E-01	2.318E-02	9.772

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.747E+00	2.520E-01	8.153E-02	1.077E-02	21.422
TH-230	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
TH-232	1.710E+00	3.665E-01	1.749E-01	2.318E-02	9.772
TH-234	1.626E+00	1.603E+00	1.751E+00	3.048E-01	0.928
U-234	1.147E+00	1.880E-01	9.758E-02	1.135E-02	11.750
NP-237	6.216E-01	3.083E-01	3.514E-01	7.955E-02	1.769
U-238	1.626E+00	1.603E+00	1.751E+00	3.048E-01	0.928
AM-243	4.083E-01	7.494E-02	7.585E-02	6.183E-03	5.383
ANH-511	1.481E-01	6.629E-02	3.792E-02	3.800E-03	3.906

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.322E-02		2.768E-01	4.432E-01	4.625E-02	-0.098
NA-22	-5.948E-02		4.028E-02	5.909E-02	5.092E-03	-1.007
NA-24	-1.027E-01		8.752E-02	Half-Life too short		
AL-26	4.957E-03		2.533E-02	4.274E-02	3.496E-03	0.116
TI-44	3.692E-01	+	5.219E-02	6.883E-02	5.836E-03	5.363
SC-46	1.119E-03		3.373E-02	5.608E-02	6.277E-03	0.020
V-48	1.256E-03		5.416E-02	8.913E-02	9.347E-03	0.014
CR-51	4.660E-02		3.116E-01	5.246E-01	6.793E-02	0.089
MN-52	6.810E-02		1.594E-01	2.723E-01	2.434E-02	0.250
MN-54	3.202E-02		3.223E-02	5.649E-02	6.276E-03	0.567
CO-56	9.383E-03		3.306E-02	5.604E-02	6.238E-03	0.167
CO-57	5.104E-03		2.427E-02	3.780E-02	3.117E-03	0.135
CO-58	-3.809E-02		3.382E-02	5.214E-02	5.773E-03	-0.731
FE-59	4.471E-02		8.195E-02	1.378E-01	1.351E-02	0.324
CO-60	1.991E-03		3.180E-02	5.268E-02	4.698E-03	0.038
ZN-65	4.032E-02		9.203E-02	1.323E-01	1.180E-02	0.305
GE-68	-6.882E-01		1.073E+00	1.659E+00	1.564E-01	-0.415
AS-73	-1.742E-01		6.590E-01	1.079E+00	8.150E-02	-0.161
AS-74	3.294E-02		7.718E-02	1.307E-01	1.355E-02	0.252
SE-75	-1.925E-02		4.735E-02	6.464E-02	8.699E-03	-0.298
BR-77	-3.308E+00		6.774E+00	1.020E+01	1.027E+00	-0.324
SR-82	-1.005E-01		3.307E-01	5.237E-01	5.744E-02	-0.192
RB-83	-3.396E-02		6.286E-02	9.430E-02	9.490E-03	-0.360
RB-84	3.154E-03		5.368E-02	8.948E-02	1.001E-02	0.035
KR-85	3.120E+01		8.153E+00	1.329E+01	1.333E+00	2.349
SR-85	1.580E-01		4.128E-02	6.726E-02	6.749E-03	2.349
RB-86	-1.065E-02		6.317E-01	1.027E+00	9.692E-02	-0.010
Y-88	-8.146E-03		3.062E-02	4.388E-02	3.548E-03	-0.186
ZR-88	-5.947E-03		2.667E-02	4.336E-02	4.038E-03	-0.137
Y-91	6.273E+00		1.603E+01	2.730E+01	2.245E+00	0.230
NB-94	2.124E-03		3.043E-02	4.987E-02	5.345E-03	0.043
NB-95	7.984E-02		4.083E-02	7.146E-02	7.814E-03	1.117
NB-95M	2.323E-01		1.277E-01	1.930E-01	2.551E-02	1.204
ZR-95	5.073E-02		6.171E-02	1.048E-01	1.216E-02	0.484



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	1.699E-02		1.494E-02	Half-Life	too short	
ZR-97	1.761E+00		2.985E-01	Half-Life	too short	
MO-99	-3.496E+00		7.164E+00	1.121E+01	1.855E+00	-0.312
TC-99M	-6.496E+08		6.516E+08	Half-Life	too short	
RH-101	-3.231E-02		3.283E-02	5.029E-02	5.487E-03	-0.642
RH-102	-6.210E-03		2.654E-02	4.147E-02	4.078E-03	-0.150
RU-103	1.354E-02		3.557E-02	5.841E-02	8.767E-03	0.232
RH-106	-2.011E-01		2.812E-01	4.425E-01	6.461E-02	-0.454
RU-106	-2.011E-01		2.804E-01	4.425E-01	4.622E-02	-0.454
AG-108M	-3.063E-03		2.883E-02	4.672E-02	4.625E-03	-0.066
AG-110M	1.908E-02		3.490E-02	5.142E-02	5.526E-03	0.371
IN-111	-3.495E-01		8.194E-01	1.127E+00	1.429E-01	-0.310
IN-113M	2.668E-02		3.818E-02	6.483E-02	6.191E-03	0.412
SN-113	2.668E-02		3.818E-02	6.483E-02	6.191E-03	0.412
IN-114M	1.010E-01		1.844E-01	2.740E-01	2.913E-02	0.369
CD-115	-2.984E+00		6.364E+00	1.038E+01	1.049E+00	-0.287
SN-117M	2.428E-02		4.966E-02	8.427E-02	7.992E-03	0.288
SB-122	-3.889E-01		1.284E+00	2.102E+00	2.155E-01	-0.185
I-123	9.197E-01		6.019E-01	Half-Life	too short	
TE-123M	2.075E-02		2.716E-02	4.640E-02	4.431E-03	0.447
I-124	3.536E-01		5.500E-01	8.202E-01	8.519E-02	0.431
SB-124	4.297E-02		6.000E-02	1.079E-01	9.602E-03	0.398
SB-125	-1.772E-02		8.123E-02	1.310E-01	1.271E-02	-0.135
TE-125M	-3.675E+00		9.167E+00	1.411E+01	1.428E+00	-0.260
I-126	1.090E-01		1.787E-01	2.634E-01	2.783E-02	0.414
SB-126	4.794E-02		1.309E-01	1.887E-01	2.034E-02	0.254
SB-127	-1.240E-01		9.041E-01	1.466E+00	1.860E-01	-0.085
XE-127	2.089E-02		4.655E-02	7.208E-02	7.990E-03	0.290
I-131	2.623E-02		9.018E-02	1.513E-01	1.675E-02	0.173
TE-132	2.697E-01		5.027E-01	8.312E-01	1.465E-01	0.324
BA-133	-2.097E-04		4.222E-02	6.075E-02	9.077E-03	-0.003
I-133	-1.018E-03		9.747E-04	Half-Life	too short	
CS-134	7.530E-02		4.119E-02	7.260E-02	8.035E-03	1.037
CS-135	1.250E-01		1.700E-01	2.470E-01	3.573E-02	0.506
I-135	-1.744E+08		1.151E+08	Half-Life	too short	
CS-136	-1.189E-02		8.222E-02	1.327E-01	1.342E-02	-0.090
CE-139	-6.897E-03		2.818E-02	4.660E-02	4.570E-03	-0.148
BA-140	-1.032E-02		2.062E-01	3.440E-01	1.155E-01	-0.030
LA-140	-1.618E-02		7.958E-02	1.302E-01	1.141E-02	-0.124
CE-141	7.137E-03		5.756E-02	9.726E-02	8.854E-03	0.073
CE-143	4.573E-04		7.101E-05	Half-Life	too short	
CE-144	-8.882E-02		2.100E-01	3.074E-01	4.772E-02	-0.289
PM-144	4.713E-03		3.127E-02	5.152E-02	5.510E-03	0.091
PR-144	3.191E-01		2.118E+00	3.489E+00	3.731E-01	0.091
PM-146	1.920E-02		3.962E-02	6.423E-02	7.465E-03	0.299
ND-147	-2.538E-02		4.471E-01	7.466E-01	1.184E-01	-0.034
PM-149	3.361E+01		5.863E+01	9.554E+01	1.807E+01	0.352
EU-152	-1.039E-01		1.026E-01	1.374E-01	1.651E-02	-0.756

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-5.625E-02		8.130E-02	1.126E-01	9.900E-03	-0.500
EU-154	-1.649E-01		1.133E-01	1.655E-01	1.870E-02	-0.996
EU-155	8.651E-02		1.034E-01	1.676E-01	1.439E-02	0.516
TB-160	-1.354E-01		1.124E-01	1.685E-01	1.884E-02	-0.804
HO-166M	-1.566E-02		5.226E-02	8.355E-02	8.982E-03	-0.187
TM-171	-2.649E+01		2.679E+01	3.770E+01	2.849E+00	-0.702
LU-176	-6.948E-03		2.280E-02	3.676E-02	4.822E-03	-0.189
LU-177	3.054E+00	+	1.482E+00	1.648E+00	1.860E-01	1.854
LU-177M	-2.495E-01		1.674E-01	2.514E-01	2.377E-02	-0.993
HF-181	1.520E-02		3.584E-02	5.925E-02	5.849E-03	0.257
W-181	-2.276E-01		3.417E-01	4.894E-01	3.648E-02	-0.465
TA-182	2.073E-02		1.599E-01	2.679E-01	2.228E-02	0.077
RE-183	-7.113E-03		1.073E-01	1.747E-01	1.686E-02	-0.041
RE-184	-5.864E-02		2.115E-01	3.368E-01	4.370E-02	-0.174
OS-185	3.030E-02		3.862E-02	6.577E-02	6.912E-03	0.461
RE-188	8.748E-02		1.578E-01	2.688E-01	2.509E-02	0.325
W-188	-1.344E+00		7.274E+00	1.057E+01	1.444E+00	-0.127
IR-192	-1.473E-02		2.982E-02	4.876E-02	6.232E-03	-0.302
AU-195	2.728E-01		2.108E-01	3.383E-01	2.950E-02	0.806
TL-200	-6.079E-05		9.364E-05	Half-Life too short		
TL-201	7.663E-01		5.081E+00	8.509E+00	8.387E-01	0.090
TL-202	-2.606E-02		5.630E-02	8.923E-02	8.589E-03	-0.292
HG-203	2.159E-02		3.707E-02	6.065E-02	8.584E-03	0.356
BI-207	2.957E-02		4.530E-02	7.711E-02	7.403E-03	0.383
TL-207	-1.165E+00		6.428E-01	9.187E-01	1.826E-01	-1.268
PO-209	-1.792E+00		6.406E+00	1.041E+01	1.167E+00	-0.172
BI-210	8.734E-01		2.930E+00	4.830E+00	4.488E-01	0.181
PB-210	8.734E-01		2.930E+00	4.830E+00	4.488E-01	0.181
PO-210	8.734E-01		2.930E+00	4.830E+00	4.062E-01	0.181
PB-211	-5.694E-01		9.591E-01	1.416E+00	8.891E-01	-0.402
BI-212	1.187E+00	+	4.280E-01	5.690E-01	6.797E-02	2.086
PO-215	-1.165E+00		6.428E-01	9.187E-01	1.826E-01	-1.268
RN-219	9.497E-02		3.883E-01	6.441E-01	9.965E-02	0.147
RN-220	3.149E+01		2.089E+01	3.742E+01	3.814E+00	0.842
RA-223	-1.165E+00		6.428E-01	9.187E-01	1.826E-01	-1.268
AC-227	2.286E-01		3.431E-01	5.653E-01	1.031E-01	0.404
TH-227	2.286E-01		3.438E-01	5.653E-01	1.164E-01	0.404
TH-229	1.350E-01		4.744E-01	7.895E-01	8.488E-02	0.171
PA-231	5.475E-02		1.386E+00	2.218E+00	4.142E-01	0.025
TH-231	-1.165E+00		6.428E-01	9.187E-01	1.826E-01	-1.268
U-231	2.703E-01		8.756E-01	1.277E+00	1.134E-01	0.212
PA-233	-1.507E-02		5.675E-02	9.402E-02	1.232E-02	-0.160
PA-234	1.337E-01		2.530E-01	4.301E-01	8.548E-02	0.311
PA-234M	9.330E-01		4.283E+00	6.795E+00	7.787E-01	0.137
U-235	4.743E-02		2.033E-01	3.345E-01	5.901E-02	0.142
NP-236	-4.568E-03		7.698E-02	1.285E-01	1.228E-02	-0.036
NP-239	1.002E-01		1.746E-01	2.837E-01	2.345E-02	0.353
AM-241	1.015E-01		1.356E-01	2.087E-01	1.631E-02	0.486

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.893E-02		8.836E-02	1.399E-01	1.193E-02	-0.207
AM-246	-4.748E-02		1.231E-01	1.945E-01	1.830E-02	-0.244
CM-247	2.840E-02		3.417E-02	5.807E-02	5.447E-03	0.489
CF-249	-2.330E-02		3.579E-02	5.693E-02	5.411E-03	-0.409
CF-251	5.393E-02		1.183E-01	1.991E-01	2.023E-02	0.271

# 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]G244132006             *
* Acquisition date   : 19-JAN-2010 09:54:05 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 02:00:02.15                      Half life ratio : 8.000   *
*****
*                               SAMPLE DATA                               *
*                               *                                               *
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID         : G244132006                      Analyst initials: MXR1      *
* Batch Number      : 940270                          Sample Quantity : 1.2936E+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	2.192E+01	2.355E+00	2.306E-01	1.201E+00
CD-109	2.150E+00	9.502E-01	5.953E-01	4.848E-01
SN-126	2.117E-01	9.356E-02	6.424E-02	4.773E-02
BA-137M	8.010E-02	5.343E-02	2.489E-02	2.726E-02
CS-137	8.467E-02	5.649E-02	2.631E-02	2.882E-02
TL-208	5.223E-01	9.041E-02	2.526E-02	4.613E-02
BI-211	4.531E+00	6.411E-01	1.535E-01	3.271E-01
PB-212	1.722E+00	2.436E-01	4.143E-02	1.243E-01
PO-212	1.722E+00	2.436E-01	4.143E-02	1.243E-01
BI-214	1.147E+00	1.842E-01	4.954E-02	9.398E-02
PB-214	1.576E+00	2.371E-01	5.257E-02	1.210E-01
PO-214	1.576E+00	2.371E-01	5.257E-02	1.210E-01
PO-216	1.722E+00	2.436E-01	4.143E-02	1.243E-01
PO-218	1.576E+00	2.371E-01	5.257E-02	1.210E-01
RA-224	5.528E+00	1.438E+00	4.709E-01	7.338E-01
RA-226	1.147E+00	1.842E-01	4.954E-02	9.398E-02
AC-228	1.710E+00	3.592E-01	8.824E-02	1.833E-01
RA-228	1.710E+00	3.592E-01	8.824E-02	1.833E-01
TH-228	1.747E+00	2.470E-01	4.201E-02	1.260E-01
TH-230	1.147E+00	1.842E-01	4.954E-02	9.398E-02
TH-232	1.710E+00	3.592E-01	8.824E-02	1.833E-01
TH-234	1.626E+00	1.571E+00	9.205E-01	8.017E-01
U-234	1.147E+00	1.842E-01	4.954E-02	9.398E-02
NP-237	6.216E-01	3.021E-01	1.839E-01	1.541E-01
U-238	1.626E+00	1.571E+00	9.205E-01	8.017E-01
AM-243	4.083E-01	7.344E-02	3.978E-02	3.747E-02
ANH-511	1.481E-01	6.497E-02	1.931E-02	3.315E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-4.322E-02	2.713E-01	2.259E-01	1.384E-01	NOT IDENT.
NA-22	-5.948E-02	3.947E-02	2.964E-02	2.014E-02	NOT IDENT.
NA-24	-1.027E+05	1.715E+05	0.000E+00	8.752E+04	SHORT HLIF
AL-26	4.957E-03	2.483E-02	2.132E-02	1.267E-02	NOT IDENT.
TI-44	3.692E-01	5.115E-02	3.607E-02	2.609E-02	FAIL ABUN
SC-46	1.119E-03	3.306E-02	2.830E-02	1.687E-02	FAIL ABUN
V-48	1.256E-03	5.308E-02	4.490E-02	2.708E-02	NOT IDENT.
CR-51	4.660E-02	3.053E-01	2.690E-01	1.558E-01	NOT IDENT.
MN-52	6.810E-02	1.562E-01	1.363E-01	7.970E-02	NOT IDENT.
MN-54	3.202E-02	3.158E-02	2.854E-02	1.611E-02	NOT IDENT.
CO-56	9.383E-03	3.239E-02	2.830E-02	1.653E-02	NOT IDENT.
CO-57	5.104E-03	2.378E-02	1.968E-02	1.213E-02	NOT IDENT.
CO-58	-3.809E-02	3.314E-02	2.635E-02	1.691E-02	NOT IDENT.
FE-59	4.471E-02	8.031E-02	6.931E-02	4.097E-02	NOT IDENT.
CO-60	1.991E-03	3.116E-02	2.641E-02	1.590E-02	NOT IDENT.
ZN-65	4.032E-02	9.019E-02	6.650E-02	4.602E-02	NOT IDENT.
GE-68	-6.882E-01	1.051E+00	8.347E-01	5.365E-01	NOT IDENT.
AS-73	-1.742E-01	6.458E-01	5.684E-01	3.295E-01	NOT IDENT.
AS-74	3.294E-02	7.564E-02	6.640E-02	3.859E-02	NOT IDENT.
SE-75	-1.925E-02	4.641E-02	3.325E-02	2.368E-02	NOT IDENT.
BR-77	-3.308E+00	6.639E+00	5.192E+00	3.387E+00	FAIL ABUN
SR-82	-1.005E-01	3.241E-01	2.649E-01	1.653E-01	NOT IDENT.
RB-83	-3.396E-02	6.161E-02	4.799E-02	3.143E-02	NOT IDENT.
RB-84	3.154E-03	5.260E-02	4.516E-02	2.684E-02	NOT IDENT.
KR-85	3.120E+01	7.990E+00	6.763E+00	4.077E+00	NOT IDENT.
SR-85	1.580E-01	4.045E-02	3.424E-02	2.064E-02	NOT IDENT.
RB-86	-1.065E-02	6.191E-01	5.167E-01	3.159E-01	NOT IDENT.
Y-88	-8.146E-03	3.001E-02	2.188E-02	1.531E-02	NOT IDENT.
ZR-88	-5.947E-03	2.614E-02	2.217E-02	1.334E-02	NOT IDENT.
Y-91	6.273E+00	1.571E+01	1.371E+01	8.016E+00	NOT IDENT.
NB-94	2.124E-03	2.982E-02	2.526E-02	1.522E-02	NOT IDENT.
NB-95	7.984E-02	4.001E-02	3.614E-02	2.042E-02	NOT IDENT.
NB-95M	2.323E-01	1.251E-01	9.944E-02	6.384E-02	NOT IDENT.
ZR-95	5.073E-02	6.048E-02	5.300E-02	3.085E-02	NOT IDENT.
NB-97	1.699E+04	2.928E+04	0.000E+00	1.494E+04	SHORT HLIF
ZR-97	1.761E+06	5.851E+05	0.000E+00	2.985E+05	SHORT HLIF
MO-99	-3.496E+00	7.021E+00	5.672E+00	3.582E+00	NOT IDENT.
TC-99M	-6.496E+14	1.277E+15	0.000E+00	6.516E+14	SHORT HLIF
RH-101	-3.231E-02	3.217E-02	2.599E-02	1.641E-02	NOT IDENT.
RH-102	-6.210E-03	2.601E-02	2.114E-02	1.327E-02	NOT IDENT.
RU-103	1.354E-02	3.485E-02	2.975E-02	1.778E-02	FAIL ABUN
RH-106	-2.011E-01	2.756E-01	2.246E-01	1.406E-01	FAIL ABUN
RU-106	-2.011E-01	2.748E-01	2.246E-01	1.402E-01	FAIL ABUN
AG-108M	-3.063E-03	2.825E-02	2.385E-02	1.441E-02	NOT IDENT.
AG-110M	1.908E-02	3.420E-02	2.607E-02	1.745E-02	NOT IDENT.
IN-111	-3.495E-01	8.030E-01	5.802E-01	4.097E-01	NOT IDENT.
IN-113M	2.668E-02	3.742E-02	3.315E-02	1.909E-02	NOT IDENT.
SN-113	2.668E-02	3.742E-02	3.315E-02	1.909E-02	NOT IDENT.
IN-114M	1.010E-01	1.807E-01	1.417E-01	9.220E-02	NOT IDENT.
CD-115	-2.984E+00	6.237E+00	5.284E+00	3.182E+00	NOT IDENT.
SN-117M	2.428E-02	4.867E-02	4.369E-02	2.483E-02	NOT IDENT.
SB-122	-3.889E-01	1.258E+00	1.069E+00	6.419E-01	NOT IDENT.
I-123	9.197E+05	1.180E+06	0.000E+00	6.019E+05	SHORT HLIF
TE-123M	2.075E-02	2.662E-02	2.406E-02	1.358E-02	NOT IDENT.
I-124	3.536E-01	5.390E-01	4.165E-01	2.750E-01	FAIL ABUN
SB-124	4.297E-02	5.880E-02	5.390E-02	3.000E-02	FAIL ABUN
SB-125	-1.772E-02	7.961E-02	6.689E-02	4.062E-02	FAIL ABUN
TE-125M	-3.675E+00	8.983E+00	7.357E+00	4.583E+00	NOT IDENT.
I-126	1.090E-01	1.751E-01	1.335E-01	8.933E-02	NOT IDENT.
SB-126	4.794E-02	1.283E-01	9.552E-02	6.546E-02	FAIL ABUN
SB-127	-1.240E-01	8.860E-01	7.428E-01	4.520E-01	NOT IDENT.
XE-127	2.089E-02	4.562E-02	3.723E-02	2.328E-02	NOT IDENT.
I-131	2.623E-02	8.837E-02	7.742E-02	4.509E-02	NOT IDENT.
TE-132	2.697E-01	4.926E-01	4.286E-01	2.514E-01	NOT IDENT.
BA-133	-2.097E-04	4.137E-02	3.110E-02	2.111E-02	NOT IDENT.
I-133	-1.018E+03	1.910E+03	0.000E+00	9.747E+02	SHORT HLIF
CS-134	7.530E-02	4.037E-02	3.670E-02	2.060E-02	NOT IDENT.
CS-135	1.250E-01	1.666E-01	1.270E-01	8.501E-02	NOT IDENT.
I-135	-1.744E+14	2.256E+14	0.000E+00	1.151E+14	SHORT HLIF
CS-136	-1.189E-02	8.058E-02	6.678E-02	4.111E-02	FAIL ABUN
CE-139	-6.897E-03	2.761E-02	2.414E-02	1.409E-02	NOT IDENT.
BA-140	-1.032E-02	2.021E-01	1.750E-01	1.031E-01	NOT IDENT.
LA-140	-1.618E-02	7.799E-02	6.508E-02	3.979E-02	NOT IDENT.
CE-141	7.137E-03	5.641E-02	5.049E-02	2.878E-02	NOT IDENT.
CE-143	4.573E+02	1.392E+02	0.000E+00	7.101E+01	SHORT HLIF
CE-144	-8.882E-02	2.058E-01	1.598E-01	1.050E-01	NOT IDENT.
PM-144	4.713E-03	3.065E-02	2.610E-02	1.564E-02	NOT IDENT.
PR-144	3.191E-01	2.075E+00	1.768E+00	1.059E+00	NOT IDENT.

PM-146	1.920E-02	3.883E-02	3.276E-02	1.981E-02	NOT IDENT.
ND-147	-2.538E-02	4.382E-01	3.798E-01	2.236E-01	FAIL ABUN
PM-149	3.361E+01	5.746E+01	4.909E+01	2.932E+01	NOT IDENT.
EU-152	-1.039E-01	1.006E-01	7.038E-02	5.131E-02	NOT IDENT.
GD-153	-5.625E-02	7.968E-02	5.881E-02	4.065E-02	NOT IDENT.
EU-154	-1.649E-01	1.110E-01	8.302E-02	5.665E-02	NOT IDENT.
EU-155	8.651E-02	1.014E-01	8.743E-02	5.171E-02	FAIL ABUN
TB-160	-1.354E-01	1.102E-01	8.505E-02	5.621E-02	FAIL ABUN
HO-166M	-1.566E-02	5.121E-02	4.231E-02	2.613E-02	NOT IDENT.
TM-171	-2.649E+01	2.625E+01	1.981E+01	1.339E+01	NOT IDENT.
LU-176	-6.948E-03	2.234E-02	1.886E-02	1.140E-02	FAIL ABUN
LU-177	3.054E+00	1.452E+00	8.508E-01	7.408E-01	FAIL ABUN
LU-177M	-2.495E-01	1.641E-01	1.284E-01	8.370E-02	NOT IDENT.
HF-181	1.520E-02	3.513E-02	3.019E-02	1.792E-02	NOT IDENT.
W-181	-2.276E-01	3.348E-01	2.572E-01	1.708E-01	NOT IDENT.
TA-182	2.073E-02	1.567E-01	1.345E-01	7.995E-02	FAIL ABUN
RE-183	-7.113E-03	1.051E-01	9.056E-02	5.364E-02	FAIL ABUN
RE-184	-5.864E-02	2.073E-01	1.734E-01	1.057E-01	NOT IDENT.
OS-185	3.030E-02	3.785E-02	3.336E-02	1.931E-02	NOT IDENT.
RE-188	8.748E-02	1.547E-01	1.394E-01	7.891E-02	NOT IDENT.
W-188	-1.344E+00	7.129E+00	5.431E+00	3.637E+00	FAIL ABUN
IR-192	-1.473E-02	2.923E-02	2.501E-02	1.491E-02	FAIL ABUN
AU-195	2.728E-01	2.066E-01	1.767E-01	1.054E-01	FAIL ABUN
TL-200	-6.079E+01	1.835E+02	0.000E+00	9.364E+01	SHORT HLIF
TL-201	7.663E-01	4.980E+00	4.408E+00	2.541E+00	NOT IDENT.
TL-202	-2.606E-02	5.518E-02	4.554E-02	2.815E-02	NOT IDENT.
HG-203	2.159E-02	3.633E-02	3.117E-02	1.854E-02	NOT IDENT.
BI-207	2.957E-02	4.440E-02	3.880E-02	2.265E-02	FAIL ABUN
TL-207	-1.165E+00	6.300E-01	4.711E-01	3.214E-01	FAIL ABUN
PO-209	-1.792E+00	6.278E+00	5.255E+00	3.203E+00	NOT IDENT.
BI-210	8.734E-01	2.872E+00	2.551E+00	1.465E+00	NOT IDENT.
PB-210	8.734E-01	2.872E+00	2.551E+00	1.465E+00	NOT IDENT.
PO-210	8.734E-01	2.871E+00	2.551E+00	1.465E+00	NOT IDENT.
PB-211	-5.694E-01	9.399E-01	7.237E-01	4.795E-01	NOT IDENT.
BI-212	1.187E+00	4.195E-01	2.881E-01	2.140E-01	FAIL ABUN
PO-215	-1.165E+00	6.300E-01	4.711E-01	3.214E-01	FAIL ABUN
RN-219	9.497E-02	3.806E-01	3.291E-01	1.942E-01	FAIL ABUN
RN-220	3.149E+01	2.047E+01	1.903E+01	1.044E+01	NOT IDENT.
RA-223	-1.165E+00	6.300E-01	4.711E-01	3.214E-01	FAIL ABUN
AC-227	2.286E-01	3.362E-01	2.909E-01	1.715E-01	FAIL ABUN
TH-227	2.286E-01	3.369E-01	2.909E-01	1.719E-01	FAIL ABUN
TH-229	1.350E-01	4.649E-01	4.081E-01	2.372E-01	FAIL ABUN
PA-231	5.475E-02	1.358E+00	1.140E+00	6.929E-01	FAIL ABUN
TH-231	-1.165E+00	6.300E-01	4.711E-01	3.214E-01	FAIL ABUN
U-231	2.703E-01	8.581E-01	6.669E-01	4.378E-01	FAIL ABUN
PA-233	-1.507E-02	5.562E-02	4.824E-02	2.838E-02	FAIL ABUN
PA-234	1.337E-01	2.479E-01	2.168E-01	1.265E-01	FAIL ABUN
PA-234M	9.330E-01	4.198E+00	3.422E+00	2.142E+00	NOT IDENT.
U-235	4.743E-02	1.993E-01	1.737E-01	1.017E-01	FAIL ABUN
NP-236	-4.568E-03	7.544E-02	6.659E-02	3.849E-02	NOT IDENT.
NP-239	1.002E-01	1.711E-01	1.478E-01	8.732E-02	FAIL ABUN
AM-241	1.015E-01	1.329E-01	1.098E-01	6.778E-02	NOT IDENT.
CM-243	-2.893E-02	8.660E-02	7.302E-02	4.418E-02	FAIL ABUN
AM-246	-4.748E-02	1.207E-01	9.785E-02	6.156E-02	NOT IDENT.
CM-247	2.840E-02	3.349E-02	2.967E-02	1.709E-02	NOT IDENT.
CF-249	-2.330E-02	3.507E-02	2.911E-02	1.789E-02	NOT IDENT.
CF-251	5.393E-02	1.159E-01	1.031E-01	5.913E-02	NOT IDENT.



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77.11	524.3488
77.11	524.3488
77.11	524.3488
77.11	524.3488
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81.07	521.2737
81.07	521.2737
81.07	521.2737
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83.78	516.3339
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87.30	638.5443
87.30	638.5443
87.30	638.5443
87.30	638.5443
87.30	638.5443
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94.90	391.6324
94.90	391.6324
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98.44	390.5951
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144.24	451.8533
144.24	451.8533
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145.44	459.3037
147.16	433.5576
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154.21	407.2433
154.21	407.2433
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163.89	455.1163
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172.10	414.1430
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190.27	365.2301
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193.63	385.8076
197.04	404.8078
198.01	423.3528
198.60	410.7804
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201.83	418.8643
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208.81	386.8788
209.75	387.4238
209.75	387.4238
210.97	364.1504
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218.09	387.0756
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226.40	376.1103
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238.63	318.0374
238.63	318.0374
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241.98	319.4680
241.98	319.4680
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252.85	292.8184
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256.20	258.3967
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268.79	298.7202
269.46	276.1031
269.46	276.1031
269.46	276.1031
269.46	276.1031
271.23	296.0836
273.65	371.1863
276.40	226.9938
277.35	271.3811
277.60	279.7048
277.60	279.7048
278.00	272.0660
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279.20	273.5669
279.53	273.6720
280.46	328.5440
281.68	324.5554
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286.10	261.2113
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291.72	279.8287
293.26	0.0000
293.70	278.9491
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295.21	264.6250

295.21	264.6250
295.96	264.8496
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300.09	268.8130
300.09	268.8130
300.09	268.8130
300.12	268.8202
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304.40	254.8388
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323.87	312.2566
323.87	312.2566
323.87	312.2566
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338.28	234.3575
338.28	234.3575
338.28	234.3575
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338.32	234.3696
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351.92	233.7006
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387.95	228.7731
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391.69	183.6316
392.90	207.8070
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413.65	264.4814
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415.30	220.0315

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433.93	185.1859
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445.03	169.1073
445.03	169.1073
445.03	169.1073
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529.87	0.0000
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574.64	152.2843
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609.31	162.8311
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696.49	157.8569
697.00	172.2554
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698.50	164.1862
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722.78	138.9974
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724.18	131.9648
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911.07	100.3075
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969.11	200.7762
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1368.53	0.0000
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1764.49	32.0229
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1791.20	0.0000
1808.65	25.9626

1836.01

29.2173



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132006

Total Uranium Activity	4.8585E+00	ug/g
Total Uranium Counting Unc.	4.6759E+00	ug/g
Total Uranium Tpu	2.3857E-06	ug/g
Total Uranium Mda	2.7397E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270          SAMPLE ID   : G244132006
*  ANALYST       : MXR1            DETECTOR    : GAM22
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 09:54:05.05  SAMPLE ALQT: 129.360 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.872E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.117E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.200E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.068E+00

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VAX/VMS Nuclide Identification Report Generated 20-JAN-2010 08:59:05.69

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132007.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:54:35
Sample ID          : G244132007      Sample quantity   : 1.25270E+02 GRAM
Detector name      : GAM25           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.94  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 940270          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	46.59*	115	516	0.92	92.75	89	10	1.59E-02	40.1	
2	0	63.20*	60	630	0.62	125.97	123	7	8.33E-03	73.4	
3	3	74.81*	857	410	0.89	149.17	143	14	1.19E-01	5.0	3.19E+00
4	3	77.07*	1373	382	0.79	153.70	143	14	1.91E-01	3.5	
5	5	84.14*	202	472	1.31	167.83	164	29	2.80E-02	19.6	2.71E+00
6	5	87.19	507	389	1.16	173.94	164	29	7.04E-02	7.7	
7	5	89.92	355	311	1.00	179.39	164	29	4.93E-02	9.6	
8	5	92.75*	394	382	1.35	185.05	164	29	5.48E-02	11.0	
9	0	128.80	127	369	0.93	257.15	253	9	1.76E-02	28.7	
10	0	186.00*	240	409	1.13	371.54	367	12	3.33E-02	18.6	
11	0	209.11	196	291	0.96	417.75	413	11	2.72E-02	18.3	
12	5	238.55*	1627	151	0.97	476.63	471	20	2.26E-01	2.8	2.73E+00
13	5	241.41	407	206	1.77	482.34	471	20	5.65E-02	11.7	
14	0	270.17	133	194	1.53	539.87	535	10	1.84E-02	21.5	
15	0	295.17	494	191	0.99	589.86	586	10	6.86E-02	6.9	
16	0	300.10	70	154	0.69	599.71	596	8	9.75E-03	32.8	
17	0	327.81	60	143	1.06	655.14	652	8	8.29E-03	37.0	
18	0	338.17*	291	180	1.04	675.85	671	10	4.04E-02	10.5	
19	0	351.79*	769	126	1.12	703.09	699	11	1.07E-01	4.6	
20	0	462.74	68	97	1.04	924.98	920	9	9.47E-03	28.7	
21	0	510.57*	139	135	1.68	1020.63	1014	15	1.94E-02	22.4	
22	0	582.94*	433	93	1.49	1165.37	1160	11	6.01E-02	6.6	
23	0	609.01*	519	84	1.64	1217.50	1211	11	7.21E-02	5.7	
24	0	727.09	104	101	1.69	1453.66	1445	14	1.45E-02	22.7	
25	0	767.97	46	57	1.08	1535.42	1532	9	6.33E-03	33.3	
26	0	794.67	53	60	1.73	1588.83	1582	12	7.36E-03	32.3	
27	0	860.17*	50	63	2.21	1719.83	1714	12	6.92E-03	35.7	
28	0	910.60*	326	62	1.64	1820.69	1812	16	4.53E-02	7.9	
29	0	968.71*	160	74	1.31	1936.91	1932	13	2.22E-02	14.2	
30	0	1119.87*	84	39	2.05	2239.23	2233	11	1.17E-02	18.5	
31	0	1238.64	28	54	2.97	2476.78	2473	10	3.87E-03	56.1	
32	0	1378.15	55	6	1.09	2755.81	2750	15	7.70E-03	17.0	
33	0	1460.14*	815	19	2.25	2919.81	2910	19	1.13E-01	3.8	
34	0	1728.42	32	4	1.52	3456.42	3448	16	4.45E-03	22.5	
35	0	1763.69*	99	3	2.04	3526.97	3520	15	1.37E-02	11.6	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 09:54:35
Sample ID        : G244132007             Sample quantity  : 125.27 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA25                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.94   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	*	2.065E+01	2.350E+00	5.137E-01	4.375E-02	40.195
CD-109	+	88.03	*	4.435E+00	8.340E-01	6.741E-01	7.244E-02	6.579
SN-126	+	64.28		1.914E-01	2.825E-01	2.870E-01	4.574E-02	0.667
	+	86.94		1.815E+00	8.098E-01	2.746E-01	1.149E-01	6.611
	+	87.57	*	4.366E-01	8.212E-02	6.624E-02	7.102E-03	6.592
TL-208		277.35		6.517E-01	3.525E-01	6.009E-01	8.535E-02	1.085
	+	510.84		6.888E-01	3.218E-01	2.156E-01	2.855E-02	3.194
	+	583.14	*	6.168E-01	1.071E-01	5.934E-02	6.689E-03	10.395
	+	860.37		6.789E-01	4.895E-01	4.544E-01	4.750E-02	1.494
BI-210	+	46.50	*	9.233E-01	7.468E-01	5.753E-01	5.932E-02	1.605
PB-210	+	46.50	*	9.233E-01	7.468E-01	5.753E-01	5.932E-02	1.605
PO-210	+	46.50	*	9.233E-01	7.459E-01	5.753E-01	5.479E-02	1.605
BI-211		72.87		2.353E+00	1.528E+00	2.513E+00	2.536E-01	0.937
	+	351.07	*	4.579E+00	6.427E-01	3.095E-01	3.261E-02	14.795
PB-212	+	74.81		2.475E+00	4.207E-01	2.692E-01	3.716E-02	9.196
	+	77.11		2.367E+00	2.946E-01	1.613E-01	1.653E-02	14.677
	+	87.30		2.020E+00	4.301E-01	3.060E-01	4.483E-02	6.600
	+	238.63	*	2.047E+00	2.595E-01	7.650E-02	8.709E-03	26.755
	+	300.09		1.389E+00	9.288E-01	1.142E+00	1.423E-01	1.216
PO-212	+	74.81		2.475E+00	4.207E-01	2.692E-01	3.716E-02	9.196
	+	77.11		2.367E+00	2.946E-01	1.613E-01	1.653E-02	14.677
	+	87.30		2.020E+00	4.301E-01	3.060E-01	4.483E-02	6.600
		115.19		2.080E+00	2.564E+00	4.461E+00	5.532E-01	0.466
	+	238.63	*	2.047E+00	2.595E-01	7.650E-02	8.709E-03	26.755
	+	300.09		1.389E+00	9.288E-01	1.142E+00	1.423E-01	1.216
BI-214	+	609.31	*	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
	+	1120.29		1.197E+00	4.624E-01	5.261E-01	5.710E-02	2.275
	+	1764.49		1.985E+00	4.882E-01	2.741E-01	2.258E-02	7.243
PB-214	+	74.81		4.265E+00	6.829E-01	4.638E-01	5.832E-02	9.196
	+	77.11		4.059E+00	5.922E-01	2.765E-01	3.531E-02	14.677
	+	87.30		3.460E+00	7.032E-01	5.242E-01	6.916E-02	6.600
	+	241.98		3.074E+00	8.085E-01	4.615E-01	5.505E-02	6.661
	+	295.21		1.712E+00	3.208E-01	1.996E-01	2.532E-02	8.577
	+	351.92	*	1.593E+00	2.385E-01	1.049E-01	1.232E-02	15.182

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		4.265E+00	6.829E-01	4.638E-01	5.832E-02	9.196
	+	77.11		4.059E+00	5.922E-01	2.765E-01	3.531E-02	14.677
	+	87.30		3.460E+00	7.032E-01	5.242E-01	6.916E-02	6.600
	+	241.98		3.074E+00	8.085E-01	4.615E-01	5.505E-02	6.661
	+	295.21		1.712E+00	3.208E-01	1.996E-01	2.532E-02	8.577
	+	351.92	*	1.593E+00	2.385E-01	1.049E-01	1.232E-02	15.182
PO-216	+	74.81		2.475E+00	4.207E-01	2.692E-01	3.716E-02	9.196
	+	77.11		2.367E+00	2.946E-01	1.613E-01	1.653E-02	14.677
	+	87.30		2.020E+00	4.301E-01	3.060E-01	4.483E-02	6.600
	+	238.63	*	2.047E+00	2.595E-01	7.650E-02	8.709E-03	26.755
	+	300.09		1.389E+00	9.288E-01	1.142E+00	1.423E-01	1.216
PO-218	+	74.81		4.265E+00	6.829E-01	4.638E-01	5.832E-02	9.196
	+	77.11		4.059E+00	5.922E-01	2.765E-01	3.531E-02	14.677
	+	87.30		3.460E+00	7.032E-01	5.242E-01	6.916E-02	6.600
	+	241.98		3.074E+00	8.085E-01	4.615E-01	5.505E-02	6.661
	+	295.21		1.712E+00	3.208E-01	1.996E-01	2.532E-02	8.577
	+	351.92	*	1.593E+00	2.385E-01	1.049E-01	1.232E-02	15.182
RA-224	+	240.98	*	5.829E+00	1.498E+00	8.717E-01	9.160E-02	6.687
RA-226	+	609.31	*	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
	+	1120.29		1.197E+00	4.624E-01	5.261E-01	5.710E-02	2.275
	+	1764.49		1.985E+00	4.882E-01	2.741E-01	2.258E-02	7.243
AC-228	+	338.32		1.903E+00	8.885E-01	3.502E-01	1.459E-01	5.433
	+	911.07	*	2.103E+00	4.146E-01	2.016E-01	2.398E-02	10.427
	+	969.11		1.812E+00	6.698E-01	4.523E-01	1.067E-01	4.006
RA-228	+	338.32		1.903E+00	8.885E-01	3.502E-01	1.459E-01	5.433
	+	911.07	*	2.103E+00	4.146E-01	2.016E-01	2.398E-02	10.427
	+	969.11		1.812E+00	6.698E-01	4.523E-01	1.067E-01	4.006
TH-228	+	74.81		2.510E+00	3.574E-01	2.729E-01	2.790E-02	9.196
	+	77.11		2.401E+00	2.987E-01	1.636E-01	1.636E-02	14.677
	+	87.30		2.048E+00	3.851E-01	3.102E-01	3.322E-02	6.600
	+	238.63	*	2.075E+00	2.631E-01	7.757E-02	8.831E-03	26.755
	+	300.09		1.409E+00	1.250E+00	1.158E+00	6.912E-01	1.216
TH-230	+	609.31	*	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
	+	1120.29		1.197E+00	4.623E-01	5.261E-01	5.710E-02	2.275
	+	1764.49		1.985E+00	4.882E-01	2.740E-01	2.258E-02	7.243
TH-232	+	338.32		1.903E+00	4.473E-01	3.502E-01	3.650E-02	5.433
	+	911.07	*	2.103E+00	4.146E-01	2.016E-01	2.398E-02	10.427
	+	969.11		1.812E+00	6.698E-01	4.523E-01	1.067E-01	4.006
TH-234	+	63.29	*	4.835E-01	7.151E-01	7.267E-01	1.353E-01	0.665
	+	92.38		2.364E+00	6.928E-01	4.711E-01	9.100E-02	5.019
U-234	+	609.31	*	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
	+	1120.29		1.197E+00	4.623E-01	5.261E-01	5.710E-02	2.275
	+	1764.49		1.985E+00	4.882E-01	2.740E-01	2.258E-02	7.243
NP-237	+	86.50	*	1.282E+00	3.580E-01	1.936E-01	4.497E-02	6.624
	+	95.87		4.930E-02	6.085E-01	9.439E-01	2.420E-01	0.052
U-238	+	63.29	*	4.835E-01	7.151E-01	7.267E-01	1.353E-01	0.665
	+	92.38		2.364E+00	5.820E-01	4.711E-01	5.171E-02	5.019
AM-243	+	74.67	*	4.013E-01	5.697E-02	4.362E-02	4.430E-03	9.201
	+	86.72		4.808E+01	9.043E+00	7.266E+00	7.760E-01	6.617

## ----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-1.405E+00	2.700E+00	4.454E+00	5.600E-01	-0.316
		142.18		-1.150E+01	1.420E+01	2.226E+01	2.514E+00	-0.517
ANH-511	+	511.00	*	1.488E-01	6.840E-02	4.659E-02	4.795E-03	3.193

## ----- 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	*	2.508E-01	3.358E-01	5.739E-01	6.076E-02	0.437
NA-22		1274.54	*	1.414E-02	4.702E-02	7.964E-02	6.530E-03	0.178
NA-24		1368.53	*	-1.132E-01	4.702E-02	Half-Life too short		
AL-26		1129.67		-2.148E+00	1.889E+00	2.798E+00	2.389E-01	-0.768
		1808.65	*	-1.396E-02	3.398E-02	5.146E-02	4.217E-03	-0.271
TI-44		67.85		3.785E-05	1.988E-02	3.145E-02	3.130E-03	0.001
	+	78.38	*	4.369E-01	5.436E-02	4.530E-02	4.665E-03	9.643
SC-46		889.25	*	-2.983E-02	4.052E-02	6.066E-02	5.809E-03	-0.492
	+	1120.51		2.028E-01	7.720E-02	1.307E-01	1.124E-02	1.552
V-48		944.10		-9.331E-02	8.957E-01	1.433E+00	1.344E-01	-0.065
		983.50	*	5.814E-02	6.789E-02	1.190E-01	1.103E-02	0.488
		1312.09		-2.011E-02	7.216E-02	1.139E-01	9.283E-03	-0.177
CR-51		320.08	*	1.445E-01	3.347E-01	5.768E-01	6.405E-02	0.251
MN-52		744.21		-1.347E-01	2.136E-01	3.330E-01	3.598E-02	-0.404
		848.13		-8.584E-01	5.652E+00	9.091E+00	9.109E-01	-0.094
		935.52		4.115E-01	2.453E-01	4.515E-01	4.245E-02	0.911
		1246.25		-2.540E+00	6.846E+00	9.959E+00	8.178E-01	-0.255
		1333.61		5.948E-01	3.906E+00	6.531E+00	5.306E-01	0.091
		1434.06	*	1.573E-01	1.915E-01	3.500E-01	2.884E-02	0.449
MN-54		834.83	*	4.210E-03	3.663E-02	6.060E-02	6.149E-03	0.069
CO-56		846.75	*	-2.161E-02	3.951E-02	6.093E-02	6.113E-03	-0.355
		977.42		-8.665E-01	2.821E+00	4.240E+00	3.938E-01	-0.204
		1037.82		-7.852E-02	2.590E-01	4.188E-01	3.974E-02	-0.187
		1175.09		-7.855E-02	2.343E+00	3.872E+00	3.187E-01	-0.020
	+	1238.25		1.102E-01	1.239E-01	1.767E-01	1.498E-02	0.624
		1360.21		-4.762E-02	8.115E-01	1.312E+00	1.071E-01	-0.036
		1771.40		-4.338E-01	3.089E-01	3.860E-01	3.178E-02	-1.124
CO-57		122.06	*	1.787E-02	1.793E-02	3.131E-02	4.037E-03	0.571
		136.48		-8.784E-02	1.670E-01	2.728E-01	3.345E-02	-0.322
CO-58		810.76	*	-1.419E-02	3.959E-02	6.270E-02	6.505E-03	-0.226
FE-59		142.65		2.585E-01	2.107E+00	3.456E+00	3.888E-01	0.075
		192.34		8.905E-02	8.668E-01	1.357E+00	1.901E-01	0.066
		1099.22	*	-2.294E-02	8.811E-02	1.431E-01	1.348E-02	-0.160
		1291.56		8.966E-02	1.278E-01	2.250E-01	2.113E-02	0.399
CO-60		1173.22		-1.897E-02	4.821E-02	7.697E-02	6.336E-03	-0.246
		1332.49	*	-1.252E-02	3.707E-02	5.776E-02	4.691E-03	-0.217
ZN-65		1115.52	*	-1.990E-02	1.006E-01	1.403E-01	1.212E-02	-0.142
GE-68		1077.35	*	5.684E-01	1.225E+00	2.138E+00	1.893E-01	0.266
AS-73		53.44	*	2.589E-01	1.623E-01	2.762E-01	2.651E-02	0.937
AS-74		595.88	*	4.552E-02	9.130E-02	1.517E-01	1.644E-02	0.300
		634.78		-6.190E-02	3.277E-01	5.415E-01	5.955E-02	-0.114

## ---- 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		-1.551E+00	2.096E+00	2.938E+00	3.387E-01	-0.528
		96.73		-6.072E-01	5.205E-01	7.404E-01	1.141E-01	-0.820
		121.11		3.590E-02	9.450E-02	1.619E-01	2.380E-02	0.222
		136.00		-1.199E-02	3.113E-02	5.124E-02	6.079E-03	-0.234
		198.60		-5.255E-01	1.565E+00	2.467E+00	2.590E-01	-0.213
		264.65	*	2.739E-02	4.132E-02	6.534E-02	7.161E-03	0.419
		279.53		-6.991E-02	1.022E-01	1.545E-01	1.763E-02	-0.452
		303.91		9.725E-02	2.061E+00	3.091E+00	4.115E-01	0.031
		400.65		-1.149E-01	2.408E-01	3.850E-01	4.453E-02	-0.298
BR-77	+	87.88		6.756E+02	1.271E+02	1.648E+02	1.770E+01	4.100
		200.40		3.154E+01	9.763E+01	1.615E+02	1.565E+01	0.195
	+	239.00		2.314E+02	2.744E+01	2.862E+01	2.996E+00	8.085
		249.79		2.545E+00	4.344E+01	6.975E+01	7.442E+00	0.036
		281.68		-3.418E+01	5.734E+01	8.695E+01	9.691E+00	-0.393
		297.23		9.431E+01	5.170E+01	6.752E+01	7.439E+00	1.397
		303.76		5.875E+00	1.245E+02	1.866E+02	2.043E+01	0.031
		439.47		6.719E+01	9.813E+01	1.685E+02	1.623E+01	0.399
		484.57		-8.395E+01	1.664E+02	2.601E+02	2.619E+01	-0.323
		520.65	*	-1.747E-01	7.192E+00	1.160E+01	1.203E+00	-0.015
		574.64		-6.931E+01	1.490E+02	2.286E+02	2.452E+01	-0.303
		578.91		3.728E+01	6.316E+01	9.461E+01	1.017E+01	0.394
		585.48		6.372E+02	1.783E+02	3.037E+02	3.275E+01	2.098
		755.35		4.890E+01	1.269E+02	2.160E+02	2.321E+01	0.226
		817.79		-3.863E+01	9.815E+01	1.548E+02	1.594E+01	-0.250
SR-82		698.33		1.440E+00	3.548E+01	5.923E+01	6.513E+00	0.024
		776.49	*	-1.413E-01	3.907E-01	6.232E-01	6.614E-02	-0.227
		1395.20		-2.029E+00	1.127E+01	1.789E+01	1.468E+00	-0.113
RB-83		520.41	*	1.985E-03	6.717E-02	1.089E-01	1.129E-02	0.018
		529.64		-2.296E-02	1.084E-01	1.718E-01	1.793E-02	-0.134
		552.65		3.215E-02	1.957E-01	3.190E-01	3.379E-02	0.101
RB-84		881.50	*	-2.316E-02	6.551E-02	1.024E-01	9.898E-03	-0.226
KR-85		513.99	*	7.147E+00	7.497E+00	1.164E+01	1.201E+00	0.614
SR-85		513.99	*	3.618E-02	3.795E-02	5.893E-02	6.080E-03	0.614
RB-86		1076.63	*	2.210E-01	7.390E-01	1.271E+00	1.126E-01	0.174
Y-88		898.02		-1.071E-02	4.824E-02	7.681E-02	7.306E-03	-0.139
		1836.01	*	3.651E-02	4.108E-02	7.733E-02	6.320E-03	0.472
ZR-88		392.90	*	6.690E-03	2.954E-02	4.965E-02	4.519E-03	0.135
Y-91		1204.90	*	8.271E+00	2.013E+01	3.443E+01	2.833E+00	0.240
NB-94		702.63	*	7.891E-03	3.826E-02	6.364E-02	6.988E-03	0.124
		871.10		4.323E-03	3.420E-02	5.648E-02	5.524E-03	0.077
NB-95		765.79	*	7.143E-02	5.318E-02	8.591E-02	9.177E-03	0.831
NB-95M		235.69	*	7.433E-02	1.118E-01	1.675E-01	1.920E-02	0.444
ZR-95		724.18		9.083E-02	1.177E-01	1.822E-01	2.094E-02	0.499
		756.15	*	2.827E-02	7.613E-02	1.294E-01	1.482E-02	0.218
NB-97		657.90	*	-3.173E-02	7.613E-02	Half-Life	too short	
		1024.50		7.978E-01	7.613E-02	Half-Life	too short	
ZR-97		254.15		1.020E+00	7.613E-02	Half-Life	too short	
		355.39		-5.279E-01	7.613E-02	Half-Life	too short	
		507.63	*	7.796E-01	7.613E-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			1.741E-01	7.613E-02	Half-Life	too short	
	1021.30			-3.952E+00	7.613E-02	Half-Life	too short	
	1147.95			1.714E-01	7.613E-02	Half-Life	too short	
	1362.66			-1.071E+00	7.613E-02	Half-Life	too short	
	1750.46			-2.690E+00	7.613E-02	Half-Life	too short	
MO-99	140.51			-6.143E+00	1.568E+01	2.516E+01	7.218E+00	-0.244
	181.06			8.607E+00	1.146E+01	1.747E+01	3.249E+00	0.493
	366.43			-5.119E+01	5.940E+01	9.316E+01	9.130E+00	-0.550
	739.58	*		3.586E-01	9.196E+00	1.527E+01	2.526E+00	0.023
	778.00			-2.352E+00	2.648E+01	4.330E+01	4.591E+00	-0.054
TC-99M	140.51	*		-4.341E+08	2.648E+01	Half-Life	too short	
RH-101	127.23			3.699E-03	2.616E-02	3.987E-02	4.989E-03	0.093
	198.01	*		-6.461E-03	2.878E-02	4.564E-02	4.397E-03	-0.142
	325.23			-1.497E-01	2.276E-01	3.190E-01	3.399E-02	-0.469
RH-102	418.52			-2.308E-01	2.949E-01	4.594E-01	4.320E-02	-0.502
	475.06	*		-2.106E-03	2.991E-02	4.851E-02	4.843E-03	-0.043
	631.29			3.182E-02	5.439E-02	9.526E-02	1.046E-02	0.334
	697.49			4.379E-02	8.140E-02	1.407E-01	1.547E-02	0.311
+	766.84			2.074E-01	1.397E-01	2.246E-01	2.398E-02	0.923
	1046.59			2.320E-02	1.144E-01	1.955E-01	1.761E-02	0.119
	1112.84			1.699E-01	2.319E-01	3.689E-01	3.189E-02	0.461
RU-103	497.08	*		-2.692E-02	3.690E-02	5.567E-02	8.440E-03	-0.484
+	610.33			1.479E+01	3.142E+00	3.165E+00	5.687E-01	4.672
RH-106	511.85	+		7.414E-01	3.409E-01	4.292E-01	4.420E-02	1.728
	621.84	*		9.403E-02	3.089E-01	5.312E-01	7.950E-02	0.177
	1050.47			-1.904E-01	2.341E+00	3.890E+00	3.498E-01	-0.049
RU-106	511.85	+		7.414E-01	3.409E-01	4.292E-01	4.420E-02	1.728
	621.84	*		9.403E-02	3.087E-01	5.312E-01	5.816E-02	0.177
	1050.47			-1.904E-01	2.341E+00	3.890E+00	3.497E-01	-0.049
AG-108M	433.93	*		-7.140E-03	3.095E-02	4.998E-02	4.939E-03	-0.143
	614.37			1.996E-02	4.226E-02	6.677E-02	7.471E-03	0.299
	722.95			-2.279E-02	5.025E-02	6.845E-02	7.648E-03	-0.333
AG-110M	657.75	*		-3.476E-02	3.821E-02	5.926E-02	6.677E-03	-0.587
	677.61			2.012E-01	3.201E-01	5.586E-01	6.279E-02	0.360
	706.67			-1.569E-01	2.303E-01	3.621E-01	4.039E-02	-0.433
	763.93			9.110E-02	1.968E-01	2.963E-01	3.227E-02	0.307
	884.67			3.188E-03	4.625E-02	7.586E-02	7.494E-03	0.042
	937.48			-2.779E-02	1.296E-01	2.056E-01	1.991E-02	-0.135
	1384.27			1.017E-01	1.690E-01	2.667E-01	2.252E-02	0.381
IN-111	171.28			-2.373E-01	6.137E-01	9.918E-01	8.960E-02	-0.239
	245.39	*		-9.694E-01	7.772E-01	9.817E-01	1.040E-01	-0.987
IN-113M	391.69	*		-1.604E-02	4.267E-02	6.897E-02	6.442E-03	-0.233
SN-113	391.69	*		-1.604E-02	4.267E-02	6.897E-02	6.442E-03	-0.233
IN-114M	190.27	*		6.373E-02	1.749E-01	2.613E-01	2.473E-02	0.244
CD-115	260.90			-5.334E+01	8.108E+01	1.235E+02	1.342E+01	-0.432
	492.35			1.056E+01	2.573E+01	4.306E+01	4.366E+00	0.245
	527.90	*		2.792E+00	7.574E+00	1.259E+01	1.312E+00	0.222
SN-117M	156.02			-1.205E+00	1.841E+00	2.940E+00	2.932E-01	-0.410
	158.56	*		7.102E-03	4.398E-02	7.340E-02	7.126E-03	0.097



## ---- 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	*		4.793E-01	1.438E+00	2.374E+00	2.532E-01	0.202
	692.80			-3.249E+01	3.267E+01	4.960E+01	5.462E+00	-0.655
I-123	159.00	*		-2.332E-02	3.267E+01	Half-Life too short		
	528.96			-5.778E+01	3.267E+01	Half-Life too short		
TE-123M	159.00	*		-5.260E-04	2.414E-02	3.997E-02	3.881E-03	-0.013
I-124	602.71	*		6.913E-02	5.802E-01	8.639E-01	9.389E-02	0.080
	722.78			-5.884E-01	4.164E+00	5.896E+00	6.430E-01	-0.100
	1325.50			1.761E+01	2.944E+01	5.161E+01	4.197E+00	0.341
	1376.25			5.449E+01	3.275E+01	5.712E+01	4.672E+00	0.954
	1509.49			2.597E+01	1.487E+01	2.908E+01	2.412E+00	0.893
	1691.02			-1.085E+00	2.686E+00	4.042E+00	3.351E-01	-0.268
SB-124	602.71			4.839E-03	4.061E-02	6.046E-02	6.572E-03	0.080
	645.85			-3.051E-01	4.823E-01	7.633E-01	8.734E-02	-0.400
	709.31			-1.043E+00	2.901E+00	4.680E+00	5.129E-01	-0.223
	713.82			6.915E-01	1.666E+00	2.855E+00	3.939E-01	0.242
	722.78			-5.969E-02	4.225E-01	5.982E-01	6.612E-02	-0.100
	968.20	+		1.840E+01	5.507E+00	8.189E+00	7.628E-01	2.246
	1045.16			-2.963E-01	2.370E+00	3.922E+00	3.537E-01	-0.076
	1325.50			1.908E+00	3.190E+00	5.593E+00	4.548E-01	0.341
	1368.21			-1.358E+00	1.853E+00	2.699E+00	3.561E-01	-0.503
	1436.60			-6.566E-01	3.498E+00	5.502E+00	4.536E-01	-0.119
	1691.02	*		-2.596E-02	6.429E-02	9.673E-02	8.361E-03	-0.268
SB-125	427.89	*		-1.070E-03	8.906E-02	1.464E-01	1.414E-02	-0.007
	463.38	+		6.507E-01	3.794E-01	5.533E-01	5.792E-02	1.176
	600.56			-1.018E-01	1.823E-01	2.759E-01	3.137E-02	-0.369
	635.90			-3.225E-01	2.775E-01	4.177E-01	4.826E-02	-0.772
TE-125M	109.28	*		3.497E+00	6.352E+00	1.100E+01	1.460E+00	0.318
I-126	388.63			1.132E-01	1.886E-01	3.238E-01	2.973E-02	0.350
	666.33	*		-9.410E-02	1.911E-01	3.078E-01	3.408E-02	-0.306
	753.82			1.429E+00	1.472E+00	2.610E+00	2.806E-01	0.547
SB-126	223.80			-1.865E+00	3.401E+00	5.320E+00	5.413E-01	-0.351
	278.60			2.175E+00	2.164E+00	3.615E+00	4.031E-01	0.602
	296.50	+		1.594E+01	2.815E+00	3.483E+00	3.840E-01	4.575
	414.70			2.329E-02	6.869E-02	1.158E-01	1.084E-02	0.201
	415.30			1.805E+00	5.798E+00	9.755E+00	9.137E-01	0.185
	555.20			-1.687E+00	3.733E+00	5.751E+00	6.101E-01	-0.293
	573.80			2.432E-01	1.024E+00	1.672E+00	1.792E-01	0.145
	593.00			-4.341E-01	9.138E-01	1.396E+00	1.510E-01	-0.311
	656.30			-4.497E+00	3.507E+00	5.247E+00	5.805E-01	-0.857
	666.33			-3.921E-02	7.964E-02	1.283E-01	1.420E-02	-0.306
	675.00			2.619E-01	1.993E+00	3.359E+00	3.714E-01	0.078
	695.00			-2.342E-02	7.529E-02	1.222E-01	1.345E-02	-0.192
	697.00			2.036E-01	2.594E-01	4.559E-01	5.014E-02	0.447
	720.50	*		6.476E-02	1.533E-01	2.319E-01	2.531E-02	0.279
	856.80			4.614E-01	5.031E-01	7.951E-01	7.897E-02	0.580
	989.30			-4.081E-01	1.218E+00	1.887E+00	1.744E-01	-0.216
	1034.80			-1.170E+00	7.197E+00	1.185E+01	1.074E+00	-0.099
	1213.00			1.880E+00	4.846E+00	8.262E+00	6.797E-01	0.228
SB-127	61.10			1.254E+01	1.579E+01	2.400E+01	2.834E+00	0.523

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	252.40			-4.484E-01	3.342E+00	5.293E+00	2.245E+00	-0.085
	290.80			8.984E+00	1.588E+01	2.481E+01	3.189E+00	0.362
	411.60			-8.412E+00	1.025E+01	1.590E+01	2.526E+00	-0.529
	444.90			3.324E+00	7.939E+00	1.338E+01	1.739E+00	0.249
	473.00			-8.891E-01	1.375E+00	2.124E+00	2.872E-01	-0.419
	543.00			-7.084E+00	1.447E+01	2.231E+01	3.427E+00	-0.318
	603.60			-7.528E-01	1.009E+01	1.471E+01	2.042E+00	-0.051
	685.20	*		-4.177E-01	1.089E+00	1.755E+00	2.283E-01	-0.238
	698.50			-1.743E+00	1.342E+01	2.212E+01	3.762E+00	-0.079
	722.20			2.504E+00	2.796E+01	4.069E+01	5.173E+00	0.062
	783.80			4.571E+00	3.450E+00	6.139E+00	8.322E-01	0.745
XE-127	57.60			3.851E-01	1.564E+00	2.509E+00	2.446E-01	0.154
	145.22			1.272E-01	5.246E-01	8.839E-01	9.738E-02	0.144
	172.10			7.233E-02	9.361E-02	1.597E-01	1.445E-02	0.453
	202.84	*		-9.061E-03	3.892E-02	6.255E-02	6.092E-03	-0.145
	374.96			-6.613E-02	1.834E-01	2.979E-01	2.852E-02	-0.222
I-131	80.18			1.424E+00	2.631E+00	3.433E+00	3.574E-01	0.415
	284.30			6.206E-02	1.229E+00	1.952E+00	2.239E-01	0.032
	364.48	*		4.892E-02	9.690E-02	1.665E-01	1.707E-02	0.294
	636.97			-4.549E-01	1.449E+00	2.371E+00	2.698E-01	-0.192
	722.89			-1.222E+00	7.377E+00	1.041E+01	1.139E+00	-0.117
TE-132	49.72			-1.488E-01	2.241E+00	3.321E+00	3.752E-01	-0.045
	111.76			-6.667E+00	1.589E+01	2.645E+01	3.597E+00	-0.252
	116.30			2.031E+01	1.535E+01	2.693E+01	3.738E+00	0.754
	228.16	*		3.189E-02	4.787E-01	7.743E-01	1.275E-01	0.041
BA-133	53.15			1.180E+00	6.843E-01	1.170E+00	1.123E-01	1.008
	79.62			1.604E-02	7.343E-01	1.058E+00	1.722E-01	0.015
	81.00			-3.180E-02	5.735E-02	7.959E-02	1.346E-02	-0.400
	276.40			3.271E-01	3.534E-01	5.848E-01	9.394E-02	0.559
	302.84			1.480E-01	1.366E-01	2.186E-01	3.259E-02	0.677
	356.01	*		-1.222E-02	4.348E-02	6.228E-02	8.831E-03	-0.196
	383.85			-1.431E-01	2.788E-01	4.459E-01	5.839E-02	-0.321
I-133	510.53	+		5.778E-01	2.788E-01	Half-Life	too short	
	529.87	*		-7.129E-04	2.788E-01	Half-Life	too short	
	706.58			-9.426E-02	2.788E-01	Half-Life	too short	
	856.28			8.436E-02	2.788E-01	Half-Life	too short	
	875.33			1.964E-02	2.788E-01	Half-Life	too short	
	1236.41			3.530E-01	2.788E-01	Half-Life	too short	
	1298.22			6.267E-02	2.788E-01	Half-Life	too short	
CS-134	475.35			-3.130E-01	1.974E+00	3.180E+00	3.175E-01	-0.098
	563.23			2.290E-01	3.429E-01	5.811E-01	6.232E-02	0.394
	569.32			1.022E-02	2.116E-01	3.339E-01	3.603E-02	0.031
	604.70			3.373E-02	3.477E-02	5.608E-02	6.110E-03	0.601
	795.84	*		1.105E-01	7.230E-02	9.670E-02	1.018E-02	1.142
	801.93			-3.668E-01	4.524E-01	6.629E-01	6.940E-02	-0.553
	1038.57			-1.062E+00	3.294E+00	5.315E+00	4.808E-01	-0.200
	1167.94			2.203E+00	2.570E+00	4.583E+00	3.790E-01	0.481
	1365.15			-1.242E-01	1.132E+00	1.816E+00	1.558E-01	-0.068
CS-135	268.24	*		1.385E-01	1.651E-01	2.474E-01	2.986E-02	0.560

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I-135	288.45			-1.109E+09	1.651E-01	Half-Life	too short	
	417.63			-7.878E+07	1.651E-01	Half-Life	too short	
	546.56			9.051E+07	1.651E-01	Half-Life	too short	
	836.80			5.389E+08	1.651E-01	Half-Life	too short	
	1038.76			-1.644E+08	1.651E-01	Half-Life	too short	
	1124.00			1.769E+09	1.651E-01	Half-Life	too short	
	1131.51			-2.944E+08	1.651E-01	Half-Life	too short	
	1260.41	*		-5.926E+07	1.651E-01	Half-Life	too short	
	1457.56			3.208E+10	1.651E-01	Half-Life	too short	
	1678.03			-7.891E+07	1.651E-01	Half-Life	too short	
	1706.46			8.303E+08	1.651E-01	Half-Life	too short	
	1791.20			-2.555E+07	1.651E-01	Half-Life	too short	
CS-136	66.91			-8.425E-02	3.290E-01	4.735E-01	7.672E-02	-0.178
	86.29	+		5.348E+00	1.128E+00	1.262E+00	1.805E-01	4.237
	153.22			5.872E-01	5.124E-01	8.857E-01	9.850E-02	0.663
	163.89			-4.703E-01	8.542E-01	1.353E+00	1.369E-01	-0.347
	176.55			2.713E-01	2.875E-01	4.920E-01	4.735E-02	0.552
	273.65			-3.195E-01	4.270E-01	5.613E-01	6.467E-02	-0.569
	340.57			1.558E-01	1.214E-01	1.951E-01	2.066E-02	0.799
	818.51			3.451E-03	7.012E-02	1.155E-01	1.190E-02	0.030
	1048.07	*		3.354E-02	1.006E-01	1.738E-01	1.626E-02	0.193
	1235.34			3.653E-01	6.875E-01	1.033E+00	1.195E-01	0.353
BA-137M	661.65	*		-1.020E-02	4.256E-02	7.311E-02	8.099E-03	-0.140
CS-137	661.65	*		-1.079E-02	4.499E-02	7.729E-02	8.571E-03	-0.140
CE-139	165.85	*		4.707E-03	2.437E-02	4.061E-02	3.622E-03	0.116
BA-140	162.64			-4.951E-01	5.899E-01	9.193E-01	8.955E-02	-0.539
	304.84			-1.102E+00	1.202E+00	1.704E+00	4.912E-01	-0.647
LA-140	423.70			9.557E-01	1.782E+00	2.995E+00	9.779E-01	0.319
	537.32	*		-1.241E-01	2.572E-01	3.926E-01	1.322E-01	-0.316
	328.77	+		4.503E-01	3.367E-01	4.947E-01	5.437E-02	0.910
	432.53			6.540E-01	1.852E+00	3.119E+00	3.099E-01	0.210
	487.03			6.977E-02	1.320E-01	2.229E-01	2.351E-02	0.313
	751.79			-2.206E-01	1.714E+00	2.802E+00	3.227E-01	-0.079
	815.85			-1.144E-02	3.116E-01	5.094E-01	5.684E-02	-0.022
	867.82			1.091E-01	1.358E+00	2.174E+00	2.221E-01	0.050
	919.63			-1.651E+00	2.589E+00	3.885E+00	4.397E-01	-0.425
	925.24			-2.910E-01	1.060E+00	1.665E+00	1.652E-01	-0.175
CE-141	1596.49	*		-4.451E-02	9.346E-02	1.459E-01	1.213E-02	-0.305
CE-143	145.44	*		-1.486E-02	4.818E-02	7.921E-02	8.810E-03	-0.188
	57.37			5.725E-05	4.818E-02	Half-Life	too short	
	231.56			-9.044E-04	4.818E-02	Half-Life	too short	
	293.26	*		3.331E-04	4.818E-02	Half-Life	too short	
	350.59	+		1.978E-02	4.818E-02	Half-Life	too short	
	490.36			-1.131E-04	4.818E-02	Half-Life	too short	
	664.57			-7.963E-04	4.818E-02	Half-Life	too short	
CE-144	721.93			6.603E-05	4.818E-02	Half-Life	too short	
	80.11			7.240E-01	1.338E+00	1.746E+00	1.810E-01	0.415
	133.54	*		-6.076E-02	1.698E-01	2.668E-01	4.718E-02	-0.228
PM-144	476.78			3.527E-02	7.132E-02	1.201E-01	1.285E-02	0.294

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		-1.127E-02	3.203E-02	5.241E-02	5.830E-03	-0.215
		696.49	*	1.787E-02	3.577E-02	6.171E-02	6.790E-03	0.290
		778.57		4.188E-01	2.429E+00	4.061E+00	4.305E-01	0.103
PR-144		696.49	*	1.210E+00	2.422E+00	4.179E+00	4.598E-01	0.290
		1489.15		-3.937E+00	1.261E+01	1.935E+01	1.602E+00	-0.203
PM-146		453.90	*	4.100E-02	4.216E-02	7.341E-02	8.572E-03	0.558
		633.02		1.951E-01	1.356E+00	2.299E+00	8.734E-01	0.085
		735.90		-1.064E-02	1.574E-01	2.592E-01	7.607E-02	-0.041
		747.13		-4.349E-02	9.251E-02	1.461E-01	2.260E-02	-0.298
ND-147	+	91.11		9.822E-01	2.188E-01	3.074E-01	3.529E-02	3.195
		319.41		7.999E-01	2.813E+00	4.814E+00	5.172E-01	0.166
		439.89		4.811E+00	5.250E+00	9.137E+00	8.806E-01	0.526
		531.02	*	2.412E-01	5.326E-01	8.887E-01	1.428E-01	0.271
PM-149		285.90	*	5.458E+00	5.642E+01	8.981E+01	1.531E+01	0.061
EU-152		121.78		4.907E-02	5.251E-02	9.144E-02	1.260E-02	0.537
		244.69		-2.095E-01	2.983E-01	3.981E-01	4.210E-02	-0.526
		344.27	*	-7.911E-02	9.263E-02	1.408E-01	1.512E-02	-0.562
		443.98		7.741E-02	9.540E-01	1.574E+00	1.523E-01	0.049
		778.89		4.061E-02	2.804E-01	4.676E-01	4.955E-02	0.087
		867.32		2.537E-01	8.741E-01	1.389E+00	1.364E-01	0.183
		964.01		4.202E-01	4.001E-01	6.190E-01	5.774E-02	0.679
		1085.78		-6.733E-02	4.264E-01	7.016E-01	6.178E-02	-0.096
		1112.02		1.645E-01	3.100E-01	5.108E-01	4.419E-02	0.322
		1407.95		1.115E-01	1.996E-01	3.477E-01	2.856E-02	0.321
GD-153		69.67		4.160E-01	8.183E-01	1.217E+00	1.216E-01	0.342
	+	83.37		3.017E+01	1.225E+01	1.487E+01	1.564E+00	2.029
		97.43	*	-4.844E-02	5.491E-02	8.043E-02	9.057E-03	-0.602
		103.18		-9.431E-02	7.226E-02	1.155E-01	1.341E-02	-0.816
EU-154		123.07		6.049E-04	3.741E-02	6.313E-02	9.348E-03	0.010
		247.94		2.358E-01	3.601E-01	5.378E-01	7.023E-02	0.439
		591.81		-4.543E-01	6.320E-01	9.373E-01	1.254E-01	-0.485
		723.30		-8.162E-02	2.110E-01	2.899E-01	3.374E-02	-0.282
		756.87		-5.618E-01	8.374E-01	1.299E+00	1.764E-01	-0.433
		873.19		7.921E-02	2.907E-01	4.870E-01	6.365E-02	0.163
		996.32		-3.807E-01	4.309E-01	6.224E-01	1.124E-01	-0.612
		1004.76		-1.301E-01	2.425E-01	3.678E-01	4.439E-02	-0.354
		1274.45	*	6.169E-02	1.296E-01	2.232E-01	2.452E-02	0.276
EU-155		48.70		-2.192E-01	3.384E-01	4.834E-01	4.601E-02	-0.453
		60.01		-9.226E-01	1.696E+00	2.413E+00	2.374E-01	-0.382
	+	86.54		5.256E-01	9.907E-02	1.286E-01	1.382E-02	4.086
		105.31	*	1.004E-01	7.767E-02	1.369E-01	1.618E-02	0.734
TB-160	+	86.79		1.389E+00	2.611E-01	3.497E-01	3.735E-02	3.971
		197.04		-2.718E-01	4.825E-01	7.508E-01	7.219E-02	-0.362
		215.65		-6.677E-02	6.583E-01	1.060E+00	1.061E-01	-0.063
		298.57		1.551E-01	1.487E-01	1.828E-01	2.011E-02	0.848
		879.36	*	4.043E-02	1.257E-01	2.121E-01	2.055E-02	0.191
		962.29		8.600E-01	6.709E-01	1.102E+00	1.028E-01	0.780
		966.15		1.158E+00	3.544E-01	6.028E-01	5.619E-02	1.921
		1177.93		-3.117E-02	3.647E-01	5.993E-01	4.933E-02	-0.052

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85			1.211E-01	7.464E-01	1.248E+00	1.022E-01	0.097
	80.57			-2.720E-02	1.772E-01	2.203E-01	2.289E-02	-0.123
	184.41			5.375E-02	3.541E-02	5.698E-02	5.319E-03	0.943
	280.46			-8.835E-02	8.185E-02	1.198E-01	1.336E-02	-0.738
	410.95			1.097E-01	2.480E-01	4.203E-01	3.916E-02	0.261
	711.68	*		3.078E-02	6.428E-02	1.106E-01	1.211E-02	0.278
	752.31			1.903E-01	2.944E-01	5.109E-01	5.497E-02	0.372
TM-171	810.29			-3.590E-02	6.009E-02	9.269E-02	9.605E-03	-0.387
	51.35			-8.462E+00	5.820E+00	7.829E+00	7.477E-01	-1.081
	52.39			1.725E+00	2.873E+00	4.736E+00	4.533E-01	0.364
	59.40			-4.595E+00	8.583E+00	1.221E+01	1.200E+00	-0.376
LU-176	66.72	*		-7.424E-01	1.243E+01	1.807E+01	1.794E+00	-0.041
	88.36			1.036E+00	1.948E-01	2.374E-01	2.556E-02	4.362
	201.83			-3.113E-03	2.458E-02	3.975E-02	3.863E-03	-0.078
LU-177	306.84	*		-5.760E-03	2.200E-02	3.664E-02	3.998E-03	-0.157
	401.10			-9.053E-01	6.304E+00	1.033E+01	9.503E-01	-0.088
	112.95			-7.898E-01	9.974E-01	1.627E+00	1.993E-01	-0.485
LU-177M	208.36	*		3.828E+00	1.452E+00	1.694E+00	1.670E-01	2.260
	52.97			4.432E-01	3.041E-01	5.163E-01	4.950E-02	0.858
	54.07			1.529E-01	1.709E-01	2.846E-01	2.737E-02	0.537
HF-181	61.30			3.093E-01	5.105E-01	7.704E-01	7.586E-02	0.402
	121.62			2.311E-01	2.657E-01	4.625E-01	5.946E-02	0.500
	147.16			-1.189E-01	5.095E-01	8.399E-01	9.103E-02	-0.142
	171.86			6.052E-02	3.881E-01	6.443E-01	5.830E-02	0.094
	218.09			3.548E-02	7.723E-01	1.252E+00	1.260E-01	0.028
	268.79			2.569E+00	1.140E+00	1.365E+00	1.501E-01	1.883
	319.02			1.571E-02	2.352E-01	3.979E-01	4.277E-02	0.039
	367.43			-8.033E-01	8.411E-01	1.307E+00	1.278E-01	-0.615
	413.65	*		-2.190E-02	1.716E-01	2.807E-01	2.623E-02	-0.078
	56.28			-2.033E-01	2.218E-01	3.366E-01	3.263E-02	-0.604
	57.53			5.399E-02	1.303E-01	2.109E-01	2.055E-02	0.256
	65.20			-4.373E-02	3.867E-01	5.619E-01	5.561E-02	-0.078
	133.02			-4.781E-03	5.674E-02	8.509E-02	1.027E-02	-0.056
	136.25			-2.063E-01	3.614E-01	5.894E-01	6.955E-02	-0.350
W-181	345.85			9.060E-02	1.749E-01	2.927E-01	3.007E-02	0.310
	482.03	*		-3.024E-02	4.370E-02	6.727E-02	6.759E-03	-0.449
	56.28			-8.048E-02	8.794E-02	1.335E-01	1.294E-02	-0.603
TA-182	57.53			2.140E-02	5.168E-02	8.366E-02	8.153E-03	0.256
	65.20	*		-1.721E-02	1.522E-01	2.212E-01	2.189E-02	-0.078
	67.75			1.630E-02	4.620E-02	7.406E-02	7.368E-03	0.220
RE-183	100.10			1.035E-01	1.172E-01	2.057E-01	2.349E-02	0.503
	152.43			2.008E-01	2.718E-01	4.648E-01	4.803E-02	0.432
	222.10			-8.778E-02	3.081E-01	4.900E-01	4.970E-02	-0.179
	1001.68			1.573E+00	2.382E+00	4.098E+00	3.771E-01	0.384
	1121.28			5.617E-01	2.138E-01	3.615E-01	3.106E-02	1.554
	1189.05			-2.876E-01	3.108E-01	4.658E-01	3.834E-02	-0.617
	1221.42	*		-2.055E-01	2.075E-01	3.101E-01	2.550E-02	-0.663
RE-183	1230.97			-2.945E-01	4.977E-01	7.555E-01	6.210E-02	-0.390
	57.98			1.397E-02	5.288E-02	8.486E-02	8.287E-03	0.165

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	59.32		-2.555E-02	3.221E-02	4.919E-02	4.834E-03	-0.519
		67.20		-5.174E-04	8.163E-02	1.292E-01	1.284E-02	-0.004
		162.32	*	-7.781E-02	9.098E-02	1.417E-01	1.319E-02	-0.549
		208.81		3.851E+00	1.460E+00	1.716E+00	1.693E-01	2.245
		291.72		4.102E-01	8.645E-01	1.342E+00	1.485E-01	0.306
		57.98		5.184E-02	1.962E-01	3.149E-01	3.075E-02	0.165
		59.32		-9.474E-02	1.194E-01	1.824E-01	1.792E-02	-0.519
		67.20		-1.919E-03	3.028E-01	4.792E-01	4.762E-02	-0.004
		161.27		-2.631E-01	2.971E-01	4.701E-01	4.429E-02	-0.560
		216.55		1.492E-02	2.379E-01	3.863E-01	3.874E-02	0.039
		252.85	*	4.715E-03	2.220E-01	3.553E-01	3.810E-02	0.013
		318.01		-9.155E-02	4.087E-01	6.801E-01	7.321E-02	-0.135
		792.07		1.389E+00	1.159E+00	1.875E+00	1.970E-01	0.741
		903.28		-5.596E-01	1.268E+00	1.667E+00	1.578E-01	-0.336
OS-185	+	920.93		1.993E-01	4.238E-01	7.226E-01	6.816E-02	0.276
		59.72		-2.378E-02	9.587E-02	1.386E-01	1.363E-02	-0.172
		61.14		3.520E-02	5.567E-02	8.413E-02	8.283E-03	0.418
		69.30		-1.382E-02	1.345E-01	2.116E-01	2.114E-02	-0.065
		592.07		-1.732E+00	2.561E+00	3.824E+00	4.137E-01	-0.453
		646.12	*	-2.414E-02	4.140E-02	6.587E-02	7.268E-03	-0.366
		717.42		1.323E-02	9.216E-01	1.532E+00	1.674E-01	0.009
		874.81		2.135E-01	5.786E-01	9.779E-01	9.526E-02	0.218
		880.27		-1.094E-01	7.375E-01	1.181E+00	1.143E-01	-0.093
		155.03	*	-9.538E-03	1.444E-01	2.373E-01	2.390E-02	-0.040
RE-188	+	477.96		2.957E+00	3.239E+00	5.588E+00	5.594E-01	0.529
		633.10		4.274E-01	2.709E+00	4.604E+00	5.061E-01	0.093
		63.58		1.920E+01	2.824E+01	3.551E+01	3.506E+00	0.541
W-188	+	227.08		1.171E+00	1.112E+01	1.803E+01	1.846E+00	0.065
		290.67	*	1.814E+00	6.870E+00	1.051E+01	1.165E+00	0.173
		295.96		1.291E+00	2.284E-01	3.035E-01	3.362E-02	4.254
IR-192	+	308.46		5.211E-02	8.556E-02	1.491E-01	1.629E-02	0.350
		316.51	*	-1.195E-03	3.036E-02	5.110E-02	5.519E-03	-0.023
		468.07		4.654E-02	6.449E-02	1.075E-01	1.124E-02	0.433
AU-195	+	604.41		4.214E-01	4.646E-01	7.431E-01	1.086E-01	0.567
		612.46		-4.072E-02	8.312E-01	1.214E+00	1.450E-01	-0.034
		65.12		-6.715E-03	7.053E-02	1.026E-01	1.015E-02	-0.065
		66.83		-1.101E-02	4.179E-02	6.016E-02	5.973E-03	-0.183
		75.70		1.293E+00	1.835E-01	2.743E-01	2.796E-02	4.714
		98.88	*	2.133E-01	1.526E-01	2.611E-01	2.963E-02	0.817
		129.76		6.140E+00	3.606E+00	4.142E+00	5.104E-01	1.482
TL-200	+	367.94	*	-9.537E-05	3.606E+00	Half-Life	too short	
		579.30		1.787E-03	3.606E+00	Half-Life	too short	
		828.27		2.437E-03	3.606E+00	Half-Life	too short	
TL-201	+	1205.75		1.252E-03	3.606E+00	Half-Life	too short	
		68.90		3.852E-01	1.595E+00	2.543E+00	2.538E-01	0.151
		70.82		6.666E-01	1.036E+00	1.547E+00	1.552E-01	0.431
		80.30		1.327E-01	2.492E+00	3.146E+00	3.266E-01	0.042
		135.34		4.815E-01	1.510E+01	2.533E+01	3.008E+00	0.019
		167.43	*	1.226E+00	4.374E+00	7.314E+00	6.542E-01	0.168

## ---- 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		4.256E-02	1.762E-01	2.811E-01	2.804E-02	0.151
		70.82		7.345E-02	1.142E-01	1.705E-01	1.710E-02	0.431
		80.30		1.463E-02	2.747E-01	3.468E-01	3.600E-02	0.042
		439.56	*	5.314E-02	6.252E-02	1.084E-01	1.044E-02	0.490
HG-203		70.83		3.359E-01	5.217E-01	7.774E-01	1.130E-01	0.432
		72.87		4.597E-01	3.020E-01	4.909E-01	6.975E-02	0.937
		82.60		4.977E-01	6.481E-01	9.626E-01	1.442E-01	0.517
		279.20	*	3.579E-04	3.733E-02	5.920E-02	6.719E-03	0.006
BI-207		72.80		1.141E-01	8.796E-02	1.440E-01	1.454E-02	0.792
	+	74.97		7.203E-01	1.022E-01	1.396E-01	1.419E-02	5.159
	+	84.90		3.915E-01	1.590E-01	1.955E-01	2.070E-02	2.003
		569.67		8.333E-03	3.353E-02	5.379E-02	5.753E-03	0.155
		1063.62	*	1.230E-02	5.368E-02	9.173E-02	8.187E-03	0.134
		1770.23		6.193E-03	4.946E-01	7.009E-01	5.771E-02	0.009
TL-207		81.07		-6.971E-02	1.264E-01	1.760E-01	1.832E-02	-0.396
	+	83.78		2.582E-01	1.048E-01	1.327E-01	1.398E-02	1.946
		94.90		1.896E-01	1.439E-01	2.549E-01	2.834E-02	0.744
		122.32		6.761E-01	1.246E+00	2.146E+00	2.856E-01	0.315
		144.24		1.986E-01	5.463E-01	9.042E-01	1.078E-01	0.220
		154.21		5.081E-02	3.382E-01	5.611E-01	6.113E-02	0.091
	+	269.46		6.047E-01	2.685E-01	3.369E-01	3.755E-02	1.795
		323.87	*	-9.332E-02	6.726E-01	9.874E-01	1.855E-01	-0.095
	+	338.28		7.945E+00	1.994E+00	2.638E+00	3.597E-01	3.011
		445.03		1.309E+00	2.279E+00	3.876E+00	4.989E-01	0.338
PO-209		260.50		-2.772E+00	8.568E+00	1.337E+01	1.452E+00	-0.207
		262.80		3.762E+00	2.393E+01	3.850E+01	4.195E+00	0.098
		896.60	*	4.139E-01	8.596E+00	1.404E+01	1.332E+00	0.029
PB-211		404.84	*	-2.962E-01	9.728E-01	1.548E+00	9.715E-01	-0.191
		427.08		7.512E-02	1.984E+00	3.272E+00	2.037E+00	0.023
		831.96		-1.254E+00	1.479E+00	1.850E+00	1.164E+00	-0.678
BI-212	+	727.18	*	1.293E+00	6.064E-01	7.527E-01	9.043E-02	1.718
		785.46		1.952E+00	2.078E+00	3.641E+00	3.842E-01	0.536
		1620.62		3.223E-01	1.476E+00	2.534E+00	2.106E-01	0.127
PO-215		81.07		-6.971E-02	1.264E-01	1.760E-01	1.832E-02	-0.396
	+	83.78		2.582E-01	1.048E-01	1.327E-01	1.398E-02	1.946
		94.90		1.896E-01	1.439E-01	2.549E-01	2.834E-02	0.744
		122.32		6.761E-01	1.246E+00	2.146E+00	2.856E-01	0.315
		144.24		1.986E-01	5.463E-01	9.042E-01	1.078E-01	0.220
		154.21		5.081E-02	3.382E-01	5.611E-01	6.113E-02	0.091
	+	269.46		6.047E-01	2.685E-01	3.369E-01	3.755E-02	1.795
		323.87	*	-9.332E-02	6.726E-01	9.874E-01	1.855E-01	-0.095
	+	338.28		7.945E+00	1.994E+00	2.638E+00	3.597E-01	3.011
		445.03		1.309E+00	2.279E+00	3.876E+00	4.989E-01	0.338
RN-219	+	271.23		7.758E-01	3.470E-01	4.196E-01	5.203E-02	1.849
		401.81	*	2.142E-01	3.928E-01	6.705E-01	1.031E-01	0.319
RN-220		549.76	*	-3.642E-01	2.739E+01	4.401E+01	4.653E+00	-0.008
RA-223		81.07		-6.971E-02	1.264E-01	1.760E-01	1.832E-02	-0.396
	+	83.78		2.582E-01	1.048E-01	1.327E-01	1.398E-02	1.946
		94.90		1.896E-01	1.439E-01	2.549E-01	2.834E-02	0.744

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		6.761E-01	1.246E+00	2.146E+00	2.856E-01	0.315
		144.24		1.986E-01	5.463E-01	9.042E-01	1.078E-01	0.220
		154.21		5.081E-02	3.382E-01	5.611E-01	6.113E-02	0.091
	+	269.46		6.047E-01	2.685E-01	3.369E-01	3.755E-02	1.795
		323.87	*	-9.332E-02	6.726E-01	9.874E-01	1.855E-01	-0.095
	+	338.28		7.945E+00	1.994E+00	2.638E+00	3.597E-01	3.011
		445.03		1.309E+00	2.279E+00	3.876E+00	4.989E-01	0.338
		79.80		5.584E-01	1.039E+00	1.348E+00	3.001E-01	0.414
		236.00		3.016E-01	2.199E-01	3.396E-01	4.607E-02	0.888
		256.20	*	-6.490E-02	3.618E-01	5.713E-01	9.518E-02	-0.114
		286.10		1.983E-01	1.383E+00	2.208E+00	3.302E-01	0.090
	+	299.80		2.575E+00	1.759E+00	2.447E+00	4.593E-01	1.052
TH-227		304.40		-3.887E-01	1.876E+00	2.755E+00	5.408E-01	-0.141
		334.20		-8.687E-02	2.400E+00	3.542E+00	7.197E-01	-0.025
		79.80		5.584E-01	1.039E+00	1.348E+00	3.037E-01	0.414
	+	94.00		9.137E+00	2.898E+00	2.634E+00	6.021E-01	3.468
		236.00		3.016E-01	2.194E-01	3.396E-01	4.253E-02	0.888
		256.20	*	-6.490E-02	3.619E-01	5.713E-01	1.096E-01	-0.114
		286.10		1.983E-01	1.397E+00	2.208E+00	2.222E+00	0.090
	+	299.80		2.575E+00	1.759E+00	2.447E+00	4.593E-01	1.052
		304.40		-3.887E-01	1.876E+00	2.755E+00	5.408E-01	-0.141
		334.20		-8.687E-02	2.400E+00	3.542E+00	7.197E-01	-0.025
	+	85.43		3.865E-01	1.569E-01	1.927E-01	2.046E-02	2.005
	+	88.47		5.962E-01	1.121E-01	1.352E-01	1.456E-02	4.408
TH-229		100.00		1.154E-01	1.228E-01	2.159E-01	2.464E-02	0.535
		193.63	*	-1.606E-01	4.439E-01	7.116E-01	6.788E-02	-0.226
		210.97		6.569E-01	7.030E-01	1.078E+00	1.069E-01	0.609
	PA-231	283.67	*	-4.692E-01	1.387E+00	2.140E+00	3.583E-01	-0.219
	+	301.29		1.030E+00	6.917E-01	9.724E-01	1.362E-01	1.059
	TH-231	81.07		-6.971E-02	1.264E-01	1.760E-01	1.832E-02	-0.396
	+	83.78		2.582E-01	1.048E-01	1.327E-01	1.398E-02	1.946
		94.90		1.896E-01	1.439E-01	2.549E-01	2.834E-02	0.744
		122.32		6.761E-01	1.246E+00	2.146E+00	2.856E-01	0.315
		144.24		1.986E-01	5.463E-01	9.042E-01	1.078E-01	0.220
		154.21		5.081E-02	3.382E-01	5.611E-01	6.113E-02	0.091
	+	269.46		6.047E-01	2.685E-01	3.369E-01	3.755E-02	1.795
U-231		323.87	*	-9.332E-02	6.726E-01	9.874E-01	1.855E-01	-0.095
	+	338.28		7.945E+00	1.994E+00	2.638E+00	3.597E-01	3.011
		445.03		1.309E+00	2.279E+00	3.876E+00	4.989E-01	0.338
	+	84.21		9.113E+00	3.700E+00	4.678E+00	4.938E-01	1.948
	+	92.29		7.397E+00	1.821E+00	2.349E+00	2.577E-01	3.149
		95.87	*	4.580E-02	5.652E-01	8.769E-01	9.795E-02	0.052
		108.00		-9.328E-01	1.209E+00	1.986E+00	2.367E-01	-0.470
	PA-233	75.28		2.102E+01	4.004E+00	4.071E+00	6.625E-01	5.164
	+	86.59		8.548E+00	2.701E+00	2.107E+00	5.803E-01	4.058
	+	300.12		7.177E-01	4.859E-01	6.817E-01	1.115E-01	1.053
		311.98	*	-6.166E-03	5.742E-02	9.637E-02	1.064E-02	-0.064
		340.50		9.287E-01	6.682E-01	1.030E+00	2.527E-01	0.902
		398.62		-7.354E-01	1.914E+00	3.066E+00	8.222E-01	-0.240



## ---- 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		3.300E-01	1.631E+00	2.724E+00	5.956E-01	0.121
		63.00		5.636E-01	8.320E-01	1.032E+00	1.674E-01	0.546
		94.67		2.149E-01	1.090E-01	1.913E-01	2.724E-02	1.123
		98.44		6.386E-02	7.343E-02	1.037E-01	5.837E-02	0.616
		99.86		3.166E-01	3.120E-01	5.492E-01	6.265E-02	0.576
		111.00		-1.420E-02	1.270E-01	2.146E-01	3.173E-02	-0.066
		131.20		1.851E-02	9.147E-02	1.395E-01	1.703E-02	0.133
		152.70		3.307E-01	2.686E-01	4.590E-01	8.242E-02	0.721
	+	186.00		5.605E+00	2.727E+00	2.379E+00	7.476E-01	2.356
		226.40		2.486E-02	3.590E-01	5.811E-01	8.313E-02	0.043
		227.20		-1.094E-01	3.890E-01	6.176E-01	6.326E-02	-0.177
		248.90		5.084E-01	7.662E-01	1.258E+00	2.928E-01	0.404
	+	293.70		8.219E+00	1.904E+00	1.755E+00	3.270E-01	4.682
		369.80		7.257E-02	7.903E-01	1.324E+00	2.944E-01	0.055
		568.70		-9.957E-02	1.069E+00	1.666E+00	1.782E-01	-0.060
		569.50		4.491E-02	2.954E-01	4.702E-01	5.029E-02	0.096
		574.00		2.078E-01	1.560E+00	2.526E+00	2.709E-01	0.082
		699.00		-9.177E-02	7.907E-01	1.305E+00	2.643E-01	-0.070
		706.10		-3.999E-01	1.143E+00	1.826E+00	8.237E-01	-0.219
		733.00		3.878E-02	4.370E-01	6.640E-01	1.538E-01	0.058
		742.81		7.382E-01	1.525E+00	2.486E+00	1.679E+00	0.297
		796.30		1.353E+00	1.214E+00	1.857E+00	5.143E-01	0.729
		805.60		1.266E-01	1.030E+00	1.709E+00	5.331E-01	0.074
		819.60		-8.768E-02	1.241E+00	2.021E+00	7.767E-01	-0.043
		826.30		8.836E-02	8.927E-01	1.474E+00	6.646E-01	0.060
		831.60		-5.219E-01	6.779E-01	9.990E-01	3.030E-01	-0.522
		876.40		-1.890E-01	8.419E-01	1.301E+00	1.339E+00	-0.145
		880.51		2.843E-02	2.636E-01	4.343E-01	4.203E-02	0.065
		883.24		-8.164E-02	2.734E-01	4.208E-01	2.834E-01	-0.194
		899.00		3.846E-01	9.217E-01	1.532E+00	6.725E-01	0.251
		925.00		-5.143E-01	1.197E+00	1.847E+00	1.741E-01	-0.278
		926.50		1.546E-02	1.651E-01	2.703E-01	6.909E-02	0.057
		946.00	*	-8.978E-02	3.216E-01	5.042E-01	9.643E-02	-0.178
		949.00		3.433E-01	4.580E-01	7.953E-01	7.451E-02	0.432
		980.50		-2.936E-01	7.646E-01	1.179E+00	1.094E-01	-0.249
		1394.10		-2.573E-01	1.217E+00	1.902E+00	1.237E+00	-0.135
PA-234M		766.42		1.932E+01	1.759E+01	2.361E+01	1.207E+01	0.818
		1001.03	*	4.866E+00	5.475E+00	9.567E+00	1.002E+00	0.509
U-235	+	89.95		4.221E+00	1.558E+00	1.367E+00	4.313E-01	3.088
	+	93.35		2.843E+00	1.032E+00	9.319E-01	2.689E-01	3.050
		105.00		1.141E+00	8.218E-01	1.335E+00	4.124E-01	0.855
		143.76	*	6.811E-02	1.700E-01	2.814E-01	5.314E-02	0.242
		163.35		-3.033E-01	4.045E-01	6.289E-01	1.217E-01	-0.482
	+	185.71		2.076E-01	7.950E-02	8.833E-02	8.271E-03	2.350
		205.31		-1.868E-02	4.853E-01	7.022E-01	1.379E-01	-0.027
NP-236		94.67		1.652E-01	8.156E-02	1.453E-01	1.614E-02	1.136
		98.44		4.824E-02	4.872E-02	7.841E-02	8.877E-03	0.615
		111.00		-1.074E-02	9.609E-02	1.623E-01	1.967E-02	-0.066
		160.31	*	2.689E-02	6.674E-02	1.124E-01	1.071E-02	0.239

---- 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		1.784E-01	1.038E-01	1.851E-01	2.108E-02	0.964
		117.00	*	6.378E-02	1.341E-01	2.311E-01	2.895E-02	0.276
	+	209.75		3.075E+00	1.166E+00	1.330E+00	1.315E-01	2.312
		228.18		1.226E-02	2.022E-01	3.270E-01	3.356E-02	0.038
		277.60		3.438E-01	1.701E-01	2.949E-01	3.284E-02	1.166
AM-241		334.30		-1.436E-01	1.355E+00	1.989E+00	2.088E-01	-0.072
		59.54	*	-2.090E-02	5.042E-02	7.221E-02	7.502E-03	-0.289
CM-243		99.55		1.835E-01	1.068E-01	1.904E-01	2.169E-02	0.964
		103.76	*	-1.289E-02	6.704E-02	1.134E-01	1.321E-02	-0.114
		117.00		6.561E-02	1.380E-01	2.377E-01	2.978E-02	0.276
	+	209.75		3.031E+00	1.149E+00	1.311E+00	1.296E-01	2.312
		228.18		1.239E-02	2.043E-01	3.304E-01	3.391E-02	0.038
AM-246		277.60		3.466E-01	1.715E-01	2.973E-01	3.310E-02	1.166
		798.80		1.660E-02	1.566E-01	2.261E-01	2.364E-02	0.073
		1036.00		-1.618E-01	2.629E-01	4.092E-01	3.707E-02	-0.395
		1062.04		1.024E-01	2.263E-01	3.949E-01	3.528E-02	0.259
		1078.86	*	1.720E-01	1.396E-01	2.592E-01	2.292E-02	0.664
CM-247		278.00		1.250E+00	7.077E-01	1.216E+00	1.355E-01	1.028
		287.40		5.045E-01	1.090E+00	1.775E+00	1.971E-01	0.284
CF-249		402.60	*	2.240E-02	3.555E-02	6.108E-02	5.630E-03	0.367
		252.85		1.778E-02	8.371E-01	1.340E+00	1.437E-01	0.013
		333.44		8.525E-02	1.907E-01	2.738E-01	2.879E-02	0.311
CF-251		387.95	*	3.179E-02	3.939E-02	6.837E-02	6.292E-03	0.465
		176.60	*	1.017E-01	1.057E-01	1.811E-01	1.658E-02	0.562
		227.00		3.833E-02	3.377E-01	5.480E-01	5.611E-02	0.070
		285.00		6.945E-01	1.569E+00	2.554E+00	2.841E-01	0.272

# 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]G244132007      *
* Acquisition date   : 19-JAN-2010 09:54:35 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 02:00:01.94              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132007              Analyst initials: MXR1         *
* Batch Number       : 940270                  Sample Quantity : 1.2527E+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	2.065E+01	2.303E+00	5.133E-01	0.000E+00
CD-109	4.435E+00	8.173E-01	7.005E-01	0.000E+00
SN-126	4.366E-01	8.047E-02	6.884E-02	0.000E+00
TL-208	6.168E-01	1.050E-01	6.008E-02	0.000E+00
BI-210	9.233E-01	7.318E-01	6.029E-01	0.000E+00
PB-210	9.233E-01	7.318E-01	6.029E-01	0.000E+00
PO-210	9.233E-01	7.310E-01	6.029E-01	0.000E+00
BI-211	4.579E+00	6.298E-01	3.156E-01	0.000E+00
PB-212	2.047E+00	2.543E-01	7.843E-02	0.000E+00
PO-212	2.047E+00	2.543E-01	7.843E-02	0.000E+00
BI-214	1.399E+00	2.270E-01	1.145E-01	0.000E+00
PB-214	1.593E+00	2.337E-01	1.070E-01	0.000E+00
PO-214	1.593E+00	2.337E-01	1.070E-01	0.000E+00
PO-216	2.047E+00	2.543E-01	7.843E-02	0.000E+00
PO-218	1.593E+00	2.337E-01	1.070E-01	0.000E+00
RA-224	5.829E+00	1.468E+00	8.936E-01	0.000E+00
RA-226	1.399E+00	2.270E-01	1.145E-01	0.000E+00
AC-228	2.103E+00	4.063E-01	2.029E-01	0.000E+00
RA-228	2.103E+00	4.063E-01	2.029E-01	0.000E+00
TH-228	2.075E+00	2.579E-01	7.952E-02	0.000E+00
TH-230	1.399E+00	2.270E-01	1.145E-01	0.000E+00
TH-232	2.103E+00	4.063E-01	2.029E-01	0.000E+00
TH-234	4.835E-01	7.008E-01	7.585E-01	0.000E+00
U-234	1.399E+00	2.270E-01	1.145E-01	0.000E+00
NP-237	1.282E+00	3.508E-01	2.012E-01	0.000E+00
U-238	4.835E-01	7.008E-01	7.585E-01	0.000E+00
AM-243	4.013E-01	5.583E-02	4.543E-02	0.000E+00
ANH-511	1.488E-01	6.703E-02	4.726E-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	2.508E-01	3.291E-01	5.827E-01	0.000E+00	NOT IDENT.
NA-22	1.414E-02	4.608E-02	7.973E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.016E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.396E-02	3.330E-02	5.125E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.327E-02	4.715E-02	0.000E+00	FAIL ABUN
SC-46	-2.983E-02	3.971E-02	6.104E-02	0.000E+00	FAIL ABUN
V-48	5.814E-02	6.653E-02	1.196E-01	0.000E+00	NOT IDENT.
CR-51	1.445E-01	3.280E-01	5.889E-01	0.000E+00	NOT IDENT.
MN-52	1.573E-01	1.877E-01	3.498E-01	0.000E+00	NOT IDENT.
MN-54	4.210E-03	3.589E-02	6.104E-02	0.000E+00	NOT IDENT.
CO-56	-2.161E-02	3.872E-02	6.136E-02	0.000E+00	FAIL ABUN
CO-57	1.787E-02	1.757E-02	3.239E-02	0.000E+00	NOT IDENT.
CO-58	-1.419E-02	3.880E-02	6.318E-02	0.000E+00	NOT IDENT.
FE-59	-2.294E-02	8.635E-02	1.436E-01	0.000E+00	NOT IDENT.
CO-60	-1.252E-02	3.633E-02	5.779E-02	0.000E+00	NOT IDENT.
ZN-65	-1.990E-02	9.864E-02	1.407E-01	0.000E+00	NOT IDENT.
GE-68	5.684E-01	1.201E+00	2.146E+00	0.000E+00	NOT IDENT.
AS-73	2.589E-01	1.591E-01	2.890E-01	0.000E+00	NOT IDENT.
AS-74	4.552E-02	8.947E-02	1.535E-01	0.000E+00	NOT IDENT.
SE-75	2.739E-02	4.050E-02	6.689E-02	0.000E+00	NOT IDENT.
BR-77	-1.747E-01	7.048E+00	1.177E+01	0.000E+00	FAIL ABUN
SR-82	-1.413E-01	3.829E-01	6.284E-01	0.000E+00	NOT IDENT.
RB-83	1.985E-03	6.583E-02	1.104E-01	0.000E+00	NOT IDENT.
RB-84	-2.316E-02	6.420E-02	1.031E-01	0.000E+00	NOT IDENT.
KR-85	7.147E+00	7.347E+00	1.181E+01	0.000E+00	NOT IDENT.
SR-85	3.618E-02	3.719E-02	5.977E-02	0.000E+00	NOT IDENT.
RB-86	2.210E-01	7.242E-01	1.276E+00	0.000E+00	NOT IDENT.
Y-88	3.651E-02	4.026E-02	7.701E-02	0.000E+00	NOT IDENT.
ZR-88	6.690E-03	2.895E-02	5.055E-02	0.000E+00	NOT IDENT.
Y-91	8.271E+00	1.972E+01	3.449E+01	0.000E+00	NOT IDENT.
NB-94	7.891E-03	3.750E-02	6.426E-02	0.000E+00	NOT IDENT.
NB-95	7.143E-02	5.212E-02	8.665E-02	0.000E+00	NOT IDENT.
NB-95M	7.433E-02	1.096E-01	1.718E-01	0.000E+00	NOT IDENT.
ZR-95	2.827E-02	7.460E-02	1.306E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.240E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.159E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	3.586E-01	9.012E+00	1.541E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.085E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.461E-03	2.820E-02	4.691E-02	0.000E+00	NOT IDENT.
RH-102	-2.106E-03	2.931E-02	4.925E-02	0.000E+00	FAIL ABUN
RU-103	-2.692E-02	3.616E-02	5.649E-02	0.000E+00	FAIL ABUN
RH-106	9.403E-02	3.027E-01	5.373E-01	0.000E+00	FAIL ABUN
RU-106	9.403E-02	3.025E-01	5.373E-01	0.000E+00	FAIL ABUN
AG-108M	-7.140E-03	3.034E-02	5.082E-02	0.000E+00	NOT IDENT.
AG-110M	-3.476E-02	3.744E-02	5.989E-02	0.000E+00	NOT IDENT.
IN-111	-9.694E-01	7.616E-01	1.006E+00	0.000E+00	NOT IDENT.
IN-113M	-1.604E-02	4.182E-02	7.022E-02	0.000E+00	NOT IDENT.
SN-113	-1.604E-02	4.182E-02	7.022E-02	0.000E+00	NOT IDENT.
IN-114M	6.373E-02	1.714E-01	2.687E-01	0.000E+00	NOT IDENT.
CD-115	2.792E+00	7.423E+00	1.276E+01	0.000E+00	NOT IDENT.
SN-117M	7.102E-03	4.310E-02	7.567E-02	0.000E+00	NOT IDENT.
SB-122	4.793E-01	1.409E+00	2.405E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.049E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-5.260E-04	2.366E-02	4.120E-02	0.000E+00	NOT IDENT.
I-124	6.913E-02	5.686E-01	8.742E-01	0.000E+00	NOT IDENT.
SB-124	-2.596E-02	6.300E-02	9.645E-02	0.000E+00	FAIL ABUN
SB-125	-1.070E-03	8.728E-02	1.489E-01	0.000E+00	FAIL ABUN
TE-125M	3.497E+00	6.225E+00	1.139E+01	0.000E+00	NOT IDENT.
I-126	-9.410E-02	1.873E-01	3.110E-01	0.000E+00	NOT IDENT.
SB-126	6.476E-02	1.502E-01	2.340E-01	0.000E+00	FAIL ABUN
SB-127	-4.177E-01	1.067E+00	1.773E+00	0.000E+00	NOT IDENT.
XE-127	-9.061E-03	3.814E-02	6.427E-02	0.000E+00	NOT IDENT.
I-131	4.892E-02	9.497E-02	1.697E-01	0.000E+00	NOT IDENT.
TE-132	3.189E-02	4.691E-01	7.943E-01	0.000E+00	NOT IDENT.
BA-133	-1.222E-02	4.261E-02	6.350E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.375E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.085E-02	9.747E-02	0.000E+00	FAIL ABUN
CS-135	1.385E-01	1.618E-01	2.532E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.810E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.354E-02	9.858E-02	1.745E-01	0.000E+00	FAIL ABUN
BA-137M	-1.020E-02	4.171E-02	7.389E-02	0.000E+00	NOT IDENT.
CS-137	-1.079E-02	4.409E-02	7.811E-02	0.000E+00	NOT IDENT.
CE-139	4.707E-03	2.388E-02	4.184E-02	0.000E+00	NOT IDENT.
BA-140	-1.241E-01	2.521E-01	3.979E-01	0.000E+00	NOT IDENT.
LA-140	-4.451E-02	9.159E-02	1.456E-01	0.000E+00	FAIL ABUN
CE-141	-1.486E-02	4.722E-02	8.176E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.107E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	-6.076E-02	1.664E-01	2.757E-01	0.000E+00	NOT IDENT.
PM-144	1.787E-02	3.505E-02	6.233E-02	0.000E+00	NOT IDENT.
PR-144	1.210E+00	2.374E+00	4.221E+00	0.000E+00	NOT IDENT.
PM-146	4.100E-02	4.132E-02	7.459E-02	0.000E+00	NOT IDENT.
ND-147	2.412E-01	5.220E-01	9.010E-01	0.000E+00	FAIL ABUN
PM-149	5.458E+00	5.529E+01	9.184E+01	0.000E+00	NOT IDENT.
EU-152	-7.911E-02	9.078E-02	1.436E-01	0.000E+00	NOT IDENT.
GD-153	-4.844E-02	5.382E-02	8.347E-02	0.000E+00	FAIL ABUN
EU-154	6.169E-02	1.270E-01	2.234E-01	0.000E+00	NOT IDENT.
EU-155	1.004E-01	7.611E-02	1.419E-01	0.000E+00	FAIL ABUN
TB-160	4.043E-02	1.232E-01	2.135E-01	0.000E+00	FAIL ABUN
HO-166M	3.078E-02	6.299E-02	1.117E-01	0.000E+00	NOT IDENT.
TM-171	-7.424E-01	1.218E+01	1.885E+01	0.000E+00	NOT IDENT.
LU-176	-5.760E-03	2.156E-02	3.743E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.422E+00	1.740E+00	0.000E+00	FAIL ABUN
LU-177M	-2.190E-02	1.681E-01	2.855E-01	0.000E+00	FAIL ABUN
HF-181	-3.024E-02	4.283E-02	6.829E-02	0.000E+00	NOT IDENT.
W-181	-1.721E-02	1.492E-01	2.308E-01	0.000E+00	NOT IDENT.
TA-182	-2.055E-01	2.034E-01	3.107E-01	0.000E+00	FAIL ABUN
RE-183	-7.781E-02	8.916E-02	1.461E-01	0.000E+00	FAIL ABUN
RE-184	4.715E-03	2.176E-01	3.639E-01	0.000E+00	NOT IDENT.
OS-185	-2.414E-02	4.057E-02	6.659E-02	0.000E+00	NOT IDENT.
RE-188	-9.538E-03	1.415E-01	2.447E-01	0.000E+00	NOT IDENT.
W-188	1.814E+00	6.732E+00	1.075E+01	0.000E+00	FAIL ABUN
IR-192	-1.195E-03	2.976E-02	5.218E-02	0.000E+00	FAIL ABUN
AU-195	2.133E-01	1.495E-01	2.710E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.921E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.226E+00	4.287E+00	7.534E+00	0.000E+00	NOT IDENT.
TL-202	5.314E-02	6.127E-02	1.102E-01	0.000E+00	NOT IDENT.
HG-203	3.579E-04	3.658E-02	6.056E-02	0.000E+00	NOT IDENT.
BI-207	1.230E-02	5.260E-02	9.207E-02	0.000E+00	FAIL ABUN
TL-207	-9.332E-02	6.592E-01	1.008E+00	0.000E+00	FAIL ABUN
PO-209	4.139E-01	8.424E+00	1.412E+01	0.000E+00	NOT IDENT.
PB-211	-2.962E-01	9.534E-01	1.576E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.943E-01	7.596E-01	0.000E+00	FAIL ABUN
PO-215	-9.332E-02	6.592E-01	1.008E+00	0.000E+00	FAIL ABUN
RN-219	2.142E-01	3.849E-01	6.824E-01	0.000E+00	FAIL ABUN
RN-220	-3.642E-01	2.684E+01	4.459E+01	0.000E+00	NOT IDENT.
RA-223	-9.332E-02	6.592E-01	1.008E+00	0.000E+00	FAIL ABUN
AC-227	-6.490E-02	3.546E-01	5.851E-01	0.000E+00	FAIL ABUN
TH-227	-6.490E-02	3.546E-01	5.851E-01	0.000E+00	FAIL ABUN
TH-229	-1.606E-01	4.350E-01	7.316E-01	0.000E+00	FAIL ABUN
PA-231	-4.692E-01	1.359E+00	2.189E+00	0.000E+00	FAIL ABUN
TH-231	-9.332E-02	6.592E-01	1.008E+00	0.000E+00	FAIL ABUN
U-231	4.580E-02	5.538E-01	9.102E-01	0.000E+00	FAIL ABUN
PA-233	-6.166E-03	5.627E-02	9.843E-02	0.000E+00	FAIL ABUN
PA-234	-8.978E-02	3.152E-01	5.070E-01	0.000E+00	FAIL ABUN
PA-234M	4.866E+00	5.365E+00	9.612E+00	0.000E+00	NOT IDENT.
U-235	6.811E-02	1.666E-01	2.905E-01	0.000E+00	FAIL ABUN
NP-236	2.689E-02	6.540E-02	1.159E-01	0.000E+00	NOT IDENT.
NP-239	6.378E-02	1.315E-01	2.392E-01	0.000E+00	FAIL ABUN
AM-241	-2.090E-02	4.941E-02	7.543E-02	0.000E+00	NOT IDENT.
CM-243	-1.289E-02	6.570E-02	1.176E-01	0.000E+00	FAIL ABUN
AM-246	1.720E-01	1.368E-01	2.601E-01	0.000E+00	NOT IDENT.
CM-247	2.240E-02	3.484E-02	6.216E-02	0.000E+00	NOT IDENT.
CF-249	3.179E-02	3.860E-02	6.962E-02	0.000E+00	NOT IDENT.
CF-251	1.017E-01	1.036E-01	1.864E-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]G244132007.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 09:54:35
Sample ID          : G244132007           Sample quantity  : 1.25270E+02 GRAM
Detector name      : GAM25                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time  : 0 02:00:01.94  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity        : 5.00000
Batch ID           : 940270                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	815	10.67*	1.109E+00	2.065E+01	2.065E+01	11.38
CD-109	88.03	507	3.72*	9.405E+00	4.343E+00	4.435E+00	18.81
SN-126	64.28	60	9.60	9.778E+00	1.914E-01	1.914E-01	147.60
	86.94	507	8.90	9.405E+00	1.815E+00	1.815E+00	44.61
	87.57	507	37.00*	9.405E+00	4.366E-01	4.366E-01	18.81
TL-208	277.35	-----	6.80	4.738E+00	-----	Line Not Found	-----
	510.84	139	21.60	2.809E+00	6.888E-01	6.888E-01	46.72
	583.14	433	84.20*	2.497E+00	6.168E-01	6.168E-01	17.36
	860.37	50	12.46	1.766E+00	6.789E-01	6.789E-01	72.11
BI-210	46.50	115	4.05*	9.195E+00	9.222E-01	9.233E-01	80.88
PB-210	46.50	115	4.05*	9.195E+00	9.222E-01	9.233E-01	80.88
PO-210	46.50	115	4.05*	9.195E+00	9.222E-01	9.233E-01	80.78
BI-211	72.87	-----	1.27	9.724E+00	-----	Line Not Found	-----
	351.07	769	12.94*	3.887E+00	4.579E+00	4.579E+00	14.04
PB-212	74.81	857	10.70	9.694E+00	2.475E+00	2.475E+00	16.99
	77.11	1373	18.00	9.653E+00	2.367E+00	2.367E+00	12.44
	87.30	507	8.00	9.405E+00	2.020E+00	2.020E+00	21.30
	238.63	1627	44.60*	5.340E+00	2.047E+00	2.047E+00	12.68
	300.09	70	3.41	4.442E+00	1.389E+00	1.389E+00	66.86
PO-212	74.81	857	10.70	9.694E+00	2.475E+00	2.475E+00	16.99
	77.11	1373	18.00	9.653E+00	2.367E+00	2.367E+00	12.44
	87.30	507	8.00	9.405E+00	2.020E+00	2.020E+00	21.30
	115.19	-----	0.60	8.498E+00	-----	Line Not Found	-----
	238.63	1627	44.60*	5.340E+00	2.047E+00	2.047E+00	12.68
	300.09	70	3.41	4.442E+00	1.389E+00	1.389E+00	66.86
BI-214	609.31	519	46.30*	2.402E+00	1.399E+00	1.399E+00	16.56
	1120.29	84	15.10	1.398E+00	1.197E+00	1.197E+00	38.63
	1764.49	99	15.80	9.416E-01	1.985E+00	1.985E+00	24.59
PB-214	74.81	857	6.21	9.694E+00	4.265E+00	4.265E+00	16.01
	77.11	1373	10.50	9.653E+00	4.059E+00	4.059E+00	14.59
	87.30	507	4.67	9.405E+00	3.460E+00	3.460E+00	20.32
	241.98	407	7.49	5.291E+00	3.074E+00	3.074E+00	26.30

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	494	19.20	4.503E+00	1.712E+00	1.712E+00	18.73
	351.92	769	37.20*	3.887E+00	1.593E+00	1.593E+00	14.97
	74.81	857	6.21	9.694E+00	4.265E+00	4.265E+00	16.01
	77.11	1373	10.50	9.653E+00	4.059E+00	4.059E+00	14.59
	87.30	507	4.67	9.405E+00	3.460E+00	3.460E+00	20.32
PO-216	241.98	407	7.49	5.291E+00	3.074E+00	3.074E+00	26.30
	295.21	494	19.20	4.503E+00	1.712E+00	1.712E+00	18.73
	351.92	769	37.20*	3.887E+00	1.593E+00	1.593E+00	14.97
	74.81	857	10.70	9.694E+00	2.475E+00	2.475E+00	16.99
	77.11	1373	18.00	9.653E+00	2.367E+00	2.367E+00	12.44
PO-218	87.30	507	8.00	9.405E+00	2.020E+00	2.020E+00	21.30
	238.63	1627	44.60*	5.340E+00	2.047E+00	2.047E+00	12.68
	300.09	70	3.41	4.442E+00	1.389E+00	1.389E+00	66.86
	74.81	857	6.21	9.694E+00	4.265E+00	4.265E+00	16.01
	77.11	1373	10.50	9.653E+00	4.059E+00	4.059E+00	14.59
RA-224	87.30	507	4.67	9.405E+00	3.460E+00	3.460E+00	20.32
	241.98	407	7.49	5.291E+00	3.074E+00	3.074E+00	26.30
	295.21	494	19.20	4.503E+00	1.712E+00	1.712E+00	18.73
	351.92	769	37.20*	3.887E+00	1.593E+00	1.593E+00	14.97
	240.98	407	3.95*	5.291E+00	5.829E+00	5.829E+00	25.70
RA-226	609.31	519	46.30*	2.402E+00	1.399E+00	1.399E+00	16.56
	1120.29	84	15.10	1.398E+00	1.197E+00	1.197E+00	38.63
	1764.49	99	15.80	9.416E-01	1.985E+00	1.985E+00	24.59
	338.32	291	11.40	4.020E+00	1.903E+00	1.903E+00	46.70
	911.07	326	27.70*	1.679E+00	2.103E+00	2.103E+00	19.72
AC-228	969.11	160	16.60	1.589E+00	1.812E+00	1.812E+00	36.97
	338.32	291	11.40	4.020E+00	1.903E+00	1.903E+00	46.70
	911.07	326	27.70*	1.679E+00	2.103E+00	2.103E+00	19.72
	969.11	160	16.60	1.589E+00	1.812E+00	1.812E+00	36.97
	74.81	857	10.70	9.694E+00	2.475E+00	2.510E+00	14.24
TH-228	77.11	1373	18.00	9.653E+00	2.367E+00	2.401E+00	12.44
	87.30	507	8.00	9.405E+00	2.020E+00	2.048E+00	18.81
	238.63	1627	44.60*	5.340E+00	2.047E+00	2.075E+00	12.68
	300.09	70	3.41	4.442E+00	1.389E+00	1.409E+00	88.75
	609.31	519	46.30*	2.402E+00	1.399E+00	1.399E+00	16.56
TH-230	1120.29	84	15.10	1.398E+00	1.197E+00	1.197E+00	38.63
	1764.49	99	15.80	9.416E-01	1.985E+00	1.985E+00	24.59
	338.32	291	11.40	4.020E+00	1.903E+00	1.903E+00	23.51
	911.07	326	27.70*	1.679E+00	2.103E+00	2.103E+00	19.72
	969.11	160	16.60	1.589E+00	1.812E+00	1.812E+00	36.97
TH-232	63.29	60	3.80*	9.778E+00	4.835E-01	4.835E-01	147.91
	92.38	394	5.41	9.241E+00	2.364E+00	2.364E+00	29.30
	609.31	519	46.30*	2.402E+00	1.399E+00	1.399E+00	16.56
	1120.29	84	15.10	1.398E+00	1.197E+00	1.197E+00	38.63
	1764.49	99	15.80	9.416E-01	1.985E+00	1.985E+00	24.59
TH-234	86.50	507	12.60*	9.405E+00	1.282E+00	1.282E+00	27.92
	95.87	---	2.60	9.143E+00	---	Line Not Found	---
	63.29	60	3.80*	9.778E+00	4.835E-01	4.835E-01	147.91
	92.38	394	5.41	9.241E+00	2.364E+00	2.364E+00	24.61

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	857	66.00*	9.694E+00	4.013E-01	4.013E-01	14.19
	86.72	507	0.34	9.405E+00	4.808E+01	4.808E+01	18.81
	117.66	-----	0.55	8.415E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.617E+00	-----	Line Not Found	-----
ANH-511	511.00	139	100.00*	2.809E+00	1.488E-01	1.488E-01	45.97

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	2.065E+01	2.065E+01	0.235E+01	11.38	
CD-109	464.00D	1.02	4.343E+00	4.435E+00	0.834E+00	18.81	
SN-126	1.00E+05Y	1.00	4.366E-01	4.366E-01	0.821E-01	18.81	
TL-208	1.41E+10Y	1.00	6.168E-01	6.168E-01	1.071E-01	17.36	
BI-210	22.26Y	1.00	9.222E-01	9.233E-01	7.468E-01	80.88	
PB-210	22.26Y	1.00	9.222E-01	9.233E-01	7.468E-01	80.88	
PO-210	22.26Y	1.00	9.222E-01	9.233E-01	7.459E-01	80.78	
BI-211	7.04E+08Y	1.00	4.579E+00	4.579E+00	0.643E+00	14.04	
PB-212	1.41E+10Y	1.00	2.047E+00	2.047E+00	0.260E+00	12.68	
PO-212	1.41E+10Y	1.00	2.047E+00	2.047E+00	0.260E+00	12.68	
BI-214	1600.00Y	1.00	1.399E+00	1.399E+00	0.232E+00	16.56	
PB-214	1600.00Y	1.00	1.593E+00	1.593E+00	0.239E+00	14.97	
PO-214	1600.00Y	1.00	1.593E+00	1.593E+00	0.239E+00	14.97	
PO-216	1.41E+10Y	1.00	2.047E+00	2.047E+00	0.260E+00	12.68	
PO-218	1600.00Y	1.00	1.593E+00	1.593E+00	0.239E+00	14.97	
RA-224	1.41E+10Y	1.00	5.829E+00	5.829E+00	1.498E+00	25.70	
RA-226	1600.00Y	1.00	1.399E+00	1.399E+00	0.232E+00	16.56	
AC-228	1.41E+10Y	1.00	2.103E+00	2.103E+00	0.415E+00	19.72	
RA-228	1.41E+10Y	1.00	2.103E+00	2.103E+00	0.415E+00	19.72	
TH-228	1.91Y	1.01	2.047E+00	2.075E+00	0.263E+00	12.68	
TH-230	4.47E+09Y	1.00	1.399E+00	1.399E+00	0.232E+00	16.56	
TH-232	1.41E+10Y	1.00	2.103E+00	2.103E+00	0.415E+00	19.72	
TH-234	4.47E+09Y	1.00	4.835E-01	4.835E-01	7.151E-01	147.91	
U-234	4.47E+09Y	1.00	1.399E+00	1.399E+00	0.232E+00	16.56	
NP-237	2.14E+06Y	1.00	1.282E+00	1.282E+00	0.358E+00	27.92	
U-238	4.47E+09Y	1.00	4.835E-01	4.835E-01	7.151E-01	147.91	
AM-243	7380.00Y	1.00	4.013E-01	4.013E-01	0.570E-01	14.19	
ANH-511	1.00E+09Y	1.00	1.488E-01	1.488E-01	0.684E-01	45.97	
Total Activity :			6.689E+01	6.701E+01			

Grand Total Activity : 6.689E+01 6.701E+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	84.14	202	472	1.31	167.83	164	29	2.80E-02	39.2	9.49E+00	T
5	89.92	355	311	1.00	179.39	164	29	4.93E-02	19.1	9.33E+00	T
0	128.80	127	369	0.93	257.15	253	9	1.76E-02	57.4	8.04E+00	T
0	186.00	240	409	1.13	371.54	367	12	3.33E-02	37.1	6.42E+00	T
0	209.11	196	291	0.96	417.75	413	11	2.72E-02	36.6	5.90E+00	T
0	270.17	133	194	1.53	539.87	535	10	1.84E-02	43.0	4.84E+00	T
0	327.81	60	143	1.06	655.14	652	8	8.29E-03	74.0	4.13E+00	T
0	462.74	68	97	1.04	924.98	920	9	9.47E-03	57.4	3.06E+00	T
0	727.09	104	101	1.69	1453.66	1445	14	1.45E-02	45.3	2.05E+00	T
0	767.97	46	57	1.08	1535.42	1532	9	6.33E-03	66.5	1.95E+00	T
0	794.67	53	60	1.73	1588.83	1582	12	7.36E-03	64.6	1.89E+00	T
0	1238.64	28	54	2.97	2476.78	2473	10	3.87E-03	****	1.28E+00	T
0	1378.15	55	6	1.09	2755.81	2750	15	7.70E-03	34.1	1.17E+00	
0	1728.42	32	4	1.52	3456.42	3448	16	4.45E-03	45.0	9.58E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132007.CNF;1
* Acquisition date   : 19-JAN-2010 09:54:35  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 02:00:01.94          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244132007            Analyst initials: MXR1
* Batch Number       : 940270                Sample Quantity : 1.25270E+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	2.065E+01	2.350E+00	5.137E-01	4.375E-02	40.195
CD-109	4.435E+00	8.340E-01	6.741E-01	7.244E-02	6.579
SN-126	4.366E-01	8.212E-02	6.624E-02	7.102E-03	6.592
TL-208	6.168E-01	1.071E-01	5.934E-02	6.689E-03	10.395
BI-210	9.233E-01	7.468E-01	5.753E-01	5.932E-02	1.605
PB-210	9.233E-01	7.468E-01	5.753E-01	5.932E-02	1.605
PO-210	9.233E-01	7.459E-01	5.753E-01	5.479E-02	1.605
BI-211	4.579E+00	6.427E-01	3.095E-01	3.261E-02	14.795
PB-212	2.047E+00	2.595E-01	7.650E-02	8.709E-03	26.755
PO-212	2.047E+00	2.595E-01	7.650E-02	8.709E-03	26.755
BI-214	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
PB-214	1.593E+00	2.385E-01	1.049E-01	1.232E-02	15.182
PO-214	1.593E+00	2.385E-01	1.049E-01	1.232E-02	15.182
PO-216	2.047E+00	2.595E-01	7.650E-02	8.709E-03	26.755
PO-218	1.593E+00	2.385E-01	1.049E-01	1.232E-02	15.182
RA-224	5.829E+00	1.498E+00	8.717E-01	9.160E-02	6.687
RA-226	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
AC-228	2.103E+00	4.146E-01	2.016E-01	2.398E-02	10.427

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	2.103E+00	4.146E-01	2.016E-01	2.398E-02	10.427
TH-228	2.075E+00	2.631E-01	7.757E-02	8.831E-03	26.755
TH-230	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
TH-232	2.103E+00	4.146E-01	2.016E-01	2.398E-02	10.427
TH-234	4.835E-01	7.151E-01	7.267E-01	1.353E-01	0.665
U-234	1.399E+00	2.317E-01	1.131E-01	1.365E-02	12.365
NP-237	1.282E+00	3.580E-01	1.936E-01	4.497E-02	6.624
U-238	4.835E-01	7.151E-01	7.267E-01	1.353E-01	0.665
AM-243	4.013E-01	5.697E-02	4.362E-02	4.430E-03	9.201
ANH-511	1.488E-01	6.840E-02	4.659E-02	4.795E-03	3.193

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.508E-01		3.358E-01	5.739E-01	6.076E-02	0.437
NA-22	1.414E-02		4.702E-02	7.964E-02	6.530E-03	0.178
NA-24	-1.132E-01		1.029E-01	Half-Life too short		
AL-26	-1.396E-02		3.398E-02	5.146E-02	4.217E-03	-0.271
TI-44	4.369E-01	+	5.436E-02	4.530E-02	4.665E-03	9.643
SC-46	-2.983E-02		4.052E-02	6.066E-02	5.809E-03	-0.492
V-48	5.814E-02		6.789E-02	1.190E-01	1.103E-02	0.488
CR-51	1.445E-01		3.347E-01	5.768E-01	6.405E-02	0.251
MN-52	1.573E-01		1.915E-01	3.500E-01	2.884E-02	0.449
MN-54	4.210E-03		3.663E-02	6.060E-02	6.149E-03	0.069
CO-56	-2.161E-02		3.951E-02	6.093E-02	6.113E-03	-0.355
CO-57	1.787E-02		1.793E-02	3.131E-02	4.037E-03	0.571
CO-58	-1.419E-02		3.959E-02	6.270E-02	6.505E-03	-0.226
FE-59	-2.294E-02		8.811E-02	1.431E-01	1.348E-02	-0.160
CO-60	-1.252E-02		3.707E-02	5.776E-02	4.691E-03	-0.217
ZN-65	-1.990E-02		1.006E-01	1.403E-01	1.212E-02	-0.142
GE-68	5.684E-01		1.225E+00	2.138E+00	1.893E-01	0.266
AS-73	2.589E-01		1.623E-01	2.762E-01	2.651E-02	0.937
AS-74	4.552E-02		9.130E-02	1.517E-01	1.644E-02	0.300
SE-75	2.739E-02		4.132E-02	6.534E-02	7.161E-03	0.419
BR-77	-1.747E-01		7.192E+00	1.160E+01	1.203E+00	-0.015
SR-82	-1.413E-01		3.907E-01	6.232E-01	6.614E-02	-0.227
RB-83	1.985E-03		6.717E-02	1.089E-01	1.129E-02	0.018
RB-84	-2.316E-02		6.551E-02	1.024E-01	9.898E-03	-0.226
KR-85	7.147E+00		7.497E+00	1.164E+01	1.201E+00	0.614
SR-85	3.618E-02		3.795E-02	5.893E-02	6.080E-03	0.614
RB-86	2.210E-01		7.390E-01	1.271E+00	1.126E-01	0.174
Y-88	3.651E-02		4.108E-02	7.733E-02	6.320E-03	0.472
ZR-88	6.690E-03		2.954E-02	4.965E-02	4.519E-03	0.135
Y-91	8.271E+00		2.013E+01	3.443E+01	2.833E+00	0.240
NB-94	7.891E-03		3.826E-02	6.364E-02	6.988E-03	0.124
NB-95	7.143E-02		5.318E-02	8.591E-02	9.177E-03	0.831
NB-95M	7.433E-02		1.118E-01	1.675E-01	1.920E-02	0.444

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	2.827E-02		7.613E-02	1.294E-01	1.482E-02	0.218
NB-97	-3.173E-02		1.653E-02	Half-Life too short		
ZR-97	7.796E-01		3.142E-01	Half-Life too short		
MO-99	3.586E-01		9.196E+00	1.527E+01	2.526E+00	0.023
TC-99M	-4.341E+08		5.538E+08	Half-Life too short		
RH-101	-6.461E-03		2.878E-02	4.564E-02	4.397E-03	-0.142
RH-102	-2.106E-03		2.991E-02	4.851E-02	4.843E-03	-0.043
RU-103	-2.692E-02		3.690E-02	5.567E-02	8.440E-03	-0.484
RH-106	9.403E-02		3.089E-01	5.312E-01	7.950E-02	0.177
RU-106	9.403E-02		3.087E-01	5.312E-01	5.816E-02	0.177
AG-108M	-7.140E-03		3.095E-02	4.998E-02	4.939E-03	-0.143
AG-110M	-3.476E-02		3.821E-02	5.926E-02	6.677E-03	-0.587
IN-111	-9.694E-01		7.772E-01	9.817E-01	1.040E-01	-0.987
IN-113M	-1.604E-02		4.267E-02	6.897E-02	6.442E-03	-0.233
SN-113	-1.604E-02		4.267E-02	6.897E-02	6.442E-03	-0.233
IN-114M	6.373E-02		1.749E-01	2.613E-01	2.473E-02	0.244
CD-115	2.792E+00		7.574E+00	1.259E+01	1.312E+00	0.222
SN-117M	7.102E-03		4.398E-02	7.340E-02	7.126E-03	0.097
SB-122	4.793E-01		1.438E+00	2.374E+00	2.532E-01	0.202
I-123	-2.332E-02		5.352E-01	Half-Life too short		
TE-123M	-5.260E-04		2.414E-02	3.997E-02	3.881E-03	-0.013
I-124	6.913E-02		5.802E-01	8.639E-01	9.389E-02	0.080
SB-124	-2.596E-02		6.429E-02	9.673E-02	8.361E-03	-0.268
SB-125	-1.070E-03		8.906E-02	1.464E-01	1.414E-02	-0.007
TE-125M	3.497E+00		6.352E+00	1.100E+01	1.460E+00	0.318
I-126	-9.410E-02		1.911E-01	3.078E-01	3.408E-02	-0.306
SB-126	6.476E-02		1.533E-01	2.319E-01	2.531E-02	0.279
SB-127	-4.177E-01		1.089E+00	1.755E+00	2.283E-01	-0.238
XE-127	-9.061E-03		3.892E-02	6.255E-02	6.092E-03	-0.145
I-131	4.892E-02		9.690E-02	1.665E-01	1.707E-02	0.294
TE-132	3.189E-02		4.787E-01	7.743E-01	1.275E-01	0.041
BA-133	-1.222E-02		4.348E-02	6.228E-02	8.831E-03	-0.196
I-133	-7.129E-04		1.212E-03	Half-Life too short		
CS-134	1.105E-01	+	7.230E-02	9.670E-02	1.018E-02	1.142
CS-135	1.385E-01		1.651E-01	2.474E-01	2.986E-02	0.560
I-135	-5.926E+07		1.434E+08	Half-Life too short		
CS-136	3.354E-02		1.006E-01	1.738E-01	1.626E-02	0.193
BA-137M	-1.020E-02		4.256E-02	7.311E-02	8.099E-03	-0.140
CS-137	-1.079E-02		4.499E-02	7.729E-02	8.571E-03	-0.140
CE-139	4.707E-03		2.437E-02	4.061E-02	3.622E-03	0.116
BA-140	-1.241E-01		2.572E-01	3.926E-01	1.322E-01	-0.316
LA-140	-4.451E-02		9.346E-02	1.459E-01	1.213E-02	-0.305
CE-141	-1.486E-02		4.818E-02	7.921E-02	8.810E-03	-0.188
CE-143	3.331E-04		5.649E-05	Half-Life too short		
CE-144	-6.076E-02		1.698E-01	2.668E-01	4.718E-02	-0.228
PM-144	1.787E-02		3.577E-02	6.171E-02	6.790E-03	0.290
PR-144	1.210E+00		2.422E+00	4.179E+00	4.598E-01	0.290
PM-146	4.100E-02		4.216E-02	7.341E-02	8.572E-03	0.558

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	2.412E-01		5.326E-01	8.887E-01	1.428E-01	0.271
PM-149	5.458E+00		5.642E+01	8.981E+01	1.531E+01	0.061
EU-152	-7.911E-02		9.263E-02	1.408E-01	1.512E-02	-0.562
GD-153	-4.844E-02		5.491E-02	8.043E-02	9.057E-03	-0.602
EU-154	6.169E-02		1.296E-01	2.232E-01	2.452E-02	0.276
EU-155	1.004E-01		7.767E-02	1.369E-01	1.618E-02	0.734
TB-160	4.043E-02		1.257E-01	2.121E-01	2.055E-02	0.191
HO-166M	3.078E-02		6.428E-02	1.106E-01	1.211E-02	0.278
TM-171	-7.424E-01		1.243E+01	1.807E+01	1.794E+00	-0.041
LU-176	-5.760E-03		2.200E-02	3.664E-02	3.998E-03	-0.157
LU-177	3.828E+00	+	1.452E+00	1.694E+00	1.670E-01	2.260
LU-177M	-2.190E-02		1.716E-01	2.807E-01	2.623E-02	-0.078
HF-181	-3.024E-02		4.370E-02	6.727E-02	6.759E-03	-0.449
W-181	-1.721E-02		1.522E-01	2.212E-01	2.189E-02	-0.078
TA-182	-2.055E-01		2.075E-01	3.101E-01	2.550E-02	-0.663
RE-183	-7.781E-02		9.098E-02	1.417E-01	1.319E-02	-0.549
RE-184	4.715E-03		2.220E-01	3.553E-01	3.810E-02	0.013
OS-185	-2.414E-02		4.140E-02	6.587E-02	7.268E-03	-0.366
RE-188	-9.538E-03		1.444E-01	2.373E-01	2.390E-02	-0.040
W-188	1.814E+00		6.870E+00	1.051E+01	1.165E+00	0.173
IR-192	-1.195E-03		3.036E-02	5.110E-02	5.519E-03	-0.023
AU-195	2.133E-01		1.526E-01	2.611E-01	2.963E-02	0.817
TL-200	-9.537E-05		9.803E-05	Half-Life too short		
TL-201	1.226E+00		4.374E+00	7.314E+00	6.542E-01	0.168
TL-202	5.314E-02		6.252E-02	1.084E-01	1.044E-02	0.490
HG-203	3.579E-04		3.733E-02	5.920E-02	6.719E-03	0.006
BI-207	1.230E-02		5.368E-02	9.173E-02	8.187E-03	0.134
TL-207	-9.332E-02		6.726E-01	9.874E-01	1.855E-01	-0.095
PO-209	4.139E-01		8.596E+00	1.404E+01	1.332E+00	0.029
PB-211	-2.962E-01		9.728E-01	1.548E+00	9.715E-01	-0.191
BI-212	1.293E+00	+	6.064E-01	7.527E-01	9.043E-02	1.718
PO-215	-9.332E-02		6.726E-01	9.874E-01	1.855E-01	-0.095
RN-219	2.142E-01		3.928E-01	6.705E-01	1.031E-01	0.319
RN-220	-3.642E-01		2.739E+01	4.401E+01	4.653E+00	-0.008
RA-223	-9.332E-02		6.726E-01	9.874E-01	1.855E-01	-0.095
AC-227	-6.490E-02		3.618E-01	5.713E-01	9.518E-02	-0.114
TH-227	-6.490E-02		3.619E-01	5.713E-01	1.096E-01	-0.114
TH-229	-1.606E-01		4.439E-01	7.116E-01	6.788E-02	-0.226
PA-231	-4.692E-01		1.387E+00	2.140E+00	3.583E-01	-0.219
TH-231	-9.332E-02		6.726E-01	9.874E-01	1.855E-01	-0.095
U-231	4.580E-02		5.652E-01	8.769E-01	9.795E-02	0.052
PA-233	-6.166E-03		5.742E-02	9.637E-02	1.064E-02	-0.064
PA-234	-8.978E-02		3.216E-01	5.042E-01	9.643E-02	-0.178
PA-234M	4.866E+00		5.475E+00	9.567E+00	1.002E+00	0.509
U-235	6.811E-02		1.700E-01	2.814E-01	5.314E-02	0.242
NP-236	2.689E-02		6.674E-02	1.124E-01	1.071E-02	0.239
NP-239	6.378E-02		1.341E-01	2.311E-01	2.895E-02	0.276
AM-241	-2.090E-02		5.042E-02	7.221E-02	7.502E-03	-0.289

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.289E-02		6.704E-02	1.134E-01	1.321E-02	-0.114
AM-246	1.720E-01		1.396E-01	2.592E-01	2.292E-02	0.664
CM-247	2.240E-02		3.555E-02	6.108E-02	5.630E-03	0.367
CF-249	3.179E-02		3.939E-02	6.837E-02	6.292E-03	0.465
CF-251	1.017E-01		1.057E-01	1.811E-01	1.658E-02	0.562

# 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]G244132007             *
* Acquisition date   : 19-JAN-2010 09:54:35 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 02:00:01.94                Half life ratio : 8.000      *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G244132007                      Analyst initials: MXR1     *
* Batch Number       : 940270                          Sample Quantity : 1.2527E+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	2.065E+01	2.303E+00	2.568E-01	1.175E+00
CD-109	4.435E+00	8.173E-01	3.505E-01	4.170E-01
SN-126	4.366E-01	8.047E-02	3.444E-02	4.106E-02
TL-208	6.168E-01	1.050E-01	3.006E-02	5.355E-02
BI-210	9.233E-01	7.318E-01	3.016E-01	3.734E-01
PB-210	9.233E-01	7.318E-01	3.016E-01	3.734E-01
PO-210	9.233E-01	7.310E-01	3.016E-01	3.729E-01
BI-211	4.579E+00	6.298E-01	1.579E-01	3.213E-01
PB-212	2.047E+00	2.543E-01	3.924E-02	1.298E-01
PO-212	2.047E+00	2.543E-01	3.924E-02	1.298E-01
BI-214	1.399E+00	2.270E-01	5.726E-02	1.158E-01
PB-214	1.593E+00	2.337E-01	5.352E-02	1.193E-01
PO-214	1.593E+00	2.337E-01	5.352E-02	1.193E-01
PO-216	2.047E+00	2.543E-01	3.924E-02	1.298E-01
PO-218	1.593E+00	2.337E-01	5.352E-02	1.193E-01
RA-224	5.829E+00	1.468E+00	4.470E-01	7.489E-01
RA-226	1.399E+00	2.270E-01	5.726E-02	1.158E-01
AC-228	2.103E+00	4.063E-01	1.015E-01	2.073E-01
RA-228	2.103E+00	4.063E-01	1.015E-01	2.073E-01
TH-228	2.075E+00	2.579E-01	3.978E-02	1.316E-01
TH-230	1.399E+00	2.270E-01	5.726E-02	1.158E-01
TH-232	2.103E+00	4.063E-01	1.015E-01	2.073E-01
TH-234	4.835E-01	7.008E-01	3.795E-01	3.576E-01
U-234	1.399E+00	2.270E-01	5.726E-02	1.158E-01
NP-237	1.282E+00	3.508E-01	1.007E-01	1.790E-01
U-238	4.835E-01	7.008E-01	3.795E-01	3.576E-01
AM-243	4.013E-01	5.583E-02	2.273E-02	2.848E-02
ANH-511	1.488E-01	6.703E-02	2.364E-02	3.420E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	2.508E-01	3.291E-01	2.915E-01	1.679E-01	NOT IDENT.
NA-22	1.414E-02	4.608E-02	3.989E-02	2.351E-02	NOT IDENT.
NA-24	-1.132E+05	2.016E+05	0.000E+00	1.029E+05	SHORT HLIF
AL-26	-1.396E-02	3.330E-02	2.564E-02	1.699E-02	NOT IDENT.
TI-44	4.369E-01	5.327E-02	2.359E-02	2.718E-02	FAIL ABUN
SC-46	-2.983E-02	3.971E-02	3.054E-02	2.026E-02	FAIL ABUN
V-48	5.814E-02	6.653E-02	5.985E-02	3.394E-02	NOT IDENT.
CR-51	1.445E-01	3.280E-01	2.946E-01	1.674E-01	NOT IDENT.
MN-52	1.573E-01	1.877E-01	1.750E-01	9.577E-02	NOT IDENT.
MN-54	4.210E-03	3.589E-02	3.054E-02	1.831E-02	NOT IDENT.
CO-56	-2.161E-02	3.872E-02	3.070E-02	1.976E-02	FAIL ABUN
CO-57	1.787E-02	1.757E-02	1.620E-02	8.964E-03	NOT IDENT.
CO-58	-1.419E-02	3.880E-02	3.161E-02	1.979E-02	NOT IDENT.
FE-59	-2.294E-02	8.635E-02	7.182E-02	4.406E-02	NOT IDENT.
CO-60	-1.252E-02	3.633E-02	2.891E-02	1.853E-02	NOT IDENT.
ZN-65	-1.990E-02	9.864E-02	7.040E-02	5.032E-02	NOT IDENT.
GE-68	5.684E-01	1.201E+00	1.074E+00	6.127E-01	NOT IDENT.
AS-73	2.589E-01	1.591E-01	1.446E-01	8.115E-02	NOT IDENT.
AS-74	4.552E-02	8.947E-02	7.681E-02	4.565E-02	NOT IDENT.
SE-75	2.739E-02	4.050E-02	3.347E-02	2.066E-02	NOT IDENT.
BR-77	-1.747E-01	7.048E+00	5.886E+00	3.596E+00	FAIL ABUN
SR-82	-1.413E-01	3.829E-01	3.144E-01	1.954E-01	NOT IDENT.
RB-83	1.985E-03	6.583E-02	5.523E-02	3.359E-02	NOT IDENT.
RB-84	-2.316E-02	6.420E-02	5.157E-02	3.275E-02	NOT IDENT.
KR-85	7.147E+00	7.347E+00	5.906E+00	3.748E+00	NOT IDENT.
SR-85	3.618E-02	3.719E-02	2.990E-02	1.898E-02	NOT IDENT.
RB-86	2.210E-01	7.242E-01	6.382E-01	3.695E-01	NOT IDENT.
Y-88	3.651E-02	4.026E-02	3.853E-02	2.054E-02	NOT IDENT.
ZR-88	6.690E-03	2.895E-02	2.529E-02	1.477E-02	NOT IDENT.
Y-91	8.271E+00	1.972E+01	1.726E+01	1.006E+01	NOT IDENT.
NB-94	7.891E-03	3.750E-02	3.215E-02	1.913E-02	NOT IDENT.
NB-95	7.143E-02	5.212E-02	4.335E-02	2.659E-02	NOT IDENT.
NB-95M	7.433E-02	1.096E-01	8.595E-02	5.592E-02	NOT IDENT.
ZR-95	2.827E-02	7.460E-02	6.532E-02	3.806E-02	NOT IDENT.
NB-97	-3.173E+04	3.240E+04	0.000E+00	1.653E+04	SHORT HLIF
ZR-97	7.796E+05	6.159E+05	0.000E+00	3.142E+05	SHORT HLIF
MO-99	3.586E-01	9.012E+00	7.710E+00	4.598E+00	NOT IDENT.
TC-99M	-4.341E+14	1.085E+15	0.000E+00	5.538E+14	SHORT HLIF
RH-101	-6.461E-03	2.820E-02	2.347E-02	1.439E-02	NOT IDENT.
RH-102	-2.106E-03	2.931E-02	2.464E-02	1.496E-02	FAIL ABUN
RU-103	-2.692E-02	3.616E-02	2.826E-02	1.845E-02	FAIL ABUN
RH-106	9.403E-02	3.027E-01	2.688E-01	1.544E-01	FAIL ABUN
RU-106	9.403E-02	3.025E-01	2.688E-01	1.544E-01	FAIL ABUN
AG-108M	-7.140E-03	3.034E-02	2.542E-02	1.548E-02	NOT IDENT.
AG-110M	-3.476E-02	3.744E-02	2.996E-02	1.910E-02	NOT IDENT.
IN-111	-9.694E-01	7.616E-01	5.033E-01	3.886E-01	NOT IDENT.
IN-113M	-1.604E-02	4.182E-02	3.513E-02	2.134E-02	NOT IDENT.
SN-113	-1.604E-02	4.182E-02	3.513E-02	2.134E-02	NOT IDENT.
IN-114M	6.373E-02	1.714E-01	1.344E-01	8.747E-02	NOT IDENT.
CD-115	2.792E+00	7.423E+00	6.384E+00	3.787E+00	NOT IDENT.
SN-117M	7.102E-03	4.310E-02	3.786E-02	2.199E-02	NOT IDENT.
SB-122	4.793E-01	1.409E+00	1.203E+00	7.189E-01	NOT IDENT.
I-123	-2.332E+04	1.049E+06	0.000E+00	5.352E+05	SHORT HLIF
TE-123M	-5.260E-04	2.366E-02	2.061E-02	1.207E-02	NOT IDENT.
I-124	6.913E-02	5.686E-01	4.374E-01	2.901E-01	NOT IDENT.
SB-124	-2.596E-02	6.300E-02	4.825E-02	3.214E-02	FAIL ABUN
SB-125	-1.070E-03	8.728E-02	7.448E-02	4.453E-02	FAIL ABUN
TE-125M	3.497E+00	6.225E+00	5.700E+00	3.176E+00	NOT IDENT.
I-126	-9.410E-02	1.873E-01	1.556E-01	9.555E-02	NOT IDENT.
SB-126	6.476E-02	1.502E-01	1.171E-01	7.666E-02	FAIL ABUN
SB-127	-4.177E-01	1.067E+00	8.869E-01	5.446E-01	NOT IDENT.
XE-127	-9.061E-03	3.814E-02	3.215E-02	1.946E-02	NOT IDENT.
I-131	4.892E-02	9.497E-02	8.489E-02	4.845E-02	NOT IDENT.
TE-132	3.189E-02	4.691E-01	3.974E-01	2.393E-01	NOT IDENT.
BA-133	-1.222E-02	4.261E-02	3.177E-02	2.174E-02	NOT IDENT.
I-133	-7.129E+02	2.375E+03	0.000E+00	1.212E+03	SHORT HLIF
CS-134	1.105E-01	7.085E-02	4.876E-02	3.615E-02	FAIL ABUN
CS-135	1.385E-01	1.618E-01	1.267E-01	8.257E-02	NOT IDENT.
I-135	-5.926E+13	2.810E+14	0.000E+00	1.434E+14	SHORT HLIF
CS-136	3.354E-02	9.858E-02	8.732E-02	5.030E-02	FAIL ABUN
BA-137M	-1.020E-02	4.171E-02	3.697E-02	2.128E-02	NOT IDENT.
CS-137	-1.079E-02	4.409E-02	3.908E-02	2.249E-02	NOT IDENT.
CE-139	4.707E-03	2.388E-02	2.093E-02	1.218E-02	NOT IDENT.
BA-140	-1.241E-01	2.521E-01	1.991E-01	1.286E-01	NOT IDENT.
LA-140	-4.451E-02	9.159E-02	7.284E-02	4.673E-02	FAIL ABUN
CE-141	-1.486E-02	4.722E-02	4.090E-02	2.409E-02	NOT IDENT.
CE-143	3.331E+02	1.107E+02	0.000E+00	5.649E+01	SHORT HLIF

CE-144	-6.076E-02	1.664E-01	1.380E-01	8.491E-02	NOT IDENT.
PM-144	1.787E-02	3.505E-02	3.118E-02	1.788E-02	NOT IDENT.
PR-144	1.210E+00	2.374E+00	2.112E+00	1.211E+00	NOT IDENT.
PM-146	4.100E-02	4.132E-02	3.732E-02	2.108E-02	NOT IDENT.
ND-147	2.412E-01	5.220E-01	4.508E-01	2.663E-01	FAIL ABUN
PM-149	5.458E+00	5.529E+01	4.595E+01	2.821E+01	NOT IDENT.
EU-152	-7.911E-02	9.078E-02	7.187E-02	4.632E-02	NOT IDENT.
GD-153	-4.844E-02	5.382E-02	4.176E-02	2.746E-02	FAIL ABUN
EU-154	6.169E-02	1.270E-01	1.118E-01	6.481E-02	NOT IDENT.
EU-155	1.004E-01	7.611E-02	7.101E-02	3.883E-02	FAIL ABUN
TB-160	4.043E-02	1.232E-01	1.068E-01	6.287E-02	FAIL ABUN
HO-166M	3.078E-02	6.299E-02	5.587E-02	3.214E-02	NOT IDENT.
TM-171	-7.424E-01	1.218E+01	9.430E+00	6.213E+00	NOT IDENT.
LU-176	-5.760E-03	2.156E-02	1.873E-02	1.100E-02	FAIL ABUN
LU-177	3.828E+00	1.422E+00	8.705E-01	7.258E-01	FAIL ABUN
LU-177M	-2.190E-02	1.681E-01	1.429E-01	8.578E-02	FAIL ABUN
HF-181	-3.024E-02	4.283E-02	3.417E-02	2.185E-02	NOT IDENT.
W-181	-1.721E-02	1.492E-01	1.155E-01	7.612E-02	NOT IDENT.
TA-182	-2.055E-01	2.034E-01	1.554E-01	1.038E-01	FAIL ABUN
RE-183	-7.781E-02	8.916E-02	7.308E-02	4.549E-02	FAIL ABUN
RE-184	4.715E-03	2.176E-01	1.821E-01	1.110E-01	NOT IDENT.
OS-185	-2.414E-02	4.057E-02	3.331E-02	2.070E-02	NOT IDENT.
RE-188	-9.538E-03	1.415E-01	1.224E-01	7.219E-02	NOT IDENT.
W-188	1.814E+00	6.732E+00	5.377E+00	3.435E+00	FAIL ABUN
IR-192	-1.195E-03	2.976E-02	2.611E-02	1.518E-02	FAIL ABUN
AU-195	2.133E-01	1.495E-01	1.356E-01	7.629E-02	FAIL ABUN
TL-200	-9.537E+01	1.921E+02	0.000E+00	9.803E+01	SHORT HLIF
TL-201	1.226E+00	4.287E+00	3.769E+00	2.187E+00	NOT IDENT.
TL-202	5.314E-02	6.127E-02	5.514E-02	3.126E-02	NOT IDENT.
HG-203	3.579E-04	3.658E-02	3.030E-02	1.866E-02	NOT IDENT.
BI-207	1.230E-02	5.260E-02	4.606E-02	2.684E-02	FAIL ABUN
TL-207	-9.332E-02	6.592E-01	5.043E-01	3.363E-01	FAIL ABUN
PO-209	4.139E-01	8.424E+00	7.066E+00	4.298E+00	NOT IDENT.
PB-211	-2.962E-01	9.534E-01	7.882E-01	4.864E-01	NOT IDENT.
BI-212	1.293E+00	5.943E-01	3.800E-01	3.032E-01	FAIL ABUN
PO-215	-9.332E-02	6.592E-01	5.043E-01	3.363E-01	FAIL ABUN
RN-219	2.142E-01	3.849E-01	3.414E-01	1.964E-01	FAIL ABUN
RN-220	-3.642E-01	2.684E+01	2.231E+01	1.370E+01	NOT IDENT.
RA-223	-9.332E-02	6.592E-01	5.043E-01	3.363E-01	FAIL ABUN
AC-227	-6.490E-02	3.546E-01	2.927E-01	1.809E-01	FAIL ABUN
TH-227	-6.490E-02	3.546E-01	2.927E-01	1.809E-01	FAIL ABUN
TH-229	-1.606E-01	4.350E-01	3.660E-01	2.219E-01	FAIL ABUN
PA-231	-4.692E-01	1.359E+00	1.095E+00	6.933E-01	FAIL ABUN
TH-231	-9.332E-02	6.592E-01	5.043E-01	3.363E-01	FAIL ABUN
U-231	4.580E-02	5.538E-01	4.554E-01	2.826E-01	FAIL ABUN
PA-233	-6.166E-03	5.627E-02	4.924E-02	2.871E-02	FAIL ABUN
PA-234	-8.978E-02	3.152E-01	2.537E-01	1.608E-01	FAIL ABUN
PA-234M	4.866E+00	5.365E+00	4.809E+00	2.737E+00	NOT IDENT.
U-235	6.811E-02	1.666E-01	1.454E-01	8.500E-02	FAIL ABUN
NP-236	2.689E-02	6.540E-02	5.797E-02	3.337E-02	NOT IDENT.
NP-239	6.378E-02	1.315E-01	1.197E-01	6.707E-02	FAIL ABUN
AM-241	-2.090E-02	4.941E-02	3.774E-02	2.521E-02	NOT IDENT.
CM-243	-1.289E-02	6.570E-02	5.883E-02	3.352E-02	FAIL ABUN
AM-246	1.720E-01	1.368E-01	1.301E-01	6.979E-02	NOT IDENT.
CM-247	2.240E-02	3.484E-02	3.110E-02	1.777E-02	NOT IDENT.
CF-249	3.179E-02	3.860E-02	3.483E-02	1.969E-02	NOT IDENT.
CF-251	1.017E-01	1.036E-01	9.326E-02	5.286E-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	235.4465
46.50	235.4465
46.50	235.4465
48.70	251.0783
49.72	230.5957
51.35	309.1614
52.39	248.2094
52.97	221.4137
53.15	213.9024
53.44	225.1447
54.07	234.5434
56.28	292.2171
56.28	292.2211
57.37	0.0000
57.53	278.0477
57.53	278.0496
57.60	289.2943
57.98	290.8456
57.98	290.8456
59.32	354.2164
59.32	354.2164
59.40	346.4530
59.54	346.6398
59.72	345.3790
60.01	374.3270
61.10	327.5772
61.14	336.6857
61.30	336.8899
63.00	375.1451
63.29	375.5474
63.29	375.5474
63.58	375.9477
64.28	374.2391
65.12	398.3637
65.20	398.4794
65.20	398.4794
66.05	424.2955
66.72	394.4844
66.83	413.1422
66.91	413.2567
67.20	399.4037
67.20	399.4037
67.75	387.4157
67.85	410.7601
68.90	400.6186
68.90	400.6186
69.30	436.1612
69.67	409.4741
70.82	398.5776
70.82	398.5776
70.83	398.5905
72.80	398.8762
72.87	398.9691
72.87	398.9691
74.67	401.3415
74.81	401.5246
74.81	401.5246
74.81	401.5246
74.81	401.5246
74.81	401.5246
74.81	401.5246
74.97	401.7335
75.28	402.1383
75.70	402.6876
77.11	404.5133
77.11	404.5133

77.11	404.5133
77.11	404.5133
77.11	404.5133
77.11	404.5133
77.11	404.5133
78.38	339.6542
79.62	342.5824
79.80	308.9805
79.80	308.9805
80.11	309.2773
80.18	309.3438
80.30	338.4708
80.30	338.4708
80.57	338.7527
81.00	356.9690
81.07	357.0455
81.07	357.0455
81.07	357.0455
81.07	357.0455
82.60	314.8908
83.37	269.6591
83.78	269.9929
83.78	269.9929
83.78	269.9929
83.78	269.9929
84.21	270.3402
84.90	270.8966
85.43	271.3215
86.29	272.0078
86.50	272.1747
86.54	272.2068
86.59	272.2472
86.72	272.3501
86.79	272.4040
86.94	272.5254
87.30	272.8104
87.30	272.8104
87.30	272.8104
87.30	272.8104
87.30	272.8104
87.30	272.8104
87.57	273.0245
87.88	273.2690
88.03	273.3870
88.36	273.6467
88.47	273.7343
89.95	274.8944
91.11	275.7964
92.29	286.3070
92.38	286.3794
92.38	286.3794
93.35	287.1488
94.00	287.6634
94.67	288.1885
94.67	288.1920
94.90	288.3735
94.90	288.3735
94.90	288.3735
94.90	288.3735
95.87	255.4158
95.87	255.4158
96.73	290.2300
97.43	293.3111
98.44	244.4473
98.44	244.4473
98.88	240.6526
99.55	231.5448
99.55	231.5448
99.86	256.4397
100.00	256.5331
100.10	256.6035
103.18	307.6344
103.76	284.8555
105.00	246.0395
105.31	258.3279
108.00	301.8159
109.28	246.0529

111.00	251.4666
111.00	251.4666
111.76	259.8280
112.95	264.0900
115.19	232.7509
116.30	208.5128
117.00	221.2945
117.00	221.2945
117.66	243.8863
121.11	205.4464
121.62	197.5992
121.78	198.5693
122.06	194.1987
122.32	206.9062
122.32	206.9062
122.32	206.9062
122.32	206.9062
123.07	226.1768
127.23	237.3550
129.76	253.7427
131.20	254.5246
133.02	261.0286
133.54	265.4619
135.34	246.1063
136.00	263.1183
136.25	270.6697
136.48	267.0879
140.51	253.3954
140.51	0.0000
142.18	255.1826
142.65	226.3126
143.76	226.8103
144.24	223.2579
144.24	223.2579
144.24	223.2579
144.24	223.2579
145.22	230.2964
145.44	249.2805
147.16	242.5391
152.43	225.8594
152.70	212.5693
153.22	223.3201
154.21	252.5420
154.21	252.5420
154.21	252.5420
154.21	252.5420
155.03	254.8533
156.02	271.7015
158.56	246.8419
159.00	0.0000
159.00	251.8829
160.31	231.1218
161.27	258.7617
162.32	238.7843
162.64	237.9462
163.35	243.1311
163.89	238.4798
165.85	220.6764
167.43	215.3910
171.28	219.8072
171.86	202.1863
172.10	184.4220
176.55	193.8145
176.60	193.8303
181.06	193.2617
184.41	215.5784
185.71	239.3610
186.00	239.4714
190.27	222.2127
192.34	228.7809
193.63	229.0387
197.04	212.6994
198.01	207.8476
198.60	211.1387
200.40	199.2656
201.83	212.1804
202.84	209.3791
205.31	202.3125

208.36	194.3004
208.81	194.4303
209.75	194.6975
209.75	194.6975
210.97	177.1226
215.65	206.9832
216.55	206.1881
218.09	208.7704
222.10	203.5266
223.80	208.3037
226.40	190.7345
227.00	184.4220
227.08	184.4429
227.20	200.6542
228.16	190.1152
228.18	190.1206
228.18	190.1206
231.56	0.0000
235.69	165.3240
236.00	165.3918
236.00	165.3918
238.63	170.8995
238.63	170.8995
238.63	170.8995
238.63	170.8995
239.00	170.9821
240.98	171.4280
241.98	171.6517
241.98	171.6517
241.98	171.6517
244.69	152.3806
245.39	180.7009
247.94	146.3663
248.90	157.6468
249.79	170.0519
252.40	179.5347
252.85	178.5221
252.85	178.5221
254.15	0.0000
256.20	177.0300
256.20	177.0300
260.50	154.3201
260.90	163.4111
262.80	145.7181
264.65	137.2155
268.24	155.2065
268.79	151.8959
269.46	146.8939
269.46	146.8939
269.46	146.8939
269.46	146.8939
271.23	142.0686
273.65	168.2252
276.40	152.6962
277.35	122.9808
277.60	123.0178
277.60	123.0178
278.00	129.9758
278.60	143.8802
279.20	157.8014
279.53	172.8424
280.46	181.1032
281.68	151.3248
283.67	142.4064
284.30	137.8746
285.00	126.3905
285.90	132.3228
286.10	132.3529
286.10	132.3529
287.40	122.0856
288.45	0.0000
290.67	133.0394
290.80	123.2537
291.72	128.9887
293.26	0.0000
293.70	136.2997
295.21	153.4196
295.21	153.4196

295.21	153.4196
295.96	153.5474
296.50	137.4283
297.23	137.5402
298.57	137.7426
299.80	154.1967
299.80	154.1967
300.09	154.2446
300.09	154.2446
300.09	154.2446
300.09	154.2446
300.12	154.2499
301.29	130.3588
302.84	112.1275
303.76	139.2337
303.91	139.2552
304.40	145.0163
304.40	145.0163
304.84	162.3921
306.84	139.8736
308.46	126.7309
311.98	135.2678
316.51	129.6123
318.01	139.7332
319.02	134.4651
319.41	130.9084
320.08	131.9026
323.87	136.4102
323.87	136.4102
323.87	136.4102
323.87	136.4102
325.23	148.2262
328.77	157.5097
333.44	135.5410
334.20	142.2438
334.20	142.2438
334.30	142.2580
338.28	132.5149
338.28	132.5149
338.28	132.5149
338.28	132.5149
338.32	132.5193
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338.32	132.5193
340.50	121.0000
340.57	121.0081
344.27	139.6446
345.85	112.3108
350.59	0.0000
351.07	125.2309
351.92	118.4327
351.92	118.4327
351.92	118.4327
355.39	0.0000
356.01	115.3364
364.48	105.6887
366.43	130.4594
367.43	126.7946
367.94	0.0000
369.80	110.0014
374.96	121.0023
383.85	115.2502
387.95	108.9222
388.63	111.8812
391.69	120.8858
391.69	120.8858
392.90	112.3007
398.62	106.0478
400.65	115.9785
401.10	110.1740
401.81	101.4609
402.60	102.5054
404.84	133.0242
410.95	117.9822
411.60	142.6392
413.65	114.3061
414.70	104.5443
415.30	107.5563

415.76	107.5979
417.63	0.0000
418.52	129.6108
423.70	98.3686
427.08	99.6368
427.89	100.6995
432.53	91.0708
433.93	96.1816
439.47	87.5509
439.56	83.5319
439.89	83.5535
443.98	98.9735
444.90	96.0133
445.03	91.9803
445.03	91.9803
445.03	91.9803
445.03	91.9803
453.90	78.3688
463.38	106.6184
468.07	77.6027
473.00	104.2950
475.06	98.2500
475.35	101.3750
476.78	96.3050
477.59	92.2172
477.96	90.1701
482.03	108.1133
484.57	102.0644
487.03	85.5547
490.36	0.0000
492.35	86.9324
497.08	81.9728
507.63	0.0000
510.53	0.0000
510.84	88.0792
511.00	88.0893
511.85	88.1413
511.85	88.1413
513.99	73.1709
513.99	73.1709
520.41	77.9836
520.65	77.9947
527.90	77.3086
528.96	0.0000
529.64	88.1510
529.87	0.0000
531.02	76.3952
537.32	91.8481
543.00	96.5344
546.56	0.0000
549.76	83.8921
552.65	73.1340
555.20	80.9104
563.23	62.6464
563.90	65.9729
568.70	83.8208
569.32	82.7499
569.50	82.7614
569.67	82.7705
573.80	80.7727
574.00	80.7839
574.64	83.0315
578.91	58.6104
579.30	0.0000
583.14	80.1343
585.48	69.5506
591.81	81.6861
592.07	81.6973
593.00	83.9836
595.88	72.9147
600.56	86.6227
602.52	0.0000
602.71	73.5937
602.71	73.5937
603.60	79.6445
604.41	61.6418
604.70	61.6535
609.31	81.4263



609.31	81.4263
609.31	81.4263
609.31	81.4263
610.33	81.4768
612.46	96.6875
614.37	72.5996
618.01	81.8503
621.84	66.5394
621.84	66.5394
631.29	64.1604
633.02	66.9761
633.10	66.9796
634.78	68.8824
635.90	88.2258
636.97	80.9230
645.85	73.9434
646.12	73.9551
656.30	105.9927
657.75	98.6349
657.90	0.0000
661.65	82.0660
661.65	82.0660
664.57	0.0000
666.33	100.0434
666.33	100.0434
675.00	77.0372
677.61	65.8574
685.20	70.8545
692.80	85.3748
695.00	80.7251
696.49	71.2848
696.49	71.2848
697.00	66.5513
697.49	74.1762
698.33	83.7246
698.50	89.4400
699.00	90.4170
702.63	84.8694
706.10	86.9343
706.58	0.0000
706.67	94.6059
709.31	81.3414
711.68	68.9854
713.82	65.2259
717.42	70.1538
720.50	60.9614
721.93	0.0000
722.20	70.6496
722.78	73.8834
722.78	73.8834
722.89	73.8871
722.95	81.9204
723.30	81.9349
724.18	78.7577
727.18	80.4911
733.00	70.5821
735.90	69.8537
739.58	69.9855
742.81	62.3109
744.21	73.0719
747.13	67.3255
751.79	71.3942
752.31	62.6078
753.82	57.7612
755.35	67.6018
756.15	67.6288
756.87	79.4200
763.93	67.2339
765.79	67.2957
766.42	72.2412
766.84	75.5417
776.49	71.2775
778.00	66.3768
778.57	64.4128
778.89	64.4240
783.80	66.5633
785.46	72.5812
792.07	51.5342

795.84	63.2839
796.30	63.2978
798.80	55.0336
801.93	70.1470
805.60	58.2223
810.29	62.3754
810.76	60.3765
815.85	56.4854
817.79	61.5838
818.51	52.5154
819.60	53.5525
826.30	60.8130
828.27	0.0000
831.60	71.1211
831.96	71.1331
834.83	55.9628
836.80	0.0000
846.75	59.3353
848.13	50.1592
856.28	0.0000
856.80	44.5309
860.37	51.4636
867.32	46.4590
867.82	50.4859
871.10	47.5711
873.19	43.4735
874.81	44.5401
875.33	0.0000
876.40	48.7177
879.36	37.3641
880.27	45.6855
880.51	41.5361
881.50	47.7868
883.24	44.7038
884.67	41.6113
889.25	59.4130
896.60	63.7834
898.02	69.0535
899.00	52.3352
903.28	64.6642
911.07	45.2392
911.07	45.2392
911.07	45.2392
919.63	51.7377
920.93	36.9756
925.00	51.8543
925.24	48.6841
926.50	40.2386
935.52	41.4518
937.48	68.0781
944.10	52.2635
946.00	55.5064
949.00	41.6813
962.29	62.9357
964.01	71.6829
966.15	82.5065
968.20	116.6805
969.11	73.2660
969.11	73.2660
969.11	73.2660
977.42	42.0391
980.50	51.9516
983.50	36.8430
989.30	49.9599
996.32	70.7891
1001.03	49.0979
1001.68	51.2926
1004.76	64.4664
1021.30	0.0000
1024.50	0.0000
1034.80	36.8408
1036.00	41.4661
1037.82	35.9611
1038.57	36.8929
1038.76	0.0000
1045.16	46.2301
1046.59	45.3314
1048.07	43.5041

1050.47	50.0273
1050.47	50.0273
1062.04	41.8689
1063.62	47.4784
1076.63	42.0941
1077.35	41.1694
1078.86	32.7655
1085.78	55.3725
1099.22	49.0378
1112.02	36.6308
1112.84	34.1147
1115.52	52.0335
1120.29	63.5219
1120.29	63.5219
1120.29	63.5219
1120.29	63.5219
1120.51	63.5273
1121.28	58.6557
1124.00	0.0000
1129.67	73.4000
1131.51	0.0000
1147.95	0.0000
1167.94	44.4277
1173.22	62.8920
1175.09	57.1226
1177.93	54.2682
1189.05	63.2253
1204.90	58.6694
1205.75	0.0000
1213.00	62.7474
1221.42	73.7335
1230.97	67.7765
1235.34	66.0247
1236.41	0.0000
1238.25	46.4588
1246.25	54.1751
1260.41	0.0000
1271.85	43.9588
1274.45	40.9950
1274.54	43.9946
1291.56	35.1823
1298.22	0.0000
1312.09	32.3698
1325.50	28.4386
1325.50	28.4386
1332.49	29.5168
1333.61	23.4174
1360.21	18.4724
1362.66	0.0000
1365.15	22.6105
1368.21	34.9740
1368.53	0.0000
1376.25	24.7461
1384.27	17.7169
1394.10	26.9479
1395.20	29.0299
1407.95	26.0142
1434.06	14.6762
1436.60	20.9806
1457.56	0.0000
1460.81	19.0107
1489.15	23.4162
1509.49	14.9832
1596.49	30.0313
1620.62	22.6616
1678.03	0.0000
1691.02	11.5296
1691.02	11.5296
1706.46	0.0000
1750.46	0.0000
1764.49	8.5550
1764.49	8.5550
1764.49	8.5550
1764.49	8.5550
1770.23	10.2795
1771.40	31.3371
1791.20	0.0000
1808.65	15.8030

1836.01

10.9321

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132007

Total Uranium Activity	1.4699E+00	ug/g
Total Uranium Counting Unc.	2.0863E+00	ug/g
Total Uranium Tpu	1.0645E-06	ug/g
Total Uranium Mda	1.1310E+00	ug/g

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*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
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*
*  BATCH ID      : 940270          SAMPLE ID   : G244132007
*  ANALYST       : MXR1           DETECTOR    : GAM25
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 09:54:35.35  SAMPLE ALQT: 125.270 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.589E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.263E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.477E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.686E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 12:02:41.26

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132008.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 10:02:14
Sample ID        : G244132008      Sample quantity   : 1.34790E+02 GRAM
Detector name    : GAM05           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        : 940270           Detector SN#    :
Matrix Spike ID  :                  LCS ID          : 1032-A
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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	45.98*	183	584	1.29	92.94	86	13	2.55E-02	30.0	
2	0	63.30*	146	515	1.14	127.58	124	8	2.03E-02	28.9	
3	2	74.70*	715	626	1.33	150.38	145	14	9.93E-02	7.2	1.61E+00
4	2	77.00*	1087	499	1.13	154.97	145	14	1.51E-01	4.7	
5	1	84.13	143	417	1.25	169.24	162	33	1.99E-02	24.0	1.77E+00
6	1	87.15	405	485	1.47	175.27	162	33	5.62E-02	10.9	
7	1	89.92	275	345	1.23	180.82	162	33	3.82E-02	13.2	
8	1	92.88*	345	397	1.46	186.73	162	33	4.79E-02	13.1	
9	0	129.09*	97	414	1.03	259.14	254	10	1.34E-02	41.3	
10	0	186.25*	175	524	1.51	373.46	368	14	2.44E-02	29.2	
11	0	209.45	163	256	1.77	419.83	414	11	2.27E-02	20.7	
12	3	238.52*	1331	191	1.31	477.96	471	19	1.85E-01	3.3	1.38E+00
13	3	241.60	313	238	1.84	484.13	471	19	4.35E-02	13.0	
14	0	270.48	80	246	1.49	541.87	535	12	1.12E-02	40.5	
15	5	295.05*	446	123	1.55	591.01	585	21	6.20E-02	6.6	2.39E+00
16	5	299.59	100	167	2.26	600.08	585	21	1.39E-02	27.8	
17	0	338.01	224	225	1.36	676.89	671	11	3.11E-02	14.6	
18	0	351.72*	570	155	1.29	704.31	699	12	7.92E-02	6.1	
19	0	410.71	57	171	3.14	822.25	812	16	7.94E-03	53.9	
20	0	462.22	81	95	1.05	925.23	920	10	1.13E-02	25.0	
21	0	510.67*	161	144	2.21	1022.09	1016	18	2.24E-02	21.3	
22	0	583.07	392	116	1.67	1166.82	1159	17	5.44E-02	8.1	
23	0	609.02	493	86	1.62	1218.69	1213	15	6.84E-02	6.1	
24	0	726.89	75	77	1.27	1454.30	1447	12	1.05E-02	26.1	
25	0	768.23	37	65	0.94	1536.92	1529	12	5.09E-03	47.2	
26	0	794.99	71	44	0.84	1590.41	1582	16	9.87E-03	24.0	
27	0	910.92	229	114	1.15	1822.09	1813	20	3.17E-02	13.3	
28	0	967.51	176	57	1.54	1935.19	1926	16	2.44E-02	12.2	
29	0	1070.68	30	38	0.95	2141.35	2133	14	4.11E-03	48.1	
30	0	1119.65	101	57	2.15	2239.20	2232	16	1.40E-02	19.8	
31	0	1459.76	771	28	2.04	2918.67	2910	19	1.07E-01	4.0	
32	0	1727.93	19	3	1.42	3454.30	3448	12	2.65E-03	29.2	
33	0	1763.38	77	17	1.83	3525.10	3519	14	1.07E-02	16.2	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132008.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 10:02:14
Sample ID        : G244132008             Sample quantity  : 134.79 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA5                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.72    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

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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	*	2.006E+01	2.020E+00	6.218E-01	3.867E-02	32.255
CD-109	+	88.03	*	3.938E+00	9.122E-01	9.720E-01	7.402E-02	4.051
SN-126	+	64.28		5.261E-01	3.140E-01	4.024E-01	5.997E-02	1.307
	+	86.94		1.612E+00	7.514E-01	3.966E-01	1.633E-01	4.064
	+	87.57	*	3.878E-01	8.982E-02	9.558E-02	7.279E-03	4.057
TL-208		277.35		3.222E-01	4.160E-01	6.988E-01	8.964E-02	0.461
	+	510.84		8.178E-01	3.590E-01	2.357E-01	2.476E-02	3.470
	+	583.14	*	5.733E-01	1.023E-01	6.336E-02	4.662E-03	9.048
		860.37		5.367E-01	3.340E-01	6.151E-01	6.242E-02	0.873
BI-210	+	46.50	*	1.661E+00	1.003E+00	7.989E-01	6.232E-02	2.079
PB-210	+	46.50	*	1.661E+00	1.003E+00	7.989E-01	6.232E-02	2.079
PO-210	+	46.50	*	1.661E+00	1.001E+00	7.989E-01	5.374E-02	2.079
BI-211		72.87		1.125E+01	2.635E+00	4.119E+00	3.242E-01	2.731
	+	351.07	*	3.491E+00	5.092E-01	3.617E-01	2.866E-02	9.651
PB-212	+	74.81		2.315E+00	4.356E-01	3.781E-01	4.610E-02	6.122
	+	77.11		2.098E+00	2.576E-01	2.148E-01	1.672E-02	9.769
	+	87.30		1.793E+00	4.525E-01	4.417E-01	5.553E-02	4.060
	+	238.63	*	1.740E+00	2.209E-01	9.413E-02	1.015E-02	18.490
	+	300.09		2.032E+00	1.150E+00	1.283E+00	1.364E-01	1.584
PO-212	+	74.81		2.315E+00	4.356E-01	3.781E-01	4.610E-02	6.122
	+	77.11		2.098E+00	2.576E-01	2.148E-01	1.672E-02	9.769
	+	87.30		1.793E+00	4.525E-01	4.417E-01	5.553E-02	4.060
		115.19		9.328E-01	3.456E+00	5.684E+00	7.233E-01	0.164
	+	238.63	*	1.740E+00	2.209E-01	9.413E-02	1.015E-02	18.490
	+	300.09		2.032E+00	1.150E+00	1.283E+00	1.364E-01	1.584
BI-214	+	609.31	*	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
	+	1120.29		1.477E+00	6.016E-01	4.642E-01	4.434E-02	3.182
	+	1764.49		1.576E+00	5.179E-01	3.072E-01	1.776E-02	5.131
PB-214	+	74.81		3.989E+00	7.153E-01	6.515E-01	7.023E-02	6.122
	+	77.11		3.597E+00	5.198E-01	3.682E-01	4.010E-02	9.769
	+	87.30		3.072E+00	7.501E-01	7.567E-01	8.202E-02	4.060
	+	241.98		2.463E+00	6.969E-01	5.669E-01	6.388E-02	4.345
	+	295.21		1.594E+00	2.735E-01	2.302E-01	2.517E-02	6.926
	+	351.92	*	1.214E+00	1.881E-01	1.168E-01	1.106E-02	10.396



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		3.989E+00	7.153E-01	6.515E-01	7.023E-02	6.122
	+	77.11		3.597E+00	5.198E-01	3.682E-01	4.010E-02	9.769
	+	87.30		3.072E+00	7.501E-01	7.567E-01	8.202E-02	4.060
	+	241.98		2.463E+00	6.969E-01	5.669E-01	6.388E-02	4.345
	+	295.21		1.594E+00	2.735E-01	2.302E-01	2.517E-02	6.926
	+	351.92	*	1.214E+00	1.881E-01	1.168E-01	1.106E-02	10.396
PO-216	+	74.81		2.315E+00	4.356E-01	3.781E-01	4.610E-02	6.122
	+	77.11		2.098E+00	2.576E-01	2.148E-01	1.672E-02	9.769
	+	87.30		1.793E+00	4.525E-01	4.417E-01	5.553E-02	4.060
	+	238.63	*	1.740E+00	2.209E-01	9.413E-02	1.015E-02	18.490
	+	300.09		2.032E+00	1.150E+00	1.283E+00	1.364E-01	1.584
	+	74.81		3.989E+00	7.153E-01	6.515E-01	7.023E-02	6.122
PO-218	+	77.11		3.597E+00	5.198E-01	3.682E-01	4.010E-02	9.769
	+	87.30		3.072E+00	7.501E-01	7.567E-01	8.202E-02	4.060
	+	241.98		2.463E+00	6.969E-01	5.669E-01	6.388E-02	4.345
	+	295.21		1.594E+00	2.735E-01	2.302E-01	2.517E-02	6.926
	+	351.92	*	1.214E+00	1.881E-01	1.168E-01	1.106E-02	10.396
	+	240.98	*	4.670E+00	1.295E+00	1.071E+00	1.048E-01	4.359
RA-224	+	609.31	*	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
RA-226	+	1120.29		1.477E+00	6.016E-01	4.642E-01	4.434E-02	3.182
	+	1764.49		1.576E+00	5.179E-01	3.072E-01	1.776E-02	5.131
	+	74.81		2.347E+00	3.842E-01	3.834E-01	3.033E-02	6.122
	+	77.11		2.127E+00	2.612E-01	2.178E-01	1.695E-02	9.769
	+	87.30		1.818E+00	4.212E-01	4.479E-01	3.413E-02	4.060
	+	238.63	*	1.765E+00	2.240E-01	9.545E-02	1.029E-02	18.490
TH-228	+	300.09		2.061E+00	1.675E+00	1.301E+00	7.718E-01	1.584
	+	609.31	*	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
	+	1120.29		1.477E+00	6.016E-01	4.642E-01	4.434E-02	3.182
	+	1764.49		1.576E+00	5.179E-01	3.071E-01	1.776E-02	5.131
	+	63.29	*	1.329E+00	8.036E-01	9.837E-01	1.748E-01	1.351
	+	92.38		2.289E+00	7.278E-01	6.634E-01	1.192E-01	3.451
TH-230	+	609.31	*	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
	+	1120.29		1.477E+00	6.016E-01	4.642E-01	4.434E-02	3.182
	+	1764.49		1.576E+00	5.179E-01	3.071E-01	1.776E-02	5.131
	+	63.29	*	1.329E+00	8.036E-01	9.837E-01	1.748E-01	1.351
	+	92.38		2.289E+00	7.278E-01	6.634E-01	1.192E-01	3.451
	+	609.31	*	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
U-234	+	1120.29		1.477E+00	6.016E-01	4.642E-01	4.434E-02	3.182
	+	1764.49		1.576E+00	5.179E-01	3.071E-01	1.776E-02	5.131
	+	86.50	*	1.139E+00	3.532E-01	2.798E-01	6.156E-02	4.069
	+	95.87		-1.047E-02	9.279E-01	1.331E+00	3.295E-01	-0.008
	+	63.29	*	1.329E+00	8.036E-01	9.837E-01	1.748E-01	1.351
	+	92.38		2.289E+00	6.302E-01	6.634E-01	5.550E-02	3.451
AM-243	+	74.67	*	3.753E-01	6.129E-02	6.129E-02	4.800E-03	6.124
	+	86.72		4.270E+01	9.891E+00	1.050E+01	8.008E-01	4.067
	+	117.66		-2.544E+00	3.729E+00	5.881E+00	7.787E-01	-0.433
	+	142.18		2.285E+01	1.894E+01	3.169E+01	3.939E+00	0.721
	+	511.00	*	1.767E-01	7.614E-02	5.092E-02	3.259E-03	3.469
	+	511.00	*	1.767E-01	7.614E-02	5.092E-02	3.259E-03	3.469

## ---- 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	*	-1.893E-01	3.698E-01	5.825E-01	4.173E-02	-0.325

## ---- 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	*		-1.416E-02	4.712E-02	7.363E-02	4.288E-03	-0.192
NA-24	1368.53	*		-3.936E-02	4.712E-02	Half-Life too short		
AL-26	1129.67			-2.207E-01	1.767E+00	2.777E+00	1.860E-01	-0.079
	1808.65	*		6.626E-03	2.954E-02	5.095E-02	2.924E-03	0.130
TI-44	67.85			-6.623E-03	3.187E-02	4.264E-02	3.412E-03	-0.155
	78.38	*	+	3.872E-01	4.754E-02	6.513E-02	5.054E-03	5.944
SC-46	889.25	*		3.911E-03	4.500E-02	7.500E-02	7.533E-03	0.052
	1120.51		+	2.504E-01	1.006E-01	1.376E-01	9.467E-03	1.819
V-48	944.10			4.625E-02	9.567E-01	1.584E+00	1.532E-01	0.029
	983.50	*		-2.279E-02	6.695E-02	1.059E-01	9.704E-03	-0.215
	1312.09			-4.480E-02	8.258E-02	1.241E-01	7.193E-03	-0.361
CR-51	320.08	*		-2.230E-01	3.873E-01	6.231E-01	5.511E-02	-0.358
MN-52	744.21			-9.301E-02	2.364E-01	3.827E-01	2.971E-02	-0.243
	848.13			9.448E-01	6.811E+00	1.142E+01	1.071E+00	0.083
	935.52			-1.544E-01	2.552E-01	3.973E-01	3.884E-02	-0.389
	1246.25			-1.216E+00	6.876E+00	1.095E+01	6.365E-01	-0.111
	1333.61			-1.625E+00	4.678E+00	7.315E+00	4.234E-01	-0.222
	1434.06	*		-1.015E-01	2.258E-01	3.545E-01	2.076E-02	-0.286
MN-54	834.83	*		7.617E-03	4.222E-02	7.108E-02	6.511E-03	0.107
CO-56	846.75	*		1.748E-03	4.484E-02	7.461E-02	6.977E-03	0.023
	977.42			2.802E+00	3.036E+00	5.431E+00	5.021E-01	0.516
	1037.82			-1.178E-01	3.418E-01	5.407E-01	4.770E-02	-0.218
	1175.09			-2.321E+00	2.491E+00	3.666E+00	2.127E-01	-0.633
	1238.25			1.488E-01	9.930E-02	1.801E-01	1.113E-02	0.826
	1360.21			-8.178E-01	9.648E-01	1.334E+00	7.750E-02	-0.613
	1771.40			-2.714E-01	2.764E-01	3.707E-01	2.141E-02	-0.732
CO-57	122.06	*		-1.519E-03	2.534E-02	4.111E-02	5.833E-03	-0.037
	136.48			9.023E-02	2.131E-01	3.506E-01	4.697E-02	0.257
CO-58	810.76	*		-6.117E-02	3.918E-02	5.408E-02	4.760E-03	-1.131
FE-59	142.65			4.148E+00	2.883E+00	4.841E+00	5.995E-01	0.857
	192.34			-8.890E-02	1.123E+00	1.560E+00	2.237E-01	-0.057
	1099.22	*		-8.236E-02	9.849E-02	1.465E-01	1.186E-02	-0.562
	1291.56			8.031E-02	1.337E-01	2.305E-01	1.712E-02	0.348
CO-60	1173.22			-1.796E-02	4.843E-02	7.581E-02	4.397E-03	-0.237
	1332.49	*		-2.360E-02	4.222E-02	6.290E-02	3.640E-03	-0.375
ZN-65	1115.52	*		3.598E-02	1.273E-01	1.842E-01	1.287E-02	0.195
GE-68	1077.35	*		9.972E-01	1.373E+00	2.212E+00	1.699E-01	0.451
AS-73	53.44	*		1.027E-02	2.261E-01	3.694E-01	2.781E-02	0.028
AS-74	595.88	*		-5.604E-02	9.362E-02	1.433E-01	9.427E-03	-0.391
	634.78			-2.016E-01	3.761E-01	5.761E-01	3.798E-02	-0.350
SE-75	66.05			-2.635E+00	2.916E+00	4.064E+00	4.054E-01	-0.648
	96.73			1.339E-01	7.424E-01	1.074E+00	1.500E-01	0.125
	121.11			7.795E-02	1.339E-01	2.218E-01	3.486E-02	0.351
	136.00			1.988E-02	3.991E-02	6.583E-02	8.584E-03	0.302
	198.60			1.609E+00	1.994E+00	3.262E+00	3.526E-01	0.493
	264.65	*		4.936E-03	4.890E-02	7.174E-02	6.849E-03	0.069
	279.53			9.093E-02	1.145E-01	1.977E-01	1.893E-02	0.460
	303.91			1.305E+00	2.355E+00	3.544E+00	4.109E-01	0.368
	400.65			-1.745E-01	2.910E-01	4.473E-01	4.093E-02	-0.390

## ---- 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		6.009E+02	1.392E+02	2.126E+02	1.618E+01	2.827
		200.40		8.040E+01	1.243E+02	2.040E+02	2.037E+01	0.394
	+	239.00		1.970E+02	2.340E+01	2.821E+01	2.765E+00	6.984
		249.79		2.676E+01	4.601E+01	7.918E+01	7.678E+00	0.338
		281.68		-1.075E+02	7.056E+01	1.082E+02	9.994E+00	-0.993
		297.23		2.459E+02	5.341E+01	9.539E+01	8.516E+00	2.577
		303.76		6.845E+01	1.417E+02	2.125E+02	1.866E+01	0.322
		439.47		9.670E+01	1.110E+02	1.918E+02	1.169E+01	0.504
		484.57		-2.992E+01	1.839E+02	2.967E+02	1.870E+01	-0.101
		520.65	*	-1.092E+00	8.926E+00	1.352E+01	8.694E-01	-0.081
		574.64		-8.966E+01	1.681E+02	2.425E+02	1.589E+01	-0.370
		578.91		5.829E+01	7.238E+01	1.101E+02	7.219E+00	0.530
		585.48		8.732E+02	2.015E+02	3.606E+02	2.368E+01	2.421
		755.35		1.349E+02	1.363E+02	2.432E+02	1.929E+01	0.554
		817.79		2.678E+01	1.081E+02	1.833E+02	1.630E+01	0.146
	SR-82	698.33		-1.759E+01	3.670E+01	5.931E+01	4.207E+00	-0.297
		776.49	*	-5.575E-02	4.211E-01	6.944E-01	5.729E-02	-0.080
RB-83		1395.20		1.141E-01	1.155E+01	1.933E+01	1.128E+00	0.006
	*	520.41		1.360E-02	8.511E-02	1.272E-01	8.178E-03	0.107
		529.64		4.080E-02	1.119E-01	1.869E-01	1.206E-02	0.218
RB-84	*	552.65		2.033E-02	2.104E-01	3.436E-01	2.238E-02	0.059
		881.50		5.064E-02	7.408E-02	1.299E-01	1.288E-02	0.390
KR-85	*	513.99		1.794E+01	9.341E+00	1.524E+01	9.769E-01	1.177
SR-85	*	513.99		9.084E-02	4.730E-02	7.716E-02	4.946E-03	1.177
RB-86	*	1076.63		8.403E-01	8.862E-01	1.417E+00	1.090E-01	0.593
Y-88	*	898.02		-2.585E-02	4.964E-02	7.827E-02	8.003E-03	-0.330
		1836.01		2.435E-02	3.942E-02	7.182E-02	4.109E-03	0.339
ZR-88	*	392.90		-3.163E-02	3.260E-02	5.032E-02	2.931E-03	-0.628
Y-91	*	1204.90		1.620E+01	2.021E+01	3.524E+01	2.048E+00	0.460
NB-94	*	702.63		-1.879E-02	3.696E-02	5.952E-02	4.259E-03	-0.316
		871.10		1.205E-02	3.487E-02	5.965E-02	5.814E-03	0.202
NB-95	*	765.79		2.352E-02	5.716E-02	8.554E-02	6.918E-03	0.275
NB-95M	*	235.69		5.363E-01	1.756E-01	2.786E-01	3.047E-02	1.925
ZR-95	*	724.18		3.026E-01	1.267E-01	2.194E-01	1.825E-02	1.379
		756.15		6.992E-02	8.181E-02	1.447E-01	1.285E-02	0.483
NB-97	*	657.90		6.077E-04	8.181E-02	Half-Life too short		
		1024.50		-6.597E-01	8.181E-02	Half-Life too short		
ZR-97	*	254.15		-4.961E-01	8.181E-02	Half-Life too short		
		355.39		5.754E-01	8.181E-02	Half-Life too short		
	*	507.63		2.577E+00	8.181E-02	Half-Life too short		
		602.52		4.108E-01	8.181E-02	Half-Life too short		
	*	1021.30		-1.038E+00	8.181E-02	Half-Life too short		
		1147.95		-8.322E-01	8.181E-02	Half-Life too short		
	*	1362.66		-7.015E-01	8.181E-02	Half-Life too short		
		1750.46		-2.232E-01	8.181E-02	Half-Life too short		
MO-99	*	140.51		-3.298E+01	2.366E+01	3.226E+01	9.410E+00	-1.023
		181.06		2.600E+00	1.519E+01	2.149E+01	4.075E+00	0.121
	*	366.43		-3.512E+01	6.530E+01	1.043E+02	7.154E+00	-0.337
		739.58		5.637E+00	1.007E+01	1.746E+01	2.563E+00	0.323

## ----- 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			2.705E+00	2.841E+01	4.770E+01	3.947E+00	0.057
	140.51	*		-2.362E+09	2.841E+01	Half-Life too short		
RH-101	127.23			5.224E-02	3.785E-02	5.663E-02	7.796E-03	0.922
	198.01	*		2.159E-02	3.694E-02	6.000E-02	5.991E-03	0.360
	325.23			-1.380E-01	2.434E-01	3.922E-01	3.228E-02	-0.352
RH-102	418.52			2.561E-01	2.988E-01	5.173E-01	3.094E-02	0.495
	475.06	*		-2.994E-03	3.311E-02	5.373E-02	3.366E-03	-0.056
	631.29			8.966E-03	6.000E-02	9.780E-02	6.447E-03	0.092
	697.49			-1.135E-02	9.136E-02	1.428E-01	1.011E-02	-0.079
	766.84	+		1.722E-01	1.632E-01	2.188E-01	1.773E-02	0.787
	1046.59			4.029E-02	1.228E-01	2.078E-01	1.705E-02	0.194
	1112.84			7.328E-02	3.022E-01	4.364E-01	3.067E-02	0.168
RU-103	497.08	*		-5.519E-03	4.533E-02	7.322E-02	9.450E-03	-0.075
	610.33	+		1.442E+01	2.879E+00	3.157E+00	4.966E-01	4.568
RH-106	511.85	+		8.804E-01	3.795E-01	4.848E-01	3.104E-02	1.816
	621.84	*		3.700E-01	3.839E-01	6.589E-01	8.005E-02	0.562
	1050.47			-5.411E-01	2.507E+00	4.017E+00	3.270E-01	-0.135
RU-106	511.85	+		8.804E-01	3.795E-01	4.848E-01	3.104E-02	1.816
	621.84	*		3.700E-01	3.821E-01	6.589E-01	4.343E-02	0.562
	1050.47			-5.411E-01	2.507E+00	4.017E+00	3.270E-01	-0.135
AG-108M	433.93	*		1.121E-04	3.821E-02	6.268E-02	4.101E-03	0.002
	614.37			-4.826E-02	5.212E-02	6.451E-02	4.533E-03	-0.748
	722.95			3.123E-02	5.216E-02	8.004E-02	6.274E-03	0.390
AG-110M	657.75	*		-2.017E-03	3.795E-02	6.066E-02	4.193E-03	-0.033
	677.61			-1.304E-01	3.590E-01	5.866E-01	4.167E-02	-0.222
	706.67			3.961E-02	2.311E-01	3.919E-01	2.938E-02	0.101
	763.93			6.240E-02	2.072E-01	3.078E-01	2.561E-02	0.203
	884.67			-7.584E-03	5.549E-02	9.066E-02	9.255E-03	-0.084
	937.48			-1.284E-01	1.271E-01	1.886E-01	1.892E-02	-0.681
	1384.27			-1.575E-01	1.708E-01	2.505E-01	1.549E-02	-0.629
IN-111	171.28			4.290E-01	8.167E-01	1.341E+00	1.333E-01	0.320
	245.39	*		-1.030E+00	9.135E-01	1.225E+00	1.194E-01	-0.841
IN-113M	391.69	*		-2.266E-02	4.820E-02	7.712E-02	4.784E-03	-0.294
SN-113	391.69	*		-2.266E-02	4.820E-02	7.712E-02	4.784E-03	-0.294
IN-114M	190.27	*		1.500E-01	2.163E-01	3.144E-01	3.139E-02	0.477
CD-115	260.90			-4.314E+01	8.788E+01	1.434E+02	1.372E+01	-0.301
	492.35			1.555E+01	2.865E+01	4.839E+01	3.065E+00	0.321
	527.90	*		4.003E-01	8.232E+00	1.342E+01	8.659E-01	0.030
SN-117M	156.02			-1.936E+00	2.274E+00	3.524E+00	3.886E-01	-0.549
	158.56	*		3.866E-02	5.409E-02	8.957E-02	9.630E-03	0.432
SB-122	563.90	*		1.269E+00	1.710E+00	2.918E+00	1.907E-01	0.435
	692.80			3.713E+00	3.594E+01	6.070E+01	4.258E+00	0.061
I-123	159.00	*		-1.555E-01	3.594E+01	Half-Life too short		
	528.96			1.751E+01	3.594E+01	Half-Life too short		
TE-123M	159.00	*		-3.484E-03	2.975E-02	4.773E-02	5.128E-03	-0.073
I-124	602.71	*		-1.153E-02	7.361E-01	1.022E+00	6.729E-02	-0.011
	722.78			8.974E-01	4.563E+00	6.722E+00	5.006E-01	0.133
	1325.50			2.024E+01	2.972E+01	5.213E+01	3.019E+00	0.388
	1376.25			1.899E+01	2.846E+01	5.092E+01	2.965E+00	0.373

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1509.49	1.547E+00	1.401E+01	2.366E+01	1.391E+00	0.065
		1691.02	3.139E+00	3.292E+00	6.326E+00	3.692E-01	0.496
		602.71	-8.062E-04	5.148E-02	7.148E-02	4.707E-03	-0.011
		645.85	9.186E-02	5.564E-01	9.070E-01	6.576E-02	0.101
		709.31	4.646E-01	3.176E+00	5.373E+00	3.896E-01	0.086
		713.82	1.410E+00	1.880E+00	3.303E+00	3.680E-01	0.427
		722.78	9.097E-02	4.626E-01	6.814E-01	5.221E-02	0.133
	+	968.20	2.092E+01	5.453E+00	7.420E+00	6.951E-01	2.819
		1045.16	1.285E+00	2.626E+00	4.509E+00	3.710E-01	0.285
		1325.50	2.191E+00	3.217E+00	5.644E+00	3.268E-01	0.388
		1368.21	-5.103E-02	1.802E+00	2.891E+00	3.434E-01	-0.018
		1436.60	8.028E-01	4.140E+00	7.080E+00	4.147E-01	0.113
		1691.02 *	7.506E-02	7.873E-02	1.513E-01	9.573E-03	0.496
		427.89 *	-5.044E-02	9.846E-02	1.559E-01	9.776E-03	-0.323
SB-125	+	463.38	7.933E-01	4.014E-01	6.038E-01	4.299E-02	1.314
		600.56	-2.300E-02	2.180E-01	3.298E-01	2.439E-02	-0.070
		635.90	-1.994E-01	2.995E-01	4.527E-01	3.385E-02	-0.441
		109.28 *	2.631E+00	9.346E+00	1.512E+01	1.944E+00	0.174
TE-125M I-126		388.63	4.546E-02	2.106E-01	3.514E-01	2.091E-02	0.129
		666.33 *	-1.038E-02	1.967E-01	3.142E-01	2.086E-02	-0.033
SB-126		753.82	8.024E-01	1.595E+00	2.760E+00	2.183E-01	0.291
		223.80	2.688E+00	3.927E+00	6.781E+00	6.719E-01	0.396
		278.60	3.760E+00	2.464E+00	4.353E+00	4.044E-01	0.864
	+	296.50	1.484E+01	2.371E+00	3.667E+00	3.280E-01	4.048
		414.70	-6.278E-02	8.202E-02	1.076E-01	6.408E-03	-0.584
		415.30	-8.168E+00	7.140E+00	8.986E+00	5.357E-01	-0.909
		555.20	3.133E-01	4.021E+00	6.556E+00	4.273E-01	0.048
		573.80	-6.632E-01	1.070E+00	1.588E+00	1.040E-01	-0.418
		593.00	-2.727E-01	9.066E-01	1.425E+00	9.371E-02	-0.191
		656.30	5.924E-01	3.311E+00	5.403E+00	3.555E-01	0.110
		666.33	-4.326E-03	8.195E-02	1.309E-01	8.695E-03	-0.033
		675.00	1.195E-01	2.168E+00	3.653E+00	2.470E-01	0.033
		695.00	-1.442E-02	8.710E-02	1.357E-01	9.562E-03	-0.106
		697.00	-6.355E-02	3.033E-01	4.716E-01	3.336E-02	-0.135
SB-127		720.50 *	-1.704E-01	1.836E-01	2.369E-01	1.757E-02	-0.719
		856.80	-3.504E-01	5.130E-01	7.996E-01	7.607E-02	-0.438
		989.30	-4.748E-01	1.172E+00	1.839E+00	1.669E-01	-0.258
		1034.80	-2.844E-01	9.501E+00	1.553E+01	1.304E+00	-0.018
		1213.00	-2.350E+00	4.671E+00	7.200E+00	4.185E-01	-0.326
		61.10	1.374E+01	2.230E+01	3.321E+01	3.489E+00	0.414
		252.40	-7.716E-01	3.517E+00	5.812E+00	2.451E+00	-0.133
		290.80	-5.382E+00	1.993E+01	2.832E+01	3.163E+00	-0.190
	+	411.60	1.859E+01	2.020E+01	1.704E+01	2.414E+00	1.091
		444.90	-3.577E+00	8.444E+00	1.341E+01	1.423E+00	-0.267
		473.00	5.331E-01	1.515E+00	2.532E+00	2.804E-01	0.211
		543.00	-3.995E+00	1.447E+01	2.294E+01	2.968E+00	-0.174
		603.60	2.735E+00	1.210E+01	1.724E+01	1.872E+00	0.159
		685.20 *	4.611E-01	1.199E+00	2.067E+00	2.018E-01	0.223
		698.50	-7.607E+00	1.357E+01	2.172E+01	3.212E+00	-0.350

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		722.20		-1.039E+01	3.150E+01	4.378E+01	4.333E+00	-0.237
		783.80		2.663E+00	3.172E+00	5.607E+00	6.685E-01	0.475
		57.60		1.392E+00	2.188E+00	3.579E+00	2.882E-01	0.389
		145.22		7.668E-02	7.589E-01	1.215E+00	1.474E-01	0.063
		172.10		7.008E-02	1.266E-01	2.081E-01	2.069E-02	0.337
I-131		202.84	*	-6.445E-02	5.404E-02	7.366E-02	7.352E-03	-0.875
		374.96		-6.547E-02	2.084E-01	3.374E-01	2.202E-02	-0.194
		80.18		6.066E-01	4.582E+00	4.818E+00	3.748E-01	0.126
		284.30		5.076E-01	1.407E+00	2.389E+00	2.294E-01	0.213
		364.48	*	3.326E-02	1.084E-01	1.823E-01	1.367E-02	0.182
TE-132		636.97		4.696E-01	1.483E+00	2.452E+00	1.766E-01	0.192
		722.89		4.411E+00	7.897E+00	1.208E+01	9.060E-01	0.365
		49.72		-3.601E+00	3.495E+00	4.836E+00	4.514E-01	-0.745
		111.76		-1.470E+01	2.303E+01	3.654E+01	4.922E+00	-0.402
		116.30		-4.752E+00	2.121E+01	3.423E+01	4.898E+00	-0.139
BA-133		228.16	*	-5.065E-01	5.691E-01	9.130E-01	1.483E-01	-0.555
		53.15		8.615E-02	9.642E-01	1.577E+00	1.182E-01	0.055
		79.62		2.009E+00	1.479E+00	1.659E+00	2.446E-01	1.211
		81.00		5.165E-02	1.049E-01	1.131E-01	1.742E-02	0.457
		276.40		2.795E-01	4.387E-01	6.886E-01	1.025E-01	0.406
I-133		302.84		9.300E-02	1.660E-01	2.494E-01	3.344E-02	0.373
		356.01	*	2.508E-02	4.898E-02	7.327E-02	9.049E-03	0.342
		383.85		-1.254E-01	3.335E-01	5.374E-01	5.947E-02	-0.233
	+	510.53		6.890E-01	3.335E-01	Half-Life	too short	
		529.87	*	6.022E-04	3.335E-01	Half-Life	too short	
CS-134		706.58		3.261E-02	3.335E-01	Half-Life	too short	
		856.28		-2.669E-01	3.335E-01	Half-Life	too short	
		875.33		-1.052E-02	3.335E-01	Half-Life	too short	
		1236.41		2.299E-01	3.335E-01	Half-Life	too short	
		1298.22		-1.546E-01	3.335E-01	Half-Life	too short	
I-135		475.35		-2.255E-02	2.175E+00	3.549E+00	2.224E-01	-0.006
		563.23		3.315E-01	4.160E-01	7.112E-01	4.724E-02	0.466
		569.32		8.583E-02	2.100E-01	3.506E-01	2.348E-02	0.245
		604.70		2.494E-02	4.265E-02	6.301E-02	4.167E-03	0.396
	+	795.84	*	1.528E-01	7.452E-02	9.784E-02	8.426E-03	1.562
CS-135		801.93		6.548E-02	5.057E-01	7.359E-01	6.396E-02	0.089
		1038.57		-1.059E+00	4.214E+00	6.729E+00	5.609E-01	-0.157
		1167.94		3.365E+00	2.596E+00	4.748E+00	2.808E-01	0.709
		1365.15		3.309E-01	1.193E+00	2.005E+00	1.280E-01	0.165
	*	268.24		2.669E-01	1.868E-01	2.936E-01	3.141E-02	0.909
I-135		288.45		4.715E+08	1.868E-01	Half-Life	too short	
		417.63		5.341E+08	1.868E-01	Half-Life	too short	
		546.56		-1.705E+08	1.868E-01	Half-Life	too short	
		836.80		2.918E+08	1.868E-01	Half-Life	too short	
		1038.76		-2.394E+08	1.868E-01	Half-Life	too short	
		1124.00		-5.555E+08	1.868E-01	Half-Life	too short	
		1131.51		2.391E+08	1.868E-01	Half-Life	too short	
		1260.41	*	1.503E+08	1.868E-01	Half-Life	too short	
		1457.56		3.982E+10	1.868E-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	-3.123E+08	1.868E-01	Half-Life	too short	
		1706.46	1.493E+09	1.868E-01	Half-Life	too short	
		1791.20	-3.724E+08	1.868E-01	Half-Life	too short	
		66.91	-4.424E-01	4.663E-01	6.445E-01	9.741E-02	-0.686
	+	86.29	4.751E+00	1.190E+00	1.621E+00	1.979E-01	2.931
		153.22	-2.067E-01	6.576E-01	1.047E+00	1.269E-01	-0.197
		163.89	2.369E-01	1.094E+00	1.722E+00	1.902E-01	0.138
		176.55	-1.819E-01	3.798E-01	5.970E-01	6.205E-02	-0.305
		273.65	-5.074E-01	5.281E-01	7.165E-01	7.091E-02	-0.708
		340.57	3.905E-01	1.641E-01	2.663E-01	2.142E-02	1.466
		818.51	1.200E-02	8.134E-02	1.368E-01	1.219E-02	0.088
		1048.07	* 5.935E-02	1.065E-01	1.842E-01	1.578E-02	0.322
		1235.34	5.489E-01	6.307E-01	1.093E+00	1.092E-01	0.502
		661.65	* 2.782E-02	4.093E-02	6.923E-02	4.553E-03	0.402
BA-137M		661.65	* 2.940E-02	4.327E-02	7.318E-02	4.828E-03	0.402
CE-137		165.85	* -1.053E-04	3.161E-02	5.090E-02	5.054E-03	-0.002
CE-139		162.64	-8.173E-01	7.924E-01	1.176E+00	1.261E-01	-0.695
BA-140		304.84	1.572E+00	1.396E+00	2.090E+00	5.866E-01	0.752
		423.70	-2.421E-01	1.893E+00	3.079E+00	9.798E-01	-0.079
		537.32	* 8.613E-02	2.567E-01	4.252E-01	1.388E-01	0.203
LA-140		328.77	3.432E-01	3.011E-01	5.251E-01	4.536E-02	0.654
		432.53	-1.595E-01	2.215E+00	3.616E+00	2.402E-01	-0.044
		487.03	-3.342E-02	1.450E-01	2.326E-01	1.634E-02	-0.144
		751.79	-7.930E-01	1.796E+00	2.889E+00	2.564E-01	-0.274
		815.85	8.890E-02	3.242E-01	5.517E-01	5.422E-02	0.161
		867.82	-1.462E+00	1.385E+00	2.041E+00	2.061E-01	-0.716
		919.63	-2.856E+00	3.229E+00	4.051E+00	4.763E-01	-0.705
		925.24	-1.872E-01	1.158E+00	1.881E+00	1.950E-01	-0.100
		1596.49	* -7.061E-02	8.506E-02	1.219E-01	7.162E-03	-0.579
CE-141		145.44	* -3.029E-02	6.941E-02	1.087E-01	1.329E-02	-0.279
CE-143		57.37	1.085E-04	6.941E-02	Half-Life	too short	
		231.56	5.659E-04	6.941E-02	Half-Life	too short	
		293.26	* 5.709E-04	6.941E-02	Half-Life	too short	
	+	350.59	1.512E-02	6.941E-02	Half-Life	too short	
		490.36	6.816E-04	6.941E-02	Half-Life	too short	
		664.57	-7.136E-05	6.941E-02	Half-Life	too short	
		721.93	-3.836E-04	6.941E-02	Half-Life	too short	
CE-144		80.11	5.452E-01	2.334E+00	2.473E+00	1.911E-01	0.220
		133.54	* 4.214E-02	2.363E-01	3.382E-01	6.262E-02	0.125
PM-144		476.78	5.341E-03	7.591E-02	1.245E-01	9.141E-03	0.043
		618.01	1.566E-02	4.088E-02	6.403E-02	4.417E-03	0.245
		696.49	* 2.625E-03	4.123E-02	6.540E-02	4.624E-03	0.040
		778.57	-1.638E-01	2.581E+00	4.279E+00	3.545E-01	-0.038
PR-144		696.49	* 1.777E-01	2.792E+00	4.429E+00	3.130E-01	0.040
		1489.15	-7.446E+00	1.237E+01	1.865E+01	1.096E+00	-0.399
PM-146		453.90	* -1.785E-02	4.944E-02	7.647E-02	6.785E-03	-0.233
		633.02	-5.669E-01	1.542E+00	2.378E+00	8.787E-01	-0.238
		735.90	-2.025E-02	1.688E-01	2.793E-01	7.912E-02	-0.072
		747.13	-3.766E-03	9.931E-02	1.653E-01	2.241E-02	-0.023

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	91.11	8.456E-01	2.349E-01	4.359E-01	3.877E-02	1.940
		319.41	-2.203E+00	3.312E+00	5.302E+00	4.449E-01	-0.416
		439.89	3.908E+00	5.987E+00	1.021E+01	6.230E-01	0.383
		531.02	* -2.196E-01	5.660E-01	8.897E-01	1.229E-01	-0.247
PM-149		285.90	* -1.479E+00	6.624E+01	1.104E+02	1.750E+01	-0.013
EU-152		121.78	1.320E-03	7.322E-02	1.192E-01	1.782E-02	0.011
		244.69	1.490E-01	3.740E-01	5.603E-01	5.463E-02	0.266
		344.27	* -8.401E-02	1.213E-01	1.736E-01	1.427E-02	-0.484
		443.98	-5.787E-01	1.033E+00	1.626E+00	9.951E-02	-0.356
		778.89	4.023E-02	2.958E-01	4.982E-01	4.129E-02	0.081
		867.32	-9.303E-01	8.883E-01	1.312E+00	1.271E-01	-0.709
		964.01	5.051E-01	3.655E-01	5.961E-01	5.617E-02	0.847
		1085.78	-1.152E-01	3.643E-01	5.721E-01	4.308E-02	-0.201
		1112.02	2.512E-01	4.148E-01	6.273E-01	4.418E-02	0.400
		1407.95	7.026E-02	2.131E-01	3.694E-01	2.158E-01	0.190
GD-153	+	69.67	8.594E-01	1.093E+00	1.631E+00	1.297E-01	0.527
		83.37	2.383E+01	1.157E+01	1.913E+01	1.468E+00	1.246
		97.43	* 3.789E-02	7.605E-02	1.117E-01	1.036E-02	0.339
		103.18	-1.031E-01	9.686E-02	1.510E-01	1.561E-02	-0.683
EU-154		123.07	-1.505E-02	5.681E-02	8.421E-02	1.342E-02	-0.179
		247.94	-9.227E-02	3.865E-01	5.818E-01	7.168E-02	-0.159
		591.81	2.807E-01	6.663E-01	1.055E+00	1.082E-01	0.266
		723.30	2.381E-01	2.196E-01	3.516E-01	2.985E-02	0.677
		756.87	1.090E-01	9.203E-01	1.549E+00	1.782E-01	0.070
		873.19	2.012E-01	3.154E-01	5.514E-01	7.216E-02	0.365
		996.32	1.605E-01	3.791E-01	6.478E-01	1.162E-01	0.248
		1004.76	-1.836E-01	2.130E-01	3.141E-01	3.712E-02	-0.584
EU-155		1274.45	* -4.084E-02	1.316E-01	2.053E-01	1.920E-02	-0.199
		48.70	4.652E-01	5.179E-01	7.873E-01	5.487E-02	0.591
		60.01	5.698E-01	2.195E+00	3.231E+00	2.675E-01	0.176
		86.54	4.668E-01	1.083E-01	1.578E-01	1.219E-02	2.959
TB-160	+	105.31	* -1.934E-02	1.015E-01	1.645E-01	1.782E-02	-0.118
		86.79	1.233E+00	2.857E-01	4.130E-01	3.150E-02	2.986
		197.04	2.515E-03	6.188E-01	9.822E-01	9.809E-02	0.003
		215.65	-9.040E-02	7.827E-01	1.241E+00	1.235E-01	-0.073
	+	298.57	2.924E-01	1.645E-01	2.137E-01	1.902E-02	1.368
		879.36	* -1.638E-02	1.497E-01	2.452E-01	2.423E-02	-0.067
		962.29	9.899E-01	6.379E-01	1.062E+00	1.003E-01	0.932
		966.15	1.616E+00	4.212E-01	6.067E-01	5.700E-02	2.663
		1177.93	1.650E-01	3.837E-01	6.502E-01	3.773E-02	0.254
		1271.85	-6.224E-01	7.561E-01	1.102E+00	6.406E-02	-0.565
HO-166M		80.57	-9.416E-04	3.005E-01	3.127E-01	2.414E-02	-0.003
		184.41	1.383E-01	4.636E-02	7.164E-02	7.149E-03	1.931
		280.46	-5.830E-02	9.245E-02	1.497E-01	1.386E-02	-0.390
		410.95	4.612E-01	4.975E-01	4.552E-01	2.702E-02	1.013
		711.68	* -1.861E-02	7.202E-02	1.183E-01	8.622E-03	-0.157
		752.31	-9.714E-03	2.972E-01	4.948E-01	3.901E-02	-0.020
TM-171		810.29	-8.830E-02	5.900E-02	8.208E-02	7.201E-03	-1.076
		51.35	-4.054E+00	8.064E+00	1.149E+01	8.363E-01	-0.353



## ---- 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		-1.708E+00	4.193E+00	6.524E+00	4.828E-01	-0.262
		59.40		1.311E+01	1.154E+01	1.756E+01	1.455E+00	0.747
		66.72	*	-8.860E+00	1.742E+01	2.476E+01	1.990E+00	-0.358
		88.36		9.197E-01	2.130E-01	3.359E-01	2.577E-02	2.738
		201.83		-2.538E-02	3.076E-02	4.714E-02	4.706E-03	-0.538
LU-177	+	306.84	*	1.262E-02	2.577E-02	4.291E-02	3.737E-03	0.294
		401.10		-3.215E+00	7.684E+00	1.156E+01	6.790E-01	-0.278
		112.95		-4.487E-01	1.425E+00	2.295E+00	2.814E-01	-0.196
LU-177M	+	208.36	*	3.341E+00	1.420E+00	1.817E+00	1.811E-01	1.839
		52.97		3.836E-02	4.289E-01	7.017E-01	5.242E-02	0.055
HF-181		54.07		-8.185E-02	2.500E-01	4.036E-01	3.069E-02	-0.203
		61.30		4.936E-01	7.366E-01	1.099E+00	9.038E-02	0.449
		121.62		-9.911E-03	3.740E-01	6.076E-01	8.559E-02	-0.016
		147.16		-6.685E-01	7.230E-01	1.120E+00	1.338E-01	-0.597
		171.86		2.336E-01	5.241E-01	8.578E-01	8.530E-02	0.272
		218.09		-1.145E-01	8.710E-01	1.461E+00	1.451E-01	-0.078
		268.79		1.370E+00	9.517E-01	1.498E+00	1.415E-01	0.915
		319.02		-1.376E-01	2.717E-01	4.388E-01	3.686E-02	-0.314
		367.43		-4.814E-01	9.475E-01	1.516E+00	1.034E-01	-0.318
		413.65	*	-1.154E-01	2.029E-01	2.723E-01	1.621E-02	-0.424
		56.28		-1.234E-01	3.112E-01	5.093E-01	4.014E-02	-0.242
		57.53		1.103E-01	1.838E-01	3.004E-01	2.416E-02	0.367
		65.20		4.782E-01	5.467E-01	8.194E-01	6.624E-02	0.584
		133.02		-1.422E-02	7.561E-02	1.061E-01	1.407E-02	-0.134
		136.25		1.502E-01	4.621E-01	7.579E-01	9.836E-02	0.198
W-181		345.85		-8.472E-02	2.472E-01	3.418E-01	2.597E-02	-0.248
		482.03	*	1.247E-02	4.781E-02	7.938E-02	4.996E-03	0.157
		56.28		-4.851E-02	1.234E-01	2.020E-01	1.592E-02	-0.240
		57.53		4.369E-02	7.292E-02	1.192E-01	9.583E-03	0.367
TA-182		65.20	*	1.882E-01	2.152E-01	3.225E-01	2.607E-02	0.584
		67.75		-4.630E-02	7.118E-02	1.004E-01	8.040E-03	-0.461
		100.10		1.732E-01	1.666E-01	2.627E-01	2.564E-02	0.659
		152.43		3.658E-02	3.577E-01	5.799E-01	6.614E-02	0.063
RE-183		222.10		1.418E-01	3.563E-01	6.094E-01	6.044E-02	0.233
		1001.68		4.110E-01	1.941E+00	3.260E+00	2.902E-01	0.126
		1121.28		6.643E-01	1.949E-01	3.652E-01	2.507E-02	1.819
		1189.05		-2.517E-01	3.360E-01	5.046E-01	2.930E-02	-0.499
		1221.42	*	5.309E-02	2.080E-01	3.458E-01	2.010E-02	0.154
		1230.97		-4.115E-01	5.299E-01	7.960E-01	4.629E-02	-0.517
		57.98		7.597E-02	7.660E-02	1.218E-01	9.870E-03	0.623
		59.32		7.323E-02	4.627E-02	7.144E-02	5.913E-03	1.025
		67.20		-1.268E-01	1.258E-01	1.747E-01	1.401E-02	-0.726
		162.32	*	-8.583E-02	1.202E-01	1.814E-01	1.874E-02	-0.473
RE-184	+	208.81		3.360E+00	1.428E+00	1.831E+00	1.825E-01	1.835
		291.72		9.134E-01	1.033E+00	1.590E+00	1.438E-01	0.575
		57.98		2.819E-01	2.842E-01	4.521E-01	3.662E-02	0.623
		59.32		2.715E-01	1.715E-01	2.649E-01	2.192E-02	1.025
		67.20		-4.703E-01	4.666E-01	6.480E-01	5.198E-02	-0.726
		161.27		-7.563E-03	3.700E-01	5.958E-01	6.227E-02	-0.013

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		216.55		-2.395E-02	2.671E-01	4.487E-01	4.462E-02	-0.053
		252.85	*	-1.717E-01	2.366E-01	3.824E-01	3.694E-02	-0.449
		318.01		-1.212E-02	4.740E-01	7.868E-01	6.631E-02	-0.015
		792.07		9.021E-01	1.178E+00	1.841E+00	1.563E-01	0.490
		903.28		-2.052E-01	1.345E+00	1.874E+00	1.899E-01	-0.110
		920.93		-2.268E-01	5.026E-01	7.235E-01	7.195E-02	-0.313
		59.72		6.650E-02	1.290E-01	1.919E-01	1.591E-02	0.347
		61.14		5.558E-02	7.832E-02	1.171E-01	9.638E-03	0.475
		69.30		1.222E-01	1.921E-01	2.852E-01	2.271E-02	0.429
		592.07		5.361E-01	2.647E+00	4.108E+00	2.701E-01	0.131
		646.12	*	8.869E-03	4.766E-02	7.782E-02	5.126E-03	0.114
		717.42		-3.062E-01	1.042E+00	1.667E+00	1.228E-01	-0.184
		874.81		-8.257E-02	5.996E-01	9.792E-01	9.603E-02	-0.084
		880.27		4.892E-01	8.276E-01	1.442E+00	1.427E-01	0.339
RE-188		155.03	*	-9.401E-02	1.804E-01	2.844E-01	3.167E-02	-0.330
		477.96		-1.182E+00	3.535E+00	5.639E+00	3.540E-01	-0.210
		633.10		-1.133E+00	3.053E+00	4.751E+00	3.132E-01	-0.238
W-188	+	63.58		5.278E+01	3.081E+01	4.522E+01	3.681E+00	1.167
		227.08		-6.108E+00	1.312E+01	2.165E+01	2.141E+00	-0.282
IR-192	+	290.67	*	-2.490E+00	8.453E+00	1.199E+01	1.087E+00	-0.208
		295.96		1.202E+00	1.924E-01	2.985E-01	2.691E-02	4.028
		308.46		-5.302E-02	9.555E-02	1.540E-01	1.342E-02	-0.344
AU-195		316.51	*	1.397E-02	3.587E-02	6.083E-02	5.163E-03	0.230
		468.07		1.164E-02	7.752E-02	1.164E-01	8.224E-03	0.100
		604.41		1.134E-01	5.843E-01	8.292E-01	9.761E-02	0.137
		612.46		1.020E+00	9.471E-01	1.452E+00	1.190E-01	0.703
		65.12		1.028E-01	1.001E-01	1.508E-01	1.219E-02	0.682
		66.83		-5.541E-02	5.884E-02	8.200E-02	6.586E-03	-0.676
	+	75.70		1.209E+00	1.974E-01	3.776E-01	2.949E-02	3.202
		98.88	*	3.001E-01	2.170E-01	3.305E-01	3.152E-02	0.908
	+	129.76		5.076E+00	4.250E+00	5.234E+00	7.093E-01	0.970
		367.94	*	-3.471E-06	4.250E+00	Half-Life	too short	
TL-200		579.30		2.670E-03	4.250E+00	Half-Life	too short	
		828.27		-2.036E-03	4.250E+00	Half-Life	too short	
		1205.75		1.289E-03	4.250E+00	Half-Life	too short	
TL-201		68.90		-2.317E-01	2.585E+00	3.476E+00	2.771E-01	-0.067
		70.82		6.134E-02	1.446E+00	2.098E+00	1.662E-01	0.029
		80.30		7.602E-02	4.212E+00	4.391E+00	3.392E-01	0.017
		135.34		4.128E+00	2.069E+01	3.264E+01	4.262E+00	0.126
TL-202		167.43	*	-1.475E+00	5.775E+00	9.194E+00	9.127E-01	-0.160
		68.90		-2.558E-02	2.854E-01	3.837E-01	3.059E-02	-0.067
		70.82		6.753E-03	1.592E-01	2.310E-01	1.830E-02	0.029
		80.30		8.372E-03	4.639E-01	4.836E-01	3.736E-02	0.017
HG-203		439.56	*	6.121E-02	7.115E-02	1.229E-01	7.491E-03	0.498
		70.83		3.721E-02	7.257E-01	1.053E+00	1.388E-01	0.035
		72.87		2.198E+00	5.599E-01	8.047E-01	1.024E-01	2.731
BI-207		82.60		1.727E+00	8.460E-01	1.385E+00	1.825E-01	1.247
		279.20	*	5.687E-02	4.324E-02	7.590E-02	7.216E-03	0.749
		72.80		6.046E-01	1.513E-01	2.364E-01	1.862E-02	2.557

----- 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		6.736E-01	1.100E-01	1.874E-01	1.467E-02	3.594
	+	84.90		3.093E-01	1.502E-01	2.726E-01	2.086E-02	1.134
		569.67		7.857E-03	3.235E-02	5.336E-02	3.493E-03	0.147
		1063.62	*	1.579E-02	6.447E-02	9.380E-02	7.429E-03	0.168
		1770.23		-4.264E-02	5.783E-01	7.953E-01	4.594E-02	-0.054
		81.07		1.105E-01	2.311E-01	2.495E-01	1.924E-02	0.443
	+	83.78		2.039E-01	9.905E-02	1.633E-01	1.252E-02	1.249
		94.90		7.097E-01	2.362E-01	3.709E-01	3.268E-02	1.914
		122.32		-3.157E-01	1.829E+00	2.849E+00	4.150E-01	-0.111
		144.24		5.979E-01	7.561E-01	1.236E+00	1.603E-01	0.484
		154.21		-3.833E-02	4.105E-01	6.600E-01	7.849E-02	-0.058
	+	269.46		3.793E-01	3.096E-01	3.543E-01	3.402E-02	1.071
		323.87	*	-7.470E-01	7.437E-01	1.152E+00	2.020E-01	-0.648
	+	338.28		6.277E+00	1.978E+00	2.713E+00	3.196E-01	2.314
PO-209		445.03		-1.012E+00	2.442E+00	3.882E+00	4.059E-01	-0.261
		260.50		-5.475E+00	9.445E+00	1.534E+01	1.468E+00	-0.357
		262.80		-1.659E+01	2.789E+01	4.251E+01	4.054E+00	-0.390
PB-211		896.60	*	-6.816E+00	9.020E+00	1.389E+01	1.412E+00	-0.491
		404.84	*	5.861E-02	1.147E+00	1.641E+00	1.023E+00	0.036
BI-212		427.08		-2.602E-01	2.181E+00	3.541E+00	2.190E+00	-0.073
		831.96		4.112E-01	1.359E+00	2.272E+00	1.425E+00	0.181
	+	727.18	*	9.612E-01	5.086E-01	7.094E-01	6.435E-02	1.355
PO-215		785.46		1.603E+00	1.952E+00	3.332E+00	2.795E-01	0.481
		1620.62		4.095E-01	1.390E+00	2.405E+00	1.411E-01	0.170
		81.07		1.105E-01	2.311E-01	2.495E-01	1.924E-02	0.443
RN-219	+	83.78		2.039E-01	9.905E-02	1.633E-01	1.252E-02	1.249
		94.90		7.097E-01	2.362E-01	3.709E-01	3.268E-02	1.914
		122.32		-3.157E-01	1.829E+00	2.849E+00	4.150E-01	-0.111
		144.24		5.979E-01	7.561E-01	1.236E+00	1.603E-01	0.484
		154.21		-3.833E-02	4.105E-01	6.600E-01	7.849E-02	-0.058
	+	269.46		3.793E-01	3.096E-01	3.543E-01	3.402E-02	1.071
		323.87	*	-7.470E-01	7.437E-01	1.152E+00	2.020E-01	-0.648
	+	338.28		6.277E+00	1.978E+00	2.713E+00	3.196E-01	2.314
		445.03		-1.012E+00	2.442E+00	3.882E+00	4.059E-01	-0.261
	+	271.23		4.867E-01	3.981E-01	4.697E-01	5.158E-02	1.036
		401.81	*	-2.957E-01	4.920E-01	6.965E-01	9.501E-02	-0.425
RN-220		549.76	*	-6.603E+00	2.788E+01	4.433E+01	2.884E+00	-0.149
RA-223		81.07		1.105E-01	2.311E-01	2.495E-01	1.924E-02	0.443
	+	83.78		2.039E-01	9.905E-02	1.633E-01	1.252E-02	1.249
		94.90		7.097E-01	2.362E-01	3.709E-01	3.268E-02	1.914
		122.32		-3.157E-01	1.829E+00	2.849E+00	4.150E-01	-0.111
		144.24		5.979E-01	7.561E-01	1.236E+00	1.603E-01	0.484
		154.21		-3.833E-02	4.105E-01	6.600E-01	7.849E-02	-0.058
	+	269.46		3.793E-01	3.096E-01	3.543E-01	3.402E-02	1.071
		323.87	*	-7.470E-01	7.437E-01	1.152E+00	2.020E-01	-0.648
	+	338.28		6.277E+00	1.978E+00	2.713E+00	3.196E-01	2.314
		445.03		-1.012E+00	2.442E+00	3.882E+00	4.059E-01	-0.261
		79.80		1.231E+00	1.837E+00	1.989E+00	4.210E-01	0.619
		236.00		1.975E+00	4.274E-01	6.143E-01	8.061E-02	3.215

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		256.20	*	1.006E-01	3.827E-01	6.489E-01	1.034E-01	0.155
		286.10		-1.640E-01	1.634E+00	2.713E+00	3.678E-01	-0.060
	+	299.80		3.767E+00	2.196E+00	2.687E+00	4.733E-01	1.402
		304.40		1.643E+00	2.157E+00	3.267E+00	6.046E-01	0.503
		334.20		1.143E+00	2.779E+00	4.113E+00	7.868E-01	0.278
		79.80		1.231E+00	1.838E+00	1.989E+00	4.266E-01	0.619
	+	94.00		8.846E+00	3.010E+00	3.410E+00	7.431E-01	2.594
		236.00		1.975E+00	4.148E-01	6.143E-01	7.396E-02	3.215
		256.20	*	1.006E-01	3.828E-01	6.489E-01	1.204E-01	0.155
		286.10		-1.640E-01	1.642E+00	2.713E+00	2.725E+00	-0.060
AC-228	+	299.80		3.767E+00	2.196E+00	2.687E+00	4.733E-01	1.402
		304.40		1.643E+00	2.157E+00	3.267E+00	6.046E-01	0.503
		334.20		1.143E+00	2.779E+00	4.113E+00	7.868E-01	0.278
	+	338.32		1.503E+00	7.582E-01	6.504E-01	2.673E-01	2.311
	+	911.07	*	1.522E+00	4.452E-01	5.402E-01	6.686E-02	2.816
RA-228		969.11		1.616E+00	5.268E-01	7.225E-01	1.706E-01	2.237
	+	338.32		1.503E+00	7.582E-01	6.504E-01	2.673E-01	2.311
	+	911.07	*	1.522E+00	4.452E-01	5.402E-01	6.686E-02	2.816
TH-229		969.11		1.616E+00	5.268E-01	7.225E-01	1.706E-01	2.237
	+	85.43		3.053E-01	1.483E-01	2.894E-01	2.213E-02	1.055
	+	88.47		5.294E-01	1.226E-01	1.927E-01	1.482E-02	2.747
		100.00		1.950E-01	1.747E-01	2.761E-01	2.690E-02	0.706
PA-231		193.63	*	-5.865E-01	5.960E-01	8.273E-01	8.262E-02	-0.709
		210.97		1.865E+00	9.052E-01	1.394E+00	1.389E-01	1.338
		283.67	*	-3.877E-01	1.603E+00	2.642E+00	4.101E-01	-0.147
		301.29		2.331E-01	7.062E-01	1.044E+00	1.294E-01	0.223
TH-231		81.07		1.105E-01	2.311E-01	2.495E-01	1.924E-02	0.443
	+	83.78		2.039E-01	9.905E-02	1.633E-01	1.252E-02	1.249
		94.90		7.097E-01	2.362E-01	3.709E-01	3.268E-02	1.914
		122.32		-3.157E-01	1.829E+00	2.849E+00	4.150E-01	-0.111
		144.24		5.979E-01	7.561E-01	1.236E+00	1.603E-01	0.484
		154.21		-3.833E-02	4.105E-01	6.600E-01	7.849E-02	-0.058
	+	269.46		3.793E-01	3.096E-01	3.543E-01	3.402E-02	1.071
		323.87	*	-7.470E-01	7.437E-01	1.152E+00	2.020E-01	-0.648
	+	338.28		6.277E+00	1.978E+00	2.713E+00	3.196E-01	2.314
		445.03		-1.012E+00	2.442E+00	3.882E+00	4.059E-01	-0.261
U-231	+	84.21		7.205E+00	3.499E+00	5.837E+00	4.473E-01	1.234
	+	92.29		7.168E+00	1.973E+00	2.839E+00	2.371E-01	2.525
		95.87	*	-9.735E-03	8.627E-01	1.237E+00	1.112E-01	-0.008
		108.00		1.041E+00	1.634E+00	2.720E+00	3.066E-01	0.383
TH-232	+	338.32		1.503E+00	4.550E-01	6.504E-01	5.099E-02	2.311
	+	911.07	*	1.522E+00	4.452E-01	5.402E-01	6.686E-02	2.816
PA-233		969.11		1.616E+00	5.268E-01	7.225E-01	1.706E-01	2.237
	+	75.28		1.966E+01	4.067E+00	5.870E+00	8.753E-01	3.349
	+	86.59		7.591E+00	2.609E+00	2.560E+00	6.790E-01	2.965
	+	300.12		1.050E+00	6.045E-01	7.517E-01	1.129E-01	1.397
		311.98	*	-6.551E-02	6.524E-02	1.020E-01	9.004E-03	-0.642
		340.50		2.231E+00	9.911E-01	1.404E+00	3.306E-01	1.589
		398.62		1.029E+00	2.230E+00	3.748E+00	9.697E-01	0.274

## ---- 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	-1.752E+00	2.039E+00	2.611E+00	5.387E-01	-0.671	
		63.00	1.549E+00	9.259E-01	1.318E+00	2.009E-01	1.176	
		94.67	4.754E-01	1.706E-01	2.769E-01	3.464E-02	1.717	
		98.44	1.031E-01	1.050E-01	1.335E-01	7.466E-02	0.772	
		99.86	5.415E-01	4.440E-01	7.039E-01	6.840E-02	0.769	
		111.00	5.499E-02	1.879E-01	3.038E-01	4.431E-02	0.181	
		131.20	5.796E-02	1.263E-01	1.832E-01	2.460E-02	0.316	
		152.70	1.241E-02	3.467E-01	5.606E-01	1.042E-01	0.022	
		186.00	4.322E+00	2.869E+00	2.680E+00	8.472E-01	1.613	
		226.40	-2.719E-01	4.205E-01	6.862E-01	9.654E-02	-0.396	
		227.20	-2.040E-01	4.489E-01	7.409E-01	7.327E-02	-0.275	
		248.90	-2.506E-01	8.355E-01	1.342E+00	3.067E-01	-0.187	
		293.70	7.653E+00	1.677E+00	1.855E+00	3.245E-01	4.126	
		369.80	3.339E-01	8.891E-01	1.497E+00	3.159E-01	0.223	
		568.70	-2.058E-01	1.089E+00	1.736E+00	1.136E-01	-0.119	
		569.50	9.127E-02	2.887E-01	4.789E-01	3.134E-02	0.191	
		574.00	-9.214E-01	1.650E+00	2.464E+00	1.614E-01	-0.374	
		699.00	-3.035E-01	7.866E-01	1.277E+00	2.355E-01	-0.238	
	706.10	3.182E-01	1.170E+00	1.983E+00	8.792E-01	0.160		
	733.00	-5.487E-01	4.903E-01	6.241E-01	1.362E-01	-0.879		
	742.81	7.497E-01	1.671E+00	2.753E+00	1.848E+00	0.272		
	796.30	2.973E+00	1.638E+00	1.877E+00	5.074E-01	1.584		
	805.60	9.957E-01	1.080E+00	1.865E+00	5.720E-01	0.534		
	819.60	9.362E-01	1.468E+00	2.492E+00	9.494E-01	0.376		
	826.30	-1.007E+00	1.029E+00	1.386E+00	6.213E-01	-0.726		
	831.60	3.102E-01	6.802E-01	1.162E+00	3.486E-01	0.267		
	876.40	-1.819E-01	9.103E-01	1.446E+00	1.488E+00	-0.126		
	880.51	1.995E-01	3.041E-01	5.322E-01	5.269E-02	0.375		
	883.24	6.673E-02	3.198E-01	5.339E-01	3.599E-01	0.125		
	899.00	2.311E-01	9.691E-01	1.626E+00	7.164E-01	0.142		
	925.00	-4.084E-01	1.288E+00	2.060E+00	2.039E-01	-0.198		
	926.50	-2.386E-02	2.036E-01	3.323E-01	8.552E-02	-0.072		
	946.00	*	1.738E-01	3.458E-01	5.929E-01	1.142E-01	0.293	
	949.00		2.892E-01	4.900E-01	8.503E-01	8.173E-02	0.340	
	980.50		2.753E-01	7.669E-01	1.306E+00	1.202E-01	0.211	
	1394.10		4.240E-01	1.311E+00	2.231E+00	1.445E+00	0.190	
PA-234M		766.42	8.313E+00	1.589E+01	2.323E+01	1.177E+01	0.358	
		1001.03	*	-4.783E-01	4.489E+00	7.290E+00	7.449E-01	-0.066
U-235	+	89.95	3.633E+00	1.470E+00	1.684E+00	5.166E-01	2.157	
	+	93.35	2.752E+00	1.055E+00	1.070E+00	2.997E-01	2.571	
		105.00	-4.868E-04	9.816E-01	1.603E+00	4.891E-01	0.000	
		143.76	*	2.154E-01	2.371E-01	3.851E-01	7.536E-02	0.559
		163.35	-8.450E-02	5.192E-01	8.044E-01	1.597E-01	-0.105	
	+	185.71	1.601E-01	9.480E-02	9.848E-02	9.828E-03	1.626	
NP-236		205.31	3.470E-02	6.075E-01	8.448E-01	1.667E-01	0.041	
		94.67	3.628E-01	1.254E-01	2.102E-01	1.844E-02	1.726	
		98.44	7.795E-02	6.677E-02	1.009E-01	9.542E-03	0.772	
		111.00	4.160E-02	1.421E-01	2.298E-01	2.728E-02	0.181	
		160.31	*	-9.537E-03	8.492E-02	1.362E-01	1.438E-02	-0.070

---- 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		2.229E-01	1.539E-01	2.348E-01	2.268E-02	0.950
		117.00	*	-1.001E-01	1.877E-01	2.985E-01	3.910E-02	-0.335
	+	209.75		2.682E+00	1.140E+00	1.427E+00	1.422E-01	1.880
		228.18		-2.151E-01	2.386E-01	3.852E-01	3.807E-02	-0.558
		277.60		1.684E-01	2.001E-01	3.377E-01	3.144E-02	0.499
AM-241		334.30		3.538E-01	1.601E+00	2.342E+00	1.865E-01	0.151
		59.54	*	7.050E-02	6.736E-02	1.021E-01	9.136E-03	0.690
CM-243		99.55		2.294E-01	1.583E-01	2.416E-01	2.333E-02	0.950
		103.76	*	-3.926E-02	8.953E-02	1.437E-01	1.502E-02	-0.273
		117.00		-1.030E-01	1.931E-01	3.070E-01	4.023E-02	-0.335
	+	209.75		2.644E+00	1.124E+00	1.407E+00	1.402E-01	1.880
		228.18		-2.173E-01	2.411E-01	3.892E-01	3.846E-02	-0.558
AM-246		277.60		1.698E-01	2.017E-01	3.405E-01	3.169E-02	0.499
		798.80		-4.559E-02	1.720E-01	2.381E-01	2.046E-02	-0.192
		1036.00		-4.068E-02	3.404E-01	5.515E-01	4.620E-02	-0.074
		1062.04		-2.004E-02	2.893E-01	4.194E-01	3.333E-02	-0.048
		1078.86	*	5.498E-02	1.439E-01	2.404E-01	1.840E-02	0.229
CM-247		278.00		9.368E-01	8.124E-01	1.418E+00	1.319E-01	0.661
		287.40		1.861E-01	1.309E+00	2.145E+00	1.958E-01	0.087
		402.60	*	-1.060E-02	4.572E-02	6.381E-02	3.755E-03	-0.166
CF-249		252.85		-6.475E-01	8.923E-01	1.442E+00	1.393E-01	-0.449
		333.44		-4.807E-02	2.152E-01	3.047E-01	2.435E-02	-0.158
		387.95	*	3.132E-02	4.274E-02	7.343E-02	4.392E-03	0.427
CF-251		176.60	*	-3.653E-03	1.368E-01	2.195E-01	2.186E-02	-0.017
		227.00		-2.134E-01	3.995E-01	6.570E-01	6.498E-02	-0.325
		285.00		1.713E-02	1.857E+00	3.102E+00	2.846E-01	0.006

# 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]G244132008      *
* Acquisition date   : 19-JAN-2010 10:02:14 Detector SN#                   *
* Detector ID        : GAM05                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance : 1.500      *
* Elapsed live time   : 0 02:00:00.00                               Abundance limit : 75.000      *
* Elapsed real time   : 0 02:00:01.72                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132008                               Analyst initials: MXR1        *
* Batch Number       : 940270                                   Sample Quantity : 1.3479E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight   : 0.00000      *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                         *
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope                 : *
* MSD DPM             : 0.000                                           MSD Isotope       : *
* LCS DPM             : 0.000                                           LCS Isotope       : *
* LCSD DPM            : 0.000                                           LCSD Isotope      : *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.006E+01	1.980E+00	6.231E-01	0.000E+00
CD-109	3.938E+00	8.940E-01	1.025E+00	0.000E+00
SN-126	3.878E-01	8.803E-02	1.008E-01	0.000E+00
TL-208	5.733E-01	1.003E-01	6.459E-02	0.000E+00
BI-210	1.661E+00	9.833E-01	8.513E-01	0.000E+00
PB-210	1.661E+00	9.833E-01	8.513E-01	0.000E+00
PO-210	1.661E+00	9.812E-01	8.513E-01	0.000E+00
BI-211	3.491E+00	4.990E-01	3.721E-01	0.000E+00
PB-212	1.740E+00	2.165E-01	9.752E-02	0.000E+00
PO-212	1.740E+00	2.165E-01	9.752E-02	0.000E+00
BI-214	1.364E+00	1.989E-01	1.271E-01	0.000E+00
PB-214	1.214E+00	1.844E-01	1.202E-01	0.000E+00
PO-214	1.214E+00	1.844E-01	1.202E-01	0.000E+00
PO-216	1.740E+00	2.165E-01	9.752E-02	0.000E+00
PO-218	1.214E+00	1.844E-01	1.202E-01	0.000E+00
RA-224	4.670E+00	1.269E+00	1.110E+00	0.000E+00
RA-226	1.364E+00	1.989E-01	1.271E-01	0.000E+00
TH-228	1.765E+00	2.195E-01	9.888E-02	0.000E+00
TH-230	1.364E+00	1.989E-01	1.271E-01	0.000E+00
TH-234	1.329E+00	7.875E-01	1.043E+00	0.000E+00
U-234	1.364E+00	1.989E-01	1.271E-01	0.000E+00
NP-237	1.139E+00	3.462E-01	2.950E-01	0.000E+00
U-238	1.329E+00	7.875E-01	1.043E+00	0.000E+00
AM-243	3.753E-01	6.006E-02	6.479E-02	0.000E+00
ANH-511	1.767E-01	7.462E-02	5.204E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-1.893E-01	3.624E-01	5.960E-01	0.000E+00 NOT IDENT.
NA-22	-1.416E-02	4.618E-02	7.397E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.077E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	6.626E-03	2.895E-02	5.086E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.659E-02	6.879E-02	0.000E+00	FAIL ABUN
SC-46	3.911E-03	4.410E-02	7.586E-02	0.000E+00	FAIL ABUN
V-48	-2.279E-02	6.562E-02	1.070E-01	0.000E+00	NOT IDENT.
CR-51	-2.230E-01	3.796E-01	6.422E-01	0.000E+00	NOT IDENT.
MN-52	-1.015E-01	2.213E-01	3.554E-01	0.000E+00	NOT IDENT.
MN-54	7.617E-03	4.138E-02	7.198E-02	0.000E+00	NOT IDENT.
CO-56	1.748E-03	4.394E-02	7.554E-02	0.000E+00	NOT IDENT.
CO-57	-1.519E-03	2.483E-02	4.309E-02	0.000E+00	NOT IDENT.
CO-58	-6.117E-02	3.839E-02	5.480E-02	0.000E+00	NOT IDENT.
FE-59	-8.236E-02	9.652E-02	1.476E-01	0.000E+00	NOT IDENT.
CO-60	-2.360E-02	4.138E-02	6.314E-02	0.000E+00	NOT IDENT.
ZN-65	3.598E-02	1.248E-01	1.856E-01	0.000E+00	NOT IDENT.
GE-68	9.972E-01	1.346E+00	2.230E+00	0.000E+00	NOT IDENT.
AS-73	1.027E-02	2.216E-01	3.927E-01	0.000E+00	NOT IDENT.
AS-74	-5.604E-02	9.175E-02	1.460E-01	0.000E+00	NOT IDENT.
SE-75	4.936E-03	4.792E-02	7.419E-02	0.000E+00	NOT IDENT.
BR-77	-1.092E+00	8.747E+00	1.381E+01	0.000E+00	FAIL ABUN
SR-82	-5.575E-02	4.127E-01	7.042E-01	0.000E+00	NOT IDENT.
RB-83	1.360E-02	8.341E-02	1.299E-01	0.000E+00	NOT IDENT.
RB-84	5.064E-02	7.260E-02	1.314E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	9.155E+00	1.557E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.635E-02	7.884E-02	0.000E+00	NOT IDENT.
RB-86	8.403E-01	8.684E-01	1.429E+00	0.000E+00	NOT IDENT.
Y-88	2.435E-02	3.863E-02	7.166E-02	0.000E+00	NOT IDENT.
ZR-88	-3.163E-02	3.194E-02	5.167E-02	0.000E+00	NOT IDENT.
Y-91	1.620E+01	1.980E+01	3.544E+01	0.000E+00	NOT IDENT.
NB-94	-1.879E-02	3.622E-02	6.047E-02	0.000E+00	NOT IDENT.
NB-95	2.352E-02	5.601E-02	8.676E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.721E-01	2.887E-01	0.000E+00	NOT IDENT.
ZR-95	6.992E-02	8.018E-02	1.468E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.216E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.207E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	5.637E+00	9.868E+00	1.772E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.655E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.159E-02	3.620E-02	6.236E-02	0.000E+00	NOT IDENT.
RH-102	-2.994E-03	3.244E-02	5.497E-02	0.000E+00	FAIL ABUN
RU-103	-5.519E-03	4.443E-02	7.486E-02	0.000E+00	FAIL ABUN
RH-106	3.700E-01	3.763E-01	6.709E-01	0.000E+00	FAIL ABUN
RU-106	3.700E-01	3.744E-01	6.709E-01	0.000E+00	FAIL ABUN
AG-108M	1.121E-04	3.745E-02	6.424E-02	0.000E+00	NOT IDENT.
AG-110M	-2.017E-03	3.719E-02	6.171E-02	0.000E+00	NOT IDENT.
IN-111	-1.030E+00	8.952E-01	1.269E+00	0.000E+00	NOT IDENT.
IN-113M	-2.266E-02	4.724E-02	7.919E-02	0.000E+00	NOT IDENT.
SN-113	-2.266E-02	4.724E-02	7.919E-02	0.000E+00	NOT IDENT.
IN-114M	1.500E-01	2.120E-01	3.270E-01	0.000E+00	NOT IDENT.
CD-115	4.003E-01	8.067E+00	1.371E+01	0.000E+00	NOT IDENT.
SN-117M	3.866E-02	5.301E-02	9.346E-02	0.000E+00	NOT IDENT.
SB-122	1.269E+00	1.676E+00	2.976E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.301E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-3.484E-03	2.915E-02	4.980E-02	0.000E+00	NOT IDENT.
I-124	-1.153E-02	7.214E-01	1.041E+00	0.000E+00	NOT IDENT.
SB-124	7.506E-02	7.716E-02	1.512E-01	0.000E+00	FAIL ABUN
SB-125	-5.044E-02	9.649E-02	1.599E-01	0.000E+00	FAIL ABUN
TE-125M	2.631E+00	9.159E+00	1.588E+01	0.000E+00	NOT IDENT.
I-126	-1.038E-02	1.927E-01	3.195E-01	0.000E+00	NOT IDENT.
SB-126	-1.704E-01	1.799E-01	2.406E-01	0.000E+00	FAIL ABUN
SB-127	4.611E-01	1.175E+00	2.101E+00	0.000E+00	FAIL ABUN
XE-127	-6.445E-02	5.296E-02	7.653E-02	0.000E+00	NOT IDENT.
I-131	3.326E-02	1.062E-01	1.875E-01	0.000E+00	NOT IDENT.
TE-132	-5.065E-01	5.578E-01	9.465E-01	0.000E+00	NOT IDENT.
BA-133	2.508E-02	4.800E-02	7.537E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.439E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.303E-02	9.918E-02	0.000E+00	FAIL ABUN
CS-135	2.669E-01	1.831E-01	3.035E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.033E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.935E-02	1.044E-01	1.858E-01	0.000E+00	FAIL ABUN
BA-137M	2.782E-02	4.011E-02	7.041E-02	0.000E+00	NOT IDENT.
CS-137	2.940E-02	4.240E-02	7.443E-02	0.000E+00	NOT IDENT.
CE-139	-1.053E-04	3.098E-02	5.307E-02	0.000E+00	NOT IDENT.
BA-140	8.613E-02	2.515E-01	4.341E-01	0.000E+00	NOT IDENT.
LA-140	-7.061E-02	8.336E-02	1.219E-01	0.000E+00	NOT IDENT.
CE-141	-3.029E-02	6.802E-02	1.136E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.623E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.214E-02	2.315E-01	3.539E-01	0.000E+00	NOT IDENT.
PM-144	2.625E-03	4.041E-02	6.646E-02	0.000E+00	NOT IDENT.
PR-144	1.777E-01	2.736E+00	4.501E+00	0.000E+00	NOT IDENT.



PM-146	-1.785E-02	4.845E-02	7.831E-02	0.000E+00	NOT IDENT.
ND-147	-2.196E-01	5.547E-01	9.086E-01	0.000E+00	FAIL ABUN
PM-149	-1.479E+00	6.491E+01	1.141E+02	0.000E+00	NOT IDENT.
EU-152	-8.401E-02	1.189E-01	1.787E-01	0.000E+00	NOT IDENT.
GD-153	3.789E-02	7.453E-02	1.176E-01	0.000E+00	FAIL ABUN
EU-154	-4.084E-02	1.290E-01	2.063E-01	0.000E+00	NOT IDENT.
EU-155	-1.934E-02	9.943E-02	1.729E-01	0.000E+00	FAIL ABUN
TB-160	-1.638E-02	1.467E-01	2.481E-01	0.000E+00	FAIL ABUN
HO-166M	-1.861E-02	7.058E-02	1.202E-01	0.000E+00	FAIL ABUN
TM-171	-8.860E+00	1.707E+01	2.623E+01	0.000E+00	NOT IDENT.
LU-176	1.262E-02	2.525E-02	4.426E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.391E+00	1.887E+00	0.000E+00	FAIL ABUN
LU-177M	-1.154E-01	1.989E-01	2.793E-01	0.000E+00	NOT IDENT.
HF-181	1.247E-02	4.686E-02	8.120E-02	0.000E+00	NOT IDENT.
W-181	1.882E-01	2.109E-01	3.417E-01	0.000E+00	NOT IDENT.
TA-182	5.309E-02	2.038E-01	3.477E-01	0.000E+00	NOT IDENT.
RE-183	-8.583E-02	1.178E-01	1.892E-01	0.000E+00	FAIL ABUN
RE-184	-1.717E-01	2.319E-01	3.957E-01	0.000E+00	NOT IDENT.
OS-185	8.869E-03	4.671E-02	7.918E-02	0.000E+00	NOT IDENT.
RE-188	-9.401E-02	1.768E-01	2.969E-01	0.000E+00	NOT IDENT.
W-188	-2.490E+00	8.284E+00	1.238E+01	0.000E+00	FAIL ABUN
IR-192	1.397E-02	3.516E-02	6.271E-02	0.000E+00	FAIL ABUN
AU-195	3.001E-01	2.126E-01	3.477E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.168E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.475E+00	5.660E+00	9.584E+00	0.000E+00	NOT IDENT.
TL-202	6.121E-02	6.973E-02	1.259E-01	0.000E+00	NOT IDENT.
HG-203	5.687E-02	4.238E-02	7.841E-02	0.000E+00	NOT IDENT.
BI-207	1.579E-02	6.318E-02	9.457E-02	0.000E+00	FAIL ABUN
TL-207	-7.470E-01	7.288E-01	1.187E+00	0.000E+00	FAIL ABUN
PO-209	-6.816E+00	8.840E+00	1.405E+01	0.000E+00	NOT IDENT.
PB-211	5.861E-02	1.124E+00	1.684E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.984E-01	7.202E-01	0.000E+00	FAIL ABUN
PO-215	-7.470E-01	7.288E-01	1.187E+00	0.000E+00	FAIL ABUN
RN-219	-2.957E-01	4.821E-01	7.149E-01	0.000E+00	FAIL ABUN
RN-220	-6.603E+00	2.733E+01	4.524E+01	0.000E+00	NOT IDENT.
RA-223	-7.470E-01	7.288E-01	1.187E+00	0.000E+00	FAIL ABUN
AC-227	1.006E-01	3.751E-01	6.714E-01	0.000E+00	FAIL ABUN
TH-227	1.006E-01	3.752E-01	6.714E-01	0.000E+00	FAIL ABUN
AC-228	0.000E+00	4.363E-01	5.462E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	4.363E-01	5.462E-01	0.000E+00	FAIL ABUN
TH-229	-5.865E-01	5.841E-01	8.602E-01	0.000E+00	FAIL ABUN
PA-231	-3.877E-01	1.571E+00	2.729E+00	0.000E+00	NOT IDENT.
TH-231	-7.470E-01	7.288E-01	1.187E+00	0.000E+00	FAIL ABUN
U-231	-9.735E-03	8.454E-01	1.302E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	4.363E-01	5.462E-01	0.000E+00	FAIL ABUN
PA-233	-6.551E-02	6.393E-02	1.051E-01	0.000E+00	FAIL ABUN
PA-234	1.738E-01	3.389E-01	5.991E-01	0.000E+00	FAIL ABUN
PA-234M	-4.783E-01	4.399E+00	7.358E+00	0.000E+00	NOT IDENT.
U-235	2.154E-01	2.324E-01	4.025E-01	0.000E+00	FAIL ABUN
NP-236	-9.537E-03	8.322E-02	1.421E-01	0.000E+00	NOT IDENT.
NP-239	-1.001E-01	1.839E-01	3.131E-01	0.000E+00	FAIL ABUN
AM-241	7.050E-02	6.601E-02	1.083E-01	0.000E+00	NOT IDENT.
CM-243	-3.926E-02	8.774E-02	1.511E-01	0.000E+00	FAIL ABUN
AM-246	5.498E-02	1.411E-01	2.423E-01	0.000E+00	NOT IDENT.
CM-247	-1.060E-02	4.481E-02	6.549E-02	0.000E+00	NOT IDENT.
CF-249	3.132E-02	4.188E-02	7.541E-02	0.000E+00	NOT IDENT.
CF-251	-3.653E-03	1.340E-01	2.286E-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]G244132008.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 10:02:14
Sample ID          : G244132008          Sample quantity   : 1.34790E+02 GRAM
Detector name      : GAM05              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           : 940270             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	771	10.67*	1.004E+00	2.006E+01	2.006E+01	10.07
CD-109	88.03	405	3.72*	7.861E+00	3.857E+00	3.938E+00	23.16
SN-126	64.28	146	9.60	8.065E+00	5.261E-01	5.261E-01	59.69
	86.94	405	8.90	7.861E+00	1.612E+00	1.612E+00	46.61
	87.57	405	37.00*	7.861E+00	3.878E-01	3.878E-01	23.16
TL-208	277.35	-----	6.80	4.261E+00	-----	Line Not Found	-----
	510.84	161	21.60	2.545E+00	8.178E-01	8.178E-01	43.90
	583.14	392	84.20*	2.259E+00	5.733E-01	5.733E-01	17.85
	860.37	-----	12.46	1.590E+00	-----	Line Not Found	-----
BI-210	46.50	183	4.05*	7.603E+00	1.659E+00	1.661E+00	60.42
PB-210	46.50	183	4.05*	7.603E+00	1.659E+00	1.661E+00	60.42
PO-210	46.50	183	4.05*	7.603E+00	1.659E+00	1.661E+00	60.29
BI-211	72.87	-----	1.27	8.052E+00	-----	Line Not Found	-----
	351.07	570	12.94*	3.517E+00	3.491E+00	3.491E+00	14.59
PB-212	74.81	715	10.70	8.037E+00	2.315E+00	2.315E+00	18.82
	77.11	1087	18.00	8.013E+00	2.098E+00	2.098E+00	12.28
	87.30	405	8.00	7.861E+00	1.793E+00	1.793E+00	25.23
	238.63	1331	44.60*	4.774E+00	1.740E+00	1.740E+00	12.69
	300.09	100	3.41	4.010E+00	2.032E+00	2.032E+00	56.58
PO-212	74.81	715	10.70	8.037E+00	2.315E+00	2.315E+00	18.82
	77.11	1087	18.00	8.013E+00	2.098E+00	2.098E+00	12.28
	87.30	405	8.00	7.861E+00	1.793E+00	1.793E+00	25.23
	115.19	-----	0.60	7.241E+00	-----	Line Not Found	-----
	238.63	1331	44.60*	4.774E+00	1.740E+00	1.740E+00	12.69
	300.09	100	3.41	4.010E+00	2.032E+00	2.032E+00	56.58
BI-214	609.31	493	46.30*	2.172E+00	1.364E+00	1.364E+00	14.88
	1120.29	101	15.10	1.258E+00	1.477E+00	1.477E+00	40.72
	1764.49	77	15.80	8.616E-01	1.576E+00	1.576E+00	32.86
PB-214	74.81	715	6.21	8.037E+00	3.989E+00	3.989E+00	17.93
	77.11	1087	10.50	8.013E+00	3.597E+00	3.597E+00	14.45
	87.30	405	4.67	7.861E+00	3.072E+00	3.072E+00	24.41
	241.98	313	7.49	4.730E+00	2.463E+00	2.463E+00	28.30

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	446	19.20	4.059E+00	1.594E+00	1.594E+00	17.15
	351.92	570	37.20*	3.517E+00	1.214E+00	1.214E+00	15.49
	74.81	715	6.21	8.037E+00	3.989E+00	3.989E+00	17.93
	77.11	1087	10.50	8.013E+00	3.597E+00	3.597E+00	14.45
	87.30	405	4.67	7.861E+00	3.072E+00	3.072E+00	24.41
PO-216	241.98	313	7.49	4.730E+00	2.463E+00	2.463E+00	28.30
	295.21	446	19.20	4.059E+00	1.594E+00	1.594E+00	17.15
	351.92	570	37.20*	3.517E+00	1.214E+00	1.214E+00	15.49
	74.81	715	10.70	8.037E+00	2.315E+00	2.315E+00	18.82
	77.11	1087	18.00	8.013E+00	2.098E+00	2.098E+00	12.28
PO-218	87.30	405	8.00	7.861E+00	1.793E+00	1.793E+00	25.23
	238.63	1331	44.60*	4.774E+00	1.740E+00	1.740E+00	12.69
	300.09	100	3.41	4.010E+00	2.032E+00	2.032E+00	56.58
	74.81	715	6.21	8.037E+00	3.989E+00	3.989E+00	17.93
	77.11	1087	10.50	8.013E+00	3.597E+00	3.597E+00	14.45
RA-224	87.30	405	4.67	7.861E+00	3.072E+00	3.072E+00	24.41
	241.98	313	7.49	4.730E+00	2.463E+00	2.463E+00	28.30
	295.21	446	19.20	4.059E+00	1.594E+00	1.594E+00	17.15
	351.92	570	37.20*	3.517E+00	1.214E+00	1.214E+00	15.49
	240.98	313	3.95*	4.730E+00	4.670E+00	4.670E+00	27.73
RA-226	609.31	493	46.30*	2.172E+00	1.364E+00	1.364E+00	14.88
	1120.29	101	15.10	1.258E+00	1.477E+00	1.477E+00	40.72
	1764.49	77	15.80	8.616E-01	1.576E+00	1.576E+00	32.86
	74.81	715	10.70	8.037E+00	2.315E+00	2.347E+00	16.37
	77.11	1087	18.00	8.013E+00	2.098E+00	2.127E+00	12.28
TH-228	87.30	405	8.00	7.861E+00	1.793E+00	1.818E+00	23.16
	238.63	1331	44.60*	4.774E+00	1.740E+00	1.765E+00	12.69
	300.09	100	3.41	4.010E+00	2.032E+00	2.061E+00	81.28
	609.31	493	46.30*	2.172E+00	1.364E+00	1.364E+00	14.88
	1120.29	101	15.10	1.258E+00	1.477E+00	1.477E+00	40.72
TH-234	1764.49	77	15.80	8.616E-01	1.576E+00	1.576E+00	32.86
	63.29	146	3.80*	8.065E+00	1.329E+00	1.329E+00	60.46
	92.38	345	5.41	7.750E+00	2.289E+00	2.289E+00	31.79
	609.31	493	46.30*	2.172E+00	1.364E+00	1.364E+00	14.88
	1120.29	101	15.10	1.258E+00	1.477E+00	1.477E+00	40.72
U-234	1764.49	77	15.80	8.616E-01	1.576E+00	1.576E+00	32.86
	86.50	405	12.60*	7.861E+00	1.139E+00	1.139E+00	31.02
	95.87	-----	2.60	7.687E+00	-----	Line Not Found	-----
	63.29	146	3.80*	8.065E+00	1.329E+00	1.329E+00	60.46
	92.38	345	5.41	7.750E+00	2.289E+00	2.289E+00	27.53
AM-243	74.67	715	66.00*	8.037E+00	3.753E-01	3.753E-01	16.33
	86.72	405	0.34	7.861E+00	4.270E+01	4.270E+01	23.16
	117.66	-----	0.55	7.181E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.593E+00	-----	Line Not Found	-----
	511.00	161	100.00*	2.545E+00	1.767E-01	1.767E-01	43.10

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	2.006E+01	2.006E+01	0.202E+01	10.07	
CD-109	464.00D	1.02	3.857E+00	3.938E+00	0.912E+00	23.16	
SN-126	1.00E+05Y	1.00	3.878E-01	3.878E-01	0.898E-01	23.16	
TL-208	1.41E+10Y	1.00	5.733E-01	5.733E-01	1.023E-01	17.85	
BI-210	22.26Y	1.00	1.659E+00	1.661E+00	1.003E+00	60.42	
PB-210	22.26Y	1.00	1.659E+00	1.661E+00	1.003E+00	60.42	
PO-210	22.26Y	1.00	1.659E+00	1.661E+00	1.001E+00	60.29	
BI-211	7.04E+08Y	1.00	3.491E+00	3.491E+00	0.509E+00	14.59	
PB-212	1.41E+10Y	1.00	1.740E+00	1.740E+00	0.221E+00	12.69	
PO-212	1.41E+10Y	1.00	1.740E+00	1.740E+00	0.221E+00	12.69	
BI-214	1600.00Y	1.00	1.364E+00	1.364E+00	0.203E+00	14.88	
PB-214	1600.00Y	1.00	1.214E+00	1.214E+00	0.188E+00	15.49	
PO-214	1600.00Y	1.00	1.214E+00	1.214E+00	0.188E+00	15.49	
PO-216	1.41E+10Y	1.00	1.740E+00	1.740E+00	0.221E+00	12.69	
PO-218	1600.00Y	1.00	1.214E+00	1.214E+00	0.188E+00	15.49	
RA-224	1.41E+10Y	1.00	4.670E+00	4.670E+00	1.295E+00	27.73	
RA-226	1600.00Y	1.00	1.364E+00	1.364E+00	0.203E+00	14.88	
TH-228	1.91Y	1.01	1.740E+00	1.765E+00	0.224E+00	12.69	
TH-230	4.47E+09Y	1.00	1.364E+00	1.364E+00	0.203E+00	14.88	
TH-234	4.47E+09Y	1.00	1.329E+00	1.329E+00	0.804E+00	60.46	
U-234	4.47E+09Y	1.00	1.364E+00	1.364E+00	0.203E+00	14.88	
NP-237	2.14E+06Y	1.00	1.139E+00	1.139E+00	0.353E+00	31.02	
U-238	4.47E+09Y	1.00	1.329E+00	1.329E+00	0.804E+00	60.46	
AM-243	7380.00Y	1.00	3.753E-01	3.753E-01	0.613E-01	16.33	
ANH-511	1.00E+09Y	1.00	1.767E-01	1.767E-01	0.761E-01	43.10	

Total Activity : 5.842E+01 5.853E+01

Grand Total Activity : 5.842E+01 5.853E+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
1	84.13	143	417	1.25	169.24	162	33	1.99E-02	48.0	7.91E+00	T
1	89.92	275	345	1.23	180.82	162	33	3.82E-02	26.4	7.81E+00	T
0	129.09	97	414	1.03	259.14	254	10	1.34E-02	82.6	6.90E+00	T
0	186.25	175	524	1.51	373.46	368	14	2.44E-02	58.4	5.65E+00	T
0	209.45	163	256	1.77	419.83	414	11	2.27E-02	41.3	5.23E+00	T
0	270.48	80	246	1.49	541.87	535	12	1.12E-02	81.1	4.34E+00	T
0	338.01	224	225	1.36	676.89	671	11	3.11E-02	29.2	3.64E+00	T
0	410.71	57	171	3.14	822.25	812	16	7.94E-03	****	3.08E+00	T
0	462.22	81	95	1.05	925.23	920	10	1.13E-02	50.1	2.78E+00	T
0	726.89	75	77	1.27	1454.30	1447	12	1.05E-02	52.1	1.85E+00	T
0	768.23	37	65	0.94	1536.92	1529	12	5.09E-03	94.5	1.76E+00	T
0	794.99	71	44	0.84	1590.41	1582	16	9.87E-03	48.0	1.71E+00	T
0	910.92	229	114	1.15	1822.09	1813	20	3.17E-02	26.5	1.51E+00	T
0	967.51	176	57	1.54	1935.19	1926	16	2.44E-02	24.3	1.43E+00	T
0	1070.68	30	38	0.95	2141.35	2133	14	4.11E-03	96.3	1.31E+00	
0	1727.93	19	3	1.42	3454.30	3448	12	2.65E-03	58.5	8.76E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132008.CNF;1
* Acquisition date   : 19-JAN-2010 10:02:14  Detector SN#      :
* Detector ID        : GAM05                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:01.72          Half life ratio    : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library   : SOLID
* Sample ID          : G244132008            Analyst initials : MXR1
* Batch Number       : 940270                Sample Quantity  : 1.34790E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS Isotope       :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A                LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.006E+01	2.020E+00	6.218E-01	3.867E-02	32.255
CD-109	3.938E+00	9.122E-01	9.720E-01	7.402E-02	4.051
SN-126	3.878E-01	8.982E-02	9.558E-02	7.279E-03	4.057
TL-208	5.733E-01	1.023E-01	6.336E-02	4.662E-03	9.048
BI-210	1.661E+00	1.003E+00	7.989E-01	6.232E-02	2.079
PB-210	1.661E+00	1.003E+00	7.989E-01	6.232E-02	2.079
PO-210	1.661E+00	1.001E+00	7.989E-01	5.374E-02	2.079
BI-211	3.491E+00	5.092E-01	3.617E-01	2.866E-02	9.651
PB-212	1.740E+00	2.209E-01	9.413E-02	1.015E-02	18.490
PO-212	1.740E+00	2.209E-01	9.413E-02	1.015E-02	18.490
BI-214	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
PB-214	1.214E+00	1.881E-01	1.168E-01	1.106E-02	10.396
PO-214	1.214E+00	1.881E-01	1.168E-01	1.106E-02	10.396
PO-216	1.740E+00	2.209E-01	9.413E-02	1.015E-02	18.490
PO-218	1.214E+00	1.881E-01	1.168E-01	1.106E-02	10.396
RA-224	4.670E+00	1.295E+00	1.071E+00	1.048E-01	4.359
RA-226	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
TH-228	1.765E+00	2.240E-01	9.545E-02	1.029E-02	18.490

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
TH-234	1.329E+00	8.036E-01	9.837E-01	1.748E-01	1.351
U-234	1.364E+00	2.029E-01	1.248E-01	1.046E-02	10.928
NP-237	1.139E+00	3.532E-01	2.798E-01	6.156E-02	4.069
U-238	1.329E+00	8.036E-01	9.837E-01	1.748E-01	1.351
AM-243	3.753E-01	6.129E-02	6.129E-02	4.800E-03	6.124
ANH-511	1.767E-01	7.614E-02	5.092E-02	3.259E-03	3.469

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.893E-01		3.698E-01	5.825E-01	4.173E-02	-0.325
NA-22	-1.416E-02		4.712E-02	7.363E-02	4.288E-03	-0.192
NA-24	-3.936E-02		1.060E-01	Half-Life too short		
AL-26	6.626E-03		2.954E-02	5.095E-02	2.924E-03	0.130
TI-44	3.872E-01	+	4.754E-02	6.513E-02	5.054E-03	5.944
SC-46	3.911E-03		4.500E-02	7.500E-02	7.533E-03	0.052
V-48	-2.279E-02		6.695E-02	1.059E-01	9.704E-03	-0.215
CR-51	-2.230E-01		3.873E-01	6.231E-01	5.511E-02	-0.358
MN-52	-1.015E-01		2.258E-01	3.545E-01	2.076E-02	-0.286
MN-54	7.617E-03		4.222E-02	7.108E-02	6.511E-03	0.107
CO-56	1.748E-03		4.484E-02	7.461E-02	6.977E-03	0.023
CO-57	-1.519E-03		2.534E-02	4.111E-02	5.833E-03	-0.037
CO-58	-6.117E-02		3.918E-02	5.408E-02	4.760E-03	-1.131
FE-59	-8.236E-02		9.849E-02	1.465E-01	1.186E-02	-0.562
CO-60	-2.360E-02		4.222E-02	6.290E-02	3.640E-03	-0.375
ZN-65	3.598E-02		1.273E-01	1.842E-01	1.287E-02	0.195
GE-68	9.972E-01		1.373E+00	2.212E+00	1.699E-01	0.451
AS-73	1.027E-02		2.261E-01	3.694E-01	2.781E-02	0.028
AS-74	-5.604E-02		9.362E-02	1.433E-01	9.427E-03	-0.391
SE-75	4.936E-03		4.890E-02	7.174E-02	6.849E-03	0.069
BR-77	-1.092E+00		8.926E+00	1.352E+01	8.694E-01	-0.081
SR-82	-5.575E-02		4.211E-01	6.944E-01	5.729E-02	-0.080
RB-83	1.360E-02		8.511E-02	1.272E-01	8.178E-03	0.107
RB-84	5.064E-02		7.408E-02	1.299E-01	1.288E-02	0.390
KR-85	1.794E+01		9.341E+00	1.524E+01	9.769E-01	1.177
SR-85	9.084E-02		4.730E-02	7.716E-02	4.946E-03	1.177
RB-86	8.403E-01		8.862E-01	1.417E+00	1.090E-01	0.593
Y-88	2.435E-02		3.942E-02	7.182E-02	4.109E-03	0.339
ZR-88	-3.163E-02		3.260E-02	5.032E-02	2.931E-03	-0.628
Y-91	1.620E+01		2.021E+01	3.524E+01	2.048E+00	0.460
NB-94	-1.879E-02		3.696E-02	5.952E-02	4.259E-03	-0.316
NB-95	2.352E-02		5.716E-02	8.554E-02	6.918E-03	0.275
NB-95M	5.363E-01		1.756E-01	2.786E-01	3.047E-02	1.925
ZR-95	6.992E-02		8.181E-02	1.447E-01	1.285E-02	0.483
NB-97	6.077E-04		1.641E-02	Half-Life too short		
ZR-97	2.577E+00		3.677E-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
MO-99	5.637E+00		1.007E+01	1.746E+01	2.563E+00	0.323
TC-99M	-2.362E+09		8.442E+08	Half-Life too short		
RH-101	2.159E-02		3.694E-02	6.000E-02	5.991E-03	0.360
RH-102	-2.994E-03		3.311E-02	5.373E-02	3.366E-03	-0.056
RU-103	-5.519E-03		4.533E-02	7.322E-02	9.450E-03	-0.075
RH-106	3.700E-01		3.839E-01	6.589E-01	8.005E-02	0.562
RU-106	3.700E-01		3.821E-01	6.589E-01	4.343E-02	0.562
AG-108M	1.121E-04		3.821E-02	6.268E-02	4.101E-03	0.002
AG-110M	-2.017E-03		3.795E-02	6.066E-02	4.193E-03	-0.033
IN-111	-1.030E+00		9.135E-01	1.225E+00	1.194E-01	-0.841
IN-113M	-2.266E-02		4.820E-02	7.712E-02	4.784E-03	-0.294
SN-113	-2.266E-02		4.820E-02	7.712E-02	4.784E-03	-0.294
IN-114M	1.500E-01		2.163E-01	3.144E-01	3.139E-02	0.477
CD-115	4.003E-01		8.232E+00	1.342E+01	8.659E-01	0.030
SN-117M	3.866E-02		5.409E-02	8.957E-02	9.630E-03	0.432
SB-122	1.269E+00		1.710E+00	2.918E+00	1.907E-01	0.435
I-123	-1.555E-01		6.639E-01	Half-Life too short		
TE-123M	-3.484E-03		2.975E-02	4.773E-02	5.128E-03	-0.073
I-124	-1.153E-02		7.361E-01	1.022E+00	6.729E-02	-0.011
SB-124	7.506E-02		7.873E-02	1.513E-01	9.573E-03	0.496
SB-125	-5.044E-02		9.846E-02	1.559E-01	9.776E-03	-0.323
TE-125M	2.631E+00		9.346E+00	1.512E+01	1.944E+00	0.174
I-126	-1.038E-02		1.967E-01	3.142E-01	2.086E-02	-0.033
SB-126	-1.704E-01		1.836E-01	2.369E-01	1.757E-02	-0.719
SB-127	4.611E-01		1.199E+00	2.067E+00	2.018E-01	0.223
XE-127	-6.445E-02		5.404E-02	7.366E-02	7.352E-03	-0.875
I-131	3.326E-02		1.084E-01	1.823E-01	1.367E-02	0.182
TE-132	-5.065E-01		5.691E-01	9.130E-01	1.483E-01	-0.555
BA-133	2.508E-02		4.898E-02	7.327E-02	9.049E-03	0.342
I-133	6.022E-04		1.244E-03	Half-Life too short		
CS-134	1.528E-01	+	7.452E-02	9.784E-02	8.426E-03	1.562
CS-135	2.669E-01		1.868E-01	2.936E-01	3.141E-02	0.909
I-135	1.503E+08		1.547E+08	Half-Life too short		
CS-136	5.935E-02		1.065E-01	1.842E-01	1.578E-02	0.322
BA-137M	2.782E-02		4.093E-02	6.923E-02	4.553E-03	0.402
CS-137	2.940E-02		4.327E-02	7.318E-02	4.828E-03	0.402
CE-139	-1.053E-04		3.161E-02	5.090E-02	5.054E-03	-0.002
BA-140	8.613E-02		2.567E-01	4.252E-01	1.388E-01	0.203
LA-140	-7.061E-02		8.506E-02	1.219E-01	7.162E-03	-0.579
CE-141	-3.029E-02		6.941E-02	1.087E-01	1.329E-02	-0.279
CE-143	5.709E-04		8.283E-05	Half-Life too short		
CE-144	4.214E-02		2.363E-01	3.382E-01	6.262E-02	0.125
PM-144	2.625E-03		4.123E-02	6.540E-02	4.624E-03	0.040
PR-144	1.777E-01		2.792E+00	4.429E+00	3.130E-01	0.040
PM-146	-1.785E-02		4.944E-02	7.647E-02	6.785E-03	-0.233
ND-147	-2.196E-01		5.660E-01	8.897E-01	1.229E-01	-0.247
PM-149	-1.479E+00		6.624E+01	1.104E+02	1.750E+01	-0.013
EU-152	-8.401E-02		1.213E-01	1.736E-01	1.427E-02	-0.484



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	3.789E-02		7.605E-02	1.117E-01	1.036E-02	0.339
EU-154	-4.084E-02		1.316E-01	2.053E-01	1.920E-02	-0.199
EU-155	-1.934E-02		1.015E-01	1.645E-01	1.782E-02	-0.118
TB-160	-1.638E-02		1.497E-01	2.452E-01	2.423E-02	-0.067
HO-166M	-1.861E-02		7.202E-02	1.183E-01	8.622E-03	-0.157
TM-171	-8.860E+00		1.742E+01	2.476E+01	1.990E+00	-0.358
LU-176	1.262E-02		2.577E-02	4.291E-02	3.737E-03	0.294
LU-177	3.341E+00	+	1.420E+00	1.817E+00	1.811E-01	1.839
LU-177M	-1.154E-01		2.029E-01	2.723E-01	1.621E-02	-0.424
HF-181	1.247E-02		4.781E-02	7.938E-02	4.996E-03	0.157
W-181	1.882E-01		2.152E-01	3.225E-01	2.607E-02	0.584
TA-182	5.309E-02		2.080E-01	3.458E-01	2.010E-02	0.154
RE-183	-8.583E-02		1.202E-01	1.814E-01	1.874E-02	-0.473
RE-184	-1.717E-01		2.366E-01	3.824E-01	3.694E-02	-0.449
OS-185	8.869E-03		4.766E-02	7.782E-02	5.126E-03	0.114
RE-188	-9.401E-02		1.804E-01	2.844E-01	3.167E-02	-0.330
W-188	-2.490E+00		8.453E+00	1.199E+01	1.087E+00	-0.208
IR-192	1.397E-02		3.587E-02	6.083E-02	5.163E-03	0.230
AU-195	3.001E-01		2.170E-01	3.305E-01	3.152E-02	0.908
TL-200	-3.471E-06		1.106E-04	Half-Life too short		
TL-201	-1.475E+00		5.775E+00	9.194E+00	9.127E-01	-0.160
TL-202	6.121E-02		7.115E-02	1.229E-01	7.491E-03	0.498
HG-203	5.687E-02		4.324E-02	7.590E-02	7.216E-03	0.749
BI-207	1.579E-02		6.447E-02	9.380E-02	7.429E-03	0.168
TL-207	-7.470E-01		7.437E-01	1.152E+00	2.020E-01	-0.648
PO-209	-6.816E+00		9.020E+00	1.389E+01	1.412E+00	-0.491
PB-211	5.861E-02		1.147E+00	1.641E+00	1.023E+00	0.036
BI-212	9.612E-01	+	5.086E-01	7.094E-01	6.435E-02	1.355
PO-215	-7.470E-01		7.437E-01	1.152E+00	2.020E-01	-0.648
RN-219	-2.957E-01		4.920E-01	6.965E-01	9.501E-02	-0.425
RN-220	-6.603E+00		2.788E+01	4.433E+01	2.884E+00	-0.149
RA-223	-7.470E-01		7.437E-01	1.152E+00	2.020E-01	-0.648
AC-227	1.006E-01		3.827E-01	6.489E-01	1.034E-01	0.155
TH-227	1.006E-01		3.828E-01	6.489E-01	1.204E-01	0.155
AC-228	1.522E+00	+	4.452E-01	5.402E-01	6.686E-02	2.816
RA-228	1.522E+00	+	4.452E-01	5.402E-01	6.686E-02	2.816
TH-229	-5.865E-01		5.960E-01	8.273E-01	8.262E-02	-0.709
PA-231	-3.877E-01		1.603E+00	2.642E+00	4.101E-01	-0.147
TH-231	-7.470E-01		7.437E-01	1.152E+00	2.020E-01	-0.648
U-231	-9.735E-03		8.627E-01	1.237E+00	1.112E-01	-0.008
TH-232	1.522E+00	+	4.452E-01	5.402E-01	6.686E-02	2.816
PA-233	-6.551E-02		6.524E-02	1.020E-01	9.004E-03	-0.642
PA-234	1.738E-01		3.458E-01	5.929E-01	1.142E-01	0.293
PA-234M	-4.783E-01		4.489E+00	7.290E+00	7.449E-01	-0.066
U-235	2.154E-01		2.371E-01	3.851E-01	7.536E-02	0.559
NP-236	-9.537E-03		8.492E-02	1.362E-01	1.438E-02	-0.070
NP-239	-1.001E-01		1.877E-01	2.985E-01	3.910E-02	-0.335
AM-241	7.050E-02		6.736E-02	1.021E-01	9.136E-03	0.690

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-3.926E-02		8.953E-02	1.437E-01	1.502E-02	-0.273
AM-246	5.498E-02		1.439E-01	2.404E-01	1.840E-02	0.229
CM-247	-1.060E-02		4.572E-02	6.381E-02	3.755E-03	-0.166
CF-249	3.132E-02		4.274E-02	7.343E-02	4.392E-03	0.427
CF-251	-3.653E-03		1.368E-01	2.195E-01	2.186E-02	-0.017

# 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]G244132008           *
* Acquisition date   : 19-JAN-2010 10:02:14 Detector SN#                   *
* Detector ID        : GAM05                                           Sensitivity      : 5.000      *
* Geometry           : CAN                                           Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:01.72                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132008                               Analyst initials: MXR1        *
* Batch Number       : 940270                                   Sample Quantity : 1.3479E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight   : 0.00000      *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope                  :
* MSD DPM             : 0.000                                         MSD Isotope       :
* LCS DPM             : 0.000                                         LCS Isotope       :
* LCSD DPM            : 0.000                                         LCSD Isotope      :
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.006E+01	1.980E+00	3.117E-01	1.010E+00
CD-109	3.938E+00	8.940E-01	5.126E-01	4.561E-01
SN-126	3.878E-01	8.803E-02	5.041E-02	4.491E-02
TL-208	5.733E-01	1.003E-01	3.232E-02	5.116E-02
BI-210	1.661E+00	9.833E-01	4.259E-01	5.017E-01
PB-210	1.661E+00	9.833E-01	4.259E-01	5.017E-01
PO-210	1.661E+00	9.812E-01	4.259E-01	5.006E-01
BI-211	3.491E+00	4.990E-01	1.862E-01	2.546E-01
PB-212	1.740E+00	2.165E-01	4.879E-02	1.105E-01
PO-212	1.740E+00	2.165E-01	4.879E-02	1.105E-01
BI-214	1.364E+00	1.989E-01	6.360E-02	1.015E-01
PB-214	1.214E+00	1.844E-01	6.012E-02	9.406E-02
PO-214	1.214E+00	1.844E-01	6.012E-02	9.406E-02
PO-216	1.740E+00	2.165E-01	4.879E-02	1.105E-01
PO-218	1.214E+00	1.844E-01	6.012E-02	9.406E-02
RA-224	4.670E+00	1.269E+00	5.552E-01	6.476E-01
RA-226	1.364E+00	1.989E-01	6.360E-02	1.015E-01
TH-228	1.765E+00	2.195E-01	4.947E-02	1.120E-01
TH-230	1.364E+00	1.989E-01	6.360E-02	1.015E-01
TH-234	1.329E+00	7.875E-01	5.217E-01	4.018E-01
U-234	1.364E+00	1.989E-01	6.360E-02	1.015E-01
NP-237	1.139E+00	3.462E-01	1.476E-01	1.766E-01
U-238	1.329E+00	7.875E-01	5.217E-01	4.018E-01
AM-243	3.753E-01	6.006E-02	3.241E-02	3.064E-02
ANH-511	1.767E-01	7.462E-02	2.603E-02	3.807E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-1.893E-01	3.624E-01	2.982E-01	1.849E-01 NOT IDENT.
NA-22	-1.416E-02	4.618E-02	3.701E-02	2.356E-02 NOT IDENT.

NA-24	-3.936E+04	2.077E+05	0.000E+00	1.060E+05	SHORT HLIF
AL-26	6.626E-03	2.895E-02	2.544E-02	1.477E-02	NOT IDENT.
TI-44	3.872E-01	4.659E-02	3.442E-02	2.377E-02	FAIL ABUN
SC-46	3.911E-03	4.410E-02	3.795E-02	2.250E-02	FAIL ABUN
V-48	-2.279E-02	6.562E-02	5.351E-02	3.348E-02	NOT IDENT.
CR-51	-2.230E-01	3.796E-01	3.213E-01	1.937E-01	NOT IDENT.
MN-52	-1.015E-01	2.213E-01	1.778E-01	1.129E-01	NOT IDENT.
MN-54	7.617E-03	4.138E-02	3.601E-02	2.111E-02	NOT IDENT.
CO-56	1.748E-03	4.394E-02	3.779E-02	2.242E-02	NOT IDENT.
CO-57	-1.519E-03	2.483E-02	2.156E-02	1.267E-02	NOT IDENT.
CO-58	-6.117E-02	3.839E-02	2.741E-02	1.959E-02	NOT IDENT.
FE-59	-8.236E-02	9.652E-02	7.383E-02	4.924E-02	NOT IDENT.
CO-60	-2.360E-02	4.138E-02	3.159E-02	2.111E-02	NOT IDENT.
ZN-65	3.598E-02	1.248E-01	9.283E-02	6.366E-02	NOT IDENT.
GE-68	9.972E-01	1.346E+00	1.115E+00	6.867E-01	NOT IDENT.
AS-73	1.027E-02	2.216E-01	1.965E-01	1.131E-01	NOT IDENT.
AS-74	-5.604E-02	9.175E-02	7.306E-02	4.681E-02	NOT IDENT.
SE-75	4.936E-03	4.792E-02	3.712E-02	2.445E-02	NOT IDENT.
BR-77	-1.092E+00	8.747E+00	6.909E+00	4.463E+00	FAIL ABUN
SR-82	-5.575E-02	4.127E-01	3.523E-01	2.106E-01	NOT IDENT.
RB-83	1.360E-02	8.341E-02	6.501E-02	4.255E-02	NOT IDENT.
RB-84	5.064E-02	7.260E-02	6.576E-02	3.704E-02	NOT IDENT.
KR-85	1.794E+01	9.155E+00	7.791E+00	4.671E+00	NOT IDENT.
SR-85	9.084E-02	4.635E-02	3.944E-02	2.365E-02	NOT IDENT.
RB-86	8.403E-01	8.684E-01	7.147E-01	4.431E-01	NOT IDENT.
Y-88	2.435E-02	3.863E-02	3.585E-02	1.971E-02	NOT IDENT.
ZR-88	-3.163E-02	3.194E-02	2.585E-02	1.630E-02	NOT IDENT.
Y-91	1.620E+01	1.980E+01	1.773E+01	1.010E+01	NOT IDENT.
NB-94	-1.879E-02	3.622E-02	3.026E-02	1.848E-02	NOT IDENT.
NB-95	2.352E-02	5.601E-02	4.341E-02	2.858E-02	NOT IDENT.
NB-95M	5.363E-01	1.721E-01	1.444E-01	8.781E-02	NOT IDENT.
ZR-95	6.992E-02	8.018E-02	7.345E-02	4.091E-02	NOT IDENT.
NB-97	6.077E+02	3.216E+04	0.000E+00	1.641E+04	SHORT HLIF
ZR-97	2.577E+06	7.207E+05	0.000E+00	3.677E+05	SHORT HLIF
MO-99	5.637E+00	9.868E+00	8.866E+00	5.035E+00	NOT IDENT.
TC-99M	-2.362E+15	1.655E+15	0.000E+00	8.442E+14	SHORT HLIF
RH-101	2.159E-02	3.620E-02	3.120E-02	1.847E-02	NOT IDENT.
RH-102	-2.994E-03	3.244E-02	2.750E-02	1.655E-02	FAIL ABUN
RU-103	-5.519E-03	4.443E-02	3.745E-02	2.267E-02	FAIL ABUN
RH-106	3.700E-01	3.763E-01	3.357E-01	1.920E-01	FAIL ABUN
RU-106	3.700E-01	3.744E-01	3.357E-01	1.910E-01	FAIL ABUN
AG-108M	1.121E-04	3.745E-02	3.214E-02	1.911E-02	NOT IDENT.
AG-110M	-2.017E-03	3.719E-02	3.087E-02	1.898E-02	NOT IDENT.
IN-111	-1.030E+00	8.952E-01	6.347E-01	4.567E-01	NOT IDENT.
IN-113M	-2.266E-02	4.724E-02	3.962E-02	2.410E-02	NOT IDENT.
SN-113	-2.266E-02	4.724E-02	3.962E-02	2.410E-02	NOT IDENT.
IN-114M	1.500E-01	2.120E-01	1.636E-01	1.082E-01	NOT IDENT.
CD-115	4.003E-01	8.067E+00	6.858E+00	4.116E+00	NOT IDENT.
SN-117M	3.866E-02	5.301E-02	4.676E-02	2.705E-02	NOT IDENT.
SB-122	1.269E+00	1.676E+00	1.489E+00	8.552E-01	NOT IDENT.
I-123	-1.555E+05	1.301E+06	0.000E+00	6.639E+05	SHORT HLIF
TE-123M	-3.484E-03	2.915E-02	2.491E-02	1.487E-02	NOT IDENT.
I-124	-1.153E-02	7.214E-01	5.210E-01	3.681E-01	NOT IDENT.
SB-124	7.506E-02	7.716E-02	7.563E-02	3.937E-02	FAIL ABUN
SB-125	-5.044E-02	9.649E-02	7.998E-02	4.923E-02	FAIL ABUN
TE-125M	2.631E+00	9.159E+00	7.947E+00	4.673E+00	NOT IDENT.
I-126	-1.038E-02	1.927E-01	1.599E-01	9.833E-02	NOT IDENT.
SB-126	-1.704E-01	1.799E-01	1.204E-01	9.181E-02	FAIL ABUN
SB-127	4.611E-01	1.175E+00	1.051E+00	5.993E-01	FAIL ABUN
XE-127	-6.445E-02	5.296E-02	3.829E-02	2.702E-02	NOT IDENT.
I-131	3.326E-02	1.062E-01	9.379E-02	5.418E-02	NOT IDENT.
TE-132	-5.065E-01	5.578E-01	4.736E-01	2.846E-01	NOT IDENT.
BA-133	2.508E-02	4.800E-02	3.771E-02	2.449E-02	NOT IDENT.
I-133	6.022E+02	2.439E+03	0.000E+00	1.244E+03	SHORT HLIF
CS-134	1.528E-01	7.303E-02	4.962E-02	3.726E-02	FAIL ABUN
CS-135	2.669E-01	1.831E-01	1.519E-01	9.340E-02	NOT IDENT.
I-135	1.503E+14	3.033E+14	0.000E+00	1.547E+14	SHORT HLIF
CS-136	5.935E-02	1.044E-01	9.295E-02	5.327E-02	FAIL ABUN
BA-137M	2.782E-02	4.011E-02	3.523E-02	2.047E-02	NOT IDENT.
CS-137	2.940E-02	4.240E-02	3.724E-02	2.163E-02	NOT IDENT.
CE-139	-1.053E-04	3.098E-02	2.655E-02	1.581E-02	NOT IDENT.
BA-140	8.613E-02	2.515E-01	2.172E-01	1.283E-01	NOT IDENT.
LA-140	-7.061E-02	8.336E-02	6.100E-02	4.253E-02	NOT IDENT.
CE-141	-3.029E-02	6.802E-02	5.685E-02	3.470E-02	NOT IDENT.
CE-143	5.709E+02	1.623E+02	0.000E+00	8.283E+01	SHORT HLIF
CE-144	4.214E-02	2.315E-01	1.771E-01	1.181E-01	NOT IDENT.
PM-144	2.625E-03	4.041E-02	3.325E-02	2.062E-02	NOT IDENT.
PR-144	1.777E-01	2.736E+00	2.252E+00	1.396E+00	NOT IDENT.

PM-146	-1.785E-02	4.845E-02	3.918E-02	2.472E-02	NOT IDENT.
ND-147	-2.196E-01	5.547E-01	4.545E-01	2.830E-01	FAIL ABUN
PM-149	-1.479E+00	6.491E+01	5.706E+01	3.312E+01	NOT IDENT.
EU-152	-8.401E-02	1.189E-01	8.938E-02	6.064E-02	NOT IDENT.
GD-153	3.789E-02	7.453E-02	5.882E-02	3.803E-02	FAIL ABUN
EU-154	-4.084E-02	1.290E-01	1.032E-01	6.580E-02	NOT IDENT.
EU-155	-1.934E-02	9.943E-02	8.650E-02	5.073E-02	FAIL ABUN
TB-160	-1.638E-02	1.467E-01	1.241E-01	7.485E-02	FAIL ABUN
HO-166M	-1.861E-02	7.058E-02	6.013E-02	3.601E-02	FAIL ABUN
TM-171	-8.860E+00	1.707E+01	1.312E+01	8.711E+00	NOT IDENT.
LU-176	1.262E-02	2.525E-02	2.214E-02	1.288E-02	FAIL ABUN
LU-177	3.341E+00	1.391E+00	9.439E-01	7.099E-01	FAIL ABUN
LU-177M	-1.154E-01	1.989E-01	1.397E-01	1.015E-01	NOT IDENT.
HF-181	1.247E-02	4.686E-02	4.063E-02	2.391E-02	NOT IDENT.
W-181	1.882E-01	2.109E-01	1.710E-01	1.076E-01	NOT IDENT.
TA-182	5.309E-02	2.038E-01	1.739E-01	1.040E-01	NOT IDENT.
RE-183	-8.583E-02	1.178E-01	9.466E-02	6.010E-02	FAIL ABUN
RE-184	-1.717E-01	2.319E-01	1.980E-01	1.183E-01	NOT IDENT.
OS-185	8.869E-03	4.671E-02	3.962E-02	2.383E-02	NOT IDENT.
RE-188	-9.401E-02	1.768E-01	1.485E-01	9.019E-02	NOT IDENT.
W-188	-2.490E+00	8.284E+00	6.191E+00	4.226E+00	FAIL ABUN
IR-192	1.397E-02	3.516E-02	3.137E-02	1.794E-02	FAIL ABUN
AU-195	3.001E-01	2.126E-01	1.740E-01	1.085E-01	FAIL ABUN
TL-200	-3.471E+00	2.168E+02	0.000E+00	1.106E+02	SHORT HLIF
TL-201	-1.475E+00	5.660E+00	4.795E+00	2.888E+00	NOT IDENT.
TL-202	6.121E-02	6.973E-02	6.300E-02	3.558E-02	NOT IDENT.
HG-203	5.687E-02	4.238E-02	3.923E-02	2.162E-02	NOT IDENT.
BI-207	1.579E-02	6.318E-02	4.731E-02	3.224E-02	FAIL ABUN
TL-207	-7.470E-01	7.288E-01	5.939E-01	3.718E-01	FAIL ABUN
PO-209	-6.816E+00	8.840E+00	7.028E+00	4.510E+00	NOT IDENT.
PB-211	5.861E-02	1.124E+00	8.426E-01	5.736E-01	NOT IDENT.
BI-212	9.612E-01	4.984E-01	3.603E-01	2.543E-01	FAIL ABUN
PO-215	-7.470E-01	7.288E-01	5.939E-01	3.718E-01	FAIL ABUN
RN-219	-2.957E-01	4.821E-01	3.577E-01	2.460E-01	FAIL ABUN
RN-220	-6.603E+00	2.733E+01	2.263E+01	1.394E+01	NOT IDENT.
RA-223	-7.470E-01	7.288E-01	5.939E-01	3.718E-01	FAIL ABUN
AC-227	1.006E-01	3.751E-01	3.359E-01	1.914E-01	FAIL ABUN
TH-227	1.006E-01	3.752E-01	3.359E-01	1.914E-01	FAIL ABUN
AC-228	1.522E+00	4.363E-01	2.733E-01	2.226E-01	FAIL ABUN
RA-228	1.522E+00	4.363E-01	2.733E-01	2.226E-01	FAIL ABUN
TH-229	-5.865E-01	5.841E-01	4.304E-01	2.980E-01	FAIL ABUN
PA-231	-3.877E-01	1.571E+00	1.365E+00	8.013E-01	NOT IDENT.
TH-231	-7.470E-01	7.288E-01	5.939E-01	3.718E-01	FAIL ABUN
U-231	-9.735E-03	8.454E-01	6.515E-01	4.313E-01	FAIL ABUN
TH-232	1.522E+00	4.363E-01	2.733E-01	2.226E-01	FAIL ABUN
PA-233	-6.551E-02	6.393E-02	5.260E-02	3.262E-02	FAIL ABUN
PA-234	1.738E-01	3.389E-01	2.997E-01	1.729E-01	FAIL ABUN
PA-234M	-4.783E-01	4.399E+00	3.681E+00	2.244E+00	NOT IDENT.
U-235	2.154E-01	2.324E-01	2.014E-01	1.186E-01	FAIL ABUN
NP-236	-9.537E-03	8.322E-02	7.111E-02	4.246E-02	NOT IDENT.
NP-239	-1.001E-01	1.839E-01	1.566E-01	9.383E-02	FAIL ABUN
AM-241	7.050E-02	6.601E-02	5.421E-02	3.368E-02	NOT IDENT.
CM-243	-3.926E-02	8.774E-02	7.559E-02	4.476E-02	FAIL ABUN
AM-246	5.498E-02	1.411E-01	1.212E-01	7.197E-02	NOT IDENT.
CM-247	-1.060E-02	4.481E-02	3.276E-02	2.286E-02	NOT IDENT.
CF-249	3.132E-02	4.188E-02	3.773E-02	2.137E-02	NOT IDENT.
CF-251	-3.653E-03	1.340E-01	1.144E-01	6.838E-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	362.6620
46.50	362.6620
46.50	362.6620
48.70	404.0474
49.72	449.0283
51.35	428.7936
52.39	428.4208
52.97	405.9259
53.15	406.0425
53.44	411.0323
54.07	447.0124
56.28	485.2128
56.28	485.2147
57.37	0.0000
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57.53	452.8722
57.60	452.9196
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57.98	438.4438
59.32	417.1052
59.32	417.1052
59.40	443.5182
59.54	443.6107
59.72	471.6574
60.01	471.8605
61.10	517.7079
61.14	517.7383
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63.00	536.8779
63.29	541.9761
63.29	541.9761
63.58	551.9550
64.28	579.4503
65.12	566.0696
65.20	566.1337
65.20	566.1337
66.05	620.0503
66.72	598.6890
66.83	636.4020
66.91	636.4739
67.20	636.7303
67.20	636.7303
67.75	645.0623
67.85	614.1508
68.90	618.9691
68.90	618.9691
69.30	567.7972
69.67	568.0858
70.82	636.7414
70.82	636.7414
70.83	636.7513
72.80	644.7515
72.87	644.8113
72.87	644.8113
74.67	630.2723
74.81	630.3865
74.81	630.3865
74.81	630.3865
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74.81	630.3865
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75.28	630.7726
75.70	631.1174
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77.11	572.1021

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77.11	572.1021
77.11	572.1021
77.11	572.1021
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79.62	530.0862
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79.80	530.2060
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80.30	530.5388
80.30	530.5388
80.57	530.7174
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81.07	475.1484
81.07	475.1484
81.07	475.1484
81.07	475.1484
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83.37	457.6189
83.78	457.8509
83.78	457.8509
83.78	457.8509
83.78	457.8509
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84.90	458.4734
85.43	458.7664
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86.50	459.3558
86.54	459.3785
86.59	459.4064
86.72	459.4779
86.79	459.5145
86.94	459.5982
87.30	459.7953
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87.30	459.7953
87.30	459.7953
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87.88	460.1109
88.03	460.1929
88.36	460.3725
88.47	460.4318
89.95	461.2322
91.11	461.8565
92.29	462.4861
92.38	462.5331
92.38	462.5331
93.35	463.0476
94.00	463.3911
94.67	463.7399
94.67	463.7434
94.90	391.2690
94.90	391.2690
94.90	391.2690
94.90	391.2690
95.87	422.5778
95.87	422.5778
96.73	388.8228
97.43	363.0746
98.44	327.6224
98.44	327.6224
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99.55	321.4957
99.86	337.3861
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100.10	337.4756
103.18	409.6008
103.76	391.4121
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105.31	393.0855
108.00	378.7616
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111.00	387.1679
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112.95	400.3545
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116.30	372.6441
117.00	367.7106
117.00	367.7106
117.66	362.7540
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121.62	342.2539
121.78	340.2192
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122.32	352.0320
122.32	352.0320
122.32	352.0320
122.32	352.0320
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129.76	323.0438
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135.34	341.8613
136.00	323.6332
136.25	332.1685
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140.51	0.0000
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144.24	349.4509
144.24	349.4509
144.24	349.4509
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145.44	397.8122
147.16	413.3576
152.43	346.5537
152.70	347.7057
153.22	353.2247
154.21	327.7298
154.21	327.7298
154.21	327.7298
154.21	327.7298
155.03	353.7618
156.02	358.3576
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163.89	308.6855
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171.86	306.2847
172.10	297.6211
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176.60	308.5063
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186.00	289.7731
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202.84	316.7439
205.31	253.8337



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209.75	254.6172
210.97	220.7334
215.65	259.9191
216.55	262.1042
218.09	268.6874
222.10	254.9429
223.80	247.0847
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227.20	271.2224
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228.18	286.8263
228.18	286.8263
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236.00	296.4871
238.63	239.4140
238.63	239.4140
238.63	239.4140
238.63	239.4140
239.00	239.4700
240.98	239.7690
241.98	239.9193
241.98	239.9193
241.98	239.9193
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247.94	198.2691
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252.85	222.1792
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256.20	193.9937
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260.90	193.6158
262.80	195.9220
264.65	177.9561
268.24	184.5357
268.79	192.3499
269.46	195.5292
269.46	195.5292
269.46	195.5292
269.46	195.5292
271.23	212.8194
273.65	256.6745
276.40	215.0157
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277.60	208.9279
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280.46	231.4449
281.68	252.2335
283.67	196.1952
284.30	182.1781
285.00	195.4037
285.90	192.6830
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286.10	198.3457
287.40	182.9159
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290.80	186.9277
291.72	155.5919
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295.21	191.7944

295.21	191.7944
295.96	191.8737
296.50	191.9306
297.23	192.0075
298.57	192.1487
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300.09	183.1498
300.09	183.1498
300.09	183.1498
300.12	183.1522
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303.91	151.8867
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304.40	150.3452
304.84	134.5505
306.84	152.1270
308.46	166.5341
311.98	174.4733
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319.02	175.1211
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320.08	181.9194
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323.87	208.1817
323.87	208.1817
323.87	208.1817
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334.20	162.3496
334.30	172.0029
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338.28	191.6778
338.28	191.6778
338.28	191.6778
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338.32	191.6827
338.32	191.6827
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340.57	180.6100
344.27	189.7153
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351.92	139.1405
351.92	139.1405
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367.43	142.1467
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369.80	124.6420
374.96	144.6224
383.85	151.1491
387.95	122.7315
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391.69	145.7439
391.69	145.7439
392.90	147.8087
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401.10	140.6413
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402.60	134.5073
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410.95	90.0055
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433.93	134.3370
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439.89	109.3605
443.98	119.6925
444.90	115.6797
445.03	115.6852
445.03	115.6852
445.03	115.6852
445.03	115.6852
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475.35	115.0721
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511.85	100.0430
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513.99	95.6049
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595.88	88.0739
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602.71	102.2734
602.71	102.2734
603.60	93.3296
604.41	95.1503
604.70	86.1816
609.31	93.8691

609.31	93.8691
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609.31	93.8691
610.33	93.9009
612.46	91.8087
614.37	108.0786
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621.84	80.1769
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633.10	80.4750
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661.65	75.7282
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666.33	86.8325
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696.49	75.8140
697.00	81.3739
697.49	77.6870
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722.78	79.8793
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722.95	71.8945
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752.31	69.5617
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756.15	68.6974
756.87	81.8900
763.93	72.7577
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766.84	85.8994
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778.89	69.1445
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896.60	77.2224
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903.28	67.1415
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911.07	51.0161
911.07	51.0161
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969.11	37.5324
969.11	37.5324
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1036.00	55.6020
1037.82	55.6244
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1038.76	0.0000
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1046.59	45.6024
1048.07	41.5622

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1063.62	45.3422
1076.63	34.9791
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1085.78	37.8250
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1115.52	68.7968
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1120.29	46.3531
1120.29	46.3531
1120.29	46.3531
1120.51	46.3550
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1147.95	0.0000
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1175.09	67.7374
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1230.97	74.8424
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1274.54	45.7207
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1298.22	0.0000
1312.09	40.7013
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1325.50	25.7715
1332.49	36.5580
1333.61	32.2644
1360.21	29.1841
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1365.15	20.5555
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1368.53	0.0000
1376.25	32.5232
1384.27	36.2945
1394.10	26.1045
1395.20	28.9068
1407.95	31.7789
1434.06	30.9893
1436.60	26.3066
1457.56	0.0000
1460.81	26.4199
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1596.49	26.0753
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1678.03	0.0000
1691.02	8.8258
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1750.46	0.0000
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1764.49	10.4150
1764.49	10.4150
1764.49	10.4150
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1808.65	8.9874

1836.01

11.0295

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132008

Total Uranium Activity	4.0535E+00	ug/g
Total Uranium Counting Unc.	2.3453E+00	ug/g
Total Uranium Tpu	1.1966E-06	ug/g
Total Uranium Mda	1.5548E+00	ug/g



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*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132008
*  ANALYST       : MXR1                             DETECTOR    : GAM05
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 10:02:14.50          SAMPLE ALQT: 134.790 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.592E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.263E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.811E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.857E+00

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## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 12:55:23.02

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132009.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 10:54:45
Sample ID        : G244132009      Sample quantity   : 1.19810E+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        : 940270            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	62.99*	56	487	1.07	126.72	122	10	7.80E-03	77.8	
2	2	74.96	364	373	1.05	150.63	146	15	5.05E-02	9.7	1.48E+00
3	2	77.15	585	377	1.24	155.00	146	15	8.13E-02	7.4	
4	0	87.39	153	415	1.12	175.47	172	7	2.12E-02	23.6	
5	8	89.97	141	351	1.02	180.64	178	13	1.96E-02	22.0	2.21E+00
6	8	92.96*	177	428	1.41	186.61	178	13	2.46E-02	23.1	
7	0	186.19*	136	330	1.01	372.98	368	9	1.88E-02	27.1	
8	0	209.72	110	261	1.69	420.00	416	9	1.53E-02	28.1	
9	4	239.02*	1120	166	1.15	478.58	471	22	1.56E-01	3.6	1.41E+00
10	4	241.98	258	240	1.88	484.49	471	22	3.58E-02	16.7	
11	0	270.62	106	169	1.87	541.73	537	10	1.48E-02	24.8	
12	0	277.80	62	220	1.20	556.09	550	12	8.64E-03	49.5	
13	0	295.46*	309	180	1.20	591.39	588	9	4.29E-02	9.8	
14	0	301.32	35	182	0.94	603.11	598	9	4.92E-03	71.2	
15	0	338.69*	201	179	1.11	677.80	673	11	2.79E-02	15.1	
16	0	352.22*	549	215	1.31	704.85	699	14	7.63E-02	7.2	
17	0	409.96	24	117	1.01	820.26	815	9	3.38E-03	82.6	
18	0	463.14	91	67	1.17	926.55	921	10	1.26E-02	19.9	
19	0	511.48*	81	126	1.92	1023.18	1017	13	1.13E-02	35.7	
20	0	583.56*	317	70	1.31	1167.25	1162	10	4.40E-02	7.7	
21	0	609.54*	423	66	1.51	1219.17	1212	12	5.88E-02	6.3	
22	0	662.27	85	78	1.27	1324.57	1320	12	1.18E-02	23.1	
23	0	727.45	84	80	1.67	1454.84	1449	15	1.16E-02	25.2	
24	0	795.10	61	42	1.64	1590.06	1584	12	8.47E-03	24.8	
25	0	836.13	17	40	0.92	1672.05	1667	8	2.32E-03	70.1	
26	0	911.45*	219	39	1.90	1822.59	1816	14	3.04E-02	9.2	
27	0	935.43	23	55	1.57	1870.51	1862	11	3.18E-03	66.1	
28	0	969.29	133	41	1.36	1938.20	1934	12	1.85E-02	13.2	
29	0	1120.80*	68	51	1.46	2240.99	2234	12	9.43E-03	24.9	
30	0	1378.65	30	17	1.42	2756.31	2749	15	4.15E-03	36.3	
31	0	1410.62	24	32	0.86	2820.20	2809	22	3.39E-03	63.1	
32	0	1461.10*	657	5	2.07	2921.08	2912	17	9.13E-02	4.0	
33	0	1765.85*	51	17	2.28	3530.10	3522	14	7.03E-03	23.6	
34	0	1847.24	25	4	3.28	3692.73	3684	16	3.52E-03	26.4	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132009.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 10:54:45
Sample ID        : G244132009             Sample quantity  : 119.81 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

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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	*	2.042E+01	2.448E+00	6.055E-01	5.383E-02	33.719
MN-54	+	834.83	*	3.456E-02	4.853E-02	7.404E-02	6.590E-03	0.467
CD-109	+	88.03	*	2.523E+00	1.216E+00	1.300E+00	1.230E-01	1.940
SN-126	+	64.28		6.694E-01	1.047E+00	9.830E-01	1.447E-01	0.681
	+	86.94		1.033E+00	6.499E-01	6.990E-01	2.902E-01	1.477
	+	87.57	*	2.484E-01	1.197E-01	1.287E-01	1.212E-02	1.930
BA-137M	+	661.65	*	1.544E-01	7.253E-02	7.031E-02	5.759E-03	2.196
CS-137	+	661.65	*	1.632E-01	7.667E-02	7.432E-02	6.101E-03	2.196
HG-203		70.83		-2.701E-02	1.342E+00	1.930E+00	2.562E-01	-0.014
		72.87		1.254E+00	8.073E-01	1.224E+00	1.584E-01	1.024
		82.60		2.257E-01	1.428E+00	2.062E+00	2.874E-01	0.109
	+	279.20	*	8.003E-02	7.957E-02	7.317E-02	6.861E-03	1.094
TL-208	+	277.35		7.387E-01	7.372E-01	6.572E-01	8.352E-02	1.124
	+	510.84		4.921E-01	3.561E-01	2.699E-01	3.208E-02	1.823
	+	583.14	*	5.505E-01	9.832E-02	6.758E-02	6.137E-03	8.146
		860.37		4.529E-01	3.666E-01	6.611E-01	6.335E-02	0.685
BI-211		72.87		6.415E+00	4.079E+00	6.263E+00	5.137E-01	1.024
	+	351.07	*	4.122E+00	7.003E-01	3.901E-01	3.548E-02	10.566
PB-212	+	74.81		2.555E+00	5.901E-01	6.326E-01	7.918E-02	4.039
	+	77.11		2.324E+00	3.949E-01	3.570E-01	3.029E-02	6.511
	+	87.30		1.149E+00	5.656E-01	8.039E-01	1.103E-01	1.429
	+	238.63	*	1.811E+00	2.259E-01	1.081E-01	1.094E-02	16.754
	+	300.09		8.935E-01	1.276E+00	1.551E+00	1.677E-01	0.576
PO-212	+	74.81		2.555E+00	5.901E-01	6.326E-01	7.918E-02	4.039
	+	77.11		2.324E+00	3.949E-01	3.570E-01	3.029E-02	6.511
	+	87.30		1.149E+00	5.656E-01	8.039E-01	1.103E-01	1.429
		115.19		1.885E+00	4.195E+00	6.802E+00	5.910E-01	0.277
	+	238.63	*	1.811E+00	2.259E-01	1.081E-01	1.094E-02	16.754
	+	300.09		8.935E-01	1.276E+00	1.551E+00	1.677E-01	0.576
BI-214	+	609.31	*	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982
	+	1120.29		1.181E+00	6.011E-01	5.594E-01	5.985E-02	2.112
	+	1764.49		1.216E+00	5.833E-01	4.700E-01	3.941E-02	2.588
PB-214	+	74.81		4.403E+00	9.853E-01	1.090E+00	1.215E-01	4.039
	+	77.11		3.984E+00	7.419E-01	6.119E-01	6.979E-02	6.511

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	87.30		1.968E+00	9.608E-01	1.377E+00	1.673E-01	1.429
	+	241.98		2.507E+00	8.791E-01	6.511E-01	6.955E-02	3.850
	+	295.21		1.361E+00	3.060E-01	2.691E-01	2.972E-02	5.057
	+	351.92	*	1.434E+00	2.548E-01	1.334E-01	1.398E-02	10.749
	+	74.81		4.403E+00	9.853E-01	1.090E+00	1.215E-01	4.039
	+	77.11		3.984E+00	7.419E-01	6.119E-01	6.979E-02	6.511
	+	87.30		1.968E+00	9.608E-01	1.377E+00	1.673E-01	1.429
	+	241.98		2.507E+00	8.791E-01	6.511E-01	6.955E-02	3.850
PO-216	+	295.21		1.361E+00	3.060E-01	2.691E-01	2.972E-02	5.057
	+	351.92	*	1.434E+00	2.548E-01	1.334E-01	1.398E-02	10.749
	+	74.81		2.555E+00	5.901E-01	6.326E-01	7.918E-02	4.039
	+	77.11		2.324E+00	3.949E-01	3.570E-01	3.029E-02	6.511
	+	87.30		1.149E+00	5.656E-01	8.039E-01	1.103E-01	1.429
	+	238.63	*	1.811E+00	2.259E-01	1.081E-01	1.094E-02	16.754
	+	300.09		8.935E-01	1.276E+00	1.551E+00	1.677E-01	0.576
	+	74.81		4.403E+00	9.853E-01	1.090E+00	1.215E-01	4.039
PO-218	+	77.11		3.984E+00	7.419E-01	6.119E-01	6.979E-02	6.511
	+	87.30		1.968E+00	9.608E-01	1.377E+00	1.673E-01	1.429
	+	241.98		2.507E+00	8.791E-01	6.511E-01	6.955E-02	3.850
	+	295.21		1.361E+00	3.060E-01	2.691E-01	2.972E-02	5.057
	+	351.92	*	1.434E+00	2.548E-01	1.334E-01	1.398E-02	10.749
	+	240.98	*	4.754E+00	1.646E+00	1.230E+00	1.118E-01	3.863
	+	609.31	*	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982
	+	1120.29		1.181E+00	6.011E-01	5.594E-01	5.985E-02	2.112
AC-228	+	1764.49		1.216E+00	5.833E-01	4.700E-01	3.941E-02	2.588
	+	338.32		1.657E+00	8.473E-01	4.413E-01	1.823E-01	3.755
	+	911.07	*	1.713E+00	3.718E-01	2.423E-01	2.804E-02	7.071
	+	969.11		1.845E+00	6.512E-01	6.242E-01	1.465E-01	2.955
	+	338.32		1.657E+00	8.473E-01	4.413E-01	1.823E-01	3.755
	+	911.07	*	1.713E+00	3.718E-01	2.423E-01	2.804E-02	7.071
	+	969.11		1.845E+00	6.512E-01	6.242E-01	1.465E-01	2.955
	+	74.81		2.591E+00	5.479E-01	6.415E-01	5.388E-02	4.039
TH-228	+	77.11		2.357E+00	4.004E-01	3.620E-01	3.072E-02	6.511
	+	87.30		1.165E+00	5.616E-01	8.151E-01	7.655E-02	1.429
	+	238.63	*	1.836E+00	2.290E-01	1.096E-01	1.110E-02	16.754
	+	300.09		9.060E-01	1.398E+00	1.573E+00	9.335E-01	0.576
	+	609.31	*	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982
	+	1120.29		1.181E+00	6.011E-01	5.594E-01	5.985E-02	2.112
	+	1764.49		1.216E+00	5.833E-01	4.699E-01	3.941E-02	2.588
	+	338.32		1.657E+00	5.204E-01	4.413E-01	3.885E-02	3.755
TH-232	+	911.07	*	1.713E+00	3.718E-01	2.423E-01	2.804E-02	7.071
	+	969.11		1.845E+00	6.512E-01	6.242E-01	1.465E-01	2.955
	+	63.29	*	1.691E+00	2.649E+00	2.463E+00	4.330E-01	0.686
	+	92.38		1.864E+00	9.272E-01	8.975E-01	1.645E-01	2.077
	+	609.31	*	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982
	+	1120.29		1.181E+00	6.011E-01	5.594E-01	5.985E-02	2.112
	+	1764.49		1.216E+00	5.833E-01	4.699E-01	3.941E-02	2.588
	+	86.50	*	7.295E-01	3.825E-01	4.887E-01	1.106E-01	1.493
NP-237	+	95.87		1.405E-01	1.199E+00	1.717E+00	4.250E-01	0.082

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	+	63.29	*	1.691E+00	2.649E+00	2.463E+00	4.330E-01	0.686
	+	92.38		1.864E+00	8.786E-01	8.975E-01	8.195E-02	2.077
AM-243	+	74.67	*	4.143E-01	8.748E-02	1.029E-01	8.558E-03	4.025
	+	86.72		2.736E+01	1.319E+01	1.859E+01	1.735E+00	1.471
		117.66		-1.653E+00	4.521E+00	7.051E+00	6.147E-01	-0.234
		142.18		4.042E+00	1.961E+01	3.349E+01	2.865E+00	0.121
ANH-511	+	511.00	*	1.063E-01	7.640E-02	5.831E-02	4.942E-03	1.823

## ---- 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	*	-4.254E-02	3.970E-01	6.312E-01	5.743E-02	-0.067
NA-22		1274.54	*	2.908E-02	4.794E-02	8.542E-02	7.173E-03	0.340
NA-24		1368.53	*	-6.304E-02	4.794E-02	Half-Life too short		
AL-26		1129.67		-3.717E-01	1.849E+00	2.897E+00	2.419E-01	-0.128
		1808.65	*	-9.135E-03	3.160E-02	4.748E-02	3.934E-03	-0.192
TI-44		67.85		1.247E-02	5.970E-02	8.707E-02	6.904E-03	0.143
	+	78.38	*	4.289E-01	7.286E-02	9.154E-02	7.856E-03	4.685
SC-46		889.25	*	-1.613E-03	4.879E-02	7.949E-02	7.185E-03	-0.020
	+	1120.51		2.003E-01	1.011E-01	1.528E-01	1.284E-02	1.311
V-48		944.10		1.942E-01	8.277E-01	1.389E+00	1.251E-01	0.140
		983.50	*	-3.936E-02	7.914E-02	1.209E-01	1.079E-02	-0.326
		1312.09		7.499E-03	8.579E-02	1.445E-01	1.225E-02	0.052
CR-51		320.08	*	8.254E-02	4.401E-01	7.291E-01	6.858E-02	0.113
MN-52		744.21		8.222E-02	2.321E-01	3.963E-01	3.399E-02	0.207
		848.13		3.547E+00	6.791E+00	1.171E+01	1.047E+00	0.303
	+	935.52		3.055E-01	4.048E-01	5.432E-01	4.899E-02	0.562
		1246.25		7.610E-01	7.258E+00	1.226E+01	1.019E+00	0.062
		1333.61		7.264E-01	4.905E+00	8.191E+00	6.983E-01	0.089
		1434.06	*	-1.236E-01	2.140E-01	3.213E-01	2.774E-02	-0.385
CO-56		846.75	*	-6.956E-04	4.756E-02	7.787E-02	6.958E-03	-0.009
		977.42		4.715E+00	3.680E+00	6.474E+00	5.790E-01	0.728
		1037.82		-4.708E-01	3.594E-01	4.790E-01	4.416E-02	-0.983
		1175.09		6.308E-02	2.510E+00	4.223E+00	3.421E-01	0.015
		1238.25		1.464E-01	1.095E-01	2.013E-01	1.721E-02	0.727
		1360.21		-1.320E-01	1.060E+00	1.729E+00	1.481E-01	-0.076
		1771.40		-8.873E-02	2.252E-01	2.545E-01	2.130E-02	-0.349
CO-57		122.06	*	1.162E-02	2.974E-02	4.803E-02	4.228E-03	0.242
		136.48		-4.204E-02	2.265E-01	3.815E-01	3.525E-02	-0.110
CO-58		810.76	*	-2.990E-02	4.097E-02	6.160E-02	5.449E-03	-0.485
FE-59		142.65		-9.482E-03	3.078E+00	5.068E+00	4.333E-01	-0.002
		192.34		7.609E-01	1.067E+00	1.834E+00	2.477E-01	0.415
		1099.22	*	-6.626E-02	1.036E-01	1.534E-01	1.414E-02	-0.432
		1291.56		-6.815E-02	1.371E-01	2.145E-01	2.063E-02	-0.318
CO-60		1173.22		3.436E-02	5.126E-02	9.144E-02	7.401E-03	0.376
		1332.49	*	-8.054E-03	4.414E-02	7.165E-02	6.107E-03	-0.112
ZN-65		1115.52	*	1.251E-02	1.147E-01	1.619E-01	1.366E-02	0.077
GE-68		1077.35	*	-1.517E-01	1.411E+00	2.247E+00	1.935E-01	-0.067

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-73		53.44	*	5.280E-01	1.050E+00	1.747E+00	1.414E-01	0.302
AS-74		595.88	*	5.661E-02	9.967E-02	1.742E-01	1.467E-02	0.325
		634.78		-1.719E-01	3.648E-01	5.817E-01	4.832E-02	-0.296
SE-75		66.05		-6.361E-01	6.332E+00	9.091E+00	8.915E-01	-0.070
		96.73		-6.250E-01	1.002E+00	1.351E+00	1.867E-01	-0.463
		121.11		-5.597E-02	1.598E-01	2.490E-01	2.824E-02	-0.225
		136.00		-1.221E-02	4.232E-02	7.100E-02	6.145E-03	-0.172
		198.60		1.276E+00	2.059E+00	3.449E+00	3.356E-01	0.370
		264.65	*	4.762E-03	5.270E-02	8.123E-02	7.462E-03	0.059
		279.53		1.027E-01	1.422E-01	2.166E-01	2.046E-02	0.474
		303.91		-5.188E-01	2.686E+00	3.804E+00	4.494E-01	-0.136
		400.65		2.034E-01	3.168E-01	5.340E-01	5.722E-02	0.381
BR-77	+	87.88		3.891E+02	1.875E+02	2.827E+02	2.672E+01	1.376
		200.40		-3.059E+01	1.354E+02	2.189E+02	1.930E+01	-0.140
	+	239.00		2.072E+02	2.411E+01	3.180E+01	2.887E+00	6.515
		249.79		3.348E+01	5.932E+01	9.784E+01	8.923E+00	0.342
		281.68		-6.207E+01	8.550E+01	1.162E+02	1.062E+01	-0.534
		297.23		1.548E+02	9.447E+01	1.126E+02	1.024E+01	1.374
		303.76		-2.650E+01	1.644E+02	2.335E+02	2.117E+01	-0.113
		439.47		-3.051E+01	1.196E+02	1.887E+02	1.564E+01	-0.162
		484.57		-8.854E+01	2.065E+02	3.192E+02	2.691E+01	-0.277
		520.65	*	-1.504E+00	8.975E+00	1.411E+01	1.197E+00	-0.107
		574.64		-2.955E+01	1.694E+02	2.804E+02	2.373E+01	-0.105
		578.91		2.153E+01	7.858E+01	1.183E+02	1.000E+01	0.182
		585.48		1.247E+03	2.503E+02	4.474E+02	3.779E+01	2.786
		755.35		-9.185E+00	1.271E+02	2.084E+02	1.798E+01	-0.044
		817.79		-3.019E+01	1.031E+02	1.640E+02	1.451E+01	-0.184
SR-82		698.33		-3.328E+00	4.124E+01	6.800E+01	5.694E+00	-0.049
		776.49	*	-6.339E-01	4.226E-01	5.811E-01	5.059E-02	-1.091
		1395.20		6.840E+00	1.076E+01	1.961E+01	1.687E+00	0.349
RB-83		520.41	*	-1.228E-02	8.261E-02	1.301E-01	1.104E-02	-0.094
		529.64		1.730E-02	1.167E-01	1.990E-01	1.690E-02	0.087
		552.65		1.727E-02	2.120E-01	3.590E-01	3.047E-02	0.048
RB-84		881.50	*	-3.616E-02	8.636E-02	1.352E-01	1.220E-02	-0.267
KR-85		513.99	*	1.496E+01	1.085E+01	1.697E+01	1.439E+00	0.882
SR-85		513.99	*	7.578E-02	5.496E-02	8.595E-02	7.287E-03	0.882
RB-86		1076.63	*	-2.154E-01	8.820E-01	1.381E+00	1.190E-01	-0.156
Y-88		898.02		-3.064E-02	4.705E-02	7.102E-02	6.462E-03	-0.431
		1836.01	*	2.412E-02	4.086E-02	7.445E-02	6.123E-03	0.324
ZR-88		392.90	*	-9.364E-03	3.789E-02	6.037E-02	4.861E-03	-0.155
Y-91		1204.90	*	6.653E+00	1.896E+01	3.294E+01	2.699E+00	0.202
NB-94		702.63	*	-4.664E-03	4.187E-02	6.884E-02	5.778E-03	-0.068
		871.10		-1.085E-02	3.749E-02	5.930E-02	5.335E-03	-0.183
NB-95		765.79	*	-1.683E-02	5.197E-02	8.343E-02	7.229E-03	-0.202
NB-95M		235.69	*	1.437E-02	1.603E-01	2.355E-01	2.416E-02	0.061
ZR-95		724.18		1.503E-01	1.094E-01	1.837E-01	1.699E-02	0.818
		756.15	*	2.605E-02	7.717E-02	1.315E-01	1.250E-02	0.198
NB-97		657.90	*	-1.962E-02	7.717E-02	Half-Life too short		
		1024.50		5.455E-01	7.717E-02	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
ZR-97	254.15			-2.444E+00	7.717E-02	Half-Life	too short	
	355.39			-3.000E-01	7.717E-02	Half-Life	too short	
	507.63	*		2.785E-02	7.717E-02	Half-Life	too short	
	602.52			-2.268E+00	7.717E-02	Half-Life	too short	
	1021.30			1.692E-01	7.717E-02	Half-Life	too short	
	1147.95			1.348E+00	7.717E-02	Half-Life	too short	
	1362.66			1.415E+00	7.717E-02	Half-Life	too short	
	1750.46			-5.287E-01	7.717E-02	Half-Life	too short	
MO-99	140.51			5.012E+00	2.277E+01	3.770E+01	1.043E+01	0.133
	181.06			-4.459E+00	1.687E+01	2.457E+01	4.497E+00	-0.181
	366.43			-1.998E+00	7.350E+01	1.194E+02	1.009E+01	-0.017
	739.58	*		-8.570E+00	1.024E+01	1.544E+01	2.339E+00	-0.555
	778.00			-1.057E+01	2.767E+01	4.379E+01	3.815E+00	-0.241
TC-99M	140.51	*		3.933E+08	2.767E+01	Half-Life	too short	
RH-101	127.23			4.866E-03	3.799E-02	6.051E-02	5.263E-03	0.080
	198.01	*		2.261E-02	3.787E-02	6.342E-02	5.581E-03	0.356
	325.23			-4.019E-01	2.837E-01	4.220E-01	3.766E-02	-0.952
RH-102	418.52			1.818E-01	3.416E-01	5.730E-01	4.696E-02	0.317
	475.06	*		-7.304E-03	3.533E-02	5.570E-02	4.684E-03	-0.131
	631.29			1.323E-03	5.500E-02	9.203E-02	7.658E-03	0.014
	697.49			6.777E-02	9.213E-02	1.616E-01	1.352E-02	0.419
	766.84			1.862E-01	1.363E-01	2.468E-01	2.139E-02	0.755
	1046.59			-2.581E-02	1.295E-01	2.042E-01	1.783E-02	-0.126
	1112.84			-1.314E-01	3.102E-01	4.239E-01	3.579E-02	-0.310
RU-103	497.08	*		-1.801E-02	4.885E-02	7.559E-02	1.063E-02	-0.238
+	610.33			1.468E+01	3.061E+00	3.508E+00	5.812E-01	4.184
RH-106	511.85	+		5.298E-01	3.808E-01	5.439E-01	4.610E-02	0.974
	621.84	*		1.527E-01	3.522E-01	6.091E-01	8.033E-02	0.251
	1050.47			-3.094E+00	2.615E+00	3.551E+00	3.096E-01	-0.871
RU-106	511.85	+		5.298E-01	3.808E-01	5.439E-01	4.610E-02	0.974
	621.84	*		1.527E-01	3.519E-01	6.091E-01	5.088E-02	0.251
	1050.47			-3.094E+00	2.615E+00	3.551E+00	3.096E-01	-0.871
AG-108M	433.93	*		-2.443E-02	3.918E-02	5.996E-02	5.170E-03	-0.407
	614.37			2.604E-02	4.309E-02	6.749E-02	5.888E-03	0.386
	722.95			7.543E-03	4.981E-02	7.306E-02	6.451E-03	0.103
AG-110M	657.75	*		-2.171E-02	4.621E-02	6.286E-02	5.330E-03	-0.345
	677.61			-9.915E-02	3.363E-01	5.435E-01	4.634E-02	-0.182
	706.67			1.099E-02	2.505E-01	4.169E-01	3.609E-02	0.026
	763.93			-2.721E-01	2.085E-01	3.029E-01	2.696E-02	-0.898
	884.67			1.472E-02	6.349E-02	1.061E-01	9.863E-03	0.139
	937.48			8.207E-02	1.368E-01	2.111E-01	1.966E-02	0.389
	1384.27			1.502E-01	1.932E-01	3.214E-01	2.839E-02	0.467
IN-111	171.28			1.943E-01	8.522E-01	1.448E+00	1.240E-01	0.134
	245.39	*		3.007E-01	1.051E+00	1.563E+00	1.423E-01	0.192
IN-113M	391.69	*		1.959E-02	5.403E-02	8.974E-02	7.475E-03	0.218
SN-113	391.69	*		1.959E-02	5.403E-02	8.974E-02	7.475E-03	0.218
IN-114M	190.27	*		1.272E-01	2.291E-01	3.493E-01	3.050E-02	0.364
CD-115	260.90			2.664E+01	1.071E+02	1.795E+02	1.641E+01	0.148
	492.35			1.573E+01	3.040E+01	5.072E+01	4.285E+00	0.310

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M	527.90	*	-2.183E+00	8.767E+00	1.450E+01	1.231E+00	-0.151	
	156.02		1.262E+00	2.375E+00	4.094E+00	3.486E-01	0.308	
	158.56	*	-1.180E-02	5.726E-02	9.585E-02	8.160E-03	-0.123	
SB-122	563.90	*	2.241E+00	1.832E+00	3.326E+00	2.820E-01	0.674	
	692.80		2.102E+01	3.507E+01	6.126E+01	5.113E+00	0.343	
I-123	159.00	*	6.975E-02	3.507E+01	Half-Life	too short		
	528.96		3.272E+01	3.507E+01	Half-Life	too short		
TE-123M	159.00	*	1.492E-03	3.100E-02	5.244E-02	4.492E-03	0.028	
I-124	602.71	*	-6.365E-01	6.998E-01	9.030E-01	7.593E-02	-0.705	
	722.78		1.013E-01	4.243E+00	6.117E+00	5.192E-01	0.017	
	1325.50		5.653E+00	3.333E+01	5.667E+01	4.822E+00	0.100	
SB-124	1376.25		4.618E+01	3.470E+01	6.049E+01	5.191E+00	0.763	
	1509.49		6.298E+00	1.517E+01	2.657E+01	2.300E+00	0.237	
	1691.02		-1.519E+00	3.552E+00	5.247E+00	4.471E-01	-0.290	
	602.71		-4.426E-02	4.866E-02	6.279E-02	5.281E-03	-0.705	
	645.85		1.037E-01	5.562E-01	9.422E-01	8.292E-02	0.110	
	709.31		1.617E+00	3.184E+00	5.502E+00	4.636E-01	0.294	
	713.82		-8.199E-01	1.777E+00	2.810E+00	3.348E-01	-0.292	
	722.78		1.021E-02	4.277E-01	6.166E-01	5.350E-02	0.017	
	968.20	+	1.874E+01	5.218E+00	8.727E+00	7.821E-01	2.147	
	1045.16		1.602E+00	2.764E+00	4.765E+00	4.165E-01	0.336	
	1325.50		6.086E-01	3.588E+00	6.101E+00	5.191E-01	0.100	
	1368.21		8.143E-02	1.722E+00	2.882E+00	3.875E-01	0.028	
	1436.60		7.719E-01	3.755E+00	6.434E+00	5.556E-01	0.120	
	1691.02	*	-3.613E-02	8.445E-02	1.248E-01	1.106E-02	-0.290	
SB-125	427.89	*	-4.653E-02	1.147E-01	1.795E-01	1.510E-02	-0.259	
	463.38	+	1.071E+00	4.371E-01	6.703E-01	6.079E-02	1.598	
	600.56		-5.803E-02	2.110E-01	3.222E-01	2.920E-02	-0.180	
	635.90		-2.220E-01	2.978E-01	4.618E-01	4.167E-02	-0.481	
TE-125M	109.28	*	4.001E+00	1.047E+01	1.696E+01	1.758E+00	0.236	
I-126	388.63		5.152E-02	2.261E-01	3.727E-01	3.019E-02	0.138	
	666.33	*	2.283E-01	2.312E-01	3.703E-01	3.042E-02	0.617	
SB-126	753.82		-6.590E-01	1.504E+00	2.373E+00	2.045E-01	-0.278	
	223.80		1.740E+00	4.430E+00	7.507E+00	6.754E-01	0.232	
	278.60	+	4.577E+00	4.550E+00	4.854E+00	4.439E-01	0.943	
	296.50	+	1.270E+01	2.742E+00	4.252E+00	3.869E-01	2.986	
	414.70		-2.776E-02	1.007E-01	1.383E-01	1.131E-02	-0.201	
	415.30		-2.771E+00	7.518E+00	1.138E+01	9.304E-01	-0.244	
	555.20		2.374E+00	3.972E+00	6.995E+00	5.935E-01	0.339	
	573.80		-4.551E-01	1.129E+00	1.834E+00	1.553E-01	-0.248	
	593.00		1.542E-01	1.026E+00	1.739E+00	1.466E-01	0.089	
	656.30		-1.760E+00	4.104E+00	5.924E+00	4.867E-01	-0.297	
	666.33		9.515E-02	9.637E-02	1.543E-01	1.268E-02	0.617	
	675.00		-5.475E-01	2.107E+00	3.422E+00	2.826E-01	-0.160	
	695.00		-1.348E-02	8.764E-02	1.436E-01	1.200E-02	-0.094	
	697.00		3.192E-01	3.053E-01	5.461E-01	4.570E-02	0.585	
	720.50	*	1.909E-02	1.530E-01	2.340E-01	1.983E-02	0.082	
	856.80		-7.072E-01	5.828E-01	8.398E-01	7.526E-02	-0.842	
	989.30		-1.819E-01	1.343E+00	2.145E+00	1.912E-01	-0.085	



----- Non-Identified Nuclides -----

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SB-127	1034.80		8.155E+00	8.824E+00	1.598E+01	1.402E+00	0.510
	1213.00		2.789E+00	4.789E+00	8.468E+00	6.958E-01	0.329
	61.10		5.024E+01	6.160E+01	9.290E+01	9.330E+00	0.541
	252.40		2.096E+00	4.368E+00	7.262E+00	3.054E+00	0.289
	290.80		-8.883E-01	2.339E+01	3.368E+01	3.780E+00	-0.026
	411.60		9.044E+00	1.386E+01	2.071E+01	3.156E+00	0.437
	444.90		-5.045E-01	9.425E+00	1.511E+01	1.816E+00	-0.033
	473.00		-3.822E-01	1.643E+00	2.585E+00	3.213E-01	-0.148
	543.00		2.883E+00	1.605E+01	2.737E+01	3.847E+00	0.105
	603.60		-5.673E+00	1.172E+01	1.604E+01	1.935E+00	-0.354
XE-127	685.20	*	3.140E-01	1.108E+00	1.892E+00	2.046E-01	0.166
	698.50		-9.624E-01	1.550E+01	2.560E+01	3.955E+00	-0.038
	722.20		-1.012E-01	2.814E+01	4.041E+01	4.330E+00	-0.003
	783.80		1.361E+00	3.491E+00	5.947E+00	7.253E-01	0.229
	57.60		-1.709E+00	7.852E+00	1.202E+01	9.232E-01	-0.142
	145.22		-1.004E-01	7.772E-01	1.271E+00	1.085E-01	-0.079
I-131	172.10		-1.680E-02	1.308E-01	2.189E-01	1.875E-02	-0.077
	202.84	*	-4.044E-02	5.266E-02	8.486E-02	7.502E-03	-0.477
	374.96		-5.721E-02	2.269E-01	3.621E-01	3.015E-02	-0.158
	80.18		2.552E-01	5.107E+00	7.340E+00	6.439E-01	0.035
	284.30		1.997E-01	1.681E+00	2.695E+00	2.575E-01	0.074
TE-132	364.48	*	-6.894E-04	1.220E-01	1.985E-01	1.777E-02	-0.003
	636.97		-5.781E-01	1.566E+00	2.526E+00	2.220E-01	-0.229
	722.89		7.571E-01	7.555E+00	1.101E+01	9.394E-01	0.069
	49.72		-1.085E+01	1.972E+01	3.129E+01	3.267E+00	-0.347
BA-133	111.76		-3.061E+01	2.767E+01	4.081E+01	4.323E+00	-0.750
	116.30		7.492E+00	2.550E+01	4.106E+01	4.361E+00	0.182
	228.16	*	-7.247E-01	6.460E-01	1.001E+00	1.575E-01	-0.724
	53.15		4.511E-01	4.635E+00	7.582E+00	6.161E-01	0.059
	79.62		7.548E-01	1.597E+00	2.342E+00	3.574E-01	0.322
I-133	81.00		-2.239E-01	1.346E-01	1.690E-01	2.699E-02	-1.325
	276.40	+	7.299E-01	7.304E-01	7.723E-01	1.141E-01	0.945
	302.84		4.110E-03	1.919E-01	2.769E-01	3.762E-02	0.015
	356.01	*	-5.117E-02	5.902E-02	7.658E-02	1.010E-02	-0.668
	383.85		3.468E-02	3.490E-01	5.705E-01	7.022E-02	0.061
CS-134	510.53	+	4.269E-01	3.490E-01	Half-Life	too short	
	529.87	*	1.336E-04	3.490E-01	Half-Life	too short	
	706.58		1.011E-02	3.490E-01	Half-Life	too short	
	856.28		-2.882E-01	3.490E-01	Half-Life	too short	
	875.33		5.036E-03	3.490E-01	Half-Life	too short	
	1236.41		3.049E-01	3.490E-01	Half-Life	too short	
	1298.22		-1.923E-02	3.490E-01	Half-Life	too short	
I-133	475.35		-6.032E-01	2.314E+00	3.632E+00	3.055E-01	-0.166
	563.23		4.308E-01	4.063E-01	7.338E-01	6.283E-02	0.587
	569.32		-5.608E-02	2.335E-01	3.849E-01	3.307E-02	-0.146
	604.70		5.429E-03	4.074E-02	6.024E-02	5.076E-03	0.090
	795.84	+	1.540E-01	7.762E-02	1.150E-01	1.016E-02	1.339
CS-134	801.93	*	-1.545E-01	4.531E-01	6.725E-01	5.948E-02	-0.230
	1038.57		-5.144E+00	4.652E+00	6.471E+00	5.671E-01	-0.795

## ----- Non-Identified Nuclides -----

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CS-135 I-135	1167.94			-1.185E+00	3.064E+00	4.956E+00	4.028E-01	-0.239
	1365.15			-2.348E-01	1.304E+00	2.106E+00	1.887E-01	-0.112
	268.24		*	1.472E-01	1.912E-01	2.933E-01	3.058E-02	0.502
	288.45			-1.262E+09	1.912E-01	Half-Life	too short	
	417.63			2.489E+08	1.912E-01	Half-Life	too short	
	546.56			-6.115E+08	1.912E-01	Half-Life	too short	
	836.80		+	9.954E+08	1.912E-01	Half-Life	too short	
	1038.76			-1.118E+09	1.912E-01	Half-Life	too short	
	1124.00			2.237E+09	1.912E-01	Half-Life	too short	
	1131.51			5.056E+07	1.912E-01	Half-Life	too short	
	1260.41		*	-5.073E+07	1.912E-01	Half-Life	too short	
	1457.56			1.182E+10	1.912E-01	Half-Life	too short	
	1678.03			4.806E+08	1.912E-01	Half-Life	too short	
	1706.46			4.871E+08	1.912E-01	Half-Life	too short	
	1791.20			5.865E+07	1.912E-01	Half-Life	too short	
CS-136	66.91			2.147E-01	9.498E-01	1.387E+00	2.085E-01	0.155
	86.29		+	3.049E+00	1.498E+00	2.219E+00	2.953E-01	1.374
	153.22			4.817E-02	7.078E-01	1.200E+00	1.145E-01	0.040
	163.89			-3.330E-01	1.155E+00	1.863E+00	1.781E-01	-0.179
	176.55			-1.280E-01	3.920E-01	6.498E-01	5.916E-02	-0.197
	273.65			-1.076E-01	7.668E-01	7.871E-01	7.623E-02	-0.137
	340.57			6.019E-01	1.807E-01	3.062E-01	2.763E-02	1.966
	818.51			2.062E-02	7.523E-02	1.273E-01	1.127E-02	0.162
	1048.07		*	1.923E-02	1.096E-01	1.811E-01	1.646E-02	0.106
	1235.34			-3.134E-01	6.708E-01	1.075E+00	1.248E-01	-0.291
CE-139 BA-140	165.85		*	1.168E-02	3.294E-02	5.632E-02	4.796E-03	0.207
	162.64			-5.808E-01	8.022E-01	1.266E+00	1.142E-01	-0.459
	304.84			4.654E-01	1.538E+00	2.263E+00	6.374E-01	0.206
	423.70			6.538E-01	2.157E+00	3.545E+00	1.145E+00	0.184
LA-140	537.32		*	-1.903E-02	2.705E-01	4.531E-01	1.500E-01	-0.042
	328.77			1.682E-01	3.343E-01	5.623E-01	5.264E-02	0.299
	432.53			-8.359E-02	2.327E+00	3.742E+00	3.254E-01	-0.022
	487.03			6.861E-02	1.553E-01	2.576E-01	2.314E-02	0.266
	751.79			-1.481E+00	1.772E+00	2.667E+00	2.542E-01	-0.555
	815.85			8.755E-02	3.286E-01	5.554E-01	5.450E-02	0.158
	867.82			-1.274E+00	1.377E+00	1.989E+00	1.875E-01	-0.641
	919.63			-3.522E-01	3.224E+00	5.051E+00	5.551E-01	-0.070
	925.24			4.690E-01	1.175E+00	2.002E+00	1.912E-01	0.234
	1596.49		*	-3.727E-03	1.049E-01	1.714E-01	1.479E-02	-0.022
CE-141 CE-143	145.44		*	-2.222E-02	6.981E-02	1.132E-01	9.842E-03	-0.196
	57.37			-6.422E-05	6.981E-02	Half-Life	too short	
	231.56			6.092E-04	6.981E-02	Half-Life	too short	
	293.26		*	2.696E-04	6.981E-02	Half-Life	too short	
CE-144	350.59			1.363E-02	6.981E-02	Half-Life	too short	
	490.36			-1.190E-03	6.981E-02	Half-Life	too short	
	664.57			1.318E-03	6.981E-02	Half-Life	too short	
	721.93			8.305E-05	6.981E-02	Half-Life	too short	
	80.11			1.052E-01	2.591E+00	3.723E+00	3.246E-01	0.028
	133.54		*	-8.172E-02	2.366E-01	3.671E-01	5.714E-02	-0.223

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-144		476.78		-1.013E-02	8.415E-02	1.337E-01	1.235E-02	-0.076
		618.01		-1.258E-02	3.380E-02	5.457E-02	4.699E-03	-0.231
		696.49	*	5.196E-02	4.026E-02	7.337E-02	6.139E-03	0.708
		778.57		-4.151E-02	2.532E+00	4.168E+00	3.633E-01	-0.010
PR-144		696.49	*	3.519E+00	2.727E+00	4.968E+00	4.156E-01	0.708
		1489.15		-1.927E+00	1.302E+01	2.093E+01	1.811E+00	-0.092
PM-146		453.90	*	5.087E-02	5.621E-02	9.588E-02	1.007E-02	0.531
		633.02		-2.202E-02	1.432E+00	2.387E+00	8.903E-01	-0.009
		735.90		9.501E-02	1.768E-01	2.890E-01	8.261E-02	0.329
		747.13		-6.290E-02	1.031E-01	1.595E-01	2.236E-02	-0.394
ND-147	+	91.11		7.122E-01	3.212E-01	5.686E-01	5.620E-02	1.253
		319.41		-2.558E+00	3.901E+00	6.134E+00	5.503E-01	-0.417
		439.89		-1.266E+00	6.339E+00	1.005E+01	8.334E-01	-0.126
		531.02	*	3.711E-01	5.938E-01	1.043E+00	1.552E-01	0.356
PM-149		285.90	*	2.973E+01	7.672E+01	1.288E+02	2.039E+01	0.231
EU-152		121.78		3.894E-02	8.679E-02	1.405E-01	1.415E-02	0.277
		244.69		5.557E-01	4.450E-01	6.980E-01	6.354E-02	0.796
		344.27	*	-3.680E-02	1.275E-01	1.772E-01	1.638E-02	-0.208
		443.98		2.358E-01	1.124E+00	1.839E+00	1.528E-01	0.128
		778.89		7.013E-02	2.887E-01	4.875E-01	4.248E-02	0.144
		867.32		-5.728E-01	8.643E-01	1.298E+00	1.166E-01	-0.441
		964.01		4.365E-01	3.873E-01	6.229E-01	5.588E-02	0.701
		1085.78		1.287E-03	4.124E-01	6.652E-01	5.703E-02	0.002
		1112.02		-8.999E-02	3.966E-01	6.037E-01	5.099E-02	-0.149
		1407.95		2.509E-01	2.300E-01	4.308E-01	3.711E-02	0.582
GD-153		69.67		-1.424E+00	2.024E+00	3.010E+00	2.414E-01	-0.473
		83.37		1.920E+01	1.903E+01	2.852E+01	2.569E+00	0.673
		97.43	*	4.410E-04	1.011E-01	1.422E-01	1.263E-02	0.003
		103.18		-9.889E-02	1.216E-01	1.861E-01	1.623E-02	-0.531
EU-154		123.07		-4.019E-03	6.110E-02	9.657E-02	1.109E-02	-0.042
		247.94		-2.131E-01	5.004E-01	7.064E-01	8.371E-02	-0.302
		591.81		5.588E-02	6.963E-01	1.174E+00	1.354E-01	0.048
		723.30		1.762E-01	2.016E-01	3.232E-01	3.041E-02	0.545
		756.87		4.228E-01	8.402E-01	1.453E+00	1.741E-01	0.291
		873.19		1.465E-01	3.383E-01	5.785E-01	7.241E-02	0.253
		996.32		2.055E-01	4.240E-01	7.224E-01	1.293E-01	0.284
		1004.76		-1.001E-01	2.438E-01	3.755E-01	4.442E-02	-0.266
		1274.45	*	1.211E-01	1.299E-01	2.390E-01	2.661E-02	0.507
EU-155		48.70		-1.382E+00	3.198E+00	5.111E+00	4.373E-01	-0.270
		60.01		1.104E+00	6.649E+00	9.721E+00	7.349E-01	0.114
	+	86.54		2.991E-01	1.442E-01	2.182E-01	2.050E-02	1.370
		105.31	*	5.411E-02	1.245E-01	2.024E-01	1.780E-02	0.267
TB-160	+	86.79		7.903E-01	3.810E-01	5.761E-01	5.379E-02	1.372
		197.04		2.083E-01	6.144E-01	1.044E+00	9.175E-02	0.200
		215.65		3.804E-01	8.411E-01	1.388E+00	1.241E-01	0.274
		298.57		-2.677E-01	2.595E-01	2.355E-01	2.141E-02	-1.137
		879.36	*	-7.064E-02	1.744E-01	2.735E-01	2.466E-02	-0.258
		962.29		-3.892E-01	6.412E-01	9.459E-01	8.488E-02	-0.412
		966.15		8.570E-01	2.886E-01	5.291E-01	4.744E-02	1.620

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		1177.93		-2.690E-01	3.939E-01	6.123E-01	4.965E-02	-0.439
		1271.85		-7.422E-02	7.588E-01	1.252E+00	1.049E-01	-0.059
		80.57		-2.881E-01	3.490E-01	4.769E-01	4.177E-02	-0.604
		184.41		1.187E-01	4.894E-02	7.915E-02	6.868E-03	1.500
		280.46		-5.966E-02	1.114E-01	1.540E-01	1.408E-02	-0.387
	+	410.95		2.381E-01	3.938E-01	5.386E-01	4.393E-02	0.442
		711.68	*	-2.379E-02	6.921E-02	1.111E-01	9.372E-03	-0.214
TM-171		752.31		-1.879E-01	2.991E-01	4.617E-01	3.976E-02	-0.407
		810.29		-5.354E-02	6.229E-02	9.194E-02	8.113E-03	-0.582
		51.35		-6.255E+00	3.934E+01	6.365E+01	5.297E+00	-0.098
		52.39		-9.278E+00	2.068E+01	3.299E+01	2.708E+00	-0.281
		59.40		4.308E+00	3.561E+01	5.196E+01	3.916E+00	0.083
LU-176		66.72	*	-6.189E+00	3.735E+01	5.341E+01	4.207E+00	-0.116
	+	88.36		5.892E-01	2.840E-01	4.363E-01	4.116E-02	1.350
		201.83		-3.131E-02	3.306E-02	5.277E-02	4.661E-03	-0.593
LU-177		306.84	*	-2.036E-03	3.015E-02	4.760E-02	4.308E-03	-0.043
		401.10		5.072E+00	8.307E+00	1.399E+01	1.133E+00	0.363
		112.95		1.231E-01	1.679E+00	2.643E+00	2.292E-01	0.047
LU-177M	+	208.36	*	2.788E+00	1.589E+00	2.058E+00	1.829E-01	1.355
		52.97		1.050E-01	2.088E+00	3.409E+00	2.777E-01	0.031
HF-181		54.07		9.447E-01	1.090E+00	1.839E+00	1.476E-01	0.514
		61.30		1.826E+00	1.955E+00	2.967E+00	2.263E-01	0.615
		121.62		2.766E-01	4.377E-01	7.144E-01	6.275E-02	0.387
		147.16		-1.184E+00	7.240E-01	1.132E+00	9.662E-02	-1.045
		171.86		-4.487E-02	5.371E-01	9.010E-01	7.717E-02	-0.050
		218.09		-2.220E-01	9.410E-01	1.551E+00	1.389E-01	-0.143
		268.79		9.040E-01	9.870E-01	1.526E+00	1.396E-01	0.592
		319.02		-2.494E-01	3.194E-01	4.974E-01	4.463E-02	-0.501
		367.43		-1.963E-01	1.045E+00	1.677E+00	1.416E-01	-0.117
		413.65	*	-2.012E-02	2.430E-01	3.404E-01	2.781E-02	-0.059
		56.28		4.276E-01	1.179E+00	1.947E+00	1.519E-01	0.220
		57.53		-1.497E-01	6.631E-01	1.015E+00	7.799E-02	-0.148
		65.20		-1.279E+00	1.305E+00	1.810E+00	1.413E-01	-0.707
		133.02		-1.767E-02	7.644E-02	1.195E-01	1.030E-02	-0.148
		136.25		-1.519E-01	4.856E-01	8.137E-01	6.992E-02	-0.187
W-181		345.85		-2.106E-02	2.384E-01	3.572E-01	3.116E-02	-0.059
		482.03	*	6.146E-03	5.308E-02	8.584E-02	7.233E-03	0.072
		56.28		1.697E-01	4.673E-01	7.717E-01	6.019E-02	0.220
TA-182		57.53		-5.945E-02	2.630E-01	4.025E-01	3.093E-02	-0.148
		65.20	*	-5.033E-01	5.135E-01	7.122E-01	5.560E-02	-0.707
		67.75		2.437E-02	1.418E-01	2.064E-01	1.635E-02	0.118
		100.10		1.166E-01	1.965E-01	3.222E-01	2.833E-02	0.362
		152.43		-9.825E-02	3.789E-01	6.340E-01	5.401E-02	-0.155
		222.10		1.040E-01	3.952E-01	6.664E-01	5.988E-02	0.156
		1001.68		-8.186E-01	2.465E+00	3.874E+00	3.440E-01	-0.211
	+	1121.28		5.547E-01	2.798E-01	4.322E-01	3.630E-02	1.283
		1189.05		3.847E-02	3.044E-01	5.176E-01	4.216E-02	0.074
		1221.42	*	-1.233E-01	2.026E-01	3.165E-01	2.609E-02	-0.390
		1230.97		-2.521E-01	5.389E-01	8.413E-01	6.957E-02	-0.300

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		57.98		-3.082E-02	2.758E-01	3.973E-01	3.038E-02	-0.078
		59.32		1.711E-02	1.451E-01	2.116E-01	1.596E-02	0.081
		67.20		1.183E-01	2.517E-01	3.722E-01	2.940E-02	0.318
		162.32	*	-7.348E-02	1.190E-01	1.953E-01	1.662E-02	-0.376
	+	208.81		2.794E+00	1.592E+00	2.113E+00	1.878E-01	1.322
		291.72		1.049E-01	1.240E+00	1.802E+00	1.643E-01	0.058
RE-184		57.98		-1.144E-01	1.023E+00	1.474E+00	1.127E-01	-0.078
		59.32		6.343E-02	5.378E-01	7.845E-01	5.918E-02	0.081
		67.20		4.387E-01	9.335E-01	1.380E+00	1.090E-01	0.318
		161.27		6.694E-03	3.863E-01	6.524E-01	5.554E-02	0.010
		216.55		1.853E-02	2.875E-01	4.810E-01	4.303E-02	0.039
		252.85	*	-2.265E-02	2.829E-01	4.668E-01	4.261E-02	-0.049
		318.01		-4.194E-01	5.624E-01	8.789E-01	7.892E-02	-0.477
		792.07		-3.463E-01	1.263E+00	1.731E+00	1.517E-01	-0.200
		903.28		1.104E+00	1.163E+00	2.037E+00	1.844E-01	0.542
		920.93		-3.618E-01	5.552E-01	8.401E-01	7.593E-02	-0.431
OS-185		59.72		3.252E-02	3.918E-01	5.703E-01	4.301E-02	0.057
		61.14		1.798E-01	2.139E-01	3.235E-01	2.465E-02	0.556
		69.30		-3.488E-01	3.643E-01	5.345E-01	4.277E-02	-0.653
		592.07		3.442E-01	2.810E+00	4.755E+00	4.010E-01	0.072
		646.12	*	6.741E-03	4.735E-02	7.992E-02	6.603E-03	0.084
		717.42		1.162E-01	9.402E-01	1.576E+00	1.334E-01	0.074
		874.81		-2.170E-01	6.899E-01	1.091E+00	9.823E-02	-0.199
		880.27		7.597E-02	9.250E-01	1.526E+00	1.376E-01	0.050
RE-188		155.03	*	1.391E-01	1.908E-01	3.310E-01	2.819E-02	0.420
		477.96		-1.286E-01	3.792E+00	6.065E+00	5.105E-01	-0.021
		633.10		2.379E-01	2.838E+00	4.774E+00	3.969E-01	0.050
W-188	+	63.58		6.718E+01	1.047E+02	1.123E+02	8.685E+00	0.598
		227.08		-1.046E+01	1.482E+01	2.379E+01	2.145E+00	-0.440
		290.67	*	3.189E-01	9.903E+00	1.434E+01	1.308E+00	0.022
IR-192	+	295.96		1.026E+00	2.220E-01	3.398E-01	3.113E-02	3.021
		308.46		2.985E-02	1.096E-01	1.828E-01	1.661E-02	0.163
		316.51	*	6.255E-03	4.156E-02	6.874E-02	6.193E-03	0.091
		468.07		-1.766E-02	8.779E-02	1.201E-01	1.084E-02	-0.147
		604.41		-3.276E-02	5.436E-01	7.858E-01	1.012E-01	-0.042
		612.46		1.982E+00	9.920E-01	1.689E+00	1.637E-01	1.173
AU-195		65.12		-2.067E-01	2.393E-01	3.343E-01	2.608E-02	-0.618
		66.83		2.536E-02	1.208E-01	1.762E-01	1.389E-02	0.144
	+	75.70		1.335E+00	2.818E-01	5.534E-01	4.640E-02	2.412
		98.88	*	1.132E-01	2.545E-01	4.075E-01	3.598E-02	0.278
		129.76		4.767E+00	3.381E+00	5.652E+00	4.896E-01	0.843
TL-200		367.94	*	-7.884E-05	3.381E+00	Half-Life	too short	
		579.30		-9.729E-05	3.381E+00	Half-Life	too short	
		828.27		2.497E-03	3.381E+00	Half-Life	too short	
		1205.75		-7.045E-05	3.381E+00	Half-Life	too short	
TL-201		68.90		-3.628E+00	4.266E+00	6.644E+00	5.303E-01	-0.546
		70.82		-6.042E-02	2.695E+00	3.877E+00	3.134E-01	-0.016
		80.30		-3.974E+00	4.960E+00	6.789E+00	5.931E-01	-0.585
		135.34		1.574E-01	2.272E+01	3.591E+01	3.088E+00	0.004

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		167.43	*	-2.364E+00	6.087E+00	1.009E+01	8.601E-01	-0.234
		68.90		-3.980E-01	4.680E-01	7.290E-01	5.818E-02	-0.546
		70.82		-6.611E-03	2.949E-01	4.242E-01	3.429E-02	-0.016
		80.30		-4.350E-01	5.429E-01	7.430E-01	6.491E-02	-0.585
BI-207		439.56	*	-1.840E-02	7.613E-02	1.203E-01	9.971E-03	-0.153
		72.80		3.040E-01	2.354E-01	3.581E-01	2.936E-02	0.849
	+	74.97		7.435E-01	1.570E-01	2.770E-01	2.309E-02	2.684
		84.90		3.171E-01	2.480E-01	3.747E-01	3.428E-02	0.846
TL-207		569.67		1.252E-02	3.523E-02	6.072E-02	5.144E-03	0.206
		1063.62	*	-2.681E-02	5.853E-02	8.898E-02	7.714E-03	-0.301
		1770.23		1.841E-01	4.036E-01	6.773E-01	5.671E-02	0.272
		81.07		-4.933E-01	2.897E-01	3.730E-01	3.283E-02	-1.323
		83.78		1.482E-01	1.661E-01	2.475E-01	2.239E-02	0.599
		94.90		5.784E-01	2.980E-01	4.623E-01	4.156E-02	1.251
		122.32		2.915E-01	2.080E+00	3.321E+00	3.125E-01	0.088
		144.24		-2.522E-01	7.834E-01	1.272E+00	1.217E-01	-0.198
		154.21		1.869E-01	4.514E-01	7.745E-01	7.269E-02	0.241
	+	269.46		6.187E-01	3.119E-01	3.958E-01	3.689E-02	1.563
PO-209		323.87	*	2.856E-01	8.065E-01	1.345E+00	2.403E-01	0.212
	+	338.28		6.920E+00	2.257E+00	2.995E+00	3.726E-01	2.310
		445.03		9.074E-02	2.691E+00	4.345E+00	5.158E-01	0.021
		260.50		2.814E-01	1.153E+01	1.910E+01	1.747E+00	0.015
		262.80		-2.124E+01	3.151E+01	5.011E+01	4.583E+00	-0.424
		896.60	*	-6.884E-01	8.422E+00	1.363E+01	1.235E+00	-0.050
BI-210		46.50	*	2.914E+00	4.715E+00	7.912E+00	7.469E-01	0.368
PB-210		46.50	*	2.914E+00	4.715E+00	7.912E+00	7.469E-01	0.368
PO-210		46.50	*	2.914E+00	4.714E+00	7.912E+00	6.783E-01	0.368
PB-211		404.84	*	-3.599E-01	1.359E+00	1.848E+00	1.157E+00	-0.195
BI-212		427.08		-1.497E+00	2.717E+00	3.939E+00	2.446E+00	-0.380
		831.96		-7.800E-01	1.732E+00	2.202E+00	1.381E+00	-0.354
	+	727.18	*	1.254E+00	6.449E-01	8.092E-01	8.019E-02	1.550
		785.46		7.998E-01	2.098E+00	3.573E+00	3.123E-01	0.224
		1620.62		2.032E+00	1.656E+00	3.190E+00	2.745E-01	0.637
		81.07		-4.933E-01	2.897E-01	3.730E-01	3.283E-02	-1.323
PO-215		83.78		1.482E-01	1.661E-01	2.475E-01	2.239E-02	0.599
		94.90		5.784E-01	2.980E-01	4.623E-01	4.156E-02	1.251
		122.32		2.915E-01	2.080E+00	3.321E+00	3.125E-01	0.088
		144.24		-2.522E-01	7.834E-01	1.272E+00	1.217E-01	-0.198
		154.21		1.869E-01	4.514E-01	7.745E-01	7.269E-02	0.241
	+	269.46		6.187E-01	3.119E-01	3.958E-01	3.689E-02	1.563
		323.87	*	2.856E-01	8.065E-01	1.345E+00	2.403E-01	0.212
	+	338.28		6.920E+00	2.257E+00	2.995E+00	3.726E-01	2.310
		445.03		9.074E-02	2.691E+00	4.345E+00	5.158E-01	0.021
	+	271.23		7.938E-01	4.025E-01	5.411E-01	5.822E-02	1.467
RN-219		401.81	*	2.057E-01	5.077E-01	8.435E-01	1.243E-01	0.244
RN-220		549.76	*	-5.851E+00	2.716E+01	4.484E+01	3.806E+00	-0.130
RA-223		81.07		-4.933E-01	2.897E-01	3.730E-01	3.283E-02	-1.323
		83.78		1.482E-01	1.661E-01	2.475E-01	2.239E-02	0.599
		94.90		5.784E-01	2.980E-01	4.623E-01	4.156E-02	1.251

---- 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		2.915E-01	2.080E+00	3.321E+00	3.125E-01	0.088
		144.24		-2.522E-01	7.834E-01	1.272E+00	1.217E-01	-0.198
		154.21		1.869E-01	4.514E-01	7.745E-01	7.269E-02	0.241
	+	269.46		6.187E-01	3.119E-01	3.958E-01	3.689E-02	1.563
		323.87	*	2.856E-01	8.065E-01	1.345E+00	2.403E-01	0.212
	+	338.28		6.920E+00	2.257E+00	2.995E+00	3.726E-01	2.310
		445.03		9.074E-02	2.691E+00	4.345E+00	5.158E-01	0.021
		79.80		4.539E-01	2.029E+00	2.941E+00	6.333E-01	0.154
		236.00		3.485E-02	3.022E-01	4.446E-01	5.585E-02	0.078
		256.20	*	-1.607E-01	4.583E-01	7.439E-01	1.164E-01	-0.216
		286.10		1.120E+00	1.825E+00	3.098E+00	4.195E-01	0.362
		299.80		-2.862E+00	3.395E+00	3.142E+00	5.568E-01	-0.911
		304.40		5.480E-01	2.381E+00	3.494E+00	6.515E-01	0.157
		334.20		-7.488E-01	3.158E+00	4.427E+00	8.637E-01	-0.169
TH-227		79.80		4.539E-01	2.029E+00	2.941E+00	6.414E-01	0.154
	+	94.00		7.203E+00	3.688E+00	4.491E+00	9.856E-01	1.604
		236.00		3.485E-02	3.021E-01	4.446E-01	5.081E-02	0.078
		256.20	*	-1.607E-01	4.585E-01	7.439E-01	1.362E-01	-0.216
		286.10		1.120E+00	2.138E+00	3.098E+00	3.111E+00	0.362
		299.80		-2.862E+00	3.395E+00	3.142E+00	5.568E-01	-0.911
		304.40		5.480E-01	2.381E+00	3.494E+00	6.515E-01	0.157
		334.20		-7.488E-01	3.158E+00	4.427E+00	8.637E-01	-0.169
TH-229		85.43		4.136E-01	2.500E-01	3.817E-01	3.512E-02	1.084
	+	88.47		3.392E-01	1.635E-01	2.523E-01	2.377E-02	1.345
		100.00		9.948E-02	2.061E-01	3.365E-01	2.959E-02	0.296
		193.63	*	-2.865E-01	5.767E-01	9.443E-01	8.273E-02	-0.303
PA-231	+	210.97		2.213E+00	1.261E+00	1.663E+00	1.481E-01	1.331
		283.67	*	8.063E-01	1.939E+00	3.038E+00	4.704E-01	0.265
TH-231	+	301.29		6.623E-01	9.472E-01	1.231E+00	1.548E-01	0.538
		81.07		-4.933E-01	2.897E-01	3.730E-01	3.283E-02	-1.323
		83.78		1.482E-01	1.661E-01	2.475E-01	2.239E-02	0.599
		94.90		5.784E-01	2.980E-01	4.623E-01	4.156E-02	1.251
U-231		122.32		2.915E-01	2.080E+00	3.321E+00	3.125E-01	0.088
		144.24		-2.522E-01	7.834E-01	1.272E+00	1.217E-01	-0.198
		154.21		1.869E-01	4.514E-01	7.745E-01	7.269E-02	0.241
	+	269.46		6.187E-01	3.119E-01	3.958E-01	3.689E-02	1.563
		323.87	*	2.856E-01	8.065E-01	1.345E+00	2.403E-01	0.212
	+	338.28		6.920E+00	2.257E+00	2.995E+00	3.726E-01	2.310
		445.03		9.074E-02	2.691E+00	4.345E+00	5.158E-01	0.021
		84.21		5.776E+00	5.892E+00	8.805E+00	7.998E-01	0.656
	+	92.29		5.872E+00	2.768E+00	3.903E+00	3.566E-01	1.505
		95.87	*	1.314E-01	1.121E+00	1.606E+00	1.437E-01	0.082
PA-233		108.00		1.159E+00	1.946E+00	3.182E+00	2.759E-01	0.364
	+	75.28		2.170E+01	5.347E+00	8.437E+00	1.282E+00	2.572
	+	86.59		4.863E+00	2.650E+00	3.550E+00	9.603E-01	1.370
	+	300.12		4.616E-01	6.613E-01	8.800E-01	1.333E-01	0.525
		311.98	*	-1.353E-03	7.781E-02	1.275E-01	1.180E-02	-0.011
		340.50		3.297E+00	1.194E+00	1.606E+00	3.838E-01	2.053
		398.62		-7.228E-01	2.586E+00	4.096E+00	1.084E+00	-0.176

## ---- 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	-8.280E-01	2.027E+00	3.166E+00	6.768E-01	-0.262
		63.00	1.971E+00	3.082E+00	3.408E+00	5.116E-01	0.578
		94.67	5.629E-01	2.282E-01	3.500E-01	4.435E-02	1.608
		98.44	5.756E-03	1.063E-01	1.673E-01	9.339E-02	0.034
		99.86	2.364E-01	5.212E-01	8.498E-01	7.478E-02	0.278
		111.00	-2.692E-01	2.141E-01	3.158E-01	3.827E-02	-0.853
		131.20	-2.837E-02	1.297E-01	2.031E-01	1.755E-02	-0.140
		152.70	-2.132E-02	3.653E-01	6.162E-01	1.047E-01	-0.035
		186.00	4.118E+00	2.574E+00	3.167E+00	9.892E-01	1.300
		226.40	-2.975E-02	4.673E-01	7.756E-01	1.044E-01	-0.038
		227.20	-3.458E-01	5.069E-01	8.149E-01	7.348E-02	-0.424
		248.90	-7.467E-01	1.192E+00	1.644E+00	3.718E-01	-0.454
		293.70	3.916E+00	1.252E+00	1.838E+00	3.225E-01	2.131
	+	369.80	9.918E-01	1.010E+00	1.716E+00	3.722E-01	0.578
		568.70	-8.693E-01	1.193E+00	1.889E+00	1.601E-01	-0.460
		569.50	1.155E-01	3.131E-01	5.400E-01	4.575E-02	0.214
		574.00	-8.077E-02	1.695E+00	2.835E+00	2.400E-01	-0.028
		699.00	-4.413E-02	9.015E-01	1.490E+00	2.827E-01	-0.030
		706.10	1.115E-01	1.269E+00	2.119E+00	9.440E-01	0.053
		733.00	-1.816E-01	5.092E-01	6.940E-01	1.538E-01	-0.262
		742.81	1.432E+00	1.798E+00	2.730E+00	1.835E+00	0.525
		796.30	2.995E+00	1.694E+00	2.259E+00	6.123E-01	1.326
		805.60	8.003E-02	1.174E+00	1.864E+00	5.722E-01	0.043
		819.60	4.373E-01	1.301E+00	2.199E+00	8.376E-01	0.199
		826.30	-5.430E-01	9.366E-01	1.386E+00	6.210E-01	-0.392
		831.60	-2.147E-01	8.515E-01	1.163E+00	3.480E-01	-0.185
		876.40	7.128E-01	1.233E+00	1.740E+00	1.789E+00	0.410
		880.51	-7.697E-02	3.482E-01	5.566E-01	5.021E-02	-0.138
		883.24	3.362E-02	3.574E-01	5.888E-01	3.961E-01	0.057
		899.00	-4.300E-01	9.822E-01	1.496E+00	6.555E-01	-0.287
		925.00	6.245E-01	1.313E+00	2.253E+00	2.035E-01	0.277
		926.50	-4.303E-02	2.149E-01	3.207E-01	8.153E-02	-0.134
		946.00	3.388E-02	3.125E-01	5.154E-01	9.763E-02	0.066
		949.00	-1.608E-01	4.977E-01	7.790E-01	7.010E-02	-0.206
		980.50	-8.932E-01	9.276E-01	1.339E+00	1.197E-01	-0.667
		1394.10	3.666E-01	1.220E+00	2.084E+00	1.356E+00	0.176
PA-234M		766.42	1.912E+01	1.697E+01	2.543E+01	1.291E+01	0.752
		1001.03	* -1.488E+00	5.608E+00	8.880E+00	9.052E-01	-0.168
U-235	+	89.95	3.052E+00	1.644E+00	2.253E+00	6.998E-01	1.355
	+	93.35	2.241E+00	1.214E+00	1.475E+00	4.155E-01	1.519
		105.00	8.139E-01	1.249E+00	2.013E+00	6.013E-01	0.404
		143.76	* -6.415E-03	2.411E-01	3.961E-01	6.921E-02	-0.016
		163.35	-1.800E-01	5.371E-01	8.625E-01	1.641E-01	-0.209
NP-236	+	185.71	1.525E-01	8.363E-02	1.177E-01	1.023E-02	1.295
		205.31	2.577E-01	6.758E-01	1.001E+00	1.920E-01	0.258
		94.67	4.299E-01	1.690E-01	2.658E-01	2.393E-02	1.617
		98.44	4.361E-03	8.032E-02	1.265E-01	1.119E-02	0.034
		111.00	-2.036E-01	1.610E-01	2.389E-01	2.069E-02	-0.853
		160.31	* 1.469E-03	8.675E-02	1.465E-01	1.247E-02	0.010



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		7.528E-02	1.742E-01	2.838E-01	2.500E-02	0.265
		117.00	*	7.551E-02	2.226E-01	3.592E-01	3.128E-02	0.210
	+	209.75		2.230E+00	1.271E+00	1.712E+00	1.523E-01	1.303
		228.18		-3.035E-01	2.677E-01	4.191E-01	3.781E-02	-0.724
	+	277.60		3.563E-01	3.541E-01	3.779E-01	3.457E-02	0.943
AM-241		334.30		-4.518E-01	1.787E+00	2.503E+00	2.213E-01	-0.181
		59.54	*	6.304E-03	2.083E-01	3.024E-01	2.492E-02	0.021
CM-243		99.55		7.746E-02	1.792E-01	2.920E-01	2.572E-02	0.265
		103.76	*	3.297E-02	1.102E-01	1.782E-01	1.553E-02	0.185
		117.00		7.768E-02	2.290E-01	3.695E-01	3.218E-02	0.210
	+	209.75		2.198E+00	1.252E+00	1.687E+00	1.501E-01	1.303
		228.18		-3.067E-01	2.705E-01	4.234E-01	3.820E-02	-0.724
AM-246	+	277.60		3.591E-01	3.570E-01	3.810E-01	3.485E-02	0.943
		798.80		-1.163E-01	1.746E-01	2.227E-01	1.956E-02	-0.522
		1036.00		-7.715E-02	3.287E-01	5.158E-01	4.526E-02	-0.150
		1062.04		-1.567E-01	2.588E-01	3.855E-01	3.344E-02	-0.407
		1078.86	*	1.489E-01	1.556E-01	2.789E-01	2.400E-02	0.534
CM-247	+	278.00		1.477E+00	1.469E+00	1.578E+00	1.443E-01	0.936
		287.40		-1.865E-01	1.496E+00	2.447E+00	2.234E-01	-0.076
		402.60	*	1.667E-02	4.600E-02	7.628E-02	6.186E-03	0.218
CF-249		252.85		-8.538E-02	1.067E+00	1.760E+00	1.606E-01	-0.049
		333.44		-1.873E-01	2.447E-01	3.204E-01	2.836E-02	-0.584
		387.95	*	-1.014E-02	4.859E-02	7.768E-02	6.301E-03	-0.131
CF-251		176.60	*	-4.626E-02	1.437E-01	2.383E-01	2.051E-02	-0.194
		227.00		-3.238E-01	4.506E-01	7.228E-01	6.517E-02	-0.448
		285.00		3.438E-01	2.117E+00	3.518E+00	3.214E-01	0.098

# 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]G244132009      *
* Acquisition date   : 19-JAN-2010 10:54:45 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        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132009 Analyst initials: MXR1                  *
* Batch Number       : 940270 Sample Quantity : 1.1981E+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	2.042E+01	2.399E+00	6.040E-01	0.000E+00
MN-54	3.456E-02	4.756E-02	7.435E-02	0.000E+00
CD-109	2.523E+00	1.192E+00	1.340E+00	0.000E+00
SN-126	2.484E-01	1.174E-01	1.326E-01	0.000E+00
BA-137M	1.544E-01	7.108E-02	7.080E-02	0.000E+00
CS-137	1.632E-01	7.514E-02	7.484E-02	0.000E+00
HG-203	8.003E-02	7.797E-02	7.443E-02	0.000E+00
TL-208	5.505E-01	9.635E-02	6.815E-02	0.000E+00
BI-211	4.122E+00	6.863E-01	3.957E-01	0.000E+00
PB-212	1.811E+00	2.213E-01	1.101E-01	0.000E+00
PO-212	1.811E+00	2.213E-01	1.101E-01	0.000E+00
BI-214	1.388E+00	2.183E-01	1.167E-01	0.000E+00
PB-214	1.434E+00	2.497E-01	1.353E-01	0.000E+00
PO-214	1.434E+00	2.497E-01	1.353E-01	0.000E+00
PO-216	1.811E+00	2.213E-01	1.101E-01	0.000E+00
PO-218	1.434E+00	2.497E-01	1.353E-01	0.000E+00
RA-224	4.754E+00	1.613E+00	1.254E+00	0.000E+00
RA-226	1.388E+00	2.183E-01	1.167E-01	0.000E+00
AC-228	1.713E+00	3.644E-01	2.430E-01	0.000E+00
RA-228	1.713E+00	3.644E-01	2.430E-01	0.000E+00
TH-228	1.836E+00	2.244E-01	1.117E-01	0.000E+00
TH-230	1.388E+00	2.183E-01	1.167E-01	0.000E+00
TH-232	1.713E+00	3.644E-01	2.430E-01	0.000E+00
TH-234	1.691E+00	2.596E+00	2.548E+00	0.000E+00
U-234	1.388E+00	2.183E-01	1.167E-01	0.000E+00
NP-237	7.295E-01	3.748E-01	5.038E-01	0.000E+00
U-238	1.691E+00	2.596E+00	2.548E+00	0.000E+00
AM-243	4.143E-01	8.573E-02	1.062E-01	0.000E+00
ANH-511	1.063E-01	7.487E-02	5.889E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Key-Line			
Activity	K.L.	Act error	MDA

Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)
BE-7	-4.254E-02	3.891E-01	6.381E-01	0.000E+00 NOT IDENT.
NA-22	2.908E-02	4.698E-02	8.534E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.029E+05	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-9.135E-03	3.097E-02	4.724E-02	0.000E+00 NOT IDENT.
TI-44	0.000E+00	7.141E-02	9.446E-02	0.000E+00 FAIL ABUN
SC-46	-1.613E-03	4.781E-02	7.976E-02	0.000E+00 FAIL ABUN
V-48	-3.936E-02	7.755E-02	1.212E-01	0.000E+00 NOT IDENT.
CR-51	8.254E-02	4.313E-01	7.404E-01	0.000E+00 NOT IDENT.
MN-52	-1.236E-01	2.097E-01	3.206E-01	0.000E+00 FAIL ABUN
CO-56	-6.956E-04	4.660E-02	7.818E-02	0.000E+00 NOT IDENT.
CO-57	1.162E-02	2.915E-02	4.931E-02	0.000E+00 NOT IDENT.
CO-58	-2.990E-02	4.016E-02	6.187E-02	0.000E+00 NOT IDENT.
FE-59	-6.626E-02	1.015E-01	1.535E-01	0.000E+00 NOT IDENT.
CO-60	-8.054E-03	4.325E-02	7.155E-02	0.000E+00 NOT IDENT.
ZN-65	1.251E-02	1.124E-01	1.620E-01	0.000E+00 NOT IDENT.
GE-68	-1.517E-01	1.383E+00	2.250E+00	0.000E+00 NOT IDENT.
AS-73	5.280E-01	1.029E+00	1.811E+00	0.000E+00 NOT IDENT.
AS-74	5.661E-02	9.768E-02	1.756E-01	0.000E+00 NOT IDENT.
SE-75	4.762E-03	5.164E-02	8.267E-02	0.000E+00 NOT IDENT.
BR-77	-1.504E+00	8.795E+00	1.424E+01	0.000E+00 FAIL ABUN
SR-82	-6.339E-01	4.141E-01	5.840E-01	0.000E+00 NOT IDENT.
RB-83	-1.228E-02	8.096E-02	1.313E-01	0.000E+00 NOT IDENT.
RB-84	-3.616E-02	8.463E-02	1.357E-01	0.000E+00 NOT IDENT.
KR-85	1.496E+01	1.063E+01	1.714E+01	0.000E+00 NOT IDENT.
SR-85	7.578E-02	5.386E-02	8.680E-02	0.000E+00 NOT IDENT.
RB-86	-2.154E-01	8.644E-01	1.383E+00	0.000E+00 NOT IDENT.
Y-88	2.412E-02	4.005E-02	7.406E-02	0.000E+00 NOT IDENT.
ZR-88	-9.364E-03	3.713E-02	6.116E-02	0.000E+00 NOT IDENT.
Y-91	6.653E+00	1.858E+01	3.293E+01	0.000E+00 NOT IDENT.
NB-94	-4.664E-03	4.103E-02	6.927E-02	0.000E+00 NOT IDENT.
NB-95	-1.683E-02	5.093E-02	8.386E-02	0.000E+00 NOT IDENT.
NB-95M	1.437E-02	1.571E-01	2.400E-01	0.000E+00 NOT IDENT.
ZR-95	2.605E-02	7.563E-02	1.322E-01	0.000E+00 NOT IDENT.
NB-97	0.000E+00	4.033E+04	0.000E+00	0.000E+00 SHORT HLIF
ZR-97	0.000E+00	7.686E+05	0.000E+00	0.000E+00 SHORT HLIF
MO-99	-8.570E+00	1.003E+01	1.553E+01	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	1.751E+15	0.000E+00	0.000E+00 SHORT HLIF
RH-101	2.261E-02	3.711E-02	6.476E-02	0.000E+00 NOT IDENT.
RH-102	-7.304E-03	3.462E-02	5.631E-02	0.000E+00 NOT IDENT.
RU-103	-1.801E-02	4.787E-02	7.637E-02	0.000E+00 FAIL ABUN
RH-106	1.527E-01	3.452E-01	6.138E-01	0.000E+00 FAIL ABUN
RU-106	1.527E-01	3.448E-01	6.138E-01	0.000E+00 FAIL ABUN
AG-108M	-2.443E-02	3.840E-02	6.067E-02	0.000E+00 NOT IDENT.
AG-110M	-2.171E-02	4.529E-02	6.330E-02	0.000E+00 NOT IDENT.
IN-111	3.007E-01	1.030E+00	1.592E+00	0.000E+00 NOT IDENT.
IN-113M	1.959E-02	5.295E-02	9.092E-02	0.000E+00 NOT IDENT.
SN-113	1.959E-02	5.295E-02	9.092E-02	0.000E+00 NOT IDENT.
IN-114M	1.272E-01	2.245E-01	3.569E-01	0.000E+00 NOT IDENT.
CD-115	-2.183E+00	8.592E+00	1.464E+01	0.000E+00 NOT IDENT.
SN-117M	-1.180E-02	5.611E-02	9.812E-02	0.000E+00 NOT IDENT.
SB-122	2.241E+00	1.795E+00	3.356E+00	0.000E+00 NOT IDENT.
I-123	0.000E+00	1.420E+06	0.000E+00	0.000E+00 SHORT HLIF
TE-123M	1.492E-03	3.038E-02	5.368E-02	0.000E+00 NOT IDENT.
I-124	-6.365E-01	6.858E-01	9.103E-01	0.000E+00 NOT IDENT.
SB-124	-3.613E-02	8.276E-02	1.242E-01	0.000E+00 FAIL ABUN
SB-125	-4.653E-02	1.124E-01	1.816E-01	0.000E+00 FAIL ABUN
TE-125M	4.001E+00	1.026E+01	1.744E+01	0.000E+00 NOT IDENT.
I-126	2.283E-01	2.266E-01	3.729E-01	0.000E+00 NOT IDENT.
SB-126	1.909E-02	1.500E-01	2.354E-01	0.000E+00 FAIL ABUN
SB-127	3.140E-01	1.086E+00	1.905E+00	0.000E+00 NOT IDENT.
XE-127	-4.044E-02	5.160E-02	8.663E-02	0.000E+00 NOT IDENT.
I-131	-6.894E-04	1.196E-01	2.013E-01	0.000E+00 NOT IDENT.
TE-132	-7.247E-01	6.331E-01	1.020E+00	0.000E+00 NOT IDENT.
BA-133	-5.117E-02	5.784E-02	7.767E-02	0.000E+00 FAIL ABUN
I-133	0.000E+00	2.588E+03	0.000E+00	0.000E+00 SHORT HLIF
CS-134	0.000E+00	7.607E-02	1.155E-01	0.000E+00 FAIL ABUN
CS-135	1.472E-01	1.874E-01	2.985E-01	0.000E+00 NOT IDENT.
I-135	0.000E+00	3.650E+14	0.000E+00	0.000E+00 SHORT HLIF
CS-136	1.923E-02	1.074E-01	1.814E-01	0.000E+00 FAIL ABUN
CE-139	1.168E-02	3.228E-02	5.762E-02	0.000E+00 NOT IDENT.
BA-140	-1.903E-02	2.651E-01	4.573E-01	0.000E+00 NOT IDENT.
LA-140	-3.727E-03	1.028E-01	1.708E-01	0.000E+00 NOT IDENT.
CE-141	-2.222E-02	6.841E-02	1.160E-01	0.000E+00 NOT IDENT.
CE-143	0.000E+00	1.162E+02	0.000E+00	0.000E+00 SHORT HLIF
CE-144	-8.172E-02	2.319E-01	3.765E-01	0.000E+00 NOT IDENT.
PM-144	5.196E-02	3.946E-02	7.383E-02	0.000E+00 NOT IDENT.

PR-144	3.519E+00	2.672E+00	5.000E+00	0.000E+00	NOT IDENT.
PM-146	5.087E-02	5.509E-02	9.697E-02	0.000E+00	NOT IDENT.
ND-147	3.711E-01	5.819E-01	1.053E+00	0.000E+00	FAIL ABUN
PM-149	2.973E+01	7.518E+01	1.310E+02	0.000E+00	NOT IDENT.
EU-152	-3.680E-02	1.249E-01	1.798E-01	0.000E+00	NOT IDENT.
GD-153	4.410E-04	9.906E-02	1.464E-01	0.000E+00	NOT IDENT.
EU-154	1.211E-01	1.273E-01	2.388E-01	0.000E+00	NOT IDENT.
EU-155	5.411E-02	1.220E-01	2.082E-01	0.000E+00	FAIL ABUN
TB-160	-7.064E-02	1.709E-01	2.745E-01	0.000E+00	FAIL ABUN
HO-166M	-2.379E-02	6.783E-02	1.118E-01	0.000E+00	FAIL ABUN
TM-171	-6.189E+00	3.660E+01	5.522E+01	0.000E+00	NOT IDENT.
LU-176	-2.036E-03	2.955E-02	4.836E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.557E+00	2.100E+00	0.000E+00	FAIL ABUN
LU-177M	-2.012E-02	2.381E-01	3.446E-01	0.000E+00	NOT IDENT.
HF-181	6.146E-03	5.202E-02	8.676E-02	0.000E+00	NOT IDENT.
W-181	-5.033E-01	5.033E-01	7.365E-01	0.000E+00	NOT IDENT.
TA-182	-1.233E-01	1.986E-01	3.164E-01	0.000E+00	FAIL ABUN
RE-183	-7.348E-02	1.166E-01	1.999E-01	0.000E+00	FAIL ABUN
RE-184	-2.265E-02	2.773E-01	4.754E-01	0.000E+00	NOT IDENT.
OS-185	6.741E-03	4.641E-02	8.050E-02	0.000E+00	NOT IDENT.
RE-188	1.391E-01	1.870E-01	3.390E-01	0.000E+00	NOT IDENT.
W-188	3.189E-01	9.705E+00	1.458E+01	0.000E+00	FAIL ABUN
IR-192	6.255E-03	4.073E-02	6.982E-02	0.000E+00	FAIL ABUN
AU-195	1.132E-01	2.495E-01	4.194E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.536E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-2.364E+00	5.966E+00	1.032E+01	0.000E+00	NOT IDENT.
TL-202	-1.840E-02	7.461E-02	1.217E-01	0.000E+00	NOT IDENT.
BI-207	-2.681E-02	5.736E-02	8.910E-02	0.000E+00	FAIL ABUN
TL-207	2.856E-01	7.904E-01	1.366E+00	0.000E+00	FAIL ABUN
PO-209	-6.884E-01	8.254E+00	1.368E+01	0.000E+00	NOT IDENT.
BI-210	2.914E+00	4.621E+00	8.212E+00	0.000E+00	NOT IDENT.
PB-210	2.914E+00	4.621E+00	8.212E+00	0.000E+00	NOT IDENT.
PO-210	2.914E+00	4.620E+00	8.212E+00	0.000E+00	NOT IDENT.
PB-211	-3.599E-01	1.332E+00	1.871E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.320E-01	8.139E-01	0.000E+00	FAIL ABUN
PO-215	2.856E-01	7.904E-01	1.366E+00	0.000E+00	FAIL ABUN
RN-219	2.057E-01	4.976E-01	8.543E-01	0.000E+00	FAIL ABUN
RN-220	-5.851E+00	2.662E+01	4.525E+01	0.000E+00	NOT IDENT.
RA-223	2.856E-01	7.904E-01	1.366E+00	0.000E+00	FAIL ABUN
AC-227	-1.607E-01	4.491E-01	7.573E-01	0.000E+00	NOT IDENT.
TH-227	-1.607E-01	4.494E-01	7.573E-01	0.000E+00	FAIL ABUN
TH-229	-2.865E-01	5.652E-01	9.645E-01	0.000E+00	FAIL ABUN
PA-231	8.063E-01	1.900E+00	3.089E+00	0.000E+00	FAIL ABUN
TH-231	2.856E-01	7.904E-01	1.366E+00	0.000E+00	FAIL ABUN
U-231	1.314E-01	1.098E+00	1.654E+00	0.000E+00	FAIL ABUN
PA-233	-1.353E-03	7.626E-02	1.295E-01	0.000E+00	FAIL ABUN
PA-234	3.388E-02	3.062E-01	5.168E-01	0.000E+00	FAIL ABUN
PA-234M	-1.488E+00	5.496E+00	8.898E+00	0.000E+00	NOT IDENT.
U-235	-6.415E-03	2.363E-01	4.060E-01	0.000E+00	FAIL ABUN
NP-236	1.469E-03	8.502E-02	1.500E-01	0.000E+00	NOT IDENT.
NP-239	7.551E-02	2.182E-01	3.690E-01	0.000E+00	FAIL ABUN
AM-241	6.304E-03	2.042E-01	3.130E-01	0.000E+00	NOT IDENT.
CM-243	3.297E-02	1.080E-01	1.834E-01	0.000E+00	FAIL ABUN
AM-246	1.489E-01	1.525E-01	2.792E-01	0.000E+00	NOT IDENT.
CM-247	1.667E-02	4.508E-02	7.726E-02	0.000E+00	FAIL ABUN
CF-249	-1.014E-02	4.762E-02	7.871E-02	0.000E+00	NOT IDENT.
CF-251	-4.626E-02	1.409E-01	2.437E-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]G244132009.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 10:54:45
Sample ID          : G244132009          Sample quantity  : 1.19810E+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           : 940270             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	657	10.67*	9.455E-01	2.042E+01	2.042E+01	11.99
MN-54	834.83	17	99.97*	1.562E+00	3.350E-02	3.456E-02	140.44
CD-109	88.03	153	3.72*	5.199E+00	2.471E+00	2.523E+00	48.20
SN-126	64.28	56	9.60	2.738E+00	6.694E-01	6.694E-01	156.35
	86.94	153	8.90	5.199E+00	1.033E+00	1.033E+00	62.93
	87.57	153	37.00*	5.199E+00	2.484E-01	2.484E-01	48.20
BA-137M	661.65	85	89.98*	1.922E+00	1.543E-01	1.544E-01	46.98
CS-137	661.65	85	85.12*	1.922E+00	1.631E-01	1.632E-01	46.98
HG-203	70.83	-----	4.75	3.714E+00	-----	Line Not Found	-----
	72.87	-----	8.00	3.944E+00	-----	Line Not Found	-----
	82.60	-----	3.55	4.860E+00	-----	Line Not Found	-----
	279.20	62	77.30*	3.880E+00	6.499E-02	8.003E-02	99.42
TL-208	277.35	62	6.80	3.880E+00	7.387E-01	7.387E-01	99.79
	510.84	81	21.60	2.391E+00	4.921E-01	4.921E-01	72.36
	583.14	317	84.20*	2.142E+00	5.505E-01	5.505E-01	17.86
	860.37	-----	12.46	1.522E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.944E+00	-----	Line Not Found	-----
	351.07	549	12.94*	3.226E+00	4.122E+00	4.122E+00	16.99
PB-212	74.81	364	10.70	4.166E+00	2.555E+00	2.555E+00	23.09
	77.11	585	18.00	4.384E+00	2.324E+00	2.324E+00	16.99
	87.30	153	8.00	5.199E+00	1.149E+00	1.149E+00	49.23
	238.63	1120	44.60*	4.345E+00	1.811E+00	1.811E+00	12.47
	300.09	35	3.41	3.645E+00	8.935E-01	8.935E-01	142.86
PO-212	74.81	364	10.70	4.166E+00	2.555E+00	2.555E+00	23.09
	77.11	585	18.00	4.384E+00	2.324E+00	2.324E+00	16.99
	87.30	153	8.00	5.199E+00	1.149E+00	1.149E+00	49.23
	115.19	-----	0.60	6.043E+00	-----	Line Not Found	-----
	238.63	1120	44.60*	4.345E+00	1.811E+00	1.811E+00	12.47
	300.09	35	3.41	3.645E+00	8.935E-01	8.935E-01	142.86
BI-214	609.31	423	46.30*	2.065E+00	1.388E+00	1.388E+00	16.05
	1120.29	68	15.10	1.193E+00	1.181E+00	1.181E+00	50.88
	1764.49	51	15.80	8.253E-01	1.216E+00	1.216E+00	47.97

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-214	74.81	364	6.21	4.166E+00	4.403E+00	4.403E+00	22.38
	77.11	585	10.50	4.384E+00	3.984E+00	3.984E+00	18.62
	87.30	153	4.67	5.199E+00	1.968E+00	1.968E+00	48.82
	241.98	258	7.49	4.306E+00	2.507E+00	2.507E+00	35.07
	295.21	309	19.20	3.700E+00	1.361E+00	1.361E+00	22.49
PO-214	351.92	549	37.20*	3.226E+00	1.434E+00	1.434E+00	17.77
	74.81	364	6.21	4.166E+00	4.403E+00	4.403E+00	22.38
	77.11	585	10.50	4.384E+00	3.984E+00	3.984E+00	18.62
	87.30	153	4.67	5.199E+00	1.968E+00	1.968E+00	48.82
	241.98	258	7.49	4.306E+00	2.507E+00	2.507E+00	35.07
PO-216	295.21	309	19.20	3.700E+00	1.361E+00	1.361E+00	22.49
	351.92	549	37.20*	3.226E+00	1.434E+00	1.434E+00	17.77
	74.81	364	10.70	4.166E+00	2.555E+00	2.555E+00	23.09
	77.11	585	18.00	4.384E+00	2.324E+00	2.324E+00	16.99
	87.30	153	8.00	5.199E+00	1.149E+00	1.149E+00	49.23
PO-218	238.63	1120	44.60*	4.345E+00	1.811E+00	1.811E+00	12.47
	300.09	35	3.41	3.645E+00	8.935E-01	8.935E-01	142.86
	74.81	364	6.21	4.166E+00	4.403E+00	4.403E+00	22.38
	77.11	585	10.50	4.384E+00	3.984E+00	3.984E+00	18.62
	87.30	153	4.67	5.199E+00	1.968E+00	1.968E+00	48.82
RA-224	241.98	258	7.49	4.306E+00	2.507E+00	2.507E+00	35.07
	295.21	309	19.20	3.700E+00	1.361E+00	1.361E+00	22.49
	351.92	549	37.20*	3.226E+00	1.434E+00	1.434E+00	17.77
	240.98	258	3.95*	4.306E+00	4.754E+00	4.754E+00	34.62
	609.31	423	46.30*	2.065E+00	1.388E+00	1.388E+00	16.05
AC-228	1120.29	68	15.10	1.193E+00	1.181E+00	1.181E+00	50.88
	1764.49	51	15.80	8.253E-01	1.216E+00	1.216E+00	47.97
	338.32	201	11.40	3.327E+00	1.657E+00	1.657E+00	51.13
	911.07	219	27.70*	1.444E+00	1.713E+00	1.713E+00	21.70
	969.11	133	16.60	1.364E+00	1.845E+00	1.845E+00	35.30
TH-228	338.32	201	11.40	3.327E+00	1.657E+00	1.657E+00	51.13
	911.07	219	27.70*	1.444E+00	1.713E+00	1.713E+00	21.70
	969.11	133	16.60	1.364E+00	1.845E+00	1.845E+00	35.30
	74.81	364	10.70	4.166E+00	2.555E+00	2.591E+00	21.15
	77.11	585	18.00	4.384E+00	2.324E+00	2.357E+00	16.99
TH-230	87.30	153	8.00	5.199E+00	1.149E+00	1.165E+00	48.20
	238.63	1120	44.60*	4.345E+00	1.811E+00	1.836E+00	12.47
	300.09	35	3.41	3.645E+00	8.935E-01	9.060E-01	154.32
	609.31	423	46.30*	2.065E+00	1.388E+00	1.388E+00	16.05
	1120.29	68	15.10	1.193E+00	1.181E+00	1.181E+00	50.88
TH-232	1764.49	51	15.80	8.253E-01	1.216E+00	1.216E+00	47.97
	338.32	201	11.40	3.327E+00	1.657E+00	1.657E+00	31.40
	911.07	219	27.70*	1.444E+00	1.713E+00	1.713E+00	21.70
	969.11	133	16.60	1.364E+00	1.845E+00	1.845E+00	35.30
	63.29	56	3.80*	2.738E+00	1.691E+00	1.691E+00	156.65
U-234	92.38	177	5.41	5.508E+00	1.864E+00	1.864E+00	49.74
	609.31	423	46.30*	2.065E+00	1.388E+00	1.388E+00	16.05
	1120.29	68	15.10	1.193E+00	1.181E+00	1.181E+00	50.88
	1764.49	51	15.80	8.253E-01	1.216E+00	1.216E+00	47.97

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
NP-237	86.50	153	12.60*	5.199E+00	7.295E-01	7.295E-01	52.44
	95.87	-----	2.60	5.636E+00	-----	Line Not Found	-----
U-238	63.29	56	3.80*	2.738E+00	1.691E+00	1.691E+00	156.65
	92.38	177	5.41	5.508E+00	1.864E+00	1.864E+00	47.13
AM-243	74.67	364	66.00*	4.166E+00	4.143E-01	4.143E-01	21.12
	86.72	153	0.34	5.199E+00	2.736E+01	2.736E+01	48.20
	117.66	-----	0.55	6.054E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.887E+00	-----	Line Not Found	-----
ANH-511	511.00	81	100.00*	2.391E+00	1.063E-01	1.063E-01	71.88

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	2.042E+01	2.042E+01	0.245E+01	11.99	
MN-54	312.70D	1.03	3.350E-02	3.456E-02	4.853E-02	140.44	
CD-109	464.00D	1.02	2.471E+00	2.523E+00	1.216E+00	48.20	
SN-126	1.00E+05Y	1.00	2.484E-01	2.484E-01	1.197E-01	48.20	
BA-137M	30.17Y	1.00	1.543E-01	1.544E-01	0.725E-01	46.98	
CS-137	30.17Y	1.00	1.631E-01	1.632E-01	0.767E-01	46.98	
HG-203	46.60D	1.23	6.499E-02	8.003E-02	7.957E-02	99.42	
TL-208	1.41E+10Y	1.00	5.505E-01	5.505E-01	0.983E-01	17.86	
BI-211	7.04E+08Y	1.00	4.122E+00	4.122E+00	0.700E+00	16.99	
PB-212	1.41E+10Y	1.00	1.811E+00	1.811E+00	0.226E+00	12.47	
PO-212	1.41E+10Y	1.00	1.811E+00	1.811E+00	0.226E+00	12.47	
BI-214	1600.00Y	1.00	1.388E+00	1.388E+00	0.223E+00	16.05	
PB-214	1600.00Y	1.00	1.434E+00	1.434E+00	0.255E+00	17.77	
PO-214	1600.00Y	1.00	1.434E+00	1.434E+00	0.255E+00	17.77	
PO-216	1.41E+10Y	1.00	1.811E+00	1.811E+00	0.226E+00	12.47	
PO-218	1600.00Y	1.00	1.434E+00	1.434E+00	0.255E+00	17.77	
RA-224	1.41E+10Y	1.00	4.754E+00	4.754E+00	1.646E+00	34.62	
RA-226	1600.00Y	1.00	1.388E+00	1.388E+00	0.223E+00	16.05	
AC-228	1.41E+10Y	1.00	1.713E+00	1.713E+00	0.372E+00	21.70	
RA-228	1.41E+10Y	1.00	1.713E+00	1.713E+00	0.372E+00	21.70	
TH-228	1.91Y	1.01	1.811E+00	1.836E+00	0.229E+00	12.47	
TH-230	4.47E+09Y	1.00	1.388E+00	1.388E+00	0.223E+00	16.05	
TH-232	1.41E+10Y	1.00	1.713E+00	1.713E+00	0.372E+00	21.70	
TH-234	4.47E+09Y	1.00	1.691E+00	1.691E+00	2.649E+00	156.65	
U-234	4.47E+09Y	1.00	1.388E+00	1.388E+00	0.223E+00	16.05	
NP-237	2.14E+06Y	1.00	7.295E-01	7.295E-01	3.825E-01	52.44	
U-238	4.47E+09Y	1.00	1.691E+00	1.691E+00	2.649E+00	156.65	
AM-243	7380.00Y	1.00	4.143E-01	4.143E-01	0.875E-01	21.12	
ANH-511	1.00E+09Y	1.00	1.063E-01	1.063E-01	0.764E-01	71.88	

Total Activity : 5.984E+01 5.994E+01

Grand Total Activity : 5.984E+01 5.994E+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
8	89.97	141	351	1.02	180.64	178	13	1.96E-02	44.0	5.35E+00	T
0	186.19	136	330	1.01	372.98	368	9	1.88E-02	54.1	5.16E+00	T
0	209.72	110	261	1.69	420.00	416	9	1.53E-02	56.3	4.77E+00	T
0	270.62	106	169	1.87	541.73	537	10	1.48E-02	49.5	3.96E+00	T
0	409.96	24	117	1.01	820.26	815	9	3.38E-03	****	2.86E+00	T
0	463.14	91	67	1.17	926.55	921	10	1.26E-02	39.8	2.59E+00	T
0	727.45	84	80	1.67	1454.84	1449	15	1.16E-02	50.5	1.77E+00	T
0	795.10	61	42	1.64	1590.06	1584	12	8.47E-03	49.6	1.64E+00	T
0	935.43	23	55	1.57	1870.51	1862	11	3.18E-03	****	1.41E+00	T
0	1378.65	30	17	1.42	2756.31	2749	15	4.15E-03	72.5	9.92E-01	
0	1410.62	24	32	0.86	2820.20	2809	22	3.39E-03	****	9.73E-01	
0	1847.24	25	4	3.28	3692.73	3684	16	3.52E-03	52.9	8.04E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132009.CNF;1
* Acquisition date   : 19-JAN-2010 10:54:45   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        : 5-JAN-2010 12:00:00.   Nuclide Library   : SOLID
* Sample ID          : G244132009             Analyst initials    : MXR1
* Batch Number       : 940270                 Sample Quantity     : 1.19810E+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	2.042E+01	2.448E+00	6.055E-01	5.383E-02	33.719
MN-54	3.456E-02	4.853E-02	7.404E-02	6.590E-03	0.467
CD-109	2.523E+00	1.216E+00	1.300E+00	1.230E-01	1.940
SN-126	2.484E-01	1.197E-01	1.287E-01	1.212E-02	1.930
BA-137M	1.544E-01	7.253E-02	7.031E-02	5.759E-03	2.196
CS-137	1.632E-01	7.667E-02	7.432E-02	6.101E-03	2.196
HG-203	8.003E-02	7.957E-02	7.317E-02	6.861E-03	1.094
TL-208	5.505E-01	9.832E-02	6.758E-02	6.137E-03	8.146
BI-211	4.122E+00	7.003E-01	3.901E-01	3.548E-02	10.566
PB-212	1.811E+00	2.259E-01	1.081E-01	1.094E-02	16.754
PO-212	1.811E+00	2.259E-01	1.081E-01	1.094E-02	16.754
BI-214	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982
PB-214	1.434E+00	2.548E-01	1.334E-01	1.398E-02	10.749
PO-214	1.434E+00	2.548E-01	1.334E-01	1.398E-02	10.749
PO-216	1.811E+00	2.259E-01	1.081E-01	1.094E-02	16.754
PO-218	1.434E+00	2.548E-01	1.334E-01	1.398E-02	10.749
RA-224	4.754E+00	1.646E+00	1.230E+00	1.118E-01	3.863
RA-226	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.713E+00	3.718E-01	2.423E-01	2.804E-02	7.071
RA-228	1.713E+00	3.718E-01	2.423E-01	2.804E-02	7.071
TH-228	1.836E+00	2.290E-01	1.096E-01	1.110E-02	16.754
TH-230	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982
TH-232	1.713E+00	3.718E-01	2.423E-01	2.804E-02	7.071
TH-234	1.691E+00	2.649E+00	2.463E+00	4.330E-01	0.686
U-234	1.388E+00	2.227E-01	1.158E-01	1.142E-02	11.982
NP-237	7.295E-01	3.825E-01	4.887E-01	1.106E-01	1.493
U-238	1.691E+00	2.649E+00	2.463E+00	4.330E-01	0.686
AM-243	4.143E-01	8.748E-02	1.029E-01	8.558E-03	4.025
ANH-511	1.063E-01	7.640E-02	5.831E-02	4.942E-03	1.823

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.254E-02		3.970E-01	6.312E-01	5.743E-02	-0.067
NA-22	-2.908E-02		4.794E-02	8.542E-02	7.173E-03	0.340
NA-24	-6.304E-02		1.035E-01	Half-Life	too short	
AL-26	-9.135E-03		3.160E-02	4.748E-02	3.934E-03	-0.192
TI-44	4.289E-01	+	7.286E-02	9.154E-02	7.856E-03	4.685
SC-46	-1.613E-03		4.879E-02	7.949E-02	7.185E-03	-0.020
V-48	-3.936E-02		7.914E-02	1.209E-01	1.079E-02	-0.326
CR-51	8.254E-02		4.401E-01	7.291E-01	6.858E-02	0.113
MN-52	-1.236E-01		2.140E-01	3.213E-01	2.774E-02	-0.385
CO-56	-6.956E-04		4.756E-02	7.787E-02	6.958E-03	-0.009
CO-57	1.162E-02		2.974E-02	4.803E-02	4.228E-03	0.242
CO-58	-2.990E-02		4.097E-02	6.160E-02	5.449E-03	-0.485
FE-59	-6.626E-02		1.036E-01	1.534E-01	1.414E-02	-0.432
CO-60	-8.054E-03		4.414E-02	7.165E-02	6.107E-03	-0.112
ZN-65	1.251E-02		1.147E-01	1.619E-01	1.366E-02	0.077
GE-68	-1.517E-01		1.411E+00	2.247E+00	1.935E-01	-0.067
AS-73	5.280E-01		1.050E+00	1.747E+00	1.414E-01	0.302
AS-74	5.661E-02		9.967E-02	1.742E-01	1.467E-02	0.325
SE-75	4.762E-03		5.270E-02	8.123E-02	7.462E-03	0.059
BR-77	-1.504E+00		8.975E+00	1.411E+01	1.197E+00	-0.107
SR-82	-6.339E-01		4.226E-01	5.811E-01	5.059E-02	-1.091
RB-83	-1.228E-02		8.261E-02	1.301E-01	1.104E-02	-0.094
RB-84	-3.616E-02		8.636E-02	1.352E-01	1.220E-02	-0.267
KR-85	1.496E+01		1.085E+01	1.697E+01	1.439E+00	0.882
SR-85	7.578E-02		5.496E-02	8.595E-02	7.287E-03	0.882
RB-86	-2.154E-01		8.820E-01	1.381E+00	1.190E-01	-0.156
Y-88	2.412E-02		4.086E-02	7.445E-02	6.123E-03	0.324
ZR-88	-9.364E-03		3.789E-02	6.037E-02	4.861E-03	-0.155
Y-91	6.653E+00		1.896E+01	3.294E+01	2.699E+00	0.202
NB-94	-4.664E-03		4.187E-02	6.884E-02	5.778E-03	-0.068
NB-95	-1.683E-02		5.197E-02	8.343E-02	7.229E-03	-0.202
NB-95M	1.437E-02		1.603E-01	2.355E-01	2.416E-02	0.061

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	2.605E-02		7.717E-02	1.315E-01	1.250E-02	0.198
NB-97	-1.962E-02		2.058E-02	Half-Life too short		
ZR-97	2.785E-02		3.922E-01	Half-Life too short		
MO-99	-8.570E+00		1.024E+01	1.544E+01	2.339E+00	-0.555
TC-99M	3.933E+08		8.933E+08	Half-Life too short		
RH-101	2.261E-02		3.787E-02	6.342E-02	5.581E-03	0.356
RH-102	-7.304E-03		3.533E-02	5.570E-02	4.684E-03	-0.131
RU-103	-1.801E-02		4.885E-02	7.559E-02	1.063E-02	-0.238
RH-106	1.527E-01		3.522E-01	6.091E-01	8.033E-02	0.251
RU-106	1.527E-01		3.519E-01	6.091E-01	5.088E-02	0.251
AG-108M	-2.443E-02		3.918E-02	5.996E-02	5.170E-03	-0.407
AG-110M	-2.171E-02		4.621E-02	6.286E-02	5.330E-03	-0.345
IN-111	3.007E-01		1.051E+00	1.563E+00	1.423E-01	0.192
IN-113M	1.959E-02		5.403E-02	8.974E-02	7.475E-03	0.218
SN-113	1.959E-02		5.403E-02	8.974E-02	7.475E-03	0.218
IN-114M	1.272E-01		2.291E-01	3.493E-01	3.050E-02	0.364
CD-115	-2.183E+00		8.767E+00	1.450E+01	1.231E+00	-0.151
SN-117M	-1.180E-02		5.726E-02	9.585E-02	8.160E-03	-0.123
SB-122	2.241E+00		1.832E+00	3.326E+00	2.820E-01	0.674
I-123	6.975E-02		7.243E-01	Half-Life too short		
TE-123M	1.492E-03		3.100E-02	5.244E-02	4.492E-03	0.028
I-124	-6.365E-01		6.998E-01	9.030E-01	7.593E-02	-0.705
SB-124	-3.613E-02		8.445E-02	1.248E-01	1.106E-02	-0.290
SB-125	-4.653E-02		1.147E-01	1.795E-01	1.510E-02	-0.259
TE-125M	4.001E+00		1.047E+01	1.696E+01	1.758E+00	0.236
I-126	2.283E-01		2.312E-01	3.703E-01	3.042E-02	0.617
SB-126	1.909E-02		1.530E-01	2.340E-01	1.983E-02	0.082
SB-127	3.140E-01		1.108E+00	1.892E+00	2.046E-01	0.166
XE-127	-4.044E-02		5.266E-02	8.486E-02	7.502E-03	-0.477
I-131	-6.894E-04		1.220E-01	1.985E-01	1.777E-02	-0.003
TE-132	-7.247E-01		6.460E-01	1.001E+00	1.575E-01	-0.724
BA-133	-5.117E-02		5.902E-02	7.658E-02	1.010E-02	-0.668
I-133	1.336E-04		1.320E-03	Half-Life too short		
CS-134	1.540E-01	+	7.762E-02	1.150E-01	1.016E-02	1.339
CS-135	1.472E-01		1.912E-01	2.933E-01	3.058E-02	0.502
I-135	-5.073E+07		1.862E+08	Half-Life too short		
CS-136	1.923E-02		1.096E-01	1.811E-01	1.646E-02	0.106
CE-139	1.168E-02		3.294E-02	5.632E-02	4.796E-03	0.207
BA-140	-1.903E-02		2.705E-01	4.531E-01	1.500E-01	-0.042
LA-140	-3.727E-03		1.049E-01	1.714E-01	1.479E-02	-0.022
CE-141	-2.222E-02		6.981E-02	1.132E-01	9.842E-03	-0.196
CE-143	2.696E-04		5.928E-05	Half-Life too short		
CE-144	-8.172E-02		2.366E-01	3.671E-01	5.714E-02	-0.223
PM-144	5.196E-02		4.026E-02	7.337E-02	6.139E-03	0.708
PR-144	3.519E+00		2.727E+00	4.968E+00	4.156E-01	0.708
PM-146	5.087E-02		5.621E-02	9.588E-02	1.007E-02	0.531
ND-147	3.711E-01		5.938E-01	1.043E+00	1.552E-01	0.356
PM-149	2.973E+01		7.672E+01	1.288E+02	2.039E+01	0.231

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	-3.680E-02		1.275E-01	1.772E-01	1.638E-02	-0.208
GD-153	4.410E-04		1.011E-01	1.422E-01	1.263E-02	0.003
EU-154	1.211E-01		1.299E-01	2.390E-01	2.661E-02	0.507
EU-155	5.411E-02		1.245E-01	2.024E-01	1.780E-02	0.267
TB-160	-7.064E-02		1.744E-01	2.735E-01	2.466E-02	-0.258
HO-166M	-2.379E-02		6.921E-02	1.111E-01	9.372E-03	-0.214
TM-171	-6.189E+00		3.735E+01	5.341E+01	4.207E+00	-0.116
LU-176	-2.036E-03		3.015E-02	4.760E-02	4.308E-03	-0.043
LU-177	2.788E+00	+	1.589E+00	2.058E+00	1.829E-01	1.355
LU-177M	-2.012E-02		2.430E-01	3.404E-01	2.781E-02	-0.059
HF-181	6.146E-03		5.308E-02	8.584E-02	7.233E-03	0.072
W-181	-5.033E-01		5.135E-01	7.122E-01	5.560E-02	-0.707
TA-182	-1.233E-01		2.026E-01	3.165E-01	2.609E-02	-0.390
RE-183	-7.348E-02		1.190E-01	1.953E-01	1.662E-02	-0.376
RE-184	-2.265E-02		2.829E-01	4.668E-01	4.261E-02	-0.049
OS-185	6.741E-03		4.735E-02	7.992E-02	6.603E-03	0.084
RE-188	1.391E-01		1.908E-01	3.310E-01	2.819E-02	0.420
W-188	3.189E-01		9.903E+00	1.434E+01	1.308E+00	0.022
IR-192	6.255E-03		4.156E-02	6.874E-02	6.193E-03	0.091
AU-195	1.132E-01		2.545E-01	4.075E-01	3.598E-02	0.278
TL-200	-7.884E-05		1.294E-04	Half-Life too short		
TL-201	-2.364E+00		6.087E+00	1.009E+01	8.601E-01	-0.234
TL-202	-1.840E-02		7.613E-02	1.203E-01	9.971E-03	-0.153
BI-207	-2.681E-02		5.853E-02	8.898E-02	7.714E-03	-0.301
TL-207	2.856E-01		8.065E-01	1.345E+00	2.403E-01	0.212
PO-209	-6.884E-01		8.422E+00	1.363E+01	1.235E+00	-0.050
BI-210	2.914E+00		4.715E+00	7.912E+00	7.469E-01	0.368
PB-210	2.914E+00		4.715E+00	7.912E+00	7.469E-01	0.368
PO-210	2.914E+00		4.714E+00	7.912E+00	6.783E-01	0.368
PB-211	-3.599E-01		1.359E+00	1.848E+00	1.157E+00	-0.195
BI-212	1.254E+00	+	6.449E-01	8.092E-01	8.019E-02	1.550
PO-215	2.856E-01		8.065E-01	1.345E+00	2.403E-01	0.212
RN-219	2.057E-01		5.077E-01	8.435E-01	1.243E-01	0.244
RN-220	-5.851E+00		2.716E+01	4.484E+01	3.806E+00	-0.130
RA-223	2.856E-01		8.065E-01	1.345E+00	2.403E-01	0.212
AC-227	-1.607E-01		4.583E-01	7.439E-01	1.164E-01	-0.216
TH-227	-1.607E-01		4.585E-01	7.439E-01	1.362E-01	-0.216
TH-229	-2.865E-01		5.767E-01	9.443E-01	8.273E-02	-0.303
PA-231	8.063E-01		1.939E+00	3.038E+00	4.704E-01	0.265
TH-231	2.856E-01		8.065E-01	1.345E+00	2.403E-01	0.212
U-231	1.314E-01		1.121E+00	1.606E+00	1.437E-01	0.082
PA-233	-1.353E-03		7.781E-02	1.275E-01	1.180E-02	-0.011
PA-234	3.388E-02		3.125E-01	5.154E-01	9.763E-02	0.066
PA-234M	-1.488E+00		5.608E+00	8.880E+00	9.052E-01	-0.168
U-235	-6.415E-03		2.411E-01	3.961E-01	6.921E-02	-0.016
NP-236	1.469E-03		8.675E-02	1.465E-01	1.247E-02	0.010
NP-239	7.551E-02		2.226E-01	3.592E-01	3.128E-02	0.210
AM-241	6.304E-03		2.083E-01	3.024E-01	2.492E-02	0.021

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	3.297E-02		1.102E-01	1.782E-01	1.553E-02	0.185
AM-246	1.489E-01		1.556E-01	2.789E-01	2.400E-02	0.534
CM-247	1.667E-02		4.600E-02	7.628E-02	6.186E-03	0.218
CF-249	-1.014E-02		4.859E-02	7.768E-02	6.301E-03	-0.131
CF-251	-4.626E-02		1.437E-01	2.383E-01	2.051E-02	-0.194

# 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]G244132009          *
* Acquisition date   : 19-JAN-2010 10:54:45 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        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132009 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.1981E+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	2.042E+01	2.399E+00	3.022E-01	1.224E+00
MN-54	3.456E-02	4.756E-02	3.719E-02	2.427E-02
CD-109	2.523E+00	1.192E+00	6.705E-01	6.081E-01
SN-126	2.484E-01	1.174E-01	6.636E-02	5.987E-02
BA-137M	1.544E-01	7.108E-02	3.542E-02	3.626E-02
CS-137	1.632E-01	7.514E-02	3.744E-02	3.834E-02
HG-203	8.003E-02	7.797E-02	3.724E-02	3.978E-02
TL-208	5.505E-01	9.635E-02	3.409E-02	4.916E-02
BI-211	4.122E+00	6.863E-01	1.980E-01	3.501E-01
PB-212	1.811E+00	2.213E-01	5.510E-02	1.129E-01
PO-212	1.811E+00	2.213E-01	5.510E-02	1.129E-01
BI-214	1.388E+00	2.183E-01	5.839E-02	1.114E-01
PB-214	1.434E+00	2.497E-01	6.769E-02	1.274E-01
PO-214	1.434E+00	2.497E-01	6.769E-02	1.274E-01
PO-216	1.811E+00	2.213E-01	5.510E-02	1.129E-01
PO-218	1.434E+00	2.497E-01	6.769E-02	1.274E-01
RA-224	4.754E+00	1.613E+00	6.272E-01	8.228E-01
RA-226	1.388E+00	2.183E-01	5.839E-02	1.114E-01
AC-228	1.713E+00	3.644E-01	1.216E-01	1.859E-01
RA-228	1.713E+00	3.644E-01	1.216E-01	1.859E-01
TH-228	1.836E+00	2.244E-01	5.587E-02	1.145E-01
TH-230	1.388E+00	2.183E-01	5.839E-02	1.114E-01
TH-232	1.713E+00	3.644E-01	1.216E-01	1.859E-01
TH-234	1.691E+00	2.596E+00	1.275E+00	1.324E+00
U-234	1.388E+00	2.183E-01	5.839E-02	1.114E-01
NP-237	7.295E-01	3.748E-01	2.520E-01	1.912E-01
U-238	1.691E+00	2.596E+00	1.275E+00	1.324E+00
AM-243	4.143E-01	8.573E-02	5.316E-02	4.374E-02
ANH-511	1.063E-01	7.487E-02	2.946E-02	3.820E-02

### ---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )	
BE-7	-4.254E-02	3.891E-01	3.192E-01	1.985E-01 NOT IDENT.
NA-22	2.908E-02	4.698E-02	4.270E-02	2.397E-02 NOT IDENT.
NA-24	-6.304E+04	2.029E+05	0.000E+00	1.035E+05 SHORT HLIF
AL-26	-9.135E-03	3.097E-02	2.363E-02	1.580E-02 NOT IDENT.
TI-44	4.289E-01	7.141E-02	4.726E-02	3.643E-02 FAIL ABUN
SC-46	-1.613E-03	4.781E-02	3.990E-02	2.439E-02 FAIL ABUN
V-48	-3.936E-02	7.755E-02	6.062E-02	3.957E-02 NOT IDENT.
CR-51	8.254E-02	4.313E-01	3.704E-01	2.201E-01 NOT IDENT.
MN-52	-1.236E-01	2.097E-01	1.604E-01	1.070E-01 FAIL ABUN
CO-56	-6.956E-04	4.660E-02	3.912E-02	2.378E-02 NOT IDENT.
CO-57	1.162E-02	2.915E-02	2.467E-02	1.487E-02 NOT IDENT.
CO-58	-2.990E-02	4.016E-02	3.096E-02	2.049E-02 NOT IDENT.
FE-59	-6.626E-02	1.015E-01	7.680E-02	5.178E-02 NOT IDENT.
CO-60	-8.054E-03	4.325E-02	3.579E-02	2.207E-02 NOT IDENT.
ZN-65	1.251E-02	1.124E-01	8.106E-02	5.733E-02 NOT IDENT.
GE-68	-1.517E-01	1.383E+00	1.126E+00	7.057E-01 NOT IDENT.
AS-73	5.280E-01	1.029E+00	9.059E-01	5.249E-01 NOT IDENT.
AS-74	5.661E-02	9.768E-02	8.784E-02	4.984E-02 NOT IDENT.
SE-75	4.762E-03	5.164E-02	4.136E-02	2.635E-02 NOT IDENT.
BR-77	-1.504E+00	8.795E+00	7.126E+00	4.487E+00 FAIL ABUN
SR-82	-6.339E-01	4.141E-01	2.922E-01	2.113E-01 NOT IDENT.
RB-83	-1.228E-02	8.096E-02	6.571E-02	4.130E-02 NOT IDENT.
RB-84	-3.616E-02	8.463E-02	6.787E-02	4.318E-02 NOT IDENT.
KR-85	1.496E+01	1.063E+01	8.574E+00	5.426E+00 NOT IDENT.
SR-85	7.578E-02	5.386E-02	4.343E-02	2.748E-02 NOT IDENT.
RB-86	-2.154E-01	8.644E-01	6.918E-01	4.410E-01 NOT IDENT.
Y-88	2.412E-02	4.005E-02	3.705E-02	2.043E-02 NOT IDENT.
ZR-88	-9.364E-03	3.713E-02	3.060E-02	1.894E-02 NOT IDENT.
Y-91	6.653E+00	1.858E+01	1.647E+01	9.479E+00 NOT IDENT.
NB-94	-4.664E-03	4.103E-02	3.465E-02	2.093E-02 NOT IDENT.
NB-95	-1.683E-02	5.093E-02	4.196E-02	2.599E-02 NOT IDENT.
NB-95M	1.437E-02	1.571E-01	1.201E-01	8.015E-02 NOT IDENT.
ZR-95	2.605E-02	7.563E-02	6.616E-02	3.859E-02 NOT IDENT.
NB-97	-1.962E+04	4.033E+04	0.000E+00	2.058E+04 SHORT HLIF
ZR-97	2.785E+04	7.686E+05	0.000E+00	3.922E+05 SHORT HLIF
MO-99	-8.570E+00	1.003E+01	7.769E+00	5.119E+00 NOT IDENT.
TC-99M	3.933E+14	1.751E+15	0.000E+00	8.933E+14 SHORT HLIF
RH-101	2.261E-02	3.711E-02	3.240E-02	1.893E-02 NOT IDENT.
RH-102	-7.304E-03	3.462E-02	2.817E-02	1.767E-02 NOT IDENT.
RU-103	-1.801E-02	4.787E-02	3.821E-02	2.442E-02 FAIL ABUN
RH-106	1.527E-01	3.452E-01	3.071E-01	1.761E-01 FAIL ABUN
RU-106	1.527E-01	3.448E-01	3.071E-01	1.759E-01 FAIL ABUN
AG-108M	-2.443E-02	3.840E-02	3.035E-02	1.959E-02 NOT IDENT.
AG-110M	-2.171E-02	4.529E-02	3.167E-02	2.311E-02 NOT IDENT.
IN-111	3.007E-01	1.030E+00	7.967E-01	5.257E-01 NOT IDENT.
IN-113M	1.959E-02	5.295E-02	4.549E-02	2.702E-02 NOT IDENT.
SN-113	1.959E-02	5.295E-02	4.549E-02	2.702E-02 NOT IDENT.
IN-114M	1.272E-01	2.245E-01	1.785E-01	1.146E-01 NOT IDENT.
CD-115	-2.183E+00	8.592E+00	7.326E+00	4.384E+00 NOT IDENT.
SN-117M	-1.180E-02	5.611E-02	4.909E-02	2.863E-02 NOT IDENT.
SB-122	2.241E+00	1.795E+00	1.679E+00	9.159E-01 NOT IDENT.
I-123	6.975E+04	1.420E+06	0.000E+00	7.243E+05 SHORT HLIF
TE-123M	1.492E-03	3.038E-02	2.685E-02	1.550E-02 NOT IDENT.
I-124	-6.365E-01	6.858E-01	4.554E-01	3.499E-01 NOT IDENT.
SB-124	-3.613E-02	8.276E-02	6.215E-02	4.222E-02 FAIL ABUN
SB-125	-4.653E-02	1.124E-01	9.087E-02	5.737E-02 FAIL ABUN
TE-125M	4.001E+00	1.026E+01	8.725E+00	5.236E+00 NOT IDENT.
I-126	2.283E-01	2.266E-01	1.865E-01	1.156E-01 NOT IDENT.
SB-126	1.909E-02	1.500E-01	1.178E-01	7.651E-02 FAIL ABUN
SB-127	3.140E-01	1.086E+00	9.529E-01	5.541E-01 NOT IDENT.
XE-127	-4.044E-02	5.160E-02	4.334E-02	2.633E-02 NOT IDENT.
I-131	-6.894E-04	1.196E-01	1.007E-01	6.100E-02 NOT IDENT.
TE-132	-7.247E-01	6.331E-01	5.103E-01	3.230E-01 NOT IDENT.
BA-133	-5.117E-02	5.784E-02	3.886E-02	2.951E-02 FAIL ABUN
I-133	1.336E+02	2.588E+03	0.000E+00	1.320E+03 SHORT HLIF
CS-134	1.540E-01	7.607E-02	5.779E-02	3.881E-02 FAIL ABUN
CS-135	1.472E-01	1.874E-01	1.493E-01	9.562E-02 NOT IDENT.
I-135	-5.073E+13	3.650E+14	0.000E+00	1.862E+14 SHORT HLIF
CS-136	1.923E-02	1.074E-01	9.073E-02	5.481E-02 FAIL ABUN
CE-139	1.168E-02	3.228E-02	2.883E-02	1.647E-02 NOT IDENT.
BA-140	-1.903E-02	2.651E-01	2.288E-01	1.353E-01 NOT IDENT.
LA-140	-3.727E-03	1.028E-01	8.545E-02	5.245E-02 NOT IDENT.
CE-141	-2.222E-02	6.841E-02	5.802E-02	3.490E-02 NOT IDENT.
CE-143	2.696E+02	1.162E+02	0.000E+00	5.928E+01 SHORT HLIF
CE-144	-8.172E-02	2.319E-01	1.884E-01	1.183E-01 NOT IDENT.
PM-144	5.196E-02	3.946E-02	3.694E-02	2.013E-02 NOT IDENT.



PR-144	3.519E+00	2.672E+00	2.501E+00	1.363E+00	NOT IDENT.
PM-146	5.087E-02	5.509E-02	4.852E-02	2.811E-02	NOT IDENT.
ND-147	3.711E-01	5.819E-01	5.268E-01	2.969E-01	FAIL ABUN
PM-149	2.973E+01	7.518E+01	6.554E+01	3.836E+01	NOT IDENT.
EU-152	-3.680E-02	1.249E-01	8.993E-02	6.373E-02	NOT IDENT.
GD-153	4.410E-04	9.906E-02	7.324E-02	5.054E-02	NOT IDENT.
EU-154	1.211E-01	1.273E-01	1.195E-01	6.497E-02	NOT IDENT.
EU-155	5.411E-02	1.220E-01	1.042E-01	6.227E-02	FAIL ABUN
TB-160	-7.064E-02	1.709E-01	1.373E-01	8.721E-02	FAIL ABUN
HO-166M	-2.379E-02	6.783E-02	5.591E-02	3.460E-02	FAIL ABUN
TM-171	-6.189E+00	3.660E+01	2.763E+01	1.867E+01	NOT IDENT.
LU-176	-2.036E-03	2.955E-02	2.419E-02	1.507E-02	FAIL ABUN
LU-177	2.788E+00	1.557E+00	1.051E+00	7.944E-01	FAIL ABUN
LU-177M	-2.012E-02	2.381E-01	1.724E-01	1.215E-01	NOT IDENT.
HF-181	6.146E-03	5.202E-02	4.341E-02	2.654E-02	NOT IDENT.
W-181	-5.033E-01	5.033E-01	3.685E-01	2.568E-01	NOT IDENT.
TA-182	-1.233E-01	1.986E-01	1.583E-01	1.013E-01	FAIL ABUN
RE-183	-7.348E-02	1.166E-01	9.999E-02	5.951E-02	FAIL ABUN
RE-184	-2.265E-02	2.773E-01	2.378E-01	1.415E-01	NOT IDENT.
OS-185	6.741E-03	4.641E-02	4.027E-02	2.368E-02	NOT IDENT.
RE-188	1.391E-01	1.870E-01	1.696E-01	9.542E-02	NOT IDENT.
W-188	3.189E-01	9.705E+00	7.292E+00	4.952E+00	FAIL ABUN
IR-192	6.255E-03	4.073E-02	3.493E-02	2.078E-02	FAIL ABUN
AU-195	1.132E-01	2.495E-01	2.098E-01	1.273E-01	FAIL ABUN
TL-200	-7.884E+01	2.536E+02	0.000E+00	1.294E+02	SHORT HLIF
TL-201	-2.364E+00	5.966E+00	5.163E+00	3.044E+00	NOT IDENT.
TL-202	-1.840E-02	7.461E-02	6.088E-02	3.807E-02	NOT IDENT.
BI-207	-2.681E-02	5.736E-02	4.458E-02	2.927E-02	FAIL ABUN
TL-207	2.856E-01	7.904E-01	6.834E-01	4.033E-01	FAIL ABUN
PO-209	-6.884E-01	8.254E+00	6.844E+00	4.211E+00	NOT IDENT.
BI-210	2.914E+00	4.621E+00	4.109E+00	2.358E+00	NOT IDENT.
PB-210	2.914E+00	4.621E+00	4.109E+00	2.358E+00	NOT IDENT.
PO-210	2.914E+00	4.620E+00	4.109E+00	2.357E+00	NOT IDENT.
PB-211	-3.599E-01	1.332E+00	9.361E-01	6.797E-01	NOT IDENT.
BI-212	1.254E+00	6.320E-01	4.072E-01	3.225E-01	FAIL ABUN
PO-215	2.856E-01	7.904E-01	6.834E-01	4.033E-01	FAIL ABUN
RN-219	2.057E-01	4.976E-01	4.274E-01	2.539E-01	FAIL ABUN
RN-220	-5.851E+00	2.662E+01	2.264E+01	1.358E+01	NOT IDENT.
RA-223	2.856E-01	7.904E-01	6.834E-01	4.033E-01	FAIL ABUN
AC-227	-1.607E-01	4.491E-01	3.789E-01	2.291E-01	NOT IDENT.
TH-227	-1.607E-01	4.494E-01	3.789E-01	2.293E-01	FAIL ABUN
TH-229	-2.865E-01	5.652E-01	4.825E-01	2.884E-01	FAIL ABUN
PA-231	8.063E-01	1.900E+00	1.546E+00	9.694E-01	FAIL ABUN
TH-231	2.856E-01	7.904E-01	6.834E-01	4.033E-01	FAIL ABUN
U-231	1.314E-01	1.098E+00	8.274E-01	5.603E-01	FAIL ABUN
PA-233	-1.353E-03	7.626E-02	6.481E-02	3.891E-02	FAIL ABUN
PA-234	3.388E-02	3.062E-01	2.586E-01	1.562E-01	FAIL ABUN
PA-234M	-1.488E+00	5.496E+00	4.452E+00	2.804E+00	NOT IDENT.
U-235	-6.415E-03	2.363E-01	2.031E-01	1.205E-01	FAIL ABUN
NP-236	1.469E-03	8.502E-02	7.504E-02	4.338E-02	NOT IDENT.
NP-239	7.551E-02	2.182E-01	1.846E-01	1.113E-01	FAIL ABUN
AM-241	6.304E-03	2.042E-01	1.566E-01	1.042E-01	NOT IDENT.
CM-243	3.297E-02	1.080E-01	9.173E-02	5.510E-02	FAIL ABUN
AM-246	1.489E-01	1.525E-01	1.397E-01	7.779E-02	NOT IDENT.
CM-247	1.667E-02	4.508E-02	3.865E-02	2.300E-02	FAIL ABUN
CF-249	-1.014E-02	4.762E-02	3.938E-02	2.430E-02	NOT IDENT.
CF-251	-4.626E-02	1.409E-01	1.219E-01	7.187E-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	225.1982
46.50	225.1982
46.50	225.1982
48.70	246.8048
49.72	250.4127
51.35	245.0349
52.39	269.3707
52.97	255.1577
53.15	255.2471
53.44	241.8959
54.07	240.1133
56.28	268.2704
56.28	268.2717
57.37	0.0000
57.53	291.2939
57.53	291.2950
57.60	291.3318
57.98	289.0245
57.98	289.0245
59.32	280.2924
59.32	280.2924
59.40	280.3332
59.54	286.7064
59.72	286.8008
60.01	288.5288
61.10	282.7794
61.14	282.7995
61.30	282.8811
63.00	318.0829
63.29	318.2456
63.29	318.2456
63.58	318.4082
64.28	354.2795
65.12	346.8416
65.20	346.8899
65.20	346.8899
66.05	344.2104
66.72	347.7951
66.83	327.1176
66.91	327.1614
67.20	312.9522
67.20	312.9522
67.75	329.2256
67.85	327.6837
68.90	369.3620
68.90	369.3620
69.30	383.2817
69.67	373.2576
70.82	361.4365
70.82	361.4365
70.83	361.4416
72.80	360.9922
72.87	361.0332
72.87	361.0332
74.67	371.7741
74.81	371.8584
74.81	371.8584
74.81	371.8584
74.81	371.8584
74.81	371.8584
74.81	371.8584
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75.70	372.3813
77.11	373.2060
77.11	373.2060

77.11	373.2060
77.11	373.2060
77.11	373.2060
77.11	373.2060
77.11	373.2060
78.38	339.8004
79.62	327.4163
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79.80	335.6537
80.11	335.8124
80.18	335.8470
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80.30	389.7189
80.57	389.8793
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81.07	437.5181
81.07	437.5181
81.07	437.5181
81.07	437.5181
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83.37	350.5664
83.78	373.7285
83.78	373.7285
83.78	373.7285
83.78	373.7285
84.21	373.9668
84.90	361.2111
85.43	369.7088
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86.50	472.3199
86.54	472.3461
86.59	488.8405
86.72	488.9333
86.79	487.3345
86.94	487.4407
87.30	525.5911
87.30	525.5911
87.30	525.5911
87.30	525.5911
87.30	525.5911
87.30	525.5911
87.30	525.5911
87.57	290.0941
87.88	290.2230
88.03	290.2861
88.36	290.4231
88.47	290.4688
89.95	291.0824
91.11	332.9737
92.29	333.5227
92.38	333.5657
92.38	333.5657
93.35	274.1914
94.00	282.7531
94.67	286.3421
94.67	286.3434
94.90	279.7727
94.90	279.7727
94.90	279.7727
94.90	279.7727
95.87	291.8158
95.87	291.8158
96.73	302.1744
97.43	272.3801
98.44	269.9606
98.44	269.9618
98.88	247.7966
99.55	252.4867
99.55	252.4867
99.86	251.4725
100.00	251.5194
100.10	247.0816
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103.76	259.5014
105.00	262.1665
105.31	265.6476
108.00	258.6523
109.28	260.1994

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111.00	297.0381
111.76	300.7210
112.95	261.3857
115.19	266.6587
116.30	269.2991
117.00	258.1043
117.00	258.1043
117.66	281.1681
121.11	270.8416
121.62	242.2956
121.78	252.6781
122.06	252.7603
122.32	263.1809
122.32	263.1809
122.32	263.1809
122.32	263.1809
123.07	265.7109
127.23	279.6974
129.76	251.5199
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135.34	258.9097
136.00	264.3468
136.25	262.6682
136.48	262.7335
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140.51	0.0000
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142.65	270.6463
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144.24	272.8645
144.24	272.8645
144.24	272.8645
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145.44	263.4806
147.16	309.1240
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152.70	274.3571
153.22	279.8479
154.21	267.6384
154.21	267.6384
154.21	267.6384
154.21	267.6384
155.03	251.7866
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161.27	242.5596
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162.64	258.1756
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163.89	253.0827
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172.10	241.4461
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176.60	251.5674
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185.71	258.2386
186.00	258.3051
190.27	227.3511
192.34	222.7695
193.63	245.2269
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198.60	207.2404
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201.83	259.0576
202.84	252.7496
205.31	219.8127

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208.81	266.9370
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209.75	232.6230
210.97	207.3167
215.65	190.6522
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218.09	203.9766
222.10	203.6785
223.80	206.7950
226.40	211.0162
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227.20	227.3173
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228.18	237.9589
228.18	237.9589
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236.00	231.3423
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238.63	207.2379
238.63	207.2379
238.63	207.2379
239.00	207.2955
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241.98	207.7570
241.98	207.7570
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252.85	191.9636
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256.20	189.5103
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268.79	141.1897
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269.46	160.0897
269.46	160.0897
269.46	160.0897
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277.60	142.0422
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285.00	159.5997
285.90	153.7441
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295.21	172.4493

295.21	172.4493
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300.09	176.1960
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304.40	128.4941
304.84	128.5293
306.84	140.1838
308.46	127.8178
311.98	144.2372
316.51	139.5877
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319.02	160.0637
319.41	164.1555
320.08	138.8793
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323.87	140.2173
323.87	140.2173
323.87	140.2173
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334.20	147.2256
334.30	147.2344
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338.28	132.2085
338.28	132.2085
338.28	132.2085
338.32	132.2104
338.32	132.2104
338.32	132.2104
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340.57	113.2975
344.27	121.7712
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351.07	125.5540
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351.92	120.8633
351.92	120.8633
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356.01	132.5352
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367.43	108.3799
367.94	0.0000
369.80	90.7834
374.96	110.9235
383.85	101.9983
387.95	116.9755
388.63	103.3145
391.69	107.7057
391.69	107.7057
392.90	120.4553
398.62	117.6394
400.65	106.0944
401.10	106.1203
401.81	107.2200
402.60	110.4508
404.84	122.4879
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411.60	102.4307
413.65	107.6645
414.70	114.5625
415.30	113.6195

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423.70	94.4735
427.08	111.8394
427.89	109.7337
432.53	94.8911
433.93	101.4298
439.47	91.9701
439.56	91.9740
439.89	90.9060
443.98	84.5817
444.90	90.0442
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445.03	87.8794
445.03	87.8794
445.03	87.8794
453.90	90.4355
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468.07	85.9976
473.00	89.0548
475.06	89.1400
475.35	90.2518
476.78	93.6160
477.59	93.6510
477.96	91.4626
482.03	91.6336
484.57	97.2678
487.03	76.3521
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492.35	74.3179
497.08	87.8154
507.63	0.0000
510.53	0.0000
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511.00	91.7151
511.85	91.7489
511.85	91.7489
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513.99	94.9704
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520.65	78.6240
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529.64	70.3600
529.87	0.0000
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537.32	71.4954
543.00	78.0173
546.56	0.0000
549.76	62.7721
552.65	63.7588
555.20	55.6193
563.23	59.4633
563.90	64.9695
568.70	90.7677
569.32	83.4552
569.50	70.6216
569.67	70.6253
573.80	79.9313
574.00	72.5870
574.64	74.4445
578.91	69.0491
579.30	0.0000
583.14	70.0866
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591.81	65.7027
592.07	64.7842
593.00	71.2870
595.88	63.0262
600.56	63.1424
602.52	0.0000
602.71	80.5433
602.71	80.5433
603.60	74.3730
604.41	66.6469
604.70	65.1055
609.31	57.7678

609.31	57.7678
609.31	57.7678
609.31	57.7678
610.33	54.3728
612.46	63.7455
614.37	46.6772
618.01	61.7010
621.84	56.1731
621.84	56.1731
631.29	48.8579
633.02	51.7102
633.10	49.8311
634.78	60.2109
635.90	65.8848
636.97	64.0272
645.85	57.6268
646.12	57.6328
656.30	73.1576
657.75	69.5807
657.90	0.0000
661.65	69.6810
661.65	69.6810
664.57	0.0000
666.33	58.6947
666.33	58.6947
675.00	62.0610
677.61	58.2955
685.20	43.1213
692.80	49.9624
695.00	72.1179
696.49	50.9892
696.49	50.9892
697.00	58.6961
697.49	61.5938
698.33	77.9783
698.50	78.9450
699.00	78.9590
702.63	77.1309
706.10	69.5004
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706.67	68.5490
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711.68	62.8656
713.82	59.0401
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720.50	47.1188
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722.78	50.1606
722.78	50.1606
722.89	50.1618
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723.30	40.4592
724.18	38.8525
727.18	54.4482
733.00	63.3242
735.90	46.3206
739.58	66.3930
742.81	42.0289
744.21	48.8940
747.13	58.7300
751.79	58.8208
752.31	55.8895
753.82	53.9553
755.35	49.0747
756.15	47.1234
756.87	44.1892
763.93	88.5828
765.79	76.8193
766.42	56.1483
766.84	59.1108
776.49	68.1914
778.00	51.4160
778.57	49.4470
778.89	45.4958
783.80	55.4736
785.46	55.5037
792.07	54.6267



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798.80	53.0846
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805.60	41.8944
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810.76	47.9566
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818.51	39.0590
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828.27	0.0000
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834.83	59.3860
836.80	0.0000
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848.13	42.4460
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856.80	78.0208
860.37	46.6604
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867.82	45.7471
871.10	42.7383
873.19	38.6921
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876.40	39.7484
879.36	57.1238
880.27	46.9355
880.51	53.0613
881.50	57.1594
883.24	50.0408
884.67	52.1044
889.25	52.1741
896.60	43.0592
898.02	49.2305
899.00	48.2186
903.28	35.3812
911.07	44.2682
911.07	44.2682
911.07	44.2682
919.63	47.0136
920.93	54.7158
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925.24	35.1438
926.50	43.9454
935.52	27.6439
937.48	32.8449
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946.00	33.2695
949.00	42.6626
962.29	62.6616
964.01	43.5354
966.15	31.3638
968.20	85.4270
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969.11	94.1682
969.11	94.1682
977.42	31.4604
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983.50	46.2183
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996.32	36.8910
1001.03	37.9925
1001.68	39.0551
1004.76	44.3686
1021.30	0.0000
1024.50	0.0000
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1036.00	37.2781
1037.82	51.1477
1038.57	52.2252
1038.76	0.0000
1045.16	33.0964
1046.59	39.5167
1048.07	33.1207

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1050.47	48.1091
1062.04	42.8887
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1077.35	38.7510
1078.86	26.9202
1085.78	31.2812
1099.22	45.4556
1112.02	48.2530
1112.84	52.7455
1115.52	39.8428
1120.29	47.8672
1120.29	47.8672
1120.29	47.8672
1120.29	47.8672
1120.51	39.8929
1121.28	41.7137
1124.00	0.0000
1129.67	38.1633
1131.51	0.0000
1147.95	0.0000
1167.94	55.9390
1173.22	38.5632
1175.09	44.0918
1177.93	48.7170
1189.05	34.0988
1204.90	35.1488
1205.75	0.0000
1213.00	38.9221
1221.42	46.4233
1230.97	52.1081
1235.34	67.9949
1236.41	0.0000
1238.25	49.3985
1246.25	43.8846
1260.41	0.0000
1271.85	32.8666
1274.45	23.4904
1274.54	28.1885
1291.56	36.7831
1298.22	0.0000
1312.09	28.4204
1325.50	27.5521
1325.50	27.5521
1332.49	27.5934
1333.61	20.9383
1360.21	22.0136
1362.66	0.0000
1365.15	21.0780
1368.21	17.2566
1368.53	0.0000
1376.25	19.7553
1384.27	14.8410
1394.10	15.4219
1395.20	13.4970
1407.95	19.3319
1434.06	18.4635
1436.60	14.5837
1457.56	0.0000
1460.81	17.5847
1489.15	16.7012
1509.49	17.7532
1596.49	22.0582
1620.62	12.0854
1678.03	0.0000
1691.02	13.2592
1691.02	13.2592
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1750.46	0.0000
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1764.49	17.7086
1764.49	17.7086
1764.49	17.7086
1770.23	3.5452
1771.40	7.0918
1791.20	0.0000
1808.65	9.3669

1836.01

8.3639

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132009

Total Uranium Activity	5.0277E+00	ug/g
Total Uranium Counting Unc.	7.7238E+00	ug/g
Total Uranium Tpu	3.9407E-06	ug/g
Total Uranium Mda	3.7937E+00	ug/g

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*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
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*
*  BATCH ID      : 940270          SAMPLE ID   : G244132009
*  ANALYST       : MXR1           DETECTOR    : GAM01
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 10:54:45.89  SAMPLE ALQT: 119.810 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.768E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.638E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.298E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.079E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 12:56:30.13

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132010.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 10:55:18
Sample ID        : G244132010      Sample quantity   : 1.23830E+02 GRAM
Detector name    : GAM04           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:01.20  0.0%
Energy tolerance : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit  : 75.00000        Sensitivity     : 5.00000
Batch ID        : 940270           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	63.18*	74	310	1.12	126.40	123	8	1.03E-02	43.2	
2	2	74.87*	269	345	0.99	149.77	146	13	3.73E-02	12.6	8.87E-01
3	2	77.12*	463	321	1.02	154.27	146	13	6.44E-02	7.9	
4	4	87.22	243	301	1.05	174.48	171	12	3.38E-02	12.7	1.98E+00
5	4	89.82	166	265	1.01	179.68	171	12	2.31E-02	17.5	
6	0	93.15*	261	343	1.71	186.34	183	9	3.62E-02	14.7	
7	0	129.13	103	300	1.23	258.30	255	8	1.43E-02	30.7	
8	0	185.81*	205	335	1.34	371.69	366	11	2.85E-02	19.1	
9	0	209.10	87	224	0.93	418.26	415	7	1.21E-02	30.5	
10	5	238.59*	1328	201	1.11	477.25	472	17	1.84E-01	3.3	1.82E+00
11	5	241.54	296	231	1.56	483.16	472	17	4.11E-02	13.5	
12	0	270.42	106	229	0.91	540.91	535	12	1.48E-02	30.0	
13	2	277.33	81	111	1.26	554.74	551	12	1.12E-02	24.6	1.85E+00
14	2	279.69	41	82	1.11	559.46	551	12	5.69E-03	42.1	
15	0	295.10	410	175	1.27	590.27	585	10	5.69E-02	7.8	
16	0	300.33	85	156	0.77	600.73	597	9	1.18E-02	28.8	
17	0	328.32	67	157	1.59	656.73	652	10	9.32E-03	37.4	
18	0	337.99*	258	196	1.20	676.06	669	14	3.58E-02	13.3	
19	0	351.85*	651	172	1.18	703.79	699	11	9.04E-02	5.6	
20	0	463.22	89	95	1.44	926.52	922	11	1.23E-02	23.7	
21	0	510.99*	125	124	1.84	1022.07	1015	16	1.74E-02	24.7	
22	0	583.09*	424	94	1.53	1166.28	1160	15	5.89E-02	7.1	
23	0	609.15*	450	112	1.31	1218.40	1211	15	6.25E-02	7.1	
24	0	666.47	16	49	1.42	1333.04	1329	8	2.21E-03	79.8	
25	0	727.49	113	75	1.41	1455.07	1449	15	1.56E-02	19.5	
26	0	769.94	109	77	5.61	1539.97	1530	24	1.51E-02	23.5	
27	0	797.33	56	75	0.85	1594.74	1586	18	7.72E-03	40.0	
28	0	860.31	56	33	2.14	1720.70	1716	10	7.82E-03	23.2	
29	0	910.86*	317	51	1.80	1821.79	1813	17	4.41E-02	7.7	
30	6	963.85	80	15	3.01	1927.76	1922	27	1.11E-02	15.9	1.21E+00
31	6	968.89*	175	23	1.98	1937.83	1922	27	2.43E-02	9.6	
32	0	1120.60	62	74	1.11	2241.22	2235	11	8.59E-03	29.8	
33	0	1460.65*	740	31	2.09	2921.18	2914	18	1.03E-01	4.1	
34	0	1587.47	31	3	2.79	3174.77	3169	11	4.35E-03	20.6	
35	0	1729.50	25	6	1.87	3458.74	3453	12	3.47E-03	28.0	
36	0	1764.48*	86	4	1.96	3528.68	3521	16	1.20E-02	12.7	

Flag: "\*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132010.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 10:55:18
Sample ID        : G244132010             Sample quantity  : 123.83 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA4                 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00          Elapsed real time: 0 02:00:01.20    0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance  : 1.50 keV               Half life ratio   : 8.00
Errors propagated: Yes                     Systematic Error  : 0.00 %
Efficiency type   : Empirical               Efficiencies at   : Peak Energy
Abundance limit   : 75.00                  WTM error limit   : 3.00

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## Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.957E+01	2.127E+00	5.428E-01	3.857E-02	36.064
CD-109	+	88.03	*	4.033E+00	1.135E+00	1.447E+00	1.739E-01	2.787
SN-126	+	64.28		1.139E+00	1.003E+00	9.800E-01	1.688E-01	1.163
	+	86.94		1.651E+00	8.135E-01	6.034E-01	2.545E-01	2.736
	+	87.57	*	3.971E-01	1.117E-01	1.436E-01	1.722E-02	2.766
HG-203		70.83		1.154E+00	1.328E+00	2.079E+00	3.243E-01	0.555
		72.87		-5.102E-02	7.782E-01	1.163E+00	1.770E-01	-0.044
		82.60		3.258E-01	1.188E+00	1.918E+00	3.036E-01	0.170
	+	279.20	*	4.599E-02	3.886E-02	6.077E-02	4.231E-03	0.757
TL-208	+	277.35		8.338E-01	4.203E-01	5.578E-01	6.163E-02	1.495
	+	510.84		6.445E-01	3.249E-01	2.052E-01	2.059E-02	3.141
	+	583.14	*	6.216E-01	9.645E-02	5.524E-02	3.476E-03	11.253
	+	860.37		7.850E-01	3.698E-01	4.594E-01	3.832E-02	1.709
BI-211		72.87		-2.610E-01	3.981E+00	5.950E+00	6.822E-01	-0.044
	+	351.07	*	4.204E+00	5.495E-01	3.392E-01	2.291E-02	12.395
PB-212	+	74.81		2.089E+00	6.092E-01	6.262E-01	9.256E-02	3.336
	+	77.11		1.987E+00	3.890E-01	3.456E-01	3.965E-02	5.748
	+	87.30		1.837E+00	5.484E-01	6.672E-01	1.041E-01	2.753
	+	238.63	*	1.870E+00	1.943E-01	8.902E-02	7.149E-03	21.012
	+	300.09		1.848E+00	1.076E+00	1.256E+00	1.105E-01	1.472
PO-212	+	74.81		2.089E+00	6.092E-01	6.262E-01	9.256E-02	3.336
	+	77.11		1.987E+00	3.890E-01	3.456E-01	3.965E-02	5.748
	+	87.30		1.837E+00	5.484E-01	6.672E-01	1.041E-01	2.753
		115.19		7.594E-01	3.331E+00	5.547E+00	4.174E-01	0.137
	+	238.63	*	1.870E+00	1.943E-01	8.902E-02	7.149E-03	21.012
	+	300.09		1.848E+00	1.076E+00	1.256E+00	1.105E-01	1.472
BI-214	+	609.31	*	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
	+	1120.29		9.152E-01	5.522E-01	4.610E-01	4.294E-02	1.985
	+	1764.49		1.734E+00	4.545E-01	2.865E-01	1.747E-02	6.051
PB-214	+	74.81		3.599E+00	1.029E+00	1.079E+00	1.472E-01	3.336
	+	77.11		3.406E+00	7.155E-01	5.925E-01	8.160E-02	5.748
	+	87.30		3.146E+00	9.179E-01	1.143E+00	1.627E-01	2.753
	+	241.98		2.506E+00	7.116E-01	5.363E-01	4.672E-02	4.673
	+	295.21		1.566E+00	2.827E-01	2.119E-01	1.924E-02	7.393

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.462E+00	2.058E-01	1.122E-01	9.570E-03	13.036
	+	74.81		3.599E+00	1.029E+00	1.079E+00	1.472E-01	3.336
	+	77.11		3.406E+00	7.155E-01	5.925E-01	8.160E-02	5.748
	+	87.30		3.146E+00	9.179E-01	1.143E+00	1.627E-01	2.753
	+	241.98		2.506E+00	7.116E-01	5.363E-01	4.672E-02	4.673
PO-216	+	295.21		1.566E+00	2.827E-01	2.119E-01	1.924E-02	7.393
	+	351.92	*	1.462E+00	2.058E-01	1.122E-01	9.570E-03	13.036
	+	74.81		2.089E+00	6.092E-01	6.262E-01	9.256E-02	3.336
	+	77.11		1.987E+00	3.890E-01	3.456E-01	3.965E-02	5.748
	+	87.30		1.837E+00	5.484E-01	6.672E-01	1.041E-01	2.753
PO-218	+	238.63	*	1.870E+00	1.943E-01	8.902E-02	7.149E-03	21.012
	+	300.09		1.848E+00	1.076E+00	1.256E+00	1.105E-01	1.472
	+	74.81		3.599E+00	1.029E+00	1.079E+00	1.472E-01	3.336
	+	77.11		3.406E+00	7.155E-01	5.925E-01	8.160E-02	5.748
	+	87.30		3.146E+00	9.179E-01	1.143E+00	1.627E-01	2.753
RA-224	+	241.98		2.506E+00	7.116E-01	5.363E-01	4.672E-02	4.673
	+	295.21		1.566E+00	2.827E-01	2.119E-01	1.924E-02	7.393
	+	351.92	*	1.462E+00	2.058E-01	1.122E-01	9.570E-03	13.036
	+	240.98	*	4.752E+00	1.323E+00	1.013E+00	6.756E-02	4.689
	+	609.31	*	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
AC-228	+	1120.29		9.152E-01	5.522E-01	4.610E-01	4.294E-02	1.985
	+	1764.49		1.734E+00	4.545E-01	2.865E-01	1.747E-02	6.051
	+	338.32		1.835E+00	8.949E-01	3.680E-01	1.503E-01	4.987
	+	911.07	*	2.100E+00	3.967E-01	1.899E-01	2.071E-02	11.056
	+	969.11		2.053E+00	6.161E-01	3.438E-01	7.928E-02	5.972
RA-228	+	338.32		1.835E+00	8.949E-01	3.680E-01	1.503E-01	4.987
	+	911.07	*	2.100E+00	3.967E-01	1.899E-01	2.071E-02	11.056
	+	969.11		2.053E+00	6.161E-01	3.438E-01	7.928E-02	5.972
	+	74.81		2.118E+00	5.856E-01	6.349E-01	7.306E-02	3.336
	+	77.11		2.015E+00	3.944E-01	3.505E-01	4.021E-02	5.748
TH-228	+	87.30		1.862E+00	5.240E-01	6.765E-01	8.099E-02	2.753
	+	238.63	*	1.897E+00	1.971E-01	9.026E-02	7.249E-03	21.012
	+	300.09		1.874E+00	1.545E+00	1.273E+00	7.514E-01	1.472
	+	609.31	*	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
	+	1120.29		9.152E-01	5.522E-01	4.609E-01	4.294E-02	1.985
TH-230	+	1764.49		1.734E+00	4.545E-01	2.865E-01	1.747E-02	6.051
	+	338.32		1.835E+00	5.023E-01	3.680E-01	2.313E-02	4.987
	+	911.07	*	2.100E+00	3.967E-01	1.899E-01	2.071E-02	11.056
	+	969.11		2.053E+00	6.161E-01	3.438E-01	7.928E-02	5.972
	+	63.29	*	2.879E+00	2.550E+00	2.660E+00	5.262E-01	1.082
TH-234	+	92.38		2.657E+00	9.334E-01	7.415E-01	1.427E-01	3.584
	+	609.31	*	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
	+	1120.29		9.152E-01	5.522E-01	4.609E-01	4.294E-02	1.985
	+	1764.49		1.734E+00	4.545E-01	2.865E-01	1.747E-02	6.051
	+	86.50	*	1.166E+00	4.069E-01	4.420E-01	1.053E-01	2.639
NP-237	+	95.87		-3.533E-01	9.937E-01	1.443E+00	3.635E-01	-0.245
	+	63.29	*	2.879E+00	2.550E+00	2.660E+00	5.262E-01	1.082
	+	92.38		2.657E+00	8.324E-01	7.415E-01	8.052E-02	3.584
	+	74.67	*	3.386E-01	9.355E-02	1.020E-01	1.168E-02	3.320
	+							



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	86.72		4.373E+01	1.230E+01	1.605E+01	1.914E+00	2.725
		117.66		-2.861E+00	3.600E+00	5.692E+00	4.155E-01	-0.503
		142.18		7.361E+00	1.725E+01	2.866E+01	1.875E+00	0.257
ANH-511	+	511.00	*	1.392E-01	6.920E-02	4.434E-02	2.479E-03	3.140

---- 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	*	2.493E-01	3.064E-01	5.310E-01	3.518E-02	0.469
NA-22		1274.54	*	1.169E-02	4.178E-02	7.208E-02	4.713E-03	0.162
NA-24		1368.53	*	7.202E-05	4.178E-02	Half-Life too short		
AL-26		1129.67		-2.876E-02	1.562E+00	2.517E+00	1.624E-01	-0.011
		1808.65	*	-1.262E-02	2.705E-02	3.845E-02	2.280E-03	-0.328
TI-44		67.85		-3.900E-02	5.673E-02	8.809E-02	1.024E-02	-0.443
	+	78.38	*	3.666E-01	7.178E-02	8.331E-02	9.581E-03	4.400
SC-46		889.25	*	1.988E-02	3.846E-02	6.659E-02	5.386E-03	0.298
	+	1120.51		1.552E-01	9.307E-02	1.367E-01	8.954E-03	1.135
V-48		944.10		-7.892E-02	7.487E-01	1.211E+00	9.683E-02	-0.065
		983.50	*	4.527E-02	6.531E-02	1.146E-01	8.882E-03	0.395
		1312.09		-2.372E-03	7.506E-02	1.248E-01	8.411E-03	-0.019
CR-51		320.08	*	-2.048E-01	3.463E-01	5.580E-01	3.930E-02	-0.367
MN-52		744.21		6.619E-02	1.935E-01	3.331E-01	1.977E-02	0.199
		848.13		-3.063E+00	5.264E+00	8.122E+00	6.042E-01	-0.377
		935.52		1.786E-01	2.318E-01	4.073E-01	3.276E-02	0.438
		1246.25		-2.317E-01	6.107E+00	1.020E+01	6.491E-01	-0.023
		1333.61		1.461E+00	4.103E+00	7.160E+00	4.906E-01	0.204
		1434.06	*	2.396E-02	2.124E-01	3.576E-01	2.440E-02	0.067
MN-54		834.83	*	9.533E-06	3.839E-02	6.353E-02	4.597E-03	0.000
CO-56		846.75	*	2.201E-02	3.534E-02	6.214E-02	4.610E-03	0.354
		977.42		5.639E-01	3.133E+00	4.561E+00	3.552E-01	0.124
		1037.82		1.770E-01	3.353E-01	5.742E-01	4.519E-02	0.308
		1175.09		-5.710E-02	2.145E+00	3.441E+00	2.050E-01	-0.017
		1238.25		7.126E-02	9.530E-02	1.689E-01	1.125E-02	0.422
		1360.21		-1.647E-01	9.511E-01	1.544E+00	1.058E-01	-0.107
		1771.40		7.831E-03	2.334E-01	3.290E-01	1.997E-02	0.024
CO-57		122.06	*	6.813E-03	2.474E-02	4.116E-02	2.858E-03	0.166
		136.48		-5.490E-02	2.009E-01	3.242E-01	2.411E-02	-0.169
CO-58		810.76	*	-1.209E-02	3.533E-02	5.647E-02	3.898E-03	-0.214
FE-59		142.65		2.325E+00	2.604E+00	4.408E+00	2.881E-01	0.527
		192.34		1.262E-01	9.201E-01	1.487E+00	1.808E-01	0.085
		1099.22	*	-5.152E-02	8.718E-02	1.308E-01	9.992E-03	-0.394
		1291.56		1.265E-03	1.133E-01	1.896E-01	1.532E-02	0.007
CO-60		1173.22		-1.281E-02	4.697E-02	7.431E-02	4.419E-03	-0.172
		1332.49	*	-1.014E-02	3.831E-02	6.163E-02	4.223E-03	-0.165
ZN-65		1115.52	*	-3.654E-02	1.173E-01	1.563E-01	1.034E-02	-0.234
GE-68		1077.35	*	7.670E-01	1.281E+00	2.210E+00	1.544E-01	0.347
AS-73		53.44	*	-8.396E-01	1.511E+00	2.498E+00	3.267E-01	-0.336
AS-74		595.88	*	-3.707E-02	9.577E-02	1.486E-01	7.844E-03	-0.249

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75		634.78		2.112E-01	3.550E-01	5.972E-01	3.021E-02	0.354
		66.05		-3.489E+00	6.211E+00	9.021E+00	1.184E+00	-0.387
		96.73		-9.929E-01	8.342E-01	1.133E+00	1.643E-01	-0.876
		121.11		-7.049E-02	1.339E-01	2.145E-01	2.153E-02	-0.329
		136.00		-2.046E-02	3.788E-02	6.032E-02	4.042E-03	-0.339
		198.60		1.412E-01	1.908E+00	2.976E+00	2.297E-01	0.047
		264.65	*	-6.188E-03	4.448E-02	6.575E-02	4.423E-03	-0.094
	+	279.53		1.242E-01	1.050E-01	1.645E-01	1.161E-02	0.755
		303.91		8.580E-01	2.285E+00	3.479E+00	3.483E-01	0.247
		400.65		-2.533E-02	2.371E-01	3.881E-01	3.494E-02	-0.065
BR-77	+	87.88		6.220E+02	1.750E+02	2.607E+02	3.133E+01	2.386
		200.40		-8.878E-01	1.199E+02	1.918E+02	1.252E+01	-0.005
	+	239.00		2.140E+02	2.006E+01	2.974E+01	1.981E+00	7.198
		249.79		-4.922E+00	4.520E+01	7.632E+01	5.096E+00	-0.064
		281.68		2.130E+01	6.168E+01	9.444E+01	6.271E+00	0.226
		297.23		1.149E+02	5.949E+01	7.807E+01	5.137E+00	1.472
		303.76		7.561E+01	1.380E+02	2.128E+02	1.393E+01	0.355
		439.47		3.280E+01	9.825E+01	1.652E+02	9.370E+00	0.199
		484.57		3.067E+00	1.528E+02	2.493E+02	1.406E+01	0.012
		520.65	*	4.363E+00	7.087E+00	1.209E+01	6.733E-01	0.361
SR-82		574.64		-2.892E+01	1.522E+02	2.407E+02	1.295E+01	-0.120
		578.91		4.958E+01	6.392E+01	9.851E+01	5.281E+00	0.503
		585.48		7.759E+02	1.819E+02	3.341E+02	1.781E+01	2.323
		755.35		-2.956E+01	1.131E+02	1.839E+02	1.120E+01	-0.161
		817.79		-5.339E+01	8.860E+01	1.373E+02	9.582E+00	-0.389
		698.33		-8.780E+00	3.421E+01	5.622E+01	2.998E+00	-0.156
		776.49	*	-2.487E-02	3.876E-01	5.550E-01	3.542E-02	-0.045
		1395.20		-5.204E+00	1.045E+01	1.605E+01	1.099E+00	-0.324
	RB-83	520.41	*	2.692E-02	6.601E-02	1.107E-01	6.166E-03	0.243
		529.64		-5.537E-02	1.001E-01	1.537E-01	8.520E-03	-0.360
RB-84		552.65		6.231E-02	1.922E-01	3.190E-01	1.744E-02	0.195
		881.50	*	2.052E-02	7.248E-02	1.205E-01	9.594E-03	0.170
	KR-85	513.99	*	8.916E+00	7.592E+00	1.211E+01	6.763E-01	0.736
	SR-85	513.99	*	4.516E-02	3.845E-02	6.133E-02	3.426E-03	0.736
	RB-86	1076.63	*	3.272E-01	8.116E-01	1.371E+00	9.587E-02	0.239
	Y-88	898.02		7.540E-03	3.824E-02	6.426E-02	5.317E-03	0.117
		1836.01	*	1.822E-02	3.692E-02	6.560E-02	3.828E-03	0.278
	ZR-88	392.90	*	-2.616E-02	2.998E-02	4.641E-02	2.612E-03	-0.564
	Y-91	1204.90	*	-8.928E+00	1.845E+01	2.797E+01	1.714E+00	-0.319
	NB-94	702.63	*	-8.481E-03	3.487E-02	5.734E-02	3.089E-03	-0.148
NB-95		871.10		-8.816E-03	3.321E-02	5.322E-02	4.150E-03	-0.166
		765.79	*	5.140E-02	4.420E-02	7.286E-02	4.541E-03	0.705
	NB-95M	235.69	*	7.151E-02	1.380E-01	2.014E-01	1.653E-02	0.355
	ZR-95	724.18		-3.706E-02	1.100E-01	1.538E-01	1.038E-02	-0.241
		756.15	*	-4.122E-02	6.545E-02	1.023E-01	7.452E-03	-0.403
	NB-97	657.90	*	-2.724E-02	6.545E-02	Half-Life	too short	
		1024.50		-6.952E-02	6.545E-02	Half-Life	too short	
	ZR-97	254.15		-2.405E-01	6.545E-02	Half-Life	too short	
		355.39		3.111E-02	6.545E-02	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
	507.63	*		5.823E-01	6.545E-02	Half-Life	too short	
	602.52			-2.542E+00	6.545E-02	Half-Life	too short	
	1021.30			9.177E-01	6.545E-02	Half-Life	too short	
	1147.95			2.615E-01	6.545E-02	Half-Life	too short	
	1362.66			-1.606E-01	6.545E-02	Half-Life	too short	
	1750.46			-4.605E-01	6.545E-02	Half-Life	too short	
MO-99	140.51			-4.538E+00	1.884E+01	3.034E+01	8.228E+00	-0.150
	181.06			-3.097E+00	1.370E+01	1.932E+01	3.355E+00	-0.160
	366.43			-3.056E+00	6.313E+01	1.044E+02	6.243E+00	-0.029
	739.58	*		-5.002E+00	8.234E+00	1.291E+01	1.783E+00	-0.387
	778.00			-2.744E+01	2.814E+01	3.479E+01	2.228E+00	-0.789
TC-99M	140.51	*		-3.565E+08	2.814E+01	Half-Life	too short	
RH-101	127.23			6.348E-03	3.477E-02	5.154E-02	3.500E-03	0.123
	198.01	*		1.214E-02	3.488E-02	5.512E-02	3.590E-03	0.220
	325.23			5.912E-02	2.458E-01	3.688E-01	2.361E-02	0.160
RH-102	418.52			-3.793E-02	2.814E-01	4.584E-01	2.595E-02	-0.083
	475.06	*		-2.239E-02	2.824E-02	4.294E-02	2.428E-03	-0.522
	631.29			9.958E-03	5.468E-02	8.886E-02	4.514E-03	0.112
	697.49			-1.511E-02	7.871E-02	1.300E-01	6.919E-03	-0.116
	766.84			1.537E-01	1.249E-01	2.048E-01	1.279E-02	0.750
	1046.59			-1.111E-01	9.935E-02	1.352E-01	9.816E-03	-0.822
	1112.84			1.591E-01	2.510E-01	4.108E-01	2.724E-02	0.387
RU-103	497.08	*		1.101E-02	3.832E-02	6.378E-02	8.013E-03	0.173
	610.33	+		1.317E+01	2.731E+00	3.018E+00	4.589E-01	4.363
RH-106	511.85	+		6.938E-01	3.449E-01	4.354E-01	2.434E-02	1.594
	621.84	*		-1.366E-01	3.159E-01	4.830E-01	5.518E-02	-0.283
	1050.47			5.803E-01	2.072E+00	3.482E+00	2.517E-01	0.167
RU-106	511.85	+		6.938E-01	3.449E-01	4.354E-01	2.434E-02	1.594
	621.84	*		-1.366E-01	3.156E-01	4.830E-01	2.482E-02	-0.283
	1050.47			5.803E-01	2.072E+00	3.482E+00	2.517E-01	0.167
AG-108M	433.93	*		-3.479E-03	3.156E-02	5.137E-02	3.174E-03	-0.068
	614.37			4.367E-03	3.799E-02	5.389E-02	3.086E-03	0.081
	722.95			2.475E-03	4.685E-02	6.860E-02	4.222E-03	0.036
AG-110M	657.75	*		-2.966E-02	3.441E-02	5.379E-02	2.874E-03	-0.551
	677.61			-2.178E-01	2.701E-01	4.182E-01	2.289E-02	-0.521
	706.67			-3.823E-02	2.186E-01	3.613E-01	2.099E-02	-0.106
	763.93			-2.065E-02	1.694E-01	2.411E-01	1.577E-02	-0.086
	884.67			-4.560E-02	5.241E-02	7.849E-02	6.523E-03	-0.581
	937.48			-1.178E-01	1.157E-01	1.686E-01	1.410E-02	-0.699
	1384.27			-1.215E-02	1.598E-01	2.628E-01	1.880E-02	-0.046
IN-111	171.28			-1.252E-01	7.711E-01	1.236E+00	7.876E-02	-0.101
	245.39	*		-6.951E-01	9.251E-01	1.217E+00	8.122E-02	-0.571
IN-113M	391.69	*		-1.885E-02	4.428E-02	7.102E-02	4.279E-03	-0.265
SN-113	391.69	*		-1.885E-02	4.428E-02	7.102E-02	4.279E-03	-0.265
IN-114M	190.27	*		-1.543E-02	1.919E-01	2.728E-01	1.765E-02	-0.057
CD-115	260.90			-5.427E+01	8.182E+01	1.333E+02	8.901E+00	-0.407
	492.35			-2.662E+00	2.374E+01	3.824E+01	2.153E+00	-0.070
	527.90	*		4.017E+00	6.764E+00	1.155E+01	6.409E-01	0.348
SN-117M	156.02			-8.395E-02	2.117E+00	3.430E+00	2.200E-01	-0.024

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122		158.56	*	-2.872E-02	4.962E-02	7.810E-02	4.995E-03	-0.368
		563.90	*	7.695E-01	1.528E+00	2.566E+00	1.392E-01	0.300
		692.80		1.906E+01	3.248E+01	5.696E+01	2.997E+00	0.335
I-123		159.00	*	-1.203E+00	3.248E+01	Half-Life	too short	
		528.96		-4.774E+01	3.248E+01	Half-Life	too short	
TE-123M		159.00	*	-2.573E-02	2.759E-02	4.259E-02	2.753E-03	-0.604
I-124		602.71	*	-6.672E-01	7.045E-01	8.749E-01	4.588E-02	-0.763
		722.78		2.760E-01	4.041E+00	5.928E+00	3.349E-01	0.047
		1325.50		4.684E+01	3.114E+01	6.001E+01	4.089E+00	0.781
		1376.25		1.706E+01	2.591E+01	4.645E+01	3.182E+00	0.367
		1509.49		1.177E+01	1.133E+01	2.181E+01	1.471E+00	0.539
		1691.02		-1.833E+00	3.161E+00	4.509E+00	2.858E-01	-0.407
SB-124		602.71		-4.639E-02	4.898E-02	6.084E-02	3.192E-03	-0.763
		645.85		-6.750E-02	4.384E-01	7.289E-01	4.253E-02	-0.093
		709.31		-3.772E-01	2.925E+00	4.851E+00	2.655E-01	-0.078
		713.82		-3.155E-01	1.696E+00	2.797E+00	2.813E-01	-0.113
		722.78		2.782E-02	4.073E-01	5.975E-01	3.543E-02	0.047
	+	968.20		2.086E+01	4.325E+00	7.987E+00	6.268E-01	2.611
		1045.16		-3.001E+00	2.243E+00	2.964E+00	2.156E-01	-1.013
		1325.50		5.043E+00	3.353E+00	6.460E+00	4.402E-01	0.781
		1368.21		-5.245E-01	1.865E+00	2.987E+00	3.709E-01	-0.176
		1436.60		-4.923E+00	4.282E+00	5.917E+00	4.037E-01	-0.832
		1691.02	*	-4.358E-02	7.515E-02	1.072E-01	7.284E-03	-0.407
SB-125		427.89	*	2.038E-02	8.966E-02	1.498E-01	8.865E-03	0.136
	+	463.38		8.892E-01	4.257E-01	5.964E-01	3.965E-02	1.491
		600.56		4.817E-02	1.879E-01	3.077E-01	1.921E-02	0.157
		635.90		6.243E-02	2.834E-01	4.616E-01	2.846E-02	0.135
TE-125M		109.28	*	-4.108E-01	9.211E+00	1.480E+01	1.468E+00	-0.028
I-126		388.63		1.534E-01	1.990E-01	3.447E-01	1.955E-02	0.445
	+	666.33	*	1.157E-01	1.848E-01	2.879E-01	1.420E-02	0.402
		753.82		-1.148E-02	1.318E+00	2.196E+00	1.332E-01	-0.005
SB-126		223.80		1.108E+00	3.918E+00	6.325E+00	4.190E-01	0.175
	+	278.60		2.630E+00	2.222E+00	4.022E+00	2.674E-01	0.654
	+	296.50		1.461E+01	2.475E+00	3.562E+00	2.345E-01	4.102
		414.70		-1.227E-02	6.652E-02	1.080E-01	6.111E-03	-0.114
		415.30		-5.969E-01	5.550E+00	9.062E+00	5.128E-01	-0.066
		555.20		-9.730E-01	3.595E+00	5.651E+00	3.085E-01	-0.172
		573.80		2.090E-01	1.034E+00	1.691E+00	9.104E-02	0.124
		593.00		-1.855E-01	8.646E-01	1.359E+00	7.197E-02	-0.136
		656.30		-2.013E+00	2.960E+00	4.692E+00	2.306E-01	-0.429
	+	666.33		4.820E-02	7.701E-02	1.200E-01	5.918E-03	0.402
		675.00		3.281E-01	1.680E+00	2.873E+00	1.448E-01	0.114
		695.00		-4.237E-03	7.211E-02	1.204E-01	6.368E-03	-0.035
		697.00		-6.181E-02	2.592E-01	4.265E-01	2.267E-02	-0.145
		720.50	*	7.400E-02	1.436E-01	2.308E-01	1.297E-02	0.321
		856.80		2.035E-01	4.489E-01	6.865E-01	5.200E-02	0.296
		989.30		-4.301E-01	1.132E+00	1.765E+00	1.360E-01	-0.244
		1034.80		2.576E+00	8.635E+00	1.450E+01	1.067E+00	0.178
		1213.00		1.294E+00	4.460E+00	7.379E+00	4.557E-01	0.175

## ---- Non-Identified Nuclides ----

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SB-127		61.10	2.820E+01	6.583E+01	1.026E+02	1.410E+01	0.275
		252.40	-5.530E-01	3.303E+00	5.542E+00	2.305E+00	-0.100
		290.80	2.723E+00	1.857E+01	2.788E+01	2.593E+00	0.098
		411.60	1.081E+00	9.847E+00	1.634E+01	2.297E+00	0.066
		444.90	4.933E-01	7.794E+00	1.263E+01	1.310E+00	0.039
		473.00	-1.441E-01	1.291E+00	2.086E+00	2.245E-01	-0.069
		543.00	2.834E+00	1.311E+01	2.159E+01	2.694E+00	0.131
		603.60	1.486E+00	1.050E+01	1.493E+01	1.509E+00	0.100
		685.20 *	7.660E-01	1.109E+00	1.962E+00	1.694E-01	0.391
		698.50	-3.533E+00	1.290E+01	2.117E+01	2.971E+00	-0.167
		722.20	-9.885E+00	2.801E+01	3.903E+01	3.372E+00	-0.253
		783.80	4.154E+00	2.806E+00	5.209E+00	5.575E-01	0.798
XE-127		57.60	4.782E+00	9.362E+00	1.618E+01	2.026E+00	0.295
		145.22	-3.912E-01	6.898E-01	1.095E+00	7.125E-02	-0.357
		172.10	-1.625E-02	1.179E-01	1.891E-01	1.206E-02	-0.086
		202.84 *	2.582E-03	4.740E-02	7.603E-02	4.970E-03	0.034
		374.96	-2.093E-02	1.846E-01	3.035E-01	1.780E-02	-0.069
I-131		80.18	-7.412E-01	4.692E+00	6.992E+00	8.105E-01	-0.106
		284.30	9.098E-01	1.290E+00	2.121E+00	1.526E-01	0.429
		364.48 *	-6.008E-02	1.041E-01	1.660E-01	1.103E-02	-0.362
		636.97	-8.090E-01	1.469E+00	2.219E+00	1.291E-01	-0.365
		722.89	5.092E-01	7.149E+00	1.049E+01	6.002E-01	0.049
TE-132		49.72	-1.643E+01	3.288E+01	5.464E+01	7.512E+00	-0.301
		111.76	-6.643E+00	2.182E+01	3.550E+01	3.531E+00	-0.187
		116.30	3.325E+00	1.980E+01	3.288E+01	3.157E+00	0.101
		228.16 *	1.298E-01	5.672E-01	9.116E-01	1.322E-01	0.142
BA-133		53.15	-2.149E+00	6.536E+00	1.094E+01	1.432E+00	-0.197
		79.62	-1.228E+00	1.490E+00	2.117E+00	3.609E-01	-0.580
		81.00	-9.138E-02	1.152E-01	1.642E-01	2.901E-02	-0.556
	+	276.40	8.238E-01	4.199E-01	6.237E-01	8.338E-02	1.321
		302.84	1.159E-01	1.557E-01	2.428E-01	2.925E-02	0.478
		356.01 *	1.563E-02	4.534E-02	6.838E-02	8.010E-03	0.229
		383.85	-1.505E-01	2.932E-01	4.670E-01	5.063E-02	-0.322
I-133	+	510.53	5.592E-01	2.932E-01	Half-Life	too short	
		529.87 *	-1.372E-03	2.932E-01	Half-Life	too short	
		706.58	-2.992E-02	2.932E-01	Half-Life	too short	
		856.28	5.384E-02	2.932E-01	Half-Life	too short	
		875.33	-3.910E-03	2.932E-01	Half-Life	too short	
		1236.41	3.922E-01	2.932E-01	Half-Life	too short	
		1298.22	-3.379E-02	2.932E-01	Half-Life	too short	
					Half-Life	too short	
CS-134		475.35	-1.704E+00	1.875E+00	2.823E+00	1.596E-01	-0.604
		563.23	2.149E-01	3.584E-01	6.067E-01	3.371E-02	0.354
		569.32	-1.791E-01	2.157E-01	3.229E-01	1.804E-02	-0.555
		604.70	1.112E-02	3.729E-02	5.402E-02	2.847E-03	0.206
	+	795.84 *	1.187E-01	9.539E-02	8.948E-02	6.031E-03	1.326
		801.93	-3.453E-01	4.732E-01	6.396E-01	4.355E-02	-0.540
		1038.57	3.702E+00	4.235E+00	7.473E+00	5.478E-01	0.495
		1167.94	4.910E-01	2.444E+00	4.026E+00	2.420E-01	0.122
		1365.15	2.362E-01	1.271E+00	2.166E+00	1.590E-01	0.109

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135		268.24	*	1.469E-01	1.600E-01	2.545E-01	2.121E-02	0.577
I-135		288.45		3.965E+08	1.600E-01	Half-Life	too short	
		417.63		-4.887E+08	1.600E-01	Half-Life	too short	
		546.56		-3.038E+08	1.600E-01	Half-Life	too short	
		836.80		1.337E+09	1.600E-01	Half-Life	too short	
		1038.76		1.116E+09	1.600E-01	Half-Life	too short	
		1124.00		2.502E+08	1.600E-01	Half-Life	too short	
		1131.51		-1.158E+08	1.600E-01	Half-Life	too short	
		1260.41	*	2.884E+08	1.600E-01	Half-Life	too short	
		1457.56		2.133E+10	1.600E-01	Half-Life	too short	
		1678.03		-5.554E+08	1.600E-01	Half-Life	too short	
		1706.46		1.232E+09	1.600E-01	Half-Life	too short	
		1791.20		-1.514E+08	1.600E-01	Half-Life	too short	
CS-136		66.91		-3.496E-01	9.420E-01	1.395E+00	2.417E-01	-0.251
	+	86.29		4.875E+00	1.448E+00	2.112E+00	3.219E-01	2.308
		153.22		3.734E-01	6.164E-01	1.028E+00	7.959E-02	0.363
		163.89		2.336E-01	9.874E-01	1.617E+00	1.246E-01	0.144
		176.55		-1.464E-01	3.440E-01	5.426E-01	3.828E-02	-0.270
		273.65		1.712E-01	5.710E-01	6.465E-01	4.771E-02	0.265
		340.57		1.830E-01	1.274E-01	2.073E-01	1.369E-02	0.882
		818.51		-1.198E-02	6.386E-02	1.037E-01	7.259E-03	-0.115
		1048.07	*	-8.776E-03	8.716E-02	1.397E-01	1.073E-02	-0.063
		1235.34		2.344E-01	5.742E-01	9.946E-01	1.023E-01	0.236
BA-137M		661.65	*	2.463E-02	4.039E-02	6.485E-02	3.163E-03	0.380
CS-137		661.65	*	2.604E-02	4.269E-02	6.856E-02	3.363E-03	0.380
CE-139		165.85	*	-2.509E-02	2.929E-02	4.530E-02	2.878E-03	-0.554
BA-140		162.64		5.474E-01	6.872E-01	1.154E+00	8.117E-02	0.474
		304.84		2.129E-01	1.330E+00	1.990E+00	5.464E-01	0.107
		423.70		-1.026E+00	1.789E+00	2.765E+00	8.783E-01	-0.371
		537.32	*	-1.316E-01	2.458E-01	3.685E-01	1.197E-01	-0.357
LA-140	+	328.77		5.547E-01	4.170E-01	5.229E-01	3.667E-02	1.061
		432.53		-1.433E-01	1.879E+00	3.066E+00	1.928E-01	-0.047
		487.03		-6.727E-02	1.220E-01	1.890E-01	1.214E-02	-0.356
		751.79		-1.888E-01	1.622E+00	2.678E+00	1.954E-01	-0.070
		815.85		-2.425E-01	2.774E-01	4.143E-01	3.377E-02	-0.585
		867.82		8.913E-01	1.248E+00	2.204E+00	1.819E-01	0.404
		919.63		-2.094E+00	2.451E+00	3.457E+00	3.544E-01	-0.606
		925.24		6.234E-01	9.898E-01	1.735E+00	1.505E-01	0.359
		1596.49	*	-6.309E-02	8.404E-02	1.200E-01	7.903E-03	-0.526
CE-141		145.44	*	-4.505E-02	6.194E-02	9.749E-02	6.544E-03	-0.462
CE-143		57.37		5.620E-04	6.194E-02	Half-Life	too short	
		231.56		-5.479E-04	6.194E-02	Half-Life	too short	
		293.26	*	3.371E-04	6.194E-02	Half-Life	too short	
	+	350.59		1.855E-02	6.194E-02	Half-Life	too short	
		490.36		-2.040E-04	6.194E-02	Half-Life	too short	
		664.57		-1.179E-04	6.194E-02	Half-Life	too short	
		721.93		-1.801E-04	6.194E-02	Half-Life	too short	
CE-144		80.11		-4.983E-01	2.378E+00	3.534E+00	4.083E-01	-0.141
		133.54	*	8.940E-02	2.210E-01	3.306E-01	4.818E-02	0.270

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-144		476.78		6.447E-03	6.551E-02	1.077E-01	7.342E-03	0.060
		618.01		1.048E-02	2.993E-02	4.952E-02	2.748E-03	0.212
		696.49	*	-8.393E-03	3.502E-02	5.761E-02	3.061E-03	-0.146
		778.57		-2.414E+00	2.539E+00	3.154E+00	2.024E-01	-0.765
PR-144		696.49	*	-5.684E-01	2.371E+00	3.902E+00	2.071E-01	-0.146
		1489.15		3.618E-01	1.237E+01	2.053E+01	1.390E+00	0.018
PM-146		453.90	*	5.334E-02	4.387E-02	7.697E-02	6.569E-03	0.693
		633.02		3.592E-01	1.465E+00	2.383E+00	8.750E-01	0.151
		735.90		3.740E-02	1.511E-01	2.440E-01	6.806E-02	0.153
		747.13		1.380E-04	9.198E-02	1.535E-01	1.932E-02	0.001
ND-147	+	91.11		8.306E-01	3.074E-01	4.583E-01	5.374E-02	1.813
		319.41		-7.397E-01	2.974E+00	4.902E+00	3.160E-01	-0.151
		439.89		-1.238E+00	5.512E+00	8.823E+00	5.007E-01	-0.140
		531.02	*	8.233E-02	5.086E-01	8.345E-01	1.119E-01	0.099
PM-149		285.90	*	-4.424E+01	5.988E+01	9.601E+01	1.395E+01	-0.461
EU-152		121.78		1.428E-02	7.175E-02	1.190E-01	1.014E-02	0.120
		244.69		-2.625E-01	3.773E-01	4.992E-01	3.331E-02	-0.526
		344.27	*	-3.484E-02	1.052E-01	1.585E-01	1.097E-02	-0.220
		443.98		3.118E-03	9.570E-01	1.545E+00	8.762E-02	0.002
		778.89		-1.503E-01	2.822E-01	3.758E-01	2.411E-02	-0.400
		867.32		3.411E-01	8.240E-01	1.383E+00	1.070E-01	0.247
	+	964.01		1.071E+00	3.519E-01	5.995E-01	4.721E-02	1.787
		1085.78		8.944E-02	4.052E-01	6.727E-01	4.644E-02	0.133
		1112.02		9.347E-02	3.458E-01	5.744E-01	3.814E-02	0.163
		1407.95		7.538E-02	2.030E-01	3.522E-01	2.409E-02	0.214
GD-153		69.67		-4.555E-01	1.945E+00	3.244E+00	3.746E-01	-0.140
		83.37		1.653E+01	1.693E+01	2.648E+01	3.100E+00	0.624
		97.43	*	-8.071E-02	8.693E-02	1.217E-01	1.194E-02	-0.663
		103.18		-4.219E-02	1.029E-01	1.672E-01	1.488E-02	-0.252
EU-154		123.07		2.775E-02	5.136E-02	8.629E-02	8.734E-03	0.322
		247.94		2.902E-01	3.748E-01	6.178E-01	6.238E-02	0.470
		591.81		-2.403E-01	6.258E-01	9.680E-01	9.183E-02	-0.248
		723.30		-4.204E-02	1.988E-01	2.818E-01	1.962E-02	-0.149
		756.87		-3.920E-02	6.823E-01	1.131E+00	1.167E-01	-0.035
		873.19		-2.908E-01	2.922E-01	4.254E-01	4.978E-02	-0.684
		996.32		-6.059E-02	3.711E-01	5.946E-01	1.030E-01	-0.102
		1004.76		-1.129E-01	2.077E-01	3.168E-01	3.454E-02	-0.357
		1274.45	*	8.403E-02	1.107E-01	2.009E-01	1.970E-02	0.418
EU-155		48.70		-1.956E+00	5.573E+00	9.346E+00	1.077E+00	-0.209
		60.01		-5.535E+00	7.675E+00	1.114E+01	1.354E+00	-0.497
	+	86.54		4.781E-01	1.346E-01	2.076E-01	2.486E-02	2.303
		105.31	*	2.750E-02	1.073E-01	1.795E-01	1.565E-02	0.153
TB-160	+	86.79		1.263E+00	3.555E-01	5.509E-01	6.574E-02	2.293
		197.04		-1.900E-01	5.922E-01	9.051E-01	5.890E-02	-0.210
		215.65		1.548E-01	7.738E-01	1.246E+00	8.217E-02	0.124
		298.57		1.248E-01	1.678E-01	1.981E-01	1.302E-02	0.630
		879.36	*	-7.487E-03	1.420E-01	2.328E-01	1.846E-02	-0.032
		962.29		9.873E-01	5.787E-01	9.943E-01	7.841E-02	0.993
		966.15		9.290E-01	2.577E-01	5.063E-01	3.980E-02	1.835

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		1177.93	-8.915E-02	3.357E-01	5.225E-01	3.121E-02	-0.171
		1271.85	4.485E-02	5.980E-01	1.010E+00	6.578E-02	0.044
		80.57	-9.432E-02	3.108E-01	4.594E-01	5.316E-02	-0.205
	+	184.41	1.517E-01	5.864E-02	6.379E-02	4.109E-03	2.379
	+	280.46	9.832E-02	8.307E-02	1.241E-01	8.247E-03	0.792
		410.95	2.593E-01	2.428E-01	4.275E-01	2.417E-02	0.607
		711.68	* 5.294E-02	6.309E-02	1.124E-01	6.185E-03	0.471
TM-171		752.31	-8.925E-02	2.691E-01	4.352E-01	2.631E-02	-0.205
		810.29	-4.837E-02	5.534E-02	8.313E-02	5.711E-03	-0.582
		51.35	1.855E+01	5.988E+01	1.033E+02	1.337E+01	0.180
		52.39	-2.184E+00	2.949E+01	4.999E+01	6.538E+00	-0.044
		59.40	-1.653E+01	4.219E+01	6.274E+01	7.650E+00	-0.263
LU-176		66.72	* -2.128E+00	3.590E+01	5.425E+01	6.342E+00	-0.039
	+	88.36	9.419E-01	2.650E-01	3.936E-01	4.692E-02	2.393
		201.83	-8.781E-05	2.949E-02	4.717E-02	3.081E-03	-0.002
LU-177		306.84	* -9.513E-04	2.436E-02	4.078E-02	2.662E-03	-0.023
		401.10	-1.525E+00	6.307E+00	1.022E+01	5.767E-01	-0.149
		112.95	-1.115E+00	1.367E+00	2.165E+00	1.676E-01	-0.515
LU-177M	+	208.36	* 1.929E+00	1.185E+00	1.822E+00	1.196E-01	1.059
		52.97	-8.181E-01	2.949E+00	4.948E+00	6.479E-01	-0.165
		54.07	-2.349E-01	1.497E+00	2.524E+00	3.292E-01	-0.093
HF-181		61.30	9.452E-01	2.075E+00	3.240E+00	3.909E-01	0.292
		121.62	8.511E-02	3.637E-01	6.042E-01	4.208E-02	0.141
		147.16	1.593E-01	6.418E-01	1.057E+00	6.855E-02	0.151
		171.86	-9.841E-02	4.818E-01	7.701E-01	4.911E-02	-0.128
		218.09	3.245E-02	8.883E-01	1.418E+00	9.361E-02	0.023
		268.79	1.579E+00	8.609E-01	1.434E+00	9.565E-02	1.101
		319.02	3.060E-02	2.391E-01	4.035E-01	2.602E-02	0.076
		367.43	6.139E-01	9.088E-01	1.572E+00	9.373E-02	0.391
		413.65	* -8.704E-02	1.737E-01	2.758E-01	1.560E-02	-0.316
		56.28	3.718E-01	1.536E+00	2.632E+00	3.355E-01	0.141
		57.53	2.564E-01	8.010E-01	1.375E+00	1.724E-01	0.186
		65.20	-6.514E-01	1.248E+00	1.821E+00	2.146E-01	-0.358
		133.02	3.754E-02	7.021E-02	1.059E-01	7.070E-03	0.354
		136.25	-1.580E-01	4.305E-01	6.914E-01	4.577E-02	-0.229
		345.85	-2.342E-02	2.098E-01	3.215E-01	1.997E-02	-0.073
W-181		482.03	* -1.256E-02	4.088E-02	6.491E-02	3.664E-03	-0.194
		56.28	1.482E-01	6.086E-01	1.043E+00	1.330E-01	0.142
		57.53	1.018E-01	3.177E-01	5.456E-01	6.837E-02	0.187
TA-182		65.20	* -2.563E-01	4.909E-01	7.164E-01	8.444E-02	-0.358
		67.75	-9.145E-02	1.348E-01	2.094E-01	2.437E-02	-0.437
		100.10	2.331E-01	1.752E-01	3.049E-01	2.854E-02	0.764
		152.43	5.610E-02	3.269E-01	5.356E-01	3.450E-02	0.105
		222.10	-1.681E-01	3.633E-01	5.633E-01	3.728E-02	-0.298
		1001.68	-6.636E-01	2.008E+00	3.155E+00	2.404E-01	-0.210
	+	1121.28	4.297E-01	2.577E-01	3.751E-01	2.454E-02	1.146
		1189.05	-1.539E-01	2.767E-01	4.127E-01	2.492E-02	-0.373
		1221.42	* 5.105E-02	1.912E-01	3.289E-01	2.047E-02	0.155
		1230.97	-8.384E-02	4.807E-01	7.882E-01	4.948E-02	-0.106



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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		57.98		6.168E-02	2.994E-01	5.119E-01	6.374E-02	0.121
		59.32		-6.021E-02	1.725E-01	2.572E-01	3.141E-02	-0.234
		67.20		-1.682E-01	2.574E-01	3.747E-01	4.370E-02	-0.449
		162.32	*	9.359E-02	1.062E-01	1.789E-01	1.140E-02	0.523
	+	208.81		1.933E+00	1.188E+00	1.802E+00	1.183E-01	1.073
		291.72		-2.369E-01	1.008E+00	1.469E+00	9.700E-02	-0.161
RE-184		57.98		2.288E-01	1.111E+00	1.899E+00	2.365E-01	0.121
		59.32		-2.232E-01	6.393E-01	9.536E-01	1.164E-01	-0.234
		67.20		-6.237E-01	9.547E-01	1.390E+00	1.621E-01	-0.449
		161.27		-8.922E-02	3.453E-01	5.524E-01	3.524E-02	-0.162
		216.55		-1.632E-01	2.838E-01	4.383E-01	2.892E-02	-0.372
		252.85	*	-8.796E-02	2.160E-01	3.585E-01	2.394E-02	-0.245
		318.01		-2.171E-01	4.236E-01	6.864E-01	4.431E-02	-0.316
		792.07		4.712E-01	9.845E-01	1.516E+00	1.001E-01	0.311
		903.28		7.205E-01	9.571E-01	1.530E+00	1.256E-01	0.471
		920.93		5.459E-02	4.035E-01	6.730E-01	5.464E-02	0.081
OS-185		59.72		-2.199E-01	4.534E-01	6.697E-01	8.147E-02	-0.328
		61.14		9.917E-02	2.285E-01	3.565E-01	4.305E-02	0.278
		69.30		-3.979E-02	3.428E-01	5.746E-01	6.644E-02	-0.069
		592.07		-7.805E-01	2.528E+00	3.941E+00	2.088E-01	-0.198
		646.12	*	-7.235E-04	3.735E-02	6.287E-02	3.134E-03	-0.012
		717.42		-8.015E-01	9.357E-01	1.453E+00	8.108E-02	-0.551
		874.81		7.609E-02	5.588E-01	9.345E-01	7.342E-02	0.081
		880.27		1.027E-01	8.200E-01	1.343E+00	1.067E-01	0.076
RE-188		155.03	*	2.178E-01	1.674E-01	2.870E-01	1.843E-02	0.759
		477.96		2.306E+00	2.976E+00	5.143E+00	2.907E-01	0.448
		633.10		7.564E-01	2.920E+00	4.774E+00	2.420E-01	0.158
W-188	+	63.58		1.144E+02	9.967E+01	1.202E+02	1.431E+01	0.951
		227.08		-4.643E+00	1.370E+01	2.138E+01	1.418E+00	-0.217
		290.67	*	1.204E+00	7.837E+00	1.177E+01	7.780E-01	0.102
IR-192	+	295.96		1.181E+00	2.004E-01	3.076E-01	2.051E-02	3.841
		308.46		2.809E-03	9.313E-02	1.565E-01	1.029E-02	0.018
		316.51	*	1.688E-02	3.140E-02	5.430E-02	3.525E-03	0.311
		468.07		3.824E-02	7.295E-02	1.101E-01	7.232E-03	0.347
		604.41		7.073E-02	4.999E-01	7.108E-01	7.870E-02	0.100
		612.46		6.208E-01	7.076E-01	1.099E+00	7.821E-02	0.565
AU-195		65.12		-1.132E-01	2.286E-01	3.343E-01	3.942E-02	-0.339
		66.83		-9.241E-03	1.179E-01	1.779E-01	2.079E-02	-0.052
	+	75.70		1.091E+00	3.014E-01	5.125E-01	5.871E-02	2.129
		98.88	*	2.309E-01	2.212E-01	3.816E-01	3.649E-02	0.605
	+	129.76		6.250E+00	3.866E+00	5.142E+00	3.464E-01	1.215
TL-200		367.94	*	1.631E-04	3.866E+00	Half-Life	too short	
		579.30		1.645E-03	3.866E+00	Half-Life	too short	
		828.27		-1.050E-04	3.866E+00	Half-Life	too short	
		1205.75		1.550E-04	3.866E+00	Half-Life	too short	
TL-201		68.90		2.959E-01	4.190E+00	7.078E+00	8.195E-01	0.042
		70.82		2.318E+00	2.657E+00	4.178E+00	4.808E-01	0.555
		80.30		-3.045E-01	4.345E+00	6.507E+00	7.523E-01	-0.047
		135.34		2.269E+00	1.878E+01	3.089E+01	2.049E+00	0.073

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202	167.43	*		1.746E+00	5.208E+00	8.560E+00	5.441E-01	0.204
	68.90			3.246E-02	4.597E-01	7.765E-01	8.991E-02	0.042
	70.82			2.536E-01	2.907E-01	4.571E-01	5.261E-02	0.555
	80.30			-3.332E-02	4.756E-01	7.122E-01	8.233E-02	-0.047
BI-207	439.56	*		2.129E-02	6.253E-02	1.052E-01	5.966E-03	0.202
	72.80			1.350E-02	2.293E-01	3.472E-01	3.981E-02	0.039
	74.97		+	6.078E-01	1.679E-01	2.588E-01	2.963E-02	2.349
	84.90			1.905E-01	2.179E-01	3.390E-01	4.000E-02	0.562
TL-207	569.67			-1.884E-02	3.328E-02	5.103E-02	2.756E-03	-0.369
	1063.62	*		1.474E-02	5.105E-02	8.560E-02	6.088E-03	0.172
	1770.23			1.435E-01	4.470E-01	6.930E-01	4.210E-02	0.207
	81.07			-2.035E-01	2.527E-01	3.620E-01	4.196E-02	-0.562
PO-209	83.78			1.556E-01	1.460E-01	2.288E-01	2.684E-02	0.680
	94.90			4.458E-01	2.415E-01	3.902E-01	4.021E-02	1.142
	122.32			7.740E-01	1.715E+00	2.875E+00	2.212E-01	0.269
	144.24			2.413E-01	6.808E-01	1.127E+00	8.811E-02	0.214
BI-210	154.21			3.949E-01	3.916E-01	6.636E-01	5.004E-02	0.595
	269.46		+	5.382E-01	3.250E-01	3.540E-01	2.442E-02	1.520
	323.87	*		-9.725E-02	7.563E-01	1.102E+00	1.845E-01	-0.088
	338.28		+	7.664E+00	2.203E+00	2.639E+00	2.852E-01	2.904
PB-210	445.03			1.636E-01	2.240E+00	3.632E+00	3.704E-01	0.045
	260.50			-5.946E+00	8.632E+00	1.404E+01	9.377E-01	-0.423
	262.80			9.873E+00	2.346E+01	4.064E+01	2.713E+00	0.243
	896.60	*		3.186E+00	7.046E+00	1.214E+01	9.967E-01	0.262
PB-211	46.50	*		3.423E+00	9.225E+00	1.595E+01	1.390E+00	0.215
	46.50	*		3.423E+00	9.225E+00	1.595E+01	1.390E+00	0.215
	46.50	*		3.423E+00	9.224E+00	1.595E+01	1.239E+00	0.215
	404.84	*		-4.200E-01	9.406E-01	1.440E+00	8.977E-01	-0.292
BI-212	427.08			8.742E-01	2.080E+00	3.405E+00	2.104E+00	0.257
	831.96			-1.961E-01	1.203E+00	1.950E+00	1.218E+00	-0.101
	727.18	*	+	1.424E+00	5.663E-01	7.373E-01	5.636E-02	1.931
	785.46			1.053E+00	1.631E+00	2.870E+00	1.869E-01	0.367
PO-215	1620.62			8.308E-01	1.208E+00	2.216E+00	1.447E-01	0.375
	81.07			-2.035E-01	2.527E-01	3.620E-01	4.196E-02	-0.562
	83.78			1.556E-01	1.460E-01	2.288E-01	2.684E-02	0.680
	94.90			4.458E-01	2.415E-01	3.902E-01	4.021E-02	1.142
RN-219	122.32			7.740E-01	1.715E+00	2.875E+00	2.212E-01	0.269
	144.24			2.413E-01	6.808E-01	1.127E+00	8.811E-02	0.214
	154.21			3.949E-01	3.916E-01	6.636E-01	5.004E-02	0.595
	269.46		+	5.382E-01	3.250E-01	3.540E-01	2.442E-02	1.520
RN-220	323.87	*		-9.725E-02	7.563E-01	1.102E+00	1.845E-01	-0.088
	338.28		+	7.664E+00	2.203E+00	2.639E+00	2.852E-01	2.904
	445.03			1.636E-01	2.240E+00	3.632E+00	3.704E-01	0.045
	271.23		+	6.905E-01	4.186E-01	4.744E-01	4.148E-02	1.456
RA-223	401.81	*		-1.096E-01	3.859E-01	6.228E-01	8.433E-02	-0.176
	549.76	*		3.007E+00	2.482E+01	4.050E+01	2.219E+00	0.074
	81.07			-2.035E-01	2.527E-01	3.620E-01	4.196E-02	-0.562
	83.78			1.556E-01	1.460E-01	2.288E-01	2.684E-02	0.680
RA-223	94.90			4.458E-01	2.415E-01	3.902E-01	4.021E-02	1.142

----- 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		7.740E-01	1.715E+00	2.875E+00	2.212E-01	0.269
		144.24		2.413E-01	6.808E-01	1.127E+00	8.811E-02	0.214
		154.21		3.949E-01	3.916E-01	6.636E-01	5.004E-02	0.595
	+	269.46		5.382E-01	3.250E-01	3.540E-01	2.442E-02	1.520
		323.87	*	-9.725E-02	7.563E-01	1.102E+00	1.845E-01	-0.088
	+	338.28		7.664E+00	2.203E+00	2.639E+00	2.852E-01	2.904
		445.03		1.636E-01	2.240E+00	3.632E+00	3.704E-01	0.045
		79.80		-1.429E+00	1.900E+00	2.698E+00	6.161E-01	-0.529
		236.00		1.550E-01	2.689E-01	3.927E-01	4.300E-02	0.395
		256.20	*	1.004E-01	3.543E-01	6.090E-01	8.738E-02	0.165
TH-227		286.10		-9.858E-01	1.451E+00	2.341E+00	2.809E-01	-0.421
	+	299.80		3.425E+00	2.051E+00	2.732E+00	4.527E-01	1.254
		304.40		3.813E-01	2.086E+00	3.128E+00	5.493E-01	0.122
		334.20		6.374E-01	2.661E+00	3.727E+00	6.898E-01	0.171
		79.80		-1.429E+00	1.901E+00	2.698E+00	6.231E-01	-0.529
	+	94.00		1.027E+01	3.816E+00	3.820E+00	8.628E-01	2.688
		236.00		1.550E-01	2.687E-01	3.927E-01	3.781E-02	0.395
		256.20	*	1.004E-01	3.544E-01	6.090E-01	1.049E-01	0.165
		286.10		-9.858E-01	1.751E+00	2.341E+00	2.347E+00	-0.421
	+	299.80		3.425E+00	2.051E+00	2.732E+00	4.527E-01	1.254
TH-229		304.40		3.813E-01	2.086E+00	3.128E+00	5.493E-01	0.122
		334.20		6.374E-01	2.661E+00	3.727E+00	6.898E-01	0.171
		85.43		1.873E-01	2.180E-01	3.385E-01	4.006E-02	0.553
	+	88.47		5.422E-01	1.526E-01	2.250E-01	2.675E-02	2.410
		100.00		2.403E-01	1.830E-01	3.183E-01	2.985E-02	0.755
		193.63	*	-1.048E-02	5.082E-01	8.143E-01	5.284E-02	-0.013
		210.97		9.920E-02	8.767E-01	1.254E+00	8.242E-02	0.079
	PA-231	283.67	*	1.539E+00	1.519E+00	2.424E+00	3.430E-01	0.635
	+	301.29		1.370E+00	8.023E-01	1.076E+00	1.172E-01	1.274
	TH-231	81.07		-2.035E-01	2.527E-01	3.620E-01	4.196E-02	-0.562
U-231		83.78		1.556E-01	1.460E-01	2.288E-01	2.684E-02	0.680
		94.90		4.458E-01	2.415E-01	3.902E-01	4.021E-02	1.142
		122.32		7.740E-01	1.715E+00	2.875E+00	2.212E-01	0.269
		144.24		2.413E-01	6.808E-01	1.127E+00	8.811E-02	0.214
		154.21		3.949E-01	3.916E-01	6.636E-01	5.004E-02	0.595
	+	269.46		5.382E-01	3.250E-01	3.540E-01	2.442E-02	1.520
		323.87	*	-9.725E-02	7.563E-01	1.102E+00	1.845E-01	-0.088
	+	338.28		7.664E+00	2.203E+00	2.639E+00	2.852E-01	2.904
		445.03		1.636E-01	2.240E+00	3.632E+00	3.704E-01	0.045
		84.21		2.309E+00	5.221E+00	7.990E+00	9.393E-01	0.289
PA-233	+	92.29		8.371E+00	2.622E+00	3.280E+00	3.568E-01	2.552
		95.87	*	-3.305E-01	9.264E-01	1.350E+00	1.364E-01	-0.245
		108.00		-5.008E-01	1.751E+00	2.789E+00	2.309E-01	-0.180
	+	75.28		1.774E+01	5.393E+00	7.742E+00	1.324E+00	2.291
	+	86.59		7.774E+00	2.947E+00	3.374E+00	9.466E-01	2.304
	+	300.12		9.549E-01	5.650E-01	7.622E-01	1.051E-01	1.253
		311.98	*	-5.255E-02	5.915E-02	9.336E-02	6.366E-03	-0.563
		340.50		1.159E+00	7.174E-01	1.108E+00	2.558E-01	1.046
		398.62		-9.913E-01	1.995E+00	3.146E+00	8.122E-01	-0.315

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		2.525E-01	1.574E+00	2.621E+00	5.385E-01	0.096
		63.00		3.355E+00	2.956E+00	3.673E+00	6.452E-01	0.914
		94.67		4.483E-01	1.843E-01	2.946E-01	4.026E-02	1.521
		98.44		3.637E-02	9.642E-02	1.522E-01	8.514E-02	0.239
		99.86		5.969E-01	4.630E-01	8.048E-01	7.564E-02	0.742
		111.00		-4.251E-02	1.758E-01	2.869E-01	3.332E-02	-0.148
		131.20		3.375E-02	1.141E-01	1.699E-01	1.140E-02	0.199
		152.70		1.331E-01	3.172E-01	5.244E-01	8.418E-02	0.254
		186.00		5.463E+00	2.673E+00	2.568E+00	7.879E-01	2.127
		226.40		-5.323E-02	4.193E-01	6.615E-01	7.938E-02	-0.080
		227.20		-1.741E-01	4.677E-01	7.281E-01	4.830E-02	-0.239
		248.90		8.237E-01	8.426E-01	1.381E+00	3.001E-01	0.597
		293.70		7.518E+00	1.701E+00	1.802E+00	2.953E-01	4.172
		369.80		6.899E-01	8.534E-01	1.469E+00	3.065E-01	0.470
		568.70		-3.188E-01	1.055E+00	1.655E+00	8.943E-02	-0.193
		569.50		-2.318E-01	2.981E-01	4.484E-01	2.422E-02	-0.517
		574.00		2.868E-01	1.560E+00	2.549E+00	1.372E-01	0.113
		699.00		2.976E-03	7.210E-01	1.209E+00	2.157E-01	0.002
		706.10		-4.884E-01	1.118E+00	1.775E+00	7.824E-01	-0.275
		733.00		2.071E-01	4.061E-01	6.250E-01	1.329E-01	0.331
		742.81		-1.548E-01	1.302E+00	2.143E+00	1.434E+00	-0.072
		796.30		2.309E+00	1.948E+00	1.733E+00	4.592E-01	1.332
		805.60		1.574E+00	1.065E+00	1.736E+00	5.241E-01	0.907
		819.60		9.818E-01	1.154E+00	1.981E+00	7.467E-01	0.496
		826.30		-8.857E-01	9.026E-01	1.193E+00	5.306E-01	-0.742
		831.60		-3.129E-01	6.335E-01	9.880E-01	2.911E-01	-0.317
		876.40		7.381E-02	8.405E-01	1.392E+00	1.431E+00	0.053
		880.51		4.440E-02	2.998E-01	4.920E-01	3.910E-02	0.090
		883.24		-6.170E-02	3.034E-01	4.851E-01	3.257E-01	-0.127
		899.00		-9.666E-02	8.164E-01	1.324E+00	5.780E-01	-0.073
		925.00		1.121E+00	1.075E+00	1.961E+00	1.588E-01	0.572
		926.50		-3.344E-02	1.726E-01	2.769E-01	6.951E-02	-0.121
		946.00	*	-1.380E-01	2.601E-01	3.951E-01	7.301E-02	-0.349
		949.00		8.506E-02	3.706E-01	6.246E-01	4.975E-02	0.136
		980.50		-7.543E-01	7.347E-01	1.052E+00	8.173E-02	-0.717
		1394.10		-2.358E-01	1.126E+00	1.794E+00	1.164E+00	-0.131
PA-234M		766.42		1.586E+01	1.508E+01	2.109E+01	1.063E+01	0.752
		1001.03	*	1.713E+00	4.453E+00	7.562E+00	6.894E-01	0.226
U-235	+	89.95		3.560E+00	1.683E+00	2.001E+00	6.359E-01	1.779
		93.35		3.195E+00	1.314E+00	1.274E+00	3.658E-01	2.507
		105.00		3.365E-01	1.047E+00	1.749E+00	5.223E-01	0.192
		143.76	*	1.888E-01	2.055E-01	3.449E-01	5.718E-02	0.547
		163.35		3.484E-01	4.660E-01	7.745E-01	1.407E-01	0.450
NP-236	+	185.71		2.023E-01	7.819E-02	9.526E-02	6.142E-03	2.124
		205.31		-3.448E-01	6.119E-01	8.324E-01	1.518E-01	-0.414
		94.67		3.420E-01	1.366E-01	2.237E-01	2.316E-02	1.529
		98.44		2.746E-02	7.129E-02	1.150E-01	1.108E-02	0.239
		111.00		-3.215E-02	1.329E-01	2.170E-01	1.724E-02	-0.148
		160.31	*	-4.301E-02	7.721E-02	1.216E-01	7.765E-03	-0.354

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		1.636E-01	1.569E-01	2.705E-01	2.556E-02	0.605
		117.00	*	-2.842E-02	1.773E-01	2.898E-01	2.133E-02	-0.098
	+	209.75		1.543E+00	9.477E-01	1.429E+00	9.388E-02	1.080
		228.18		5.526E-02	2.375E-01	3.819E-01	2.535E-02	0.145
	+	277.60		4.021E-01	1.996E-01	3.076E-01	2.046E-02	1.307
AM-241		334.30		3.453E-01	1.506E+00	2.109E+00	1.334E-01	0.164
		59.54	*	-7.371E-02	2.406E-01	3.597E-01	4.541E-02	-0.205
CM-243		99.55		1.683E-01	1.614E-01	2.783E-01	2.630E-02	0.605
		103.76	*	1.158E-02	9.518E-02	1.585E-01	1.397E-02	0.073
		117.00		-2.923E-02	1.824E-01	2.981E-01	2.194E-02	-0.098
	+	209.75		1.521E+00	9.342E-01	1.409E+00	9.253E-02	1.080
		228.18		5.583E-02	2.399E-01	3.859E-01	2.561E-02	0.145
AM-246	+	277.60		4.054E-01	2.012E-01	3.101E-01	2.062E-02	1.307
		798.80		3.631E-01	2.918E-01	2.274E-01	1.524E-02	1.597
		1036.00		2.084E-01	3.164E-01	5.494E-01	4.039E-02	0.379
		1062.04		6.963E-02	2.236E-01	3.759E-01	2.679E-02	0.185
		1078.86	*	5.381E-02	1.520E-01	2.555E-01	1.781E-02	0.211
CM-247	+	278.00		1.668E+00	8.276E-01	1.315E+00	8.745E-02	1.268
		287.40		-7.221E-01	1.167E+00	1.895E+00	1.255E-01	-0.381
		402.60	*	1.287E-02	3.516E-02	5.948E-02	3.357E-03	0.216
CF-249		252.85		-3.316E-01	8.143E-01	1.352E+00	9.027E-02	-0.245
		333.44		1.771E-01	2.359E-01	2.806E-01	1.777E-02	0.631
		387.95	*	3.005E-02	4.160E-02	7.183E-02	4.082E-03	0.418
CF-251		176.60	*	-5.718E-02	1.260E-01	1.984E-01	1.270E-02	-0.288
		227.00		8.754E-02	4.046E-01	6.503E-01	4.314E-02	0.135
		285.00		6.845E-02	1.625E+00	2.657E+00	1.762E-01	0.026

## 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]G244132010      *
* Acquisition date   : 19-JAN-2010 10:55:18 Detector SN#                   *
* Detector ID        : GAM04 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time   : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time   : 0 02:00:01.20 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132010 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.2383E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	1.957E+01	2.084E+00	5.421E-01	0.000E+00
CD-109	4.033E+00	1.112E+00	1.501E+00	0.000E+00
SN-126	3.971E-01	1.095E-01	1.489E-01	0.000E+00
HG-203	4.599E-02	3.809E-02	6.207E-02	0.000E+00
TL-208	6.216E-01	9.452E-02	5.587E-02	0.000E+00
BI-211	4.204E+00	5.385E-01	3.454E-01	0.000E+00
PB-212	1.870E+00	1.904E-01	9.111E-02	0.000E+00
PO-212	1.870E+00	1.904E-01	9.111E-02	0.000E+00
BI-214	1.245E+00	1.940E-01	1.024E-01	0.000E+00
PB-214	1.462E+00	2.017E-01	1.142E-01	0.000E+00
PO-214	1.462E+00	2.017E-01	1.142E-01	0.000E+00
PO-216	1.870E+00	1.904E-01	9.111E-02	0.000E+00
PO-218	1.462E+00	2.017E-01	1.142E-01	0.000E+00
RA-224	4.752E+00	1.296E+00	1.037E+00	0.000E+00
RA-226	1.245E+00	1.940E-01	1.024E-01	0.000E+00
AC-228	2.100E+00	3.888E-01	1.909E-01	0.000E+00
RA-228	2.100E+00	3.888E-01	1.909E-01	0.000E+00
TH-228	1.897E+00	1.931E-01	9.239E-02	0.000E+00
TH-230	1.245E+00	1.940E-01	1.024E-01	0.000E+00
TH-232	2.100E+00	3.888E-01	1.909E-01	0.000E+00
TH-234	2.879E+00	2.499E+00	2.770E+00	0.000E+00
U-234	1.245E+00	1.940E-01	1.024E-01	0.000E+00
NP-237	1.166E+00	3.988E-01	4.584E-01	0.000E+00
U-238	2.879E+00	2.499E+00	2.770E+00	0.000E+00
AM-243	3.386E-01	9.168E-02	1.060E-01	0.000E+00
ANH-511	1.392E-01	6.782E-02	4.492E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	2.493E-01	3.003E-01	5.385E-01	0.000E+00 NOT IDENT.

NA-22	1.169E-02	4.094E-02	7.212E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.087E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.262E-02	2.651E-02	3.829E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	7.034E-02	8.652E-02	0.000E+00	FAIL ABUN
SC-46	1.988E-02	3.769E-02	6.697E-02	0.000E+00	FAIL ABUN
V-48	4.527E-02	6.400E-02	1.151E-01	0.000E+00	NOT IDENT.
CR-51	-2.048E-01	3.394E-01	5.690E-01	0.000E+00	NOT IDENT.
MN-52	2.396E-02	2.081E-01	3.572E-01	0.000E+00	NOT IDENT.
MN-54	9.533E-06	3.762E-02	6.394E-02	0.000E+00	NOT IDENT.
CO-56	2.201E-02	3.463E-02	6.253E-02	0.000E+00	NOT IDENT.
CO-57	6.813E-03	2.424E-02	4.250E-02	0.000E+00	NOT IDENT.
CO-58	-1.209E-02	3.463E-02	5.685E-02	0.000E+00	NOT IDENT.
FE-59	-5.152E-02	8.543E-02	1.311E-01	0.000E+00	NOT IDENT.
CO-60	-1.014E-02	3.754E-02	6.163E-02	0.000E+00	NOT IDENT.
ZN-65	-3.654E-02	1.149E-01	1.566E-01	0.000E+00	NOT IDENT.
GE-68	7.670E-01	1.256E+00	2.217E+00	0.000E+00	NOT IDENT.
AS-73	-8.396E-01	1.481E+00	2.606E+00	0.000E+00	NOT IDENT.
AS-74	-3.707E-02	9.386E-02	1.502E-01	0.000E+00	NOT IDENT.
SE-75	-6.188E-03	4.359E-02	6.721E-02	0.000E+00	FAIL ABUN
BR-77	4.363E+00	6.946E+00	1.225E+01	0.000E+00	FAIL ABUN
SR-82	-2.487E-02	3.798E-01	5.592E-01	0.000E+00	NOT IDENT.
RB-83	2.692E-02	6.469E-02	1.121E-01	0.000E+00	NOT IDENT.
RB-84	2.052E-02	7.103E-02	1.212E-01	0.000E+00	NOT IDENT.
KR-85	8.916E+00	7.440E+00	1.227E+01	0.000E+00	NOT IDENT.
SR-85	4.516E-02	3.768E-02	6.213E-02	0.000E+00	NOT IDENT.
RB-86	3.272E-01	7.954E-01	1.375E+00	0.000E+00	NOT IDENT.
Y-88	1.822E-02	3.618E-02	6.531E-02	0.000E+00	NOT IDENT.
ZR-88	-2.616E-02	2.938E-02	4.719E-02	0.000E+00	NOT IDENT.
Y-91	-8.928E+00	1.808E+01	2.801E+01	0.000E+00	NOT IDENT.
NB-94	-8.481E-03	3.418E-02	5.785E-02	0.000E+00	NOT IDENT.
NB-95	5.140E-02	4.332E-02	7.342E-02	0.000E+00	NOT IDENT.
NB-95M	7.151E-02	1.353E-01	2.061E-01	0.000E+00	NOT IDENT.
ZR-95	-4.122E-02	6.414E-02	1.031E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.999E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.393E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-5.002E+00	8.069E+00	1.301E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.450E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.214E-02	3.418E-02	5.656E-02	0.000E+00	NOT IDENT.
RH-102	-2.239E-02	2.768E-02	4.355E-02	0.000E+00	NOT IDENT.
RU-103	1.101E-02	3.756E-02	6.464E-02	0.000E+00	FAIL ABUN
RH-106	-1.366E-01	3.096E-01	4.881E-01	0.000E+00	FAIL ABUN
RU-106	-1.366E-01	3.093E-01	4.881E-01	0.000E+00	FAIL ABUN
AG-108M	-3.479E-03	3.093E-02	5.216E-02	0.000E+00	NOT IDENT.
AG-110M	-2.966E-02	3.373E-02	5.431E-02	0.000E+00	NOT IDENT.
IN-111	-6.951E-01	9.066E-01	1.245E+00	0.000E+00	NOT IDENT.
IN-113M	-1.885E-02	4.339E-02	7.222E-02	0.000E+00	NOT IDENT.
SN-113	-1.885E-02	4.339E-02	7.222E-02	0.000E+00	NOT IDENT.
IN-114M	-1.543E-02	1.881E-01	2.800E-01	0.000E+00	NOT IDENT.
CD-115	4.017E+00	6.629E+00	1.170E+01	0.000E+00	NOT IDENT.
SN-117M	-2.872E-02	4.863E-02	8.036E-02	0.000E+00	NOT IDENT.
SB-122	7.695E-01	1.497E+00	2.597E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.264E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.573E-02	2.704E-02	4.382E-02	0.000E+00	NOT IDENT.
I-124	-6.672E-01	6.904E-01	8.845E-01	0.000E+00	NOT IDENT.
SB-124	-4.358E-02	7.365E-02	1.068E-01	0.000E+00	FAIL ABUN
SB-125	2.038E-02	8.786E-02	1.521E-01	0.000E+00	FAIL ABUN
TE-125M	-4.108E-01	9.027E+00	1.530E+01	0.000E+00	NOT IDENT.
I-126	1.157E-01	1.811E-01	2.906E-01	0.000E+00	FAIL ABUN
SB-126	7.400E-02	1.407E-01	2.327E-01	0.000E+00	FAIL ABUN
SB-127	7.660E-01	1.087E+00	1.980E+00	0.000E+00	NOT IDENT.
XE-127	2.582E-03	4.645E-02	7.798E-02	0.000E+00	NOT IDENT.
I-131	-6.008E-02	1.020E-01	1.690E-01	0.000E+00	NOT IDENT.
TE-132	1.298E-01	5.558E-01	9.336E-01	0.000E+00	NOT IDENT.
BA-133	1.563E-02	4.443E-02	6.962E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.269E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	9.348E-02	9.012E-02	0.000E+00	FAIL ABUN
CS-135	1.469E-01	1.568E-01	2.600E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.790E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.776E-03	8.542E-02	1.402E-01	0.000E+00	FAIL ABUN
BA-137M	2.463E-02	3.958E-02	6.548E-02	0.000E+00	NOT IDENT.
CS-137	2.604E-02	4.184E-02	6.922E-02	0.000E+00	NOT IDENT.
CE-139	-2.509E-02	2.870E-02	4.659E-02	0.000E+00	NOT IDENT.
BA-140	-1.316E-01	2.408E-01	3.731E-01	0.000E+00	NOT IDENT.
LA-140	-6.309E-02	8.235E-02	1.197E-01	0.000E+00	FAIL ABUN
CE-141	-4.505E-02	6.070E-02	1.004E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.185E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	8.940E-02	2.166E-01	3.409E-01	0.000E+00	NOT IDENT.
PM-144	-8.393E-03	3.432E-02	5.813E-02	0.000E+00	NOT IDENT.

PR-144	-5.684E-01	2.324E+00	3.937E+00	0.000E+00	NOT IDENT.
PM-146	5.334E-02	4.300E-02	7.811E-02	0.000E+00	NOT IDENT.
ND-147	8.233E-02	4.984E-01	8.450E-01	0.000E+00	FAIL ABUN
PM-149	-4.424E+01	5.868E+01	9.804E+01	0.000E+00	NOT IDENT.
EU-152	-3.484E-02	1.031E-01	1.614E-01	0.000E+00	FAIL ABUN
GD-153	-8.071E-02	8.519E-02	1.260E-01	0.000E+00	NOT IDENT.
EU-154	8.403E-02	1.085E-01	2.010E-01	0.000E+00	NOT IDENT.
EU-155	2.750E-02	1.052E-01	1.857E-01	0.000E+00	FAIL ABUN
TB-160	-7.487E-03	1.391E-01	2.341E-01	0.000E+00	FAIL ABUN
HO-166M	5.294E-02	6.183E-02	1.133E-01	0.000E+00	FAIL ABUN
TM-171	-2.128E+00	3.518E+01	5.645E+01	0.000E+00	NOT IDENT.
LU-176	-9.513E-04	2.387E-02	4.160E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.161E+00	1.868E+00	0.000E+00	FAIL ABUN
LU-177M	-8.704E-02	1.703E-01	2.802E-01	0.000E+00	NOT IDENT.
HF-181	-1.256E-02	4.006E-02	6.582E-02	0.000E+00	NOT IDENT.
W-181	-2.563E-01	4.811E-01	7.458E-01	0.000E+00	NOT IDENT.
TA-182	5.105E-02	1.874E-01	3.293E-01	0.000E+00	FAIL ABUN
RE-183	9.359E-02	1.040E-01	1.840E-01	0.000E+00	FAIL ABUN
RE-184	-8.796E-02	2.117E-01	3.667E-01	0.000E+00	NOT IDENT.
OS-185	-7.235E-04	3.660E-02	6.349E-02	0.000E+00	NOT IDENT.
RE-188	2.178E-01	1.641E-01	2.954E-01	0.000E+00	NOT IDENT.
W-188	1.204E+00	7.680E+00	1.202E+01	0.000E+00	FAIL ABUN
IR-192	1.688E-02	3.077E-02	5.537E-02	0.000E+00	FAIL ABUN
AU-195	2.309E-01	2.167E-01	3.951E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.170E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.746E+00	5.104E+00	8.802E+00	0.000E+00	NOT IDENT.
TL-202	2.129E-02	6.128E-02	1.068E-01	0.000E+00	NOT IDENT.
BI-207	1.474E-02	5.003E-02	8.587E-02	0.000E+00	FAIL ABUN
TL-207	-9.725E-02	7.412E-01	1.124E+00	0.000E+00	FAIL ABUN
PO-209	3.186E+00	6.906E+00	1.221E+01	0.000E+00	NOT IDENT.
BI-210	3.423E+00	9.040E+00	1.668E+01	0.000E+00	NOT IDENT.
PB-210	3.423E+00	9.040E+00	1.668E+01	0.000E+00	NOT IDENT.
PO-210	3.423E+00	9.039E+00	1.668E+01	0.000E+00	NOT IDENT.
PB-211	-4.200E-01	9.218E-01	1.464E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.550E-01	7.435E-01	0.000E+00	FAIL ABUN
PO-215	-9.725E-02	7.412E-01	1.124E+00	0.000E+00	FAIL ABUN
RN-219	-1.096E-01	3.782E-01	6.331E-01	0.000E+00	FAIL ABUN
RN-220	3.007E+00	2.432E+01	4.099E+01	0.000E+00	NOT IDENT.
RA-223	-9.725E-02	7.412E-01	1.124E+00	0.000E+00	FAIL ABUN
AC-227	1.004E-01	3.472E-01	6.228E-01	0.000E+00	FAIL ABUN
TH-227	1.004E-01	3.473E-01	6.228E-01	0.000E+00	FAIL ABUN
TH-229	-1.048E-02	4.980E-01	8.357E-01	0.000E+00	FAIL ABUN
PA-231	1.539E+00	1.489E+00	2.475E+00	0.000E+00	FAIL ABUN
TH-231	-9.725E-02	7.412E-01	1.124E+00	0.000E+00	FAIL ABUN
U-231	-3.305E-01	9.079E-01	1.398E+00	0.000E+00	FAIL ABUN
PA-233	-5.255E-02	5.797E-02	9.521E-02	0.000E+00	FAIL ABUN
PA-234	-1.380E-01	2.549E-01	3.970E-01	0.000E+00	FAIL ABUN
PA-234M	1.713E+00	4.364E+00	7.592E+00	0.000E+00	NOT IDENT.
U-235	1.888E-01	2.014E-01	3.554E-01	0.000E+00	FAIL ABUN
NP-236	-4.301E-02	7.566E-02	1.251E-01	0.000E+00	NOT IDENT.
NP-239	-2.842E-02	1.738E-01	2.994E-01	0.000E+00	FAIL ABUN
AM-241	-7.371E-02	2.358E-01	3.748E-01	0.000E+00	NOT IDENT.
CM-243	1.158E-02	9.328E-02	1.640E-01	0.000E+00	FAIL ABUN
AM-246	5.381E-02	1.489E-01	2.563E-01	0.000E+00	FAIL ABUN
CM-247	1.287E-02	3.446E-02	6.046E-02	0.000E+00	FAIL ABUN
CF-249	3.005E-02	4.076E-02	7.305E-02	0.000E+00	NOT IDENT.
CF-251	-5.718E-02	1.234E-01	2.038E-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]G244132010.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 10:55:18
Sample ID          : G244132010           Sample quantity  : 1.23830E+02 GRAM
Detector name      : GAM04                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time  : 0 02:00:01.20  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity        : 5.00000
Batch ID           : 940270                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	740	10.67*	1.075E+00	1.957E+01	1.957E+01	10.87
CD-109	88.03	243	3.72*	5.014E+00	3.950E+00	4.033E+00	28.14
SN-126	64.28	74	9.60	2.053E+00	1.139E+00	1.139E+00	88.05
	86.94	243	8.90	5.014E+00	1.651E+00	1.651E+00	49.27
	87.57	243	37.00*	5.014E+00	3.971E-01	3.971E-01	28.14
HG-203	70.83	-----	4.75	3.109E+00	-----	Line Not Found	-----
	72.87	-----	8.00	3.384E+00	-----	Line Not Found	-----
	82.60	-----	3.55	4.559E+00	-----	Line Not Found	-----
	279.20	41	77.30*	4.300E+00	3.734E-02	4.599E-02	84.51
TL-208	277.35	81	6.80	4.327E+00	8.338E-01	8.338E-01	50.41
	510.84	125	21.60	2.730E+00	6.445E-01	6.445E-01	50.41
	583.14	424	84.20*	2.455E+00	6.216E-01	6.216E-01	15.52
	860.37	56	12.46	1.744E+00	7.850E-01	7.850E-01	47.12
BI-211	72.87	-----	1.27	3.384E+00	-----	Line Not Found	-----
	351.07	651	12.94*	3.627E+00	4.204E+00	4.204E+00	13.07
PB-212	74.81	269	10.70	3.646E+00	2.089E+00	2.089E+00	29.16
	77.11	463	18.00	3.929E+00	1.987E+00	1.987E+00	19.58
	87.30	243	8.00	5.014E+00	1.837E+00	1.837E+00	29.86
	238.63	1328	44.60*	4.826E+00	1.870E+00	1.870E+00	10.39
	300.09	85	3.41	4.080E+00	1.848E+00	1.848E+00	58.21
PO-212	74.81	269	10.70	3.646E+00	2.089E+00	2.089E+00	29.16
	77.11	463	18.00	3.929E+00	1.987E+00	1.987E+00	19.58
	87.30	243	8.00	5.014E+00	1.837E+00	1.837E+00	29.86
	115.19	-----	0.60	6.408E+00	-----	Line Not Found	-----
	238.63	1328	44.60*	4.826E+00	1.870E+00	1.870E+00	10.39
	300.09	85	3.41	4.080E+00	1.848E+00	1.848E+00	58.21
BI-214	609.31	450	46.30*	2.368E+00	1.245E+00	1.245E+00	15.90
	1120.29	62	15.10	1.357E+00	9.152E-01	9.152E-01	60.34
	1764.49	86	15.80	9.529E-01	1.734E+00	1.734E+00	26.22
PB-214	74.81	269	6.21	3.646E+00	3.599E+00	3.599E+00	28.60
	77.11	463	10.50	3.929E+00	3.406E+00	3.406E+00	21.01
	87.30	243	4.67	5.014E+00	3.146E+00	3.146E+00	29.17

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	296	7.49	4.784E+00	2.506E+00	2.506E+00	28.40
	295.21	410	19.20	4.133E+00	1.566E+00	1.566E+00	18.05
	351.92	651	37.20*	3.627E+00	1.462E+00	1.462E+00	14.07
	74.81	269	6.21	3.646E+00	3.599E+00	3.599E+00	28.60
	77.11	463	10.50	3.929E+00	3.406E+00	3.406E+00	21.01
	87.30	243	4.67	5.014E+00	3.146E+00	3.146E+00	29.17
PO-216	241.98	296	7.49	4.784E+00	2.506E+00	2.506E+00	28.40
	295.21	410	19.20	4.133E+00	1.566E+00	1.566E+00	18.05
	351.92	651	37.20*	3.627E+00	1.462E+00	1.462E+00	14.07
	74.81	269	10.70	3.646E+00	2.089E+00	2.089E+00	29.16
	77.11	463	18.00	3.929E+00	1.987E+00	1.987E+00	19.58
	87.30	243	8.00	5.014E+00	1.837E+00	1.837E+00	29.86
PO-218	238.63	1328	44.60*	4.826E+00	1.870E+00	1.870E+00	10.39
	300.09	85	3.41	4.080E+00	1.848E+00	1.848E+00	58.21
	74.81	269	6.21	3.646E+00	3.599E+00	3.599E+00	28.60
	77.11	463	10.50	3.929E+00	3.406E+00	3.406E+00	21.01
	87.30	243	4.67	5.014E+00	3.146E+00	3.146E+00	29.17
	241.98	296	7.49	4.784E+00	2.506E+00	2.506E+00	28.40
RA-224	295.21	410	19.20	4.133E+00	1.566E+00	1.566E+00	18.05
	351.92	651	37.20*	3.627E+00	1.462E+00	1.462E+00	14.07
	240.98	296	3.95*	4.784E+00	4.752E+00	4.752E+00	27.84
RA-226	609.31	450	46.30*	2.368E+00	1.245E+00	1.245E+00	15.90
	1120.29	62	15.10	1.357E+00	9.152E-01	9.152E-01	60.34
	1764.49	86	15.80	9.529E-01	1.734E+00	1.734E+00	26.22
AC-228	338.32	258	11.40	3.737E+00	1.835E+00	1.835E+00	48.76
	911.07	317	27.70*	1.653E+00	2.100E+00	2.100E+00	18.89
	969.11	175	16.60	1.559E+00	2.053E+00	2.053E+00	30.01
RA-228	338.32	258	11.40	3.737E+00	1.835E+00	1.835E+00	48.76
	911.07	317	27.70*	1.653E+00	2.100E+00	2.100E+00	18.89
	969.11	175	16.60	1.559E+00	2.053E+00	2.053E+00	30.01
TH-228	74.81	269	10.70	3.646E+00	2.089E+00	2.118E+00	27.65
	77.11	463	18.00	3.929E+00	1.987E+00	2.015E+00	19.58
	87.30	243	8.00	5.014E+00	1.837E+00	1.862E+00	28.14
TH-230	238.63	1328	44.60*	4.826E+00	1.870E+00	1.897E+00	10.39
	300.09	85	3.41	4.080E+00	1.848E+00	1.874E+00	82.42
	609.31	450	46.30*	2.368E+00	1.245E+00	1.245E+00	15.90
TH-232	1120.29	62	15.10	1.357E+00	9.152E-01	9.152E-01	60.34
	1764.49	86	15.80	9.529E-01	1.734E+00	1.734E+00	26.22
	338.32	258	11.40	3.737E+00	1.835E+00	1.835E+00	27.37
TH-234	911.07	317	27.70*	1.653E+00	2.100E+00	2.100E+00	18.89
	969.11	175	16.60	1.559E+00	2.053E+00	2.053E+00	30.01
	63.29	74	3.80*	2.053E+00	2.879E+00	2.879E+00	88.57
U-234	92.38	261	5.41	5.495E+00	2.657E+00	2.657E+00	35.13
	609.31	450	46.30*	2.368E+00	1.245E+00	1.245E+00	15.90
	1120.29	62	15.10	1.357E+00	9.152E-01	9.152E-01	60.34
NP-237	1764.49	86	15.80	9.529E-01	1.734E+00	1.734E+00	26.22
	86.50	243	12.60*	5.014E+00	1.166E+00	1.166E+00	34.89
	95.87	-----	2.60	5.678E+00	-----	Line Not Found	-----
U-238	63.29	74	3.80*	2.053E+00	2.879E+00	2.879E+00	88.57

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	92.38	261	5.41	5.495E+00	2.657E+00	2.657E+00	31.32
AM-243	74.67	269	66.00*	3.646E+00	3.386E-01	3.386E-01	27.63
	86.72	243	0.34	5.014E+00	4.373E+01	4.373E+01	28.14
	117.66	-----	0.55	6.445E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.417E+00	-----	Line Not Found	-----
ANH-511	511.00	125	100.00*	2.730E+00	1.392E-01	1.392E-01	49.71

Flag: "\*" = Keyline

Total number of lines in spectrum 36  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 33 91.67%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.957E+01	1.957E+01	0.213E+01	10.87	
CD-109	464.00D	1.02	3.950E+00	4.033E+00	1.135E+00	28.14	
SN-126	1.00E+05Y	1.00	3.971E-01	3.971E-01	1.117E-01	28.14	
HG-203	46.60D	1.23	3.734E-02	4.599E-02	3.886E-02	84.51	
TL-208	1.41E+10Y	1.00	6.216E-01	6.216E-01	0.965E-01	15.52	
BI-211	7.04E+08Y	1.00	4.204E+00	4.204E+00	0.549E+00	13.07	
PB-212	1.41E+10Y	1.00	1.870E+00	1.870E+00	0.194E+00	10.39	
PO-212	1.41E+10Y	1.00	1.870E+00	1.870E+00	0.194E+00	10.39	
BI-214	1600.00Y	1.00	1.245E+00	1.245E+00	0.198E+00	15.90	
PB-214	1600.00Y	1.00	1.462E+00	1.462E+00	0.206E+00	14.07	
PO-214	1600.00Y	1.00	1.462E+00	1.462E+00	0.206E+00	14.07	
PO-216	1.41E+10Y	1.00	1.870E+00	1.870E+00	0.194E+00	10.39	
PO-218	1600.00Y	1.00	1.462E+00	1.462E+00	0.206E+00	14.07	
RA-224	1.41E+10Y	1.00	4.752E+00	4.752E+00	1.323E+00	27.84	
RA-226	1600.00Y	1.00	1.245E+00	1.245E+00	0.198E+00	15.90	
AC-228	1.41E+10Y	1.00	2.100E+00	2.100E+00	0.397E+00	18.89	
RA-228	1.41E+10Y	1.00	2.100E+00	2.100E+00	0.397E+00	18.89	
TH-228	1.91Y	1.01	1.870E+00	1.897E+00	0.197E+00	10.39	
TH-230	4.47E+09Y	1.00	1.245E+00	1.245E+00	0.198E+00	15.90	
TH-232	1.41E+10Y	1.00	2.100E+00	2.100E+00	0.397E+00	18.89	
TH-234	4.47E+09Y	1.00	2.879E+00	2.879E+00	2.550E+00	88.57	
U-234	4.47E+09Y	1.00	1.245E+00	1.245E+00	0.198E+00	15.90	
NP-237	2.14E+06Y	1.00	1.166E+00	1.166E+00	0.407E+00	34.89	
U-238	4.47E+09Y	1.00	2.879E+00	2.879E+00	2.550E+00	88.57	
AM-243	7380.00Y	1.00	3.386E-01	3.386E-01	0.935E-01	27.63	
ANH-511	1.00E+09Y	1.00	1.392E-01	1.392E-01	0.692E-01	49.71	

Total Activity : 6.408E+01 6.420E+01

Grand Total Activity : 6.408E+01 6.420E+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	89.82	166	265	1.01	179.68	171	12	2.31E-02	35.0	5.24E+00	T
0	129.13	103	300	1.23	258.30	255	8	1.43E-02	61.5	6.50E+00	T
0	185.81	205	335	1.34	371.69	366	11	2.85E-02	38.1	5.70E+00	T
0	209.10	87	224	0.93	418.26	415	7	1.21E-02	61.1	5.29E+00	T
0	270.42	106	229	0.91	540.91	535	12	1.48E-02	60.0	4.41E+00	T
0	328.32	67	157	1.59	656.73	652	10	9.32E-03	74.8	3.82E+00	T
0	463.22	89	95	1.44	926.52	922	11	1.23E-02	47.4	2.95E+00	T
0	666.47	16	49	1.42	1333.04	1329	8	2.21E-03	****	2.19E+00	T
0	727.49	113	75	1.41	1455.07	1449	15	1.56E-02	39.0	2.03E+00	T
0	769.94	109	77	5.61	1539.97	1530	24	1.51E-02	47.0	1.93E+00	
0	797.33	56	75	0.85	1594.74	1586	18	7.72E-03	80.1	1.87E+00	T
6	963.85	80	15	3.01	1927.76	1922	27	1.11E-02	31.9	1.57E+00	T
0	1587.47	31	3	2.79	3174.77	3169	11	4.35E-03	41.2	1.01E+00	
0	1729.50	25	6	1.87	3458.74	3453	12	3.47E-03	56.0	9.62E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132010.CNF;1 *
* Acquisition date   : 19-JAN-2010 10:55:18   Detector SN#      :          *
* Detector ID        : GAM04                   Sensitivity       : 5.00000    *
* Geometry           : CAN                     Energy tolerance  : 1.50000    *
* Elapsed live time  : 0 02:00:00.00           Abundance limit      : 75.00000   *
* Elapsed real time  : 0 02:00:01.20           Half life ratio     : 8.00000    *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library   : SOLID      *
* Sample ID          : G244132010             Analyst initials  : MXR1       *
* Batch Number       : 940270                  Sample Quantity   : 1.23830E+02 GRAM *
*****
*
*                               QC DATA                                *
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS Isotope          :          *
* MSD ID              :                      MSD Isotope         :          *
* LCS ID              : 1032-A                LCS Isotope        :          *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.957E+01	2.127E+00	5.428E-01	3.857E-02	36.064
CD-109	4.033E+00	1.135E+00	1.447E+00	1.739E-01	2.787
SN-126	3.971E-01	1.117E-01	1.436E-01	1.722E-02	2.766
HG-203	4.599E-02	3.886E-02	6.077E-02	4.231E-03	0.757
TL-208	6.216E-01	9.645E-02	5.524E-02	3.476E-03	11.253
BI-211	4.204E+00	5.495E-01	3.392E-01	2.291E-02	12.395
PB-212	1.870E+00	1.943E-01	8.902E-02	7.149E-03	21.012
PO-212	1.870E+00	1.943E-01	8.902E-02	7.149E-03	21.012
BI-214	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
PB-214	1.462E+00	2.058E-01	1.122E-01	9.570E-03	13.036
PO-214	1.462E+00	2.058E-01	1.122E-01	9.570E-03	13.036
PO-216	1.870E+00	1.943E-01	8.902E-02	7.149E-03	21.012
PO-218	1.462E+00	2.058E-01	1.122E-01	9.570E-03	13.036
RA-224	4.752E+00	1.323E+00	1.013E+00	6.756E-02	4.689
RA-226	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
AC-228	2.100E+00	3.967E-01	1.899E-01	2.071E-02	11.056
RA-228	2.100E+00	3.967E-01	1.899E-01	2.071E-02	11.056
TH-228	1.897E+00	1.971E-01	9.026E-02	7.249E-03	21.012

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
TH-232	2.100E+00	3.967E-01	1.899E-01	2.071E-02	11.056
TH-234	2.879E+00	2.550E+00	2.660E+00	5.262E-01	1.082
U-234	1.245E+00	1.979E-01	1.013E-01	7.443E-03	12.290
NP-237	1.166E+00	4.069E-01	4.420E-01	1.053E-01	2.639
U-238	2.879E+00	2.550E+00	2.660E+00	5.262E-01	1.082
AM-243	3.386E-01	9.355E-02	1.020E-01	1.168E-02	3.320
ANH-511	1.392E-01	6.920E-02	4.434E-02	2.479E-03	3.140

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.493E-01		3.064E-01	5.310E-01	3.518E-02	0.469
NA-22	1.169E-02		4.178E-02	7.208E-02	4.713E-03	0.162
NA-24	7.202E-05		1.065E-01	Half-Life too short		
AL-26	-1.262E-02		2.705E-02	3.845E-02	2.280E-03	-0.328
TI-44	3.666E-01	+	7.178E-02	8.331E-02	9.581E-03	4.400
SC-46	1.988E-02		3.846E-02	6.659E-02	5.386E-03	0.298
V-48	4.527E-02		6.531E-02	1.146E-01	8.882E-03	0.395
CR-51	-2.048E-01		3.463E-01	5.580E-01	3.930E-02	-0.367
MN-52	2.396E-02		2.124E-01	3.576E-01	2.440E-02	0.067
MN-54	9.533E-06		3.839E-02	6.353E-02	4.597E-03	0.000
CO-56	2.201E-02		3.534E-02	6.214E-02	4.610E-03	0.354
CO-57	6.813E-03		2.474E-02	4.116E-02	2.858E-03	0.166
CO-58	-1.209E-02		3.533E-02	5.647E-02	3.898E-03	-0.214
FE-59	-5.152E-02		8.718E-02	1.308E-01	9.992E-03	-0.394
CO-60	-1.014E-02		3.831E-02	6.163E-02	4.223E-03	-0.165
ZN-65	-3.654E-02		1.173E-01	1.563E-01	1.034E-02	-0.234
GE-68	7.670E-01		1.281E+00	2.210E+00	1.544E-01	0.347
AS-73	-8.396E-01		1.511E+00	2.498E+00	3.267E-01	-0.336
AS-74	-3.707E-02		9.577E-02	1.486E-01	7.844E-03	-0.249
SE-75	-6.188E-03		4.448E-02	6.575E-02	4.423E-03	-0.094
BR-77	4.363E+00		7.087E+00	1.209E+01	6.733E-01	0.361
SR-82	-2.487E-02		3.876E-01	5.550E-01	3.542E-02	-0.045
RB-83	2.692E-02		6.601E-02	1.107E-01	6.166E-03	0.243
RB-84	2.052E-02		7.248E-02	1.205E-01	9.594E-03	0.170
KR-85	8.916E+00		7.592E+00	1.211E+01	6.763E-01	0.736
SR-85	4.516E-02		3.845E-02	6.133E-02	3.426E-03	0.736
RB-86	3.272E-01		8.116E-01	1.371E+00	9.587E-02	0.239
Y-88	1.822E-02		3.692E-02	6.560E-02	3.828E-03	0.278
ZR-88	-2.616E-02		2.998E-02	4.641E-02	2.612E-03	-0.564
Y-91	-8.928E+00		1.845E+01	2.797E+01	1.714E+00	-0.319
NB-94	-8.481E-03		3.487E-02	5.734E-02	3.089E-03	-0.148
NB-95	5.140E-02		4.420E-02	7.286E-02	4.541E-03	0.705
NB-95M	7.151E-02		1.380E-01	2.014E-01	1.653E-02	0.355
ZR-95	-4.122E-02		6.545E-02	1.023E-01	7.452E-03	-0.403
NB-97	-2.724E-02		1.530E-02	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	5.823E-01		3.262E-01	Half-Life too short		
MO-99	-5.002E+00		8.234E+00	1.291E+01	1.783E+00	-0.387
TC-99M	-3.565E+08		7.399E+08	Half-Life too short		
RH-101	1.214E-02		3.488E-02	5.512E-02	3.590E-03	0.220
RH-102	-2.239E-02		2.824E-02	4.294E-02	2.428E-03	-0.522
RU-103	1.101E-02		3.832E-02	6.378E-02	8.013E-03	0.173
RH-106	-1.366E-01		3.159E-01	4.830E-01	5.518E-02	-0.283
RU-106	-1.366E-01		3.156E-01	4.830E-01	2.482E-02	-0.283
AG-108M	-3.479E-03		3.156E-02	5.137E-02	3.174E-03	-0.068
AG-110M	-2.966E-02		3.441E-02	5.379E-02	2.874E-03	-0.551
IN-111	-6.951E-01		9.251E-01	1.217E+00	8.122E-02	-0.571
IN-113M	-1.885E-02		4.428E-02	7.102E-02	4.279E-03	-0.265
SN-113	-1.885E-02		4.428E-02	7.102E-02	4.279E-03	-0.265
IN-114M	-1.543E-02		1.919E-01	2.728E-01	1.765E-02	-0.057
CD-115	4.017E+00		6.764E+00	1.155E+01	6.409E-01	0.348
SN-117M	-2.872E-02		4.962E-02	7.810E-02	4.995E-03	-0.368
SB-122	7.695E-01		1.528E+00	2.566E+00	1.392E-01	0.300
I-123	-1.203E+00		6.450E-01	Half-Life too short		
TE-123M	-2.573E-02		2.759E-02	4.259E-02	2.753E-03	-0.604
I-124	-6.672E-01		7.045E-01	8.749E-01	4.588E-02	-0.763
SB-124	-4.358E-02		7.515E-02	1.072E-01	7.284E-03	-0.407
SB-125	2.038E-02		8.966E-02	1.498E-01	8.865E-03	0.136
TE-125M	-4.108E-01		9.211E+00	1.480E+01	1.468E+00	-0.028
I-126	1.157E-01	+	1.848E-01	2.879E-01	1.420E-02	0.402
SB-126	7.400E-02		1.436E-01	2.308E-01	1.297E-02	0.321
SB-127	7.660E-01		1.109E+00	1.962E+00	1.694E-01	0.391
XE-127	2.582E-03		4.740E-02	7.603E-02	4.970E-03	0.034
I-131	-6.008E-02		1.041E-01	1.660E-01	1.103E-02	-0.362
TE-132	1.298E-01		5.672E-01	9.116E-01	1.322E-01	0.142
BA-133	1.563E-02		4.534E-02	6.838E-02	8.010E-03	0.229
I-133	-1.372E-03		1.158E-03	Half-Life too short		
CS-134	1.187E-01	+	9.539E-02	8.948E-02	6.031E-03	1.326
CS-135	1.469E-01		1.600E-01	2.545E-01	2.121E-02	0.577
I-135	2.884E+08		1.423E+08	Half-Life too short		
CS-136	-8.776E-03		8.716E-02	1.397E-01	1.073E-02	-0.063
BA-137M	2.463E-02		4.039E-02	6.485E-02	3.163E-03	0.380
CS-137	2.604E-02		4.269E-02	6.856E-02	3.363E-03	0.380
CE-139	-2.509E-02		2.929E-02	4.530E-02	2.878E-03	-0.554
BA-140	-1.316E-01		2.458E-01	3.685E-01	1.197E-01	-0.357
LA-140	-6.309E-02		8.404E-02	1.200E-01	7.903E-03	-0.526
CE-141	-4.505E-02		6.194E-02	9.749E-02	6.544E-03	-0.462
CE-143	3.371E-04		6.044E-05	Half-Life too short		
CE-144	8.940E-02		2.210E-01	3.306E-01	4.818E-02	0.270
PM-144	-8.393E-03		3.502E-02	5.761E-02	3.061E-03	-0.146
PR-144	-5.684E-01		2.371E+00	3.902E+00	2.071E-01	-0.146
PM-146	5.334E-02		4.387E-02	7.697E-02	6.569E-03	0.693
ND-147	8.233E-02		5.086E-01	8.345E-01	1.119E-01	0.099
PM-149	-4.424E+01		5.988E+01	9.601E+01	1.395E+01	-0.461



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	-3.484E-02		1.052E-01	1.585E-01	1.097E-02	-0.220
GD-153	-8.071E-02		8.693E-02	1.217E-01	1.194E-02	-0.663
EU-154	8.403E-02		1.107E-01	2.009E-01	1.970E-02	0.418
EU-155	2.750E-02		1.073E-01	1.795E-01	1.565E-02	0.153
TB-160	-7.487E-03		1.420E-01	2.328E-01	1.846E-02	-0.032
HO-166M	5.294E-02		6.309E-02	1.124E-01	6.185E-03	0.471
TM-171	-2.128E+00		3.590E+01	5.425E+01	6.342E+00	-0.039
LU-176	-9.513E-04		2.436E-02	4.078E-02	2.662E-03	-0.023
LU-177	1.929E+00	+	1.185E+00	1.822E+00	1.196E-01	1.059
LU-177M	-8.704E-02		1.737E-01	2.758E-01	1.560E-02	-0.316
HF-181	-1.256E-02		4.088E-02	6.491E-02	3.664E-03	-0.194
W-181	-2.563E-01		4.909E-01	7.164E-01	8.444E-02	-0.358
TA-182	5.105E-02		1.912E-01	3.289E-01	2.047E-02	0.155
RE-183	9.359E-02		1.062E-01	1.789E-01	1.140E-02	0.523
RE-184	-8.796E-02		2.160E-01	3.585E-01	2.394E-02	-0.245
OS-185	-7.235E-04		3.735E-02	6.287E-02	3.134E-03	-0.012
RE-188	2.178E-01		1.674E-01	2.870E-01	1.843E-02	0.759
W-188	1.204E+00		7.837E+00	1.177E+01	7.780E-01	0.102
IR-192	1.688E-02		3.140E-02	5.430E-02	3.525E-03	0.311
AU-195	2.309E-01		2.212E-01	3.816E-01	3.649E-02	0.605
TL-200	1.631E-04		1.107E-04	Half-Life too short		
TL-201	1.746E+00		5.208E+00	8.560E+00	5.441E-01	0.204
TL-202	2.129E-02		6.253E-02	1.052E-01	5.966E-03	0.202
BI-207	1.474E-02		5.105E-02	8.560E-02	6.088E-03	0.172
TL-207	-9.725E-02		7.563E-01	1.102E+00	1.845E-01	-0.088
PO-209	3.186E+00		7.046E+00	1.214E+01	9.967E-01	0.262
BI-210	3.423E+00		9.225E+00	1.595E+01	1.390E+00	0.215
PB-210	3.423E+00		9.225E+00	1.595E+01	1.390E+00	0.215
PO-210	3.423E+00		9.224E+00	1.595E+01	1.239E+00	0.215
PB-211	-4.200E-01		9.406E-01	1.440E+00	8.977E-01	-0.292
BI-212	1.424E+00	+	5.663E-01	7.373E-01	5.636E-02	1.931
PO-215	-9.725E-02		7.563E-01	1.102E+00	1.845E-01	-0.088
RN-219	-1.096E-01		3.859E-01	6.228E-01	8.433E-02	-0.176
RN-220	3.007E+00		2.482E+01	4.050E+01	2.219E+00	0.074
RA-223	-9.725E-02		7.563E-01	1.102E+00	1.845E-01	-0.088
AC-227	1.004E-01		3.543E-01	6.090E-01	8.738E-02	0.165
TH-227	1.004E-01		3.544E-01	6.090E-01	1.049E-01	0.165
TH-229	-1.048E-02		5.082E-01	8.143E-01	5.284E-02	-0.013
PA-231	1.539E+00		1.519E+00	2.424E+00	3.430E-01	0.635
TH-231	-9.725E-02		7.563E-01	1.102E+00	1.845E-01	-0.088
U-231	-3.305E-01		9.264E-01	1.350E+00	1.364E-01	-0.245
PA-233	-5.255E-02		5.915E-02	9.336E-02	6.366E-03	-0.563
PA-234	-1.380E-01		2.601E-01	3.951E-01	7.301E-02	-0.349
PA-234M	1.713E+00		4.453E+00	7.562E+00	6.894E-01	0.226
U-235	1.888E-01		2.055E-01	3.449E-01	5.718E-02	0.547
NP-236	-4.301E-02		7.721E-02	1.216E-01	7.765E-03	-0.354
NP-239	-2.842E-02		1.773E-01	2.898E-01	2.133E-02	-0.098
AM-241	-7.371E-02		2.406E-01	3.597E-01	4.541E-02	-0.205

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.158E-02		9.518E-02	1.585E-01	1.397E-02	0.073
AM-246	5.381E-02		1.520E-01	2.555E-01	1.781E-02	0.211
CM-247	1.287E-02		3.516E-02	5.948E-02	3.357E-03	0.216
CF-249	3.005E-02		4.160E-02	7.183E-02	4.082E-03	0.418
CF-251	-5.718E-02		1.260E-01	1.984E-01	1.270E-02	-0.288

# 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]G244132010          *
* Acquisition date   : 19-JAN-2010 10:55:18 Detector SN#      :             *
* Detector ID        : GAM04                      Sensitivity   : 5.000        *
* Geometry           : CAN                          Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:01.20              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G244132010              Analyst initials: MXR1         *
* Batch Number       : 940270                  Sample Quantity : 1.2383E+02 GRAM *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 5-MAY-2009 14:25:41 MS Isotope          :             *
* MSD DPM           : 0.000                      MSD Isotope    :             *
* LCS DPM           : 0.000                      LCS Isotope     :             *
* LCSD DPM          : 0.000                      LCSD Isotope    :             *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	1.957E+01	2.084E+00	2.712E-01	1.063E+00
CD-109	4.033E+00	1.112E+00	7.508E-01	5.674E-01
SN-126	3.971E-01	1.095E-01	7.450E-02	5.587E-02
HG-203	4.599E-02	3.809E-02	3.105E-02	1.943E-02
TL-208	6.216E-01	9.452E-02	2.795E-02	4.823E-02
BI-211	4.204E+00	5.385E-01	1.728E-01	2.747E-01
PB-212	1.870E+00	1.904E-01	4.558E-02	9.717E-02
PO-212	1.870E+00	1.904E-01	4.558E-02	9.717E-02
BI-214	1.245E+00	1.940E-01	5.122E-02	9.896E-02
PB-214	1.462E+00	2.017E-01	5.715E-02	1.029E-01
PO-214	1.462E+00	2.017E-01	5.715E-02	1.029E-01
PO-216	1.870E+00	1.904E-01	4.558E-02	9.717E-02
PO-218	1.462E+00	2.017E-01	5.715E-02	1.029E-01
RA-224	4.752E+00	1.296E+00	5.188E-01	6.614E-01
RA-226	1.245E+00	1.940E-01	5.122E-02	9.896E-02
AC-228	2.100E+00	3.888E-01	9.552E-02	1.984E-01
RA-228	2.100E+00	3.888E-01	9.552E-02	1.984E-01
TH-228	1.897E+00	1.931E-01	4.622E-02	9.853E-02
TH-230	1.245E+00	1.940E-01	5.122E-02	9.896E-02
TH-232	2.100E+00	3.888E-01	9.552E-02	1.984E-01
TH-234	2.879E+00	2.499E+00	1.386E+00	1.275E+00
U-234	1.245E+00	1.940E-01	5.122E-02	9.896E-02
NP-237	1.166E+00	3.988E-01	2.293E-01	2.034E-01
U-238	2.879E+00	2.499E+00	1.386E+00	1.275E+00
AM-243	3.386E-01	9.168E-02	5.303E-02	4.677E-02
ANH-511	1.392E-01	6.782E-02	2.247E-02	3.460E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	2.493E-01	3.003E-01	2.694E-01	1.532E-01 NOT IDENT.

NA-22	1.169E-02	4.094E-02	3.608E-02	2.089E-02	NOT IDENT.
NA-24	7.202E+01	2.087E+05	0.000E+00	1.065E+05	SHORT HLIF
AL-26	-1.262E-02	2.651E-02	1.916E-02	1.353E-02	NOT IDENT.
TI-44	3.666E-01	7.034E-02	4.329E-02	3.589E-02	FAIL ABUN
SC-46	1.988E-02	3.769E-02	3.350E-02	1.923E-02	FAIL ABUN
V-48	4.527E-02	6.400E-02	5.760E-02	3.265E-02	NOT IDENT.
CR-51	-2.048E-01	3.394E-01	2.847E-01	1.732E-01	NOT IDENT.
MN-52	2.396E-02	2.081E-01	1.787E-01	1.062E-01	NOT IDENT.
MN-54	9.533E-06	3.762E-02	3.199E-02	1.920E-02	NOT IDENT.
CO-56	2.201E-02	3.463E-02	3.128E-02	1.767E-02	NOT IDENT.
CO-57	6.813E-03	2.424E-02	2.126E-02	1.237E-02	NOT IDENT.
CO-58	-1.209E-02	3.463E-02	2.844E-02	1.767E-02	NOT IDENT.
FE-59	-5.152E-02	8.543E-02	6.560E-02	4.359E-02	NOT IDENT.
CO-60	-1.014E-02	3.754E-02	3.084E-02	1.916E-02	NOT IDENT.
ZN-65	-3.654E-02	1.149E-01	7.837E-02	5.864E-02	NOT IDENT.
GE-68	7.670E-01	1.256E+00	1.109E+00	6.406E-01	NOT IDENT.
AS-73	-8.396E-01	1.481E+00	1.304E+00	7.555E-01	NOT IDENT.
AS-74	-3.707E-02	9.386E-02	7.516E-02	4.789E-02	NOT IDENT.
SE-75	-6.188E-03	4.359E-02	3.362E-02	2.224E-02	FAIL ABUN
BR-77	4.363E+00	6.946E+00	6.128E+00	3.544E+00	FAIL ABUN
SR-82	-2.487E-02	3.798E-01	2.798E-01	1.938E-01	NOT IDENT.
RB-83	2.692E-02	6.469E-02	5.610E-02	3.301E-02	NOT IDENT.
RB-84	2.052E-02	7.103E-02	6.062E-02	3.624E-02	NOT IDENT.
KR-85	8.916E+00	7.440E+00	6.137E+00	3.796E+00	NOT IDENT.
SR-85	4.516E-02	3.768E-02	3.109E-02	1.923E-02	NOT IDENT.
RB-86	3.272E-01	7.954E-01	6.880E-01	4.058E-01	NOT IDENT.
Y-88	1.822E-02	3.618E-02	3.267E-02	1.846E-02	NOT IDENT.
ZR-88	-2.616E-02	2.938E-02	2.361E-02	1.499E-02	NOT IDENT.
Y-91	-8.928E+00	1.808E+01	1.401E+01	9.226E+00	NOT IDENT.
NB-94	-8.481E-03	3.418E-02	2.894E-02	1.744E-02	NOT IDENT.
NB-95	5.140E-02	4.332E-02	3.673E-02	2.210E-02	NOT IDENT.
NB-95M	7.151E-02	1.353E-01	1.031E-01	6.902E-02	NOT IDENT.
ZR-95	-4.122E-02	6.414E-02	5.160E-02	3.273E-02	NOT IDENT.
NB-97	-2.724E+04	2.999E+04	0.000E+00	1.530E+04	SHORT HLIF
ZR-97	5.823E+05	6.393E+05	0.000E+00	3.262E+05	SHORT HLIF
MO-99	-5.002E+00	8.069E+00	6.511E+00	4.117E+00	NOT IDENT.
TC-99M	-3.565E+14	1.450E+15	0.000E+00	7.399E+14	SHORT HLIF
RH-101	1.214E-02	3.418E-02	2.830E-02	1.744E-02	NOT IDENT.
RH-102	-2.239E-02	2.768E-02	2.179E-02	1.412E-02	NOT IDENT.
RU-103	1.101E-02	3.756E-02	3.234E-02	1.916E-02	FAIL ABUN
RH-106	-1.366E-01	3.096E-01	2.442E-01	1.580E-01	FAIL ABUN
RU-106	-1.366E-01	3.093E-01	2.442E-01	1.578E-01	FAIL ABUN
AG-108M	-3.479E-03	3.093E-02	2.609E-02	1.578E-02	NOT IDENT.
AG-110M	-2.966E-02	3.373E-02	2.717E-02	1.721E-02	NOT IDENT.
IN-111	-6.951E-01	9.066E-01	6.231E-01	4.626E-01	NOT IDENT.
IN-113M	-1.885E-02	4.339E-02	3.613E-02	2.214E-02	NOT IDENT.
SN-113	-1.885E-02	4.339E-02	3.613E-02	2.214E-02	NOT IDENT.
IN-114M	-1.543E-02	1.881E-01	1.401E-01	9.596E-02	NOT IDENT.
CD-115	4.017E+00	6.629E+00	5.852E+00	3.382E+00	NOT IDENT.
SN-117M	-2.872E-02	4.863E-02	4.021E-02	2.481E-02	NOT IDENT.
SB-122	7.695E-01	1.497E+00	1.299E+00	7.638E-01	NOT IDENT.
I-123	-1.203E+06	1.264E+06	0.000E+00	6.450E+05	SHORT HLIF
TE-123M	-2.573E-02	2.704E-02	2.192E-02	1.379E-02	NOT IDENT.
I-124	-6.672E-01	6.904E-01	4.425E-01	3.522E-01	NOT IDENT.
SB-124	-4.358E-02	7.365E-02	5.345E-02	3.758E-02	FAIL ABUN
SB-125	2.038E-02	8.786E-02	7.609E-02	4.483E-02	FAIL ABUN
TE-125M	-4.108E-01	9.027E+00	7.656E+00	4.606E+00	NOT IDENT.
I-126	1.157E-01	1.811E-01	1.454E-01	9.239E-02	FAIL ABUN
SB-126	7.400E-02	1.407E-01	1.164E-01	7.178E-02	FAIL ABUN
SB-127	7.660E-01	1.087E+00	9.904E-01	5.547E-01	NOT IDENT.
XE-127	2.582E-03	4.645E-02	3.902E-02	2.370E-02	NOT IDENT.
I-131	-6.008E-02	1.020E-01	8.455E-02	5.204E-02	NOT IDENT.
TE-132	1.298E-01	5.558E-01	4.671E-01	2.836E-01	NOT IDENT.
BA-133	1.563E-02	4.443E-02	3.483E-02	2.267E-02	FAIL ABUN
I-133	-1.372E+03	2.269E+03	0.000E+00	1.158E+03	SHORT HLIF
CS-134	1.187E-01	9.348E-02	4.509E-02	4.770E-02	FAIL ABUN
CS-135	1.469E-01	1.568E-01	1.301E-01	8.002E-02	NOT IDENT.
I-135	2.884E+14	2.790E+14	0.000E+00	1.423E+14	SHORT HLIF
CS-136	-8.776E-03	8.542E-02	7.014E-02	4.358E-02	FAIL ABUN
BA-137M	2.463E-02	3.958E-02	3.276E-02	2.019E-02	NOT IDENT.
CS-137	2.604E-02	4.184E-02	3.463E-02	2.135E-02	NOT IDENT.
CE-139	-2.509E-02	2.870E-02	2.331E-02	1.464E-02	NOT IDENT.
BA-140	-1.316E-01	2.408E-01	1.866E-01	1.229E-01	NOT IDENT.
LA-140	-6.309E-02	8.235E-02	5.988E-02	4.202E-02	FAIL ABUN
CE-141	-4.505E-02	6.070E-02	5.025E-02	3.097E-02	NOT IDENT.
CE-143	3.371E+02	1.185E+02	0.000E+00	6.044E+01	SHORT HLIF
CE-144	8.940E-02	2.166E-01	1.706E-01	1.105E-01	NOT IDENT.
PM-144	-8.393E-03	3.432E-02	2.908E-02	1.751E-02	NOT IDENT.

PR-144	-5.684E-01	2.324E+00	1.970E+00	1.186E+00	NOT IDENT.
PM-146	5.334E-02	4.300E-02	3.908E-02	2.194E-02	NOT IDENT.
ND-147	8.233E-02	4.984E-01	4.228E-01	2.543E-01	FAIL ABUN
PM-149	-4.424E+01	5.868E+01	4.905E+01	2.994E+01	NOT IDENT.
EU-152	-3.484E-02	1.031E-01	8.076E-02	5.260E-02	FAIL ABUN
GD-153	-8.071E-02	8.519E-02	6.304E-02	4.347E-02	NOT IDENT.
EU-154	8.403E-02	1.085E-01	1.006E-01	5.535E-02	NOT IDENT.
EU-155	2.750E-02	1.052E-01	9.292E-02	5.366E-02	FAIL ABUN
TB-160	-7.487E-03	1.391E-01	1.171E-01	7.099E-02	FAIL ABUN
HO-166M	5.294E-02	6.183E-02	5.671E-02	3.155E-02	FAIL ABUN
TM-171	-2.128E+00	3.518E+01	2.824E+01	1.795E+01	NOT IDENT.
LU-176	-9.513E-04	2.387E-02	2.081E-02	1.218E-02	FAIL ABUN
LU-177	1.929E+00	1.161E+00	9.345E-01	5.926E-01	FAIL ABUN
LU-177M	-8.704E-02	1.703E-01	1.402E-01	8.687E-02	NOT IDENT.
HF-181	-1.256E-02	4.006E-02	3.293E-02	2.044E-02	NOT IDENT.
W-181	-2.563E-01	4.811E-01	3.731E-01	2.455E-01	NOT IDENT.
TA-182	5.105E-02	1.874E-01	1.647E-01	9.559E-02	FAIL ABUN
RE-183	9.359E-02	1.040E-01	9.208E-02	5.308E-02	FAIL ABUN
RE-184	-8.796E-02	2.117E-01	1.834E-01	1.080E-01	NOT IDENT.
OS-185	-7.235E-04	3.660E-02	3.177E-02	1.868E-02	NOT IDENT.
RE-188	2.178E-01	1.641E-01	1.478E-01	8.371E-02	NOT IDENT.
W-188	1.204E+00	7.680E+00	6.013E+00	3.919E+00	FAIL ABUN
IR-192	1.688E-02	3.077E-02	2.770E-02	1.570E-02	FAIL ABUN
AU-195	2.309E-01	2.167E-01	1.977E-01	1.106E-01	FAIL ABUN
TL-200	1.631E+02	2.170E+02	0.000E+00	1.107E+02	SHORT HLIF
TL-201	1.746E+00	5.104E+00	4.404E+00	2.604E+00	NOT IDENT.
TL-202	2.129E-02	6.128E-02	5.342E-02	3.126E-02	NOT IDENT.
BI-207	1.474E-02	5.003E-02	4.296E-02	2.553E-02	FAIL ABUN
TL-207	-9.725E-02	7.412E-01	5.621E-01	3.782E-01	FAIL ABUN
PO-209	3.186E+00	6.906E+00	6.109E+00	3.523E+00	NOT IDENT.
BI-210	3.423E+00	9.040E+00	8.344E+00	4.612E+00	NOT IDENT.
PB-210	3.423E+00	9.040E+00	8.344E+00	4.612E+00	NOT IDENT.
PO-210	3.423E+00	9.039E+00	8.344E+00	4.612E+00	NOT IDENT.
PB-211	-4.200E-01	9.218E-01	7.324E-01	4.703E-01	NOT IDENT.
BI-212	1.424E+00	5.550E-01	3.720E-01	2.832E-01	FAIL ABUN
PO-215	-9.725E-02	7.412E-01	5.621E-01	3.782E-01	FAIL ABUN
RN-219	-1.096E-01	3.782E-01	3.167E-01	1.929E-01	FAIL ABUN
RN-220	3.007E+00	2.432E+01	2.051E+01	1.241E+01	NOT IDENT.
RA-223	-9.725E-02	7.412E-01	5.621E-01	3.782E-01	FAIL ABUN
AC-227	1.004E-01	3.472E-01	3.116E-01	1.771E-01	FAIL ABUN
TH-227	1.004E-01	3.473E-01	3.116E-01	1.772E-01	FAIL ABUN
TH-229	-1.048E-02	4.980E-01	4.181E-01	2.541E-01	FAIL ABUN
PA-231	1.539E+00	1.489E+00	1.238E+00	7.596E-01	FAIL ABUN
TH-231	-9.725E-02	7.412E-01	5.621E-01	3.782E-01	FAIL ABUN
U-231	-3.305E-01	9.079E-01	6.993E-01	4.632E-01	FAIL ABUN
PA-233	-5.255E-02	5.797E-02	4.764E-02	2.958E-02	FAIL ABUN
PA-234	-1.380E-01	2.549E-01	1.986E-01	1.300E-01	FAIL ABUN
PA-234M	1.713E+00	4.364E+00	3.798E+00	2.227E+00	NOT IDENT.
U-235	1.888E-01	2.014E-01	1.778E-01	1.027E-01	FAIL ABUN
NP-236	-4.301E-02	7.566E-02	6.260E-02	3.860E-02	NOT IDENT.
NP-239	-2.842E-02	1.738E-01	1.498E-01	8.867E-02	FAIL ABUN
AM-241	-7.371E-02	2.358E-01	1.875E-01	1.203E-01	NOT IDENT.
CM-243	1.158E-02	9.328E-02	8.203E-02	4.759E-02	FAIL ABUN
AM-246	5.381E-02	1.489E-01	1.282E-01	7.599E-02	FAIL ABUN
CM-247	1.287E-02	3.446E-02	3.025E-02	1.758E-02	FAIL ABUN
CF-249	3.005E-02	4.076E-02	3.655E-02	2.080E-02	NOT IDENT.
CF-251	-5.718E-02	1.234E-01	1.020E-01	6.298E-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	185.2030
46.50	185.2030
46.50	185.2030
48.70	206.1676
49.72	209.3615
51.35	184.3664
52.39	195.3197
52.97	200.8502
53.15	204.4297
53.44	217.6514
54.07	204.9449
56.28	214.0585
56.28	214.0603
57.37	0.0000
57.53	222.6869
57.53	222.6882
57.60	213.0443
57.98	212.3738
57.98	212.3738
59.32	228.1422
59.32	228.1422
59.40	228.1888
59.54	220.3073
59.72	227.0474
60.01	235.1875
61.10	198.5289
61.14	198.5488
61.30	198.6290
63.00	219.5501
63.29	219.7068
63.29	219.7068
63.58	219.8633
64.28	216.2099
65.12	246.2542
65.20	246.3017
65.20	246.3017
66.05	237.3634
66.72	235.0391
66.83	235.1015
66.91	248.6608
67.20	265.0588
67.20	265.0588
67.75	271.9024
67.85	271.9667
68.90	257.9696
68.90	257.9696
69.30	278.1407
69.67	291.9828
70.82	267.2943
70.82	267.2943
70.83	267.3003
72.80	324.6581
72.87	324.7087
72.87	324.7087
74.67	298.9544
74.81	299.0472
74.81	299.0472
74.81	299.0472
74.81	299.0472
74.81	299.0472
74.81	299.0472
74.81	299.0472
74.97	299.1517
75.28	299.3556
75.70	299.6309
77.11	300.5478
77.11	300.5478

77.11	300.5478
77.11	300.5478
77.11	300.5478
77.11	300.5478
77.11	300.5478
78.38	300.9047
79.62	304.4784
79.80	304.5937
79.80	304.5937
80.11	286.6998
80.18	286.7414
80.30	286.8130
80.30	286.8130
80.57	302.3004
81.00	326.2757
81.07	326.3221
81.07	326.3221
81.07	326.3221
81.07	326.3221
82.60	305.5354
83.37	285.8384
83.78	293.0914
83.78	293.0914
83.78	293.0914
83.78	293.0914
84.21	321.4198
84.90	303.5984
85.43	319.3989
86.29	381.9683
86.50	382.1275
86.54	382.1585
86.59	382.1958
86.72	361.1348
86.79	361.1836
86.94	361.2930
87.30	361.5527
87.30	361.5527
87.30	361.5527
87.30	361.5527
87.30	361.5527
87.30	361.5527
87.57	361.7461
87.88	361.9668
88.03	362.0742
88.36	362.3105
88.47	362.3887
89.95	238.5059
91.11	239.0416
92.29	239.5838
92.38	239.6248
92.38	239.6248
93.35	217.2035
94.00	217.4714
94.67	207.7151
94.67	207.7173
94.90	210.6732
94.90	210.6732
94.90	210.6732
94.90	210.6732
95.87	245.5137
95.87	245.5137
96.73	268.9152
97.43	270.7018
98.44	237.7361
98.44	237.7361
98.88	222.3349
99.55	229.3520
99.55	229.3520
99.86	215.9814
100.00	216.0361
100.10	216.0771
103.18	253.1570
103.76	241.7659
105.00	241.3197
105.31	248.2660
108.00	257.2493
109.28	237.2267

111.00	240.8691
111.00	240.8691
111.76	239.2068
112.95	252.5065
115.19	220.7724
116.30	212.2476
117.00	222.4186
117.00	222.4186
117.66	241.5428
121.11	253.8760
121.62	228.0731
121.78	232.1322
122.06	232.2348
122.32	228.3247
122.32	228.3247
122.32	228.3247
122.32	228.3247
123.07	233.6068
127.23	248.2366
129.76	261.3515
131.20	240.5995
133.02	235.1451
133.54	232.2722
135.34	235.9535
136.00	252.5403
136.25	242.4052
136.48	243.5091
140.51	250.0771
140.51	0.0000
142.18	246.5465
142.65	235.3546
143.76	228.4863
144.24	257.6095
144.24	257.6095
144.24	257.6095
144.24	257.6095
145.22	285.9362
145.44	284.9869
147.16	249.3115
152.43	239.6039
152.70	233.4123
153.22	238.8127
154.21	224.4449
154.21	224.4449
154.21	224.4449
154.21	224.4449
155.03	216.2933
156.02	247.0675
158.56	235.2384
159.00	0.0000
159.00	250.1514
160.31	238.9502
161.27	236.0732
162.32	212.0117
162.64	212.0992
163.35	215.4789
163.89	227.3119
165.85	250.2445
167.43	214.4683
171.28	241.2369
171.86	233.9003
172.10	233.9690
176.55	233.0925
176.60	233.1079
181.06	219.7169
184.41	188.4567
185.71	188.7454
186.00	188.8087
190.27	205.6522
192.34	211.0898
193.63	218.0067
197.04	225.4803
198.01	206.9167
198.60	217.0168
200.40	228.5480
201.83	227.7993
202.84	228.0538
205.31	249.3072



208.36	229.9897
208.81	225.0618
209.75	208.4780
209.75	208.4780
210.97	227.2687
215.65	212.0450
216.55	237.0831
218.09	211.4593
222.10	220.2886
223.80	195.6486
226.40	204.1537
227.00	201.9951
227.08	224.8374
227.20	224.8654
228.16	198.8051
228.18	198.8086
228.18	198.8086
231.56	0.0000
235.69	198.5793
236.00	214.1846
236.00	214.1846
238.63	184.7217
238.63	184.7217
238.63	184.7217
238.63	184.7217
239.00	184.7884
240.98	185.1449
241.98	185.3255
241.98	185.3255
241.98	185.3255
244.69	188.1332
245.39	188.2584
247.94	153.7704
248.90	139.9182
249.79	165.4183
252.40	157.0511
252.85	160.6290
252.85	160.6290
254.15	0.0000
256.20	146.1625
256.20	146.1625
260.50	149.3965
260.90	149.4506
262.80	123.1351
264.65	137.7158
268.24	129.6172
268.79	133.9569
269.46	139.9192
269.46	139.9192
269.46	139.9192
269.46	139.9192
271.23	140.1396
273.65	132.3906
276.40	138.6893
277.35	135.5143
277.60	135.5443
277.60	135.5443
278.00	135.5903
278.60	135.6618
279.20	135.7332
279.53	125.1623
280.46	123.8245
281.68	110.9826
283.67	102.5097
284.30	110.7530
285.00	123.8965
285.90	147.3705
286.10	148.2997
286.10	148.2997
287.40	148.4648
288.45	0.0000
290.67	140.8892
290.80	140.9034
291.72	152.6422
293.26	0.0000
293.70	152.8986
295.21	142.1558
295.21	142.1558

295.21	142.1558
295.96	120.3622
296.50	145.9570
297.23	146.0474
298.57	146.2085
299.80	146.3574
299.80	146.3574
300.09	153.7137
300.09	153.7137
300.09	153.7137
300.09	153.7137
300.12	153.7163
301.29	153.8650
302.84	126.1823
303.76	127.7473
303.91	133.6363
304.40	139.5660
304.40	139.5660
304.84	138.1474
306.84	136.1642
308.46	132.6577
311.98	129.3381
316.51	104.7736
318.01	128.1053
319.02	113.3418
319.41	128.2463
320.08	132.0330
323.87	141.7509
323.87	141.7509
323.87	141.7509
323.87	141.7509
325.23	129.9520
328.77	137.6106
333.44	101.4642
334.20	122.2043
334.20	122.2043
334.30	122.2122
338.28	123.5241
338.28	123.5241
338.28	123.5241
338.28	123.5241
338.32	123.5281
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338.32	123.5281
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340.57	108.8139
344.27	131.3415
345.85	135.2891
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	97.8313
364.48	119.1922
366.43	111.6564
367.43	102.1036
367.94	0.0000
369.80	95.5210
374.96	101.6771
383.85	110.0998
387.95	106.5002
388.63	104.5934
391.69	113.6264
391.69	113.6264
392.90	115.6791
398.62	101.3623
400.65	93.6156
401.10	97.5861
401.81	96.6467
402.60	90.7759
404.84	106.7212
410.95	89.2900
411.60	103.2240
413.65	108.3297
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415.30	91.5325

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418.52	96.7069
423.70	102.0296
427.08	85.2062
427.89	87.2562
432.53	88.5170
433.93	87.5868
439.47	80.8167
439.56	80.8215
439.89	87.9120
443.98	84.0803
444.90	80.0741
445.03	80.0801
445.03	80.0801
445.03	80.0801
445.03	80.0801
453.90	67.2639
463.38	88.1442
468.07	77.2895
473.00	77.3071
475.06	88.7518
475.35	92.8949
476.78	78.5095
477.59	68.2115
477.96	70.2941
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484.57	71.5995
487.03	78.9745
490.36	0.0000
492.35	71.9175
497.08	70.0190
507.63	0.0000
510.53	0.0000
510.84	73.7154
511.00	73.7224
511.85	73.7566
511.85	73.7566
513.99	67.5137
513.99	67.5137
520.41	65.6328
520.65	61.4073
527.90	53.1433
528.96	0.0000
529.64	74.4711
529.87	0.0000
531.02	68.1367
537.32	73.7063
543.00	66.4275
546.56	0.0000
549.76	63.4365
552.65	64.6088
555.20	69.0059
563.23	66.0430
563.90	67.1484
568.70	85.7674
569.32	98.8286
569.50	97.7509
569.67	93.4142
573.80	78.3699
574.00	76.2015
574.64	77.3139
578.91	54.1259
579.30	0.0000
583.14	65.6122
585.48	70.0684
591.81	73.5818
592.07	72.4916
593.00	69.2292
595.88	88.0322
600.56	78.3063
602.52	0.0000
602.71	104.2237
602.71	104.2237
603.60	70.6914
604.41	70.7188
604.70	68.9603
609.31	62.0242

609.31	62.0242
609.31	62.0242
609.31	62.0242
610.33	62.0549
612.46	51.4693
614.37	51.5161
618.01	54.4969
621.84	67.9641
621.84	67.9641
631.29	60.4319
633.02	66.0815
633.10	66.0833
634.78	60.5308
635.90	65.0482
636.97	74.0566
645.85	54.9804
646.12	53.1850
656.30	69.7324
657.75	78.8395
657.90	0.0000
661.65	51.4413
661.65	51.4413
664.57	0.0000
666.33	70.9560
666.33	70.9560
675.00	52.0529
677.61	59.4268
685.20	57.7890
692.80	62.5813
695.00	69.0894
696.49	75.5867
696.49	75.5867
697.00	77.4478
697.49	76.5420
698.33	79.3358
698.50	81.1873
699.00	71.9767
702.63	78.5586
706.10	81.4516
706.58	0.0000
706.67	77.7677
709.31	77.8559
711.68	60.3059
713.82	73.3605
717.42	80.9125
720.50	55.8735
721.93	0.0000
722.20	72.9976
722.78	65.2490
722.78	65.2490
722.89	65.2507
722.95	65.2524
723.30	69.9243
724.18	79.2766
727.18	61.6333
733.00	49.9245
735.90	52.7179
739.58	60.0719
742.81	55.4522
744.21	48.9011
747.13	60.2578
751.79	62.2585
752.31	61.3279
753.82	54.7559
755.35	57.6239
756.15	58.5882
756.87	47.2620
763.93	53.7157
765.79	45.8506
766.42	53.7683
766.84	56.9414
776.49	49.2208
778.00	61.9595
778.57	61.9738
778.89	54.0353
783.80	38.2158
785.46	44.9323
792.07	41.5338

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796.30	48.9630
798.80	49.0103
801.93	57.7280
805.60	27.5283
810.29	55.0170
810.76	47.3037
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818.51	44.5389
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826.30	61.1774
828.27	0.0000
831.60	60.3259
831.96	55.4678
834.83	61.3727
836.80	0.0000
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848.13	46.0120
856.28	0.0000
856.80	37.6464
860.37	50.1508
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867.82	37.4684
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880.27	48.5299
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884.67	61.5020
889.25	40.7367
896.60	37.8534
898.02	38.8696
899.00	45.8619
903.28	28.2904
911.07	38.0455
911.07	38.0455
911.07	38.0455
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920.93	35.1606
925.00	28.1682
925.24	33.2006
926.50	45.2933
935.52	44.4232
937.48	60.6167
944.10	35.4392
946.00	37.4878
949.00	29.4121
962.29	35.6545
964.01	39.7522
966.15	39.7798
968.20	39.8074
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969.11	39.8188
969.11	39.8188
977.42	35.8323
980.50	52.2663
983.50	33.8524
989.30	42.1381
996.32	46.3535
1001.03	39.2023
1001.68	48.4974
1004.76	46.4799
1021.30	0.0000
1024.50	0.0000
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1036.00	39.6384
1037.82	43.8354
1038.57	40.7139
1038.76	0.0000
1045.16	46.0281
1046.59	39.7683
1048.07	31.4106

1050.47	31.4341
1050.47	31.4341
1062.04	36.8030
1063.62	36.8218
1076.63	43.3042
1077.35	38.0320
1078.86	43.3343
1085.78	40.2470
1099.22	44.6619
1112.02	49.0996
1112.84	42.7070
1115.52	62.3295
1120.29	44.9388
1120.29	44.9388
1120.29	44.9388
1120.29	44.9388
1120.51	37.4524
1121.28	39.2448
1124.00	0.0000
1129.67	36.4786
1131.51	0.0000
1147.95	0.0000
1167.94	40.1345
1173.22	45.6258
1175.09	41.3027
1177.93	41.3361
1189.05	41.4642
1204.90	50.4136
1205.75	0.0000
1213.00	46.1323
1221.42	47.7069
1230.97	52.4309
1235.34	58.9375
1236.41	0.0000
1238.25	59.9060
1246.25	44.3340
1260.41	0.0000
1271.85	26.9668
1274.45	25.1246
1274.54	32.5690
1291.56	30.8448
1298.22	0.0000
1312.09	31.0087
1325.50	21.6860
1325.50	21.6860
1332.49	29.2814
1333.61	22.6758
1360.21	24.7294
1362.66	0.0000
1365.15	24.7601
1368.21	30.4974
1368.53	0.0000
1376.25	24.8278
1384.27	24.8775
1394.10	22.0594
1395.20	25.9036
1407.95	26.9461
1434.06	22.2728
1436.60	36.8202
1457.56	0.0000
1460.81	19.4906
1489.15	19.6191
1509.49	9.8551
1596.49	24.1152
1620.62	11.1106
1678.03	0.0000
1691.02	15.3772
1691.02	15.3772
1706.46	0.0000
1750.46	0.0000
1764.49	9.3651
1764.49	9.3651
1764.49	9.3651
1764.49	9.3651
1770.23	7.1434
1771.40	8.9314
1791.20	0.0000
1808.65	10.4964

1836.01

10.5526

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132010

Total Uranium Activity	8.6511E+00	ug/g
Total Uranium Counting Unc.	7.4342E+00	ug/g
Total Uranium Tpu	3.7929E-06	ug/g
Total Uranium Mda	4.1231E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132010
*  ANALYST       : MXR1                             DETECTOR    : GAM04
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 10:55:18.38          SAMPLE ALQT  : 123.830 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.264E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.382E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.258E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.567E+00

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## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:04:45.17

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132011.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:04:16
Sample ID          : G244132011      Sample quantity   : 1.16140E+02 GRAM
Detector name      : GAM16           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.78  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000         Sensitivity      : 5.00000
Batch ID           : 940270           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	63.38*	50	452	0.96	126.95	123	8	6.98E-03	77.1	
2	2	74.87	449	299	1.02	149.93	144	17	6.24E-02	7.8	5.95E+00
3	2	77.08*	630	279	1.03	154.36	144	17	8.75E-02	6.1	
4	5	87.22	258	192	1.08	174.62	172	22	3.59E-02	9.3	2.23E+00
5	5	90.02	215	299	1.17	180.24	172	22	2.98E-02	14.9	
6	5	92.76*	281	302	1.29	185.71	172	22	3.90E-02	13.6	
7	0	129.16	84	304	0.86	258.51	255	8	1.17E-02	37.6	
8	0	186.11*	196	364	1.21	372.42	368	11	2.72E-02	21.0	
9	0	209.30	112	326	1.11	418.79	414	10	1.56E-02	31.6	
10	5	238.49*	1264	151	1.14	477.17	470	21	1.76E-01	3.3	4.94E+00
11	5	241.48	316	218	1.58	483.16	470	21	4.39E-02	11.9	
12	0	270.04	93	226	1.34	540.28	536	11	1.29E-02	32.9	
13	0	277.16	93	185	1.57	554.50	551	11	1.30E-02	30.0	
14	0	294.97*	460	115	1.07	590.13	585	10	6.39E-02	6.5	
15	0	299.70*	78	117	1.34	599.60	596	7	1.08E-02	26.5	
16	0	327.95	57	138	0.75	656.09	652	8	7.89E-03	38.2	
17	0	338.33	236	181	1.20	676.86	672	11	3.28E-02	12.9	
18	0	351.79*	688	156	1.18	703.76	697	12	9.55E-02	5.3	
19	0	409.37	55	93	1.90	818.92	813	10	7.63E-03	35.5	
20	0	463.47	48	88	1.46	927.11	922	9	6.67E-03	38.9	
21	0	510.62*	90	132	1.76	1021.40	1014	14	1.25E-02	33.9	
22	0	583.11*	376	96	1.50	1166.36	1161	14	5.23E-02	7.8	
23	0	609.15*	472	81	1.44	1218.43	1213	13	6.55E-02	6.2	
24	0	661.30	79	60	1.29	1322.72	1317	11	1.09E-02	22.2	
25	0	727.11	105	52	1.76	1454.30	1449	11	1.46E-02	16.4	
26	0	768.32	33	55	0.98	1536.72	1534	9	4.61E-03	43.1	
27	0	860.45	58	29	1.32	1720.94	1717	10	8.08E-03	21.4	
28	0	910.94*	278	47	1.45	1821.88	1814	16	3.86E-02	8.3	
29	2	964.48	40	62	1.94	1928.93	1923	22	5.58E-03	40.5	1.53E+00
30	2	968.84*	144	41	1.63	1937.65	1923	22	2.00E-02	12.3	
31	0	1120.16*	91	58	1.21	2240.20	2234	13	1.27E-02	20.5	
32	0	1237.65	61	43	1.70	2475.09	2469	14	8.51E-03	25.9	
33	0	1425.12	15	0	1.46	2849.87	2847	7	2.08E-03	25.8	
34	0	1460.39*	834	18	1.74	2920.37	2915	12	1.16E-01	3.6	
35	0	1763.77*	95	0	2.33	3526.83	3521	12	1.31E-02	10.8	
36	0	1848.31	17	9	1.76	3695.80	3690	12	2.34E-03	46.7	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 13:04:48

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132011.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 11:04:16
Sample ID        : G244132011             Sample quantity  : 116.14 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA16               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.78    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	*	2.092E+01	2.390E+00	4.864E-01	4.275E-02	43.009
CD-109	+	88.03	*	3.661E+00	7.651E-01	1.068E+00	1.029E-01	3.427
SN-126	+	64.28		4.770E-01	7.385E-01	7.447E-01	1.085E-01	0.641
	+	86.94		1.498E+00	6.823E-01	5.171E-01	2.149E-01	2.898
	+	87.57	*	3.604E-01	7.534E-02	1.057E-01	1.013E-02	3.411
BA-137M	+	661.65	*	1.176E-01	5.325E-02	5.815E-02	5.161E-03	2.023
CS-137	+	661.65	*	1.243E-01	5.630E-02	6.147E-02	5.465E-03	2.023
TL-208	+	277.35		9.437E-01	5.840E-01	5.426E-01	8.065E-02	1.739
	+	510.84		4.532E-01	3.123E-01	2.060E-01	2.605E-02	2.200
	+	583.14	*	5.416E-01	1.005E-01	5.119E-02	5.074E-03	10.580
	+	860.37		7.867E-01	3.464E-01	4.133E-01	4.137E-02	1.904
BI-211		72.87		4.551E+00	2.797E+00	4.608E+00	3.746E-01	0.988
	+	351.07	*	4.358E+00	6.644E-01	3.016E-01	3.297E-02	14.451
PB-212	+	74.81		2.654E+00	5.292E-01	4.554E-01	5.690E-02	5.827
	+	77.11		2.111E+00	3.140E-01	2.584E-01	2.195E-02	8.172
	+	87.30		1.667E+00	3.863E-01	4.900E-01	6.778E-02	3.402
	+	238.63	*	1.753E+00	2.375E-01	8.082E-02	9.569E-03	21.693
	+	300.09		1.657E+00	9.049E-01	1.133E+00	1.484E-01	1.463
PO-212	+	74.81		2.654E+00	5.292E-01	4.554E-01	5.690E-02	5.827
	+	77.11		2.111E+00	3.140E-01	2.584E-01	2.195E-02	8.172
	+	87.30		1.667E+00	3.863E-01	4.900E-01	6.778E-02	3.402
		115.19		9.697E-01	3.091E+00	5.263E+00	4.391E-01	0.184
	+	238.63	*	1.753E+00	2.375E-01	8.082E-02	9.569E-03	21.693
	+	300.09		1.657E+00	9.049E-01	1.133E+00	1.484E-01	1.463
BI-214	+	609.31	*	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
	+	1120.29		1.291E+00	5.472E-01	3.905E-01	4.192E-02	3.307
	+	1764.49		1.831E+00	4.247E-01	2.343E-01	1.939E-02	7.815
PB-214	+	74.81		4.573E+00	8.739E-01	7.847E-01	8.724E-02	5.827
	+	77.11		3.620E+00	6.049E-01	4.429E-01	5.054E-02	8.172
	+	87.30		2.856E+00	6.362E-01	8.394E-01	1.031E-01	3.402
	+	241.98		2.632E+00	7.071E-01	4.868E-01	6.030E-02	5.406
	+	295.21		1.726E+00	3.209E-01	1.641E-01	2.190E-02	10.521
	+	351.92	*	1.516E+00	2.443E-01	1.051E-01	1.271E-02	14.420
PO-214	+	74.81		4.573E+00	8.739E-01	7.847E-01	8.724E-02	5.827

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		3.620E+00	6.049E-01	4.429E-01	5.054E-02	8.172
	+	87.30		2.856E+00	6.362E-01	8.394E-01	1.031E-01	3.402
	+	241.98		2.632E+00	7.071E-01	4.868E-01	6.030E-02	5.406
	+	295.21		1.726E+00	3.209E-01	1.641E-01	2.190E-02	10.521
	+	351.92	*	1.516E+00	2.443E-01	1.051E-01	1.271E-02	14.420
	+	74.81		2.654E+00	5.292E-01	4.554E-01	5.690E-02	5.827
	+	77.11		2.111E+00	3.140E-01	2.584E-01	2.195E-02	8.172
	+	87.30		1.667E+00	3.863E-01	4.900E-01	6.778E-02	3.402
	+	238.63	*	1.753E+00	2.375E-01	8.082E-02	9.569E-03	21.693
	+	300.09		1.657E+00	9.049E-01	1.133E+00	1.484E-01	1.463
PO-218	+	74.81		4.573E+00	8.739E-01	7.847E-01	8.724E-02	5.827
	+	77.11		3.620E+00	6.049E-01	4.429E-01	5.054E-02	8.172
	+	87.30		2.856E+00	6.362E-01	8.394E-01	1.031E-01	3.402
	+	241.98		2.632E+00	7.071E-01	4.868E-01	6.030E-02	5.406
RA-224	+	295.21		1.726E+00	3.209E-01	1.641E-01	2.190E-02	10.521
	+	351.92	*	1.516E+00	2.443E-01	1.051E-01	1.271E-02	14.420
	+	240.98	*	4.990E+00	1.311E+00	9.199E-01	1.014E-01	5.425
	+	609.31	*	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
RA-226	+	1120.29		1.291E+00	5.472E-01	3.905E-01	4.192E-02	3.307
	+	1764.49		1.831E+00	4.247E-01	2.343E-01	1.939E-02	7.815
	+	338.32		1.649E+00	8.097E-01	3.544E-01	1.482E-01	4.653
	+	911.07	*	1.776E+00	3.633E-01	1.960E-01	2.328E-02	9.064
AC-228	+	969.11		1.624E+00	5.542E-01	3.088E-01	7.282E-02	5.258
	+	338.32		1.649E+00	8.097E-01	3.544E-01	1.482E-01	4.653
	+	911.07	*	1.776E+00	3.633E-01	1.960E-01	2.328E-02	9.064
	+	969.11		1.624E+00	5.542E-01	3.088E-01	7.282E-02	5.258
TH-228	+	74.81		2.691E+00	4.750E-01	4.618E-01	3.863E-02	5.827
	+	77.11		2.141E+00	3.184E-01	2.620E-01	2.225E-02	8.172
	+	87.30		1.690E+00	3.533E-01	4.969E-01	4.748E-02	3.402
	+	238.63	*	1.778E+00	2.408E-01	8.195E-02	9.703E-03	21.693
TH-230	+	300.09		1.680E+00	1.343E+00	1.149E+00	6.871E-01	1.463
	+	609.31	*	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
	+	1120.29		1.291E+00	5.472E-01	3.904E-01	4.192E-02	3.307
	+	1764.49		1.831E+00	4.247E-01	2.343E-01	1.939E-02	7.815
TH-232	+	338.32		1.649E+00	4.614E-01	3.544E-01	3.869E-02	4.653
	+	911.07	*	1.776E+00	3.633E-01	1.960E-01	2.328E-02	9.064
	+	969.11		1.624E+00	5.542E-01	3.088E-01	7.282E-02	5.258
	+	63.29	*	1.205E+00	1.869E+00	1.903E+00	3.319E-01	0.633
TH-234	+	92.38		2.545E+00	8.365E-01	6.938E-01	1.275E-01	3.669
	+	609.31	*	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
	+	1120.29		1.291E+00	5.472E-01	3.904E-01	4.192E-02	3.307
	+	1764.49		1.831E+00	4.247E-01	2.343E-01	1.939E-02	7.815
U-234	+	86.50	*	1.058E+00	3.109E-01	3.669E-01	8.329E-02	2.885
	+	95.87		-1.444E-01	8.238E-01	1.241E+00	3.074E-01	-0.116
	+	63.29	*	1.205E+00	1.869E+00	1.903E+00	3.319E-01	0.633
	+	92.38		2.545E+00	7.322E-01	6.938E-01	6.402E-02	3.669
U-238	+	74.67	*	4.303E-01	7.580E-02	7.406E-02	6.131E-03	5.810
	+	86.72		3.969E+01	8.296E+00	1.373E+01	1.303E+00	2.891
	+	117.66		-1.396E+00	3.331E+00	5.480E+00	4.560E-01	-0.255

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	142.18			3.088E+00	1.616E+01	2.709E+01	2.310E+00	0.114
	511.00	*		9.789E-02	6.696E-02	4.452E-02	4.234E-03	2.199

## ---- 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	*		3.582E-01	3.171E-01	5.638E-01	5.704E-02	0.635
NA-22	1274.54	*		-1.076E-02	4.207E-02	6.605E-02	5.496E-03	-0.163
NA-24	1368.53	*		-5.882E-02	4.207E-02	Half-Life too short		
AL-26	1129.67			-5.117E-01	1.454E+00	2.279E+00	1.911E-01	-0.224
	1808.65	*		-6.445E-04	3.499E-02	5.740E-02	4.693E-03	-0.011
TI-44	67.85			1.517E-02	4.200E-02	6.627E-02	5.132E-03	0.229
	78.38	*		3.896E-01	5.795E-02	6.944E-02	5.979E-03	5.611
SC-46	889.25	*		2.342E-03	3.303E-02	5.561E-02	5.257E-03	0.042
	1120.51			2.190E-01	9.164E-02	1.325E-01	1.119E-02	1.653
V-48	944.10			-6.318E-01	7.426E-01	1.107E+00	1.035E-01	-0.571
	983.50	*		-7.305E-02	6.625E-02	9.605E-02	8.842E-03	-0.760
	1312.09			5.127E-02	6.296E-02	1.138E-01	9.556E-03	0.450
CR-51	320.08	*		-2.761E-01	3.418E-01	5.046E-01	5.900E-02	-0.547
MN-52	744.21			1.011E-01	1.974E-01	3.325E-01	3.053E-02	0.304
	848.13			-3.878E+00	5.381E+00	8.343E+00	7.853E-01	-0.465
	935.52			2.482E-01	2.033E-01	3.762E-01	3.524E-02	0.660
	1246.25			-3.543E-01	6.060E+00	9.509E+00	7.838E-01	-0.037
	1333.61			-2.736E+00	4.297E+00	6.302E+00	5.316E-01	-0.434
	1434.06	*		-1.435E-01	1.871E-01	2.557E-01	2.182E-02	-0.561
MN-54	834.83	*		-1.385E-02	3.874E-02	6.310E-02	5.927E-03	-0.219
CO-56	846.75	*		-2.933E-02	3.374E-02	5.108E-02	4.806E-03	-0.574
	977.42			1.984E+00	2.903E+00	5.124E+00	4.729E-01	0.387
	1037.82			-3.818E-02	2.936E-01	4.777E-01	4.490E-02	-0.080
	1175.09			-1.916E+00	2.110E+00	3.081E+00	2.479E-01	-0.622
	1238.25			2.408E-01	1.262E-01	1.737E-01	1.474E-02	1.386
	1360.21			-1.473E-01	8.700E-01	1.363E+00	1.154E-01	-0.108
	1771.40			-7.147E-02	1.741E-01	2.258E-01	1.865E-02	-0.317
CO-57	122.06	*		-1.201E-02	2.257E-02	3.686E-02	3.063E-03	-0.326
	136.48			1.549E-02	1.907E-01	3.188E-01	2.898E-02	0.049
CO-58	810.76	*		-1.042E-02	3.564E-02	5.828E-02	5.460E-03	-0.179
FE-59	142.65			2.397E-01	2.540E+00	4.147E+00	3.540E-01	0.058
	192.34			7.105E-01	8.673E-01	1.466E+00	2.076E-01	0.485
	1099.22	*		2.800E-02	8.782E-02	1.489E-01	1.384E-02	0.188
	1291.56			-6.771E-02	1.020E-01	1.482E-01	1.415E-02	-0.457
CO-60	1173.22			-4.502E-03	4.321E-02	6.979E-02	5.611E-03	-0.065
	1332.49	*		-2.782E-02	3.956E-02	5.752E-02	4.852E-03	-0.484
ZN-65	1115.52	*		-8.545E-02	9.396E-02	1.124E-01	9.548E-03	-0.760
GE-68	1077.35	*		3.310E-01	1.164E+00	1.974E+00	1.724E-01	0.168
AS-73	53.44	*		5.285E-02	7.736E-01	1.217E+00	9.285E-02	0.043
AS-74	595.88	*		6.237E-02	8.681E-02	1.435E-01	1.332E-02	0.435
	634.78			9.298E-02	3.176E-01	5.295E-01	4.800E-02	0.176
SE-75	66.05			1.989E+00	4.817E+00	7.035E+00	6.768E-01	0.283

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		96.73		-8.021E-01	6.918E-01	9.656E-01	1.335E-01	-0.831
		121.11		-2.032E-02	1.190E-01	1.978E-01	2.171E-02	-0.103
		136.00		2.364E-02	3.568E-02	6.109E-02	5.184E-03	0.387
		198.60		5.308E-01	1.737E+00	2.861E+00	3.067E-01	0.185
		264.65	*	8.089E-03	4.131E-02	6.395E-02	7.462E-03	0.126
		279.53		-4.660E-04	1.150E-01	1.634E-01	2.000E-02	-0.003
		303.91		1.198E+00	2.076E+00	3.266E+00	4.539E-01	0.367
		400.65		-7.367E-02	2.406E-01	3.950E-01	4.598E-02	-0.187
BR-77	+	87.88		5.656E+02	1.182E+02	2.203E+02	2.120E+01	2.568
		200.40		-1.157E+02	1.141E+02	1.757E+02	1.746E+01	-0.658
	+	239.00		2.010E+02	2.569E+01	2.799E+01	3.070E+00	7.180
		249.79		-1.223E+01	4.269E+01	6.737E+01	7.581E+00	-0.181
		281.68		-2.980E+00	6.486E+01	9.171E+01	1.099E+01	-0.032
		297.23		9.624E+01	4.820E+01	6.599E+01	7.762E+00	1.459
		303.76		1.128E+02	1.319E+02	2.000E+02	2.331E+01	0.564
		439.47		3.812E+01	9.173E+01	1.575E+02	1.487E+01	0.242
		484.57		-3.824E+01	1.499E+02	2.429E+02	2.311E+01	-0.157
		520.65	*	-7.567E+00	7.041E+00	1.045E+01	9.926E-01	-0.724
		574.64		5.394E+01	1.442E+02	2.430E+02	2.277E+01	0.222
		578.91		-5.752E+01	7.022E+01	9.040E+01	8.456E+00	-0.636
		585.48		4.797E+02	1.491E+02	2.664E+02	2.485E+01	1.800
		755.35		1.394E+01	1.205E+02	1.949E+02	1.796E+01	0.072
		817.79		4.859E+00	9.373E+01	1.583E+02	1.482E+01	0.031
SR-82		698.33		-5.250E+00	3.308E+01	5.249E+01	4.736E+00	-0.100
		776.49	*	3.480E-03	3.521E-01	5.626E-01	5.216E-02	0.006
RB-83		1395.20		-7.762E+00	1.043E+01	1.467E+01	1.247E+00	-0.529
		520.41	*	-6.425E-02	6.498E-02	9.740E-02	9.255E-03	-0.660
		529.64		-5.893E-02	1.008E-01	1.573E-01	1.493E-02	-0.375
		552.65		3.787E-02	1.853E-01	3.092E-01	2.919E-02	0.122
RB-84		881.50	*	-2.809E-02	6.258E-02	9.963E-02	9.413E-03	-0.282
KR-85		513.99	*	7.265E+00	7.273E+00	1.158E+01	1.101E+00	0.627
SR-85		513.99	*	3.680E-02	3.684E-02	5.864E-02	5.576E-03	0.627
RB-86		1076.63	*	4.831E-01	7.063E-01	1.245E+00	1.088E-01	0.388
Y-88		898.02		-3.630E-03	3.716E-02	6.140E-02	5.832E-03	-0.059
		1836.01	*	1.530E-02	3.554E-02	6.308E-02	5.121E-03	0.243
ZR-88		392.90	*	5.687E-03	3.028E-02	5.143E-02	4.757E-03	0.111
Y-91		1204.90	*	-2.569E-01	1.798E+01	2.925E+01	2.379E+00	-0.009
NB-94		702.63	*	-1.075E-02	3.261E-02	5.081E-02	4.593E-03	-0.212
		871.10		2.118E-03	2.802E-02	4.728E-02	4.462E-03	0.045
NB-95		765.79	*	4.625E-02	4.783E-02	7.442E-02	6.879E-03	0.621
NB-95M		235.69	*	8.426E-02	1.168E-01	1.769E-01	2.103E-02	0.476
ZR-95		724.18		9.463E-02	1.010E-01	1.577E-01	1.549E-02	0.600
		756.15	*	5.368E-02	7.033E-02	1.205E-01	1.210E-02	0.446
NB-97		657.90	*	1.187E-02	7.033E-02	Half-Life	too short	
		1024.50		2.225E+00	7.033E-02	Half-Life	too short	
ZR-97		254.15		5.943E-01	7.033E-02	Half-Life	too short	
		355.39		-5.526E-01	7.033E-02	Half-Life	too short	
		507.63	*	9.579E-01	7.033E-02	Half-Life	too short	
		602.52		1.079E+00	7.033E-02	Half-Life	too short	

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1021.30			5.686E-03	7.033E-02	Half-Life	too short	
	1147.95			-4.265E-01	7.033E-02	Half-Life	too short	
	1362.66			-2.102E+00	7.033E-02	Half-Life	too short	
	1750.46			4.655E-01	7.033E-02	Half-Life	too short	
MO-99	140.51			2.231E+00	1.843E+01	3.027E+01	8.371E+00	0.074
	181.06			-4.665E+00	1.262E+01	1.928E+01	3.603E+00	-0.242
	366.43			-1.725E+00	5.487E+01	9.235E+01	9.340E+00	-0.019
	739.58	*		6.681E-01	8.190E+00	1.324E+01	2.052E+00	0.050
	778.00			-6.095E+00	2.439E+01	3.786E+01	3.512E+00	-0.161
TC-99M	140.51	*		1.780E+08	2.439E+01	Half-Life	too short	
RH-101	127.23			8.993E-03	3.113E-02	4.750E-02	3.955E-03	0.189
	198.01	*		8.706E-03	3.165E-02	5.207E-02	5.141E-03	0.167
	325.23			-3.548E-02	2.486E-01	3.442E-01	3.865E-02	-0.103
RH-102	418.52			8.931E-02	2.697E-01	4.610E-01	4.318E-02	0.194
	475.06	*		4.729E-03	2.723E-02	4.573E-02	4.347E-03	0.103
	631.29			-4.210E-03	4.799E-02	7.719E-02	7.014E-03	-0.055
	697.49			-2.308E-02	7.681E-02	1.202E-01	1.084E-02	-0.192
	766.84	+		1.503E-01	1.302E-01	2.008E-01	1.856E-02	0.749
	1046.59			-4.812E-02	1.014E-01	1.576E-01	1.405E-02	-0.305
	1112.84			9.858E-02	2.004E-01	3.208E-01	2.728E-02	0.307
RU-103	497.08	*		-1.779E-02	3.713E-02	5.876E-02	8.651E-03	-0.303
	610.33	+		1.353E+01	2.850E+00	3.016E+00	5.126E-01	4.487
RH-106	511.85	+		4.879E-01	3.337E-01	4.143E-01	3.940E-02	1.178
	621.84	*		-9.034E-02	3.007E-01	4.743E-01	6.499E-02	-0.190
	1050.47			1.501E+00	1.998E+00	3.567E+00	3.171E-01	0.421
RU-106	511.85	+		4.879E-01	3.337E-01	4.143E-01	3.940E-02	1.178
	621.84	*		-9.034E-02	3.005E-01	4.743E-01	4.337E-02	-0.190
	1050.47			1.501E+00	1.998E+00	3.567E+00	3.171E-01	0.421
AG-108M	433.93	*		1.659E-04	2.926E-02	4.882E-02	4.753E-03	0.003
	614.37			2.818E-03	3.590E-02	5.166E-02	4.910E-03	0.055
	722.95			5.597E-03	4.433E-02	6.318E-02	5.960E-03	0.089
AG-110M	657.75	*		1.682E-02	3.769E-02	5.632E-02	5.155E-03	0.299
	677.61			-6.099E-02	2.845E-01	4.491E-01	4.121E-02	-0.136
	706.67			-4.078E-02	1.925E-01	3.030E-01	2.812E-02	-0.135
	763.93			1.623E-01	1.754E-01	2.742E-01	2.596E-02	0.592
	884.67			2.376E-02	4.382E-02	7.722E-02	7.493E-03	0.308
	937.48			-7.629E-02	1.031E-01	1.576E-01	1.521E-02	-0.484
	1384.27			4.865E-02	1.362E-01	2.324E-01	2.031E-02	0.209
IN-111	171.28			5.471E-01	7.076E-01	1.205E+00	1.108E-01	0.454
	245.39	*		1.352E-01	8.049E-01	1.171E+00	1.304E-01	0.115
IN-113M	391.69	*		-1.644E-02	4.433E-02	7.267E-02	6.898E-03	-0.226
SN-113	391.69	*		-1.644E-02	4.433E-02	7.267E-02	6.898E-03	-0.226
IN-114M	190.27	*		2.421E-02	1.820E-01	2.684E-01	2.596E-02	0.090
CD-115	260.90			-3.914E+00	8.757E+01	1.401E+02	1.617E+01	-0.028
	492.35			-7.807E+00	2.145E+01	3.429E+01	3.263E+00	-0.228
	527.90	*		3.184E-01	7.165E+00	1.183E+01	1.123E+00	0.027
SN-117M	156.02			-6.586E-01	1.965E+00	3.198E+00	2.821E-01	-0.206
	158.56	*		1.161E-02	4.637E-02	7.755E-02	6.888E-03	0.150
SB-122	563.90	*		5.761E-01	1.454E+00	2.458E+00	2.313E-01	0.234

## ---- 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		-6.096E+00	2.995E+01	4.602E+01	4.143E+00	-0.132
		159.00	*	-2.754E-01	2.995E+01	Half-Life too short		
		528.96		-3.449E+01	2.995E+01	Half-Life too short		
TE-123M		159.00	*	-5.843E-03	2.523E-02	4.121E-02	3.685E-03	-0.142
I-124		602.71	*	2.660E-01	5.942E-01	8.987E-01	8.312E-02	0.296
		722.78		-1.373E+00	4.078E+00	5.453E+00	4.969E-01	-0.252
		1325.50		1.462E+01	2.820E+01	4.864E+01	4.096E+00	0.300
SB-124		1376.25		4.291E+01	2.746E+01	5.192E+01	4.406E+00	0.826
		1509.49		1.016E+01	1.415E+01	2.568E+01	2.196E+00	0.396
		1691.02		9.198E-01	2.836E+00	4.999E+00	4.203E-01	0.184
		602.71		1.847E-02	4.128E-02	6.243E-02	5.775E-03	0.296
		645.85		-1.574E-01	4.822E-01	7.567E-01	7.179E-02	-0.208
		709.31		-6.389E-01	2.659E+00	4.061E+00	3.681E-01	-0.157
		713.82		-1.810E+00	1.651E+00	2.285E+00	2.827E-01	-0.792
		722.78		-1.382E-01	4.107E-01	5.491E-01	5.100E-02	-0.252
	+	968.20		1.649E+01	4.347E+00	7.327E+00	6.787E-01	2.251
		1045.16		-1.879E+00	2.087E+00	3.036E+00	2.708E-01	-0.619
		1325.50		1.572E+00	3.032E+00	5.231E+00	4.405E-01	0.300
		1368.21		-4.201E-01	1.612E+00	2.486E+00	3.328E-01	-0.169
SB-125		1436.60		8.536E-01	3.369E+00	5.865E+00	5.005E-01	0.146
		1691.02	*	2.185E-02	6.737E-02	1.187E-01	1.040E-02	0.184
		427.89	*	2.203E-02	8.275E-02	1.408E-01	1.345E-02	0.156
	+	463.38		4.736E-01	3.713E-01	5.085E-01	5.139E-02	0.931
		600.56		-8.786E-02	1.714E-01	2.664E-01	2.625E-02	-0.330
TE-125M		635.90		-2.434E-02	2.486E-01	3.993E-01	3.882E-02	-0.061
		109.28	*	5.659E+00	8.120E+00	1.404E+01	1.428E+00	0.403
		388.63		5.884E-02	1.891E-01	3.237E-01	3.029E-02	0.182
I-126		666.33	*	9.031E-02	1.810E-01	2.720E-01	2.419E-02	0.332
		753.82		-1.601E-01	1.389E+00	2.196E+00	2.023E-01	-0.073
		223.80		-1.874E+00	3.461E+00	5.423E+00	5.728E-01	-0.346
	+	278.60		5.849E+00	3.583E+00	3.915E+00	4.696E-01	1.494
		296.50		1.067E+01	2.295E+00	3.274E+00	3.855E-01	3.258
		414.70		-4.960E-02	6.549E-02	9.914E-02	9.271E-03	-0.500
		415.30		-4.691E+00	5.338E+00	8.323E+00	7.785E-01	-0.564
		555.20		7.888E-01	3.432E+00	5.737E+00	5.412E-01	0.137
		573.80		1.373E-01	9.704E-01	1.605E+00	1.504E-01	0.086
		593.00		-8.080E-01	8.350E-01	1.234E+00	1.147E-01	-0.655
		656.30		-6.095E-01	3.480E+00	4.808E+00	4.286E-01	-0.127
		666.33		3.764E-02	7.543E-02	1.134E-01	1.008E-02	0.332
SB-126		675.00		-1.232E+00	1.841E+00	2.774E+00	2.477E-01	-0.444
		695.00		7.442E-02	6.679E-02	1.185E-01	1.067E-02	0.628
		697.00		-3.648E-02	2.476E-01	3.932E-01	3.546E-02	-0.093
		720.50	*	-3.422E-02	1.451E-01	2.170E-01	1.976E-02	-0.158
		856.80		-3.378E-02	4.338E-01	6.252E-01	5.891E-02	-0.054
		989.30		-3.942E-01	1.146E+00	1.829E+00	1.679E-01	-0.216
		1034.80		-1.431E+00	8.082E+00	1.309E+01	1.174E+00	-0.109
		1213.00		-3.105E+00	4.227E+00	6.330E+00	5.162E-01	-0.491
		61.10		3.604E+01	4.607E+01	6.898E+01	6.733E+00	0.522
		252.40		-2.782E-01	3.296E+00	5.269E+00	2.244E+00	-0.053



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		290.80		-1.214E+01	1.793E+01	2.364E+01	3.203E+00	-0.513
		411.60		1.444E+00	9.652E+00	1.445E+01	2.297E+00	0.100
		444.90		5.263E+00	6.892E+00	1.210E+01	1.553E+00	0.435
		473.00		-1.051E+00	1.269E+00	1.950E+00	2.574E-01	-0.539
		543.00		6.021E+00	1.185E+01	2.029E+01	2.976E+00	0.297
		603.60		2.789E+00	1.074E+01	1.524E+01	1.929E+00	0.183
		685.20	*	4.331E-01	1.002E+00	1.684E+00	1.909E-01	0.257
		698.50		7.088E-03	1.213E+01	1.953E+01	3.087E+00	0.000
		722.20		-9.423E+00	2.756E+01	3.681E+01	4.129E+00	-0.256
		783.80		7.123E-01	3.154E+00	5.134E+00	6.469E-01	0.139
XE-127		57.60		-3.537E+00	5.518E+00	8.309E+00	6.007E-01	-0.426
		145.22		-3.424E-01	6.375E-01	1.008E+00	8.651E-02	-0.340
		172.10		1.068E-01	1.099E-01	1.884E-01	1.736E-02	0.567
		202.84	*	-1.012E-03	4.415E-02	7.188E-02	7.189E-03	-0.014
		374.96		-2.985E-02	1.845E-01	3.075E-01	3.025E-02	-0.097
I-131		80.18		-4.440E-01	3.658E+00	5.593E+00	4.939E-01	-0.079
		284.30		-5.663E-01	1.279E+00	1.975E+00	2.423E-01	-0.287
		364.48	*	-4.828E-02	9.205E-02	1.494E-01	1.579E-02	-0.323
		636.97		-5.228E-01	1.322E+00	2.060E+00	1.958E-01	-0.254
		722.89		-2.368E+00	7.214E+00	9.657E+00	8.843E-01	-0.245
TE-132		49.72		-1.772E+00	1.432E+01	2.235E+01	2.263E+00	-0.079
		111.76		-1.305E+01	2.053E+01	3.350E+01	3.474E+00	-0.390
		116.30		5.040E+00	1.895E+01	3.218E+01	3.322E+00	0.157
		228.16	*	9.335E-02	5.229E-01	8.541E-01	1.430E-01	0.109
BA-133		53.15		4.581E-01	3.391E+00	5.356E+00	4.104E-01	0.086
		79.62		5.281E-01	1.118E+00	1.758E+00	2.688E-01	0.300
		81.00		-1.214E-01	9.047E-02	1.262E-01	2.022E-02	-0.962
	+	276.40		9.324E-01	5.813E-01	6.446E-01	1.073E-01	1.447
		302.84		5.891E-02	1.536E-01	2.240E-01	3.460E-02	0.263
		356.01	*	-2.001E-02	4.377E-02	6.239E-02	9.015E-03	-0.321
		383.85		-1.315E-01	2.868E-01	4.670E-01	6.185E-02	-0.281
I-133	+	510.53		3.952E-01	2.868E-01	Half-Life	too short	
		529.87	*	-5.732E-04	2.868E-01	Half-Life	too short	
		706.58		-4.086E-02	2.868E-01	Half-Life	too short	
		856.28		-1.814E-01	2.868E-01	Half-Life	too short	
		875.33		5.724E-03	2.868E-01	Half-Life	too short	
	+	1236.41		6.994E-01	2.868E-01	Half-Life	too short	
		1298.22		-8.378E-02	2.868E-01	Half-Life	too short	
CS-134		475.35		4.553E-02	1.834E+00	3.045E+00	2.895E-01	0.015
		563.23		2.090E-01	3.422E-01	5.875E-01	5.573E-02	0.356
		569.32		-1.567E-03	1.874E-01	3.016E-01	2.865E-02	-0.005
		604.70		-7.047E-04	3.768E-02	5.359E-02	4.962E-03	-0.013
		795.84	*	1.049E-02	4.517E-02	7.754E-02	7.270E-03	0.135
		801.93		-1.418E-01	3.825E-01	6.243E-01	5.853E-02	-0.227
		1038.57		-1.206E+00	3.701E+00	5.886E+00	5.270E-01	-0.205
		1167.94		6.661E-01	2.651E+00	4.434E+00	3.584E-01	0.150
		1365.15		9.006E-01	1.069E+00	1.951E+00	1.731E-01	0.462
CS-135		268.24	*	2.364E-01	1.546E-01	2.452E-01	3.126E-02	0.964
I-135		288.45		8.726E+08	1.546E-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
		417.63		8.946E+08	1.546E-01	Half-Life too short		
		546.56		4.632E+08	1.546E-01	Half-Life too short		
		836.80		7.142E+08	1.546E-01	Half-Life too short		
		1038.76		-3.663E+07	1.546E-01	Half-Life too short		
		1124.00		-4.282E+08	1.546E-01	Half-Life too short		
		1131.51		-3.749E+08	1.546E-01	Half-Life too short		
		1260.41	*	-7.887E+07	1.546E-01	Half-Life too short		
		1457.56		2.448E+10	1.546E-01	Half-Life too short		
		1678.03		3.597E+08	1.546E-01	Half-Life too short		
		1706.46		-3.149E+08	1.546E-01	Half-Life too short		
		1791.20		-8.281E+08	1.546E-01	Half-Life too short		
CS-136		66.91		-1.547E-01	7.568E-01	1.066E+00	1.591E-01	-0.145
	+	86.29		4.426E+00	1.017E+00	1.737E+00	2.329E-01	2.549
		153.22		6.596E-01	5.703E-01	9.871E-01	9.630E-02	0.668
		163.89		5.072E-01	9.152E-01	1.547E+00	1.549E-01	0.328
		176.55		-3.204E-01	3.122E-01	4.828E-01	4.724E-02	-0.664
		273.65		-3.402E-02	5.861E-01	6.494E-01	7.979E-02	-0.052
		340.57		8.683E-02	1.248E-01	1.962E-01	2.169E-02	0.443
		818.51		6.013E-02	6.775E-02	1.224E-01	1.147E-02	0.491
		1048.07	*	2.851E-02	8.597E-02	1.473E-01	1.363E-02	0.194
		1235.34		9.403E-01	6.098E-01	1.014E+00	1.172E-01	0.927
CE-139		165.85	*	-2.113E-02	2.706E-02	4.279E-02	3.881E-03	-0.494
BA-140		162.64		5.911E-01	6.382E-01	1.096E+00	1.037E-01	0.540
		304.84		3.816E-01	1.136E+00	1.838E+00	5.349E-01	0.208
		423.70		5.047E-01	1.613E+00	2.742E+00	8.946E-01	0.184
		537.32	*	-1.017E-01	2.220E-01	3.453E-01	1.153E-01	-0.294
LA-140	+	328.77		4.611E-01	3.561E-01	5.104E-01	5.882E-02	0.903
		432.53		-1.288E-01	1.819E+00	2.957E+00	2.898E-01	-0.044
		487.03		8.743E-02	1.166E-01	2.039E-01	2.039E-02	0.429
		751.79		-5.990E-01	1.550E+00	2.377E+00	2.394E-01	-0.252
		815.85		-2.564E-01	2.869E-01	4.384E-01	4.508E-02	-0.585
		867.82		-6.437E-01	1.185E+00	1.808E+00	1.781E-01	-0.356
		919.63		4.351E-01	2.513E+00	4.259E+00	4.811E-01	0.102
		925.24		-2.799E-02	9.729E-01	1.615E+00	1.598E-01	-0.017
		1596.49	*	-4.534E-02	7.853E-02	1.182E-01	1.007E-02	-0.384
CE-141		145.44	*	-2.016E-02	5.525E-02	9.015E-02	7.886E-03	-0.224
CE-143		57.37		-9.771E-06	5.525E-02	Half-Life too short		
		231.56		3.696E-05	5.525E-02	Half-Life too short		
		293.26	*	3.363E-04	5.525E-02	Half-Life too short		
	+	350.59		1.929E-02	5.525E-02	Half-Life too short		
		490.36		-5.935E-04	5.525E-02	Half-Life too short		
		664.57		3.700E-04	5.525E-02	Half-Life too short		
		721.93		-2.318E-04	5.525E-02	Half-Life too short		
CE-144		80.11		-2.251E-01	1.855E+00	2.837E+00	2.490E-01	-0.079
		133.54	*	-3.302E-02	2.101E-01	3.112E-01	4.806E-02	-0.106
PM-144		476.78		2.639E-02	6.858E-02	1.166E-01	1.195E-02	0.226
		618.01		2.542E-02	2.930E-02	5.124E-02	4.812E-03	0.496
		696.49	*	8.808E-03	3.336E-02	5.503E-02	4.963E-03	0.160
		778.57		-7.517E-01	2.174E+00	3.335E+00	3.095E-01	-0.225

---- 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	*	5.965E-01	2.259E+00	3.727E+00	3.360E-01	0.160
		1489.15		3.397E+00	1.123E+01	1.965E+01	1.680E+00	0.173
PM-146		453.90	*	2.873E-02	3.998E-02	6.981E-02	7.972E-03	0.412
		633.02		6.329E-01	1.264E+00	2.115E+00	7.929E-01	0.299
		735.90		-4.546E-02	1.467E-01	2.268E-01	6.524E-02	-0.200
		747.13		-7.131E-02	8.430E-02	1.208E-01	1.739E-02	-0.590
ND-147	+	91.11		9.308E-01	2.933E-01	4.324E-01	4.322E-02	2.153
		319.41		-1.925E+00	2.848E+00	4.254E+00	4.830E-01	-0.453
		439.89		3.097E+00	4.782E+00	8.346E+00	7.878E-01	0.371
		531.02	*	-1.021E-01	4.968E-01	8.024E-01	1.241E-01	-0.127
PM-149		285.90	*	-2.319E+01	6.172E+01	9.572E+01	1.684E+01	-0.242
EU-152		121.78		-9.096E-03	6.508E-02	1.083E-01	1.046E-02	-0.084
		244.69		2.542E-02	3.328E-01	4.808E-01	5.345E-02	0.053
		344.27	*	-4.060E-02	9.939E-02	1.516E-01	1.694E-02	-0.268
		443.98		9.680E-02	8.458E-01	1.421E+00	1.343E-01	0.068
		778.89		-5.587E-02	2.544E-01	3.962E-01	3.676E-02	-0.141
		867.32		-4.838E-01	7.916E-01	1.154E+00	1.089E-01	-0.419
	+	964.01		5.209E-01	4.242E-01	5.765E-01	5.348E-02	0.904
		1085.78		-8.237E-02	3.428E-01	5.467E-01	4.746E-02	-0.151
		1112.02		3.373E-02	2.863E-01	4.638E-01	3.946E-02	0.073
		1407.95		1.847E-01	2.052E-01	3.717E-01	3.165E-02	0.497
GD-153		69.67		2.434E-01	1.477E+00	2.307E+00	1.818E-01	0.106
		83.37		1.490E+01	1.394E+01	2.217E+01	2.020E+00	0.672
		97.43	*	-8.698E-02	7.445E-02	1.029E-01	9.140E-03	-0.845
		103.18		-3.368E-02	9.428E-02	1.567E-01	1.351E-02	-0.215
EU-154		123.07		7.928E-03	4.638E-02	7.824E-02	8.705E-03	0.101
		247.94		-1.543E-01	3.477E-01	5.144E-01	6.957E-02	-0.300
		591.81		-4.687E-01	5.702E-01	8.516E-01	1.037E-01	-0.550
		723.30		2.927E-02	1.858E-01	2.659E-01	2.653E-02	0.110
		756.87		7.472E-01	7.551E-01	1.317E+00	1.635E-01	0.567
		873.19		-1.186E-01	2.546E-01	4.031E-01	5.173E-02	-0.294
		996.32		-1.148E-01	3.905E-01	6.277E-01	1.132E-01	-0.183
		1004.76		-1.434E-01	2.239E-01	3.461E-01	4.157E-02	-0.414
		1274.45	*	-7.474E-03	1.151E-01	1.851E-01	2.050E-02	-0.040
EU-155		48.70		-5.802E-02	2.402E+00	3.775E+00	3.102E-01	-0.015
		60.01		-1.907E-01	4.976E+00	7.117E+00	5.083E-01	-0.027
	+	86.54		4.339E-01	9.085E-02	1.730E-01	1.652E-02	2.508
		105.31	*	1.114E-01	9.704E-02	1.705E-01	1.475E-02	0.653
TB-160	+	86.79		1.147E+00	2.397E-01	4.601E-01	4.369E-02	2.493
		197.04		7.901E-02	5.283E-01	8.642E-01	8.510E-02	0.091
		215.65		1.023E-01	6.823E-01	1.117E+00	1.155E-01	0.092
	+	298.57		2.384E-01	1.295E-01	1.883E-01	2.211E-02	1.266
		879.36	*	3.961E-02	1.285E-01	2.213E-01	2.091E-02	0.179
		962.29		8.417E-01	5.561E-01	9.459E-01	8.781E-02	0.890
		966.15		8.874E-01	2.434E-01	4.771E-01	4.422E-02	1.860
		1177.93		-5.941E-02	3.329E-01	5.327E-01	4.291E-02	-0.112
		1271.85		4.432E-01	6.320E-01	1.113E+00	9.243E-02	0.398
HO-166M		80.57		-5.331E-02	2.371E-01	3.604E-01	3.180E-02	-0.148
		184.41		3.827E-02	4.064E-02	6.403E-02	6.095E-03	0.598

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		280.46		-3.314E-02	8.801E-02	1.206E-01	1.446E-02	-0.275
		410.95		2.019E-01	2.492E-01	3.946E-01	3.684E-02	0.512
		711.68	*	6.221E-03	5.472E-02	8.902E-02	8.077E-03	0.070
		752.31		-7.499E-02	2.718E-01	4.226E-01	3.890E-02	-0.177
		810.29		-2.694E-02	5.466E-02	8.754E-02	8.183E-03	-0.308
TM-171		51.35		-1.172E+01	2.903E+01	4.452E+01	3.508E+00	-0.263
		52.39		1.013E+01	1.466E+01	2.384E+01	1.848E+00	0.425
		59.40		-1.735E+00	2.642E+01	3.774E+01	2.680E+00	-0.046
		66.72	*	-1.246E+01	2.963E+01	4.119E+01	3.156E+00	-0.302
LU-176	+	88.36		8.549E-01	1.787E-01	3.166E-01	3.039E-02	2.701
		201.83		-7.063E-03	2.716E-02	4.369E-02	4.357E-03	-0.162
		306.84	*	-6.863E-03	2.374E-02	3.687E-02	4.276E-03	-0.186
		401.10		-1.936E+00	6.301E+00	1.034E+01	9.609E-01	-0.187
LU-177		112.95		-6.555E-01	1.283E+00	2.107E+00	1.764E-01	-0.311
	+	208.36	*	2.455E+00	1.570E+00	1.753E+00	1.779E-01	1.400
LU-177M		52.97		2.702E-01	1.532E+00	2.425E+00	1.863E-01	0.111
		54.07		-2.261E-01	7.989E-01	1.232E+00	9.309E-02	-0.184
		61.30		1.071E+00	1.452E+00	2.171E+00	1.575E-01	0.493
		121.62		-6.140E-02	3.321E-01	5.516E-01	4.579E-02	-0.111
		147.16		2.788E-01	5.753E-01	9.750E-01	8.408E-02	0.286
		171.86		3.959E-01	4.479E-01	7.657E-01	7.051E-02	0.517
		218.09		-2.755E-01	7.921E-01	1.260E+00	1.311E-01	-0.219
	+	268.79		1.957E+00	1.309E+00	1.331E+00	1.563E-01	1.471
		319.02		-9.895E-02	2.294E-01	3.501E-01	3.977E-02	-0.283
		367.43		2.161E-01	7.943E-01	1.364E+00	1.375E-01	0.158
		413.65	*	-9.677E-02	1.757E-01	2.436E-01	2.277E-02	-0.397
HF-181		56.28		1.436E-01	8.538E-01	1.347E+00	9.891E-02	0.107
		57.53		-3.014E-01	4.659E-01	7.013E-01	5.073E-02	-0.430
		65.20		2.302E-01	9.450E-01	1.368E+00	1.033E-01	0.168
		133.02		-5.003E-02	6.662E-02	9.500E-02	7.967E-03	-0.527
		136.25		9.559E-02	4.141E-01	6.967E-01	5.873E-02	0.137
		345.85		-8.542E-02	2.082E-01	2.973E-01	3.187E-02	-0.287
		482.03	*	-1.764E-02	3.949E-02	6.302E-02	5.994E-03	-0.280
W-181		56.28		5.721E-02	3.383E-01	5.340E-01	3.919E-02	0.107
		57.53		-1.196E-01	1.847E-01	2.781E-01	2.012E-02	-0.430
		65.20	*	9.055E-02	3.718E-01	5.382E-01	4.065E-02	0.168
TA-182		67.75		7.556E-03	1.013E-01	1.570E-01	1.215E-02	0.048
		100.10		4.172E-02	1.542E-01	2.636E-01	2.305E-02	0.158
		152.43		6.208E-02	3.026E-01	5.058E-01	4.420E-02	0.123
		222.10		-4.241E-02	3.172E-01	5.104E-01	5.367E-02	-0.083
		1001.68		1.417E-01	2.271E+00	3.763E+00	3.435E-01	0.038
	+	1121.28		6.063E-01	2.537E-01	3.576E-01	3.019E-02	1.696
		1189.05		-2.417E-02	2.921E-01	4.724E-01	3.820E-02	-0.051
		1221.42	*	-3.670E-02	1.945E-01	3.106E-01	2.540E-02	-0.118
		1230.97		-2.317E-01	5.227E-01	6.846E-01	5.616E-02	-0.338
RE-183		57.98		-1.186E-01	1.829E-01	2.752E-01	1.981E-02	-0.431
		59.32		6.609E-03	1.063E-01	1.531E-01	1.088E-02	0.043
		67.20		-5.636E-02	2.023E-01	2.836E-01	2.183E-02	-0.199
		162.32	*	7.248E-02	9.801E-02	1.671E-01	1.500E-02	0.434

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	208.81		2.458E+00	1.573E+00	1.771E+00	1.799E-01	1.388
		291.72		-3.072E-01	9.227E-01	1.264E+00	1.497E-01	-0.243
		57.98		-4.399E-01	6.783E-01	1.021E+00	7.350E-02	-0.431
		59.32		2.450E-02	3.941E-01	5.676E-01	4.034E-02	0.043
		67.20		-2.090E-01	7.504E-01	1.052E+00	8.095E-02	-0.199
		161.27		-1.064E-01	3.152E-01	5.116E-01	4.578E-02	-0.208
		216.55		9.861E-03	2.450E-01	3.987E-01	4.134E-02	0.025
		252.85	*	5.194E-02	2.145E-01	3.501E-01	3.968E-02	0.148
		318.01		5.899E-02	3.971E-01	6.360E-01	7.240E-02	0.093
		792.07		-2.094E-01	9.528E-01	1.576E+00	1.467E-01	-0.133
OS-185		903.28		1.713E-01	1.011E+00	1.569E+00	1.482E-01	0.109
		920.93		-6.025E-02	4.496E-01	7.392E-01	6.954E-02	-0.082
		59.72		6.592E-02	2.859E-01	4.161E-01	2.961E-02	0.158
		61.14		1.236E-01	1.597E-01	2.392E-01	1.732E-02	0.517
		69.30		-5.515E-02	2.522E-01	4.106E-01	3.224E-02	-0.134
		592.07		-2.112E+00	2.286E+00	3.378E+00	3.141E-01	-0.625
		646.12	*	-2.199E-02	4.190E-02	6.445E-02	5.793E-03	-0.341
		717.42		3.965E-01	8.497E-01	1.427E+00	1.297E-01	0.278
		874.81		-1.356E-01	5.242E-01	8.528E-01	8.053E-02	-0.159
		880.27		-7.956E-02	7.158E-01	1.183E+00	1.118E-01	-0.067
RE-188		155.03	*	1.516E-02	1.575E-01	2.618E-01	2.303E-02	0.058
		477.96		4.178E+00	2.996E+00	5.412E+00	5.146E-01	0.772
		633.10		7.864E-01	2.510E+00	4.196E+00	3.809E-01	0.187
W-188	+	63.58		4.788E+01	7.388E+01	8.443E+01	6.276E+00	0.567
		227.08		5.096E+00	1.202E+01	1.989E+01	2.119E+00	0.256
IR-192		290.67	*	-4.469E+00	7.578E+00	1.011E+01	1.199E+00	-0.442
	+	295.96		1.302E+00	2.284E-01	2.937E-01	3.473E-02	4.435
		308.46		2.315E-02	8.668E-02	1.402E-01	1.627E-02	0.165
		316.51	*	-5.227E-03	3.106E-02	4.854E-02	5.547E-03	-0.108
		468.07		6.974E-02	6.684E-02	1.077E-01	1.084E-02	0.647
		604.41		-8.674E-03	5.046E-01	7.178E-01	9.645E-02	-0.012
		612.46		5.878E-02	6.669E-01	9.605E-01	9.996E-02	0.061
AU-195		65.12		4.252E-02	1.727E-01	2.501E-01	1.887E-02	0.170
		66.83		-4.143E-02	9.758E-02	1.356E-01	1.040E-02	-0.306
	+	75.70		1.386E+00	2.442E-01	4.137E-01	3.462E-02	3.351
		98.88	*	9.375E-02	2.187E-01	3.350E-01	2.950E-02	0.280
TL-200	+	129.76		4.957E+00	3.748E+00	4.732E+00	3.951E-01	1.047
		367.94	*	2.124E-05	3.748E+00	Half-Life	too short	
		579.30		-2.208E-03	3.748E+00	Half-Life	too short	
		828.27		5.198E-04	3.748E+00	Half-Life	too short	
TL-201		1205.75		-4.874E-05	3.748E+00	Half-Life	too short	
		68.90		-1.560E+00	3.024E+00	5.090E+00	3.981E-01	-0.307
		70.82		-8.273E-01	1.844E+00	2.788E+00	2.221E-01	-0.297
		80.30		-4.111E-01	3.384E+00	5.174E+00	4.551E-01	-0.079
TL-202		135.34		1.094E+01	1.811E+01	3.093E+01	2.603E+00	0.354
		167.43	*	3.444E-01	4.801E+00	7.939E+00	7.228E-01	0.043
		68.90		-1.710E-01	3.314E-01	5.578E-01	4.363E-02	-0.307
		70.82		-9.042E-02	2.015E-01	3.047E-01	2.427E-02	-0.297
		80.30		-4.494E-02	3.700E-01	5.656E-01	4.976E-02	-0.079

## ---- 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	*	2.863E-02	5.793E-02	1.000E-01	9.440E-03	0.286
		70.83		-4.123E-01	9.176E-01	1.386E+00	1.829E-01	-0.298
		72.87		8.898E-01	5.541E-01	9.009E-01	1.161E-01	0.988
		82.60		-6.496E-01	9.783E-01	1.521E+00	2.130E-01	-0.427
BI-207		279.20	*	1.918E-02	4.233E-02	6.239E-02	7.604E-03	0.307
		72.80		2.573E-01	1.629E-01	2.681E-01	2.178E-02	0.960
	+	74.97		7.723E-01	1.360E-01	2.142E-01	1.778E-02	3.606
		84.90		9.656E-02	1.790E-01	2.784E-01	2.584E-02	0.347
TL-207		569.67		-5.675E-03	2.923E-02	4.625E-02	4.342E-03	-0.123
		1063.62	*	2.722E-03	4.870E-02	8.070E-02	7.114E-03	0.034
		1770.23		-1.020E-02	3.292E-01	4.596E-01	3.798E-02	-0.022
		81.07		-2.628E-01	1.966E-01	2.794E-01	2.479E-02	-0.941
		83.78		1.300E-01	1.200E-01	1.908E-01	1.748E-02	0.681
		94.90		5.231E-03	1.948E-01	3.304E-01	2.987E-02	0.016
		122.32		-3.616E-01	1.548E+00	2.564E+00	2.296E-01	-0.141
		144.24		-7.988E-02	6.456E-01	1.043E+00	1.000E-01	-0.077
		154.21		6.061E-02	3.698E-01	6.166E-01	5.934E-02	0.098
	+	269.46		4.605E-01	3.080E-01	3.329E-01	3.959E-02	1.384
		323.87	*	6.064E-01	7.122E-01	1.067E+00	2.041E-01	0.568
	+	338.28		6.886E+00	2.019E+00	2.550E+00	3.574E-01	2.701
PO-209		445.03		1.597E+00	1.985E+00	3.494E+00	4.436E-01	0.457
		260.50		-1.989E+00	9.285E+00	1.470E+01	1.695E+00	-0.135
		262.80		5.489E+00	2.507E+01	4.076E+01	4.724E+00	0.135
		896.60	*	1.729E+00	6.623E+00	1.135E+01	1.074E+00	0.152
BI-210		46.50	*	-9.157E-01	3.588E+00	5.570E+00	5.194E-01	-0.164
PB-210		46.50	*	-9.157E-01	3.588E+00	5.570E+00	5.194E-01	-0.164
PO-210		46.50	*	-9.157E-01	3.588E+00	5.570E+00	4.705E-01	-0.164
PB-211		404.84	*	-3.924E-01	9.842E-01	1.349E+00	8.467E-01	-0.291
BI-212		427.08		4.119E-01	1.836E+00	3.087E+00	1.921E+00	0.133
		831.96		-2.602E-01	1.192E+00	1.944E+00	1.220E+00	-0.134
	+	727.18	*	1.300E+00	4.487E-01	6.945E-01	7.255E-02	1.873
		785.46		1.860E+00	1.852E+00	3.343E+00	3.107E-01	0.556
PO-215		1620.62		1.427E+00	1.269E+00	2.449E+00	2.080E-01	0.583
		81.07		-2.628E-01	1.966E-01	2.794E-01	2.479E-02	-0.941
		83.78		1.300E-01	1.200E-01	1.908E-01	1.748E-02	0.681
		94.90		5.231E-03	1.948E-01	3.304E-01	2.987E-02	0.016
RN-219		122.32		-3.616E-01	1.548E+00	2.564E+00	2.296E-01	-0.141
		144.24		-7.988E-02	6.456E-01	1.043E+00	1.000E-01	-0.077
		154.21		6.061E-02	3.698E-01	6.166E-01	5.934E-02	0.098
	+	269.46		4.605E-01	3.080E-01	3.329E-01	3.959E-02	1.384
		323.87	*	6.064E-01	7.122E-01	1.067E+00	2.041E-01	0.568
	+	338.28		6.886E+00	2.019E+00	2.550E+00	3.574E-01	2.701
		445.03		1.597E+00	1.985E+00	3.494E+00	4.436E-01	0.457
	+	271.23		5.909E-01	3.965E-01	4.474E-01	5.859E-02	1.321
		401.81	*	1.309E-02	3.799E-01	6.384E-01	9.846E-02	0.021
RN-220		549.76	*	-4.467E+00	2.448E+01	3.950E+01	3.732E+00	-0.113
RA-223		81.07		-2.628E-01	1.966E-01	2.794E-01	2.479E-02	-0.941
		83.78		1.300E-01	1.200E-01	1.908E-01	1.748E-02	0.681
		94.90		5.231E-03	1.948E-01	3.304E-01	2.987E-02	0.016

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		122.32		-3.616E-01	1.548E+00	2.564E+00	2.296E-01	-0.141
		144.24		-7.988E-02	6.456E-01	1.043E+00	1.000E-01	-0.077
		154.21		6.061E-02	3.698E-01	6.166E-01	5.934E-02	0.098
	+	269.46		4.605E-01	3.080E-01	3.329E-01	3.959E-02	1.384
		323.87	*	6.064E-01	7.122E-01	1.067E+00	2.041E-01	0.568
	+	338.28		6.886E+00	2.019E+00	2.550E+00	3.574E-01	2.701
		445.03		1.597E+00	1.985E+00	3.494E+00	4.436E-01	0.457
AC-227		79.80		5.773E-01	1.416E+00	2.217E+00	4.779E-01	0.260
		236.00		1.406E-01	2.295E-01	3.440E-01	4.793E-02	0.409
		256.20	*	-1.256E-02	3.597E-01	5.767E-01	9.849E-02	-0.022
		286.10		-2.226E-01	1.472E+00	2.323E+00	3.615E-01	-0.096
	+	299.80		3.071E+00	1.732E+00	2.567E+00	4.931E-01	1.196
		304.40		4.442E-01	1.797E+00	2.899E+00	5.805E-01	0.153
		334.20		-1.842E+00	2.464E+00	3.425E+00	7.051E-01	-0.538
TH-227		79.80		5.773E-01	1.416E+00	2.217E+00	4.839E-01	0.260
	+	94.00		9.836E+00	3.446E+00	3.446E+00	7.572E-01	2.854
		236.00		1.406E-01	2.294E-01	3.440E-01	4.445E-02	0.409
		256.20	*	-1.256E-02	3.597E-01	5.767E-01	1.128E-01	-0.022
		286.10		-2.226E-01	1.488E+00	2.323E+00	2.339E+00	-0.096
	+	299.80		3.071E+00	1.732E+00	2.567E+00	4.931E-01	1.196
		304.40		4.442E-01	1.797E+00	2.899E+00	5.805E-01	0.153
		334.20		-1.842E+00	2.464E+00	3.425E+00	7.051E-01	-0.538
TH-229		85.43		1.202E-01	1.767E-01	2.764E-01	2.581E-02	0.435
	+	88.47		4.921E-01	1.029E-01	1.819E-01	1.745E-02	2.705
		100.00		2.338E-02	1.662E-01	2.762E-01	2.417E-02	0.085
		193.63	*	-1.930E-01	4.725E-01	7.554E-01	7.371E-02	-0.256
		210.97		8.276E-01	8.162E-01	1.256E+00	1.284E-01	0.659
PA-231		283.67	*	-7.237E-01	1.527E+00	2.223E+00	3.846E-01	-0.325
		301.29		7.966E-01	6.585E-01	9.937E-01	1.448E-01	0.802
TH-231		81.07		-2.628E-01	1.966E-01	2.794E-01	2.479E-02	-0.941
		83.78		1.300E-01	1.200E-01	1.908E-01	1.748E-02	0.681
		94.90		5.231E-03	1.948E-01	3.304E-01	2.987E-02	0.016
		122.32		-3.616E-01	1.548E+00	2.564E+00	2.296E-01	-0.141
		144.24		-7.988E-02	6.456E-01	1.043E+00	1.000E-01	-0.077
		154.21		6.061E-02	3.698E-01	6.166E-01	5.934E-02	0.098
	+	269.46		4.605E-01	3.080E-01	3.329E-01	3.959E-02	1.384
		323.87	*	6.064E-01	7.122E-01	1.067E+00	2.041E-01	0.568
	+	338.28		6.886E+00	2.019E+00	2.550E+00	3.574E-01	2.701
		445.03		1.597E+00	1.985E+00	3.494E+00	4.436E-01	0.457
U-231		84.21		6.124E+00	4.170E+00	6.719E+00	6.185E-01	0.911
	+	92.29		8.027E+00	2.309E+00	3.204E+00	2.959E-01	2.505
		95.87	*	-1.352E-01	7.707E-01	1.162E+00	1.044E-01	-0.116
		108.00		-2.034E+00	1.557E+00	2.463E+00	2.086E-01	-0.826
PA-233	+	75.28		2.254E+01	4.894E+00	6.303E+00	9.573E-01	3.576
	+	86.59		7.056E+00	2.321E+00	2.817E+00	7.637E-01	2.505
	+	300.12		8.561E-01	4.763E-01	7.169E-01	1.208E-01	1.194
		311.98	*	-4.276E-02	5.983E-02	8.930E-02	1.044E-02	-0.479
		340.50		5.371E-01	6.598E-01	1.028E+00	2.543E-01	0.522
		398.62		-4.807E-01	2.056E+00	3.390E+00	9.101E-01	-0.142

## ---- 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		-8.176E-01	1.505E+00	2.400E+00	5.245E-01	-0.341
		63.00		1.405E+00	2.175E+00	2.540E+00	3.772E-01	0.553
		94.67		1.144E-01	1.447E-01	2.512E-01	3.192E-02	0.456
		98.44		5.055E-02	9.068E-02	1.333E-01	7.440E-02	0.379
		99.86		1.209E-01	4.179E-01	6.984E-01	6.116E-02	0.173
		111.00		5.809E-02	1.654E-01	2.822E-01	3.368E-02	0.206
		131.20		2.040E-02	1.025E-01	1.554E-01	1.300E-02	0.131
		152.70		2.872E-01	2.962E-01	5.054E-01	8.647E-02	0.568
		186.00		5.153E+00	2.707E+00	2.581E+00	8.127E-01	1.996
		226.40		1.133E-01	3.774E-01	6.207E-01	9.060E-02	0.182
		227.20		1.943E-01	4.120E-01	6.833E-01	7.279E-02	0.284
		248.90		-1.172E-01	7.362E-01	1.172E+00	2.759E-01	-0.100
		293.70		8.287E+00	1.911E+00	1.717E+00	3.278E-01	4.827
		369.80		4.973E-01	7.851E-01	1.364E+00	3.051E-01	0.365
		568.70		-3.575E-01	9.760E-01	1.522E+00	1.430E-01	-0.235
		569.50		-1.772E-02	2.583E-01	4.134E-01	3.882E-02	-0.043
		574.00		1.386E-01	1.481E+00	2.440E+00	2.287E-01	0.057
		699.00		1.688E-01	6.896E-01	1.134E+00	2.186E-01	0.149
		706.10		-5.037E-01	9.993E-01	1.484E+00	6.630E-01	-0.339
		733.00		3.664E-01	3.932E-01	6.329E-01	1.418E-01	0.579
		742.81		1.469E+00	1.618E+00	2.289E+00	1.541E+00	0.642
		796.30		3.102E-01	8.737E-01	1.508E+00	4.115E-01	0.206
		805.60		6.030E-01	9.821E-01	1.710E+00	5.278E-01	0.353
		819.60		9.289E-01	1.253E+00	2.157E+00	8.241E-01	0.431
		826.30		-6.806E-01	8.240E-01	1.172E+00	5.263E-01	-0.580
		831.60		-6.297E-02	6.133E-01	1.020E+00	3.068E-01	-0.062
		876.40		1.629E-01	7.796E-01	1.301E+00	1.338E+00	0.125
		880.51		4.539E-02	2.554E-01	4.346E-01	4.106E-02	0.104
		883.24		-6.430E-02	2.642E-01	4.244E-01	2.857E-01	-0.152
		899.00		8.066E-01	8.684E-01	1.451E+00	6.366E-01	0.556
		925.00		4.834E-01	1.048E+00	1.829E+00	1.718E-01	0.264
		926.50		-6.182E-02	1.582E-01	2.508E-01	6.409E-02	-0.246
		946.00	*	7.255E-02	2.758E-01	4.705E-01	8.989E-02	0.154
		949.00		5.117E-01	4.121E-01	7.646E-01	7.132E-02	0.669
		980.50		5.409E-01	7.286E-01	1.292E+00	1.191E-01	0.419
		1394.10		-4.380E-02	1.087E+00	1.735E+00	1.129E+00	-0.025
PA-234M		766.42		1.172E+01	1.468E+01	2.065E+01	1.050E+01	0.568
		1001.03	*	1.016E+00	5.094E+00	8.539E+00	8.890E-01	0.119
U-235	+	89.95		3.988E+00	1.719E+00	1.790E+00	5.567E-01	2.227
		93.35		3.060E+00	1.200E+00	1.214E+00	3.422E-01	2.521
		105.00		8.069E-01	1.001E+00	1.693E+00	5.051E-01	0.477
		143.76	*	-6.607E-02	1.992E-01	3.183E-01	5.562E-02	-0.208
		163.35		4.499E-01	4.339E-01	7.366E-01	1.418E-01	0.611
NP-236	+	185.71		1.908E-01	8.230E-02	9.569E-02	9.141E-03	1.994
		205.31		-8.029E-02	5.684E-01	8.186E-01	1.619E-01	-0.098
		94.67		8.862E-02	1.096E-01	1.908E-01	1.728E-02	0.465
		98.44		3.817E-02	6.523E-02	1.007E-01	8.895E-03	0.379
		111.00		4.394E-02	1.251E-01	2.135E-01	1.794E-02	0.206
		160.31	*	-1.083E-01	7.324E-02	1.111E-01	9.914E-03	-0.975



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		7.666E-02	1.395E-01	2.355E-01	2.066E-02	0.325
		117.00	*	-4.688E-02	1.648E-01	2.729E-01	2.272E-02	-0.172
	+	209.75		1.962E+00	1.255E+00	1.439E+00	1.466E-01	1.363
		228.18		3.747E-02	2.186E-01	3.570E-01	3.812E-02	0.105
	+	277.60		4.551E-01	2.788E-01	3.294E-01	3.943E-02	1.382
AM-241		334.30		-1.075E+00	1.383E+00	1.934E+00	2.130E-01	-0.556
		59.54	*	2.624E-02	1.518E-01	2.202E-01	1.728E-02	0.119
		99.55		7.887E-02	1.435E-01	2.423E-01	2.126E-02	0.325
CM-243		103.76	*	-2.406E-02	8.754E-02	1.460E-01	1.255E-02	-0.165
		117.00		-4.823E-02	1.695E-01	2.807E-01	2.337E-02	-0.172
	+	209.75		1.934E+00	1.237E+00	1.418E+00	1.445E-01	1.363
		228.18		3.786E-02	2.208E-01	3.607E-01	3.852E-02	0.105
	+	277.60		4.588E-01	2.810E-01	3.321E-01	3.975E-02	1.382
AM-246		798.80		-9.496E-02	1.404E-01	2.225E-01	2.075E-02	-0.427
		1036.00		-2.070E-01	2.883E-01	4.367E-01	3.916E-02	-0.474
		1062.04		-1.311E-01	2.129E-01	3.252E-01	2.870E-02	-0.403
		1078.86	*	1.579E-02	1.292E-01	2.155E-01	1.880E-02	0.073
	+	278.00		1.887E+00	1.156E+00	1.358E+00	1.627E-01	1.390
CM-247		287.40		1.022E+00	1.194E+00	2.001E+00	2.382E-01	0.511
		402.60	*	1.278E-02	3.432E-02	5.719E-02	5.318E-03	0.223
CF-249		252.85		1.958E-01	8.088E-01	1.320E+00	1.496E-01	0.148
		333.44		-9.061E-02	1.753E-01	2.511E-01	2.772E-02	-0.361
		387.95	*	2.128E-02	3.899E-02	6.764E-02	6.346E-03	0.315
CF-251		176.60	*	-1.137E-01	1.145E-01	1.776E-01	1.656E-02	-0.640
		227.00		1.165E-01	3.660E-01	6.025E-01	6.416E-02	0.193
		285.00		-1.102E+00	1.694E+00	2.575E+00	3.074E-01	-0.428

# 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]G244132011      *
* Acquisition date   : 19-JAN-2010 11:04:16 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 02:00:01.78             Half life ratio : 8.000     *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132011             Analyst initials: MXR1         *
* Batch Number       : 940270                  Sample Quantity : 1.1614E+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	2.092E+01	2.342E+00	4.846E-01	0.000E+00
CD-109	3.661E+00	7.498E-01	1.095E+00	0.000E+00
SN-126	3.604E-01	7.383E-02	1.083E-01	0.000E+00
BA-137M	1.176E-01	5.219E-02	5.841E-02	0.000E+00
CS-137	1.243E-01	5.517E-02	6.174E-02	0.000E+00
TL-208	5.416E-01	9.847E-02	5.149E-02	0.000E+00
BI-211	4.358E+00	6.511E-01	3.048E-01	0.000E+00
PB-212	1.753E+00	2.327E-01	8.201E-02	0.000E+00
PO-212	1.753E+00	2.327E-01	8.201E-02	0.000E+00
BI-214	1.279E+00	2.046E-01	1.034E-01	0.000E+00
PB-214	1.516E+00	2.394E-01	1.063E-01	0.000E+00
PO-214	1.516E+00	2.394E-01	1.063E-01	0.000E+00
PO-216	1.753E+00	2.327E-01	8.201E-02	0.000E+00
PO-218	1.516E+00	2.394E-01	1.063E-01	0.000E+00
RA-224	4.990E+00	1.285E+00	9.333E-01	0.000E+00
RA-226	1.279E+00	2.046E-01	1.034E-01	0.000E+00
AC-228	1.776E+00	3.561E-01	1.962E-01	0.000E+00
RA-228	1.776E+00	3.561E-01	1.962E-01	0.000E+00
TH-228	1.778E+00	2.360E-01	8.316E-02	0.000E+00
TH-230	1.279E+00	2.046E-01	1.034E-01	0.000E+00
TH-232	1.776E+00	3.561E-01	1.962E-01	0.000E+00
TH-234	1.205E+00	1.832E+00	1.956E+00	0.000E+00
U-234	1.279E+00	2.046E-01	1.034E-01	0.000E+00
NP-237	1.058E+00	3.047E-01	3.760E-01	0.000E+00
U-238	1.205E+00	1.832E+00	1.956E+00	0.000E+00
AM-243	4.303E-01	7.428E-02	7.601E-02	0.000E+00
ANH-511	9.789E-02	6.562E-02	4.483E-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	3.582E-01	3.108E-01	5.682E-01	0.000E+00	NOT IDENT.
NA-22	-1.076E-02	4.123E-02	6.590E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.861E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-6.445E-04	3.429E-02	5.706E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.679E-02	7.123E-02	0.000E+00	FAIL ABUN
SC-46	2.342E-03	3.237E-02	5.569E-02	0.000E+00	FAIL ABUN
V-48	-7.305E-02	6.493E-02	9.609E-02	0.000E+00	NOT IDENT.
CR-51	-2.761E-01	3.349E-01	5.106E-01	0.000E+00	NOT IDENT.
MN-52	-1.435E-01	1.833E-01	2.548E-01	0.000E+00	NOT IDENT.
MN-54	-1.385E-02	3.796E-02	6.323E-02	0.000E+00	NOT IDENT.
CO-56	-2.933E-02	3.307E-02	5.117E-02	0.000E+00	FAIL ABUN
CO-57	-1.201E-02	2.212E-02	3.765E-02	0.000E+00	NOT IDENT.
CO-58	-1.042E-02	3.493E-02	5.842E-02	0.000E+00	NOT IDENT.
FE-59	2.800E-02	8.606E-02	1.488E-01	0.000E+00	NOT IDENT.
CO-60	-2.782E-02	3.877E-02	5.736E-02	0.000E+00	NOT IDENT.
ZN-65	-8.545E-02	9.208E-02	1.123E-01	0.000E+00	NOT IDENT.
GE-68	3.310E-01	1.141E+00	1.973E+00	0.000E+00	NOT IDENT.
AS-73	5.285E-02	7.581E-01	1.253E+00	0.000E+00	NOT IDENT.
AS-74	6.237E-02	8.507E-02	1.442E-01	0.000E+00	NOT IDENT.
SE-75	8.089E-03	4.049E-02	6.482E-02	0.000E+00	NOT IDENT.
BR-77	-7.567E+00	6.901E+00	1.052E+01	0.000E+00	FAIL ABUN
SR-82	3.480E-03	3.450E-01	5.642E-01	0.000E+00	NOT IDENT.
RB-83	-6.425E-02	6.368E-02	9.807E-02	0.000E+00	NOT IDENT.
RB-84	-2.809E-02	6.133E-02	9.978E-02	0.000E+00	NOT IDENT.
KR-85	7.265E+00	7.127E+00	1.166E+01	0.000E+00	NOT IDENT.
SR-85	3.680E-02	3.610E-02	5.905E-02	0.000E+00	NOT IDENT.
RB-86	4.831E-01	6.922E-01	1.245E+00	0.000E+00	NOT IDENT.
Y-88	1.530E-02	3.482E-02	6.270E-02	0.000E+00	NOT IDENT.
ZR-88	5.687E-03	2.968E-02	5.193E-02	0.000E+00	NOT IDENT.
Y-91	-2.569E-01	1.762E+01	2.921E+01	0.000E+00	NOT IDENT.
NB-94	-1.075E-02	3.196E-02	5.100E-02	0.000E+00	NOT IDENT.
NB-95	4.625E-02	4.687E-02	7.464E-02	0.000E+00	NOT IDENT.
NB-95M	8.426E-02	1.145E-01	1.795E-01	0.000E+00	NOT IDENT.
ZR-95	5.368E-02	6.892E-02	1.209E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.333E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.029E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	6.681E-01	8.026E+00	1.328E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.442E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	8.706E-03	3.102E-02	5.294E-02	0.000E+00	NOT IDENT.
RH-102	4.729E-03	2.668E-02	4.609E-02	0.000E+00	FAIL ABUN
RU-103	-1.779E-02	3.639E-02	5.919E-02	0.000E+00	FAIL ABUN
RH-106	-9.034E-02	2.947E-01	4.767E-01	0.000E+00	FAIL ABUN
RU-106	-9.034E-02	2.945E-01	4.767E-01	0.000E+00	FAIL ABUN
AG-108M	1.659E-04	2.867E-02	4.925E-02	0.000E+00	NOT IDENT.
AG-110M	1.682E-02	3.694E-02	5.658E-02	0.000E+00	NOT IDENT.
IN-111	1.352E-01	7.888E-01	1.188E+00	0.000E+00	NOT IDENT.
IN-113M	-1.644E-02	4.344E-02	7.338E-02	0.000E+00	NOT IDENT.
SN-113	-1.644E-02	4.344E-02	7.338E-02	0.000E+00	NOT IDENT.
IN-114M	2.421E-02	1.783E-01	2.730E-01	0.000E+00	NOT IDENT.
CD-115	3.184E-01	7.022E+00	1.191E+01	0.000E+00	NOT IDENT.
SN-117M	1.161E-02	4.545E-02	7.901E-02	0.000E+00	NOT IDENT.
SB-122	5.761E-01	1.425E+00	2.473E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.165E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-5.843E-03	2.472E-02	4.198E-02	0.000E+00	NOT IDENT.
I-124	2.660E-01	5.823E-01	9.035E-01	0.000E+00	NOT IDENT.
SB-124	2.185E-02	6.602E-02	1.181E-01	0.000E+00	FAIL ABUN
SB-125	2.203E-02	8.110E-02	1.421E-01	0.000E+00	FAIL ABUN
TE-125M	5.659E+00	7.958E+00	1.436E+01	0.000E+00	NOT IDENT.
I-126	9.031E-02	1.774E-01	2.732E-01	0.000E+00	NOT IDENT.
SB-126	-3.422E-02	1.421E-01	2.178E-01	0.000E+00	FAIL ABUN
SB-127	4.331E-01	9.816E-01	1.691E+00	0.000E+00	NOT IDENT.
XE-127	-1.012E-03	4.326E-02	7.305E-02	0.000E+00	NOT IDENT.
I-131	-4.828E-02	9.021E-02	1.510E-01	0.000E+00	NOT IDENT.
TE-132	9.335E-02	5.125E-01	8.671E-01	0.000E+00	NOT IDENT.
BA-133	-2.001E-02	4.289E-02	6.305E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.233E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.049E-02	4.426E-02	7.774E-02	0.000E+00	NOT IDENT.
CS-135	2.364E-01	1.515E-01	2.485E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.251E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.851E-02	8.425E-02	1.472E-01	0.000E+00	FAIL ABUN
CE-139	-2.113E-02	2.652E-02	4.358E-02	0.000E+00	NOT IDENT.
BA-140	-1.017E-01	2.176E-01	3.476E-01	0.000E+00	NOT IDENT.
LA-140	-4.534E-02	7.696E-02	1.177E-01	0.000E+00	FAIL ABUN
CE-141	-2.016E-02	5.414E-02	9.193E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.170E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.302E-02	2.059E-01	3.176E-01	0.000E+00	NOT IDENT.
PM-144	8.808E-03	3.269E-02	5.525E-02	0.000E+00	NOT IDENT.
PR-144	5.965E-01	2.214E+00	3.741E+00	0.000E+00	NOT IDENT.

PM-146	2.873E-02	3.918E-02	7.038E-02	0.000E+00	NOT IDENT.
ND-147	-1.021E-01	4.869E-01	8.078E-01	0.000E+00	FAIL ABUN
PM-149	-2.319E+01	6.048E+01	9.696E+01	0.000E+00	NOT IDENT.
EU-152	-4.060E-02	9.740E-02	1.533E-01	0.000E+00	FAIL ABUN
GD-153	-8.698E-02	7.296E-02	1.053E-01	0.000E+00	NOT IDENT.
EU-154	-7.474E-03	1.128E-01	1.847E-01	0.000E+00	NOT IDENT.
EU-155	1.114E-01	9.510E-02	1.744E-01	0.000E+00	FAIL ABUN
TB-160	3.961E-02	1.260E-01	2.217E-01	0.000E+00	FAIL ABUN
HO-166M	6.221E-03	5.362E-02	8.935E-02	0.000E+00	NOT IDENT.
TM-171	-1.246E+01	2.904E+01	4.233E+01	0.000E+00	NOT IDENT.
LU-176	-6.863E-03	2.326E-02	3.732E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.539E+00	1.781E+00	0.000E+00	FAIL ABUN
LU-177M	-9.677E-02	1.722E-01	2.459E-01	0.000E+00	FAIL ABUN
HF-181	-1.764E-02	3.870E-02	6.350E-02	0.000E+00	NOT IDENT.
W-181	9.055E-02	3.644E-01	5.531E-01	0.000E+00	NOT IDENT.
TA-182	-3.670E-02	1.906E-01	3.100E-01	0.000E+00	FAIL ABUN
RE-183	7.248E-02	9.605E-02	1.702E-01	0.000E+00	FAIL ABUN
RE-184	5.194E-02	2.102E-01	3.551E-01	0.000E+00	NOT IDENT.
OS-185	-2.199E-02	4.107E-02	6.475E-02	0.000E+00	NOT IDENT.
RE-188	1.516E-02	1.544E-01	2.668E-01	0.000E+00	NOT IDENT.
W-188	-4.469E+00	7.426E+00	1.024E+01	0.000E+00	FAIL ABUN
IR-192	-5.227E-03	3.044E-02	4.911E-02	0.000E+00	FAIL ABUN
AU-195	9.375E-02	2.143E-01	3.429E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.972E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	3.444E-01	4.705E+00	8.085E+00	0.000E+00	NOT IDENT.
TL-202	2.863E-02	5.678E-02	1.009E-01	0.000E+00	NOT IDENT.
HG-203	1.918E-02	4.148E-02	6.322E-02	0.000E+00	NOT IDENT.
BI-207	2.722E-03	4.773E-02	8.066E-02	0.000E+00	FAIL ABUN
TL-207	6.064E-01	6.980E-01	1.080E+00	0.000E+00	FAIL ABUN
PO-209	1.729E+00	6.490E+00	1.137E+01	0.000E+00	NOT IDENT.
BI-210	-9.157E-01	3.517E+00	5.743E+00	0.000E+00	NOT IDENT.
PB-210	-9.157E-01	3.517E+00	5.743E+00	0.000E+00	NOT IDENT.
PO-210	-9.157E-01	3.516E+00	5.743E+00	0.000E+00	NOT IDENT.
PB-211	-3.924E-01	9.645E-01	1.362E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.397E-01	6.969E-01	0.000E+00	FAIL ABUN
PO-215	6.064E-01	6.980E-01	1.080E+00	0.000E+00	FAIL ABUN
RN-219	1.309E-02	3.723E-01	6.444E-01	0.000E+00	FAIL ABUN
RN-220	-4.467E+00	2.399E+01	3.975E+01	0.000E+00	NOT IDENT.
RA-223	6.064E-01	6.980E-01	1.080E+00	0.000E+00	FAIL ABUN
AC-227	-1.256E-02	3.525E-01	5.848E-01	0.000E+00	FAIL ABUN
TH-227	-1.256E-02	3.525E-01	5.848E-01	0.000E+00	FAIL ABUN
TH-229	-1.930E-01	4.630E-01	7.681E-01	0.000E+00	FAIL ABUN
PA-231	-7.237E-01	1.497E+00	2.252E+00	0.000E+00	NOT IDENT.
TH-231	6.064E-01	6.980E-01	1.080E+00	0.000E+00	FAIL ABUN
U-231	-1.352E-01	7.553E-01	1.190E+00	0.000E+00	FAIL ABUN
PA-233	-4.276E-02	5.863E-02	9.038E-02	0.000E+00	FAIL ABUN
PA-234	7.255E-02	2.703E-01	4.709E-01	0.000E+00	FAIL ABUN
PA-234M	1.016E+00	4.992E+00	8.540E+00	0.000E+00	NOT IDENT.
U-235	-6.607E-02	1.952E-01	3.246E-01	0.000E+00	FAIL ABUN
NP-236	-1.083E-01	7.178E-02	1.132E-01	0.000E+00	NOT IDENT.
NP-239	-4.688E-02	1.615E-01	2.788E-01	0.000E+00	FAIL ABUN
AM-241	2.624E-02	1.488E-01	2.265E-01	0.000E+00	NOT IDENT.
CM-243	-2.406E-02	8.579E-02	1.494E-01	0.000E+00	FAIL ABUN
AM-246	1.579E-02	1.266E-01	2.153E-01	0.000E+00	NOT IDENT.
CM-247	1.278E-02	3.363E-02	5.773E-02	0.000E+00	FAIL ABUN
CF-249	2.128E-02	3.821E-02	6.831E-02	0.000E+00	NOT IDENT.
CF-251	-1.137E-01	1.122E-01	1.808E-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]G244132011.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:04:16
Sample ID          : G244132011           Sample quantity  : 1.16140E+02 GRAM
Detector name      : GAM16                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time: 0 02:00:01.78  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity       : 5.00000
Batch ID           : 940270                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	834	10.67*	1.208E+00	2.092E+01	2.092E+01	11.43
CD-109	88.03	258	3.72*	6.257E+00	3.585E+00	3.661E+00	20.90
SN-126	64.28	50	9.60	3.545E+00	4.770E-01	4.770E-01	154.80
	86.94	258	8.90	6.257E+00	1.498E+00	1.498E+00	45.53
	87.57	258	37.00*	6.257E+00	3.604E-01	3.604E-01	20.90
BA-137M	661.65	79	89.98*	2.406E+00	1.175E-01	1.176E-01	45.28
CS-137	661.65	79	85.12*	2.406E+00	1.242E-01	1.243E-01	45.28
TL-208	277.35	93	6.80	4.697E+00	9.437E-01	9.437E-01	61.89
	510.84	90	21.60	2.965E+00	4.532E-01	4.532E-01	68.91
	583.14	376	84.20*	2.668E+00	5.416E-01	5.416E-01	18.55
	860.37	58	12.46	1.919E+00	7.867E-01	7.867E-01	44.03
BI-211	72.87	----	1.27	4.872E+00	-----	Line Not Found	-----
	351.07	688	12.94*	3.941E+00	4.358E+00	4.358E+00	15.25
PB-212	74.81	449	10.70	5.112E+00	2.654E+00	2.654E+00	19.94
	77.11	630	18.00	5.360E+00	2.111E+00	2.111E+00	14.87
	87.30	258	8.00	6.257E+00	1.667E+00	1.667E+00	23.17
	238.63	1264	44.60*	5.227E+00	1.753E+00	1.753E+00	13.54
	300.09	78	3.41	4.437E+00	1.657E+00	1.657E+00	54.61
PO-212	74.81	449	10.70	5.112E+00	2.654E+00	2.654E+00	19.94
	77.11	630	18.00	5.360E+00	2.111E+00	2.111E+00	14.87
	87.30	258	8.00	6.257E+00	1.667E+00	1.667E+00	23.17
	115.19	-----	0.60	7.166E+00	-----	Line Not Found	-----
	238.63	1264	44.60*	5.227E+00	1.753E+00	1.753E+00	13.54
	300.09	78	3.41	4.437E+00	1.657E+00	1.657E+00	54.61
BI-214	609.31	472	46.30*	2.575E+00	1.279E+00	1.279E+00	16.32
	1120.29	91	15.10	1.516E+00	1.291E+00	1.291E+00	42.37
	1764.49	95	15.80	1.056E+00	1.831E+00	1.831E+00	23.20
PB-214	74.81	449	6.21	5.112E+00	4.573E+00	4.573E+00	19.11
	77.11	630	10.50	5.360E+00	3.620E+00	3.620E+00	16.71
	87.30	258	4.67	6.257E+00	2.856E+00	2.856E+00	22.28
	241.98	316	7.49	5.181E+00	2.632E+00	2.632E+00	26.87
	295.21	460	19.20	4.489E+00	1.726E+00	1.726E+00	18.59

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	688	37.20*	3.941E+00	1.516E+00	1.516E+00	16.11
	74.81	449	6.21	5.112E+00	4.573E+00	4.573E+00	19.11
	77.11	630	10.50	5.360E+00	3.620E+00	3.620E+00	16.71
	87.30	258	4.67	6.257E+00	2.856E+00	2.856E+00	22.28
	241.98	316	7.49	5.181E+00	2.632E+00	2.632E+00	26.87
PO-216	295.21	460	19.20	4.489E+00	1.726E+00	1.726E+00	18.59
	351.92	688	37.20*	3.941E+00	1.516E+00	1.516E+00	16.11
	74.81	449	10.70	5.112E+00	2.654E+00	2.654E+00	19.94
	77.11	630	18.00	5.360E+00	2.111E+00	2.111E+00	14.87
	87.30	258	8.00	6.257E+00	1.667E+00	1.667E+00	23.17
PO-218	238.63	1264	44.60*	5.227E+00	1.753E+00	1.753E+00	13.54
	300.09	78	3.41	4.437E+00	1.657E+00	1.657E+00	54.61
	74.81	449	6.21	5.112E+00	4.573E+00	4.573E+00	19.11
	77.11	630	10.50	5.360E+00	3.620E+00	3.620E+00	16.71
	87.30	258	4.67	6.257E+00	2.856E+00	2.856E+00	22.28
RA-224	241.98	316	7.49	5.181E+00	2.632E+00	2.632E+00	26.87
	295.21	460	19.20	4.489E+00	1.726E+00	1.726E+00	18.59
	351.92	688	37.20*	3.941E+00	1.516E+00	1.516E+00	16.11
	240.98	316	3.95*	5.181E+00	4.990E+00	4.990E+00	26.28
	609.31	472	46.30*	2.575E+00	1.279E+00	1.279E+00	16.32
AC-228	1120.29	91	15.10	1.516E+00	1.291E+00	1.291E+00	42.37
	1764.49	95	15.80	1.056E+00	1.831E+00	1.831E+00	23.20
	338.32	236	11.40	4.057E+00	1.649E+00	1.649E+00	49.10
	911.07	278	27.70*	1.825E+00	1.776E+00	1.776E+00	20.46
	969.11	144	16.60	1.727E+00	1.624E+00	1.624E+00	34.13
RA-228	338.32	236	11.40	4.057E+00	1.649E+00	1.649E+00	49.10
	911.07	278	27.70*	1.825E+00	1.776E+00	1.776E+00	20.46
	969.11	144	16.60	1.727E+00	1.624E+00	1.624E+00	34.13
	74.81	449	10.70	5.112E+00	2.654E+00	2.654E+00	17.65
	77.11	630	18.00	5.360E+00	2.111E+00	2.111E+00	14.87
TH-228	87.30	258	8.00	6.257E+00	1.667E+00	1.667E+00	20.90
	238.63	1264	44.60*	5.227E+00	1.753E+00	1.753E+00	13.54
	300.09	78	3.41	4.437E+00	1.657E+00	1.657E+00	79.93
	609.31	472	46.30*	2.575E+00	1.279E+00	1.279E+00	16.32
	1120.29	91	15.10	1.516E+00	1.291E+00	1.291E+00	42.37
TH-230	1764.49	95	15.80	1.056E+00	1.831E+00	1.831E+00	23.20
	338.32	236	11.40	4.057E+00	1.649E+00	1.649E+00	27.98
	911.07	278	27.70*	1.825E+00	1.776E+00	1.776E+00	20.46
	969.11	144	16.60	1.727E+00	1.624E+00	1.624E+00	34.13
	63.29	50	3.80*	3.545E+00	1.205E+00	1.205E+00	155.10
TH-234	92.38	281	5.41	6.594E+00	2.545E+00	2.545E+00	32.86
	609.31	472	46.30*	2.575E+00	1.279E+00	1.279E+00	16.32
	1120.29	91	15.10	1.516E+00	1.291E+00	1.291E+00	42.37
	1764.49	95	15.80	1.056E+00	1.831E+00	1.831E+00	23.20
	86.50	258	12.60*	6.257E+00	1.058E+00	1.058E+00	29.37
NP-237	95.87	-----	2.60	6.742E+00	-----	Line Not Found	-----
	63.29	50	3.80*	3.545E+00	1.205E+00	1.205E+00	155.10
	92.38	281	5.41	6.594E+00	2.545E+00	2.545E+00	28.76
	74.67	449	66.00*	5.112E+00	4.303E-01	4.303E-01	17.62

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	258	0.34	6.257E+00	3.969E+01	3.969E+01	20.90
	117.66	-----	0.55	7.175E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.968E+00	-----	Line Not Found	-----
ANH-511	511.00	90	100.00*	2.965E+00	9.789E-02	9.789E-02	68.40

Flag: "\*" = Keyline

Total number of lines in spectrum 36  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 33 91.67%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.092E+01	2.092E+01	0.239E+01	11.43	
CD-109	464.00D	1.02	3.585E+00	3.661E+00	0.765E+00	20.90	
SN-126	1.00E+05Y	1.00	3.604E-01	3.604E-01	0.753E-01	20.90	
BA-137M	30.17Y	1.00	1.175E-01	1.176E-01	0.533E-01	45.28	
CS-137	30.17Y	1.00	1.242E-01	1.243E-01	0.563E-01	45.28	
TL-208	1.41E+10Y	1.00	5.416E-01	5.416E-01	1.005E-01	18.55	
BI-211	7.04E+08Y	1.00	4.358E+00	4.358E+00	0.664E+00	15.25	
PB-212	1.41E+10Y	1.00	1.753E+00	1.753E+00	0.237E+00	13.54	
PO-212	1.41E+10Y	1.00	1.753E+00	1.753E+00	0.237E+00	13.54	
BI-214	1600.00Y	1.00	1.279E+00	1.279E+00	0.209E+00	16.32	
PB-214	1600.00Y	1.00	1.516E+00	1.516E+00	0.244E+00	16.11	
PO-214	1600.00Y	1.00	1.516E+00	1.516E+00	0.244E+00	16.11	
PO-216	1.41E+10Y	1.00	1.753E+00	1.753E+00	0.237E+00	13.54	
PO-218	1600.00Y	1.00	1.516E+00	1.516E+00	0.244E+00	16.11	
RA-224	1.41E+10Y	1.00	4.990E+00	4.990E+00	1.311E+00	26.28	
RA-226	1600.00Y	1.00	1.279E+00	1.279E+00	0.209E+00	16.32	
AC-228	1.41E+10Y	1.00	1.776E+00	1.776E+00	0.363E+00	20.46	
RA-228	1.41E+10Y	1.00	1.776E+00	1.776E+00	0.363E+00	20.46	
TH-228	1.91Y	1.01	1.753E+00	1.778E+00	0.241E+00	13.54	
TH-230	4.47E+09Y	1.00	1.279E+00	1.279E+00	0.209E+00	16.32	
TH-232	1.41E+10Y	1.00	1.776E+00	1.776E+00	0.363E+00	20.46	
TH-234	4.47E+09Y	1.00	1.205E+00	1.205E+00	1.869E+00	155.10	
U-234	4.47E+09Y	1.00	1.279E+00	1.279E+00	0.209E+00	16.32	
NP-237	2.14E+06Y	1.00	1.058E+00	1.058E+00	0.311E+00	29.37	
U-238	4.47E+09Y	1.00	1.205E+00	1.205E+00	1.869E+00	155.10	
AM-243	7380.00Y	1.00	4.303E-01	4.303E-01	0.758E-01	17.62	
ANH-511	1.00E+09Y	1.00	9.789E-02	9.789E-02	6.696E-02	68.40	

Total Activity : 6.100E+01 6.110E+01

Grand Total Activity : 6.100E+01 6.110E+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	90.02	215	299	1.17	180.24	172	22	2.98E-02	29.9	6.44E+00	T
0	129.16	84	304	0.86	258.51	255	8	1.17E-02	75.1	7.13E+00	T
0	186.11	196	364	1.21	372.42	368	11	2.72E-02	42.0	6.14E+00	T
0	209.30	112	326	1.11	418.79	414	10	1.56E-02	63.2	5.71E+00	T
0	270.04	93	226	1.34	540.28	536	11	1.29E-02	65.8	4.79E+00	T
0	327.95	57	138	0.75	656.09	652	8	7.89E-03	76.4	4.15E+00	T
0	409.37	55	93	1.90	818.92	813	10	7.63E-03	70.9	3.52E+00	
0	463.47	48	88	1.46	927.11	922	9	6.67E-03	77.8	3.20E+00	T
0	727.11	105	52	1.76	1454.30	1449	11	1.46E-02	32.9	2.22E+00	T
0	768.32	33	55	0.98	1536.72	1534	9	4.61E-03	86.2	2.12E+00	T
2	964.48	40	62	1.94	1928.93	1923	22	5.58E-03	80.9	1.73E+00	T
0	1237.65	61	43	1.70	2475.09	2469	14	8.51E-03	51.7	1.39E+00	T
0	1425.12	15	0	1.46	2849.87	2847	7	2.08E-03	51.6	1.23E+00	
0	1848.31	17	9	1.76	3695.80	3690	12	2.34E-03	93.5	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]G244132011.CNF;1 *
* Acquisition date   : 19-JAN-2010 11:04:16   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 02:00:01.78           Half life ratio     : 8.00000    *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library   : SOLID      *
* Sample ID          : G244132011             Analyst initials : MXR1        *
* Batch Number       : 940270                  Sample Quantity  : 1.16140E+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	2.092E+01	2.390E+00	4.864E-01	4.275E-02	43.009
CD-109	3.661E+00	7.651E-01	1.068E+00	1.029E-01	3.427
SN-126	3.604E-01	7.534E-02	1.057E-01	1.013E-02	3.411
BA-137M	1.176E-01	5.325E-02	5.815E-02	5.161E-03	2.023
CS-137	1.243E-01	5.630E-02	6.147E-02	5.465E-03	2.023
TL-208	5.416E-01	1.005E-01	5.119E-02	5.074E-03	10.580
BI-211	4.358E+00	6.644E-01	3.016E-01	3.297E-02	14.451
PB-212	1.753E+00	2.375E-01	8.082E-02	9.569E-03	21.693
PO-212	1.753E+00	2.375E-01	8.082E-02	9.569E-03	21.693
BI-214	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
PB-214	1.516E+00	2.443E-01	1.051E-01	1.271E-02	14.420
PO-214	1.516E+00	2.443E-01	1.051E-01	1.271E-02	14.420
PO-216	1.753E+00	2.375E-01	8.082E-02	9.569E-03	21.693
PO-218	1.516E+00	2.443E-01	1.051E-01	1.271E-02	14.420
RA-224	4.990E+00	1.311E+00	9.199E-01	1.014E-01	5.425
RA-226	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
AC-228	1.776E+00	3.633E-01	1.960E-01	2.328E-02	9.064
RA-228	1.776E+00	3.633E-01	1.960E-01	2.328E-02	9.064

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.778E+00	2.408E-01	8.195E-02	9.703E-03	21.693
TH-230	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
TH-232	1.776E+00	3.633E-01	1.960E-01	2.328E-02	9.064
TH-234	1.205E+00	1.869E+00	1.903E+00	3.319E-01	0.633
U-234	1.279E+00	2.088E-01	1.029E-01	1.088E-02	12.430
NP-237	1.058E+00	3.109E-01	3.669E-01	8.329E-02	2.885
U-238	1.205E+00	1.869E+00	1.903E+00	3.319E-01	0.633
AM-243	4.303E-01	7.580E-02	7.406E-02	6.131E-03	5.810
ANH-511	9.789E-02	6.696E-02	4.452E-02	4.234E-03	2.199

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.582E-01		3.171E-01	5.638E-01	5.704E-02	0.635
NA-22	-1.076E-02		4.207E-02	6.605E-02	5.496E-03	-0.163
NA-24	-5.882E-02		9.495E-02	Half-Life too short		
AL-26	-6.445E-04		3.499E-02	5.740E-02	4.693E-03	-0.011
TI-44	3.896E-01	+	5.795E-02	6.944E-02	5.979E-03	5.611
SC-46	2.342E-03		3.303E-02	5.561E-02	5.257E-03	0.042
V-48	-7.305E-02		6.625E-02	9.605E-02	8.842E-03	-0.760
CR-51	-2.761E-01		3.418E-01	5.046E-01	5.900E-02	-0.547
MN-52	-1.435E-01		1.871E-01	2.557E-01	2.182E-02	-0.561
MN-54	-1.385E-02		3.874E-02	6.310E-02	5.927E-03	-0.219
CO-56	-2.933E-02		3.374E-02	5.108E-02	4.806E-03	-0.574
CO-57	-1.201E-02		2.257E-02	3.686E-02	3.063E-03	-0.326
CO-58	-1.042E-02		3.564E-02	5.828E-02	5.460E-03	-0.179
FE-59	2.800E-02		8.782E-02	1.489E-01	1.384E-02	0.188
CO-60	-2.782E-02		3.956E-02	5.752E-02	4.852E-03	-0.484
ZN-65	-8.545E-02		9.396E-02	1.124E-01	9.548E-03	-0.760
GE-68	3.310E-01		1.164E+00	1.974E+00	1.724E-01	0.168
AS-73	5.285E-02		7.736E-01	1.217E+00	9.285E-02	0.043
AS-74	6.237E-02		8.681E-02	1.435E-01	1.332E-02	0.435
SE-75	8.089E-03		4.131E-02	6.395E-02	7.462E-03	0.126
BR-77	-7.567E+00		7.041E+00	1.045E+01	9.926E-01	-0.724
SR-82	3.480E-03		3.521E-01	5.626E-01	5.216E-02	0.006
RB-83	-6.425E-02		6.498E-02	9.740E-02	9.255E-03	-0.660
RB-84	-2.809E-02		6.258E-02	9.963E-02	9.413E-03	-0.282
KR-85	7.265E+00		7.273E+00	1.158E+01	1.101E+00	0.627
SR-85	3.680E-02		3.684E-02	5.864E-02	5.576E-03	0.627
RB-86	4.831E-01		7.063E-01	1.245E+00	1.088E-01	0.388
Y-88	1.530E-02		3.554E-02	6.308E-02	5.121E-03	0.243
ZR-88	5.687E-03		3.028E-02	5.143E-02	4.757E-03	0.111
Y-91	-2.569E-01		1.798E+01	2.925E+01	2.379E+00	-0.009
NB-94	-1.075E-02		3.261E-02	5.081E-02	4.593E-03	-0.212
NB-95	4.625E-02		4.783E-02	7.442E-02	6.879E-03	0.621
NB-95M	8.426E-02		1.168E-01	1.769E-01	2.103E-02	0.476
ZR-95	5.368E-02		7.033E-02	1.205E-01	1.210E-02	0.446

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	1.187E-02		1.701E-02	Half-Life	too short	
ZR-97	9.579E-01		3.076E-01	Half-Life	too short	
MO-99	6.681E-01		8.190E+00	1.324E+01	2.052E+00	0.050
TC-99M	1.780E+08		7.355E+08	Half-Life	too short	
RH-101	8.706E-03		3.165E-02	5.207E-02	5.141E-03	0.167
RH-102	4.729E-03		2.723E-02	4.573E-02	4.347E-03	0.103
RU-103	-1.779E-02		3.713E-02	5.876E-02	8.651E-03	-0.303
RH-106	-9.034E-02		3.007E-01	4.743E-01	6.499E-02	-0.190
RU-106	-9.034E-02		3.005E-01	4.743E-01	4.337E-02	-0.190
AG-108M	1.659E-04		2.926E-02	4.882E-02	4.753E-03	0.003
AG-110M	1.682E-02		3.769E-02	5.632E-02	5.155E-03	0.299
IN-111	1.352E-01		8.049E-01	1.171E+00	1.304E-01	0.115
IN-113M	-1.644E-02		4.433E-02	7.267E-02	6.898E-03	-0.226
SN-113	-1.644E-02		4.433E-02	7.267E-02	6.898E-03	-0.226
IN-114M	2.421E-02		1.820E-01	2.684E-01	2.596E-02	0.090
CD-115	3.184E-01		7.165E+00	1.183E+01	1.123E+00	0.027
SN-117M	1.161E-02		4.637E-02	7.755E-02	6.888E-03	0.150
SB-122	5.761E-01		1.454E+00	2.458E+00	2.313E-01	0.234
I-123	-2.754E-01		5.944E-01	Half-Life	too short	
TE-123M	-5.843E-03		2.523E-02	4.121E-02	3.685E-03	-0.142
I-124	2.660E-01		5.942E-01	8.987E-01	8.312E-02	0.296
SB-124	2.185E-02		6.737E-02	1.187E-01	1.040E-02	0.184
SB-125	2.203E-02		8.275E-02	1.408E-01	1.345E-02	0.156
TE-125M	5.659E+00		8.120E+00	1.404E+01	1.428E+00	0.403
I-126	9.031E-02		1.810E-01	2.720E-01	2.419E-02	0.332
SB-126	-3.422E-02		1.451E-01	2.170E-01	1.976E-02	-0.158
SB-127	4.331E-01		1.002E+00	1.684E+00	1.909E-01	0.257
XE-127	-1.012E-03		4.415E-02	7.188E-02	7.189E-03	-0.014
I-131	-4.828E-02		9.205E-02	1.494E-01	1.579E-02	-0.323
TE-132	9.335E-02		5.229E-01	8.541E-01	1.430E-01	0.109
BA-133	-2.001E-02		4.377E-02	6.239E-02	9.015E-03	-0.321
I-133	-5.732E-04		1.139E-03	Half-Life	too short	
CS-134	1.049E-02		4.517E-02	7.754E-02	7.270E-03	0.135
CS-135	2.364E-01		1.546E-01	2.452E-01	3.126E-02	0.964
I-135	-7.887E+07		1.659E+08	Half-Life	too short	
CS-136	2.851E-02		8.597E-02	1.473E-01	1.363E-02	0.194
CE-139	-2.113E-02		2.706E-02	4.279E-02	3.881E-03	-0.494
BA-140	-1.017E-01		2.220E-01	3.453E-01	1.153E-01	-0.294
LA-140	-4.534E-02		7.853E-02	1.182E-01	1.007E-02	-0.384
CE-141	-2.016E-02		5.525E-02	9.015E-02	7.886E-03	-0.224
CE-143	3.363E-04		5.967E-05	Half-Life	too short	
CE-144	-3.302E-02		2.101E-01	3.112E-01	4.806E-02	-0.106
PM-144	8.808E-03		3.336E-02	5.503E-02	4.963E-03	0.160
PR-144	5.965E-01		2.259E+00	3.727E+00	3.360E-01	0.160
PM-146	2.873E-02		3.998E-02	6.981E-02	7.972E-03	0.412
ND-147	-1.021E-01		4.968E-01	8.024E-01	1.241E-01	-0.127
PM-149	-2.319E+01		6.172E+01	9.572E+01	1.684E+01	-0.242
EU-152	-4.060E-02		9.939E-02	1.516E-01	1.694E-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	-8.698E-02		7.445E-02	1.029E-01	9.140E-03	-0.845
EU-154	-7.474E-03		1.151E-01	1.851E-01	2.050E-02	-0.040
EU-155	1.114E-01		9.704E-02	1.705E-01	1.475E-02	0.653
TB-160	3.961E-02		1.285E-01	2.213E-01	2.091E-02	0.179
HO-166M	6.221E-03		5.472E-02	8.902E-02	8.077E-03	0.070
TM-171	-1.246E+01		2.963E+01	4.119E+01	3.156E+00	-0.302
LU-176	-6.863E-03		2.374E-02	3.687E-02	4.276E-03	-0.186
LU-177	2.455E+00	+	1.570E+00	1.753E+00	1.779E-01	1.400
LU-177M	-9.677E-02		1.757E-01	2.436E-01	2.277E-02	-0.397
HF-181	-1.764E-02		3.949E-02	6.302E-02	5.994E-03	-0.280
W-181	9.055E-02		3.718E-01	5.382E-01	4.065E-02	0.168
TA-182	-3.670E-02		1.945E-01	3.106E-01	2.540E-02	-0.118
RE-183	7.248E-02		9.801E-02	1.671E-01	1.500E-02	0.434
RE-184	5.194E-02		2.145E-01	3.501E-01	3.968E-02	0.148
OS-185	-2.199E-02		4.190E-02	6.445E-02	5.793E-03	-0.341
RE-188	1.516E-02		1.575E-01	2.618E-01	2.303E-02	0.058
W-188	-4.469E+00		7.578E+00	1.011E+01	1.199E+00	-0.442
IR-192	-5.227E-03		3.106E-02	4.854E-02	5.547E-03	-0.108
AU-195	9.375E-02		2.187E-01	3.350E-01	2.950E-02	0.280
TL-200	2.124E-05		1.006E-04	Half-Life too short		
TL-201	3.444E-01		4.801E+00	7.939E+00	7.228E-01	0.043
TL-202	2.863E-02		5.793E-02	1.000E-01	9.440E-03	0.286
HG-203	1.918E-02		4.233E-02	6.239E-02	7.604E-03	0.307
BI-207	2.722E-03		4.870E-02	8.070E-02	7.114E-03	0.034
TL-207	6.064E-01		7.122E-01	1.067E+00	2.041E-01	0.568
PO-209	1.729E+00		6.623E+00	1.135E+01	1.074E+00	0.152
BI-210	-9.157E-01		3.588E+00	5.570E+00	5.194E-01	-0.164
PB-210	-9.157E-01		3.588E+00	5.570E+00	5.194E-01	-0.164
PO-210	-9.157E-01		3.588E+00	5.570E+00	4.705E-01	-0.164
PB-211	-3.924E-01		9.842E-01	1.349E+00	8.467E-01	-0.291
BI-212	1.300E+00	+	4.487E-01	6.945E-01	7.255E-02	1.873
PO-215	6.064E-01		7.122E-01	1.067E+00	2.041E-01	0.568
RN-219	1.309E-02		3.799E-01	6.384E-01	9.846E-02	0.021
RN-220	-4.467E+00		2.448E+01	3.950E+01	3.732E+00	-0.113
RA-223	6.064E-01		7.122E-01	1.067E+00	2.041E-01	0.568
AC-227	-1.256E-02		3.597E-01	5.767E-01	9.849E-02	-0.022
TH-227	-1.256E-02		3.597E-01	5.767E-01	1.128E-01	-0.022
TH-229	-1.930E-01		4.725E-01	7.554E-01	7.371E-02	-0.256
PA-231	-7.237E-01		1.527E+00	2.223E+00	3.846E-01	-0.325
TH-231	6.064E-01		7.122E-01	1.067E+00	2.041E-01	0.568
U-231	-1.352E-01		7.707E-01	1.162E+00	1.044E-01	-0.116
PA-233	-4.276E-02		5.983E-02	8.930E-02	1.044E-02	-0.479
PA-234	7.255E-02		2.758E-01	4.705E-01	8.989E-02	0.154
PA-234M	1.016E+00		5.094E+00	8.539E+00	8.890E-01	0.119
U-235	-6.607E-02		1.992E-01	3.183E-01	5.562E-02	-0.208
NP-236	-1.083E-01		7.324E-02	1.111E-01	9.914E-03	-0.975
NP-239	-4.688E-02		1.648E-01	2.729E-01	2.272E-02	-0.172
AM-241	2.624E-02		1.518E-01	2.202E-01	1.728E-02	0.119

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.406E-02		8.754E-02	1.460E-01	1.255E-02	-0.165
AM-246	1.579E-02		1.292E-01	2.155E-01	1.880E-02	0.073
CM-247	1.278E-02		3.432E-02	5.719E-02	5.318E-03	0.223
CF-249	2.128E-02		3.899E-02	6.764E-02	6.346E-03	0.315
CF-251	-1.137E-01		1.145E-01	1.776E-01	1.656E-02	-0.640

# 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]G244132011          *
* Acquisition date   : 19-JAN-2010 11:04:16 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 02:00:01.78             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G244132011             Analyst initials: MXR1          *
* Batch Number       : 940270                  Sample Quantity : 1.1614E+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	2.092E+01	2.342E+00	2.424E-01	1.195E+00
CD-109	3.661E+00	7.498E-01	5.477E-01	3.826E-01
SN-126	3.604E-01	7.383E-02	5.417E-02	3.767E-02
BA-137M	1.176E-01	5.219E-02	2.922E-02	2.663E-02
CS-137	1.243E-01	5.517E-02	3.089E-02	2.815E-02
TL-208	5.416E-01	9.847E-02	2.576E-02	5.024E-02
BI-211	4.358E+00	6.511E-01	1.525E-01	3.322E-01
PB-212	1.753E+00	2.327E-01	4.103E-02	1.187E-01
PO-212	1.753E+00	2.327E-01	4.103E-02	1.187E-01
BI-214	1.279E+00	2.046E-01	5.175E-02	1.044E-01
PB-214	1.516E+00	2.394E-01	5.316E-02	1.221E-01
PO-214	1.516E+00	2.394E-01	5.316E-02	1.221E-01
PO-216	1.753E+00	2.327E-01	4.103E-02	1.187E-01
PO-218	1.516E+00	2.394E-01	5.316E-02	1.221E-01
RA-224	4.990E+00	1.285E+00	4.670E-01	6.556E-01
RA-226	1.279E+00	2.046E-01	5.175E-02	1.044E-01
AC-228	1.776E+00	3.561E-01	9.816E-02	1.817E-01
RA-228	1.776E+00	3.561E-01	9.816E-02	1.817E-01
TH-228	1.778E+00	2.360E-01	4.160E-02	1.204E-01
TH-230	1.279E+00	2.046E-01	5.175E-02	1.044E-01
TH-232	1.776E+00	3.561E-01	9.816E-02	1.817E-01
TH-234	1.205E+00	1.832E+00	9.787E-01	9.346E-01
U-234	1.279E+00	2.046E-01	5.175E-02	1.044E-01
NP-237	1.058E+00	3.047E-01	1.881E-01	1.554E-01
U-238	1.205E+00	1.832E+00	9.787E-01	9.346E-01
AM-243	4.303E-01	7.428E-02	3.803E-02	3.790E-02
ANH-511	9.789E-02	6.562E-02	2.243E-02	3.348E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	3.582E-01	3.108E-01	2.843E-01	1.586E-01	NOT IDENT.
NA-22	-1.076E-02	4.123E-02	3.297E-02	2.103E-02	NOT IDENT.
NA-24	-5.882E+04	1.861E+05	0.000E+00	9.495E+04	SHORT HLIF
AL-26	-6.445E-04	3.429E-02	2.855E-02	1.749E-02	NOT IDENT.
TI-44	3.896E-01	5.679E-02	3.564E-02	2.897E-02	FAIL ABUN
SC-46	2.342E-03	3.237E-02	2.786E-02	1.651E-02	FAIL ABUN
V-48	-7.305E-02	6.493E-02	4.808E-02	3.313E-02	NOT IDENT.
CR-51	-2.761E-01	3.349E-01	2.554E-01	1.709E-01	NOT IDENT.
MN-52	-1.435E-01	1.833E-01	1.275E-01	9.353E-02	NOT IDENT.
MN-54	-1.385E-02	3.796E-02	3.164E-02	1.937E-02	NOT IDENT.
CO-56	-2.933E-02	3.307E-02	2.560E-02	1.687E-02	FAIL ABUN
CO-57	-1.201E-02	2.212E-02	1.884E-02	1.129E-02	NOT IDENT.
CO-58	-1.042E-02	3.493E-02	2.923E-02	1.782E-02	NOT IDENT.
FE-59	2.800E-02	8.606E-02	7.445E-02	4.391E-02	NOT IDENT.
CO-60	-2.782E-02	3.877E-02	2.870E-02	1.978E-02	NOT IDENT.
ZN-65	-8.545E-02	9.208E-02	5.620E-02	4.698E-02	NOT IDENT.
GE-68	3.310E-01	1.141E+00	9.869E-01	5.820E-01	NOT IDENT.
AS-73	5.285E-02	7.581E-01	6.269E-01	3.868E-01	NOT IDENT.
AS-74	6.237E-02	8.507E-02	7.216E-02	4.340E-02	NOT IDENT.
SE-75	8.089E-03	4.049E-02	3.243E-02	2.066E-02	NOT IDENT.
BR-77	-7.567E+00	6.901E+00	5.262E+00	3.521E+00	FAIL ABUN
SR-82	3.480E-03	3.450E-01	2.823E-01	1.760E-01	NOT IDENT.
RB-83	-6.425E-02	6.368E-02	4.906E-02	3.249E-02	NOT IDENT.
RB-84	-2.809E-02	6.133E-02	4.992E-02	3.129E-02	NOT IDENT.
KR-85	7.265E+00	7.127E+00	5.833E+00	3.636E+00	NOT IDENT.
SR-85	3.680E-02	3.610E-02	2.954E-02	1.842E-02	NOT IDENT.
RB-86	4.831E-01	6.922E-01	6.227E-01	3.532E-01	NOT IDENT.
Y-88	1.530E-02	3.482E-02	3.137E-02	1.777E-02	NOT IDENT.
ZR-88	5.687E-03	2.968E-02	2.598E-02	1.514E-02	NOT IDENT.
Y-91	-2.569E-01	1.762E+01	1.461E+01	8.990E+00	NOT IDENT.
NB-94	-1.075E-02	3.196E-02	2.552E-02	1.631E-02	NOT IDENT.
NB-95	4.625E-02	4.687E-02	3.734E-02	2.391E-02	NOT IDENT.
NB-95M	8.426E-02	1.145E-01	8.980E-02	5.840E-02	NOT IDENT.
ZR-95	5.368E-02	6.892E-02	6.047E-02	3.517E-02	NOT IDENT.
NB-97	1.187E+04	3.333E+04	0.000E+00	1.701E+04	SHORT HLIF
ZR-97	9.579E+05	6.029E+05	0.000E+00	3.076E+05	SHORT HLIF
MO-99	6.681E-01	8.026E+00	6.645E+00	4.095E+00	NOT IDENT.
TC-99M	1.780E+14	1.442E+15	0.000E+00	7.355E+14	SHORT HLIF
RH-101	8.706E-03	3.102E-02	2.648E-02	1.583E-02	NOT IDENT.
RH-102	4.729E-03	2.668E-02	2.306E-02	1.361E-02	FAIL ABUN
RU-103	-1.779E-02	3.639E-02	2.961E-02	1.856E-02	FAIL ABUN
RH-106	-9.034E-02	2.947E-01	2.385E-01	1.503E-01	FAIL ABUN
RU-106	-9.034E-02	2.945E-01	2.385E-01	1.503E-01	FAIL ABUN
AG-108M	1.659E-04	2.867E-02	2.464E-02	1.463E-02	NOT IDENT.
AG-110M	1.682E-02	3.694E-02	2.831E-02	1.884E-02	NOT IDENT.
IN-111	1.352E-01	7.888E-01	5.944E-01	4.024E-01	NOT IDENT.
IN-113M	-1.644E-02	4.344E-02	3.671E-02	2.216E-02	NOT IDENT.
SN-113	-1.644E-02	4.344E-02	3.671E-02	2.216E-02	NOT IDENT.
IN-114M	2.421E-02	1.783E-01	1.366E-01	9.099E-02	NOT IDENT.
CD-115	3.184E-01	7.022E+00	5.959E+00	3.583E+00	NOT IDENT.
SN-117M	1.161E-02	4.545E-02	3.953E-02	2.319E-02	NOT IDENT.
SB-122	5.761E-01	1.425E+00	1.237E+00	7.272E-01	NOT IDENT.
I-123	-2.754E+05	1.165E+06	0.000E+00	5.944E+05	SHORT HLIF
TE-123M	-5.843E-03	2.472E-02	2.100E-02	1.261E-02	NOT IDENT.
I-124	2.660E-01	5.823E-01	4.520E-01	2.971E-01	NOT IDENT.
SB-124	2.185E-02	6.602E-02	5.909E-02	3.368E-02	FAIL ABUN
SB-125	2.203E-02	8.110E-02	7.108E-02	4.138E-02	FAIL ABUN
TE-125M	5.659E+00	7.958E+00	7.182E+00	4.060E+00	NOT IDENT.
I-126	9.031E-02	1.774E-01	1.367E-01	9.049E-02	NOT IDENT.
SB-126	-3.422E-02	1.421E-01	1.090E-01	7.253E-02	FAIL ABUN
SB-127	4.331E-01	9.816E-01	8.462E-01	5.008E-01	NOT IDENT.
XE-127	-1.012E-03	4.326E-02	3.655E-02	2.207E-02	NOT IDENT.
I-131	-4.828E-02	9.021E-02	7.555E-02	4.603E-02	NOT IDENT.
TE-132	9.335E-02	5.125E-01	4.338E-01	2.615E-01	NOT IDENT.
BA-133	-2.001E-02	4.289E-02	3.155E-02	2.188E-02	FAIL ABUN
I-133	-5.732E+02	2.233E+03	0.000E+00	1.139E+03	SHORT HLIF
CS-134	1.049E-02	4.426E-02	3.889E-02	2.258E-02	NOT IDENT.
CS-135	2.364E-01	1.515E-01	1.243E-01	7.729E-02	NOT IDENT.
I-135	-7.887E+13	3.251E+14	0.000E+00	1.659E+14	SHORT HLIF
CS-136	2.851E-02	8.425E-02	7.366E-02	4.298E-02	FAIL ABUN
CE-139	-2.113E-02	2.652E-02	2.180E-02	1.353E-02	NOT IDENT.
BA-140	-1.017E-01	2.176E-01	1.739E-01	1.110E-01	NOT IDENT.
LA-140	-4.534E-02	7.696E-02	5.888E-02	3.927E-02	FAIL ABUN
CE-141	-2.016E-02	5.414E-02	4.599E-02	2.762E-02	NOT IDENT.
CE-143	3.363E+02	1.170E+02	0.000E+00	5.967E+01	SHORT HLIF
CE-144	-3.302E-02	2.059E-01	1.589E-01	1.050E-01	NOT IDENT.
PM-144	8.808E-03	3.269E-02	2.764E-02	1.668E-02	NOT IDENT.
PR-144	5.965E-01	2.214E+00	1.872E+00	1.130E+00	NOT IDENT.



PM-146	2.873E-02	3.918E-02	3.521E-02	1.999E-02	NOT IDENT.
ND-147	-1.021E-01	4.869E-01	4.041E-01	2.484E-01	FAIL ABUN
PM-149	-2.319E+01	6.048E+01	4.851E+01	3.086E+01	NOT IDENT.
EU-152	-4.060E-02	9.740E-02	7.669E-02	4.969E-02	FAIL ABUN
GD-153	-8.698E-02	7.296E-02	5.269E-02	3.723E-02	NOT IDENT.
EU-154	-7.474E-03	1.128E-01	9.239E-02	5.754E-02	NOT IDENT.
EU-155	1.114E-01	9.510E-02	8.725E-02	4.852E-02	FAIL ABUN
TB-160	3.961E-02	1.260E-01	1.109E-01	6.426E-02	FAIL ABUN
HO-166M	6.221E-03	5.362E-02	4.470E-02	2.736E-02	NOT IDENT.
TM-171	-1.246E+01	2.904E+01	2.118E+01	1.482E+01	NOT IDENT.
LU-176	-6.863E-03	2.326E-02	1.867E-02	1.187E-02	FAIL ABUN
LU-177	2.455E+00	1.539E+00	8.913E-01	7.852E-01	FAIL ABUN
LU-177M	-9.677E-02	1.722E-01	1.230E-01	8.785E-02	FAIL ABUN
HF-181	-1.764E-02	3.870E-02	3.177E-02	1.975E-02	NOT IDENT.
W-181	9.055E-02	3.644E-01	2.767E-01	1.859E-01	NOT IDENT.
TA-182	-3.670E-02	1.906E-01	1.551E-01	9.725E-02	FAIL ABUN
RE-183	7.248E-02	9.605E-02	8.516E-02	4.901E-02	FAIL ABUN
RE-184	5.194E-02	2.102E-01	1.776E-01	1.073E-01	NOT IDENT.
OS-185	-2.199E-02	4.107E-02	3.239E-02	2.095E-02	NOT IDENT.
RE-188	1.516E-02	1.544E-01	1.335E-01	7.877E-02	NOT IDENT.
W-188	-4.469E+00	7.426E+00	5.122E+00	3.789E+00	FAIL ABUN
IR-192	-5.227E-03	3.044E-02	2.457E-02	1.553E-02	FAIL ABUN
AU-195	9.375E-02	2.143E-01	1.716E-01	1.093E-01	FAIL ABUN
TL-200	2.124E+01	1.972E+02	0.000E+00	1.006E+02	SHORT HLIF
TL-201	3.444E-01	4.705E+00	4.045E+00	2.400E+00	NOT IDENT.
TL-202	2.863E-02	5.678E-02	5.048E-02	2.897E-02	NOT IDENT.
HG-203	1.918E-02	4.148E-02	3.163E-02	2.116E-02	NOT IDENT.
BI-207	2.722E-03	4.773E-02	4.036E-02	2.435E-02	FAIL ABUN
TL-207	6.064E-01	6.980E-01	5.402E-01	3.561E-01	FAIL ABUN
PO-209	1.729E+00	6.490E+00	5.688E+00	3.311E+00	NOT IDENT.
BI-210	-9.157E-01	3.517E+00	2.873E+00	1.794E+00	NOT IDENT.
PB-210	-9.157E-01	3.517E+00	2.873E+00	1.794E+00	NOT IDENT.
PO-210	-9.157E-01	3.516E+00	2.873E+00	1.794E+00	NOT IDENT.
PB-211	-3.924E-01	9.645E-01	6.813E-01	4.921E-01	NOT IDENT.
BI-212	1.300E+00	4.397E-01	3.487E-01	2.243E-01	FAIL ABUN
PO-215	6.064E-01	6.980E-01	5.402E-01	3.561E-01	FAIL ABUN
RN-219	1.309E-02	3.723E-01	3.224E-01	1.899E-01	FAIL ABUN
RN-220	-4.467E+00	2.399E+01	1.989E+01	1.224E+01	NOT IDENT.
RA-223	6.064E-01	6.980E-01	5.402E-01	3.561E-01	FAIL ABUN
AC-227	-1.256E-02	3.525E-01	2.925E-01	1.799E-01	FAIL ABUN
TH-227	-1.256E-02	3.525E-01	2.925E-01	1.799E-01	FAIL ABUN
TH-229	-1.930E-01	4.630E-01	3.843E-01	2.362E-01	FAIL ABUN
PA-231	-7.237E-01	1.497E+00	1.127E+00	7.636E-01	NOT IDENT.
TH-231	6.064E-01	6.980E-01	5.402E-01	3.561E-01	FAIL ABUN
U-231	-1.352E-01	7.553E-01	5.955E-01	3.854E-01	FAIL ABUN
PA-233	-4.276E-02	5.863E-02	4.522E-02	2.992E-02	FAIL ABUN
PA-234	7.255E-02	2.703E-01	2.356E-01	1.379E-01	FAIL ABUN
PA-234M	1.016E+00	4.992E+00	4.273E+00	2.547E+00	NOT IDENT.
U-235	-6.607E-02	1.952E-01	1.624E-01	9.961E-02	FAIL ABUN
NP-236	-1.083E-01	7.178E-02	5.661E-02	3.662E-02	NOT IDENT.
NP-239	-4.688E-02	1.615E-01	1.395E-01	8.238E-02	FAIL ABUN
AM-241	2.624E-02	1.488E-01	1.133E-01	7.591E-02	NOT IDENT.
CM-243	-2.406E-02	8.579E-02	7.475E-02	4.377E-02	FAIL ABUN
AM-246	1.579E-02	1.266E-01	1.077E-01	6.460E-02	NOT IDENT.
CM-247	1.278E-02	3.363E-02	2.888E-02	1.716E-02	FAIL ABUN
CF-249	2.128E-02	3.821E-02	3.417E-02	1.949E-02	NOT IDENT.
CF-251	-1.137E-01	1.122E-01	9.044E-02	5.726E-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	213.9366
46.50	213.9366
46.50	213.9366
48.70	224.8763
49.72	208.9557
51.35	218.3303
52.39	191.4752
52.97	212.1783
53.15	212.2894
53.44	212.4677
54.07	221.2711
56.28	214.1867
56.28	214.1881
57.37	0.0000
57.53	242.8608
57.53	242.8619
57.60	242.9077
57.98	245.5926
57.98	245.5926
59.32	232.6594
59.32	232.6594
59.40	240.8463
59.54	231.1696
59.72	231.2812
60.01	251.0215
61.10	238.6728
61.14	238.6977
61.30	238.7983
63.00	288.3282
63.29	288.5452
63.29	288.5452
63.58	288.7612
64.28	306.5872
65.12	275.8594
65.20	275.9142
65.20	275.9142
66.05	264.9170
66.72	308.4825
66.83	308.5677
66.91	295.3557
67.20	293.9071
67.20	293.9071
67.75	271.8597
67.85	271.9279
68.90	300.9766
68.90	300.9766
69.30	293.4256
69.67	276.9008
70.82	291.4886
70.82	291.4886
70.83	291.4957
72.80	272.6664
72.87	272.7109
72.87	272.7109
74.67	273.8595
74.81	273.9468
74.81	273.9468
74.81	273.9468
74.81	273.9468
74.81	273.9468
74.81	273.9468
74.97	274.0490
75.28	274.2451
75.70	274.5088
77.11	275.3921
77.11	275.3921

77.11	275.3921
77.11	275.3921
77.11	275.3921
77.11	275.3921
77.11	275.3921
78.38	276.1815
79.62	256.4316
79.80	256.5338
79.80	256.5338
80.11	279.8131
80.18	279.8564
80.30	279.9296
80.30	279.9296
80.57	280.0959
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81.07	324.1362
81.07	324.1362
81.07	324.1362
82.60	312.8275
83.37	270.1699
83.78	276.8782
83.78	276.8782
83.78	276.8782
83.78	276.8782
84.21	253.8226
84.90	290.5085
85.43	290.8350
86.29	359.0009
86.50	364.3640
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86.59	364.4324
86.72	364.5306
86.79	364.5819
86.94	364.6994
87.30	266.7778
87.30	266.7778
87.30	266.7778
87.30	266.7778
87.30	266.7778
87.30	266.7778
87.57	266.9277
87.88	267.0994
88.03	267.1822
88.36	267.3649
88.47	267.4258
89.95	268.2378
91.11	268.8701
92.29	269.5104
92.38	269.5588
92.38	269.5588
93.35	270.0803
94.00	270.4301
94.67	270.7845
94.67	270.7877
94.90	270.9095
94.90	270.9095
94.90	270.9095
94.90	270.9095
95.87	217.4934
95.87	217.4934
96.73	240.4431
97.43	244.7582
98.44	203.9164
98.44	203.9175
98.88	222.7639
99.55	220.8226
99.55	220.8226
99.86	227.1898
100.00	234.3788
100.10	234.4257
103.18	257.2968
103.76	256.6768
105.00	240.1721
105.31	220.5085
108.00	285.8012
109.28	223.0026

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111.00	234.5946
111.76	251.2972
112.95	249.9960
115.19	215.2457
116.30	218.4088
117.00	220.5078
117.00	220.5078
117.66	227.1931
121.11	218.3343
121.62	221.2970
121.78	220.4292
122.06	232.5779
122.32	221.5535
122.32	221.5535
122.32	221.5535
122.32	221.5535
123.07	219.9707
127.23	218.6573
129.76	209.6881
131.20	215.8076
133.02	257.4427
133.54	242.0760
135.34	226.1874
136.00	216.9448
136.25	230.2943
136.48	230.3759
140.51	230.8286
140.51	0.0000
142.18	238.0956
142.65	235.3922
143.76	239.6113
144.24	234.9836
144.24	234.9836
144.24	234.9836
144.24	234.9836
145.22	237.2435
145.44	237.3189
147.16	209.0157
152.43	218.3601
152.70	199.9963
153.22	203.0577
154.21	232.5256
154.21	232.5256
154.21	232.5256
154.21	232.5256
155.03	230.8450
156.02	233.1140
158.56	202.6117
159.00	0.0000
159.00	210.5668
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161.27	211.2207
162.32	193.8116
162.64	189.9569
163.35	187.1839
163.89	200.1358
165.85	226.3607
167.43	198.1079
171.28	195.1247
171.86	191.2871
172.10	191.3457
176.55	214.4898
176.60	214.5051
181.06	228.6134
184.41	244.4431
185.71	209.8553
186.00	209.9312
190.27	194.1994
192.34	182.9295
193.63	207.7743
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198.01	190.3296
198.60	194.5775
200.40	238.3151
201.83	210.8087
202.84	212.0882
205.31	225.6554

208.36	212.3796
208.81	212.4875
209.75	212.7117
209.75	212.7117
210.97	192.6417
215.65	176.3228
216.55	178.5982
218.09	186.2656
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223.80	176.8259
226.40	168.8210
227.00	174.2400
227.08	171.0674
227.20	171.0887
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228.18	180.8394
228.18	180.8394
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236.00	165.6918
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238.63	156.9978
238.63	156.9978
238.63	156.9978
239.00	157.0558
240.98	157.3721
241.98	157.5310
241.98	157.5310
241.98	157.5310
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245.39	141.2887
247.94	147.1814
248.90	136.8909
249.79	139.1862
252.40	143.9037
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252.85	136.3322
254.15	0.0000
256.20	145.5289
256.20	145.5289
260.50	151.6254
260.90	147.2850
262.80	134.3385
264.65	123.1001
268.24	101.2695
268.79	114.6097
269.46	154.0165
269.46	154.0165
269.46	154.0165
269.46	154.0165
271.23	154.2682
273.65	156.8378
276.40	153.8883
277.35	132.8146
277.60	132.8461
277.60	132.8461
278.00	132.8945
278.60	132.9671
279.20	130.8014
279.53	139.2292
280.46	134.3091
281.68	121.0100
283.67	136.0443
284.30	134.7729
285.00	143.8464
285.90	139.4647
286.10	133.8629
286.10	133.8629
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290.80	133.8549
291.72	122.0933
293.26	0.0000
293.70	105.3175
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295.21	88.4467

295.21	88.4467
295.96	95.3135
296.50	95.3579
297.23	95.4177
298.57	95.5271
299.80	134.9037
299.80	134.9037
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300.09	129.8132
300.09	129.8132
300.09	129.8132
300.12	129.8179
301.29	126.5281
302.84	121.5589
303.76	104.5198
303.91	115.1575
304.40	122.2907
304.40	122.2907
304.84	116.6198
306.84	123.6885
308.46	103.2147
311.98	119.6216
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319.02	104.1211
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320.08	121.5793
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323.87	102.7909
323.87	102.7909
323.87	102.7909
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328.77	131.1813
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334.20	141.9376
334.30	141.9499
338.28	118.9552
338.28	118.9552
338.28	118.9552
338.28	118.9552
338.32	118.9593
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338.32	118.9593
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340.57	124.2871
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345.85	126.2144
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351.92	105.0739
351.92	105.0739
351.92	105.0739
355.39	0.0000
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367.94	0.0000
369.80	89.3366
374.96	109.5990
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391.69	120.9926
391.69	120.9926
392.90	110.0867
398.62	112.3664
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401.10	105.1772
401.81	95.9972
402.60	86.5502
404.84	97.6755
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411.60	81.7695
413.65	92.3037
414.70	96.8383
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439.56	71.9249
439.89	68.1537
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444.90	62.6736
445.03	62.6797
445.03	62.6797
445.03	62.6797
445.03	62.6797
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475.35	83.2141
476.78	88.1271
477.59	73.6366
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484.57	76.8615
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510.53	0.0000
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511.00	77.0609
511.85	77.4926
511.85	77.4926
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513.99	68.0861
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520.65	84.4345
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529.64	80.8640
529.87	0.0000
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546.56	0.0000
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552.65	65.7062
555.20	61.7465
563.23	64.0421
563.90	66.0970
568.70	71.3608
569.32	63.2261
569.50	63.2318
569.67	65.2773
573.80	74.6174
574.00	74.6241
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578.91	88.5463
579.30	0.0000
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592.07	70.1582
593.00	77.4170
595.88	53.7535
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602.71	65.0018
602.71	65.0018
603.60	69.7348
604.41	79.7297
604.70	79.7414
609.31	66.6016

609.31	66.6016
609.31	66.6016
609.31	66.6016
610.33	66.6348
612.46	56.6993
614.37	50.0757
618.01	50.1650
621.84	64.9176
621.84	64.9176
631.29	52.5925
633.02	48.4258
633.10	51.5855
634.78	54.7882
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636.97	63.2831
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646.12	69.9135
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657.75	56.2354
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661.65	69.9943
664.57	0.0000
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666.33	54.7469
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696.49	60.6997
696.49	60.6997
697.00	67.2184
697.49	71.5712
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698.50	66.1789
699.00	60.7681
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713.82	60.0706
717.42	51.4134
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722.78	68.4176
722.89	68.4214
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723.30	56.1500
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727.18	63.7136
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742.81	39.8101
744.21	47.5785
747.13	56.4987
751.79	57.7192
752.31	59.9524
753.82	59.9903
755.35	58.9166
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756.87	44.4934
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766.84	62.5471
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778.00	53.8564
778.57	53.8682
778.89	53.8755
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792.07	64.0907



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805.60	49.0074
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884.67	35.5350
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896.60	38.5066
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903.28	44.3829
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911.07	43.4271
911.07	43.4271
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920.93	51.1589
925.00	35.1030
925.24	41.7474
926.50	43.6652
935.52	32.3755
937.48	51.4556
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946.00	39.1832
949.00	30.6141
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964.01	34.6175
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968.20	34.6667
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969.11	34.6781
969.11	34.6781
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980.50	39.6457
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989.30	47.5214
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1021.30	0.0000
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1036.00	49.2358
1037.82	43.3512
1038.57	45.3329
1038.76	0.0000
1045.16	41.4791
1046.59	40.5095
1048.07	30.6428

1050.47	28.6885
1050.47	28.6885
1062.04	45.6721
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1077.35	37.9091
1078.86	36.9277
1085.78	36.0070
1099.22	42.1805
1112.02	36.9674
1112.84	28.8142
1115.52	50.4639
1120.29	35.3760
1120.29	35.3760
1120.29	35.3760
1120.29	35.3760
1120.51	35.3777
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1124.00	0.0000
1129.67	38.5158
1131.51	0.0000
1147.95	0.0000
1167.94	53.3000
1173.22	47.2219
1175.09	53.4117
1177.93	45.2311
1189.05	47.4375
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1235.34	40.0479
1236.41	0.0000
1238.25	41.8223
1246.25	43.0803
1260.41	0.0000
1271.85	26.3794
1274.45	35.9025
1274.54	39.0704
1291.56	30.7629
1298.22	0.0000
1312.09	17.0648
1325.50	25.6875
1325.50	25.6875
1332.49	25.7332
1333.61	23.5963
1360.21	21.5977
1362.66	0.0000
1365.15	14.0562
1368.21	23.8058
1368.53	0.0000
1376.25	21.6855
1384.27	16.2971
1394.10	20.6940
1395.20	28.3258
1407.95	20.7655
1434.06	23.0990
1436.60	18.3439
1457.56	0.0000
1460.81	17.3970
1489.15	16.7183
1509.49	22.3975
1596.49	22.8457
1620.62	11.4839
1678.03	0.0000
1691.02	9.7160
1691.02	9.7160
1706.46	0.0000
1750.46	0.0000
1764.49	6.7648
1764.49	6.7648
1764.49	6.7648
1764.49	6.7648
1770.23	5.0795
1771.40	7.9033
1791.20	0.0000
1808.65	15.9258

1836.01

11.0085

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132011

Total Uranium Activity	3.5547E+00	ug/g
Total Uranium Counting Unc.	5.4504E+00	ug/g
Total Uranium Tpu	2.7808E-06	ug/g
Total Uranium Mda	2.9127E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132011
*  ANALYST       : MXR1                             DETECTOR    : GAM16
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 11:04:16.20          SAMPLE ALQT  : 116.140 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.024E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.368E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.377E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.629E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:12:54.32

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132012.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:12:28
Sample ID        : G244132012          Sample quantity  : 1.15200E+02 GRAM
Detector name    : GAM12              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00      Elapsed real time: 0 02:00:01.43  0.0%
Energy tolerance : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit  : 75.00000           Sensitivity      : 5.00000
Batch ID        : 940270              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	63.34*	13	404	0.82	126.15	122	7	1.77E-03	272.9	
2	4	74.70	433	491	1.21	148.90	143	14	6.01E-02	9.5	3.10E+00
3	4	77.02*	656	359	0.84	153.52	143	14	9.12E-02	5.8	
4	4	84.19*	121	432	1.38	167.87	164	27	1.68E-02	30.2	2.79E+00
5	4	87.09	300	395	1.39	173.69	164	27	4.17E-02	12.8	
6	4	89.73	189	272	0.96	178.96	164	27	2.62E-02	15.9	
7	4	92.67*	227	324	1.40	184.86	164	27	3.15E-02	17.0	
8	0	185.86*	190	355	1.40	371.31	366	11	2.63E-02	21.2	
9	0	209.10	115	299	1.15	417.82	414	10	1.59E-02	29.6	
10	5	238.47*	1378	161	1.08	476.59	471	19	1.91E-01	3.1	1.35E+00
11	5	241.39	328	218	1.64	482.44	471	19	4.56E-02	11.3	
12	0	270.12	115	175	1.24	539.91	536	9	1.60E-02	22.6	
13	0	294.96*	471	187	1.34	589.62	583	12	6.53E-02	7.5	
14	0	299.62	70	153	1.01	598.95	595	9	9.77E-03	33.7	
15	0	328.43	137	212	1.37	656.59	650	15	1.91E-02	24.6	
16	0	338.06*	283	152	1.08	675.85	671	11	3.93E-02	10.5	
17	0	351.66*	702	193	1.24	703.06	696	14	9.75E-02	5.7	
18	0	463.02	97	101	1.11	925.86	920	11	1.34E-02	22.6	
19	0	510.43*	189	160	2.09	1020.72	1013	19	2.62E-02	19.4	
20	0	582.82*	445	91	1.27	1165.54	1159	14	6.18E-02	6.6	
21	0	609.05*	439	127	1.29	1218.02	1212	12	6.09E-02	7.0	
22	0	727.06	112	68	1.37	1454.10	1448	12	1.55E-02	17.6	
23	0	767.97	46	43	1.00	1535.93	1533	8	6.35E-03	28.1	
24	0	784.91	34	64	1.73	1569.82	1561	16	4.68E-03	55.8	
25	0	795.01	29	49	0.84	1590.02	1584	9	4.06E-03	43.8	
26	0	860.32	33	46	1.02	1720.67	1718	8	4.53E-03	40.1	
27	0	910.86*	273	68	1.96	1821.76	1814	16	3.79E-02	9.2	
28	2	964.39	61	32	2.20	1928.82	1923	24	8.44E-03	22.6	1.65E+00
29	2	968.63*	155	35	2.20	1937.31	1923	24	2.15E-02	12.1	
30	0	1119.71*	96	39	1.60	2239.48	2234	11	1.34E-02	16.4	
31	0	1237.62	39	46	1.18	2475.30	2470	11	5.48E-03	37.7	
32	0	1460.07*	714	10	2.08	2920.16	2910	20	9.92E-02	3.9	
33	0	1588.33	18	16	0.92	3176.63	3171	9	2.53E-03	47.4	
34	0	1763.74*	76	17	1.39	3527.36	3520	13	1.06E-02	16.5	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 13:12:57

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132012.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 11:12:28
Sample ID        : G244132012             Sample quantity  : 115.20 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA12               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.43    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	*	1.917E+01	2.037E+00	6.140E-01	4.377E-02	31.219
CD-109	+	88.03	*	4.762E+00	1.267E+00	1.230E+00	9.415E-02	3.870
SN-126	+	64.28		1.347E-01	7.354E-01	9.068E-01	1.273E-01	0.149
	+	86.94		1.949E+00	9.436E-01	5.094E-01	2.096E-01	3.826
	+	87.57	*	4.688E-01	1.247E-01	1.217E-01	9.276E-03	3.852
TL-208		277.35		1.491E-01	4.100E-01	6.847E-01	7.171E-02	0.218
	+	510.84		1.018E+00	4.082E-01	2.349E-01	2.425E-02	4.334
	+	583.14	*	6.873E-01	1.035E-01	5.694E-02	4.073E-03	12.071
	+	860.37		4.756E-01	3.833E-01	5.097E-01	4.454E-02	0.933
BI-211		72.87		6.625E+00	3.689E+00	5.950E+00	3.992E-01	1.114
	+	351.07	*	4.698E+00	6.124E-01	3.650E-01	2.294E-02	12.873
BI-212	+	727.18	*	1.487E+00	5.386E-01	4.846E-01	4.195E-02	3.068
	+	785.46		2.869E+00	3.208E+00	2.850E+00	2.129E-01	1.007
		1620.62		7.091E-01	1.472E+00	2.623E+00	1.689E-01	0.270
PB-212	+	74.81		2.875E+00	6.396E-01	5.822E-01	6.730E-02	4.938
	+	77.11		2.467E+00	3.347E-01	3.304E-01	2.287E-02	7.466
	+	87.30		2.168E+00	6.163E-01	5.645E-01	7.091E-02	3.841
	+	238.63	*	2.007E+00	1.888E-01	9.283E-02	6.591E-03	21.616
	+	300.09		1.580E+00	1.073E+00	1.395E+00	1.139E-01	1.133
PO-212	+	74.81		2.875E+00	6.396E-01	5.822E-01	6.730E-02	4.938
	+	77.11		2.467E+00	3.347E-01	3.304E-01	2.287E-02	7.466
	+	87.30		2.168E+00	6.163E-01	5.645E-01	7.091E-02	3.841
		115.19		1.774E+00	3.622E+00	6.079E+00	3.856E-01	0.292
	+	238.63	*	2.007E+00	1.888E-01	9.283E-02	6.591E-03	21.616
	+	300.09		1.580E+00	1.073E+00	1.395E+00	1.139E-01	1.133
BI-214	+	609.31	*	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
	+	1120.29		1.458E+00	4.965E-01	4.604E-01	4.182E-02	3.166
	+	1764.49		1.591E+00	5.323E-01	2.518E-01	1.492E-02	6.318
PB-214	+	74.81		4.953E+00	1.065E+00	1.003E+00	1.009E-01	4.938
	+	77.11		4.229E+00	6.581E-01	5.664E-01	5.831E-02	7.466
	+	87.30		3.715E+00	1.029E+00	9.671E-01	1.047E-01	3.841
	+	241.98		2.868E+00	6.890E-01	5.591E-01	4.399E-02	5.130
	+	295.21		1.855E+00	3.196E-01	2.188E-01	1.847E-02	8.479
	+	351.92	*	1.634E+00	2.295E-01	1.272E-01	1.039E-02	12.845

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		4.953E+00	1.065E+00	1.003E+00	1.009E-01	4.938
	+	77.11		4.229E+00	6.581E-01	5.664E-01	5.831E-02	7.466
	+	87.30		3.715E+00	1.029E+00	9.671E-01	1.047E-01	3.841
	+	241.98		2.868E+00	6.890E-01	5.591E-01	4.399E-02	5.130
	+	295.21		1.855E+00	3.196E-01	2.188E-01	1.847E-02	8.479
	+	351.92	*	1.634E+00	2.295E-01	1.272E-01	1.039E-02	12.845
PO-216	+	74.81		2.875E+00	6.396E-01	5.822E-01	6.730E-02	4.938
	+	77.11		2.467E+00	3.347E-01	3.304E-01	2.287E-02	7.466
	+	87.30		2.168E+00	6.163E-01	5.645E-01	7.091E-02	3.841
	+	238.63	*	2.007E+00	1.888E-01	9.283E-02	6.591E-03	21.616
	+	300.09		1.580E+00	1.073E+00	1.395E+00	1.139E-01	1.133
PO-218	+	74.81		4.953E+00	1.065E+00	1.003E+00	1.009E-01	4.938
	+	77.11		4.229E+00	6.581E-01	5.664E-01	5.831E-02	7.466
	+	87.30		3.715E+00	1.029E+00	9.671E-01	1.047E-01	3.841
	+	241.98		2.868E+00	6.890E-01	5.591E-01	4.399E-02	5.130
	+	295.21		1.855E+00	3.196E-01	2.188E-01	1.847E-02	8.479
	+	351.92	*	1.634E+00	2.295E-01	1.272E-01	1.039E-02	12.845
RA-224	+	240.98	*	5.439E+00	1.270E+00	1.057E+00	5.828E-02	5.148
RA-226	+	609.31	*	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
	+	1120.29		1.458E+00	4.965E-01	4.604E-01	4.182E-02	3.166
	+	1764.49		1.591E+00	5.323E-01	2.518E-01	1.492E-02	6.318
AC-228	+	338.32		2.082E+00	9.551E-01	3.932E-01	1.602E-01	5.295
	+	911.07	*	1.878E+00	4.035E-01	2.147E-01	2.357E-02	8.748
	+	969.11		1.877E+00	6.270E-01	3.731E-01	8.603E-02	5.030
RA-228	+	338.32		2.082E+00	9.551E-01	3.932E-01	1.602E-01	5.295
	+	911.07	*	1.878E+00	4.035E-01	2.147E-01	2.357E-02	8.748
	+	969.11		1.877E+00	6.270E-01	3.731E-01	8.603E-02	5.030
TH-228	+	74.81		2.915E+00	5.894E-01	5.904E-01	4.070E-02	4.938
	+	77.11		2.501E+00	3.394E-01	3.350E-01	2.319E-02	7.466
	+	87.30		2.199E+00	5.849E-01	5.724E-01	4.351E-02	3.841
	+	238.63	*	2.035E+00	1.915E-01	9.413E-02	6.684E-03	21.616
	+	300.09		1.602E+00	1.435E+00	1.414E+00	8.334E-01	1.133
TH-230	+	609.31	*	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
	+	1120.29		1.458E+00	4.965E-01	4.604E-01	4.182E-02	3.166
	+	1764.49		1.591E+00	5.323E-01	2.518E-01	1.492E-02	6.318
TH-232	+	338.32		2.082E+00	4.542E-01	3.932E-01	2.227E-02	5.295
	+	911.07	*	1.878E+00	4.035E-01	2.147E-01	2.357E-02	8.748
	+	969.11		1.877E+00	6.270E-01	3.731E-01	8.603E-02	5.030
TH-234	+	63.29	*	3.402E-01	1.858E+00	2.288E+00	3.896E-01	0.149
	+	92.38		2.287E+00	8.755E-01	7.972E-01	1.394E-01	2.869
U-234	+	609.31	*	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
	+	1120.29		1.458E+00	4.965E-01	4.604E-01	4.182E-02	3.166
	+	1764.49		1.591E+00	5.323E-01	2.518E-01	1.492E-02	6.318
NP-237	+	86.50	*	1.377E+00	4.635E-01	3.615E-01	7.943E-02	3.808
		95.87		-9.791E-01	1.051E+00	1.435E+00	3.462E-01	-0.682
U-238	+	63.29	*	3.402E-01	1.858E+00	2.288E+00	3.896E-01	0.149
	+	92.38		2.287E+00	7.964E-01	7.972E-01	5.804E-02	2.869
AM-243	+	74.67	*	4.661E-01	9.409E-02	9.468E-02	6.433E-03	4.923
	+	86.72		5.163E+01	1.373E+01	1.353E+01	1.022E+00	3.817



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-2.957E+00	3.865E+00	6.105E+00	3.846E-01	-0.484
		142.18		-6.287E+00	1.862E+01	2.977E+01	1.685E+00	-0.211
ANH-511	+	511.00	*	2.199E-01	8.625E-02	5.076E-02	3.094E-03	4.333

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-8.990E-02	3.667E-01	5.792E-01	3.985E-02	-0.155
NA-22		1274.54	*	8.486E-03	4.494E-02	7.545E-02	4.859E-03	0.112
NA-24		1368.53	*	-1.275E-01	4.494E-02	Half-Life too short		
AL-26		1129.67		-5.544E-01	1.674E+00	2.682E+00	1.635E-01	-0.207
		1808.65	*	-1.605E-02	3.803E-02	5.746E-02	3.297E-03	-0.279
TI-44		67.85		4.041E-04	4.803E-02	8.097E-02	5.271E-03	0.005
	+	78.38	*	4.552E-01	6.177E-02	8.324E-02	5.822E-03	5.469
SC-46		889.25	*	-1.702E-02	4.444E-02	6.913E-02	5.730E-03	-0.246
	+	1120.51		2.471E-01	8.259E-02	1.428E-01	8.872E-03	1.731
V-48		944.10		-6.287E-01	7.809E-01	1.117E+00	8.971E-02	-0.563
		983.50	*	-4.926E-02	6.769E-02	9.843E-02	7.583E-03	-0.500
		1312.09		3.031E-02	8.225E-02	1.407E-01	9.549E-03	0.215
CR-51		320.08	*	3.883E-02	3.725E-01	6.213E-01	3.950E-02	0.062
MN-52		744.21		-2.106E-02	2.115E-01	3.445E-01	2.461E-02	-0.061
		848.13		1.930E+00	6.071E+00	1.020E+01	8.124E-01	0.189
		935.52		1.103E-01	2.417E-01	4.077E-01	3.301E-02	0.270
		1246.25		1.884E+00	6.522E+00	1.106E+01	6.812E-01	0.170
		1333.61		1.961E+00	4.535E+00	7.838E+00	5.474E-01	0.250
		1434.06	*	-8.517E-02	2.412E-01	3.725E-01	2.559E-02	-0.229
MN-54		834.83	*	-1.144E-02	4.180E-02	6.636E-02	5.216E-03	-0.172
CO-56		846.75	*	-1.441E-02	3.953E-02	6.173E-02	4.910E-03	-0.233
		977.42		1.698E+00	3.217E+00	5.041E+00	3.911E-01	0.337
		1037.82		2.718E-01	3.401E-01	6.096E-01	4.708E-02	0.446
		1175.09		-5.908E-01	2.375E+00	3.836E+00	2.115E-01	-0.154
	+	1238.25		1.662E-01	1.258E-01	1.823E-01	1.173E-02	0.912
		1360.21		-4.967E-01	9.989E-01	1.508E+00	1.050E-01	-0.329
		1771.40		-4.480E-01	2.517E-01	2.398E-01	1.414E-02	-1.868
CO-57		122.06	*	3.197E-03	2.550E-02	4.201E-02	2.627E-03	0.076
		136.48		7.444E-02	2.126E-01	3.515E-01	2.364E-02	0.212
CO-58		810.76	*	-1.699E-02	4.178E-02	6.541E-02	5.033E-03	-0.260
FE-59		142.65		-1.795E+00	2.899E+00	4.546E+00	2.568E-01	-0.395
		192.34		3.682E-02	9.799E-01	1.565E+00	1.808E-01	0.024
		1099.22	*	3.199E-02	9.959E-02	1.707E-01	1.261E-02	0.187
		1291.56		3.498E-02	1.166E-01	1.986E-01	1.599E-02	0.176
CO-60		1173.22		-6.115E-03	4.722E-02	7.719E-02	4.243E-03	-0.079
		1332.49	*	3.197E-02	4.323E-02	7.698E-02	5.377E-03	0.415
ZN-65		1115.52	*	-5.248E-03	1.045E-01	1.478E-01	9.295E-03	-0.036
GE-68		1077.35	*	4.311E-01	1.311E+00	2.256E+00	1.521E-01	0.191
AS-73		53.44	*	1.913E-01	8.466E-01	1.453E+00	9.383E-02	0.132
AS-74		595.88	*	2.937E-02	8.882E-02	1.525E-01	9.707E-03	0.193
		634.78		1.586E-01	3.629E-01	6.254E-01	4.030E-02	0.254

---- 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	4.285E+00	5.443E+00	8.545E+00	7.460E-01	0.501
		96.73	-6.511E-01	8.577E-01	1.211E+00	1.534E-01	-0.537
		121.11	7.209E-02	1.341E-01	2.250E-01	2.142E-02	0.320
		136.00	1.318E-02	3.965E-02	6.554E-02	3.870E-03	0.201
		198.60	3.744E-02	1.924E+00	3.000E+00	2.016E-01	0.012
		264.65 *	3.010E-02	4.601E-02	7.477E-02	4.238E-03	0.403
		279.53	-7.917E-02	1.131E-01	1.821E-01	1.116E-02	-0.435
		303.91	1.141E+00	2.482E+00	3.757E+00	3.558E-01	0.304
		400.65	1.985E-01	2.779E-01	4.740E-01	4.236E-02	0.419
BR-77	+	87.88	7.369E+02	1.961E+02	2.710E+02	2.072E+01	2.719
		200.40	-4.060E+01	1.255E+02	1.961E+02	1.040E+01	-0.207
	+	239.00	2.304E+02	1.906E+01	3.153E+01	1.737E+00	7.307
		249.79	-1.548E+01	4.600E+01	7.611E+01	4.226E+00	-0.203
		281.68	7.487E+00	6.504E+01	1.094E+02	6.184E+00	0.068
		297.23	1.542E+02	5.542E+01	7.907E+01	4.488E+00	1.950
		303.76	4.635E+01	1.555E+02	2.326E+02	1.322E+01	0.199
		439.47	9.051E+01	1.108E+02	1.900E+02	1.094E+01	0.476
		484.57	-1.631E+02	1.833E+02	2.728E+02	1.632E+01	-0.598
		520.65 *	-8.428E-03	8.252E+00	1.319E+01	8.090E-01	-0.001
		574.64	-3.823E+01	1.642E+02	2.635E+02	1.663E+01	-0.145
		578.91	-2.259E+01	7.522E+01	1.062E+02	6.717E+00	-0.213
		585.48	5.915E+02	1.742E+02	3.161E+02	2.004E+01	1.871
		755.35	-3.722E+00	1.405E+02	2.303E+02	1.666E+01	-0.016
		817.79	-3.707E+01	9.362E+01	1.459E+02	1.127E+01	-0.254
SR-82		698.33	-5.439E+00	3.420E+01	5.576E+01	3.779E+00	-0.098
		776.49 *	-3.954E-01	4.680E-01	6.247E-01	4.622E-02	-0.633
		1395.20	-5.007E+00	1.062E+01	1.598E+01	1.107E+00	-0.313
RB-83		520.41 *	-3.929E-03	7.632E-02	1.215E-01	7.449E-03	-0.032
		529.64	2.365E-02	1.130E-01	1.837E-01	1.133E-02	0.129
		552.65	7.598E-02	2.076E-01	3.587E-01	2.240E-02	0.212
RB-84		881.50 *	1.044E-01	6.920E-02	1.291E-01	1.062E-02	0.809
KR-85		513.99 *	1.339E+01	8.546E+00	1.382E+01	8.440E-01	0.969
SR-85		513.99 *	6.783E-02	4.329E-02	7.002E-02	4.276E-03	0.969
RB-86		1076.63 *	-1.247E-02	8.262E-01	1.376E+00	9.289E-02	-0.009
Y-88		898.02	-2.782E-02	4.874E-02	7.433E-02	6.244E-03	-0.374
		1836.01 *	-1.665E-03	4.245E-02	6.966E-02	3.921E-03	-0.024
ZR-88		392.90 *	8.492E-03	3.185E-02	5.299E-02	2.907E-03	0.160
Y-91		1204.90 *	-1.193E+01	2.050E+01	3.199E+01	1.849E+00	-0.373
NB-94		702.63 *	7.433E-03	3.639E-02	6.112E-02	4.163E-03	0.122
		871.10	-1.130E-02	3.504E-02	5.478E-02	4.463E-03	-0.206
NB-95		765.79 *	8.142E-02	5.372E-02	8.828E-02	6.458E-03	0.922
NB-95M		235.69 *	9.119E-02	1.349E-01	2.095E-01	1.528E-02	0.435
ZR-95		724.18	9.806E-02	1.298E-01	1.993E-01	1.572E-02	0.492
		756.15 *	3.187E-02	8.087E-02	1.371E-01	1.132E-02	0.232
NB-97		657.90 *	-6.803E-03	8.087E-02	Half-Life	too short	
		1024.50	5.101E-02	8.087E-02	Half-Life	too short	
ZR-97		254.15	6.125E-01	8.087E-02	Half-Life	too short	
		355.39	1.121E+00	8.087E-02	Half-Life	too short	
		507.63 *	1.920E+00	8.087E-02	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	602.52			-2.144E+00	8.087E-02	Half-Life too short		
	1021.30			-1.185E+00	8.087E-02	Half-Life too short		
	1147.95			1.330E-02	8.087E-02	Half-Life too short		
	1362.66			-1.864E-01	8.087E-02	Half-Life too short		
	1750.46			1.047E+00	8.087E-02	Half-Life too short		
MO-99	140.51			-8.822E+00	2.118E+01	3.355E+01	9.034E+00	-0.263
	181.06			7.014E+00	1.447E+01	2.121E+01	3.594E+00	0.331
	366.43			-3.545E+01	6.753E+01	1.069E+02	5.978E+00	-0.332
	739.58	*		4.011E+00	9.575E+00	1.630E+01	2.344E+00	0.246
	778.00			-5.338E+00	2.996E+01	4.138E+01	3.067E+00	-0.129
TC-99M	140.51	*		-7.141E+08	2.996E+01	Half-Life too short		
RH-101	127.23			1.917E-03	3.381E-02	5.538E-02	3.361E-03	0.035
	198.01	*		-1.113E-02	3.579E-02	5.485E-02	2.902E-03	-0.203
	325.23			-1.636E-02	2.504E-01	3.622E-01	2.057E-02	-0.045
RH-102	418.52			-4.665E-02	3.145E-01	5.060E-01	2.854E-02	-0.092
	475.06	*		1.703E-02	3.071E-02	5.165E-02	3.068E-03	0.330
	631.29			-4.185E-03	5.976E-02	9.902E-02	6.375E-03	-0.042
	697.49			1.011E-03	8.202E-02	1.357E-01	9.188E-03	0.007
	766.84	+		2.233E-01	1.265E-01	2.255E-01	1.651E-02	0.990
	1046.59			-8.587E-02	1.111E-01	1.694E-01	1.200E-02	-0.507
	1112.84			1.112E-01	2.457E-01	3.889E-01	2.455E-02	0.286
RU-103	497.08	*		-9.825E-03	4.442E-02	6.996E-02	8.924E-03	-0.140
	610.33	+		1.353E+01	2.847E+00	3.271E+00	5.121E-01	4.135
RH-106	511.85	+		1.096E+00	4.299E-01	5.121E-01	3.123E-02	2.141
	621.84	*		1.022E-01	3.303E-01	5.644E-01	6.804E-02	0.181
	1050.47			2.437E+00	2.178E+00	4.055E+00	2.856E-01	0.601
RU-106	511.85	+		1.096E+00	4.299E-01	5.121E-01	3.123E-02	2.141
	621.84	*		1.022E-01	3.301E-01	5.644E-01	3.624E-02	0.181
	1050.47			2.437E+00	2.178E+00	4.055E+00	2.856E-01	0.601
AG-108M	433.93	*		-1.080E-02	3.405E-02	5.384E-02	3.355E-03	-0.201
	614.37			3.487E-02	4.375E-02	6.917E-02	4.742E-03	0.504
	722.95			1.531E-02	5.325E-02	7.858E-02	5.805E-03	0.195
AG-110M	657.75	*		-9.889E-03	3.733E-02	6.064E-02	4.133E-03	-0.163
	677.61			2.960E-01	3.051E-01	5.475E-01	3.791E-02	0.541
	706.67			1.088E-01	2.210E-01	3.797E-01	2.711E-02	0.287
	763.93			-2.872E-02	1.948E-01	2.713E-01	2.058E-02	-0.106
	884.67			-2.162E-02	5.466E-02	8.484E-02	7.247E-03	-0.255
	937.48			1.895E-02	1.134E-01	1.862E-01	1.567E-02	0.102
	1384.27			-5.951E-03	1.917E-01	3.115E-01	2.254E-02	-0.019
IN-111	171.28			-9.137E-01	8.058E-01	1.216E+00	6.255E-02	-0.751
	245.39	*		1.150E-01	8.818E-01	1.325E+00	7.332E-02	0.087
IN-113M	391.69	*		1.629E-02	4.638E-02	7.762E-02	4.569E-03	0.210
SN-113	391.69	*		1.629E-02	4.638E-02	7.762E-02	4.569E-03	0.210
IN-114M	190.27	*		1.026E-01	2.015E-01	2.959E-01	1.552E-02	0.347
CD-115	260.90			-6.990E+01	8.880E+01	1.425E+02	7.974E+00	-0.490
	492.35			1.295E+01	2.795E+01	4.654E+01	2.800E+00	0.278
	527.90	*		-6.140E+00	8.538E+00	1.277E+01	7.864E-01	-0.481
SN-117M	156.02			-1.651E+00	2.239E+00	3.483E+00	1.860E-01	-0.474
	158.56	*		-3.708E-02	5.146E-02	7.983E-02	4.217E-03	-0.465

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122		563.90	*	1.907E+00	1.623E+00	2.947E+00	1.851E-01	0.647
		692.80		-7.982E+00	3.402E+01	5.512E+01	3.711E+00	-0.145
I-123		159.00	*	-7.862E-01	3.402E+01	Half-Life too short		
		528.96		7.451E+00	3.402E+01	Half-Life too short		
TE-123M		159.00	*	-1.656E-02	2.829E-02	4.422E-02	2.369E-03	-0.375
I-124		602.71	*	-6.207E-01	6.744E-01	8.773E-01	5.598E-02	-0.708
		722.78		1.053E+00	4.577E+00	6.713E+00	4.680E-01	0.157
		1325.50		5.873E+00	3.240E+01	5.422E+01	3.750E+00	0.108
		1376.25		5.821E+01	3.209E+01	6.093E+01	4.232E+00	0.955
		1509.49		1.068E+01	1.521E+01	2.697E+01	1.815E+00	0.396
		1691.02		-2.297E+00	3.241E+00	5.061E+00	3.141E-01	-0.454
SB-124		602.71		-4.308E-02	4.680E-02	6.089E-02	3.887E-03	-0.708
		645.85		-7.611E-02	5.288E-01	8.689E-01	6.201E-02	-0.088
		709.31		-3.190E+00	2.980E+00	4.441E+00	3.048E-01	-0.718
		713.82		-2.473E-01	1.788E+00	2.916E+00	3.171E-01	-0.085
		722.78		1.060E-01	4.605E-01	6.754E-01	4.863E-02	0.157
	+	968.20		1.907E+01	4.845E+00	8.366E+00	6.556E-01	2.279
		1045.16		-2.046E+00	2.393E+00	3.612E+00	2.565E-01	-0.566
		1325.50		6.311E-01	3.482E+00	5.827E+00	4.030E-01	0.108
		1368.21		-8.870E-01	1.750E+00	2.626E+00	3.277E-01	-0.338
		1436.60		5.855E-01	4.254E+00	7.052E+00	4.842E-01	0.083
		1691.02	*	-5.450E-02	7.691E-02	1.201E-01	8.014E-03	-0.454
SB-125		427.89	*	-9.699E-02	9.657E-02	1.441E-01	8.564E-03	-0.673
	+	463.38		1.014E+00	4.644E-01	6.511E-01	4.450E-02	1.558
		600.56		-4.942E-02	1.832E-01	2.999E-01	2.163E-02	-0.165
		635.90		8.469E-02	2.875E-01	4.901E-01	3.603E-02	0.173
TE-125M		109.28	*	6.853E+00	9.231E+00	1.567E+01	1.351E+00	0.437
I-126		388.63		5.231E-02	2.015E-01	3.354E-01	1.842E-02	0.156
		666.33	*	7.922E-02	2.008E-01	3.427E-01	2.234E-02	0.231
		753.82		7.038E-01	1.620E+00	2.755E+00	1.989E-01	0.255
SB-126		223.80		-1.267E+00	3.780E+00	6.312E+00	3.429E-01	-0.201
		278.60		4.564E-01	2.570E+00	4.255E+00	2.402E-01	0.107
		296.50		1.360E+01	2.298E+00	3.727E+00	2.115E-01	3.650
		414.70		2.945E-02	7.677E-02	1.282E-01	7.205E-03	0.230
		415.30		1.766E+00	6.541E+00	1.084E+01	6.094E-01	0.163
		555.20		-1.429E-01	3.942E+00	6.614E+00	4.135E-01	-0.022
		573.80		-1.779E-01	1.072E+00	1.777E+00	1.121E-01	-0.100
		593.00		-4.888E-01	8.742E-01	1.394E+00	8.864E-02	-0.351
		656.30		-2.335E+00	3.328E+00	5.191E+00	3.362E-01	-0.450
		666.33		3.302E-02	8.370E-02	1.428E-01	9.311E-03	0.231
		675.00		-3.168E-01	2.057E+00	3.294E+00	2.171E-01	-0.096
		695.00		3.725E-02	7.591E-02	1.306E-01	8.816E-03	0.285
		697.00		1.586E-01	2.642E-01	4.581E-01	3.100E-02	0.346
		720.50	*	3.721E-03	1.776E-01	2.544E-01	1.769E-02	0.015
		856.80		1.183E-01	5.310E-01	7.692E-01	6.180E-02	0.154
		989.30		1.058E+00	1.172E+00	2.076E+00	1.589E-01	0.509
		1034.80		1.410E+00	9.177E+00	1.558E+01	1.123E+00	0.090
		1213.00		-7.498E-01	4.450E+00	7.223E+00	4.229E-01	-0.104
SB-127		61.10		-8.841E+00	5.143E+01	7.764E+01	7.063E+00	-0.114

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		252.40		1.241E+00	3.579E+00	6.069E+00	2.514E+00	0.205
		290.80		-1.756E+00	1.984E+01	2.893E+01	2.506E+00	-0.061
		411.60		-4.882E+00	1.156E+01	1.784E+01	2.504E+00	-0.274
		444.90		-1.321E+00	8.766E+00	1.403E+01	1.464E+00	-0.094
		473.00		-1.582E+00	1.468E+00	2.133E+00	2.327E-01	-0.742
		543.00		6.537E+00	1.390E+01	2.419E+01	3.099E+00	0.270
		603.60		-3.071E+00	1.130E+01	1.593E+01	1.712E+00	-0.193
		685.20	*	-1.436E-01	1.034E+00	1.689E+00	1.624E-01	-0.085
		698.50		-2.032E+00	1.279E+01	2.085E+01	3.053E+00	-0.097
		722.20		3.695E-01	3.148E+01	4.504E+01	4.307E+00	0.008
XE-127	+	783.80		4.788E+00	5.370E+00	5.549E+00	6.282E-01	0.863
		57.60		1.353E+00	6.223E+00	1.065E+01	6.727E-01	0.127
		145.22		3.868E-01	7.273E-01	1.200E+00	6.704E-02	0.322
		172.10		-1.117E-01	1.230E-01	1.879E-01	9.673E-03	-0.594
		202.84	*	-1.610E-02	4.930E-02	7.694E-02	4.091E-03	-0.209
I-131		374.96		-7.806E-02	1.923E-01	3.059E-01	1.700E-02	-0.255
		80.18		6.464E+00	5.285E+00	6.918E+00	4.953E-01	0.934
		284.30		-7.306E-01	1.363E+00	2.206E+00	1.392E-01	-0.331
		364.48	*	3.064E-02	1.097E-01	1.835E-01	1.153E-02	0.167
		636.97		-9.011E-01	1.528E+00	2.418E+00	1.710E-01	-0.373
TE-132		722.89		2.161E+00	8.109E+00	1.194E+01	8.395E-01	0.181
		49.72		-5.850E-01	1.459E+01	2.485E+01	2.222E+00	-0.024
		111.76		-1.771E+01	2.349E+01	3.723E+01	3.295E+00	-0.476
		116.30		3.949E+00	2.181E+01	3.610E+01	3.171E+00	0.109
BA-133	*	228.16		-2.945E-02	5.468E-01	9.240E-01	1.294E-01	-0.032
		53.15		1.283E+00	3.660E+00	6.314E+00	4.083E-01	0.203
		79.62		-1.478E+00	1.887E+00	2.101E+00	3.026E-01	-0.703
		81.00		-1.339E-01	1.248E-01	1.581E-01	2.392E-02	-0.847
		276.40		5.681E-01	3.950E-01	6.959E-01	8.972E-02	0.816
		302.84		6.423E-02	1.706E-01	2.567E-01	2.977E-02	0.250
		356.01	*	3.745E-02	4.925E-02	7.578E-02	8.694E-03	0.494
I-133	+	383.85		-1.491E-01	3.070E-01	4.842E-01	5.192E-02	-0.308
		510.53		8.920E-01	3.070E-01	Half-Life	too short	
		529.87	*	7.331E-04	3.070E-01	Half-Life	too short	
		706.58		8.466E-02	3.070E-01	Half-Life	too short	
		856.28		-4.822E-02	3.070E-01	Half-Life	too short	
		875.33		-1.092E-02	3.070E-01	Half-Life	too short	
	+	1236.41		4.850E-01	3.070E-01	Half-Life	too short	
CS-134		1298.22		-1.062E-03	3.070E-01	Half-Life	too short	
		475.35		1.361E+00	2.000E+00	3.396E+00	2.017E-01	0.401
		563.23		4.331E-01	3.740E-01	6.792E-01	4.340E-02	0.638
		569.32		1.284E-01	2.139E-01	3.741E-01	2.415E-02	0.343
		604.70		1.074E-02	3.926E-02	5.877E-02	3.771E-03	0.183
	+	795.84	*	6.527E-02	5.743E-02	9.349E-02	7.128E-03	0.698
		801.93		-3.192E-01	4.245E-01	6.408E-01	4.906E-02	-0.498
		1038.57		3.157E-01	4.310E+00	7.261E+00	5.206E-01	0.043
		1167.94		1.089E+00	2.672E+00	4.597E+00	2.562E-01	0.237
CS-135		1365.15		1.104E+00	1.193E+00	2.208E+00	1.642E-01	0.500
	*	268.24		2.099E-01	1.838E-01	2.919E-01	2.195E-02	0.719

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135		288.45		8.892E+08	1.838E-01	Half-Life	too short	
		417.63		-1.777E+07	1.838E-01	Half-Life	too short	
		546.56		-3.875E+08	1.838E-01	Half-Life	too short	
		836.80		1.404E+09	1.838E-01	Half-Life	too short	
		1038.76		-3.765E+06	1.838E-01	Half-Life	too short	
		1124.00		-1.495E+08	1.838E-01	Half-Life	too short	
		1131.51		1.103E+08	1.838E-01	Half-Life	too short	
		1260.41	*	-2.433E+08	1.838E-01	Half-Life	too short	
		1457.56		3.506E+10	1.838E-01	Half-Life	too short	
		1678.03		3.131E+08	1.838E-01	Half-Life	too short	
		1706.46		1.370E+09	1.838E-01	Half-Life	too short	
		1791.20		3.106E+07	1.838E-01	Half-Life	too short	
CS-136		66.91		6.052E-01	7.942E-01	1.311E+00	1.882E-01	0.462
	+	86.29		5.759E+00	1.627E+00	2.130E+00	2.586E-01	2.704
		153.22		9.112E-01	6.612E-01	1.130E+00	7.806E-02	0.806
		163.89		-5.770E-01	1.085E+00	1.684E+00	1.137E-01	-0.343
		176.55		-1.261E-02	3.651E-01	5.840E-01	3.482E-02	-0.022
		273.65		-4.927E-01	5.180E-01	7.119E-01	4.604E-02	-0.692
		340.57		6.356E-02	1.409E-01	2.115E-01	1.276E-02	0.300
		818.51		-4.297E-03	7.032E-02	1.140E-01	8.822E-03	-0.038
		1048.07	*	-5.624E-02	9.958E-02	1.560E-01	1.172E-02	-0.361
		1235.34		1.511E+00	7.098E-01	1.228E+00	1.245E-01	1.231
BA-137M		661.65	*	2.382E-03	4.316E-02	6.917E-02	4.484E-03	0.034
CS-137		661.65	*	2.518E-03	4.562E-02	7.312E-02	4.756E-03	0.034
CE-139		165.85	*	-2.646E-02	3.239E-02	5.001E-02	2.562E-03	-0.529
BA-140		162.64		-1.724E-01	7.445E-01	1.173E+00	7.023E-02	-0.147
		304.84		-3.786E-01	1.396E+00	2.107E+00	5.746E-01	-0.180
LA-140		423.70		1.073E+00	1.906E+00	3.175E+00	1.008E+00	0.338
		537.32	*	1.101E-01	2.563E-01	4.416E-01	1.439E-01	0.249
	+	328.77		1.174E+00	5.820E-01	5.980E-01	3.819E-02	1.964
		432.53		1.036E+00	2.028E+00	3.416E+00	2.164E-01	0.303
		487.03		5.274E-02	1.355E-01	2.249E-01	1.515E-02	0.235
		751.79		1.225E+00	1.790E+00	3.109E+00	2.575E-01	0.394
		815.85		-1.233E-01	3.032E-01	4.726E-01	4.162E-02	-0.261
		867.82		-6.600E-01	1.487E+00	2.230E+00	1.919E-01	-0.296
		919.63		6.753E-02	2.737E+00	4.312E+00	4.450E-01	0.016
		925.24		-4.749E-02	1.110E+00	1.783E+00	1.559E-01	-0.027
		1596.49	*	-2.010E-02	9.234E-02	1.467E-01	9.555E-03	-0.137
CE-141		145.44	*	4.551E-02	6.359E-02	1.064E-01	6.193E-03	0.428
CE-143		57.37		1.666E-04	6.359E-02	Half-Life	too short	
		231.56		7.828E-05	6.359E-02	Half-Life	too short	
		293.26	*	5.594E-04	6.359E-02	Half-Life	too short	
	+	350.59		2.086E-02	6.359E-02	Half-Life	too short	
		490.36		-6.551E-04	6.359E-02	Half-Life	too short	
		664.57		6.142E-05	6.359E-02	Half-Life	too short	
		721.93		-7.337E-06	6.359E-02	Half-Life	too short	
CE-144		80.11		3.271E+00	2.679E+00	3.506E+00	2.489E-01	0.933
PM-144		133.54	*	-7.880E-02	2.056E-01	3.284E-01	4.675E-02	-0.240
		476.78		1.972E-02	7.447E-02	1.223E-01	8.644E-03	0.161

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		-9.476E-03	3.426E-02	5.591E-02	3.763E-03	-0.169
		696.49	*	2.058E-02	3.550E-02	6.151E-02	4.161E-03	0.335
		778.57		1.101E+00	2.561E+00	3.855E+00	2.860E-01	0.286
PR-144		696.49	*	1.394E+00	2.404E+00	4.165E+00	2.816E-01	0.335
		1489.15		8.266E+00	1.319E+01	2.341E+01	1.585E+00	0.353
PM-146		453.90	*	2.542E-02	4.602E-02	7.747E-02	6.697E-03	0.328
		633.02		3.151E-01	1.490E+00	2.516E+00	9.292E-01	0.125
		735.90		7.200E-02	1.657E-01	2.809E-01	7.915E-02	0.256
		747.13		-1.172E-01	9.659E-02	1.375E-01	1.814E-02	-0.852
ND-147	+	91.11		9.145E-01	3.008E-01	5.034E-01	4.128E-02	1.817
		319.41		1.490E-01	3.191E+00	5.306E+00	3.017E-01	0.028
		439.89		5.900E+00	5.884E+00	1.021E+01	5.885E-01	0.578
		531.02	*	2.784E-01	5.808E-01	9.626E-01	1.317E-01	0.289
PM-149		285.90	*	-5.013E+01	6.533E+01	1.037E+02	1.464E+01	-0.483
EU-152		121.78		4.888E-02	7.267E-02	1.227E-01	9.757E-03	0.398
		244.69		2.143E-01	3.601E-01	5.579E-01	3.087E-02	0.384
		344.27	*	4.424E-02	1.201E-01	1.792E-01	1.148E-02	0.247
		443.98		1.008E-02	1.043E+00	1.690E+00	9.774E-02	0.006
		778.89		1.379E-01	2.919E-01	4.423E-01	3.281E-02	0.312
		867.32		1.634E-02	9.669E-01	1.445E+00	1.173E-01	0.011
	+	964.01		8.487E-01	3.890E-01	6.638E-01	5.225E-02	1.278
		1085.78		2.573E-01	4.340E-01	7.635E-01	5.072E-02	0.337
		1112.02		1.173E-01	3.466E-01	5.569E-01	3.521E-02	0.211
		1407.95		2.672E-01	2.130E-01	3.989E-01	2.755E-02	0.670
GD-153		69.67		-1.768E+00	1.908E+00	2.752E+00	1.810E-01	-0.642
	+	83.37		3.423E+01	2.083E+01	2.594E+01	1.897E+00	1.320
		97.43	*	3.080E-02	8.596E-02	1.302E-01	9.056E-03	0.236
		103.18		-3.636E-02	1.061E-01	1.726E-01	1.154E-02	-0.211
EU-154		123.07		3.432E-03	5.132E-02	8.427E-02	8.143E-03	0.041
		247.94		-1.493E-01	3.847E-01	5.871E-01	5.512E-02	-0.254
		591.81		1.698E-02	6.309E-01	1.059E+00	1.071E-01	0.016
		723.30		1.237E-01	2.196E-01	3.338E-01	2.694E-02	0.371
		756.87		3.402E-01	8.905E-01	1.508E+00	1.663E-01	0.226
		873.19		6.622E-02	2.828E-01	4.714E-01	5.623E-02	0.140
		996.32		-1.764E-01	3.635E-01	5.770E-01	9.976E-02	-0.306
		1004.76		-9.524E-02	2.182E-01	3.496E-01	3.790E-02	-0.272
		1274.45	*	2.111E-02	1.253E-01	2.099E-01	2.045E-02	0.101
EU-155		48.70		-2.217E-01	2.341E+00	3.982E+00	2.602E-01	-0.056
		60.01		1.482E+00	5.577E+00	8.616E+00	5.414E-01	0.172
	+	86.54		5.644E-01	1.503E-01	2.110E-01	1.612E-02	2.675
		105.31	*	1.503E-01	1.111E-01	1.931E-01	1.301E-02	0.778
TB-160	+	86.79		1.492E+00	3.969E-01	5.548E-01	4.195E-02	2.689
		197.04		-3.929E-01	6.026E-01	9.059E-01	4.787E-02	-0.434
		215.65		-4.496E-02	7.761E-01	1.223E+00	6.594E-02	-0.037
	+	298.57		2.274E-01	1.539E-01	2.021E-01	1.148E-02	1.125
		879.36	*	-9.584E-02	1.438E-01	2.152E-01	1.767E-02	-0.445
		962.29		1.027E+00	6.941E-01	1.130E+00	8.913E-02	0.908
		966.15		1.415E+00	3.147E-01	6.131E-01	4.815E-02	2.308
		1177.93		-1.589E-01	4.077E-01	6.051E-01	3.351E-02	-0.263

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85			-4.177E-01	7.285E-01	1.115E+00	7.140E-02	-0.375
	80.57			1.049E-01	3.683E-01	4.492E-01	3.201E-02	0.233
	184.41		+	1.465E-01	6.266E-02	6.977E-02	3.637E-03	2.100
	280.46			-8.231E-02	9.100E-02	1.448E-01	8.179E-03	-0.568
	410.95			-2.004E-03	2.784E-01	4.531E-01	2.536E-02	-0.004
	711.68		*	1.431E-02	6.294E-02	1.060E-01	7.293E-03	0.135
TM-171	752.31			4.319E-01	3.068E-01	5.603E-01	4.038E-02	0.771
	810.29			-3.952E-02	6.413E-02	9.814E-02	7.524E-03	-0.403
	51.35			-8.354E+00	3.079E+01	5.189E+01	3.382E+00	-0.161
	52.39			-2.577E+00	1.599E+01	2.705E+01	1.756E+00	-0.095
	59.40			1.066E+01	3.030E+01	4.702E+01	2.949E+00	0.227
	66.72		*	2.544E+01	3.229E+01	5.072E+01	3.282E+00	0.501
LU-176	88.36		+	1.112E+00	2.958E-01	4.011E-01	3.057E-02	2.772
	201.83			-6.203E-03	3.013E-02	4.734E-02	2.515E-03	-0.131
	306.84		*	7.059E-03	2.593E-02	4.378E-02	2.488E-03	0.161
LU-177	401.10			4.975E+00	7.254E+00	1.237E+01	6.847E-01	0.402
	112.95			-1.127E+00	1.480E+00	2.347E+00	1.499E-01	-0.480
LU-177M	208.36		+	2.640E+00	1.569E+00	1.886E+00	1.009E-01	1.400
	52.97		*	2.788E-01	1.634E+00	2.801E+00	1.813E-01	0.100
HF-181	54.07			-3.256E-01	8.864E-01	1.486E+00	9.561E-02	-0.219
	61.30			-1.094E-01	1.631E+00	2.476E+00	1.564E-01	-0.044
	121.62			2.466E-01	3.706E-01	6.257E-01	3.907E-02	0.394
	147.16			-1.668E-01	6.709E-01	1.074E+00	5.952E-02	-0.155
	171.86			-5.135E-01	5.016E-01	7.610E-01	3.917E-02	-0.675
	218.09			-7.481E-02	9.095E-01	1.431E+00	7.730E-02	-0.052
	268.79		+	2.554E+00	1.165E+00	1.571E+00	8.829E-02	1.626
	319.02			-6.399E-02	2.644E-01	4.319E-01	2.455E-02	-0.148
	367.43			-2.262E-01	9.514E-01	1.537E+00	8.586E-02	-0.147
	413.65		*	-9.142E-02	2.000E-01	3.073E-01	1.725E-02	-0.298
	56.28			-1.669E-01	9.754E-01	1.646E+00	1.047E-01	-0.101
	57.53			1.219E-01	5.257E-01	8.998E-01	5.688E-02	0.135
	65.20			-3.178E-01	1.066E+00	1.595E+00	1.025E-01	-0.199
	133.02			-4.783E-02	6.513E-02	1.023E-01	6.033E-03	-0.468
	136.25			1.580E-01	4.582E-01	7.577E-01	4.403E-02	0.208
W-181	345.85			1.355E-01	2.264E-01	3.441E-01	1.944E-02	0.394
	482.03		*	-1.337E-02	4.685E-02	7.365E-02	4.398E-03	-0.182
	56.28			-6.588E-02	3.865E-01	6.521E-01	4.148E-02	-0.101
TA-182	57.53			4.842E-02	2.085E-01	3.568E-01	2.256E-02	0.136
	65.20		*	-1.250E-01	4.195E-01	6.277E-01	4.033E-02	-0.199
	67.75			6.358E-03	1.141E-01	1.927E-01	1.253E-02	0.033
RE-183	100.10			1.961E-02	1.801E-01	2.994E-01	2.040E-02	0.066
	152.43			4.170E-01	3.544E-01	6.025E-01	3.265E-02	0.692
	222.10			-1.781E-03	3.444E-01	5.842E-01	3.169E-02	-0.003
	1001.68			1.492E+00	2.110E+00	3.765E+00	2.838E-01	0.396
	1121.28			7.866E-01	2.037E-01	3.943E-01	2.446E-02	1.995
	1189.05			1.861E-01	3.165E-01	5.530E-01	3.118E-02	0.337
	1221.42		*	-5.365E-02	1.966E-01	3.155E-01	1.871E-02	-0.170
RE-183	1230.97			-4.248E-01	5.955E-01	7.579E-01	4.563E-02	-0.560
	57.98			-1.152E-02	2.065E-01	3.495E-01	2.205E-02	-0.033



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	59.32		2.107E-02	1.247E-01	1.918E-01	1.203E-02	0.110
		67.20		1.089E-01	2.134E-01	3.507E-01	2.275E-02	0.311
		162.32	*	3.196E-02	1.132E-01	1.829E-01	9.510E-03	0.175
		208.81		2.643E+00	1.571E+00	1.918E+00	1.026E-01	1.378
		291.72		-2.680E-01	1.061E+00	1.526E+00	8.653E-02	-0.176
		57.98		-4.272E-02	7.659E-01	1.297E+00	8.179E-02	-0.033
		59.32		7.811E-02	4.622E-01	7.110E-01	4.461E-02	0.110
		67.20		4.040E-01	7.913E-01	1.300E+00	8.436E-02	0.311
		161.27		1.675E-02	3.582E-01	5.786E-01	3.022E-02	0.029
		216.55		-6.215E-02	2.798E-01	4.368E-01	2.356E-02	-0.142
		252.85	*	1.791E-01	2.289E-01	4.004E-01	2.228E-02	0.447
		318.01		7.013E-02	4.665E-01	7.806E-01	4.437E-02	0.090
OS-185		792.07		-1.076E+00	1.718E+00	1.747E+00	1.314E-01	-0.616
		903.28		-1.313E-01	1.350E+00	1.858E+00	1.547E-01	-0.071
		920.93		1.173E-01	4.530E-01	7.532E-01	6.179E-02	0.156
		59.72		1.455E-01	3.269E-01	5.095E-01	3.198E-02	0.286
		61.14		-3.066E-02	1.784E-01	2.693E-01	1.700E-02	-0.114
		69.30		-3.615E-01	3.411E-01	4.886E-01	3.206E-02	-0.740
		592.07		1.100E-02	2.549E+00	4.270E+00	2.714E-01	0.003
		646.12	*	-8.643E-03	4.566E-02	7.474E-02	4.830E-03	-0.116
		717.42		-2.954E-01	1.026E+00	1.651E+00	1.144E-01	-0.179
		874.81		6.504E-02	5.437E-01	8.947E-01	7.315E-02	0.073
		880.27		4.992E-01	7.800E-01	1.351E+00	1.110E-01	0.369
		155.03	*	2.189E-01	1.774E-01	3.023E-01	1.621E-02	0.724
RE-188		477.96		-1.080E+00	3.550E+00	5.582E+00	3.322E-01	-0.193
		633.10		6.706E-01	2.972E+00	5.041E+00	3.247E-01	0.133
W-188	+	63.58		1.352E+01	7.380E+01	9.595E+01	6.121E+00	0.141
		227.08		-4.776E+00	1.285E+01	2.113E+01	1.151E+00	-0.226
IR-192	+	290.67	*	8.427E-01	8.223E+00	1.217E+01	6.899E-01	0.069
		295.96		1.400E+00	2.251E-01	3.284E-01	1.894E-02	4.262
		308.46		4.316E-02	9.699E-02	1.653E-01	9.510E-03	0.261
		316.51	*	1.086E-02	3.465E-02	5.856E-02	3.347E-03	0.185
AU-195		468.07		2.676E-02	7.432E-02	1.090E-01	7.390E-03	0.245
		604.41		1.166E-01	5.291E-01	7.875E-01	9.182E-02	0.148
		612.46		-8.560E-02	8.846E-01	1.272E+00	1.023E-01	-0.067
		65.12		-1.457E-01	1.991E-01	2.915E-01	1.872E-02	-0.500
		66.83		8.250E-02	1.063E-01	1.669E-01	1.081E-02	0.494
		75.70	+	1.502E+00	3.032E-01	5.209E-01	3.567E-02	2.883
		98.88	*	2.172E-01	2.269E-01	3.901E-01	2.682E-02	0.557
		129.76		3.955E+00	3.056E+00	5.244E+00	3.142E-01	0.754
		367.94	*	6.669E-06	3.056E+00	Half-Life	too short	
		579.30		7.659E-04	3.056E+00	Half-Life	too short	
TL-200		828.27		1.272E-04	3.056E+00	Half-Life	too short	
		1205.75		-1.526E-04	3.056E+00	Half-Life	too short	
TL-201		68.90		-3.853E+00	3.984E+00	6.145E+00	4.023E-01	-0.627
		70.82		7.932E-01	2.370E+00	3.638E+00	2.409E-01	0.218
		80.30		6.004E+00	4.894E+00	6.406E+00	4.555E-01	0.937
		135.34		-4.942E+00	1.997E+01	3.214E+01	1.875E+00	-0.154
		167.43	*	4.425E+00	5.686E+00	9.479E+00	4.859E-01	0.467

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90	-4.219E-01	4.362E-01	6.727E-01	4.404E-02	-0.627
		70.82	8.661E-02	2.588E-01	3.973E-01	2.630E-02	0.218
		80.30	6.557E-01	5.345E-01	6.997E-01	4.975E-02	0.937
		439.56 *	5.876E-02	7.034E-02	1.208E-01	6.957E-03	0.486
HG-203		70.83	4.060E-01	1.178E+00	1.808E+00	2.248E-01	0.225
		72.87	1.295E+00	7.328E-01	1.163E+00	1.401E-01	1.114
		82.60	3.128E-01	1.220E+00	1.832E+00	2.370E-01	0.171
		279.20 *	-1.486E-02	4.269E-02	6.861E-02	4.126E-03	-0.217
BI-207		72.80	3.398E-01	2.136E-01	3.424E-01	2.296E-02	0.992
	+	74.97	8.365E-01	1.689E-01	2.577E-01	1.755E-02	3.246
	+	84.90	4.442E-01	2.703E-01	3.627E-01	2.691E-02	1.225
		569.67	3.477E-02	3.315E-02	5.963E-02	3.755E-03	0.583
		1063.62 *	6.677E-03	6.023E-02	1.016E-01	7.007E-03	0.066
		1770.23	-3.025E+00	8.294E-01	5.017E-01	2.961E-02	-6.028
TL-207		81.07	-2.973E-01	2.726E-01	3.486E-01	2.495E-02	-0.853
	+	83.78	2.929E-01	1.782E-01	2.282E-01	1.675E-02	1.283
		94.90	7.533E-02	2.404E-01	3.637E-01	2.584E-02	0.207
		122.32	9.267E-02	1.763E+00	2.893E+00	2.048E-01	0.032
		144.24	5.295E-01	7.336E-01	1.219E+00	8.635E-02	0.434
		154.21	2.000E-01	4.250E-01	7.012E-01	4.677E-02	0.285
	+	269.46	6.010E-01	2.743E-01	3.829E-01	2.256E-02	1.570
	+	323.87 *	2.037E-02	7.232E-01	1.055E+00	1.738E-01	0.019
		338.28	8.695E+00	2.045E+00	2.853E+00	2.983E-01	3.048
		445.03	-2.755E-01	2.519E+00	4.044E+00	4.150E-01	-0.068
PO-209		260.50	4.693E-01	9.169E+00	1.545E+01	8.641E-01	0.030
		262.80	-1.646E+01	2.601E+01	4.212E+01	2.359E+00	-0.391
		896.60 *	-1.252E+01	9.075E+00	1.253E+01	1.046E+00	-0.999
BI-210		46.50 *	-9.821E-01	3.361E+00	5.518E+00	4.156E-01	-0.178
PB-210		46.50 *	-9.821E-01	3.361E+00	5.518E+00	4.156E-01	-0.178
PO-210		46.50 *	-9.821E-01	3.360E+00	5.518E+00	3.539E-01	-0.178
PB-211		404.84 *	-1.887E+00	1.574E+00	1.490E+00	9.284E-01	-1.266
		427.08	-1.082E+00	2.210E+00	3.282E+00	2.028E+00	-0.330
		831.96	-7.237E-01	1.412E+00	2.065E+00	1.292E+00	-0.350
PO-215		81.07	-2.973E-01	2.726E-01	3.486E-01	2.495E-02	-0.853
	+	83.78	2.929E-01	1.782E-01	2.282E-01	1.675E-02	1.283
		94.90	7.533E-02	2.404E-01	3.637E-01	2.584E-02	0.207
		122.32	9.267E-02	1.763E+00	2.893E+00	2.048E-01	0.032
		144.24	5.295E-01	7.336E-01	1.219E+00	8.635E-02	0.434
		154.21	2.000E-01	4.250E-01	7.012E-01	4.677E-02	0.285
	+	269.46	6.010E-01	2.743E-01	3.829E-01	2.256E-02	1.570
	+	323.87 *	2.037E-02	7.232E-01	1.055E+00	1.738E-01	0.019
		338.28	8.695E+00	2.045E+00	2.853E+00	2.983E-01	3.048
		445.03	-2.755E-01	2.519E+00	4.044E+00	4.150E-01	-0.068
RN-219	+	271.23	7.711E-01	3.544E-01	5.024E-01	4.010E-02	1.535
		401.81 *	-6.756E-02	4.509E-01	7.278E-01	9.824E-02	-0.093
RN-220		549.76 *	1.388E+01	2.734E+01	4.773E+01	2.976E+00	0.291
RA-223		81.07	-2.973E-01	2.726E-01	3.486E-01	2.495E-02	-0.853
	+	83.78	2.929E-01	1.782E-01	2.282E-01	1.675E-02	1.283
		94.90	7.533E-02	2.404E-01	3.637E-01	2.584E-02	0.207

----- 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		9.267E-02	1.763E+00	2.893E+00	2.048E-01	0.032
		144.24		5.295E-01	7.336E-01	1.219E+00	8.635E-02	0.434
		154.21		2.000E-01	4.250E-01	7.012E-01	4.677E-02	0.285
	+	269.46		6.010E-01	2.743E-01	3.829E-01	2.256E-02	1.570
		323.87	*	2.037E-02	7.232E-01	1.055E+00	1.738E-01	0.019
	+	338.28		8.695E+00	2.045E+00	2.853E+00	2.983E-01	3.048
		445.03		-2.755E-01	2.519E+00	4.044E+00	4.150E-01	-0.068
		79.80		-1.597E+00	2.408E+00	2.700E+00	5.652E-01	-0.592
		236.00		7.044E-01	2.763E-01	4.567E-01	4.697E-02	1.542
		256.20	*	-4.142E-02	3.803E-01	6.360E-01	8.821E-02	-0.065
		286.10		-1.134E+00	1.561E+00	2.490E+00	2.861E-01	-0.455
	+	299.80		2.929E+00	2.031E+00	2.740E+00	4.451E-01	1.069
TH-227		304.40		-2.456E-01	2.276E+00	3.302E+00	5.698E-01	-0.074
		334.20		2.998E-01	3.660E+00	3.887E+00	7.110E-01	0.077
		79.80		-1.597E+00	2.409E+00	2.700E+00	5.728E-01	-0.592
	+	94.00		8.838E+00	3.549E+00	3.766E+00	8.000E-01	2.347
		236.00		7.044E-01	2.738E-01	4.567E-01	4.048E-02	1.542
		256.20	*	-4.142E-02	3.803E-01	6.360E-01	1.070E-01	-0.065
		286.10		-1.134E+00	1.926E+00	2.490E+00	2.494E+00	-0.455
	+	299.80		2.929E+00	2.031E+00	2.740E+00	4.451E-01	1.069
		304.40		-2.456E-01	2.276E+00	3.302E+00	5.698E-01	-0.074
		334.20		2.998E-01	3.660E+00	3.887E+00	7.110E-01	0.077
	+	85.43		4.385E-01	2.668E-01	3.631E-01	2.708E-02	1.208
	+	88.47		3.902E-01	1.276E-01	2.302E-01	1.752E-02	1.695
TH-229		100.00		5.383E-02	1.876E-01	3.142E-01	2.143E-02	0.171
		193.63	*	2.972E-01	5.277E-01	8.650E-01	4.554E-02	0.344
		210.97		1.018E+00	9.217E-01	1.390E+00	7.454E-02	0.732
		283.67	*	2.928E-02	1.537E+00	2.571E+00	3.528E-01	0.011
		301.29		4.409E-01	7.306E-01	1.112E+00	1.155E-01	0.397
	TH-231	81.07		-2.973E-01	2.726E-01	3.486E-01	2.495E-02	-0.853
	+	83.78		2.929E-01	1.782E-01	2.282E-01	1.675E-02	1.283
		94.90		7.533E-02	2.404E-01	3.637E-01	2.584E-02	0.207
		122.32		9.267E-02	1.763E+00	2.893E+00	2.048E-01	0.032
		144.24		5.295E-01	7.336E-01	1.219E+00	8.635E-02	0.434
		154.21		2.000E-01	4.250E-01	7.012E-01	4.677E-02	0.285
	+	269.46		6.010E-01	2.743E-01	3.829E-01	2.256E-02	1.570
U-231		323.87	*	2.037E-02	7.232E-01	1.055E+00	1.738E-01	0.019
	+	338.28		8.695E+00	2.045E+00	2.853E+00	2.983E-01	3.048
		445.03		-2.755E-01	2.519E+00	4.044E+00	4.150E-01	-0.068
	+	84.21		1.043E+01	6.349E+00	8.265E+00	6.092E-01	1.262
	+	92.29		7.219E+00	2.514E+00	3.606E+00	2.627E-01	2.002
		95.87	*	-9.177E-01	9.619E-01	1.345E+00	9.473E-02	-0.682
		108.00		-8.585E-01	1.758E+00	2.834E+00	1.846E-01	-0.303
	PA-233	75.28		2.441E+01	5.823E+00	7.850E+00	1.132E+00	3.110
	+	86.59		9.178E+00	3.376E+00	3.436E+00	9.105E-01	2.671
	+	300.12		8.165E-01	5.612E-01	7.662E-01	1.026E-01	1.066
		311.98	*	3.021E-03	6.420E-02	1.069E-01	6.470E-03	0.028
		340.50		4.561E-01	7.399E-01	1.114E+00	2.554E-01	0.410
		398.62		-2.843E-01	2.304E+00	3.727E+00	9.614E-01	-0.076

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		-1.487E-01	1.804E+00	2.918E+00	5.993E-01	-0.051
		63.00		3.966E-01	2.166E+00	2.818E+00	4.050E-01	0.141
		94.67		1.873E-01	1.782E-01	2.782E-01	3.174E-02	0.673
		98.44		1.215E-01	1.175E-01	1.613E-01	8.962E-02	0.753
		99.86		2.268E-01	4.719E-01	7.968E-01	5.440E-02	0.285
		111.00		-9.319E-02	1.884E-01	3.027E-01	3.221E-02	-0.308
		131.20		-7.356E-02	1.128E-01	1.784E-01	1.061E-02	-0.412
		152.70		4.769E-01	3.506E-01	5.886E-01	9.225E-02	0.810
		186.00		5.275E+00	2.755E+00	2.860E+00	8.709E-01	1.844
		226.40		-1.155E-01	4.098E-01	6.764E-01	7.702E-02	-0.171
		227.20		-1.660E-02	4.274E-01	7.229E-01	3.940E-02	-0.023
		248.90		-9.776E-01	8.373E-01	1.278E+00	2.739E-01	-0.765
		293.70		8.906E+00	1.957E+00	2.034E+00	3.262E-01	4.379
		369.80		1.575E-01	8.982E-01	1.490E+00	3.095E-01	0.106
		568.70		2.867E-01	1.079E+00	1.846E+00	1.162E-01	0.155
		569.50		2.070E-01	2.987E-01	5.252E-01	3.307E-02	0.394
		574.00		-2.464E-01	1.643E+00	2.728E+00	1.721E-01	-0.090
		699.00		-2.958E-01	7.546E-01	1.202E+00	2.203E-01	-0.246
		706.10		9.733E-02	1.140E+00	1.895E+00	8.393E-01	0.051
		733.00		2.933E-01	4.482E-01	6.867E-01	1.486E-01	0.427
		742.81		1.266E-01	1.421E+00	2.353E+00	1.578E+00	0.054
		796.30		1.270E+00	1.164E+00	1.801E+00	4.816E-01	0.705
		805.60		4.725E-01	1.102E+00	1.856E+00	5.640E-01	0.255
		819.60		2.082E-02	1.240E+00	2.026E+00	7.665E-01	0.010
		826.30		-4.227E-01	8.732E-01	1.317E+00	5.870E-01	-0.321
		831.60		-6.105E-01	7.182E-01	1.035E+00	3.066E-01	-0.590
		876.40		-5.317E-01	9.786E-01	1.212E+00	1.245E+00	-0.439
		880.51		2.449E-01	2.879E-01	5.080E-01	4.176E-02	0.482
		883.24		2.002E-01	3.406E-01	5.401E-01	3.628E-01	0.371
		899.00		1.539E-01	9.675E-01	1.587E+00	6.927E-01	0.097
		925.00		2.126E-01	1.194E+00	1.967E+00	1.608E-01	0.108
		926.50		-1.027E-01	1.857E-01	2.776E-01	6.975E-02	-0.370
		946.00	*	1.165E-01	2.851E-01	4.810E-01	8.895E-02	0.242
		949.00		3.820E-01	4.502E-01	7.922E-01	6.332E-02	0.482
		980.50		-2.822E-01	7.200E-01	1.098E+00	8.490E-02	-0.257
		1394.10		9.475E-02	1.170E+00	1.930E+00	1.252E+00	0.049
PA-234M		766.42		1.354E+01	1.652E+01	2.335E+01	1.180E+01	0.580
		1001.03	*	2.782E+00	5.312E+00	8.609E+00	7.792E-01	0.323
U-235	+	89.95		3.917E+00	1.728E+00	2.060E+00	6.296E-01	1.901
	+	93.35		2.750E+00	1.206E+00	1.331E+00	3.677E-01	2.065
		105.00		1.161E+00	1.136E+00	1.871E+00	5.487E-01	0.620
		143.76	*	3.744E-02	2.279E-01	3.702E-01	6.013E-02	0.101
		163.35		-4.431E-01	5.161E-01	7.783E-01	1.385E-01	-0.569
	+	185.71		1.954E-01	8.355E-02	1.050E-01	5.483E-03	1.860
		205.31		2.032E-01	6.158E-01	8.864E-01	1.581E-01	0.229
NP-236		94.67		1.442E-01	1.347E-01	2.113E-01	1.504E-02	0.683
		98.44		9.182E-02	7.301E-02	1.220E-01	8.414E-03	0.753
		111.00		-7.049E-02	1.424E-01	2.290E-01	1.473E-02	-0.308
		160.31	*	3.206E-02	7.937E-02	1.305E-01	6.845E-03	0.246

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		7.785E-02	1.576E-01	2.663E-01	1.822E-02	0.292
		117.00	*	-1.258E-01	1.938E-01	3.081E-01	1.945E-02	-0.408
	+	209.75		2.109E+00	1.253E+00	1.573E+00	8.425E-02	1.341
		228.18		-1.106E-02	2.285E-01	3.862E-01	2.107E-02	-0.029
		277.60		6.767E-02	1.985E-01	3.314E-01	1.870E-02	0.204
AM-241		334.30		2.110E-01	2.076E+00	2.211E+00	1.254E-01	0.095
		59.54	*	5.440E-02	1.758E-01	2.722E-01	1.934E-02	0.200
CM-243		99.55		8.010E-02	1.622E-01	2.740E-01	1.875E-02	0.292
		103.76	*	-1.333E-02	1.013E-01	1.664E-01	1.108E-02	-0.080
		117.00		-1.294E-01	1.994E-01	3.170E-01	2.000E-02	-0.408
	+	209.75		2.079E+00	1.235E+00	1.550E+00	8.305E-02	1.341
		228.18		-1.117E-02	2.308E-01	3.902E-01	2.129E-02	-0.029
AM-246		277.60		6.821E-02	2.001E-01	3.340E-01	1.885E-02	0.204
		798.80		7.647E-02	1.571E-01	2.376E-01	1.800E-02	0.322
		1036.00		2.963E-01	3.348E-01	6.038E-01	4.346E-02	0.491
		1062.04		-7.885E-02	2.728E-01	4.438E-01	3.070E-02	-0.178
		1078.86	*	8.406E-02	1.477E-01	2.601E-01	1.749E-02	0.323
CM-247		278.00		5.516E-01	8.210E-01	1.391E+00	7.851E-02	0.396
		287.40		2.312E-01	1.249E+00	2.107E+00	1.193E-01	0.110
		402.60	*	1.342E-02	3.896E-02	6.505E-02	3.608E-03	0.206
CF-249		252.85		6.751E-01	8.629E-01	1.509E+00	8.401E-02	0.447
		333.44		6.213E-02	2.725E-01	2.957E-01	1.677E-02	0.210
		387.95	*	1.247E-02	4.177E-02	6.970E-02	3.832E-03	0.179
CF-251		176.60	*	-4.935E-03	1.337E-01	2.139E-01	1.106E-02	-0.023
		227.00		-1.482E-01	3.900E-01	6.407E-01	3.491E-02	-0.231
		285.00		-1.726E+00	1.793E+00	2.828E+00	1.600E-01	-0.610

# 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]G244132012      *
* Acquisition date   : 19-JAN-2010 11:12:28 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 02:00:01.43 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132012 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.1520E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	1.917E+01	1.996E+00	6.115E-01	0.000E+00
CD-109	4.762E+00	1.241E+00	1.259E+00	0.000E+00
SN-126	4.688E-01	1.222E-01	1.245E-01	0.000E+00
TL-208	6.873E-01	1.014E-01	5.723E-02	0.000E+00
BI-211	4.698E+00	6.001E-01	3.686E-01	0.000E+00
BI-212	1.487E+00	5.278E-01	4.860E-01	0.000E+00
PB-212	2.007E+00	1.850E-01	9.409E-02	0.000E+00
PO-212	2.007E+00	1.850E-01	9.409E-02	0.000E+00
BI-214	1.278E+00	2.042E-01	1.229E-01	0.000E+00
PB-214	1.634E+00	2.249E-01	1.285E-01	0.000E+00
PO-214	1.634E+00	2.249E-01	1.285E-01	0.000E+00
PO-216	2.007E+00	1.850E-01	9.409E-02	0.000E+00
PO-218	1.634E+00	2.249E-01	1.285E-01	0.000E+00
RA-224	5.439E+00	1.245E+00	1.071E+00	0.000E+00
RA-226	1.278E+00	2.042E-01	1.229E-01	0.000E+00
AC-228	1.878E+00	3.955E-01	2.149E-01	0.000E+00
RA-228	1.878E+00	3.955E-01	2.149E-01	0.000E+00
TH-228	2.035E+00	1.876E-01	9.541E-02	0.000E+00
TH-230	1.278E+00	2.042E-01	1.229E-01	0.000E+00
TH-232	1.878E+00	3.955E-01	2.149E-01	0.000E+00
TH-234	3.402E-01	1.821E+00	2.349E+00	0.000E+00
U-234	1.278E+00	2.042E-01	1.229E-01	0.000E+00
NP-237	1.377E+00	4.542E-01	3.700E-01	0.000E+00
U-238	3.402E-01	1.821E+00	2.349E+00	0.000E+00
AM-243	4.661E-01	9.221E-02	9.702E-02	0.000E+00
ANH-511	2.199E-01	8.453E-02	5.108E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-8.990E-02	3.593E-01	5.832E-01	0.000E+00 NOT IDENT.

NA-22	8.486E-03	4.404E-02	7.525E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.061E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.605E-02	3.726E-02	5.712E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.054E-02	8.526E-02	0.000E+00	FAIL ABUN
SC-46	-1.702E-02	4.355E-02	6.920E-02	0.000E+00	FAIL ABUN
V-48	-4.926E-02	6.634E-02	9.842E-02	0.000E+00	NOT IDENT.
CR-51	3.883E-02	3.650E-01	6.281E-01	0.000E+00	NOT IDENT.
MN-52	-8.517E-02	2.364E-01	3.711E-01	0.000E+00	NOT IDENT.
MN-54	-1.144E-02	4.096E-02	6.646E-02	0.000E+00	NOT IDENT.
CO-56	-1.441E-02	3.874E-02	6.181E-02	0.000E+00	FAIL ABUN
CO-57	3.197E-03	2.499E-02	4.286E-02	0.000E+00	NOT IDENT.
CO-58	-1.699E-02	4.094E-02	6.553E-02	0.000E+00	NOT IDENT.
FE-59	3.199E-02	9.760E-02	1.705E-01	0.000E+00	NOT IDENT.
CO-60	3.197E-02	4.236E-02	7.675E-02	0.000E+00	NOT IDENT.
ZN-65	-5.248E-03	1.024E-01	1.476E-01	0.000E+00	NOT IDENT.
GE-68	4.311E-01	1.284E+00	2.254E+00	0.000E+00	NOT IDENT.
AS-73	1.913E-01	8.296E-01	1.494E+00	0.000E+00	NOT IDENT.
AS-74	2.937E-02	8.704E-02	1.532E-01	0.000E+00	NOT IDENT.
SE-75	3.010E-02	4.509E-02	7.572E-02	0.000E+00	NOT IDENT.
BR-77	-8.428E-03	8.087E+00	1.327E+01	0.000E+00	FAIL ABUN
SR-82	-3.954E-01	4.586E-01	6.261E-01	0.000E+00	NOT IDENT.
RB-83	-3.929E-03	7.479E-02	1.222E-01	0.000E+00	NOT IDENT.
RB-84	1.044E-01	6.781E-02	1.292E-01	0.000E+00	NOT IDENT.
KR-85	1.339E+01	8.375E+00	1.391E+01	0.000E+00	NOT IDENT.
SR-85	6.783E-02	4.242E-02	7.045E-02	0.000E+00	NOT IDENT.
RB-86	-1.247E-02	8.097E-01	1.375E+00	0.000E+00	NOT IDENT.
Y-88	-1.665E-03	4.160E-02	6.923E-02	0.000E+00	NOT IDENT.
ZR-88	8.492E-03	3.121E-02	5.346E-02	0.000E+00	NOT IDENT.
Y-91	-1.193E+01	2.009E+01	3.192E+01	0.000E+00	NOT IDENT.
NB-94	7.433E-03	3.566E-02	6.132E-02	0.000E+00	NOT IDENT.
NB-95	8.142E-02	5.265E-02	8.849E-02	0.000E+00	NOT IDENT.
NB-95M	9.119E-02	1.322E-01	2.124E-01	0.000E+00	NOT IDENT.
ZR-95	3.187E-02	7.926E-02	1.375E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.294E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.397E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	4.011E+00	9.383E+00	1.634E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.680E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.113E-02	3.508E-02	5.570E-02	0.000E+00	NOT IDENT.
RH-102	1.703E-02	3.010E-02	5.202E-02	0.000E+00	FAIL ABUN
RU-103	-9.825E-03	4.353E-02	7.042E-02	0.000E+00	FAIL ABUN
RH-106	1.022E-01	3.237E-01	5.669E-01	0.000E+00	FAIL ABUN
RU-106	1.022E-01	3.235E-01	5.669E-01	0.000E+00	FAIL ABUN
AG-108M	-1.080E-02	3.337E-02	5.426E-02	0.000E+00	NOT IDENT.
AG-110M	-9.889E-03	3.659E-02	6.088E-02	0.000E+00	NOT IDENT.
IN-111	1.150E-01	8.642E-01	1.342E+00	0.000E+00	NOT IDENT.
IN-113M	1.629E-02	4.545E-02	7.831E-02	0.000E+00	NOT IDENT.
SN-113	1.629E-02	4.545E-02	7.831E-02	0.000E+00	NOT IDENT.
IN-114M	1.026E-01	1.975E-01	3.006E-01	0.000E+00	NOT IDENT.
CD-115	-6.140E+00	8.367E+00	1.284E+01	0.000E+00	NOT IDENT.
SN-117M	-3.708E-02	5.043E-02	8.123E-02	0.000E+00	NOT IDENT.
SB-122	1.907E+00	1.591E+00	2.963E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.316E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.656E-02	2.772E-02	4.500E-02	0.000E+00	NOT IDENT.
I-124	-6.207E-01	6.609E-01	8.814E-01	0.000E+00	NOT IDENT.
SB-124	-5.450E-02	7.538E-02	1.194E-01	0.000E+00	FAIL ABUN
SB-125	-9.699E-02	9.464E-02	1.452E-01	0.000E+00	FAIL ABUN
TE-125M	6.853E+00	9.046E+00	1.601E+01	0.000E+00	NOT IDENT.
I-126	7.922E-02	1.968E-01	3.439E-01	0.000E+00	NOT IDENT.
SB-126	3.721E-03	1.740E-01	2.551E-01	0.000E+00	NOT IDENT.
SB-127	-1.436E-01	1.014E+00	1.695E+00	0.000E+00	FAIL ABUN
XE-127	-1.610E-02	4.831E-02	7.811E-02	0.000E+00	NOT IDENT.
I-131	3.064E-02	1.075E-01	1.852E-01	0.000E+00	NOT IDENT.
TE-132	-2.945E-02	5.358E-01	9.370E-01	0.000E+00	NOT IDENT.
BA-133	3.745E-02	4.826E-02	7.652E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.568E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.527E-02	5.628E-02	9.368E-02	0.000E+00	FAIL ABUN
CS-135	2.099E-01	1.801E-01	2.955E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.992E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.624E-02	9.759E-02	1.559E-01	0.000E+00	FAIL ABUN
BA-137M	2.382E-03	4.229E-02	6.944E-02	0.000E+00	NOT IDENT.
CS-137	2.518E-03	4.471E-02	7.340E-02	0.000E+00	NOT IDENT.
CE-139	-2.646E-02	3.174E-02	5.086E-02	0.000E+00	NOT IDENT.
BA-140	1.101E-01	2.512E-01	4.441E-01	0.000E+00	NOT IDENT.
LA-140	-2.010E-02	9.050E-02	1.460E-01	0.000E+00	FAIL ABUN
CE-141	4.551E-02	6.231E-02	1.083E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.584E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.880E-02	2.015E-01	3.347E-01	0.000E+00	NOT IDENT.
PM-144	2.058E-02	3.479E-02	6.171E-02	0.000E+00	NOT IDENT.

PR-144	1.394E+00	2.356E+00	4.179E+00	0.000E+00	NOT IDENT.
PM-146	2.542E-02	4.509E-02	7.804E-02	0.000E+00	NOT IDENT.
ND-147	2.784E-01	5.692E-01	9.683E-01	0.000E+00	FAIL ABUN
PM-149	-5.013E+01	6.402E+01	1.050E+02	0.000E+00	NOT IDENT.
EU-152	4.424E-02	1.177E-01	1.810E-01	0.000E+00	FAIL ABUN
GD-153	3.080E-02	8.424E-02	1.331E-01	0.000E+00	FAIL ABUN
EU-154	2.111E-02	1.228E-01	2.094E-01	0.000E+00	NOT IDENT.
EU-155	1.503E-01	1.088E-01	1.972E-01	0.000E+00	FAIL ABUN
TB-160	-9.584E-02	1.409E-01	2.154E-01	0.000E+00	FAIL ABUN
HO-166M	1.431E-02	6.168E-02	1.063E-01	0.000E+00	FAIL ABUN
TM-171	2.544E+01	3.165E+01	5.203E+01	0.000E+00	NOT IDENT.
LU-176	7.059E-03	2.542E-02	4.427E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.538E+00	1.915E+00	0.000E+00	FAIL ABUN
LU-177M	-9.142E-02	1.960E-01	3.099E-01	0.000E+00	FAIL ABUN
HF-181	-1.337E-02	4.591E-02	7.416E-02	0.000E+00	NOT IDENT.
W-181	-1.250E-01	4.111E-01	6.440E-01	0.000E+00	NOT IDENT.
TA-182	-5.365E-02	1.927E-01	3.148E-01	0.000E+00	NOT IDENT.
RE-183	3.196E-02	1.110E-01	1.861E-01	0.000E+00	FAIL ABUN
RE-184	1.791E-01	2.243E-01	4.056E-01	0.000E+00	NOT IDENT.
OS-185	-8.643E-03	4.474E-02	7.504E-02	0.000E+00	NOT IDENT.
RE-188	2.189E-01	1.739E-01	3.077E-01	0.000E+00	NOT IDENT.
W-188	8.427E-01	8.059E+00	1.232E+01	0.000E+00	FAIL ABUN
IR-192	1.086E-02	3.395E-02	5.920E-02	0.000E+00	FAIL ABUN
AU-195	2.172E-01	2.223E-01	3.987E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.247E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	4.425E+00	5.573E+00	9.640E+00	0.000E+00	NOT IDENT.
TL-202	5.876E-02	6.894E-02	1.217E-01	0.000E+00	NOT IDENT.
HG-203	-1.486E-02	4.184E-02	6.944E-02	0.000E+00	NOT IDENT.
BI-207	6.677E-03	5.902E-02	1.015E-01	0.000E+00	FAIL ABUN
TL-207	2.037E-02	7.088E-01	1.066E+00	0.000E+00	FAIL ABUN
PO-209	-1.252E+01	8.894E+00	1.254E+01	0.000E+00	NOT IDENT.
BI-210	-9.821E-01	3.293E+00	5.679E+00	0.000E+00	NOT IDENT.
PB-210	-9.821E-01	3.293E+00	5.679E+00	0.000E+00	NOT IDENT.
PO-210	-9.821E-01	3.293E+00	5.679E+00	0.000E+00	NOT IDENT.
PB-211	-1.887E+00	1.542E+00	1.503E+00	0.000E+00	NOT IDENT.
PO-215	2.037E-02	7.088E-01	1.066E+00	0.000E+00	FAIL ABUN
RN-219	-6.756E-02	4.419E-01	7.341E-01	0.000E+00	FAIL ABUN
RN-220	1.388E+01	2.680E+01	4.800E+01	0.000E+00	NOT IDENT.
RA-223	2.037E-02	7.088E-01	1.066E+00	0.000E+00	FAIL ABUN
AC-227	-4.142E-02	3.727E-01	6.442E-01	0.000E+00	FAIL ABUN
TH-227	-4.142E-02	3.727E-01	6.442E-01	0.000E+00	FAIL ABUN
TH-229	2.972E-01	5.172E-01	8.786E-01	0.000E+00	FAIL ABUN
PA-231	2.928E-02	1.506E+00	2.602E+00	0.000E+00	NOT IDENT.
TH-231	2.037E-02	7.088E-01	1.066E+00	0.000E+00	FAIL ABUN
U-231	-9.177E-01	9.426E-01	1.375E+00	0.000E+00	FAIL ABUN
PA-233	3.021E-03	6.292E-02	1.081E-01	0.000E+00	FAIL ABUN
PA-234	1.165E-01	2.794E-01	4.811E-01	0.000E+00	FAIL ABUN
PA-234M	2.782E+00	5.206E+00	8.607E+00	0.000E+00	NOT IDENT.
U-235	3.744E-02	2.234E-01	3.771E-01	0.000E+00	FAIL ABUN
NP-236	3.206E-02	7.779E-02	1.328E-01	0.000E+00	NOT IDENT.
NP-239	-1.258E-01	1.899E-01	3.145E-01	0.000E+00	FAIL ABUN
AM-241	5.440E-02	1.723E-01	2.795E-01	0.000E+00	NOT IDENT.
CM-243	-1.333E-02	9.929E-02	1.700E-01	0.000E+00	FAIL ABUN
AM-246	8.406E-02	1.448E-01	2.598E-01	0.000E+00	NOT IDENT.
CM-247	1.342E-02	3.818E-02	6.561E-02	0.000E+00	NOT IDENT.
CF-249	1.247E-02	4.094E-02	7.033E-02	0.000E+00	NOT IDENT.
CF-251	-4.935E-03	1.311E-01	2.175E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132012.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:12:28
Sample ID         : G244132012          Sample quantity  : 1.15200E+02 GRAM
Detector name     : GAM12              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00      Elapsed real time: 0 02:00:01.43  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 940270             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	714	10.67*	1.138E+00	1.917E+01	1.917E+01	10.63
CD-109	88.03	300	3.72*	5.643E+00	4.663E+00	4.762E+00	26.60
SN-126	64.28	13	9.60	3.212E+00	1.347E-01	1.347E-01	546.03
	86.94	300	8.90	5.643E+00	1.949E+00	1.949E+00	48.41
	87.57	300	37.00*	5.643E+00	4.688E-01	4.688E-01	26.60
TL-208	277.35	-----	6.80	4.505E+00	-----	Line Not Found	-----
	510.84	189	21.60	2.796E+00	1.018E+00	1.018E+00	40.09
	583.14	445	84.20*	2.506E+00	6.873E-01	6.873E-01	15.06
	860.37	33	12.46	1.795E+00	4.756E-01	4.756E-01	80.61
BI-211	72.87	-----	1.27	4.387E+00	-----	Line Not Found	-----
	351.07	702	12.94*	3.763E+00	4.698E+00	4.698E+00	13.03
BI-212	727.18	112	11.80*	2.078E+00	1.487E+00	1.487E+00	36.23
	785.46	34	1.97	1.944E+00	2.869E+00	2.869E+00	111.83
	1620.62	-----	2.75	1.050E+00	-----	Line Not Found	-----
PB-212	74.81	433	10.70	4.584E+00	2.875E+00	2.875E+00	22.25
	77.11	656	18.00	4.818E+00	2.467E+00	2.467E+00	13.57
	87.30	300	8.00	5.643E+00	2.168E+00	2.168E+00	28.42
	238.63	1378	44.60*	5.016E+00	2.007E+00	2.007E+00	9.41
	300.09	70	3.41	4.253E+00	1.580E+00	1.580E+00	67.91
PO-212	74.81	433	10.70	4.584E+00	2.875E+00	2.875E+00	22.25
	77.11	656	18.00	4.818E+00	2.467E+00	2.467E+00	13.57
	87.30	300	8.00	5.643E+00	2.168E+00	2.168E+00	28.42
	115.19	-----	0.60	6.604E+00	-----	Line Not Found	-----
	238.63	1378	44.60*	5.016E+00	2.007E+00	2.007E+00	9.41
	300.09	70	3.41	4.253E+00	1.580E+00	1.580E+00	67.91
BI-214	609.31	439	46.30*	2.415E+00	1.278E+00	1.278E+00	16.30
	1120.29	96	15.10	1.423E+00	1.458E+00	1.458E+00	34.07
	1764.49	76	15.80	9.904E-01	1.591E+00	1.591E+00	33.46
PB-214	74.81	433	6.21	4.584E+00	4.953E+00	4.953E+00	21.51
	77.11	656	10.50	4.818E+00	4.229E+00	4.229E+00	15.56
	87.30	300	4.67	5.643E+00	3.714E+00	3.715E+00	27.70
	241.98	328	7.49	4.974E+00	2.868E+00	2.868E+00	24.02

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	471	19.20	4.304E+00	1.855E+00	1.855E+00	17.22
	351.92	702	37.20*	3.763E+00	1.634E+00	1.634E+00	14.04
	74.81	433	6.21	4.584E+00	4.953E+00	4.953E+00	21.51
	77.11	656	10.50	4.818E+00	4.229E+00	4.229E+00	15.56
	87.30	300	4.67	5.643E+00	3.714E+00	3.715E+00	27.70
PO-216	241.98	328	7.49	4.974E+00	2.868E+00	2.868E+00	24.02
	295.21	471	19.20	4.304E+00	1.855E+00	1.855E+00	17.22
	351.92	702	37.20*	3.763E+00	1.634E+00	1.634E+00	14.04
	74.81	433	10.70	4.584E+00	2.875E+00	2.875E+00	22.25
	77.11	656	18.00	4.818E+00	2.467E+00	2.467E+00	13.57
PO-218	87.30	300	8.00	5.643E+00	2.168E+00	2.168E+00	28.42
	238.63	1378	44.60*	5.016E+00	2.007E+00	2.007E+00	9.41
	300.09	70	3.41	4.253E+00	1.580E+00	1.580E+00	67.91
	74.81	433	6.21	4.584E+00	4.953E+00	4.953E+00	21.51
	77.11	656	10.50	4.818E+00	4.229E+00	4.229E+00	15.56
RA-224	87.30	300	4.67	5.643E+00	3.714E+00	3.715E+00	27.70
	241.98	328	7.49	4.974E+00	2.868E+00	2.868E+00	24.02
	295.21	471	19.20	4.304E+00	1.855E+00	1.855E+00	17.22
	351.92	702	37.20*	3.763E+00	1.634E+00	1.634E+00	14.04
	240.98	328	3.95*	4.974E+00	5.439E+00	5.439E+00	23.36
AC-228	609.31	439	46.30*	2.415E+00	1.278E+00	1.278E+00	16.30
	1120.29	96	15.10	1.423E+00	1.458E+00	1.458E+00	34.07
	1764.49	76	15.80	9.904E-01	1.591E+00	1.591E+00	33.46
	338.32	283	11.40	3.880E+00	2.082E+00	2.082E+00	45.87
	911.07	273	27.70*	1.707E+00	1.878E+00	1.878E+00	21.48
RA-228	969.11	155	16.60	1.617E+00	1.877E+00	1.877E+00	33.41
	338.32	283	11.40	3.880E+00	2.082E+00	2.082E+00	45.87
	911.07	273	27.70*	1.707E+00	1.878E+00	1.878E+00	21.48
	969.11	155	16.60	1.617E+00	1.877E+00	1.877E+00	33.41
	74.81	433	10.70	4.584E+00	2.875E+00	2.915E+00	20.22
TH-228	77.11	656	18.00	4.818E+00	2.467E+00	2.501E+00	13.57
	87.30	300	8.00	5.643E+00	2.168E+00	2.199E+00	26.60
	238.63	1378	44.60*	5.016E+00	2.007E+00	2.035E+00	9.41
	300.09	70	3.41	4.253E+00	1.580E+00	1.602E+00	89.54
	609.31	439	46.30*	2.415E+00	1.278E+00	1.278E+00	16.30
TH-230	1120.29	96	15.10	1.423E+00	1.458E+00	1.458E+00	34.07
	1764.49	76	15.80	9.904E-01	1.591E+00	1.591E+00	33.46
	338.32	283	11.40	3.880E+00	2.082E+00	2.082E+00	21.82
	911.07	273	27.70*	1.707E+00	1.878E+00	1.878E+00	21.48
	969.11	155	16.60	1.617E+00	1.877E+00	1.877E+00	33.41
TH-232	63.29	13	3.80*	3.212E+00	3.402E-01	3.402E-01	546.11
	92.38	227	5.41	5.972E+00	2.287E+00	2.287E+00	38.28
	609.31	439	46.30*	2.415E+00	1.278E+00	1.278E+00	16.30
	1120.29	96	15.10	1.423E+00	1.458E+00	1.458E+00	34.07
	1764.49	76	15.80	9.904E-01	1.591E+00	1.591E+00	33.46
U-234	86.50	300	12.60*	5.643E+00	1.377E+00	1.377E+00	33.67
	95.87	-----	2.60	6.124E+00	-----	Line Not Found	-----
	63.29	13	3.80*	3.212E+00	3.402E-01	3.402E-01	546.11
	92.38	227	5.41	5.972E+00	2.287E+00	2.287E+00	34.82

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	433	66.00*	4.584E+00	4.661E-01	4.661E-01	20.19
	86.72	300	0.34	5.643E+00	5.163E+01	5.163E+01	26.60
	117.66	-----	0.55	6.624E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.534E+00	-----	Line Not Found	-----
ANH-511	511.00	189	100.00*	2.796E+00	2.199E-01	2.199E-01	39.22

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	1.917E+01	1.917E+01	0.204E+01	10.63	
CD-109	464.00D	1.02	4.663E+00	4.762E+00	1.267E+00	26.60	
SN-126	1.00E+05Y	1.00	4.688E-01	4.688E-01	1.247E-01	26.60	
TL-208	1.41E+10Y	1.00	6.873E-01	6.873E-01	1.035E-01	15.06	
BI-211	7.04E+08Y	1.00	4.698E+00	4.698E+00	0.612E+00	13.03	
BI-212	1.41E+10Y	1.00	1.487E+00	1.487E+00	0.539E+00	36.23	
PB-212	1.41E+10Y	1.00	2.007E+00	2.007E+00	0.189E+00	9.41	
PO-212	1.41E+10Y	1.00	2.007E+00	2.007E+00	0.189E+00	9.41	
BI-214	1600.00Y	1.00	1.278E+00	1.278E+00	0.208E+00	16.30	
PB-214	1600.00Y	1.00	1.634E+00	1.634E+00	0.229E+00	14.04	
PO-214	1600.00Y	1.00	1.634E+00	1.634E+00	0.229E+00	14.04	
PO-216	1.41E+10Y	1.00	2.007E+00	2.007E+00	0.189E+00	9.41	
PO-218	1600.00Y	1.00	1.634E+00	1.634E+00	0.229E+00	14.04	
RA-224	1.41E+10Y	1.00	5.439E+00	5.439E+00	1.270E+00	23.36	
RA-226	1600.00Y	1.00	1.278E+00	1.278E+00	0.208E+00	16.30	
AC-228	1.41E+10Y	1.00	1.878E+00	1.878E+00	0.404E+00	21.48	
RA-228	1.41E+10Y	1.00	1.878E+00	1.878E+00	0.404E+00	21.48	
TH-228	1.91Y	1.01	2.007E+00	2.035E+00	0.191E+00	9.41	
TH-230	4.47E+09Y	1.00	1.278E+00	1.278E+00	0.208E+00	16.30	
TH-232	1.41E+10Y	1.00	1.878E+00	1.878E+00	0.404E+00	21.48	
TH-234	4.47E+09Y	1.00	3.402E-01	3.402E-01	18.58E-01	546.11	
U-234	4.47E+09Y	1.00	1.278E+00	1.278E+00	0.208E+00	16.30	
NP-237	2.14E+06Y	1.00	1.377E+00	1.377E+00	0.464E+00	33.67	
U-238	4.47E+09Y	1.00	3.402E-01	3.402E-01	18.58E-01	546.11	
AM-243	7380.00Y	1.00	4.661E-01	4.661E-01	0.941E-01	20.19	
ANH-511	1.00E+09Y	1.00	2.199E-01	2.199E-01	0.863E-01	39.22	

Total Activity : 6.303E+01 6.316E+01

Grand Total Activity : 6.303E+01 6.316E+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	84.19	121	432	1.38	167.87	164	27	1.68E-02	60.4	5.44E+00	T
4	89.73	189	272	0.96	178.96	164	27	2.62E-02	31.8	5.81E+00	T
0	185.86	190	355	1.40	371.31	366	11	2.63E-02	42.4	5.86E+00	T
0	209.10	115	299	1.15	417.82	414	10	1.59E-02	59.2	5.47E+00	T
0	270.12	115	175	1.24	539.91	536	9	1.60E-02	45.3	4.59E+00	T
0	328.43	137	212	1.37	656.59	650	15	1.91E-02	49.2	3.97E+00	T
0	463.02	97	101	1.11	925.86	920	11	1.34E-02	45.3	3.03E+00	T
0	767.97	46	43	1.00	1535.93	1533	8	6.35E-03	56.2	1.98E+00	T
0	795.01	29	49	0.84	1590.02	1584	9	4.06E-03	87.7	1.92E+00	T
2	964.39	61	32	2.20	1928.82	1923	24	8.44E-03	45.2	1.62E+00	T
0	1237.62	39	46	1.18	2475.30	2470	11	5.48E-03	75.4	1.30E+00	T
0	1588.33	18	16	0.92	3176.63	3171	9	2.53E-03	94.8	1.07E+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]G244132012.CNF;1
* Acquisition date   : 19-JAN-2010 11:12:28 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 02:00:01.43 Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00. Nuclide Library : SOLID
* Sample ID          : G244132012 Analyst initials: MXR1
* Batch Number       : 940270 Sample Quantity : 1.15200E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24.5MS Isotope      :
* MSD ID              : MSD Isotope      :
* LCS ID              : 1032-A LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.917E+01	2.037E+00	6.140E-01	4.377E-02	31.219
CD-109	4.762E+00	1.267E+00	1.230E+00	9.415E-02	3.870
SN-126	4.688E-01	1.247E-01	1.217E-01	9.276E-03	3.852
TL-208	6.873E-01	1.035E-01	5.694E-02	4.073E-03	12.071
BI-211	4.698E+00	6.124E-01	3.650E-01	2.294E-02	12.873
BI-212	1.487E+00	5.386E-01	4.846E-01	4.195E-02	3.068
PB-212	2.007E+00	1.888E-01	9.283E-02	6.591E-03	21.616
PO-212	2.007E+00	1.888E-01	9.283E-02	6.591E-03	21.616
BI-214	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
PB-214	1.634E+00	2.295E-01	1.272E-01	1.039E-02	12.845
PO-214	1.634E+00	2.295E-01	1.272E-01	1.039E-02	12.845
PO-216	2.007E+00	1.888E-01	9.283E-02	6.591E-03	21.616
PO-218	1.634E+00	2.295E-01	1.272E-01	1.039E-02	12.845
RA-224	5.439E+00	1.270E+00	1.057E+00	5.828E-02	5.148
RA-226	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
AC-228	1.878E+00	4.035E-01	2.147E-01	2.357E-02	8.748
RA-228	1.878E+00	4.035E-01	2.147E-01	2.357E-02	8.748
TH-228	2.035E+00	1.915E-01	9.413E-02	6.684E-03	21.616

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
TH-232	1.878E+00	4.035E-01	2.147E-01	2.357E-02	8.748
TH-234	3.402E-01	1.858E+00	2.288E+00	3.896E-01	0.149
U-234	1.278E+00	2.084E-01	1.224E-01	1.007E-02	10.447
NP-237	1.377E+00	4.635E-01	3.615E-01	7.943E-02	3.808
U-238	3.402E-01	1.858E+00	2.288E+00	3.896E-01	0.149
AM-243	4.661E-01	9.409E-02	9.468E-02	6.433E-03	4.923
ANH-511	2.199E-01	8.625E-02	5.076E-02	3.094E-03	4.333

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-8.990E-02		3.667E-01	5.792E-01	3.985E-02	-0.155
NA-22	8.486E-03		4.494E-02	7.545E-02	4.859E-03	0.112
NA-24	-1.275E-01		1.051E-01	Half-Life too short		
AL-26	-1.605E-02		3.803E-02	5.746E-02	3.297E-03	-0.279
TI-44	4.552E-01	+	6.177E-02	8.324E-02	5.822E-03	5.469
SC-46	-1.702E-02		4.444E-02	6.913E-02	5.730E-03	-0.246
V-48	-4.926E-02		6.769E-02	9.843E-02	7.583E-03	-0.500
CR-51	3.883E-02		3.725E-01	6.213E-01	3.950E-02	0.062
MN-52	-8.517E-02		2.412E-01	3.725E-01	2.559E-02	-0.229
MN-54	-1.144E-02		4.180E-02	6.636E-02	5.216E-03	-0.172
CO-56	-1.441E-02		3.953E-02	6.173E-02	4.910E-03	-0.233
CO-57	3.197E-03		2.550E-02	4.201E-02	2.627E-03	0.076
CO-58	-1.699E-02		4.178E-02	6.541E-02	5.033E-03	-0.260
FE-59	3.199E-02		9.959E-02	1.707E-01	1.261E-02	0.187
CO-60	3.197E-02		4.323E-02	7.698E-02	5.377E-03	0.415
ZN-65	-5.248E-03		1.045E-01	1.478E-01	9.295E-03	-0.036
GE-68	4.311E-01		1.311E+00	2.256E+00	1.521E-01	0.191
AS-73	1.913E-01		8.466E-01	1.453E+00	9.383E-02	0.132
AS-74	2.937E-02		8.882E-02	1.525E-01	9.707E-03	0.193
SE-75	3.010E-02		4.601E-02	7.477E-02	4.238E-03	0.403
BR-77	-8.428E-03		8.252E+00	1.319E+01	8.090E-01	-0.001
SR-82	-3.954E-01		4.680E-01	6.247E-01	4.622E-02	-0.633
RB-83	-3.929E-03		7.632E-02	1.215E-01	7.449E-03	-0.032
RB-84	1.044E-01		6.920E-02	1.291E-01	1.062E-02	0.809
KR-85	1.339E+01		8.546E+00	1.382E+01	8.440E-01	0.969
SR-85	6.783E-02		4.329E-02	7.002E-02	4.276E-03	0.969
RB-86	-1.247E-02		8.262E-01	1.376E+00	9.289E-02	-0.009
Y-88	-1.665E-03		4.245E-02	6.966E-02	3.921E-03	-0.024
ZR-88	8.492E-03		3.185E-02	5.299E-02	2.907E-03	0.160
Y-91	-1.193E+01		2.050E+01	3.199E+01	1.849E+00	-0.373
NB-94	7.433E-03		3.639E-02	6.112E-02	4.163E-03	0.122
NB-95	8.142E-02		5.372E-02	8.828E-02	6.458E-03	0.922
NB-95M	9.119E-02		1.349E-01	2.095E-01	1.528E-02	0.435
ZR-95	3.187E-02		8.087E-02	1.371E-01	1.132E-02	0.232
NB-97	-6.803E-03		1.681E-02	Half-Life too short		

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-97	1.920E+00		3.774E-01	Half-Life too short		
MO-99	4.011E+00		9.575E+00	1.630E+01	2.344E+00	0.246
TC-99M	-7.141E+08		8.570E+08	Half-Life too short		
RH-101	-1.113E-02		3.579E-02	5.485E-02	2.902E-03	-0.203
RH-102	1.703E-02		3.071E-02	5.165E-02	3.068E-03	0.330
RU-103	-9.825E-03		4.442E-02	6.996E-02	8.924E-03	-0.140
RH-106	1.022E-01		3.303E-01	5.644E-01	6.804E-02	0.181
RU-106	1.022E-01		3.301E-01	5.644E-01	3.624E-02	0.181
AG-108M	-1.080E-02		3.405E-02	5.384E-02	3.355E-03	-0.201
AG-110M	-9.889E-03		3.733E-02	6.064E-02	4.133E-03	-0.163
IN-111	1.150E-01		8.818E-01	1.325E+00	7.332E-02	0.087
IN-113M	1.629E-02		4.638E-02	7.762E-02	4.569E-03	0.210
SN-113	1.629E-02		4.638E-02	7.762E-02	4.569E-03	0.210
IN-114M	1.026E-01		2.015E-01	2.959E-01	1.552E-02	0.347
CD-115	-6.140E+00		8.538E+00	1.277E+01	7.864E-01	-0.481
SN-117M	-3.708E-02		5.146E-02	7.983E-02	4.217E-03	-0.465
SB-122	1.907E+00		1.623E+00	2.947E+00	1.851E-01	0.647
I-123	-7.862E-01		6.714E-01	Half-Life too short		
TE-123M	-1.656E-02		2.829E-02	4.422E-02	2.369E-03	-0.375
I-124	-6.207E-01		6.744E-01	8.773E-01	5.598E-02	-0.708
SB-124	-5.450E-02		7.691E-02	1.201E-01	8.014E-03	-0.454
TE-125	-9.699E-02		9.657E-02	1.441E-01	8.564E-03	-0.673
SB-125M	6.853E+00		9.231E+00	1.567E+01	1.351E+00	0.437
I-126	7.922E-02		2.008E-01	3.427E-01	2.234E-02	0.231
SB-126	3.721E-03		1.776E-01	2.544E-01	1.769E-02	0.015
SB-127	-1.436E-01		1.034E+00	1.689E+00	1.624E-01	-0.085
XE-127	-1.610E-02		4.930E-02	7.694E-02	4.091E-03	-0.209
I-131	3.064E-02		1.097E-01	1.835E-01	1.153E-02	0.167
TE-132	-2.945E-02		5.468E-01	9.240E-01	1.294E-01	-0.032
BA-133	3.745E-02		4.925E-02	7.578E-02	8.694E-03	0.494
I-133	7.331E-04		1.310E-03	Half-Life too short		
CS-134	6.527E-02	+	5.743E-02	9.349E-02	7.128E-03	0.698
CS-135	2.099E-01		1.838E-01	2.919E-01	2.195E-02	0.719
I-135	-2.433E+08		1.527E+08	Half-Life too short		
CS-136	-5.624E-02		9.958E-02	1.560E-01	1.172E-02	-0.361
BA-137M	2.382E-03		4.316E-02	6.917E-02	4.484E-03	0.034
CS-137	2.518E-03		4.562E-02	7.312E-02	4.756E-03	0.034
CE-139	-2.646E-02		3.239E-02	5.001E-02	2.562E-03	-0.529
BA-140	1.101E-01		2.563E-01	4.416E-01	1.439E-01	0.249
LA-140	-2.010E-02		9.234E-02	1.467E-01	9.555E-03	-0.137
CE-141	4.551E-02		6.359E-02	1.064E-01	6.193E-03	0.428
CE-143	5.594E-04		8.081E-05	Half-Life too short		
CE-144	-7.880E-02		2.056E-01	3.284E-01	4.675E-02	-0.240
PM-144	2.058E-02		3.550E-02	6.151E-02	4.161E-03	0.335
PR-144	1.394E+00		2.404E+00	4.165E+00	2.816E-01	0.335
PM-146	2.542E-02		4.602E-02	7.747E-02	6.697E-03	0.328
ND-147	2.784E-01		5.808E-01	9.626E-01	1.317E-01	0.289
PM-149	-5.013E+01		6.533E+01	1.037E+02	1.464E+01	-0.483



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	4.424E-02		1.201E-01	1.792E-01	1.148E-02	0.247
GD-153	3.080E-02		8.596E-02	1.302E-01	9.056E-03	0.236
EU-154	2.111E-02		1.253E-01	2.099E-01	2.045E-02	0.101
EU-155	1.503E-01		1.111E-01	1.931E-01	1.301E-02	0.778
TB-160	-9.584E-02		1.438E-01	2.152E-01	1.767E-02	-0.445
HO-166M	1.431E-02		6.294E-02	1.060E-01	7.293E-03	0.135
TM-171	2.544E+01		3.229E+01	5.072E+01	3.282E+00	0.501
LU-176	7.059E-03		2.593E-02	4.378E-02	2.488E-03	0.161
LU-177	2.640E+00	+	1.569E+00	1.886E+00	1.009E-01	1.400
LU-177M	-9.142E-02		2.000E-01	3.073E-01	1.725E-02	-0.298
HF-181	-1.337E-02		4.685E-02	7.365E-02	4.398E-03	-0.182
W-181	-1.250E-01		4.195E-01	6.277E-01	4.033E-02	-0.199
TA-182	-5.365E-02		1.966E-01	3.155E-01	1.871E-02	-0.170
RE-183	3.196E-02		1.132E-01	1.829E-01	9.510E-03	0.175
RE-184	1.791E-01		2.289E-01	4.004E-01	2.228E-02	0.447
OS-185	-8.643E-03		4.566E-02	7.474E-02	4.830E-03	-0.116
RE-188	2.189E-01		1.774E-01	3.023E-01	1.621E-02	0.724
W-188	8.427E-01		8.223E+00	1.217E+01	6.899E-01	0.069
IR-192	1.086E-02		3.465E-02	5.856E-02	3.347E-03	0.185
AU-195	2.172E-01		2.269E-01	3.901E-01	2.682E-02	0.557
TL-200	6.669E-06		1.146E-04	Half-Life too short		
TL-201	4.425E+00		5.686E+00	9.479E+00	4.859E-01	0.467
TL-202	5.876E-02		7.034E-02	1.208E-01	6.957E-03	0.486
HG-203	-1.486E-02		4.269E-02	6.861E-02	4.126E-03	-0.217
BI-207	6.677E-03		6.023E-02	1.016E-01	7.007E-03	0.066
TL-207	2.037E-02		7.232E-01	1.055E+00	1.738E-01	0.019
PO-209	-1.252E+01		9.075E+00	1.253E+01	1.046E+00	-0.999
BI-210	-9.821E-01		3.361E+00	5.518E+00	4.156E-01	-0.178
PB-210	-9.821E-01		3.361E+00	5.518E+00	4.156E-01	-0.178
PO-210	-9.821E-01		3.360E+00	5.518E+00	3.539E-01	-0.178
PB-211	-1.887E+00		1.574E+00	1.490E+00	9.284E-01	-1.266
PO-215	2.037E-02		7.232E-01	1.055E+00	1.738E-01	0.019
RN-219	-6.756E-02		4.509E-01	7.278E-01	9.824E-02	-0.093
RN-220	1.388E+01		2.734E+01	4.773E+01	2.976E+00	0.291
RA-223	2.037E-02		7.232E-01	1.055E+00	1.738E-01	0.019
AC-227	-4.142E-02		3.803E-01	6.360E-01	8.821E-02	-0.065
TH-227	-4.142E-02		3.803E-01	6.360E-01	1.070E-01	-0.065
TH-229	2.972E-01		5.277E-01	8.650E-01	4.554E-02	0.344
PA-231	2.928E-02		1.537E+00	2.571E+00	3.528E-01	0.011
TH-231	2.037E-02		7.232E-01	1.055E+00	1.738E-01	0.019
U-231	-9.177E-01		9.619E-01	1.345E+00	9.473E-02	-0.682
PA-233	3.021E-03		6.420E-02	1.069E-01	6.470E-03	0.028
PA-234	1.165E-01		2.851E-01	4.810E-01	8.895E-02	0.242
PA-234M	2.782E+00		5.312E+00	8.609E+00	7.792E-01	0.323
U-235	3.744E-02		2.279E-01	3.702E-01	6.013E-02	0.101
NP-236	3.206E-02		7.937E-02	1.305E-01	6.845E-03	0.246
NP-239	-1.258E-01		1.938E-01	3.081E-01	1.945E-02	-0.408
AM-241	5.440E-02		1.758E-01	2.722E-01	1.934E-02	0.200

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.333E-02		1.013E-01	1.664E-01	1.108E-02	-0.080
AM-246	8.406E-02		1.477E-01	2.601E-01	1.749E-02	0.323
CM-247	1.342E-02		3.896E-02	6.505E-02	3.608E-03	0.206
CF-249	1.247E-02		4.177E-02	6.970E-02	3.832E-03	0.179
CF-251	-4.935E-03		1.337E-01	2.139E-01	1.106E-02	-0.023

## 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]G244132012
* Acquisition date   : 19-JAN-2010 11:12:28 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 02:00:01.43                      Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G244132012                      Analyst initials: MXR1
* Batch Number       : 940270                          Sample Quantity : 1.1520E+02 GRAM
* Recovery           : 1.00000                          Carrier Weight   : 0.00000
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24 MS Isotope      :
* MSD DPM             : 0.000                          MSD Isotope      :
* LCS DPM             : 0.000                          LCS Isotope      :
* LCSD DPM            : 0.000                          LCSD Isotope     :
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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	1.917E+01	1.996E+00	3.060E-01	1.018E+00
CD-109	4.762E+00	1.241E+00	6.299E-01	6.334E-01
SN-126	4.688E-01	1.222E-01	6.231E-02	6.236E-02
TL-208	6.873E-01	1.014E-01	2.863E-02	5.175E-02
BI-211	4.698E+00	6.001E-01	1.844E-01	3.062E-01
BI-212	1.487E+00	5.278E-01	2.431E-01	2.693E-01
PB-212	2.007E+00	1.850E-01	4.707E-02	9.441E-02
PO-212	2.007E+00	1.850E-01	4.707E-02	9.441E-02
BI-214	1.278E+00	2.042E-01	6.150E-02	1.042E-01
PB-214	1.634E+00	2.249E-01	6.429E-02	1.147E-01
PO-214	1.634E+00	2.249E-01	6.429E-02	1.147E-01
PO-216	2.007E+00	1.850E-01	4.707E-02	9.441E-02
PO-218	1.634E+00	2.249E-01	6.429E-02	1.147E-01
RA-224	5.439E+00	1.245E+00	5.358E-01	6.352E-01
RA-226	1.278E+00	2.042E-01	6.150E-02	1.042E-01
AC-228	1.878E+00	3.955E-01	1.075E-01	2.018E-01
RA-228	1.878E+00	3.955E-01	1.075E-01	2.018E-01
TH-228	2.035E+00	1.876E-01	4.773E-02	9.574E-02
TH-230	1.278E+00	2.042E-01	6.150E-02	1.042E-01
TH-232	1.878E+00	3.955E-01	1.075E-01	2.018E-01
TH-234	3.402E-01	1.821E+00	1.175E+00	9.290E-01
U-234	1.278E+00	2.042E-01	6.150E-02	1.042E-01
NP-237	1.377E+00	4.542E-01	1.851E-01	2.318E-01
U-238	3.402E-01	1.821E+00	1.175E+00	9.290E-01
AM-243	4.661E-01	9.221E-02	4.854E-02	4.705E-02
ANH-511	2.199E-01	8.453E-02	2.556E-02	4.313E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-8.990E-02	3.593E-01	2.918E-01	1.833E-01 NOT IDENT.

NA-22	8.486E-03	4.404E-02	3.765E-02	2.247E-02	NOT IDENT.
NA-24	-1.275E+05	2.061E+05	0.000E+00	1.051E+05	SHORT HLIF
AL-26	-1.605E-02	3.726E-02	2.858E-02	1.901E-02	NOT IDENT.
TI-44	4.552E-01	6.054E-02	4.266E-02	3.089E-02	FAIL ABUN
SC-46	-1.702E-02	4.355E-02	3.462E-02	2.222E-02	FAIL ABUN
V-48	-4.926E-02	6.634E-02	4.924E-02	3.385E-02	NOT IDENT.
CR-51	3.883E-02	3.650E-01	3.142E-01	1.862E-01	NOT IDENT.
MN-52	-8.517E-02	2.364E-01	1.857E-01	1.206E-01	NOT IDENT.
MN-54	-1.144E-02	4.096E-02	3.325E-02	2.090E-02	NOT IDENT.
CO-56	-1.441E-02	3.874E-02	3.092E-02	1.976E-02	FAIL ABUN
CO-57	3.197E-03	2.499E-02	2.144E-02	1.275E-02	NOT IDENT.
CO-58	-1.699E-02	4.094E-02	3.279E-02	2.089E-02	NOT IDENT.
FE-59	3.199E-02	9.760E-02	8.532E-02	4.979E-02	NOT IDENT.
CO-60	3.197E-02	4.236E-02	3.840E-02	2.161E-02	NOT IDENT.
ZN-65	-5.248E-03	1.024E-01	7.384E-02	5.226E-02	NOT IDENT.
GE-68	4.311E-01	1.284E+00	1.128E+00	6.553E-01	NOT IDENT.
AS-73	1.913E-01	8.296E-01	7.474E-01	4.233E-01	NOT IDENT.
AS-74	2.937E-02	8.704E-02	7.666E-02	4.441E-02	NOT IDENT.
SE-75	3.010E-02	4.509E-02	3.788E-02	2.300E-02	NOT IDENT.
BR-77	-8.428E-03	8.087E+00	6.640E+00	4.126E+00	FAIL ABUN
SR-82	-3.954E-01	4.586E-01	3.132E-01	2.340E-01	NOT IDENT.
RB-83	-3.929E-03	7.479E-02	6.115E-02	3.816E-02	NOT IDENT.
RB-84	1.044E-01	6.781E-02	6.464E-02	3.460E-02	NOT IDENT.
KR-85	1.339E+01	8.375E+00	6.958E+00	4.273E+00	NOT IDENT.
SR-85	6.783E-02	4.242E-02	3.525E-02	2.164E-02	NOT IDENT.
RB-86	-1.247E-02	8.097E-01	6.878E-01	4.131E-01	NOT IDENT.
Y-88	-1.665E-03	4.160E-02	3.463E-02	2.122E-02	NOT IDENT.
ZR-88	8.492E-03	3.121E-02	2.675E-02	1.592E-02	NOT IDENT.
Y-91	-1.193E+01	2.009E+01	1.597E+01	1.025E+01	NOT IDENT.
NB-94	7.433E-03	3.566E-02	3.068E-02	1.820E-02	NOT IDENT.
NB-95	8.142E-02	5.265E-02	4.427E-02	2.686E-02	NOT IDENT.
NB-95M	9.119E-02	1.322E-01	1.063E-01	6.743E-02	NOT IDENT.
ZR-95	3.187E-02	7.926E-02	6.877E-02	4.044E-02	NOT IDENT.
NB-97	-6.803E+03	3.294E+04	0.000E+00	1.681E+04	SHORT HLIF
ZR-97	1.920E+06	7.397E+05	0.000E+00	3.774E+05	SHORT HLIF
MO-99	4.011E+00	9.383E+00	8.177E+00	4.787E+00	NOT IDENT.
TC-99M	-7.141E+14	1.680E+15	0.000E+00	8.570E+14	SHORT HLIF
RH-101	-1.113E-02	3.508E-02	2.787E-02	1.790E-02	NOT IDENT.
RH-102	1.703E-02	3.010E-02	2.602E-02	1.536E-02	FAIL ABUN
RU-103	-9.825E-03	4.353E-02	3.523E-02	2.221E-02	FAIL ABUN
RH-106	1.022E-01	3.237E-01	2.836E-01	1.651E-01	FAIL ABUN
RU-106	1.022E-01	3.235E-01	2.836E-01	1.651E-01	FAIL ABUN
AG-108M	-1.080E-02	3.337E-02	2.715E-02	1.703E-02	NOT IDENT.
AG-110M	-9.889E-03	3.659E-02	3.046E-02	1.867E-02	NOT IDENT.
IN-111	1.150E-01	8.642E-01	6.715E-01	4.409E-01	NOT IDENT.
IN-113M	1.629E-02	4.545E-02	3.918E-02	2.319E-02	NOT IDENT.
SN-113	1.629E-02	4.545E-02	3.918E-02	2.319E-02	NOT IDENT.
IN-114M	1.026E-01	1.975E-01	1.504E-01	1.007E-01	NOT IDENT.
CD-115	-6.140E+00	8.367E+00	6.425E+00	4.269E+00	NOT IDENT.
SN-117M	-3.708E-02	5.043E-02	4.064E-02	2.573E-02	NOT IDENT.
SB-122	1.907E+00	1.591E+00	1.482E+00	8.116E-01	NOT IDENT.
I-123	-7.862E+05	1.316E+06	0.000E+00	6.714E+05	SHORT HLIF
TE-123M	-1.656E-02	2.772E-02	2.251E-02	1.414E-02	NOT IDENT.
I-124	-6.207E-01	6.609E-01	4.410E-01	3.372E-01	NOT IDENT.
SB-124	-5.450E-02	7.538E-02	5.976E-02	3.846E-02	FAIL ABUN
SB-125	-9.699E-02	9.464E-02	7.265E-02	4.828E-02	FAIL ABUN
TE-125M	6.853E+00	9.046E+00	8.008E+00	4.616E+00	NOT IDENT.
I-126	7.922E-02	1.968E-01	1.721E-01	1.004E-01	NOT IDENT.
SB-126	3.721E-03	1.740E-01	1.277E-01	8.879E-02	NOT IDENT.
SB-127	-1.436E-01	1.014E+00	8.478E-01	5.172E-01	FAIL ABUN
XE-127	-1.610E-02	4.831E-02	3.908E-02	2.465E-02	NOT IDENT.
I-131	3.064E-02	1.075E-01	9.267E-02	5.483E-02	NOT IDENT.
TE-132	-2.945E-02	5.358E-01	4.688E-01	2.734E-01	NOT IDENT.
BA-133	3.745E-02	4.826E-02	3.828E-02	2.462E-02	NOT IDENT.
I-133	7.331E+02	2.568E+03	0.000E+00	1.310E+03	SHORT HLIF
CS-134	6.527E-02	5.628E-02	4.687E-02	2.871E-02	FAIL ABUN
CS-135	2.099E-01	1.801E-01	1.479E-01	9.191E-02	NOT IDENT.
I-135	-2.433E+14	2.992E+14	0.000E+00	1.527E+14	SHORT HLIF
CS-136	-5.624E-02	9.759E-02	7.799E-02	4.979E-02	FAIL ABUN
BA-137M	2.382E-03	4.229E-02	3.474E-02	2.158E-02	NOT IDENT.
CS-137	2.518E-03	4.471E-02	3.672E-02	2.281E-02	NOT IDENT.
CE-139	-2.646E-02	3.174E-02	2.545E-02	1.620E-02	NOT IDENT.
BA-140	1.101E-01	2.512E-01	2.222E-01	1.282E-01	NOT IDENT.
LA-140	-2.010E-02	9.050E-02	7.305E-02	4.617E-02	FAIL ABUN
CE-141	4.551E-02	6.231E-02	5.420E-02	3.179E-02	NOT IDENT.
CE-143	5.594E+02	1.584E+02	0.000E+00	8.081E+01	SHORT HLIF
CE-144	-7.880E-02	2.015E-01	1.674E-01	1.028E-01	NOT IDENT.
PM-144	2.058E-02	3.479E-02	3.087E-02	1.775E-02	NOT IDENT.

PR-144	1.394E+00	2.356E+00	2.091E+00	1.202E+00	NOT IDENT.
PM-146	2.542E-02	4.509E-02	3.904E-02	2.301E-02	NOT IDENT.
ND-147	2.784E-01	5.692E-01	4.844E-01	2.904E-01	FAIL ABUN
PM-149	-5.013E+01	6.402E+01	5.251E+01	3.267E+01	NOT IDENT.
EU-152	4.424E-02	1.177E-01	9.056E-02	6.006E-02	FAIL ABUN
GD-153	3.080E-02	8.424E-02	6.661E-02	4.298E-02	FAIL ABUN
EU-154	2.111E-02	1.228E-01	1.047E-01	6.265E-02	NOT IDENT.
EU-155	1.503E-01	1.088E-01	9.868E-02	5.553E-02	FAIL ABUN
TB-160	-9.584E-02	1.409E-01	1.078E-01	7.190E-02	FAIL ABUN
HO-166M	1.431E-02	6.168E-02	5.317E-02	3.147E-02	FAIL ABUN
TM-171	2.544E+01	3.165E+01	2.603E+01	1.615E+01	NOT IDENT.
LU-176	7.059E-03	2.542E-02	2.215E-02	1.297E-02	FAIL ABUN
LU-177	2.640E+00	1.538E+00	9.579E-01	7.845E-01	FAIL ABUN
LU-177M	-9.142E-02	1.960E-01	1.550E-01	1.000E-01	FAIL ABUN
HF-181	-1.337E-02	4.591E-02	3.710E-02	2.343E-02	NOT IDENT.
W-181	-1.250E-01	4.111E-01	3.222E-01	2.097E-01	NOT IDENT.
TA-182	-5.365E-02	1.927E-01	1.575E-01	9.832E-02	NOT IDENT.
RE-183	3.196E-02	1.110E-01	9.310E-02	5.661E-02	FAIL ABUN
RE-184	1.791E-01	2.243E-01	2.029E-01	1.144E-01	NOT IDENT.
OS-185	-8.643E-03	4.474E-02	3.754E-02	2.283E-02	NOT IDENT.
RE-188	2.189E-01	1.739E-01	1.539E-01	8.872E-02	NOT IDENT.
W-188	8.427E-01	8.059E+00	6.162E+00	4.112E+00	FAIL ABUN
IR-192	1.086E-02	3.395E-02	2.962E-02	1.732E-02	FAIL ABUN
AU-195	2.172E-01	2.223E-01	1.995E-01	1.134E-01	FAIL ABUN
TL-200	6.669E+00	2.247E+02	0.000E+00	1.146E+02	SHORT HLIF
TL-201	4.425E+00	5.573E+00	4.823E+00	2.843E+00	NOT IDENT.
TL-202	5.876E-02	6.894E-02	6.090E-02	3.517E-02	NOT IDENT.
HG-203	-1.486E-02	4.184E-02	3.474E-02	2.135E-02	NOT IDENT.
BI-207	6.677E-03	5.902E-02	5.077E-02	3.011E-02	FAIL ABUN
TL-207	2.037E-02	7.088E-01	5.336E-01	3.616E-01	FAIL ABUN
PO-209	-1.252E+01	8.894E+00	6.276E+00	4.538E+00	NOT IDENT.
BI-210	-9.821E-01	3.293E+00	2.841E+00	1.680E+00	NOT IDENT.
PB-210	-9.821E-01	3.293E+00	2.841E+00	1.680E+00	NOT IDENT.
PO-210	-9.821E-01	3.293E+00	2.841E+00	1.680E+00	NOT IDENT.
PB-211	-1.887E+00	1.542E+00	7.517E-01	7.870E-01	NOT IDENT.
PO-215	2.037E-02	7.088E-01	5.336E-01	3.616E-01	FAIL ABUN
RN-219	-6.756E-02	4.419E-01	3.673E-01	2.254E-01	FAIL ABUN
RN-220	1.388E+01	2.680E+01	2.401E+01	1.367E+01	NOT IDENT.
RA-223	2.037E-02	7.088E-01	5.336E-01	3.616E-01	FAIL ABUN
AC-227	-4.142E-02	3.727E-01	3.223E-01	1.901E-01	FAIL ABUN
TH-227	-4.142E-02	3.727E-01	3.223E-01	1.902E-01	FAIL ABUN
TH-229	2.972E-01	5.172E-01	4.395E-01	2.639E-01	FAIL ABUN
PA-231	2.928E-02	1.506E+00	1.302E+00	7.685E-01	NOT IDENT.
TH-231	2.037E-02	7.088E-01	5.336E-01	3.616E-01	FAIL ABUN
U-231	-9.177E-01	9.426E-01	6.878E-01	4.809E-01	FAIL ABUN
PA-233	3.021E-03	6.292E-02	5.409E-02	3.210E-02	FAIL ABUN
PA-234	1.165E-01	2.794E-01	2.407E-01	1.425E-01	FAIL ABUN
PA-234M	2.782E+00	5.206E+00	4.306E+00	2.656E+00	NOT IDENT.
U-235	3.744E-02	2.234E-01	1.887E-01	1.140E-01	FAIL ABUN
NP-236	3.206E-02	7.779E-02	6.645E-02	3.969E-02	NOT IDENT.
NP-239	-1.258E-01	1.899E-01	1.573E-01	9.689E-02	FAIL ABUN
AM-241	5.440E-02	1.723E-01	1.399E-01	8.789E-02	NOT IDENT.
CM-243	-1.333E-02	9.929E-02	8.505E-02	5.066E-02	FAIL ABUN
AM-246	8.406E-02	1.448E-01	1.300E-01	7.386E-02	NOT IDENT.
CM-247	1.342E-02	3.818E-02	3.283E-02	1.948E-02	NOT IDENT.
CF-249	1.247E-02	4.094E-02	3.519E-02	2.089E-02	NOT IDENT.
CF-251	-4.935E-03	1.311E-01	1.088E-01	6.687E-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	226.9204
46.50	226.9204
46.50	226.9204
48.70	231.1877
49.72	227.6954
51.35	252.1501
52.39	254.7227
52.97	246.5432
53.15	246.6839
53.44	254.7071
54.07	276.9143
56.28	285.8007
56.28	285.8032
57.37	0.0000
57.53	282.4993
57.53	282.5009
57.60	282.5591
57.98	292.5445
57.98	292.5445
59.32	296.3550
59.32	296.3550
59.40	285.8376
59.54	285.9554
59.72	276.8343
60.01	286.3493
61.10	297.8952
61.14	297.9298
61.30	298.0665
63.00	321.8007
63.29	338.5679
63.29	338.5679
63.58	338.8444
64.28	367.6895
65.12	375.2724
65.20	349.7935
65.20	349.7935
66.05	314.2012
66.72	318.8265
66.83	318.9237
66.91	321.1566
67.20	331.1483
67.20	331.1483
67.75	346.8105
67.85	346.9063
68.90	375.0591
68.90	375.0591
69.30	382.2588
69.67	378.5489
70.82	345.5452
70.82	345.5452
70.83	345.5549
72.80	365.1635
72.87	365.2305
72.87	365.2305
74.67	356.7856
74.81	356.9119
74.81	356.9119
74.81	356.9119
74.81	356.9119
74.81	356.9119
74.81	356.9119
74.97	357.0550
75.28	357.3323
75.70	357.7072
77.11	358.9584
77.11	358.9584

77.11	358.9584
77.11	358.9584
77.11	358.9584
77.11	358.9584
77.11	358.9584
78.38	335.4826
79.62	376.9807
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80.30	254.5281
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81.07	386.6973
81.07	386.6973
81.07	386.6973
82.60	309.3515
83.37	340.8978
83.78	282.0053
83.78	282.0053
83.78	282.0053
83.78	282.0053
84.21	282.2861
84.90	282.7362
85.43	283.0811
86.29	283.6365
86.50	283.7723
86.54	283.7982
86.59	283.8303
86.72	283.9142
86.79	283.9584
86.94	284.0561
87.30	284.2865
87.30	284.2865
87.30	284.2865
87.30	284.2865
87.30	284.2865
87.30	284.2865
87.57	284.4604
87.88	284.6588
88.03	284.7549
88.36	284.9655
88.47	285.0357
89.95	285.9741
91.11	286.7065
92.29	287.4451
92.38	287.5015
92.38	287.5015
93.35	288.1042
94.00	288.5071
94.67	251.3583
94.67	251.3609
94.90	251.4844
94.90	251.4844
94.90	251.4844
94.90	251.4844
95.87	275.1747
95.87	275.1747
96.73	278.5781
97.43	238.3000
98.44	224.8219
98.44	224.8231
98.88	233.1897
99.55	240.3227
99.55	240.3227
99.86	240.4760
100.00	248.3360
100.10	254.2337
103.18	255.8253
103.76	266.9171
105.00	230.1950
105.31	224.4305
108.00	271.1361
109.28	228.1610

111.00	260.7634
111.00	260.7634
111.76	263.1339
112.95	269.7198
115.19	232.7316
116.30	233.2107
117.00	251.6276
117.00	251.6276
117.66	251.9328
121.11	207.8778
121.62	204.0077
121.78	204.0660
122.06	225.4992
122.32	225.6031
122.32	225.6031
122.32	225.6031
122.32	225.6031
123.07	219.7980
127.23	265.4794
129.76	249.1341
131.20	283.8008
133.02	251.5454
133.54	240.3663
135.34	244.2036
136.00	227.8242
136.25	228.9608
136.48	229.0458
140.51	280.8542
140.51	0.0000
142.18	273.2005
142.65	275.5073
143.76	253.8732
144.24	236.1429
144.24	236.1429
144.24	236.1429
144.24	236.1429
145.22	236.5075
145.44	235.5333
147.16	253.1133
152.43	227.4110
152.70	222.1637
153.22	225.5440
154.21	249.4326
154.21	249.4326
154.21	249.4326
154.21	249.4326
155.03	218.6571
156.02	260.8448
158.56	228.4266
159.00	0.0000
159.00	228.5733
160.31	206.3280
161.27	220.6804
162.32	208.0156
162.64	224.3700
163.35	250.6401
163.89	241.0623
165.85	272.2295
167.43	218.2739
171.28	254.5689
171.86	243.7926
172.10	243.8739
176.55	227.6846
176.60	227.7004
181.06	205.1658
184.41	226.1852
185.71	221.5355
186.00	221.6201
190.27	194.1520
192.34	218.9308
193.63	201.2042
197.04	228.1840
198.01	221.6403
198.60	210.4285
200.40	232.5609
201.83	220.4096
202.84	232.1189
205.31	215.0421



208.36	231.3778
208.81	222.2885
209.75	222.5398
209.75	222.5398
210.97	209.5843
215.65	199.7166
216.55	204.5760
218.09	204.9430
222.10	200.9236
223.80	204.8296
226.40	199.2639
227.00	200.2807
227.08	200.2997
227.20	193.2658
228.16	200.5422
228.18	200.5474
228.18	200.5474
231.56	0.0000
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236.00	181.0835
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238.63	187.6817
238.63	187.6817
238.63	187.6817
239.00	187.7554
240.98	188.1592
241.98	188.3611
241.98	188.3611
241.98	188.3611
244.69	159.7617
245.39	165.6424
247.94	169.7009
248.90	184.3303
249.79	160.9879
252.40	156.8921
252.85	144.2636
252.85	144.2636
254.15	0.0000
256.20	162.9726
256.20	162.9726
260.50	142.6580
260.90	162.8416
262.80	158.5737
264.65	137.1357
268.24	154.8314
268.79	163.7684
269.46	163.8768
269.46	163.8768
269.46	163.8768
269.46	163.8768
271.23	177.4746
273.65	209.0284
276.40	149.5716
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277.60	169.2781
277.60	169.2781
278.00	160.9706
278.60	174.0970
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279.53	181.7086
280.46	190.2664
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283.67	144.0719
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285.00	165.7998
285.90	160.3151
286.10	158.4710
286.10	158.4710
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290.80	150.6958
291.72	155.3500
293.26	0.0000
293.70	142.0350
295.21	142.2347
295.21	142.2347

295.21	142.2347
295.96	102.2075
296.50	102.2569
297.23	102.3261
298.57	102.4514
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299.80	150.4312
300.09	177.8309
300.09	177.8309
300.09	177.8309
300.09	177.8309
300.12	177.8337
301.29	178.0251
302.84	146.2758
303.76	152.4976
303.91	143.3661
304.40	157.1630
304.40	157.1630
304.84	161.5509
306.84	136.6722
308.46	125.3851
311.98	124.8167
316.51	121.4588
318.01	131.2706
319.02	133.3190
319.41	130.4640
320.08	128.6063
323.87	116.4148
323.87	116.4148
323.87	116.4148
323.87	116.4148
325.23	127.4303
328.77	132.4908
333.44	129.1016
334.20	129.1842
334.20	129.1842
334.30	129.1943
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338.28	131.5873
338.28	131.5873
338.28	131.5873
338.32	131.5934
338.32	131.5934
338.32	131.5934
340.50	138.5205
340.57	138.5270
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345.85	118.5754
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351.07	137.9332
351.92	138.0286
351.92	138.0286
351.92	138.0286
355.39	0.0000
356.01	98.8291
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366.43	122.5473
367.43	115.6054
367.94	0.0000
369.80	108.7679
374.96	104.1457
383.85	108.9217
387.95	103.1314
388.63	104.2054
391.69	101.3702
391.69	101.3702
392.90	101.4608
398.62	117.3242
400.65	103.0685
401.10	102.0711
401.81	116.5657
402.60	101.1492
404.84	148.8691
410.95	124.6014
411.60	126.7377
413.65	118.5992
414.70	102.0285
415.30	108.3212

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427.89	107.1766
432.53	84.3286
433.93	93.9039
439.47	84.7266
439.56	84.7314
439.89	82.6322
443.98	95.6071
444.90	99.9180
445.03	99.9266
445.03	99.9266
445.03	99.9266
445.03	99.9266
453.90	81.2684
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468.07	72.5228
473.00	99.6002
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476.78	87.9028
477.59	103.1481
477.96	105.3448
482.03	95.8149
484.57	102.5113
487.03	74.2707
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497.08	90.1192
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510.53	0.0000
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511.00	87.5562
511.85	87.6008
511.85	87.6008
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513.99	71.0581
520.41	83.5876
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529.64	73.9559
529.87	0.0000
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537.32	72.9356
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546.56	0.0000
549.76	70.7332
552.65	73.5724
555.20	78.2252
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563.90	64.8950
568.70	80.6459
569.32	77.0068
569.50	77.0150
569.67	69.6858
573.80	87.3044
574.00	87.3137
574.64	83.7684
578.91	86.0098
579.30	0.0000
583.14	62.8087
585.48	69.3604
591.81	68.6668
592.07	68.6776
593.00	73.3527
595.88	66.0251
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602.52	0.0000
602.71	93.3276
602.71	93.3276
603.60	84.0344
604.41	76.2854
604.70	74.7402
609.31	81.4754

609.31	81.4754
609.31	81.4754
609.31	81.4754
610.33	82.7672
612.46	92.2403
614.37	59.4678
618.01	78.0800
621.84	64.0937
621.84	64.0937
631.29	73.8734
633.02	67.3009
633.10	67.3044
634.78	63.5666
635.90	64.5519
636.97	78.8318
645.85	69.6423
646.12	71.5594
656.30	76.7129
657.75	73.8888
657.90	0.0000
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661.65	77.8735
664.57	0.0000
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666.33	81.9038
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677.61	46.5023
685.20	51.5314
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695.00	60.5590
696.49	58.6465
696.49	58.6465
697.00	60.6150
697.49	70.4074
698.33	68.4790
698.50	68.4841
699.00	73.3942
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706.58	0.0000
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713.82	70.9383
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722.78	70.8986
722.78	70.8986
722.89	70.9021
722.95	70.9038
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735.90	59.7056
739.58	58.8070
742.81	55.8961
744.21	55.9303
747.13	70.0034
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755.35	74.2692
756.15	65.2587
756.87	65.2793
763.93	62.1213
765.79	53.7695
766.42	67.2298
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778.89	42.2434
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785.46	51.8492
792.07	74.7620

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805.60	53.3114
810.29	61.6318
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836.80	0.0000
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860.37	56.5906
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867.82	57.2212
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880.27	36.9619
880.51	35.9092
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883.24	43.3473
884.67	55.0075
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898.02	64.8557
899.00	54.2435
903.28	60.3674
911.07	44.8731
911.07	44.8731
911.07	44.8731
919.63	41.6812
920.93	38.6033
925.00	39.7353
925.24	44.0350
926.50	49.4275
935.52	46.3562
937.48	42.0745
944.10	40.0126
946.00	32.4646
949.00	33.5831
962.29	50.7956
964.01	43.5654
966.15	43.5986
968.20	43.6299
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969.11	43.6445
969.11	43.6445
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983.50	44.9619
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1001.03	38.6154
1001.68	42.3024
1004.76	49.7120
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1024.50	0.0000
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1036.00	41.8671
1037.82	41.8927
1038.57	50.2822
1038.76	0.0000
1045.16	47.5946
1046.59	45.7481
1048.07	44.8379

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1050.47	27.1108
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1077.35	42.4384
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1085.78	42.5537
1099.22	48.4351
1112.02	41.9572
1112.84	38.6296
1115.52	45.8203
1120.29	42.6109
1120.29	42.6109
1120.29	42.6109
1120.29	42.6109
1120.51	29.5024
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1124.00	0.0000
1129.67	45.0646
1131.51	0.0000
1147.95	0.0000
1167.94	46.5645
1173.22	50.5252
1175.09	53.4715
1177.93	50.5972
1189.05	42.9544
1204.90	63.7543
1205.75	0.0000
1213.00	51.1240
1221.42	52.2344
1230.97	66.0737
1235.34	42.4090
1236.41	0.0000
1238.25	50.9326
1246.25	43.6759
1260.41	0.0000
1271.85	42.9930
1274.45	36.0205
1274.54	36.0220
1291.56	28.1493
1298.22	0.0000
1312.09	31.3418
1325.50	33.4861
1325.50	33.4861
1332.49	26.4327
1333.61	25.4232
1360.21	27.6526
1362.66	0.0000
1365.15	15.3827
1368.21	26.6855
1368.53	0.0000
1376.25	22.6275
1384.27	32.9818
1394.10	20.6665
1395.20	24.8066
1407.95	20.7406
1434.06	30.2744
1436.60	25.0703
1457.56	0.0000
1460.81	24.1717
1489.15	16.9336
1509.49	21.2720
1596.49	24.0514
1620.62	18.7144
1678.03	0.0000
1691.02	12.3571
1691.02	12.3571
1706.46	0.0000
1750.46	0.0000
1764.49	6.7598
1764.49	6.7598
1764.49	6.7598
1764.49	6.7598
1770.23	67.6782
1771.40	23.2098
1791.20	0.0000
1808.65	17.5430

1836.01

16.6620

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132012

Total Uranium Activity	1.0295E+00	ug/g
Total Uranium Counting Unc.	5.4183E+00	ug/g
Total Uranium Tpu	2.7644E-06	ug/g
Total Uranium Mda	3.4969E+00	ug/g



```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270                SAMPLE ID   : G244132012
*  ANALYST       : MXR1                  DETECTOR    : GAM12
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00 COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 11:12:28.77 SAMPLE ALQT: 115.200 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.508E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.624E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.709E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.794E+00

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## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:41:26.40

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132013.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:41:00
Sample ID          : G244132013          Sample quantity  : 1.22660E+02 GRAM
Detector name      : GAM13              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.64  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940270             Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.40*	105	479	1.25	92.55	89	8	1.46E-02	39.5	
2	0	63.20*	273	767	1.19	126.17	122	9	3.80E-02	20.8	
3	4	74.69	667	634	1.34	149.16	142	17	9.27E-02	7.8	1.96E+00
4	4	77.00*	958	489	1.08	153.78	142	17	1.33E-01	5.0	
5	5	84.11*	121	569	1.39	167.99	163	31	1.68E-02	37.0	2.19E+00
6	5	87.20	293	408	1.06	174.19	163	31	4.07E-02	12.2	
7	5	89.82	223	455	1.18	179.41	163	31	3.10E-02	17.3	
8	5	92.64*	517	541	1.47	185.07	163	31	7.18E-02	10.6	
9	0	143.75*	17	286	1.31	287.30	285	6	2.43E-03	167.2	
10	0	185.95*	221	434	1.45	371.72	367	10	3.07E-02	20.8	
11	0	209.05	123	365	1.87	417.94	414	11	1.71E-02	31.5	
12	4	238.56*	1089	225	1.34	476.98	472	18	1.51E-01	4.0	1.70E+00
13	4	241.64	285	284	1.83	483.14	472	18	3.96E-02	14.8	
14	0	269.99	83	219	0.85	539.86	536	9	1.15E-02	34.1	
15	0	295.13*	332	249	1.36	590.14	585	10	4.62E-02	10.7	
16	0	299.83	42	190	0.67	599.56	597	8	5.87E-03	58.8	
17	0	338.33*	190	219	1.26	676.56	670	11	2.64E-02	17.1	
18	0	351.74*	663	156	1.49	703.40	697	11	9.20E-02	5.5	
19	0	463.11	103	150	1.56	926.20	920	14	1.43E-02	27.4	
20	0	510.77*	132	148	1.39	1021.54	1014	16	1.84E-02	25.9	
21	0	583.12*	320	114	1.77	1166.29	1161	12	4.45E-02	9.1	
22	0	609.34*	429	174	1.71	1218.75	1211	16	5.96E-02	8.6	
23	1	661.27	116	81	1.92	1322.65	1315	21	1.62E-02	18.7	6.33E-01
24	1	664.95	49	91	1.92	1330.02	1315	21	6.80E-03	42.5	
25	0	794.96	49	55	1.14	1590.12	1586	11	6.81E-03	32.6	
26	0	860.42	80	59	1.66	1721.10	1714	15	1.11E-02	24.0	
27	0	911.23*	237	60	1.51	1822.75	1815	14	3.29E-02	10.0	
28	0	968.76*	116	75	1.42	1937.85	1933	11	1.61E-02	17.7	
29	0	1120.39*	109	67	2.28	2241.24	2232	18	1.51E-02	20.5	
30	0	1460.72*	688	35	2.36	2922.22	2911	19	9.56E-02	4.4	
31	0	1620.85	25	11	1.61	3242.65	3238	13	3.54E-03	32.3	
32	0	1764.68	71	17	3.57	3530.46	3523	15	9.92E-03	17.6	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132013.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 11:41:00
Sample ID        : G244132013             Sample quantity  : 122.66 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA13                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.64   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	*	1.897E+01	2.021E+00	7.718E-01	4.719E-02	24.579
CD-109	+	88.03	*	3.400E+00	8.739E-01	1.062E+00	8.383E-02	3.200
SN-126	+	64.28		1.179E+00	5.228E-01	4.506E-01	7.016E-02	2.616
	+	86.94		1.392E+00	6.669E-01	4.334E-01	1.787E-01	3.210
	+	87.57	*	3.347E-01	8.604E-02	1.045E-01	8.263E-03	3.204
BA-137M	+	661.65	*	1.962E-01	7.491E-02	7.657E-02	6.245E-03	2.562
CS-137	+	661.65	*	2.074E-01	7.920E-02	8.094E-02	6.616E-03	2.562
TL-208	+	277.35		4.989E-01	4.715E-01	7.768E-01	9.098E-02	0.642
	+	510.84		7.380E-01	3.913E-01	2.747E-01	2.986E-02	2.687
	+	583.14	*	5.158E-01	1.034E-01	7.717E-02	6.388E-03	6.684
	+	860.37		1.218E+00	5.927E-01	5.662E-01	4.774E-02	2.152
BI-210	+	46.50	*	1.090E+00	8.669E-01	8.727E-01	7.113E-02	1.249
PB-210	+	46.50	*	1.090E+00	8.669E-01	8.727E-01	7.113E-02	1.249
PO-210	+	46.50	*	1.090E+00	8.658E-01	8.727E-01	6.222E-02	1.249
BI-211	+	72.87		5.383E+00	2.140E+00	3.761E+00	3.289E-01	1.431
	+	351.07	*	4.480E+00	5.879E-01	4.165E-01	3.036E-02	10.755
PB-212	+	74.81		2.593E+00	5.214E-01	3.834E-01	4.877E-02	6.765
	+	77.11		2.218E+00	2.922E-01	2.292E-01	1.947E-02	9.676
	+	87.30		1.548E+00	4.270E-01	4.827E-01	6.159E-02	3.207
	+	238.63	*	1.586E+00	1.915E-01	9.861E-02	8.958E-03	16.079
	+	300.09		9.527E-01	1.123E+00	1.504E+00	1.431E-01	0.633
PO-212	+	74.81		2.593E+00	5.214E-01	3.834E-01	4.877E-02	6.765
	+	77.11		2.218E+00	2.922E-01	2.292E-01	1.947E-02	9.676
	+	87.30		1.548E+00	4.270E-01	4.827E-01	6.159E-02	3.207
	+	115.19		-2.469E+00	3.865E+00	6.148E+00	7.130E-01	-0.402
	+	238.63	*	1.586E+00	1.915E-01	9.861E-02	8.958E-03	16.079
	+	300.09		9.527E-01	1.123E+00	1.504E+00	1.431E-01	0.633
BI-214	+	609.31	*	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
	+	1120.29		1.713E+00	7.191E-01	6.309E-01	5.644E-02	2.715
	+	1764.49		1.539E+00	5.494E-01	4.029E-01	2.288E-02	3.820
PB-214	+	74.81		4.469E+00	8.615E-01	6.606E-01	7.513E-02	6.765
	+	77.11		3.802E+00	5.786E-01	3.929E-01	4.483E-02	9.676
	+	87.30		2.652E+00	7.117E-01	8.269E-01	9.143E-02	3.207
	+	241.98		2.493E+00	7.768E-01	5.942E-01	5.752E-02	4.197

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		1.315E+00	3.098E-01	2.574E-01	2.521E-02	5.110
	+	351.92	*	1.558E+00	2.201E-01	1.518E-01	1.359E-02	10.267
	+	74.81		4.469E+00	8.615E-01	6.606E-01	7.513E-02	6.765
	+	77.11		3.802E+00	5.786E-01	3.929E-01	4.483E-02	9.676
	+	87.30		2.652E+00	7.117E-01	8.269E-01	9.143E-02	3.207
	+	241.98		2.493E+00	7.768E-01	5.942E-01	5.752E-02	4.197
PO-216	+	295.21		1.315E+00	3.098E-01	2.574E-01	2.521E-02	5.110
	+	351.92	*	1.558E+00	2.201E-01	1.518E-01	1.359E-02	10.267
	+	74.81		2.593E+00	5.214E-01	3.834E-01	4.877E-02	6.765
	+	77.11		2.218E+00	2.922E-01	2.292E-01	1.947E-02	9.676
	+	87.30		1.548E+00	4.270E-01	4.827E-01	6.159E-02	3.207
	+	238.63	*	1.586E+00	1.915E-01	9.861E-02	8.958E-03	16.079
PO-218	+	300.09		9.527E-01	1.123E+00	1.504E+00	1.431E-01	0.633
	+	74.81		4.469E+00	8.615E-01	6.606E-01	7.513E-02	6.765
	+	77.11		3.802E+00	5.786E-01	3.929E-01	4.483E-02	9.676
	+	87.30		2.652E+00	7.117E-01	8.269E-01	9.143E-02	3.207
	+	241.98		2.493E+00	7.768E-01	5.942E-01	5.752E-02	4.197
	+	295.21		1.315E+00	3.098E-01	2.574E-01	2.521E-02	5.110
RA-224	+	351.92	*	1.558E+00	2.201E-01	1.518E-01	1.359E-02	10.267
RA-226	+	240.98	*	4.728E+00	1.449E+00	1.123E+00	8.862E-02	4.211
AC-228	+	609.31	*	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
	+	1120.29		1.713E+00	7.191E-01	6.309E-01	5.644E-02	2.715
	+	1764.49		1.539E+00	5.494E-01	4.029E-01	2.288E-02	3.820
	+	338.32		1.412E+00	7.539E-01	4.485E-01	1.836E-01	3.150
	+	911.07	*	1.713E+00	3.874E-01	3.031E-01	3.148E-02	5.649
	+	969.11		1.473E+00	6.209E-01	5.858E-01	1.338E-01	2.515
TH-228	+	338.32		1.412E+00	7.539E-01	4.485E-01	1.836E-01	3.150
	+	911.07	*	1.713E+00	3.874E-01	3.031E-01	3.148E-02	5.649
	+	969.11		1.473E+00	6.209E-01	5.858E-01	1.338E-01	2.515
	+	74.81		2.630E+00	4.690E-01	3.888E-01	3.383E-02	6.765
	+	77.11		2.249E+00	2.963E-01	2.324E-01	1.974E-02	9.676
	+	87.30		1.570E+00	4.035E-01	4.895E-01	3.879E-02	3.207
TH-230	+	238.63	*	1.608E+00	1.942E-01	9.999E-02	9.084E-03	16.079
	+	300.09		9.660E-01	1.271E+00	1.525E+00	9.019E-01	0.633
	+	609.31	*	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
	+	1120.29		1.713E+00	7.191E-01	6.309E-01	5.644E-02	2.715
	+	1764.49		1.539E+00	5.494E-01	4.029E-01	2.288E-02	3.820
	+	338.32		1.412E+00	4.935E-01	4.485E-01	3.123E-02	3.150
TH-232	+	911.07	*	1.713E+00	3.874E-01	3.031E-01	3.148E-02	5.649
	+	969.11		1.473E+00	6.209E-01	5.858E-01	1.338E-01	2.515
	+	63.29	*	2.978E+00	1.352E+00	1.100E+00	2.018E-01	2.707
	+	92.38		4.073E+00	1.132E+00	7.250E-01	1.305E-01	5.618
	+	609.31	*	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
	+	1120.29		1.713E+00	7.191E-01	6.309E-01	5.644E-02	2.715
U-234	+	1764.49		1.539E+00	5.494E-01	4.029E-01	2.288E-02	3.820
	+	89.95		3.503E+00	1.621E+00	1.442E+00	4.430E-01	2.429
	+	93.35		4.896E+00	1.718E+00	8.743E-01	2.449E-01	5.600
	+	105.00		1.356E+00	1.216E+00	1.927E+00	5.841E-01	0.704
	+	143.76	*	8.096E-02	2.711E-01	3.815E-01	7.044E-02	0.212

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		163.35		3.729E-01	5.849E-01	9.226E-01	1.741E-01	0.404
	+	185.71		2.263E-01	9.593E-02	8.172E-02	6.450E-03	2.770
		205.31		6.033E-01	6.853E-01	1.042E+00	1.956E-01	0.579
NP-237	+	86.50	*	9.829E-01	3.240E-01	3.058E-01	6.764E-02	3.215
		95.87		4.930E-01	1.005E+00	1.515E+00	3.746E-01	0.325
U-238	+	63.29	*	2.978E+00	1.352E+00	1.100E+00	2.018E-01	2.707
	+	92.38		4.073E+00	9.290E-01	7.250E-01	6.120E-02	5.618
AM-243	+	74.67	*	4.204E-01	7.483E-02	6.213E-02	5.367E-03	6.767
	+	86.72		3.686E+01	9.474E+00	1.147E+01	9.129E-01	3.212
		117.66		-9.745E-01	3.982E+00	6.440E+00	7.707E-01	-0.151
		142.18		-1.536E+01	2.493E+01	3.448E+01	3.653E+00	-0.445
ANH-511	+	511.00	*	1.594E-01	8.347E-02	5.936E-02	4.142E-03	2.686

## ---- 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	*	-7.278E-02	4.074E-01	6.736E-01	5.064E-02	-0.108
NA-22		1274.54	*	3.455E-02	5.880E-02	1.026E-01	5.790E-03	0.337
NA-24		1368.53	*	-2.262E-01	5.880E-02	Half-Life too short		
AL-26		1129.67		-1.350E+00	2.700E+00	3.827E+00	2.268E-01	-0.353
		1808.65	*	-2.620E-02	3.939E-02	5.751E-02	3.245E-03	-0.456
TI-44		67.85		1.509E-02	2.865E-02	4.700E-02	4.255E-03	0.321
	+	78.38	*	4.092E-01	5.391E-02	6.127E-02	5.160E-03	6.679
SC-46		889.25	*	-2.618E-02	5.242E-02	8.310E-02	6.293E-03	-0.315
	+	1120.51		2.905E-01	1.204E-01	1.545E-01	9.292E-03	1.880
V-48		944.10		-7.270E-01	1.197E+00	1.868E+00	1.364E-01	-0.389
		983.50	*	-5.964E-02	9.592E-02	1.489E-01	1.053E-02	-0.401
		1312.09		-1.216E-02	1.103E-01	1.811E-01	1.027E-02	-0.067
CR-51		320.08	*	3.039E-01	4.407E-01	7.458E-01	5.804E-02	0.408
MN-52		744.21		1.691E-01	2.897E-01	4.864E-01	3.949E-02	0.348
		848.13		-6.139E+00	7.995E+00	1.246E+01	9.700E-01	-0.493
		935.52		1.017E-01	3.121E-01	5.271E-01	3.872E-02	0.193
		1246.25		1.204E+00	7.843E+00	1.324E+01	7.408E-01	0.091
		1333.61		-4.299E+00	5.858E+00	8.438E+00	4.800E-01	-0.509
		1434.06	*	1.279E-01	2.636E-01	4.587E-01	2.636E-02	0.279
MN-54		834.83	*	-1.630E-02	5.201E-02	8.466E-02	6.643E-03	-0.193
CO-56		846.75	*	-2.579E-02	5.316E-02	8.500E-02	6.625E-03	-0.303
		977.42		-1.282E+00	4.229E+00	6.602E+00	4.695E-01	-0.194
		1037.82		-2.254E-01	4.329E-01	6.736E-01	4.906E-02	-0.335
		1175.09		2.584E-01	2.941E+00	4.778E+00	2.627E-01	0.054
		1238.25		1.784E-01	1.169E-01	2.141E-01	1.277E-02	0.833
		1360.21		8.356E-01	1.384E+00	2.425E+00	1.384E-01	0.345
		1771.40		-8.414E-02	2.662E-01	3.373E-01	1.914E-02	-0.250
CO-57		122.06	*	-1.522E-03	2.669E-02	4.342E-02	5.493E-03	-0.035
		136.48		-1.040E-02	2.352E-01	3.800E-01	4.448E-02	-0.027
CO-58		810.76	*	-1.109E-02	5.266E-02	8.652E-02	6.891E-03	-0.128
FE-59	+	142.65		1.026E+00	3.433E+00	5.338E+00	5.630E-01	0.192
		192.34		-3.648E-01	9.918E-01	1.656E+00	2.149E-01	-0.220

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60		1099.22	*	-1.022E-01	1.389E-01	2.117E-01	1.512E-02	-0.483
		1291.56		-4.969E-02	1.599E-01	2.577E-01	1.882E-02	-0.193
		1173.22		-3.379E-02	5.902E-02	9.002E-02	4.948E-03	-0.375
		1332.49	*	-2.131E-02	5.194E-02	7.797E-02	4.435E-03	-0.273
ZN-65		1115.52	*	5.356E-02	1.392E-01	2.021E-01	1.227E-02	0.265
GE-68		1077.35	*	-1.016E-01	1.698E+00	2.745E+00	1.755E-01	-0.037
AS-73		53.44	*	6.823E-02	2.589E-01	4.262E-01	3.600E-02	0.160
AS-74		595.88	*	-7.868E-02	1.226E-01	1.922E-01	1.476E-02	-0.409
SE-75		634.78		1.240E-01	4.647E-01	7.724E-01	6.155E-02	0.160
		66.05		-4.033E-01	2.982E+00	4.510E+00	4.913E-01	-0.089
		96.73		-9.544E-01	8.781E-01	1.197E+00	1.661E-01	-0.797
		121.11		2.195E-02	1.429E-01	2.347E-01	3.383E-02	0.094
BR-77		136.00		8.916E-03	4.343E-02	7.090E-02	8.010E-03	0.126
		198.60		9.804E-01	2.054E+00	3.431E+00	3.066E-01	0.286
		264.65	*	-2.858E-02	5.321E-02	7.900E-02	6.189E-03	-0.362
		279.53		-1.726E-02	1.262E-01	2.070E-01	1.665E-02	-0.083
		303.91		-5.457E-01	2.870E+00	4.072E+00	4.326E-01	-0.134
		400.65		3.412E-01	3.332E-01	5.492E-01	5.048E-02	0.621
	+	87.88		5.292E+02	1.360E+02	2.208E+02	1.743E+01	2.397
		200.40		-1.326E+02	1.322E+02	2.142E+02	1.697E+01	-0.619
	+	239.00		1.831E+02	2.054E+01	2.930E+01	2.315E+00	6.249
		249.79		-1.489E+01	5.251E+01	8.625E+01	6.782E+00	-0.173
		281.68		-9.903E+01	7.572E+01	1.159E+02	8.888E+00	-0.854
		297.23		1.494E+02	7.554E+01	9.419E+01	7.085E+00	1.587
		303.76		-6.485E+01	1.786E+02	2.502E+02	1.864E+01	-0.259
		439.47		-3.589E+01	1.285E+02	2.128E+02	1.345E+01	-0.169
		484.57		-5.301E+01	2.118E+02	3.482E+02	2.347E+01	-0.152
		520.65	*	-4.916E+00	9.105E+00	1.452E+01	1.026E+00	-0.338
		574.64		-5.866E+01	1.988E+02	3.204E+02	2.407E+01	-0.183
		578.91		-2.325E+01	9.184E+01	1.275E+02	9.620E+00	-0.182
		585.48		1.015E+03	2.353E+02	4.138E+02	3.144E+01	2.454
	SR-82		755.35		7.621E+00	1.652E+02	2.662E+02	2.155E+01
		817.79		8.728E+00	1.277E+02	2.142E+02	1.696E+01	0.041
		698.33		-3.886E+01	4.923E+01	7.505E+01	6.127E+00	-0.518
		776.49	*	-1.574E-01	5.021E-01	8.225E-01	6.620E-02	-0.191
RB-83		1395.20		-8.287E-01	1.465E+01	2.400E+01	1.375E+00	-0.035
		520.41	*	-4.048E-02	8.281E-02	1.326E-01	9.365E-03	-0.305
		529.64		-1.068E-01	1.340E-01	2.095E-01	1.496E-02	-0.510
RB-84		552.65		3.227E-02	2.487E-01	4.144E-01	3.040E-02	0.078
RB-84		881.50	*	7.006E-02	9.101E-02	1.598E-01	1.217E-02	0.438
KR-85		513.99	*	1.617E+01	9.609E+00	1.580E+01	1.107E+00	1.023
SR-85		513.99	*	8.191E-02	4.869E-02	8.007E-02	5.609E-03	1.023
RB-86		1076.63	*	-4.204E-01	1.061E+00	1.663E+00	1.064E-01	-0.253
Y-88		898.02		1.479E-02	6.085E-02	1.024E-01	7.754E-03	0.144
ZR-88		1836.01	*	1.562E-02	4.667E-02	8.142E-02	4.585E-03	0.192
		392.90	*	1.481E-02	3.883E-02	6.384E-02	3.739E-03	0.232
Y-91		1204.90	*	1.053E+01	2.217E+01	3.849E+01	2.133E+00	0.274
NB-94		702.63	*	-2.996E-03	4.715E-02	7.584E-02	6.190E-03	-0.040
		871.10		2.181E-02	4.626E-02	7.954E-02	6.103E-03	0.274

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95		765.79	*	8.075E-02	6.097E-02	1.097E-01	8.857E-03	0.736
NB-95M		235.69	*	4.530E-02	1.532E-01	2.281E-01	2.110E-02	0.199
ZR-95		724.18		-1.072E-01	1.465E-01	2.241E-01	2.002E-02	-0.478
		756.15	*	-9.127E-03	9.681E-02	1.542E-01	1.391E-02	-0.059
NB-97		657.90	*	3.352E-03	9.681E-02	Half-Life	too short	
	1024.50			-2.680E+00	9.681E-02	Half-Life	too short	
ZR-97		254.15		2.220E+00	9.681E-02	Half-Life	too short	
	355.39			3.365E-01	9.681E-02	Half-Life	too short	
	507.63	*		2.037E+00	9.681E-02	Half-Life	too short	
	602.52			-3.225E+00	9.681E-02	Half-Life	too short	
	1021.30			-6.747E-01	9.681E-02	Half-Life	too short	
	1147.95			-7.738E-01	9.681E-02	Half-Life	too short	
	1362.66			1.360E+00	9.681E-02	Half-Life	too short	
	1750.46			1.284E+00	9.681E-02	Half-Life	too short	
MO-99		140.51		2.297E+01	2.561E+01	3.747E+01	1.066E+01	0.613
	181.06			-2.364E+01	1.825E+01	2.297E+01	4.124E+00	-1.029
	366.43			-4.577E+01	8.118E+01	1.266E+02	8.144E+00	-0.361
	739.58	*		-4.305E+00	1.217E+01	1.898E+01	2.830E+00	-0.227
	778.00			-1.050E+01	3.548E+01	5.820E+01	4.682E+00	-0.180
TC-99M		140.51	*	1.955E+09	3.548E+01	Half-Life	too short	
RH-101		127.23		-1.951E-03	3.578E-02	5.805E-02	7.050E-03	-0.034
	198.01	*		1.606E-02	3.807E-02	6.351E-02	5.029E-03	0.253
	325.23			-1.822E-01	2.770E-01	4.358E-01	3.124E-02	-0.418
RH-102		418.52		2.557E-02	3.651E-01	5.861E-01	3.583E-02	0.044
	475.06	*		-4.074E-03	3.839E-02	6.175E-02	4.109E-03	-0.066
	631.29			1.591E-02	7.464E-02	1.237E-01	9.823E-03	0.129
	697.49			-5.170E-02	1.118E-01	1.748E-01	1.427E-02	-0.296
	766.84			2.637E-01	1.598E-01	2.908E-01	2.347E-02	0.907
	1046.59			-1.713E-01	1.666E-01	2.467E-01	1.637E-02	-0.694
	1112.84			1.615E-01	3.430E-01	5.042E-01	3.067E-02	0.320
RU-103		497.08	*	-3.211E-02	4.990E-02	7.931E-02	1.044E-02	-0.405
	610.33	+		1.383E+01	3.267E+00	3.515E+00	5.719E-01	3.933
RH-106		511.85	+	7.946E-01	4.161E-01	5.280E-01	3.689E-02	1.505
	621.84	*		-1.540E-01	4.486E-01	7.149E-01	9.215E-02	-0.215
	1050.47			-1.071E+00	3.137E+00	4.955E+00	3.274E-01	-0.216
RU-106		511.85	+	7.946E-01	4.161E-01	5.280E-01	3.689E-02	1.505
	621.84	*		-1.540E-01	4.484E-01	7.149E-01	5.630E-02	-0.215
	1050.47			-1.071E+00	3.137E+00	4.955E+00	3.274E-01	-0.216
AG-108M		433.93	*	5.615E-03	4.146E-02	7.037E-02	4.734E-03	0.080
	614.37			-2.777E-02	5.967E-02	8.040E-02	6.585E-03	-0.345
	722.95			-1.351E-01	6.926E-02	9.532E-02	8.106E-03	-1.418
AG-110M		657.75	*	1.301E-02	5.219E-02	7.527E-02	6.323E-03	0.173
	677.61			2.766E-01	4.324E-01	7.325E-01	6.168E-02	0.378
	706.67			-5.679E-02	2.933E-01	4.668E-01	3.927E-02	-0.122
	763.93			-1.325E-01	2.354E-01	3.804E-01	3.172E-02	-0.348
	884.67			-5.667E-02	6.636E-02	1.017E-01	8.046E-03	-0.557
	937.48			-5.177E-02	1.610E-01	2.536E-01	1.953E-02	-0.204
	1384.27			-2.733E-01	2.311E-01	3.304E-01	2.009E-02	-0.827
IN-111		171.28		-4.713E-01	8.980E-01	1.394E+00	1.094E-01	-0.338

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	245.39	*		2.099E-03	9.890E-01	1.452E+00	1.144E-01	0.001
IN-113M	391.69	*		-1.354E-02	5.794E-02	9.179E-02	5.719E-03	-0.147
SN-113	391.69	*		-1.354E-02	5.794E-02	9.179E-02	5.719E-03	-0.147
IN-114M	190.27	*		-1.236E-02	2.279E-01	3.185E-01	2.517E-02	-0.039
CD-115	260.90			2.810E+01	1.020E+02	1.716E+02	1.341E+01	0.164
	492.35			-3.044E+00	3.148E+01	5.215E+01	3.553E+00	-0.058
	527.90	*		1.381E+00	9.544E+00	1.598E+01	1.138E+00	0.086
SN-117M	156.02			-1.451E+00	2.479E+00	3.866E+00	3.493E-01	-0.375
	158.56	*		-1.056E-02	5.934E-02	9.426E-02	8.231E-03	-0.112
SB-122	563.90	*		1.257E+00	2.017E+00	3.457E+00	2.568E-01	0.363
	692.80			3.780E+01	4.830E+01	8.211E+01	6.704E+00	0.460
I-123	159.00	*		-2.398E-02	4.830E+01	Half-Life	too short	
	528.96			-9.231E+01	4.830E+01	Half-Life	too short	
TE-123M	159.00	*		-4.928E-04	3.200E-02	5.119E-02	4.470E-03	-0.010
I-124	602.71	*		-8.955E-01	9.196E-01	1.182E+00	9.136E-02	-0.758
	722.78			-1.247E+01	6.025E+00	8.210E+00	6.689E-01	-1.519
	1325.50			-2.214E+01	3.824E+01	5.949E+01	3.380E+00	-0.372
	1376.25			4.627E+01	3.457E+01	6.416E+01	3.669E+00	0.721
	1509.49			2.026E+01	1.762E+01	3.259E+01	1.879E+00	0.622
	1691.02			3.340E-01	3.775E+00	6.205E+00	3.553E-01	0.054
SB-124	602.71			-6.196E-02	6.363E-02	8.176E-02	6.323E-03	-0.758
	645.85			-3.054E-01	6.996E-01	1.103E+00	9.480E-02	-0.277
	709.31			3.826E-01	3.825E+00	6.222E+00	5.077E-01	0.061
	713.82			8.772E-01	2.309E+00	3.826E+00	4.481E-01	0.229
	722.78			-1.250E+00	6.048E-01	8.234E-01	6.871E-02	-1.519
+	968.20			1.497E+01	5.410E+00	8.760E+00	6.278E-01	1.709
	1045.16			-2.504E+00	3.743E+00	5.264E+00	3.499E-01	-0.476
	1325.50			-2.372E+00	4.097E+00	6.373E+00	3.621E-01	-0.372
	1368.21			-1.083E+00	2.185E+00	3.385E+00	4.005E-01	-0.320
	1436.60			4.625E-01	4.849E+00	8.062E+00	4.634E-01	0.057
	1691.02	*		7.903E-03	8.932E-02	1.468E-01	9.142E-03	0.054
SB-125	427.89	*		4.099E-02	1.127E-01	1.940E-01	1.248E-02	0.211
+	463.38			1.108E+00	6.132E-01	6.979E-01	5.173E-02	1.588
	600.56			8.013E-02	2.528E-01	4.121E-01	3.469E-02	0.194
	635.90			-8.950E-03	3.720E-01	6.057E-01	5.284E-02	-0.015
TE-125M	109.28	*		4.114E+00	9.856E+00	1.642E+01	1.994E+00	0.251
I-126	388.63			6.348E-02	2.477E-01	4.046E-01	2.396E-02	0.157
+	666.33	*		3.936E-01	3.364E-01	4.201E-01	3.428E-02	0.937
	753.82			2.384E+00	1.901E+00	3.335E+00	2.702E-01	0.715
SB-126	223.80			-1.871E+00	4.151E+00	6.829E+00	5.413E-01	-0.274
	278.60			1.421E+00	2.756E+00	4.660E+00	3.585E-01	0.305
+	296.50			1.229E+01	2.792E+00	3.839E+00	2.890E-01	3.202
	414.70			1.409E-02	8.900E-02	1.438E-01	8.737E-03	0.098
	415.30			-3.065E+00	7.514E+00	1.169E+01	7.107E-01	-0.262
	555.20			1.239E+00	4.747E+00	7.975E+00	5.866E-01	0.155
	573.80			2.115E-01	1.295E+00	2.155E+00	1.617E-01	0.098
	593.00			-3.377E-01	1.182E+00	1.901E+00	1.456E-01	-0.178
	656.30			-3.829E+00	4.873E+00	6.224E+00	5.053E-01	-0.615
+	666.33			1.641E-01	1.402E-01	1.751E-01	1.429E-02	0.937



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		675.00		7.941E-01	2.609E+00	4.325E+00	3.531E-01	0.184
		695.00		6.265E-02	1.071E-01	1.800E-01	1.470E-02	0.348
		697.00		-2.370E-01	3.741E-01	5.773E-01	4.714E-02	-0.411
		720.50	*	-1.008E-01	1.958E-01	3.033E-01	2.472E-02	-0.332
		856.80		9.093E-02	6.748E-01	9.797E-01	7.589E-02	0.093
		989.30		4.050E-01	1.706E+00	2.851E+00	2.006E-01	0.142
		1034.80		-1.443E+01	1.165E+01	1.679E+01	1.129E+00	-0.859
		1213.00		-4.610E-01	5.458E+00	9.056E+00	5.030E-01	-0.051
		61.10		1.939E+01	2.357E+01	3.705E+01	4.276E+00	0.523
		252.40		5.741E-01	4.009E+00	6.707E+00	2.803E+00	0.086
		290.80		-6.703E+00	2.263E+01	3.197E+01	3.206E+00	-0.210
		411.60		3.156E+00	1.300E+01	2.110E+01	3.001E+00	0.150
		444.90		5.392E+00	9.854E+00	1.706E+01	1.839E+00	0.316
		473.00		-2.303E-01	1.742E+00	2.891E+00	3.271E-01	-0.080
		543.00		1.189E+01	1.813E+01	3.112E+01	4.156E+00	0.382
		603.60		-1.203E+01	1.550E+01	2.030E+01	2.357E+00	-0.592
		685.20	*	-3.943E-01	1.551E+00	2.462E+00	2.638E-01	-0.160
		698.50		-1.403E+01	1.825E+01	2.769E+01	4.248E+00	-0.507
		722.20		-8.387E+01	4.066E+01	5.472E+01	5.724E+00	-1.533
		783.80		3.641E+00	4.171E+00	7.345E+00	8.601E-01	0.496
XE-127		57.60		-5.883E-01	2.247E+00	3.792E+00	3.505E-01	-0.155
	+	145.22		2.619E-01	8.760E-01	1.313E+00	1.347E-01	0.200
		172.10		-7.371E-03	1.395E-01	2.216E-01	1.740E-02	-0.033
		202.84	*	4.045E-03	5.237E-02	8.880E-02	7.037E-03	0.046
I-131		374.96		-2.268E-01	2.503E-01	3.807E-01	2.377E-02	-0.596
		80.18		-1.759E+00	4.461E+00	5.180E+00	4.335E-01	-0.340
		284.30		1.755E-01	1.532E+00	2.543E+00	2.070E-01	0.069
		364.48	*	-1.229E-02	1.301E-01	2.091E-01	1.479E-02	-0.059
TE-132		636.97		-1.451E+00	1.944E+00	2.989E+00	2.539E-01	-0.485
		722.89		-2.079E+01	1.057E+01	1.453E+01	1.191E+00	-1.431
		49.72		-3.256E+00	3.582E+00	5.292E+00	5.217E-01	-0.615
		111.76		-1.523E+01	2.705E+01	4.198E+01	5.315E+00	-0.363
BA-133		116.30		-1.916E+01	2.330E+01	3.661E+01	4.851E+00	-0.523
		228.16	*	3.829E-01	6.093E-01	1.044E+00	1.581E-01	0.367
		53.15		3.944E-01	1.110E+00	1.833E+00	1.539E-01	0.215
		79.62		-2.117E-01	1.355E+00	1.601E+00	2.413E-01	-0.132
I-133		81.00		8.379E-03	1.022E-01	1.225E-01	1.923E-02	0.068
		276.40		4.992E-01	4.700E-01	7.723E-01	1.075E-01	0.646
		302.84		-9.627E-03	1.948E-01	2.793E-01	3.510E-02	-0.034
		356.01	*	4.381E-03	6.149E-02	8.822E-02	1.059E-02	0.050
CS-134		383.85		-9.186E-02	3.909E-01	6.201E-01	6.821E-02	-0.148
	+	510.53		6.568E-01	3.909E-01	Half-Life too short		
		529.87	*	-2.417E-03	3.909E-01	Half-Life too short		
		706.58		-4.124E-02	3.909E-01	Half-Life too short		
		856.28		-1.756E-03	3.909E-01	Half-Life too short		
		875.33		-3.650E-02	3.909E-01	Half-Life too short		
		1236.41		5.879E-01	3.909E-01	Half-Life too short		
		1298.22		1.901E-01	3.909E-01	Half-Life too short		
		475.35		-6.234E-01	2.504E+00	3.991E+00	2.657E-01	-0.156

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135		563.23		1.465E-01	4.651E-01	7.827E-01	5.883E-02	0.187
		569.32		-1.489E-01	2.734E-01	4.156E-01	3.161E-02	-0.358
		604.70		-2.151E-02	5.217E-02	7.099E-02	5.517E-03	-0.303
	+	795.84	*	1.150E-01	7.556E-02	1.114E-01	8.978E-03	1.032
		801.93		-4.062E-01	6.354E-01	8.073E-01	6.478E-02	-0.503
		1038.57		3.701E+00	5.235E+00	9.055E+00	6.065E-01	0.409
		1167.94		-7.335E-01	3.253E+00	5.136E+00	2.851E-01	-0.143
		1365.15		-1.931E-01	1.677E+00	2.736E+00	1.720E-01	-0.071
		268.24	*	2.417E-01	2.028E-01	3.165E-01	2.923E-02	0.764
		288.45		-9.522E+08	2.028E-01	Half-Life	too short	
		417.63		4.147E+08	2.028E-01	Half-Life	too short	
		546.56		-7.045E+08	2.028E-01	Half-Life	too short	
		836.80		6.766E+08	2.028E-01	Half-Life	too short	
		1038.76		1.018E+09	2.028E-01	Half-Life	too short	
		1124.00		1.010E+09	2.028E-01	Half-Life	too short	
		1131.51		2.853E+08	2.028E-01	Half-Life	too short	
		1260.41	*	1.689E+08	2.028E-01	Half-Life	too short	
		1457.56		3.217E+10	2.028E-01	Half-Life	too short	
		1678.03		-3.291E+08	2.028E-01	Half-Life	too short	
		1706.46		-2.715E+08	2.028E-01	Half-Life	too short	
		1791.20		9.838E+07	2.028E-01	Half-Life	too short	
CS-136		66.91		2.537E-01	4.657E-01	7.205E-01	1.132E-01	0.352
	+	86.29		4.116E+00	1.128E+00	1.686E+00	2.096E-01	2.441
		153.22		5.479E-01	7.228E-01	1.194E+00	1.230E-01	0.459
		163.89		2.970E-03	1.277E+00	1.976E+00	1.814E-01	0.002
		176.55		-3.442E-01	4.100E-01	6.239E-01	5.246E-02	-0.552
		273.65		-3.261E-01	5.888E-01	8.244E-01	6.890E-02	-0.396
		340.57		2.055E-01	1.747E-01	2.675E-01	1.935E-02	0.768
		818.51		1.358E-02	9.162E-02	1.546E-01	1.225E-02	0.088
		1048.07	*	-4.017E-02	1.361E-01	2.158E-01	1.531E-02	-0.186
		1235.34		8.809E-01	7.296E-01	1.308E+00	1.290E-01	0.673
CE-139 BA-140		165.85	*	-1.671E-02	3.596E-02	5.619E-02	4.405E-03	-0.297
		162.64		1.680E-01	8.789E-01	1.370E+00	1.201E-01	0.123
		304.84		-5.391E-01	1.669E+00	2.335E+00	6.464E-01	-0.231
		423.70		-1.271E+00	2.398E+00	3.639E+00	1.159E+00	-0.349
LA-140		537.32	*	-2.969E-01	3.321E-01	4.919E-01	1.614E-01	-0.604
		328.77		1.288E-01	3.387E-01	5.631E-01	4.333E-02	0.229
		432.53		-3.598E-01	2.439E+00	4.076E+00	2.779E-01	-0.088
		487.03		2.784E-02	1.642E-01	2.769E-01	2.057E-02	0.101
		751.79		3.060E-01	2.300E+00	3.732E+00	3.388E-01	0.082
		815.85		-1.560E-02	4.119E-01	6.853E-01	6.164E-02	-0.023
		867.82		1.838E-01	2.038E+00	2.941E+00	2.411E-01	0.063
		919.63		-1.406E+00	3.573E+00	5.557E+00	5.393E-01	-0.253
		925.24		4.785E-01	1.413E+00	2.396E+00	1.922E-01	0.200
		1596.49	*	-6.259E-02	1.127E-01	1.694E-01	9.759E-03	-0.370
CE-141 CE-143		145.44	*	2.539E-02	7.960E-02	1.162E-01	1.206E-02	0.218
		57.37		-1.254E-05	7.960E-02	Half-Life	too short	
		231.56		2.309E-04	7.960E-02	Half-Life	too short	
		293.26	*	5.364E-04	7.960E-02	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
	+	350.59	2.009E-02	7.960E-02	Half-Life	too short	
		490.36	-1.068E-03	7.960E-02	Half-Life	too short	
	+	664.57	1.690E-03	7.960E-02	Half-Life	too short	
		721.93	-1.349E-03	7.960E-02	Half-Life	too short	
CE-144		80.11	-8.664E-01	2.255E+00	2.621E+00	2.181E-01	-0.331
		133.54	* 8.566E-02	2.220E-01	3.649E-01	6.325E-02	0.235
PM-144		476.78	-3.696E-03	8.908E-02	1.439E-01	1.106E-02	-0.026
		618.01	1.794E-02	4.445E-02	7.282E-02	5.904E-03	0.246
		696.49	* 7.080E-03	5.007E-02	8.177E-02	6.678E-03	0.087
		778.57	-1.098E+00	3.158E+00	5.160E+00	4.151E-01	-0.213
PR-144		696.49	* 4.795E-01	3.391E+00	5.538E+00	4.521E-01	0.087
		1489.15	-9.570E+00	1.572E+01	2.356E+01	1.357E+00	-0.406
PM-146		453.90	* 6.774E-02	5.529E-02	9.865E-02	8.953E-03	0.687
		633.02	8.481E-01	1.906E+00	3.166E+00	1.178E+00	0.268
		735.90	-1.556E-01	2.183E-01	3.241E-01	9.222E-02	-0.480
		747.13	-6.950E-02	1.310E-01	2.010E-01	2.761E-02	-0.346
ND-147	+	91.11	8.189E-01	2.927E-01	5.204E-01	4.693E-02	1.574
		319.41	2.779E+00	3.817E+00	6.470E+00	4.693E-01	0.429
		439.89	-9.163E-01	6.700E+00	1.118E+01	7.073E-01	-0.082
		531.02	* 2.938E-01	6.818E-01	1.159E+00	1.641E-01	0.253
PM-149		285.90	* 2.425E+01	7.151E+01	1.199E+02	1.800E+01	0.202
EU-152		121.78	1.402E-02	7.698E-02	1.265E-01	1.711E-02	0.111
		244.69	1.617E-01	4.036E-01	6.079E-01	4.792E-02	0.266
		344.27	* -5.317E-02	1.299E-01	1.893E-01	1.419E-02	-0.281
		443.98	3.382E-01	1.206E+00	2.060E+00	1.310E-01	0.164
		778.89	-1.182E-01	3.660E-01	5.990E-01	4.817E-02	-0.197
		867.32	5.095E-01	1.216E+00	1.825E+00	1.404E-01	0.279
		964.01	3.139E-01	4.450E-01	6.750E-01	4.854E-02	0.465
		1085.78	-1.296E-01	5.544E-01	8.820E-01	5.575E-02	-0.147
		1112.02	2.384E-01	4.800E-01	7.145E-01	4.352E-02	0.334
		1407.95	-1.081E-01	2.432E-01	3.798E-01	2.178E-02	-0.285
GD-153		69.67	-2.581E-01	1.129E+00	1.696E+00	1.516E-01	-0.152
	+	83.37	2.406E+01	1.793E+01	2.168E+01	1.765E+00	1.110
		97.43	* -4.790E-02	8.919E-02	1.262E-01	1.149E-02	-0.380
		103.18	-8.455E-02	1.074E-01	1.712E-01	1.691E-02	-0.494
EU-154		123.07	-3.382E-02	5.521E-02	8.724E-02	1.272E-02	-0.388
		247.94	-1.537E-02	4.171E-01	6.435E-01	7.029E-02	-0.024
		591.81	-8.934E-02	8.329E-01	1.357E+00	1.489E-01	-0.066
		723.30	-5.832E-01	2.937E-01	4.025E-01	3.664E-02	-1.449
		756.87	-3.478E-01	1.062E+00	1.657E+00	1.923E-01	-0.210
		873.19	-8.365E-02	4.081E-01	6.655E-01	7.713E-02	-0.126
		996.32	-5.644E-01	5.775E-01	8.609E-01	1.467E-01	-0.656
		1004.76	-2.831E-01	3.187E-01	4.818E-01	5.037E-02	-0.588
		1274.45	* 9.117E-02	1.640E-01	2.852E-01	2.634E-02	0.320
EU-155		48.70	-1.827E-01	4.982E-01	7.583E-01	5.723E-02	-0.241
		60.01	6.107E-01	2.358E+00	3.646E+00	3.490E-01	0.168
	+	86.54	4.030E-01	1.037E-01	1.670E-01	1.346E-02	2.413
		105.31	* 1.357E-01	1.176E-01	1.964E-01	2.015E-02	0.691
TB-160	+	86.79	1.065E+00	2.738E-01	4.399E-01	3.499E-02	2.421

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		197.04		2.544E-01	6.403E-01	1.068E+00	8.452E-02	0.238
		215.65		6.430E-02	8.126E-01	1.329E+00	1.054E-01	0.048
	+	298.57		1.371E-01	1.615E-01	2.332E-01	1.751E-02	0.588
		879.36	*	1.246E-02	1.861E-01	3.102E-01	2.366E-02	0.040
		962.29		-4.519E-02	8.272E-01	1.137E+00	8.187E-02	-0.040
		966.15		1.415E+00	3.572E-01	6.522E-01	4.682E-02	2.170
		1177.93		3.045E-01	4.721E-01	8.034E-01	4.421E-02	0.379
		1271.85		4.615E-01	9.247E-01	1.604E+00	9.025E-02	0.288
		80.57		-1.198E-01	2.917E-01	3.381E-01	2.805E-02	-0.354
		184.41		9.074E-02	5.630E-02	9.025E-02	7.121E-03	1.005
		280.46		-1.241E-01	1.002E-01	1.543E-01	1.185E-02	-0.804
		410.95		4.152E-01	3.142E-01	5.417E-01	3.271E-02	0.766
		711.68	*	-4.368E-02	8.637E-02	1.339E-01	1.093E-02	-0.326
		752.31		3.151E-01	3.832E-01	6.534E-01	5.295E-02	0.482
		810.29		-1.461E-02	8.078E-02	1.330E-01	1.057E-02	-0.110
TM-171		51.35		-3.740E+00	7.555E+00	1.271E+01	1.023E+00	-0.294
		52.39		3.924E+00	4.548E+00	7.612E+00	6.278E-01	0.515
		59.40		8.010E+00	1.211E+01	1.902E+01	1.824E+00	0.421
LU-176	+	66.72	*	1.114E+01	1.784E+01	2.775E+01	2.532E+00	0.402
		88.36		7.939E-01	2.041E-01	3.345E-01	2.653E-02	2.373
		201.83		-4.234E-02	3.285E-02	5.248E-02	4.158E-03	-0.807
LU-177		306.84	*	-3.505E-03	3.198E-02	5.052E-02	3.745E-03	-0.069
		401.10		4.375E+00	8.978E+00	1.439E+01	8.550E-01	0.304
		112.95		1.237E+00	1.645E+00	2.676E+00	3.014E-01	0.462
LU-177M	+	208.36	*	2.829E+00	1.798E+00	2.028E+00	1.608E-01	1.395
		52.97		5.226E-01	4.878E-01	8.205E-01	6.857E-02	0.637
		54.07		-4.782E-02	2.751E-01	4.457E-01	3.818E-02	-0.107
HF-181		61.30		1.148E+00	7.750E-01	1.240E+00	1.176E-01	0.926
		121.62		8.724E-02	3.934E-01	6.476E-01	8.142E-02	0.135
		147.16		3.353E-01	8.065E-01	1.184E+00	1.189E-01	0.283
		171.86		-1.984E-01	5.752E-01	9.009E-01	7.074E-02	-0.220
		218.09		-1.278E-01	9.212E-01	1.540E+00	1.222E-01	-0.083
	+	268.79		1.832E+00	1.258E+00	1.651E+00	1.282E-01	1.109
		319.02		2.563E-01	3.148E-01	5.361E-01	3.890E-02	0.478
		367.43		5.216E-02	1.155E+00	1.871E+00	1.199E-01	0.028
		413.65	*	-1.769E-01	2.297E-01	3.487E-01	2.115E-02	-0.507
		56.28		-1.265E-01	3.233E-01	5.437E-01	4.886E-02	-0.233
		57.53		-6.033E-03	1.874E-01	3.187E-01	2.941E-02	-0.019
		65.20		-3.685E-02	5.724E-01	8.692E-01	8.017E-02	-0.042
		133.02		-2.232E-02	7.037E-02	1.125E-01	1.300E-02	-0.198
		136.25		1.380E-01	5.024E-01	8.223E-01	9.230E-02	0.168
		345.85		4.337E-02	2.588E-01	3.727E-01	2.546E-02	0.116
W-181		482.03	*	5.279E-03	5.386E-02	9.049E-02	6.080E-03	0.058
		56.28		-5.001E-02	1.281E-01	2.154E-01	1.936E-02	-0.232
		57.53		-2.414E-03	7.428E-02	1.263E-01	1.166E-02	-0.019
TA-182		65.20	*	-1.449E-02	2.251E-01	3.419E-01	3.153E-02	-0.042
		67.75		3.307E-02	6.761E-02	1.108E-01	1.004E-02	0.298
		100.10		1.398E-01	1.762E-01	2.987E-01	2.825E-02	0.468
		152.43		4.370E-01	3.894E-01	6.512E-01	6.156E-02	0.671

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Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		222.10	7.532E-02	3.787E-01	6.415E-01	5.087E-02	0.117
		1001.68	1.788E+00	3.238E+00	5.280E+00	3.673E-01	0.339
	+	1121.28	8.044E-01	3.334E-01	4.228E-01	2.539E-02	1.902
		1189.05	5.648E-01	3.953E-01	7.301E-01	4.030E-02	0.774
		1221.42 *	-3.024E-01	2.414E-01	3.594E-01	2.000E-02	-0.841
		1230.97	-7.265E-01	6.376E-01	9.702E-01	5.412E-02	-0.749
		57.98	-2.888E-02	7.654E-02	1.286E-01	1.198E-02	-0.224
		59.32	3.146E-02	4.907E-02	7.703E-02	7.374E-03	0.408
		67.20	4.547E-02	1.260E-01	1.941E-01	1.765E-02	0.234
		162.32 *	1.029E-01	1.328E-01	2.118E-01	1.753E-02	0.486
RE-184	+	208.81	2.827E+00	1.796E+00	2.030E+00	1.609E-01	1.393
		291.72	3.432E-03	1.209E+00	1.746E+00	1.323E-01	0.002
		57.98	-1.071E-01	2.839E-01	4.771E-01	4.444E-02	-0.224
		59.32	1.166E-01	1.819E-01	2.855E-01	2.733E-02	0.408
		67.20	1.686E-01	4.672E-01	7.197E-01	6.545E-02	0.234
		161.27	5.725E-02	4.126E-01	6.639E-01	5.580E-02	0.086
		216.55	1.355E-01	2.810E-01	4.824E-01	3.826E-02	0.281
		252.85 *	9.324E-02	2.595E-01	4.391E-01	3.447E-02	0.212
		318.01	-1.037E-01	5.572E-01	9.020E-01	6.559E-02	-0.115
		792.07	1.103E-01	1.554E+00	2.258E+00	1.807E-01	0.049
OS-185		903.28	-5.622E-01	1.646E+00	2.247E+00	1.685E-01	-0.250
		920.93	-8.367E-01	6.121E-01	8.823E-01	6.545E-02	-0.948
		59.72	2.930E-02	1.372E-01	2.119E-01	2.032E-02	0.138
		61.14	8.034E-02	8.201E-02	1.297E-01	1.231E-02	0.619
		69.30	-7.890E-02	2.020E-01	3.014E-01	2.701E-02	-0.262
		592.07	-4.217E-01	3.369E+00	5.481E+00	4.193E-01	-0.077
		646.12 *	-3.931E-02	6.073E-02	9.416E-02	7.579E-03	-0.417
		717.42	-1.726E-02	1.291E+00	2.080E+00	1.695E-01	-0.008
		874.81	-3.217E-01	7.980E-01	1.279E+00	9.792E-02	-0.251
		880.27	3.839E-01	1.018E+00	1.739E+00	1.326E-01	0.221
RE-188		155.03 *	-9.254E-02	1.989E-01	3.124E-01	2.859E-02	-0.296
		477.96	-7.786E-01	3.927E+00	6.485E+00	4.333E-01	-0.120
		633.10	1.589E+00	3.752E+00	6.305E+00	5.017E-01	0.252
W-188	+	63.58	1.183E+02	5.036E+01	6.567E+01	6.127E+00	1.802
		227.08	7.130E+00	1.401E+01	2.400E+01	1.902E+00	0.297
IR-192		290.67 *	-3.553E+00	9.502E+00	1.335E+01	1.013E+00	-0.266
	+	295.96	9.922E-01	2.256E-01	3.238E-01	2.463E-02	3.064
		308.46	-7.979E-03	1.232E-01	1.950E-01	1.452E-02	-0.041
		316.51 *	5.864E-03	4.228E-02	6.966E-02	5.096E-03	0.084
		468.07	1.414E-02	8.881E-02	1.313E-01	9.690E-03	0.108
AU-195		604.41	-2.282E-01	7.022E-01	9.638E-01	1.201E-01	-0.237
		612.46	2.373E+00	1.143E+00	1.871E+00	1.721E-01	1.268
		65.12	3.289E-02	1.054E-01	1.623E-01	1.498E-02	0.203
		66.83	3.410E-02	5.891E-02	9.147E-02	8.341E-03	0.373
	+	75.70	1.355E+00	2.411E-01	3.686E-01	3.162E-02	3.675
		98.88 *	3.201E-01	2.532E-01	3.879E-01	3.605E-02	0.825
TL-200		129.76	2.909E+00	3.179E+00	5.319E+00	6.324E-01	0.547
		367.94 *	-6.554E-05	3.179E+00	Half-Life too short		
		579.30	8.149E-04	3.179E+00	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
	828.27			1.075E-03	3.179E+00	Half-Life too short		
	1205.75			1.141E-03	3.179E+00	Half-Life too short		
TL-201	68.90			5.106E-01	2.480E+00	3.792E+00	3.408E-01	0.135
	70.82			-2.237E-02	1.439E+00	2.177E+00	1.931E-01	-0.010
	80.30			-1.701E+00	4.150E+00	4.812E+00	4.000E-01	-0.354
	135.34			-3.900E+00	2.192E+01	3.522E+01	3.987E+00	-0.111
	167.43	*		9.388E-01	6.407E+00	1.029E+01	8.061E-01	0.091
TL-202	68.90			5.571E-02	2.706E-01	4.138E-01	3.719E-02	0.135
	70.82			-2.434E-03	1.566E-01	2.369E-01	2.101E-02	-0.010
	80.30			-1.852E-01	4.517E-01	5.238E-01	4.354E-02	-0.354
	439.56	*		-1.099E-02	8.020E-02	1.339E-01	8.460E-03	-0.082
HG-203	70.83			-7.810E-03	7.116E-01	1.077E+00	1.482E-01	-0.007
	72.87			1.053E+00	4.316E-01	7.356E-01	9.772E-02	1.431
	82.60			-3.959E-01	1.068E+00	1.484E+00	2.000E-01	-0.267
	279.20	*		2.616E-02	4.665E-02	7.907E-02	6.295E-03	0.331
BI-207	72.80			2.825E-01	1.232E-01	2.163E-01	1.892E-02	1.306
	74.97			7.547E-01	1.343E-01	1.796E-01	1.548E-02	4.201
	84.90			3.122E-01	2.326E-01	2.826E-01	2.277E-02	1.105
	569.67			-2.420E-02	4.262E-02	6.466E-02	4.833E-03	-0.374
	1063.62	*		-2.578E-02	7.473E-02	1.180E-01	7.676E-03	-0.218
	1770.23			-6.765E-02	5.919E-01	8.108E-01	4.601E-02	-0.083
TL-207	81.07			7.105E-03	2.254E-01	2.695E-01	2.228E-02	0.026
	83.78			2.059E-01	1.534E-01	1.881E-01	1.527E-02	1.095
	94.90			2.931E-01	2.248E-01	3.858E-01	3.383E-02	0.760
	122.32			-4.124E-01	1.867E+00	3.015E+00	3.939E-01	-0.137
	144.24			2.624E-01	8.778E-01	1.363E+00	1.531E-01	0.193
	154.21			1.045E-01	4.591E-01	7.437E-01	7.476E-02	0.140
	269.46			4.309E-01	2.960E-01	3.982E-01	3.169E-02	1.082
	323.87	*		-7.545E-01	8.260E-01	1.265E+00	2.157E-01	-0.596
	338.28			5.898E+00	2.125E+00	2.792E+00	3.131E-01	2.113
	445.03			1.491E+00	2.810E+00	4.862E+00	5.155E-01	0.307
PO-209	260.50			1.182E+01	1.049E+01	1.833E+01	1.432E+00	0.645
	262.80			-1.952E+01	2.969E+01	4.756E+01	3.710E+00	-0.411
	896.60	*		5.998E+00	1.085E+01	1.867E+01	1.406E+00	0.321
PB-211	404.84	*		-1.624E+00	1.588E+00	1.794E+00	1.118E+00	-0.906
	427.08			7.691E-01	2.674E+00	4.279E+00	2.647E+00	0.180
	831.96			1.459E-01	1.670E+00	2.795E+00	1.748E+00	0.052
BI-212	727.18	*		1.084E+00	4.866E-01	8.698E-01	8.349E-02	1.246
	785.46			2.508E+00	2.469E+00	4.394E+00	3.526E-01	0.571
	1620.62			2.953E+00	1.915E+00	3.352E+00	1.929E-01	0.881
PO-215	81.07			7.105E-03	2.254E-01	2.695E-01	2.228E-02	0.026
	83.78			2.059E-01	1.534E-01	1.881E-01	1.527E-02	1.095
	94.90			2.931E-01	2.248E-01	3.858E-01	3.383E-02	0.760
	122.32			-4.124E-01	1.867E+00	3.015E+00	3.939E-01	-0.137
	144.24			2.624E-01	8.778E-01	1.363E+00	1.531E-01	0.193
	154.21			1.045E-01	4.591E-01	7.437E-01	7.476E-02	0.140
	269.46			4.309E-01	2.960E-01	3.982E-01	3.169E-02	1.082
	323.87	*		-7.545E-01	8.260E-01	1.265E+00	2.157E-01	-0.596
	338.28			5.898E+00	2.125E+00	2.792E+00	3.131E-01	2.113

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	445.03		1.491E+00	2.810E+00	4.862E+00	5.155E-01	0.307
		271.23		5.529E-01	3.809E-01	5.168E-01	4.959E-02	1.070
		401.81	*	3.633E-01	5.511E-01	8.894E-01	1.216E-01	0.409
RN-220		549.76	*	-1.604E+01	3.376E+01	5.390E+01	3.941E+00	-0.298
RA-223	+	81.07		7.105E-03	2.254E-01	2.695E-01	2.228E-02	0.026
		83.78		2.059E-01	1.534E-01	1.881E-01	1.527E-02	1.095
		94.90		2.931E-01	2.248E-01	3.858E-01	3.383E-02	0.760
	+	122.32		-4.124E-01	1.867E+00	3.015E+00	3.939E-01	-0.137
		144.24		2.624E-01	8.778E-01	1.363E+00	1.531E-01	0.193
		154.21		1.045E-01	4.591E-01	7.437E-01	7.476E-02	0.140
	+	269.46		4.309E-01	2.960E-01	3.982E-01	3.169E-02	1.082
		323.87	*	-7.545E-01	8.260E-01	1.265E+00	2.157E-01	-0.596
		338.28		5.898E+00	2.125E+00	2.792E+00	3.131E-01	2.113
AC-227	+	445.03		1.491E+00	2.810E+00	4.862E+00	5.155E-01	0.307
		79.80		-3.341E-01	1.724E+00	2.029E+00	4.341E-01	-0.165
		236.00		5.170E-01	3.036E-01	4.791E-01	5.631E-02	1.079
	+	256.20	*	-1.930E-01	4.368E-01	7.094E-01	1.058E-01	-0.272
		286.10		5.795E-01	1.708E+00	2.864E+00	3.602E-01	0.202
		299.80		1.766E+00	2.096E+00	3.021E+00	5.124E-01	0.584
	+	304.40		7.438E-02	2.584E+00	3.726E+00	6.674E-01	0.020
		334.20		-7.459E-01	2.971E+00	4.143E+00	7.772E-01	-0.180
		79.80		-3.341E-01	1.724E+00	2.029E+00	4.397E-01	-0.165
TH-227	+	94.00		1.574E+01	4.775E+00	4.258E+00	9.278E-01	3.696
		236.00		5.170E-01	3.024E-01	4.791E-01	5.046E-02	1.079
		256.20	*	-1.930E-01	4.372E-01	7.094E-01	1.256E-01	-0.272
	+	286.10		5.795E-01	1.802E+00	2.864E+00	2.872E+00	0.202
		299.80		1.766E+00	2.096E+00	3.021E+00	5.124E-01	0.584
		304.40		7.438E-02	2.584E+00	3.726E+00	6.674E-01	0.020
	+	334.20		-7.459E-01	2.971E+00	4.143E+00	7.772E-01	-0.180
		85.43		3.082E-01	2.296E-01	2.816E-01	2.260E-02	1.094
		88.47		4.570E-01	1.175E-01	1.911E-01	1.518E-02	2.391
TH-229	+	100.00		1.561E-01	1.845E-01	3.132E-01	2.958E-02	0.499
		193.63	*	-1.172E-01	5.539E-01	9.316E-01	7.370E-02	-0.126
		210.97		1.340E+00	8.968E-01	1.438E+00	1.141E-01	0.931
PA-231	+	283.67	*	6.424E-01	1.722E+00	2.893E+00	4.239E-01	0.222
		301.29		7.062E-01	8.339E-01	1.221E+00	1.400E-01	0.579
		81.07		7.105E-03	2.254E-01	2.695E-01	2.228E-02	0.026
TH-231	+	83.78		2.059E-01	1.534E-01	1.881E-01	1.527E-02	1.095
		94.90		2.931E-01	2.248E-01	3.858E-01	3.383E-02	0.760
		122.32		-4.124E-01	1.867E+00	3.015E+00	3.939E-01	-0.137
	+	144.24		2.624E-01	8.778E-01	1.363E+00	1.531E-01	0.193
		154.21		1.045E-01	4.591E-01	7.437E-01	7.476E-02	0.140
		269.46		4.309E-01	2.960E-01	3.982E-01	3.169E-02	1.082
	+	323.87	*	-7.545E-01	8.260E-01	1.265E+00	2.157E-01	-0.596
		338.28		5.898E+00	2.125E+00	2.792E+00	3.131E-01	2.113
		445.03		1.491E+00	2.810E+00	4.862E+00	5.155E-01	0.307
U-231	+	84.21		7.356E+00	5.481E+00	6.783E+00	5.490E-01	1.084
		92.29		1.290E+01	2.942E+00	4.116E+00	3.469E-01	3.134
		95.87	*	4.636E-01	9.392E-01	1.424E+00	1.267E-01	0.325

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233		108.00		-4.228E-01	1.844E+00	3.005E+00	3.170E-01	-0.141
	+	75.28		2.202E+01	4.815E+00	5.573E+00	8.547E-01	3.952
	+	86.59		6.553E+00	2.368E+00	2.714E+00	7.223E-01	2.415
	+	300.12		4.922E-01	5.827E-01	8.328E-01	1.187E-01	0.591
		311.98	*	3.902E-03	8.042E-02	1.320E-01	1.008E-02	0.030
		340.50		1.278E+00	9.527E-01	1.409E+00	3.280E-01	0.907
		398.62		-2.511E+00	2.787E+00	4.090E+00	1.059E+00	-0.614
PA-234		415.76		-9.252E-01	2.133E+00	3.299E+00	6.818E-01	-0.280
	+	63.00		3.471E+00	1.543E+00	1.922E+00	3.062E-01	1.806
		94.67		4.193E-01	1.743E-01	2.967E-01	3.704E-02	1.413
		98.44		1.337E-01	1.265E-01	1.578E-01	8.818E-02	0.848
		99.86		4.600E-01	4.677E-01	7.969E-01	7.510E-02	0.577
		111.00		-1.228E-01	2.046E-01	3.269E-01	4.534E-02	-0.376
		131.20		-7.258E-02	1.179E-01	1.860E-01	2.184E-02	-0.390
		152.70		3.837E-01	3.844E-01	6.336E-01	1.107E-01	0.606
	+	186.00		6.111E+00	3.173E+00	3.506E+00	1.088E+00	1.743
		226.40		-1.434E-01	4.514E-01	7.465E-01	9.525E-02	-0.192
		227.20		3.183E-01	4.798E-01	8.264E-01	6.548E-02	0.385
		248.90		-2.219E-01	8.909E-01	1.464E+00	3.241E-01	-0.152
	+	293.70		6.312E+00	1.718E+00	1.967E+00	3.304E-01	3.209
		369.80		7.714E-01	1.127E+00	1.873E+00	3.931E-01	0.412
		568.70		-1.007E+00	1.394E+00	2.091E+00	1.561E-01	-0.482
		569.50		-2.106E-01	3.784E-01	5.747E-01	4.294E-02	-0.366
		574.00		1.094E-01	1.967E+00	3.249E+00	2.439E-01	0.034
		699.00		-1.204E+00	1.079E+00	1.567E+00	2.958E-01	-0.769
		706.10		2.509E-01	1.441E+00	2.350E+00	1.046E+00	0.107
		733.00		4.300E-02	5.476E-01	8.865E-01	1.951E-01	0.049
		742.81		8.192E-01	1.982E+00	3.165E+00	2.125E+00	0.259
	+	796.30		2.237E+00	1.578E+00	2.133E+00	5.729E-01	1.049
		805.60		1.122E-01	1.302E+00	2.189E+00	6.670E-01	0.051
		819.60		-2.010E-01	1.625E+00	2.680E+00	1.015E+00	-0.075
		826.30		-6.572E-01	1.109E+00	1.693E+00	7.553E-01	-0.388
		831.60		3.419E-02	8.551E-01	1.429E+00	4.233E-01	0.024
		876.40		-3.433E-01	1.204E+00	1.863E+00	1.914E+00	-0.184
		880.51		1.781E-01	3.747E-01	6.443E-01	4.911E-02	0.276
		883.24		1.931E-01	3.979E-01	6.495E-01	4.358E-01	0.297
		899.00		5.923E-01	1.209E+00	2.029E+00	8.828E-01	0.292
		925.00		-1.843E-01	1.601E+00	2.615E+00	1.935E-01	-0.070
		926.50		7.861E-02	2.413E-01	4.072E-01	1.013E-01	0.193
		946.00	*	-1.745E-01	4.293E-01	6.813E-01	1.239E-01	-0.256
		949.00		6.575E-01	6.094E-01	1.086E+00	7.901E-02	0.605
		980.50		5.355E-01	1.002E+00	1.716E+00	1.217E-01	0.312
		1394.10		3.771E-01	1.643E+00	2.746E+00	1.779E+00	0.137
PA-234M		766.42		2.593E+01	2.112E+01	3.025E+01	1.532E+01	0.857
NP-236		1001.03	*	6.099E+00	7.403E+00	1.228E+01	1.053E+00	0.497
		94.67		3.228E-01	1.294E-01	2.255E-01	1.970E-02	1.432
		98.44		1.011E-01	7.772E-02	1.193E-01	1.101E-02	0.848
		111.00		-9.288E-02	1.545E-01	2.473E-01	2.715E-02	-0.376
		160.31	*	-1.167E-01	9.535E-02	1.434E-01	1.222E-02	-0.814



## ---- 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		2.252E-01	1.685E-01	2.719E-01	2.551E-02	0.828
		117.00	*	-8.194E-02	2.007E-01	3.223E-01	3.825E-02	-0.254
	+	209.75		2.255E+00	1.433E+00	1.599E+00	1.268E-01	1.410
		228.18		1.003E-01	2.550E-01	4.346E-01	3.443E-02	0.231
		277.60		2.353E-01	2.245E-01	3.711E-01	2.858E-02	0.634
		334.30		-4.926E-01	1.679E+00	2.334E+00	1.641E-01	-0.211
AM-241		59.54	*	4.949E-02	7.100E-02	1.116E-01	1.135E-02	0.443
CM-243		99.55		2.317E-01	1.734E-01	2.798E-01	2.625E-02	0.828
		103.76	*	2.963E-02	9.923E-02	1.653E-01	1.646E-02	0.179
		117.00		-8.429E-02	2.065E-01	3.316E-01	3.935E-02	-0.254
	+	209.75		2.223E+00	1.413E+00	1.576E+00	1.250E-01	1.410
		228.18		1.013E-01	2.577E-01	4.391E-01	3.478E-02	0.231
		277.60		2.373E-01	2.263E-01	3.741E-01	2.881E-02	0.634
AM-246		798.80		-3.826E-02	1.924E-01	2.706E-01	2.160E-02	-0.141
		1036.00		-5.963E-01	4.316E-01	6.141E-01	4.125E-02	-0.971
		1062.04		-1.440E-02	3.230E-01	5.238E-01	3.413E-02	-0.027
		1078.86	*	8.041E-02	1.918E-01	3.234E-01	2.063E-02	0.249
CM-247		278.00		8.381E-01	8.863E-01	1.525E+00	1.174E-01	0.550
		287.40		-6.840E-01	1.385E+00	2.221E+00	1.692E-01	-0.308
		402.60	*	3.503E-02	4.661E-02	7.817E-02	4.655E-03	0.448
CF-249		252.85		3.515E-01	9.781E-01	1.655E+00	1.299E-01	0.212
		333.44		1.023E-01	2.182E-01	3.226E-01	2.272E-02	0.317
		387.95	*	3.066E-02	5.167E-02	8.600E-02	5.107E-03	0.356
CF-251		176.60	*	-1.249E-01	1.497E-01	2.280E-01	1.794E-02	-0.548
		227.00		1.837E-01	4.236E-01	7.235E-01	5.733E-02	0.254
		285.00		-3.343E-01	1.978E+00	3.233E+00	2.470E-01	-0.103

# 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]G244132013      *
* Acquisition date   : 19-JAN-2010 11:41:00 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 02:00:01.64             Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132013             Analyst initials: MXR1         *
* Batch Number       : 940270                 Sample Quantity : 1.2266E+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	1.897E+01	1.981E+00	7.705E-01	0.000E+00
CD-109	3.400E+00	8.564E-01	1.100E+00	0.000E+00
SN-126	3.347E-01	8.432E-02	1.081E-01	0.000E+00
BA-137M	1.962E-01	7.341E-02	7.725E-02	0.000E+00
CS-137	2.074E-01	7.761E-02	8.166E-02	0.000E+00
TL-208	5.158E-01	1.013E-01	7.798E-02	0.000E+00
BI-210	1.090E+00	8.496E-01	9.104E-01	0.000E+00
PB-210	1.090E+00	8.496E-01	9.104E-01	0.000E+00
PO-210	1.090E+00	8.485E-01	9.104E-01	0.000E+00
BI-211	4.480E+00	5.761E-01	4.237E-01	0.000E+00
PB-212	1.586E+00	1.877E-01	1.008E-01	0.000E+00
PO-212	1.586E+00	1.877E-01	1.008E-01	0.000E+00
BI-214	1.306E+00	2.499E-01	1.428E-01	0.000E+00
PB-214	1.558E+00	2.157E-01	1.544E-01	0.000E+00
PO-214	1.558E+00	2.157E-01	1.544E-01	0.000E+00
PO-216	1.586E+00	1.877E-01	1.008E-01	0.000E+00
PO-218	1.558E+00	2.157E-01	1.544E-01	0.000E+00
RA-224	4.728E+00	1.420E+00	1.147E+00	0.000E+00
RA-226	1.306E+00	2.499E-01	1.428E-01	0.000E+00
AC-228	1.713E+00	3.797E-01	3.045E-01	0.000E+00
RA-228	1.713E+00	3.797E-01	3.045E-01	0.000E+00
TH-228	1.608E+00	1.903E-01	1.022E-01	0.000E+00
TH-230	1.306E+00	2.499E-01	1.428E-01	0.000E+00
TH-232	1.713E+00	3.797E-01	3.045E-01	0.000E+00
TH-234	2.978E+00	1.325E+00	1.143E+00	0.000E+00
U-234	1.306E+00	2.499E-01	1.428E-01	0.000E+00
U-235	8.096E-02	2.657E-01	3.925E-01	0.000E+00
NP-237	9.829E-01	3.175E-01	3.166E-01	0.000E+00
U-238	2.978E+00	1.325E+00	1.143E+00	0.000E+00
AM-243	4.204E-01	7.334E-02	6.444E-02	0.000E+00
ANH-511	1.594E-01	8.180E-02	6.009E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	-7.278E-02	3.992E-01	6.824E-01	0.000E+00	NOT IDENT.
NA-22	3.455E-02	5.763E-02	1.026E-01	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.723E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-2.620E-02	3.861E-02	5.725E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.283E-02	6.351E-02	0.000E+00	FAIL ABUN
SC-46	-2.618E-02	5.137E-02	8.352E-02	0.000E+00	FAIL ABUN
V-48	-5.964E-02	9.401E-02	1.494E-01	0.000E+00	NOT IDENT.
CR-51	3.039E-01	4.319E-01	7.595E-01	0.000E+00	NOT IDENT.
MN-52	1.279E-01	2.583E-01	4.581E-01	0.000E+00	NOT IDENT.
MN-54	-1.630E-02	5.097E-02	8.515E-02	0.000E+00	NOT IDENT.
CO-56	-2.579E-02	5.209E-02	8.548E-02	0.000E+00	NOT IDENT.
CO-57	-1.522E-03	2.616E-02	4.477E-02	0.000E+00	NOT IDENT.
CO-58	-1.109E-02	5.161E-02	8.706E-02	0.000E+00	NOT IDENT.
FE-59	-1.022E-01	1.361E-01	2.121E-01	0.000E+00	FAIL ABUN
CO-60	-2.131E-02	5.090E-02	7.794E-02	0.000E+00	NOT IDENT.
ZN-65	5.356E-02	1.364E-01	2.025E-01	0.000E+00	NOT IDENT.
GE-68	-1.016E-01	1.664E+00	2.752E+00	0.000E+00	NOT IDENT.
AS-73	6.823E-02	2.537E-01	4.439E-01	0.000E+00	NOT IDENT.
AS-74	-7.868E-02	1.202E-01	1.942E-01	0.000E+00	NOT IDENT.
SE-75	-2.858E-02	5.214E-02	8.065E-02	0.000E+00	NOT IDENT.
BR-77	-4.916E+00	8.923E+00	1.470E+01	0.000E+00	FAIL ABUN
SR-82	-1.574E-01	4.920E-01	8.280E-01	0.000E+00	NOT IDENT.
RB-83	-4.048E-02	8.116E-02	1.342E-01	0.000E+00	NOT IDENT.
RB-84	7.006E-02	8.919E-02	1.606E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	9.417E+00	1.600E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.771E-02	8.105E-02	0.000E+00	NOT IDENT.
RB-86	-4.204E-01	1.039E+00	1.667E+00	0.000E+00	NOT IDENT.
Y-88	1.562E-02	4.574E-02	8.104E-02	0.000E+00	NOT IDENT.
ZR-88	1.481E-02	3.805E-02	6.485E-02	0.000E+00	NOT IDENT.
Y-91	1.053E+01	2.173E+01	3.853E+01	0.000E+00	NOT IDENT.
NB-94	-2.996E-03	4.620E-02	7.645E-02	0.000E+00	NOT IDENT.
NB-95	8.075E-02	5.976E-02	1.104E-01	0.000E+00	NOT IDENT.
NB-95M	4.530E-02	1.501E-01	2.332E-01	0.000E+00	NOT IDENT.
ZR-95	-9.127E-03	9.488E-02	1.553E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	4.873E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.069E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-4.305E+00	1.193E+01	1.912E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.133E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.606E-02	3.730E-02	6.507E-02	0.000E+00	NOT IDENT.
RH-102	-4.074E-03	3.762E-02	6.257E-02	0.000E+00	NOT IDENT.
RU-103	-3.211E-02	4.890E-02	8.032E-02	0.000E+00	FAIL ABUN
RH-106	-1.540E-01	4.397E-01	7.219E-01	0.000E+00	FAIL ABUN
RU-106	-1.540E-01	4.394E-01	7.219E-01	0.000E+00	FAIL ABUN
AG-108M	5.615E-03	4.063E-02	7.138E-02	0.000E+00	NOT IDENT.
AG-110M	1.301E-02	5.115E-02	7.594E-02	0.000E+00	NOT IDENT.
IN-111	2.099E-03	9.692E-01	1.484E+00	0.000E+00	NOT IDENT.
IN-113M	-1.354E-02	5.678E-02	9.323E-02	0.000E+00	NOT IDENT.
SN-113	-1.354E-02	5.678E-02	9.323E-02	0.000E+00	NOT IDENT.
IN-114M	-1.236E-02	2.234E-01	3.265E-01	0.000E+00	NOT IDENT.
CD-115	1.381E+00	9.353E+00	1.616E+01	0.000E+00	NOT IDENT.
SN-117M	-1.056E-02	5.816E-02	9.685E-02	0.000E+00	NOT IDENT.
SB-122	1.257E+00	1.976E+00	3.495E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.526E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-4.928E-04	3.136E-02	5.260E-02	0.000E+00	NOT IDENT.
I-124	-8.955E-01	9.013E-01	1.194E+00	0.000E+00	NOT IDENT.
SB-124	7.903E-03	8.753E-02	1.463E-01	0.000E+00	FAIL ABUN
SB-125	4.099E-02	1.105E-01	1.968E-01	0.000E+00	FAIL ABUN
TE-125M	4.114E+00	9.659E+00	1.695E+01	0.000E+00	NOT IDENT.
I-126	3.936E-01	3.297E-01	4.238E-01	0.000E+00	FAIL ABUN
SB-126	-1.008E-01	1.919E-01	3.057E-01	0.000E+00	FAIL ABUN
SB-127	-3.943E-01	1.520E+00	2.483E+00	0.000E+00	NOT IDENT.
XE-127	4.045E-03	5.132E-02	9.096E-02	0.000E+00	FAIL ABUN
I-131	-1.229E-02	1.275E-01	2.126E-01	0.000E+00	NOT IDENT.
TE-132	3.829E-01	5.971E-01	1.068E+00	0.000E+00	NOT IDENT.
BA-133	4.381E-03	6.026E-02	8.972E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.156E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.405E-02	1.121E-01	0.000E+00	FAIL ABUN
CS-135	2.417E-01	1.987E-01	3.230E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.850E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.017E-02	1.333E-01	2.164E-01	0.000E+00	FAIL ABUN
CE-139	-1.671E-02	3.524E-02	5.770E-02	0.000E+00	NOT IDENT.
BA-140	-2.969E-01	3.254E-01	4.976E-01	0.000E+00	NOT IDENT.
LA-140	-6.259E-02	1.105E-01	1.689E-01	0.000E+00	NOT IDENT.
CE-141	2.539E-02	7.801E-02	1.195E-01	0.000E+00	NOT IDENT.

CE-143	0.000E+00	1.595E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	8.566E-02	2.175E-01	3.758E-01	0.000E+00	NOT IDENT.
PM-144	7.080E-03	4.907E-02	8.244E-02	0.000E+00	NOT IDENT.
PR-144	4.795E-01	3.323E+00	5.583E+00	0.000E+00	NOT IDENT.
PM-146	6.774E-02	5.419E-02	1.000E-01	0.000E+00	NOT IDENT.
ND-147	2.938E-01	6.682E-01	1.173E+00	0.000E+00	FAIL ABUN
PM-149	2.425E+01	7.008E+01	1.223E+02	0.000E+00	NOT IDENT.
EU-152	-5.317E-02	1.273E-01	1.926E-01	0.000E+00	NOT IDENT.
GD-153	-4.790E-02	8.740E-02	1.305E-01	0.000E+00	FAIL ABUN
EU-154	9.117E-02	1.607E-01	2.852E-01	0.000E+00	NOT IDENT.
EU-155	1.357E-01	1.153E-01	2.028E-01	0.000E+00	FAIL ABUN
TB-160	1.246E-02	1.824E-01	3.117E-01	0.000E+00	FAIL ABUN
HO-166M	-4.368E-02	8.464E-02	1.350E-01	0.000E+00	NOT IDENT.
TM-171	1.114E+01	1.748E+01	2.882E+01	0.000E+00	NOT IDENT.
LU-176	-3.505E-03	3.134E-02	5.148E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.762E+00	2.077E+00	0.000E+00	FAIL ABUN
LU-177M	-1.769E-01	2.251E-01	3.539E-01	0.000E+00	FAIL ABUN
HF-181	5.279E-03	5.278E-02	9.167E-02	0.000E+00	NOT IDENT.
W-181	-1.449E-02	2.206E-01	3.552E-01	0.000E+00	NOT IDENT.
TA-182	-3.024E-01	2.366E-01	3.597E-01	0.000E+00	FAIL ABUN
RE-183	1.029E-01	1.301E-01	2.175E-01	0.000E+00	FAIL ABUN
RE-184	9.324E-02	2.543E-01	4.485E-01	0.000E+00	NOT IDENT.
OS-185	-3.931E-02	5.952E-02	9.503E-02	0.000E+00	NOT IDENT.
RE-188	-9.254E-02	1.949E-01	3.211E-01	0.000E+00	NOT IDENT.
W-188	-3.553E+00	9.312E+00	1.361E+01	0.000E+00	FAIL ABUN
IR-192	5.864E-03	4.143E-02	7.096E-02	0.000E+00	FAIL ABUN
AU-195	3.201E-01	2.481E-01	4.010E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.873E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	9.388E-01	6.279E+00	1.056E+01	0.000E+00	NOT IDENT.
TL-202	-1.099E-02	7.859E-02	1.358E-01	0.000E+00	NOT IDENT.
HG-203	2.616E-02	4.571E-02	8.066E-02	0.000E+00	NOT IDENT.
BI-207	-2.578E-02	7.324E-02	1.183E-01	0.000E+00	FAIL ABUN
TL-207	-7.545E-01	8.094E-01	1.288E+00	0.000E+00	FAIL ABUN
PO-209	5.998E+00	1.063E+01	1.876E+01	0.000E+00	NOT IDENT.
PB-211	-1.624E+00	1.556E+00	1.821E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.769E-01	8.764E-01	0.000E+00	FAIL ABUN
PO-215	-7.545E-01	8.094E-01	1.288E+00	0.000E+00	FAIL ABUN
RN-219	3.633E-01	5.401E-01	9.031E-01	0.000E+00	FAIL ABUN
RN-220	-1.604E+01	3.308E+01	5.451E+01	0.000E+00	NOT IDENT.
RA-223	-7.545E-01	8.094E-01	1.288E+00	0.000E+00	FAIL ABUN
AC-227	-1.930E-01	4.281E-01	7.245E-01	0.000E+00	FAIL ABUN
TH-227	-1.930E-01	4.285E-01	7.245E-01	0.000E+00	FAIL ABUN
TH-229	-1.172E-01	5.428E-01	9.548E-01	0.000E+00	FAIL ABUN
PA-231	6.424E-01	1.688E+00	2.950E+00	0.000E+00	FAIL ABUN
TH-231	-7.545E-01	8.094E-01	1.288E+00	0.000E+00	FAIL ABUN
U-231	4.636E-01	9.205E-01	1.473E+00	0.000E+00	FAIL ABUN
PA-233	3.902E-03	7.882E-02	1.345E-01	0.000E+00	FAIL ABUN
PA-234	-1.745E-01	4.207E-01	6.842E-01	0.000E+00	FAIL ABUN
PA-234M	6.099E+00	7.255E+00	1.232E+01	0.000E+00	NOT IDENT.
NP-236	-1.167E-01	9.345E-02	1.473E-01	0.000E+00	NOT IDENT.
NP-239	-8.194E-02	1.967E-01	3.324E-01	0.000E+00	FAIL ABUN
AM-241	4.949E-02	6.958E-02	1.161E-01	0.000E+00	NOT IDENT.
CM-243	2.963E-02	9.724E-02	1.707E-01	0.000E+00	FAIL ABUN
AM-246	8.041E-02	1.880E-01	3.241E-01	0.000E+00	NOT IDENT.
CM-247	3.503E-02	4.568E-02	7.937E-02	0.000E+00	NOT IDENT.
CF-249	3.066E-02	5.063E-02	8.736E-02	0.000E+00	NOT IDENT.
CF-251	-1.249E-01	1.467E-01	2.340E-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]G244132013.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:41:00
Sample ID          : G244132013          Sample quantity   : 1.22660E+02 GRAM
Detector name      : GAM13              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time  : 0 02:00:01.64  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID          : 940270              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	688	10.67*	1.041E+00	1.897E+01	1.897E+01	10.66
CD-109	88.03	293	3.72*	7.247E+00	3.329E+00	3.400E+00	25.70
SN-126	64.28	273	9.60	7.391E+00	1.179E+00	1.179E+00	44.35
	86.94	293	8.90	7.247E+00	1.392E+00	1.392E+00	47.93
	87.57	293	37.00*	7.247E+00	3.347E-01	3.347E-01	25.70
BA-137M	661.65	116	89.98*	2.019E+00	1.960E-01	1.962E-01	38.18
CS-137	661.65	116	85.12*	2.019E+00	2.072E-01	2.074E-01	38.19
TL-208	277.35	----	6.80	4.225E+00	-----	Line Not Found	-----
	510.84	132	21.60	2.537E+00	7.380E-01	7.380E-01	53.02
	583.14	320	84.20*	2.256E+00	5.158E-01	5.158E-01	20.04
	860.37	80	12.46	1.606E+00	1.218E+00	1.218E+00	48.64
BI-210	46.50	105	4.05*	7.296E+00	1.089E+00	1.090E+00	79.52
PB-210	46.50	105	4.05*	7.296E+00	1.089E+00	1.090E+00	79.52
PO-210	46.50	105	4.05*	7.296E+00	1.089E+00	1.090E+00	79.42
BI-211	72.87	-----	1.27	7.369E+00	-----	Line Not Found	-----
	351.07	663	12.94*	3.498E+00	4.480E+00	4.480E+00	13.12
PB-212	74.81	667	10.70	7.359E+00	2.593E+00	2.593E+00	20.10
	77.11	958	18.00	7.344E+00	2.218E+00	2.218E+00	13.17
	87.30	293	8.00	7.247E+00	1.548E+00	1.548E+00	27.58
	238.63	1089	44.60*	4.714E+00	1.586E+00	1.586E+00	12.08
	300.09	42	3.41	3.979E+00	9.527E-01	9.527E-01	117.91
PO-212	74.81	667	10.70	7.359E+00	2.593E+00	2.593E+00	20.10
	77.11	958	18.00	7.344E+00	2.218E+00	2.218E+00	13.17
	87.30	293	8.00	7.247E+00	1.548E+00	1.548E+00	27.58
	115.19	-----	0.60	6.822E+00	-----	Line Not Found	-----
	238.63	1089	44.60*	4.714E+00	1.586E+00	1.586E+00	12.08
	300.09	42	3.41	3.979E+00	9.527E-01	9.527E-01	117.91
BI-214	609.31	429	46.30*	2.170E+00	1.306E+00	1.306E+00	19.52
	1120.29	109	15.10	1.287E+00	1.713E+00	1.713E+00	41.97
	1764.49	71	15.80	8.986E-01	1.539E+00	1.539E+00	35.69
PB-214	74.81	667	6.21	7.359E+00	4.468E+00	4.469E+00	19.28
	77.11	958	10.50	7.344E+00	3.802E+00	3.802E+00	15.22

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	87.30	293	4.67	7.247E+00	2.652E+00	2.652E+00	26.84
	241.98	285	7.49	4.672E+00	2.493E+00	2.493E+00	31.15
	295.21	332	19.20	4.028E+00	1.315E+00	1.315E+00	23.56
	351.92	663	37.20*	3.498E+00	1.558E+00	1.558E+00	14.12
	74.81	667	6.21	7.359E+00	4.468E+00	4.469E+00	19.28
	77.11	958	10.50	7.344E+00	3.802E+00	3.802E+00	15.22
	87.30	293	4.67	7.247E+00	2.652E+00	2.652E+00	26.84
	241.98	285	7.49	4.672E+00	2.493E+00	2.493E+00	31.15
PO-216	295.21	332	19.20	4.028E+00	1.315E+00	1.315E+00	23.56
	351.92	663	37.20*	3.498E+00	1.558E+00	1.558E+00	14.12
	74.81	667	10.70	7.359E+00	2.593E+00	2.593E+00	20.10
	77.11	958	18.00	7.344E+00	2.218E+00	2.218E+00	13.17
	87.30	293	8.00	7.247E+00	1.548E+00	1.548E+00	27.58
	238.63	1089	44.60*	4.714E+00	1.586E+00	1.586E+00	12.08
	300.09	42	3.41	3.979E+00	9.527E-01	9.527E-01	117.91
	74.81	667	6.21	7.359E+00	4.468E+00	4.469E+00	19.28
PO-218	77.11	958	10.50	7.344E+00	3.802E+00	3.802E+00	15.22
	87.30	293	4.67	7.247E+00	2.652E+00	2.652E+00	26.84
	241.98	285	7.49	4.672E+00	2.493E+00	2.493E+00	31.15
	295.21	332	19.20	4.028E+00	1.315E+00	1.315E+00	23.56
	351.92	663	37.20*	3.498E+00	1.558E+00	1.558E+00	14.12
	240.98	285	3.95*	4.672E+00	4.728E+00	4.728E+00	30.64
	RA-224	609.31	429	46.30*	2.170E+00	1.306E+00	19.52
	RA-226	1120.29	109	15.10	1.287E+00	1.713E+00	41.97
AC-228	1764.49	71	15.80	8.986E-01	1.539E+00	1.539E+00	35.69
	338.32	190	11.40	3.612E+00	1.412E+00	1.412E+00	53.38
	911.07	237	27.70*	1.529E+00	1.713E+00	1.713E+00	22.62
	969.11	116	16.60	1.452E+00	1.473E+00	1.473E+00	42.15
	RA-228	338.32	190	11.40	3.612E+00	1.412E+00	53.38
	911.07	237	27.70*	1.529E+00	1.713E+00	1.713E+00	22.62
	969.11	116	16.60	1.452E+00	1.473E+00	1.473E+00	42.15
	TH-228	74.81	667	10.70	7.359E+00	2.593E+00	17.83
TH-228	77.11	958	18.00	7.344E+00	2.218E+00	2.249E+00	13.17
	87.30	293	8.00	7.247E+00	1.548E+00	1.570E+00	25.70
	238.63	1089	44.60*	4.714E+00	1.586E+00	1.608E+00	12.08
	300.09	42	3.41	3.979E+00	9.527E-01	9.660E-01	131.56
	TH-230	609.31	429	46.30*	2.170E+00	1.306E+00	19.52
	1120.29	109	15.10	1.287E+00	1.713E+00	1.713E+00	41.97
	1764.49	71	15.80	8.986E-01	1.539E+00	1.539E+00	35.69
	TH-232	338.32	190	11.40	3.612E+00	1.412E+00	34.94
TH-232	911.07	237	27.70*	1.529E+00	1.713E+00	1.713E+00	22.62
	969.11	116	16.60	1.452E+00	1.473E+00	1.473E+00	42.15
	TH-234	63.29	273	3.80*	7.391E+00	2.978E+00	45.39
	92.38	517	5.41	7.179E+00	4.073E+00	4.073E+00	27.80
	U-234	609.31	429	46.30*	2.170E+00	1.306E+00	19.52
	1120.29	109	15.10	1.287E+00	1.713E+00	1.713E+00	41.97
	1764.49	71	15.80	8.986E-01	1.539E+00	1.539E+00	35.69
	U-235	89.95	223	2.70	7.216E+00	3.503E+00	46.29
	93.35	517	4.50	7.179E+00	4.896E+00	4.896E+00	35.09

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	105.00	-----	2.10	6.995E+00	-----	Line Not Found	-----
	143.76	17	10.50*	6.293E+00	8.096E-02	8.096E-02	334.85
	163.35	-----	4.70	5.928E+00	-----	Line Not Found	-----
	185.71	221	54.00	5.527E+00	2.263E-01	2.263E-01	42.39
	205.31	-----	4.70	5.207E+00	-----	Line Not Found	-----
NP-237	86.50	293	12.60*	7.247E+00	9.829E-01	9.829E-01	32.96
	95.87	-----	2.60	7.135E+00	-----	Line Not Found	-----
U-238	63.29	273	3.80*	7.391E+00	2.978E+00	2.978E+00	45.39
	92.38	517	5.41	7.179E+00	4.073E+00	4.073E+00	22.81
AM-243	74.67	667	66.00*	7.359E+00	4.204E-01	4.204E-01	17.80
	86.72	293	0.34	7.247E+00	3.686E+01	3.686E+01	25.70
	117.66	-----	0.55	6.778E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.323E+00	-----	Line Not Found	-----
ANH-511	511.00	132	100.00*	2.537E+00	1.594E-01	1.594E-01	52.36

Flag: "\*" = Keyline

Total number of lines in spectrum 32  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 32 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.897E+01	1.897E+01	0.202E+01	10.66	
CD-109	464.00D	1.02	3.329E+00	3.400E+00	0.874E+00	25.70	
SN-126	1.00E+05Y	1.00	3.347E-01	3.347E-01	0.860E-01	25.70	
BA-137M	30.17Y	1.00	1.960E-01	1.962E-01	0.749E-01	38.18	
CS-137	30.17Y	1.00	2.072E-01	2.074E-01	0.792E-01	38.19	
TL-208	1.41E+10Y	1.00	5.158E-01	5.158E-01	1.034E-01	20.04	
BI-210	22.26Y	1.00	1.089E+00	1.090E+00	0.867E+00	79.52	
PB-210	22.26Y	1.00	1.089E+00	1.090E+00	0.867E+00	79.52	
PO-210	22.26Y	1.00	1.089E+00	1.090E+00	0.866E+00	79.42	
BI-211	7.04E+08Y	1.00	4.480E+00	4.480E+00	0.588E+00	13.12	
PB-212	1.41E+10Y	1.00	1.586E+00	1.586E+00	0.192E+00	12.08	
PO-212	1.41E+10Y	1.00	1.586E+00	1.586E+00	0.192E+00	12.08	
BI-214	1600.00Y	1.00	1.306E+00	1.306E+00	0.255E+00	19.52	
PB-214	1600.00Y	1.00	1.558E+00	1.558E+00	0.220E+00	14.12	
PO-214	1600.00Y	1.00	1.558E+00	1.558E+00	0.220E+00	14.12	
PO-216	1.41E+10Y	1.00	1.586E+00	1.586E+00	0.192E+00	12.08	
PO-218	1600.00Y	1.00	1.558E+00	1.558E+00	0.220E+00	14.12	
RA-224	1.41E+10Y	1.00	4.728E+00	4.728E+00	1.449E+00	30.64	
RA-226	1600.00Y	1.00	1.306E+00	1.306E+00	0.255E+00	19.52	
AC-228	1.41E+10Y	1.00	1.713E+00	1.713E+00	0.387E+00	22.62	
RA-228	1.41E+10Y	1.00	1.713E+00	1.713E+00	0.387E+00	22.62	
TH-228	1.91Y	1.01	1.586E+00	1.608E+00	0.194E+00	12.08	
TH-230	4.47E+09Y	1.00	1.306E+00	1.306E+00	0.255E+00	19.52	
TH-232	1.41E+10Y	1.00	1.713E+00	1.713E+00	0.387E+00	22.62	
TH-234	4.47E+09Y	1.00	2.978E+00	2.978E+00	1.352E+00	45.39	
U-234	4.47E+09Y	1.00	1.306E+00	1.306E+00	0.255E+00	19.52	
U-235	7.04E+08Y	1.00	8.096E-02	8.096E-02	27.11E-02	334.85	
NP-237	2.14E+06Y	1.00	9.829E-01	9.829E-01	3.240E-01	32.96	
U-238	4.47E+09Y	1.00	2.978E+00	2.978E+00	1.352E+00	45.39	
AM-243	7380.00Y	1.00	4.204E-01	4.204E-01	0.748E-01	17.80	
ANH-511	1.00E+09Y	1.00	1.594E-01	1.594E-01	0.835E-01	52.36	
Total Activity :			6.501E+01	6.510E+01			

Grand Total Activity : 6.501E+01 6.510E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Unidentified Energy Lines  
Sample ID : G244132013

Page : 5  
Acquisition date : 19-JAN-2010 11:41:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	84.11	121	569	1.39	167.99	163	31	1.68E-02	74.1	7.28E+00	T
0	209.05	123	365	1.87	417.94	414	11	1.71E-02	63.0	5.15E+00	T
0	269.99	83	219	0.85	539.86	536	9	1.15E-02	68.2	4.31E+00	T
0	463.11	103	150	1.56	926.20	920	14	1.43E-02	54.8	2.76E+00	T
1	664.95	49	91	1.92	1330.02	1315	21	6.80E-03	85.1	2.01E+00	T
0	794.96	49	55	1.14	1590.12	1586	11	6.81E-03	65.2	1.72E+00	T
0	1620.85	25	11	1.61	3242.65	3238	13	3.54E-03	64.6	9.60E-01	T

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132013.CNF;1
* Acquisition date   : 19-JAN-2010 11:41:00  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 02:00:01.64          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244132013            Analyst initials: MXR1
* Batch Number       : 940270                Sample Quantity : 1.22660E+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	1.897E+01	2.021E+00	7.718E-01	4.719E-02	24.579
CD-109	3.400E+00	8.739E-01	1.062E+00	8.383E-02	3.200
SN-126	3.347E-01	8.604E-02	1.045E-01	8.263E-03	3.204
BA-137M	1.962E-01	7.491E-02	7.657E-02	6.245E-03	2.562
CS-137	2.074E-01	7.920E-02	8.094E-02	6.616E-03	2.562
TL-208	5.158E-01	1.034E-01	7.717E-02	6.388E-03	6.684
BI-210	1.090E+00	8.669E-01	8.727E-01	7.113E-02	1.249
PB-210	1.090E+00	8.669E-01	8.727E-01	7.113E-02	1.249
PO-210	1.090E+00	8.658E-01	8.727E-01	6.222E-02	1.249
BI-211	4.480E+00	5.879E-01	4.165E-01	3.036E-02	10.755
PB-212	1.586E+00	1.915E-01	9.861E-02	8.958E-03	16.079
PO-212	1.586E+00	1.915E-01	9.861E-02	8.958E-03	16.079
BI-214	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
PB-214	1.558E+00	2.201E-01	1.518E-01	1.359E-02	10.267
PO-214	1.558E+00	2.201E-01	1.518E-01	1.359E-02	10.267
PO-216	1.586E+00	1.915E-01	9.861E-02	8.958E-03	16.079
PO-218	1.558E+00	2.201E-01	1.518E-01	1.359E-02	10.267
RA-224	4.728E+00	1.449E+00	1.123E+00	8.862E-02	4.211

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
AC-228	1.713E+00	3.874E-01	3.031E-01	3.148E-02	5.649
RA-228	1.713E+00	3.874E-01	3.031E-01	3.148E-02	5.649
TH-228	1.608E+00	1.942E-01	9.999E-02	9.084E-03	16.079
TH-230	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
TH-232	1.713E+00	3.874E-01	3.031E-01	3.148E-02	5.649
TH-234	2.978E+00	1.352E+00	1.100E+00	2.018E-01	2.707
U-234	1.306E+00	2.550E-01	1.414E-01	1.322E-02	9.239
U-235	8.096E-02	2.711E-01	3.815E-01	7.044E-02	0.212
NP-237	9.829E-01	3.240E-01	3.058E-01	6.764E-02	3.215
U-238	2.978E+00	1.352E+00	1.100E+00	2.018E-01	2.707
AM-243	4.204E-01	7.483E-02	6.213E-02	5.367E-03	6.767
ANH-511	1.594E-01	8.347E-02	5.936E-02	4.142E-03	2.686

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-7.278E-02		4.074E-01	6.736E-01	5.064E-02	-0.108
NA-22	3.455E-02		5.880E-02	1.026E-01	5.790E-03	0.337
NA-24	-2.262E-01		1.389E-01	Half-Life too short		
AL-26	-2.620E-02		3.939E-02	5.751E-02	3.245E-03	-0.456
TI-44	4.092E-01	+	5.391E-02	6.127E-02	5.160E-03	6.679
SC-46	-2.618E-02		5.242E-02	8.310E-02	6.293E-03	-0.315
V-48	-5.964E-02		9.592E-02	1.489E-01	1.053E-02	-0.401
CR-51	3.039E-01		4.407E-01	7.458E-01	5.804E-02	0.408
MN-52	1.279E-01		2.636E-01	4.587E-01	2.636E-02	0.279
MN-54	-1.630E-02		5.201E-02	8.466E-02	6.643E-03	-0.193
CO-56	-2.579E-02		5.316E-02	8.500E-02	6.625E-03	-0.303
CO-57	-1.522E-03		2.669E-02	4.342E-02	5.493E-03	-0.035
CO-58	-1.109E-02		5.266E-02	8.652E-02	6.891E-03	-0.128
FE-59	-1.022E-01		1.389E-01	2.117E-01	1.512E-02	-0.483
CO-60	-2.131E-02		5.194E-02	7.797E-02	4.435E-03	-0.273
ZN-65	5.356E-02		1.392E-01	2.021E-01	1.227E-02	0.265
GE-68	-1.016E-01		1.698E+00	2.745E+00	1.755E-01	-0.037
AS-73	6.823E-02		2.589E-01	4.262E-01	3.600E-02	0.160
AS-74	-7.868E-02		1.226E-01	1.922E-01	1.476E-02	-0.409
SE-75	-2.858E-02		5.321E-02	7.900E-02	6.189E-03	-0.362
BR-77	-4.916E+00		9.105E+00	1.452E+01	1.026E+00	-0.338
SR-82	-1.574E-01		5.021E-01	8.225E-01	6.620E-02	-0.191
RB-83	-4.048E-02		8.281E-02	1.326E-01	9.365E-03	-0.305
RB-84	7.006E-02		9.101E-02	1.598E-01	1.217E-02	0.438
KR-85	1.617E+01		9.609E+00	1.580E+01	1.107E+00	1.023
SR-85	8.191E-02		4.869E-02	8.007E-02	5.609E-03	1.023
RB-86	-4.204E-01		1.061E+00	1.663E+00	1.064E-01	-0.253
Y-88	1.562E-02		4.667E-02	8.142E-02	4.585E-03	0.192
ZR-88	1.481E-02		3.883E-02	6.384E-02	3.739E-03	0.232
Y-91	1.053E+01		2.217E+01	3.849E+01	2.133E+00	0.274

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94	-2.996E-03		4.715E-02	7.584E-02	6.190E-03	-0.040
NB-95	8.075E-02		6.097E-02	1.097E-01	8.857E-03	0.736
NB-95M	4.530E-02		1.532E-01	2.281E-01	2.110E-02	0.199
ZR-95	-9.127E-03		9.681E-02	1.542E-01	1.391E-02	-0.059
NB-97	3.352E-03		2.486E-02	Half-Life	too short	
ZR-97	2.037E+00		4.117E-01	Half-Life	too short	
MO-99	-4.305E+00		1.217E+01	1.898E+01	2.830E+00	-0.227
TC-99M	1.955E+09		1.088E+09	Half-Life	too short	
RH-101	1.606E-02		3.807E-02	6.351E-02	5.029E-03	0.253
RH-102	-4.074E-03		3.839E-02	6.175E-02	4.109E-03	-0.066
RU-103	-3.211E-02		4.990E-02	7.931E-02	1.044E-02	-0.405
RH-106	-1.540E-01		4.486E-01	7.149E-01	9.215E-02	-0.215
RU-106	-1.540E-01		4.484E-01	7.149E-01	5.630E-02	-0.215
AG-108M	5.615E-03		4.146E-02	7.037E-02	4.734E-03	0.080
AG-110M	1.301E-02		5.219E-02	7.527E-02	6.323E-03	0.173
IN-111	2.099E-03		9.890E-01	1.452E+00	1.144E-01	0.001
IN-113M	-1.354E-02		5.794E-02	9.179E-02	5.719E-03	-0.147
SN-113	-1.354E-02		5.794E-02	9.179E-02	5.719E-03	-0.147
IN-114M	-1.236E-02		2.279E-01	3.185E-01	2.517E-02	-0.039
CD-115	1.381E+00		9.544E+00	1.598E+01	1.138E+00	0.086
SN-117M	-1.056E-02		5.934E-02	9.426E-02	8.231E-03	-0.112
SB-122	1.257E+00		2.017E+00	3.457E+00	2.568E-01	0.363
I-123	-2.398E-02		7.786E-01	Half-Life	too short	
TE-123M	-4.928E-04		3.200E-02	5.119E-02	4.470E-03	-0.010
I-124	-8.955E-01		9.196E-01	1.182E+00	9.136E-02	-0.758
SB-124	7.903E-03		8.932E-02	1.468E-01	9.142E-03	0.054
SB-125	4.099E-02		1.127E-01	1.940E-01	1.248E-02	0.211
TE-125M	4.114E+00		9.856E+00	1.642E+01	1.994E+00	0.251
I-126	3.936E-01	+	3.364E-01	4.201E-01	3.428E-02	0.937
SB-126	-1.008E-01		1.958E-01	3.033E-01	2.472E-02	-0.332
SB-127	-3.943E-01		1.551E+00	2.462E+00	2.638E-01	-0.160
XE-127	4.045E-03		5.237E-02	8.880E-02	7.037E-03	0.046
I-131	-1.229E-02		1.301E-01	2.091E-01	1.479E-02	-0.059
TE-132	3.829E-01		6.093E-01	1.044E+00	1.581E-01	0.367
BA-133	4.381E-03		6.149E-02	8.822E-02	1.059E-02	0.050
I-133	-2.417E-03		1.610E-03	Half-Life	too short	
CS-134	1.150E-01	+	7.556E-02	1.114E-01	8.978E-03	1.032
CS-135	2.417E-01		2.028E-01	3.165E-01	2.923E-02	0.764
I-135	1.689E+08		1.964E+08	Half-Life	too short	
CS-136	-4.017E-02		1.361E-01	2.158E-01	1.531E-02	-0.186
CE-139	-1.671E-02		3.596E-02	5.619E-02	4.405E-03	-0.297
BA-140	-2.969E-01		3.321E-01	4.919E-01	1.614E-01	-0.604
LA-140	-6.259E-02		1.127E-01	1.694E-01	9.759E-03	-0.370
CE-141	2.539E-02		7.960E-02	1.162E-01	1.206E-02	0.218
CE-143	5.364E-04		8.136E-05	Half-Life	too short	
CE-144	8.566E-02		2.220E-01	3.649E-01	6.325E-02	0.235
PM-144	7.080E-03		5.007E-02	8.177E-02	6.678E-03	0.087
PR-144	4.795E-01		3.391E+00	5.538E+00	4.521E-01	0.087

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146	6.774E-02		5.529E-02	9.865E-02	8.953E-03	0.687
ND-147	2.938E-01		6.818E-01	1.159E+00	1.641E-01	0.253
PM-149	2.425E+01		7.151E+01	1.199E+02	1.800E+01	0.202
EU-152	-5.317E-02		1.299E-01	1.893E-01	1.419E-02	-0.281
GD-153	-4.790E-02		8.919E-02	1.262E-01	1.149E-02	-0.380
EU-154	9.117E-02		1.640E-01	2.852E-01	2.634E-02	0.320
EU-155	1.357E-01		1.176E-01	1.964E-01	2.015E-02	0.691
TB-160	1.246E-02		1.861E-01	3.102E-01	2.366E-02	0.040
HO-166M	-4.368E-02		8.637E-02	1.339E-01	1.093E-02	-0.326
TM-171	1.114E+01		1.784E+01	2.775E+01	2.532E+00	0.402
LU-176	-3.505E-03		3.198E-02	5.052E-02	3.745E-03	-0.069
LU-177	2.829E+00	+	1.798E+00	2.028E+00	1.608E-01	1.395
LU-177M	-1.769E-01		2.297E-01	3.487E-01	2.115E-02	-0.507
HF-181	5.279E-03		5.386E-02	9.049E-02	6.080E-03	0.058
W-181	-1.449E-02		2.251E-01	3.419E-01	3.153E-02	-0.042
TA-182	-3.024E-01		2.414E-01	3.594E-01	2.000E-02	-0.841
RE-183	1.029E-01		1.328E-01	2.118E-01	1.753E-02	0.486
RE-184	9.324E-02		2.595E-01	4.391E-01	3.447E-02	0.212
OS-185	-3.931E-02		6.073E-02	9.416E-02	7.579E-03	-0.417
RE-188	-9.254E-02		1.989E-01	3.124E-01	2.859E-02	-0.296
W-188	-3.553E+00		9.502E+00	1.335E+01	1.013E+00	-0.266
IR-192	5.864E-03		4.228E-02	6.966E-02	5.096E-03	0.084
AU-195	3.201E-01		2.532E-01	3.879E-01	3.605E-02	0.825
TL-200	-6.554E-05		1.466E-04	Half-Life too short		
TL-201	9.388E-01		6.407E+00	1.029E+01	8.061E-01	0.091
TL-202	-1.099E-02		8.020E-02	1.339E-01	8.460E-03	-0.082
HG-203	2.616E-02		4.665E-02	7.907E-02	6.295E-03	0.331
BI-207	-2.578E-02		7.473E-02	1.180E-01	7.676E-03	-0.218
TL-207	-7.545E-01		8.260E-01	1.265E+00	2.157E-01	-0.596
PO-209	5.998E+00		1.085E+01	1.867E+01	1.406E+00	0.321
PB-211	-1.624E+00		1.588E+00	1.794E+00	1.118E+00	-0.906
BI-212	1.084E+00		4.866E-01	8.698E-01	8.349E-02	1.246
PO-215	-7.545E-01		8.260E-01	1.265E+00	2.157E-01	-0.596
RN-219	3.633E-01		5.511E-01	8.894E-01	1.216E-01	0.409
RN-220	-1.604E+01		3.376E+01	5.390E+01	3.941E+00	-0.298
RA-223	-7.545E-01		8.260E-01	1.265E+00	2.157E-01	-0.596
AC-227	-1.930E-01		4.368E-01	7.094E-01	1.058E-01	-0.272
TH-227	-1.930E-01		4.372E-01	7.094E-01	1.256E-01	-0.272
TH-229	-1.172E-01		5.539E-01	9.316E-01	7.370E-02	-0.126
PA-231	6.424E-01		1.722E+00	2.893E+00	4.239E-01	0.222
TH-231	-7.545E-01		8.260E-01	1.265E+00	2.157E-01	-0.596
U-231	4.636E-01		9.392E-01	1.424E+00	1.267E-01	0.325
PA-233	3.902E-03		8.042E-02	1.320E-01	1.008E-02	0.030
PA-234	-1.745E-01		4.293E-01	6.813E-01	1.239E-01	-0.256
PA-234M	6.099E+00		7.403E+00	1.228E+01	1.053E+00	0.497
NP-236	-1.167E-01		9.535E-02	1.434E-01	1.222E-02	-0.814
NP-239	-8.194E-02		2.007E-01	3.223E-01	3.825E-02	-0.254
AM-241	4.949E-02		7.100E-02	1.116E-01	1.135E-02	0.443

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.963E-02		9.923E-02	1.653E-01	1.646E-02	0.179
AM-246	8.041E-02		1.918E-01	3.234E-01	2.063E-02	0.249
CM-247	3.503E-02		4.661E-02	7.817E-02	4.655E-03	0.448
CF-249	3.066E-02		5.167E-02	8.600E-02	5.107E-03	0.356
CF-251	-1.249E-01		1.497E-01	2.280E-01	1.794E-02	-0.548

# 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]G244132013          *
* Acquisition date   : 19-JAN-2010 11:41:00 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 02:00:01.64              Half life ratio : 8.000    *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244132013              Analyst initials: MXRl        *
* Batch Number      : 940270                  Sample Quantity : 1.2266E+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	1.897E+01	1.981E+00	3.855E-01	1.011E+00
CD-109	3.400E+00	8.564E-01	5.502E-01	4.369E-01
SN-126	3.347E-01	8.432E-02	5.410E-02	4.302E-02
BA-137M	1.962E-01	7.341E-02	3.865E-02	3.746E-02
CS-137	2.074E-01	7.761E-02	4.085E-02	3.960E-02
TL-208	5.158E-01	1.013E-01	3.901E-02	5.169E-02
BI-210	1.090E+00	8.496E-01	4.555E-01	4.335E-01
PB-210	1.090E+00	8.496E-01	4.555E-01	4.335E-01
PO-210	1.090E+00	8.485E-01	4.555E-01	4.329E-01
BI-211	4.480E+00	5.761E-01	2.120E-01	2.939E-01
PB-212	1.586E+00	1.877E-01	5.043E-02	9.576E-02
PO-212	1.586E+00	1.877E-01	5.043E-02	9.576E-02
BI-214	1.306E+00	2.499E-01	7.143E-02	1.275E-01
PB-214	1.558E+00	2.157E-01	7.724E-02	1.100E-01
PO-214	1.558E+00	2.157E-01	7.724E-02	1.100E-01
PO-216	1.586E+00	1.877E-01	5.043E-02	9.576E-02
PO-218	1.558E+00	2.157E-01	7.724E-02	1.100E-01
RA-224	4.728E+00	1.420E+00	5.741E-01	7.244E-01
RA-226	1.306E+00	2.499E-01	7.143E-02	1.275E-01
AC-228	1.713E+00	3.797E-01	1.524E-01	1.937E-01
RA-228	1.713E+00	3.797E-01	1.524E-01	1.937E-01
TH-228	1.608E+00	1.903E-01	5.114E-02	9.710E-02
TH-230	1.306E+00	2.499E-01	7.143E-02	1.275E-01
TH-232	1.713E+00	3.797E-01	1.524E-01	1.937E-01
TH-234	2.978E+00	1.325E+00	5.719E-01	6.758E-01
U-234	1.306E+00	2.499E-01	7.143E-02	1.275E-01
U-235	8.096E-02	2.657E-01	1.964E-01	1.356E-01
NP-237	9.829E-01	3.175E-01	1.584E-01	1.620E-01
U-238	2.978E+00	1.325E+00	5.719E-01	6.758E-01
AM-243	4.204E-01	7.334E-02	3.224E-02	3.742E-02
ANH-511	1.594E-01	8.180E-02	3.006E-02	4.174E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-7.278E-02	3.992E-01	3.414E-01	2.037E-01 NOT IDENT.
NA-22	3.455E-02	5.763E-02	5.133E-02	2.940E-02 NOT IDENT.
NA-24	-2.262E+05	2.723E+05	0.000E+00	1.389E+05 SHORT HLIF
AL-26	-2.620E-02	3.861E-02	2.864E-02	1.970E-02 NOT IDENT.
TI-44	4.092E-01	5.283E-02	3.177E-02	2.696E-02 FAIL ABUN
SC-46	-2.618E-02	5.137E-02	4.178E-02	2.621E-02 FAIL ABUN
V-48	-5.964E-02	9.401E-02	7.475E-02	4.796E-02 NOT IDENT.
CR-51	3.039E-01	4.319E-01	3.800E-01	2.203E-01 NOT IDENT.
MN-52	1.279E-01	2.583E-01	2.292E-01	1.318E-01 NOT IDENT.
MN-54	-1.630E-02	5.097E-02	4.260E-02	2.601E-02 NOT IDENT.
CO-56	-2.579E-02	5.209E-02	4.276E-02	2.658E-02 NOT IDENT.
CO-57	-1.522E-03	2.616E-02	2.240E-02	1.335E-02 NOT IDENT.
CO-58	-1.109E-02	5.161E-02	4.355E-02	2.633E-02 NOT IDENT.
FE-59	-1.022E-01	1.361E-01	1.061E-01	6.944E-02 FAIL ABUN
CO-60	-2.131E-02	5.090E-02	3.899E-02	2.597E-02 NOT IDENT.
ZN-65	5.356E-02	1.364E-01	1.013E-01	6.961E-02 NOT IDENT.
GE-68	-1.016E-01	1.664E+00	1.377E+00	8.488E-01 NOT IDENT.
AS-73	6.823E-02	2.537E-01	2.221E-01	1.294E-01 NOT IDENT.
AS-74	-7.868E-02	1.202E-01	9.716E-02	6.131E-02 NOT IDENT.
SE-75	-2.858E-02	5.214E-02	4.035E-02	2.660E-02 NOT IDENT.
BR-77	-4.916E+00	8.923E+00	7.353E+00	4.552E+00 FAIL ABUN
SR-82	-1.574E-01	4.920E-01	4.143E-01	2.510E-01 NOT IDENT.
RB-83	-4.048E-02	8.116E-02	6.715E-02	4.141E-02 NOT IDENT.
RB-84	7.006E-02	8.919E-02	8.037E-02	4.551E-02 NOT IDENT.
KR-85	1.617E+01	9.417E+00	8.003E+00	4.805E+00 NOT IDENT.
SR-85	8.191E-02	4.771E-02	4.055E-02	2.434E-02 NOT IDENT.
RB-86	-4.204E-01	1.039E+00	8.342E-01	5.303E-01 NOT IDENT.
Y-88	1.562E-02	4.574E-02	4.054E-02	2.333E-02 NOT IDENT.
ZR-88	1.481E-02	3.805E-02	3.244E-02	1.942E-02 NOT IDENT.
Y-91	1.053E+01	2.173E+01	1.928E+01	1.109E+01 NOT IDENT.
NB-94	-2.996E-03	4.620E-02	3.825E-02	2.357E-02 NOT IDENT.
NB-95	8.075E-02	5.976E-02	5.526E-02	3.049E-02 NOT IDENT.
NB-95M	4.530E-02	1.501E-01	1.167E-01	7.659E-02 NOT IDENT.
ZR-95	-9.127E-03	9.488E-02	7.768E-02	4.841E-02 NOT IDENT.
NB-97	3.352E+03	4.873E+04	0.000E+00	2.486E+04 SHORT HLIF
ZR-97	2.037E+06	8.069E+05	0.000E+00	4.117E+05 SHORT HLIF
MO-99	-4.305E+00	1.193E+01	9.567E+00	6.085E+00 NOT IDENT.
TC-99M	1.955E+15	2.133E+15	0.000E+00	1.088E+15 SHORT HLIF
RH-101	1.606E-02	3.730E-02	3.256E-02	1.903E-02 NOT IDENT.
RH-102	-4.074E-03	3.762E-02	3.130E-02	1.919E-02 NOT IDENT.
RU-103	-3.211E-02	4.890E-02	4.018E-02	2.495E-02 FAIL ABUN
RH-106	-1.540E-01	4.397E-01	3.611E-01	2.243E-01 FAIL ABUN
RU-106	-1.540E-01	4.394E-01	3.611E-01	2.242E-01 FAIL ABUN
AG-108M	5.615E-03	4.063E-02	3.571E-02	2.073E-02 NOT IDENT.
AG-110M	1.301E-02	5.115E-02	3.799E-02	2.609E-02 NOT IDENT.
IN-111	2.099E-03	9.692E-01	7.424E-01	4.945E-01 NOT IDENT.
IN-113M	-1.354E-02	5.678E-02	4.664E-02	2.897E-02 NOT IDENT.
SN-113	-1.354E-02	5.678E-02	4.664E-02	2.897E-02 NOT IDENT.
IN-114M	-1.236E-02	2.234E-01	1.633E-01	1.140E-01 NOT IDENT.
CD-115	1.381E+00	9.353E+00	8.087E+00	4.772E+00 NOT IDENT.
SN-117M	-1.056E-02	5.816E-02	4.845E-02	2.967E-02 NOT IDENT.
SB-122	1.257E+00	1.976E+00	1.749E+00	1.008E+00 NOT IDENT.
I-123	-2.398E+04	1.526E+06	0.000E+00	7.786E+05 SHORT HLIF
TE-123M	-4.928E-04	3.136E-02	2.632E-02	1.600E-02 NOT IDENT.
I-124	-8.955E-01	9.013E-01	5.972E-01	4.598E-01 NOT IDENT.
SB-124	7.903E-03	8.753E-02	7.318E-02	4.466E-02 FAIL ABUN
SB-125	4.099E-02	1.105E-01	9.846E-02	5.637E-02 FAIL ABUN
TE-125M	4.114E+00	9.659E+00	8.480E+00	4.928E+00 NOT IDENT.
I-126	3.936E-01	3.297E-01	2.120E-01	1.682E-01 FAIL ABUN
SB-126	-1.008E-01	1.919E-01	1.529E-01	9.792E-02 FAIL ABUN
SB-127	-3.943E-01	1.520E+00	1.242E+00	7.753E-01 NOT IDENT.
XE-127	4.045E-03	5.132E-02	4.551E-02	2.618E-02 FAIL ABUN
I-131	-1.229E-02	1.275E-01	1.064E-01	6.503E-02 NOT IDENT.
TE-132	3.829E-01	5.971E-01	5.344E-01	3.047E-01 NOT IDENT.
BA-133	4.381E-03	6.026E-02	4.489E-02	3.074E-02 NOT IDENT.
I-133	-2.417E+03	3.156E+03	0.000E+00	1.610E+03 SHORT HLIF
CS-134	1.150E-01	7.405E-02	5.609E-02	3.778E-02 FAIL ABUN
CS-135	2.417E-01	1.987E-01	1.616E-01	1.014E-01 NOT IDENT.
I-135	1.689E+14	3.850E+14	0.000E+00	1.964E+14 SHORT HLIF
CS-136	-4.017E-02	1.333E-01	1.083E-01	6.803E-02 FAIL ABUN
CE-139	-1.671E-02	3.524E-02	2.887E-02	1.798E-02 NOT IDENT.
BA-140	-2.969E-01	3.254E-01	2.490E-01	1.660E-01 NOT IDENT.
LA-140	-6.259E-02	1.105E-01	8.449E-02	5.635E-02 NOT IDENT.
CE-141	2.539E-02	7.801E-02	5.981E-02	3.980E-02 NOT IDENT.



CE-143	5.364E+02	1.595E+02	0.000E+00	8.136E+01	SHORT HLIF
CE-144	8.566E-02	2.175E-01	1.880E-01	1.110E-01	NOT IDENT.
PM-144	7.080E-03	4.907E-02	4.124E-02	2.503E-02	NOT IDENT.
PR-144	4.795E-01	3.323E+00	2.793E+00	1.695E+00	NOT IDENT.
PM-146	6.774E-02	5.419E-02	5.003E-02	2.765E-02	NOT IDENT.
ND-147	2.938E-01	6.682E-01	5.868E-01	3.409E-01	FAIL ABUN
PM-149	2.425E+01	7.008E+01	6.118E+01	3.576E+01	NOT IDENT.
EU-152	-5.317E-02	1.273E-01	9.634E-02	6.494E-02	NOT IDENT.
GD-153	-4.790E-02	8.740E-02	6.528E-02	4.459E-02	FAIL ABUN
EU-154	9.117E-02	1.607E-01	1.427E-01	8.199E-02	NOT IDENT.
EU-155	1.357E-01	1.153E-01	1.015E-01	5.881E-02	FAIL ABUN
TB-160	1.246E-02	1.824E-01	1.560E-01	9.307E-02	FAIL ABUN
HO-166M	-4.368E-02	8.464E-02	6.754E-02	4.318E-02	NOT IDENT.
TM-171	1.114E+01	1.748E+01	1.442E+01	8.921E+00	NOT IDENT.
LU-176	-3.505E-03	3.134E-02	2.575E-02	1.599E-02	FAIL ABUN
LU-177	2.829E+00	1.762E+00	1.039E+00	8.990E-01	FAIL ABUN
LU-177M	-1.769E-01	2.251E-01	1.771E-01	1.148E-01	FAIL ABUN
HF-181	5.279E-03	5.278E-02	4.586E-02	2.693E-02	NOT IDENT.
W-181	-1.449E-02	2.206E-01	1.777E-01	1.126E-01	NOT IDENT.
TA-182	-3.024E-01	2.366E-01	1.800E-01	1.207E-01	FAIL ABUN
RE-183	1.029E-01	1.301E-01	1.088E-01	6.639E-02	FAIL ABUN
RE-184	9.324E-02	2.543E-01	2.244E-01	1.297E-01	NOT IDENT.
OS-185	-3.931E-02	5.952E-02	4.754E-02	3.037E-02	NOT IDENT.
RE-188	-9.254E-02	1.949E-01	1.606E-01	9.946E-02	NOT IDENT.
W-188	-3.553E+00	9.312E+00	6.809E+00	4.751E+00	FAIL ABUN
IR-192	5.864E-03	4.143E-02	3.550E-02	2.114E-02	FAIL ABUN
AU-195	3.201E-01	2.481E-01	2.006E-01	1.266E-01	FAIL ABUN
TL-200	-6.554E+01	2.873E+02	0.000E+00	1.466E+02	SHORT HLIF
TL-201	9.388E-01	6.279E+00	5.284E+00	3.203E+00	NOT IDENT.
TL-202	-1.099E-02	7.859E-02	6.794E-02	4.010E-02	NOT IDENT.
HG-203	2.616E-02	4.571E-02	4.035E-02	2.332E-02	NOT IDENT.
BI-207	-2.578E-02	7.324E-02	5.920E-02	3.737E-02	FAIL ABUN
TL-207	-7.545E-01	8.094E-01	6.445E-01	4.130E-01	FAIL ABUN
PO-209	5.998E+00	1.063E+01	9.385E+00	5.425E+00	NOT IDENT.
PB-211	-1.624E+00	1.556E+00	9.111E-01	7.941E-01	NOT IDENT.
BI-212	1.084E+00	4.769E-01	4.385E-01	2.433E-01	FAIL ABUN
PO-215	-7.545E-01	8.094E-01	6.445E-01	4.130E-01	FAIL ABUN
RN-219	3.633E-01	5.401E-01	4.518E-01	2.756E-01	FAIL ABUN
RN-220	-1.604E+01	3.308E+01	2.727E+01	1.688E+01	NOT IDENT.
RA-223	-7.545E-01	8.094E-01	6.445E-01	4.130E-01	FAIL ABUN
AC-227	-1.930E-01	4.281E-01	3.625E-01	2.184E-01	FAIL ABUN
TH-227	-1.930E-01	4.285E-01	3.625E-01	2.186E-01	FAIL ABUN
TH-229	-1.172E-01	5.428E-01	4.777E-01	2.770E-01	FAIL ABUN
PA-231	6.424E-01	1.688E+00	1.476E+00	8.611E-01	FAIL ABUN
TH-231	-7.545E-01	8.094E-01	6.445E-01	4.130E-01	FAIL ABUN
U-231	4.636E-01	9.205E-01	7.368E-01	4.696E-01	FAIL ABUN
PA-233	3.902E-03	7.882E-02	6.730E-02	4.021E-02	FAIL ABUN
PA-234	-1.745E-01	4.207E-01	3.423E-01	2.146E-01	FAIL ABUN
PA-234M	6.099E+00	7.255E+00	6.166E+00	3.702E+00	NOT IDENT.
NP-236	-1.167E-01	9.345E-02	7.371E-02	4.768E-02	NOT IDENT.
NP-239	-8.194E-02	1.967E-01	1.663E-01	1.004E-01	FAIL ABUN
AM-241	4.949E-02	6.958E-02	5.807E-02	3.550E-02	NOT IDENT.
CM-243	2.963E-02	9.724E-02	8.541E-02	4.961E-02	FAIL ABUN
AM-246	8.041E-02	1.880E-01	1.622E-01	9.592E-02	NOT IDENT.
CM-247	3.503E-02	4.568E-02	3.971E-02	2.331E-02	NOT IDENT.
CF-249	3.066E-02	5.063E-02	4.371E-02	2.583E-02	NOT IDENT.
CF-251	-1.249E-01	1.467E-01	1.170E-01	7.487E-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	327.6817
46.50	327.6817
46.50	327.6817
48.70	338.2643
49.72	377.4365
51.35	377.4086
52.39	329.8016
52.97	325.4569
53.15	360.5514
53.44	360.9601
54.07	362.6977
56.28	391.5815
56.28	391.5861
57.37	0.0000
57.53	389.9569
57.53	389.9603
57.60	403.0309
57.98	414.8554
57.98	414.8554
59.32	389.0390
59.32	389.0390
59.40	389.1516
59.54	389.3482
59.72	419.6717
60.01	420.1100
61.10	424.3737
61.14	424.4341
61.30	431.2482
63.00	470.8576
63.29	471.3302
63.29	471.3302
63.58	471.8028
64.28	504.8209
65.12	515.5906
65.20	515.7301
65.20	515.7301
66.05	494.4888
66.72	462.1066
66.83	462.2803
66.91	462.4014
67.20	468.2126
67.20	468.2126
67.75	468.7931
67.85	468.9501
68.90	474.8799
68.90	474.8799
69.30	503.8625
69.67	486.8880
70.82	464.2487
70.82	464.2487
70.83	464.2644
72.80	447.1240
72.87	447.2214
72.87	447.2214
74.67	449.7187
74.81	449.9110
74.81	449.9110
74.81	449.9110
74.81	449.9110
74.81	449.9110
74.81	449.9110
74.81	449.9110
74.97	450.1333
75.28	450.5578
75.70	451.1347
77.11	453.0577
77.11	453.0577

77.11	453.0577
77.11	453.0577
77.11	453.0577
77.11	453.0577
77.11	453.0577
78.38	439.0276
79.62	451.7886
79.80	452.0259
79.80	452.0259
80.11	466.3978
80.18	466.4946
80.30	466.6551
80.30	466.6551
80.57	467.0221
81.00	422.8028
81.07	422.8892
81.07	422.8892
81.07	422.8892
81.07	422.8892
82.60	444.4401
83.37	382.4485
83.78	382.8957
83.78	382.8957
83.78	382.8957
83.78	382.8957
84.21	383.3594
84.90	384.1005
85.43	384.6677
86.29	385.5847
86.50	385.8083
86.54	385.8497
86.59	385.9035
86.72	386.0402
86.79	386.1126
86.94	386.2741
87.30	386.6550
87.30	386.6550
87.30	386.6550
87.30	386.6550
87.30	386.6550
87.30	386.6550
87.57	386.9406
87.88	387.2677
88.03	387.4250
88.36	387.7728
88.47	387.8888
89.95	389.4352
91.11	390.6400
92.29	391.8572
92.38	391.9503
92.38	391.9503
93.35	392.9440
94.00	393.6064
94.67	394.2833
94.67	394.2896
94.90	394.5214
94.90	394.5214
94.90	394.5214
94.90	394.5214
95.87	360.0337
95.87	360.0337
96.73	410.4934
97.43	379.0211
98.44	306.6275
98.44	306.6275
98.88	308.4343
99.55	304.8293
99.55	304.8293
99.86	324.8904
100.00	327.9489
100.10	328.0321
103.18	366.1289
103.76	334.9313
105.00	322.0142
105.31	322.2515
108.00	372.3444
109.28	343.3359

111.00	381.9879
111.00	381.9879
111.76	373.5625
112.95	314.8423
115.19	347.9665
116.30	336.5829
117.00	311.5636
117.00	311.5636
117.66	300.7620
121.11	283.4329
121.62	276.5195
121.78	276.6136
122.06	287.1060
122.32	295.5310
122.32	295.5310
122.32	295.5310
122.32	295.5310
123.07	303.2456
127.23	333.0340
129.76	306.4271
131.20	334.6854
133.02	305.2751
133.54	282.3268
135.34	309.8639
136.00	296.4517
136.25	296.5964
136.48	310.5560
140.51	291.0096
140.51	0.0000
142.18	364.5154
142.65	376.1399
143.76	313.8380
144.24	319.5164
144.24	319.5164
144.24	319.5164
144.24	319.5164
145.22	295.2279
145.44	318.0693
147.16	284.8957
152.43	283.8056
152.70	291.6167
153.22	295.1792
154.21	304.4932
154.21	304.4932
154.21	304.4932
154.21	304.4932
155.03	326.9556
156.02	318.7043
158.56	292.4346
159.00	0.0000
159.00	281.5720
160.31	339.9855
161.27	293.8069
162.32	265.3483
162.64	292.2661
163.35	273.6312
163.89	308.5375
165.85	326.3833
167.43	293.5108
171.28	296.5170
171.86	301.3308
172.10	291.2478
176.55	302.4813
176.60	301.3640
181.06	346.6128
184.41	317.2231
185.71	294.1216
186.00	294.2534
190.27	257.1109
192.34	264.9297
193.63	272.4728
197.04	258.8317
198.01	259.1983
198.60	254.1095
200.40	305.3751
201.83	322.0196
202.84	287.7433
205.31	257.4712

208.36	316.0459
208.81	268.6283
209.75	268.9818
209.75	268.9818
210.97	211.9477
215.65	230.1105
216.55	218.8475
218.09	240.2369
222.10	234.2168
223.80	243.9159
226.40	250.2769
227.00	225.6108
227.08	225.6351
227.20	222.9054
228.16	225.0306
228.18	235.1812
228.18	235.1812
231.56	0.0000
235.69	245.8524
236.00	245.9491
236.00	245.9491
238.63	212.1838
238.63	212.1838
238.63	212.1838
238.63	212.1838
239.00	212.2825
240.98	212.8116
241.98	213.0775
241.98	213.0775
241.98	213.0775
244.69	200.4222
245.39	203.6107
247.94	187.8597
248.90	195.9687
249.79	200.9190
252.40	199.6532
252.85	192.1521
252.85	192.1521
254.15	0.0000
256.20	215.8451
256.20	215.8451
260.50	160.3109
260.90	184.3945
262.80	200.2051
264.65	201.9229
268.24	182.8712
268.79	212.4537
269.46	209.5104
269.46	209.5104
269.46	209.5104
269.46	209.5104
271.23	225.4863
273.65	251.0555
276.40	200.4080
277.35	196.7062
277.60	192.8457
277.60	192.8457
278.00	196.8503
278.60	206.7823
279.20	192.2108
279.53	206.9948
280.46	227.8334
281.68	221.2543
283.67	168.5238
284.30	174.5558
285.00	179.6256
285.90	163.9939
286.10	164.0294
286.10	164.0294
287.40	183.0635
288.45	0.0000
290.67	192.2500
290.80	190.6890
291.72	189.2873
293.26	0.0000
293.70	172.1540
295.21	195.5813
295.21	195.5813

295.21	195.5813
295.96	207.7207
296.50	203.8412
297.23	204.0000
298.57	204.2895
299.80	184.4969
299.80	184.4969
300.09	205.4156
300.09	205.4156
300.09	205.4156
300.09	205.4156
300.12	205.4219
301.29	192.8203
302.84	191.5214
303.76	202.9812
303.91	196.5671
304.40	191.8323
304.40	191.8323
304.84	198.3705
306.84	190.9034
308.46	189.1971
311.98	188.8608
316.51	178.5061
318.01	186.9456
319.02	160.5479
319.41	165.7252
320.08	161.7393
323.87	202.4228
323.87	202.4228
323.87	202.4228
323.87	202.4228
325.23	204.7511
328.77	181.7122
333.44	146.0271
334.20	159.4195
334.20	159.4195
334.30	159.4359
338.28	168.3761
338.28	168.3761
338.28	168.3761
338.28	168.3761
338.32	168.3835
338.32	168.3835
338.32	168.3835
340.50	188.7784
340.57	188.7922
344.27	173.2423
345.85	154.4706
350.59	0.0000
351.07	176.0971
351.92	192.4863
351.92	192.4863
351.92	192.4863
355.39	0.0000
356.01	135.5859
364.48	149.4336
366.43	164.6636
367.43	155.1776
367.94	0.0000
369.80	150.1407
374.96	172.3682
383.85	159.5857
387.95	143.8030
388.63	148.2457
391.69	159.5583
391.69	159.5583
392.90	140.0293
398.62	164.8819
400.65	120.0138
401.10	137.6829
401.81	132.2534
402.60	129.0310
404.84	176.7773
410.95	124.3611
411.60	146.6450
413.65	160.2400
414.70	131.4194
415.30	143.7393

415.76	144.9071
417.63	0.0000
418.52	131.8209
423.70	149.1887
427.08	124.8428
427.89	126.0461
432.53	138.2491
433.93	134.7802
439.47	136.2653
439.56	130.8234
439.89	130.8568
443.98	126.7068
444.90	116.7609
445.03	116.7719
445.03	116.7719
445.03	116.7719
445.03	116.7719
453.90	109.2862
463.38	116.5269
468.07	108.2656
473.00	125.7253
475.06	121.2482
475.35	123.1377
476.78	121.3973
477.59	128.0077
477.96	128.9758
482.03	121.8512
484.57	125.8262
487.03	114.7562
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492.35	110.4616
497.08	120.2965
507.63	0.0000
510.53	0.0000
510.84	111.8684
511.00	111.8805
511.85	111.9455
511.85	111.9455
513.99	89.4294
513.99	89.4294
520.41	104.8885
520.65	105.8669
527.90	100.5723
528.96	0.0000
529.64	119.0812
529.87	0.0000
531.02	103.6850
537.32	123.5707
543.00	103.5130
546.56	0.0000
549.76	111.8068
552.65	98.2544
555.20	96.4448
563.23	102.8650
563.90	99.9372
568.70	112.1448
569.32	108.2150
569.50	108.2283
569.67	108.2389
573.80	107.5175
574.00	107.5307
574.64	113.5491
578.91	109.8496
579.30	0.0000
583.14	106.1268
585.48	98.5878
591.81	107.6844
592.07	107.7001
593.00	111.7886
595.88	127.1136
600.56	115.7744
602.52	0.0000
602.71	146.8691
602.71	146.8691
603.60	141.8799
604.41	125.0466
604.70	125.0677
609.31	99.6461

609.31	99.6461
609.31	99.6461
609.31	99.6461
610.33	99.7059
612.46	98.4697
614.37	115.5745
618.01	98.7836
621.84	114.7043
621.84	114.7043
631.29	96.7860
633.02	91.7269
633.10	91.7313
634.78	94.9132
635.90	100.1354
636.97	111.5569
645.85	110.0319
646.12	116.2766
656.30	104.3994
657.75	87.0687
657.90	0.0000
661.65	95.2812
661.65	95.2812
664.57	0.0000
666.33	108.4672
666.33	108.4672
675.00	94.9109
677.61	90.8165
685.20	100.7241
692.80	103.2543
695.00	105.5017
696.49	110.9164
696.49	110.9164
697.00	126.9488
697.49	120.5784
698.33	131.3061
698.50	127.0447
699.00	134.5548
702.63	105.9198
706.10	96.4622
706.58	0.0000
706.67	106.1374
709.31	97.6917
711.68	107.4854
713.82	94.6881
717.42	102.4080
720.50	111.2028
721.93	0.0000
722.20	172.8906
722.78	176.1841
722.78	176.1841
722.89	172.9492
722.95	172.9570
723.30	177.3090
724.18	146.0215
727.18	101.8257
733.00	99.9489
735.90	104.4445
739.58	92.6429
742.81	82.9654
744.21	80.8381
747.13	99.5490
751.79	91.0042
752.31	77.8660
753.82	69.1431
755.35	86.7669
756.15	87.9004
756.87	90.1279
763.93	120.3952
765.79	97.5052
766.42	97.5354
766.84	97.5548
776.49	94.3031
778.00	96.2199
778.57	96.2453
778.89	96.2601
783.80	87.2051
785.46	83.5583
792.07	92.5973



795.84	71.8350
796.30	59.1855
798.80	70.4641
801.93	80.1880
805.60	76.8416
810.29	85.4588
810.76	84.5380
815.85	80.0247
817.79	75.3841
818.51	71.6381
819.60	75.4443
826.30	80.4017
828.27	0.0000
831.60	85.3308
831.96	86.2937
834.83	98.7463
836.80	0.0000
846.75	85.9021
848.13	87.8653
856.28	0.0000
856.80	75.5971
860.37	63.3682
867.32	61.0812
867.82	72.6540
871.10	67.5191
873.19	77.2331
874.81	80.1850
875.33	0.0000
876.40	79.2723
879.36	71.6288
880.27	64.8776
880.51	64.8844
881.50	61.0351
883.24	62.0495
884.67	81.4895
889.25	77.7588
896.60	77.0231
898.02	83.8969
899.00	73.1949
903.28	87.1515
911.07	81.4076
911.07	81.4076
911.07	81.4076
919.63	73.0122
920.93	86.6590
925.00	72.0064
925.24	63.1354
926.50	68.1016
935.52	76.2747
937.48	82.2823
944.10	82.5002
946.00	82.5610
949.00	58.7587
962.29	84.0940
964.01	77.2810
966.15	56.7199
968.20	92.3145
969.11	98.3709
969.11	98.3709
969.11	98.3709
977.42	77.9982
980.50	62.5083
983.50	81.7597
989.30	72.8364
996.32	104.4753
1001.03	66.0474
1001.68	70.1301
1004.76	95.6504
1021.30	0.0000
1024.50	0.0000
1034.80	84.3757
1036.00	90.5889
1037.82	77.2583
1038.57	57.7021
1038.76	0.0000
1045.16	78.4987
1046.59	88.8730
1048.07	68.2424

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1050.47	71.4061
1062.04	72.7429
1063.62	77.9816
1076.63	75.2109
1077.35	67.9146
1078.86	60.6338
1085.78	72.3102
1099.22	97.9194
1112.02	52.5767
1112.84	61.6582
1115.52	68.9757
1120.29	74.2411
1120.29	74.2411
1120.29	74.2411
1120.29	74.2411
1120.51	74.2468
1121.28	74.2668
1124.00	0.0000
1129.67	87.9544
1131.51	0.0000
1147.95	0.0000
1167.94	68.9714
1173.22	74.4889
1175.09	68.0526
1177.93	61.6294
1189.05	54.8763
1204.90	58.8977
1205.75	0.0000
1213.00	72.1714
1221.42	86.4618
1230.97	103.6928
1235.34	73.6283
1236.41	0.0000
1238.25	70.8618
1246.25	62.5126
1260.41	0.0000
1271.85	53.4609
1274.45	55.4148
1274.54	55.4168
1291.56	58.5853
1298.22	0.0000
1312.09	60.8774
1325.50	52.3878
1325.50	52.3878
1332.49	42.7754
1333.61	46.6791
1360.21	39.2006
1362.66	0.0000
1365.15	42.2006
1368.21	39.2899
1368.53	0.0000
1376.25	34.4580
1384.27	57.2333
1394.10	37.6011
1395.20	40.5825
1407.95	42.7151
1434.06	28.0156
1436.60	32.0402
1457.56	0.0000
1460.81	36.2838
1489.15	33.5133
1509.49	24.5047
1596.49	35.4953
1620.62	21.0045
1678.03	0.0000
1691.02	14.9551
1691.02	14.9551
1706.46	0.0000
1750.46	0.0000
1764.49	16.1637
1764.49	16.1637
1764.49	16.1637
1764.49	16.1637
1770.23	13.5399
1771.40	11.8509
1791.20	0.0000
1808.65	20.1662

1836.01

16.4241

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132013

Total Uranium Activity	8.8967E+00	ug/g
Total Uranium Counting Unc.	3.9427E+00	ug/g
Total Uranium Tpu	2.0116E-06	ug/g
Total Uranium Mda	1.7040E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132013
*  ANALYST       : MXR1                             DETECTOR    : GAM13
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 11:41:00.87          SAMPLE ALQT  : 122.660 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.634E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.444E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.662E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.780E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:42:24.57

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132014.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:41:27
Sample ID          : G244132014          Sample quantity  : 1.27100E+02 GRAM
Detector name      : GAM14              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.45  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940270             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	63.49*	167	561	1.59	126.54	123	9	2.32E-02	27.2	
2	2	74.91	558	678	1.50	149.36	144	16	7.75E-02	9.7	1.25E+00
3	2	77.21*	761	488	1.24	153.94	144	16	1.06E-01	6.5	
4	1	87.34	235	395	1.35	174.19	171	22	3.26E-02	14.2	2.77E+00
5	1	89.89	169	465	1.31	179.28	171	22	2.35E-02	23.8	
6	1	92.89*	459	422	1.56	185.28	171	22	6.37E-02	10.3	
7	0	185.84*	296	523	1.63	370.99	364	15	4.11E-02	18.2	
8	0	209.38*	76	389	1.61	418.04	411	11	1.05E-02	52.4	
9	3	238.54*	1308	197	1.40	476.31	469	18	1.82E-01	3.4	1.62E+00
10	3	241.52	315	272	1.73	482.26	469	18	4.38E-02	13.5	
11	0	270.62	86	300	1.35	540.41	533	13	1.19E-02	43.0	
12	4	295.15	481	137	1.37	589.43	583	21	6.68E-02	6.2	1.60E+00
13	4	299.61	123	182	2.33	598.35	583	21	1.71E-02	24.5	
14	0	338.30	232	255	1.33	675.66	668	14	3.22E-02	16.1	
15	0	351.80	863	143	1.55	702.64	697	11	1.20E-01	4.3	
16	0	462.84	52	117	1.23	924.59	920	9	7.23E-03	40.2	
17	0	510.51*	112	180	1.37	1019.87	1012	16	1.56E-02	31.3	
18	0	569.54*	172	104	3.26	1137.89	1131	16	2.40E-02	15.9	
19	0	583.16*	447	112	1.52	1165.11	1158	16	6.21E-02	7.1	
20	0	609.43*	534	119	1.40	1217.62	1211	14	7.41E-02	6.2	
21	0	661.78	348	107	1.63	1322.29	1316	13	4.84E-02	8.1	
22	0	727.56*	118	76	1.59	1453.82	1449	14	1.63E-02	18.9	
23	0	768.47	63	69	1.04	1535.61	1529	12	8.79E-03	29.1	
24	0	795.33	72	51	1.45	1589.32	1583	14	9.99E-03	24.3	
25	0	860.64	77	49	2.08	1719.92	1711	15	1.08E-02	22.7	
26	0	911.69*	264	88	1.69	1822.02	1816	15	3.67E-02	9.9	
27	4	965.12	77	34	2.77	1928.89	1921	23	1.07E-02	26.2	1.66E+00
28	4	969.37*	158	28	1.72	1937.38	1921	23	2.19E-02	10.6	
29	0	1120.63	138	57	2.27	2239.94	2230	19	1.92E-02	15.6	
30	0	1238.78	59	49	1.76	2476.32	2468	16	8.26E-03	29.1	
31	0	1378.68	42	26	2.77	2756.24	2749	13	5.89E-03	29.1	
32	0	1408.55	48	12	3.38	2816.02	2808	17	6.62E-03	22.4	
33	0	1461.46*	940	12	2.14	2921.89	2914	16	1.31E-01	3.4	
34	0	1590.79	34	18	5.42	3180.74	3173	18	4.72E-03	33.9	
35	0	1765.18*	100	6	2.14	3529.84	3524	14	1.39E-02	11.8	
36	0	1847.68*	20	0	3.63	3695.00	3688	13	2.71E-03	26.5	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132014.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 11:41:27
Sample ID        : G244132014             Sample quantity  : 127.10 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA14               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.45    0.0%
Peak Width (FWHM): 3.00                  Confidence level  : 5.00 %
Energy tolerance : 1.50 keV              Half life ratio   : 8.00
Errors propagated: Yes                   Systematic Error  : 0.00 %
Efficiency type   : Empirical             Efficiencies at   : Peak Energy
Abundance limit  : 75.00                 WTM error limit  : 3.00

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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	*	2.149E+01	2.135E+00	5.376E-01	3.904E-02	39.969
CD-109	+	88.03	*	2.697E+00	7.984E-01	1.284E+00	1.122E-01	2.101
SN-126	+	64.28		1.104E+00	6.219E-01	7.228E-01	1.030E-01	1.528
	+	86.94		1.104E+00	5.533E-01	5.729E-01	2.370E-01	1.927
	+	87.57	*	2.655E-01	7.860E-02	1.427E-01	1.241E-02	1.861
BA-137M	+	661.65	*	4.637E-01	8.034E-02	5.777E-02	3.435E-03	8.026
CS-137	+	661.65	*	4.902E-01	8.496E-02	6.107E-02	3.646E-03	8.026
TL-208		277.35		4.884E-01	3.810E-01	6.349E-01	6.714E-02	0.769
	+	510.84		4.975E-01	3.160E-01	1.974E-01	2.013E-02	2.520
	+	583.14	*	5.689E-01	8.982E-02	5.331E-02	3.646E-03	10.670
	+	860.37		9.449E-01	4.377E-01	4.431E-01	4.168E-02	2.133
BI-211		72.87		1.455E+01	3.616E+00	5.650E+00	4.164E-01	2.575
	+	351.07	*	4.714E+00	5.061E-01	3.414E-01	2.163E-02	13.810
PB-212	+	74.81		2.527E+00	5.786E-01	5.168E-01	6.198E-02	4.891
	+	77.11		1.979E+00	2.981E-01	2.966E-01	2.284E-02	6.671
	+	87.30		1.228E+00	3.837E-01	6.611E-01	8.751E-02	1.857
	+	238.63	*	1.555E+00	1.558E-01	9.147E-02	6.662E-03	17.003
	+	300.09		2.254E+00	1.122E+00	1.197E+00	9.902E-02	1.883
PO-212	+	74.81		2.527E+00	5.786E-01	5.168E-01	6.198E-02	4.891
	+	77.11		1.979E+00	2.981E-01	2.966E-01	2.284E-02	6.671
	+	87.30		1.228E+00	3.837E-01	6.611E-01	8.751E-02	1.857
	+	115.19		1.346E+00	3.768E+00	6.150E+00	4.475E-01	0.219
	+	238.63	*	1.555E+00	1.558E-01	9.147E-02	6.662E-03	17.003
	+	300.09		2.254E+00	1.122E+00	1.197E+00	9.902E-02	1.883
BI-214	+	609.31	*	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
	+	1120.29		1.772E+00	5.780E-01	4.242E-01	3.930E-02	4.177
	+	1764.49		1.768E+00	4.315E-01	2.718E-01	1.630E-02	6.507
PB-214	+	74.81		4.355E+00	9.656E-01	8.905E-01	9.396E-02	4.891
	+	77.11		3.392E+00	5.726E-01	5.085E-01	5.508E-02	6.671
	+	87.30		2.104E+00	6.435E-01	1.133E+00	1.314E-01	1.857
	+	241.98		2.252E+00	6.336E-01	5.472E-01	4.396E-02	4.116
	+	295.21		1.548E+00	2.324E-01	2.085E-01	1.782E-02	7.425
	+	351.92	*	1.640E+00	1.957E-01	1.024E-01	8.405E-03	16.009
PO-214	+	74.81		4.355E+00	9.656E-01	8.905E-01	9.396E-02	4.891

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		3.392E+00	5.726E-01	5.085E-01	5.508E-02	6.671
	+	87.30		2.104E+00	6.435E-01	1.133E+00	1.314E-01	1.857
	+	241.98		2.252E+00	6.336E-01	5.472E-01	4.396E-02	4.116
	+	295.21		1.548E+00	2.324E-01	2.085E-01	1.782E-02	7.425
	+	351.92	*	1.640E+00	1.957E-01	1.024E-01	8.405E-03	16.009
PO-216	+	74.81		2.527E+00	5.786E-01	5.168E-01	6.198E-02	4.891
	+	77.11		1.979E+00	2.981E-01	2.966E-01	2.284E-02	6.671
	+	87.30		1.228E+00	3.837E-01	6.611E-01	8.751E-02	1.857
	+	238.63	*	1.555E+00	1.558E-01	9.147E-02	6.662E-03	17.003
	+	300.09		2.254E+00	1.122E+00	1.197E+00	9.902E-02	1.883
PO-218	+	74.81		4.355E+00	9.656E-01	8.905E-01	9.396E-02	4.891
	+	77.11		3.392E+00	5.726E-01	5.085E-01	5.508E-02	6.671
	+	87.30		2.104E+00	6.435E-01	1.133E+00	1.314E-01	1.857
	+	241.98		2.252E+00	6.336E-01	5.472E-01	4.396E-02	4.116
	+	295.21		1.548E+00	2.324E-01	2.085E-01	1.782E-02	7.425
	+	351.92	*	1.640E+00	1.957E-01	1.024E-01	8.405E-03	16.009
RA-224	+	240.98	*	4.271E+00	1.177E+00	1.040E+00	5.980E-02	4.105
RA-226	+	609.31	*	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
	+	1120.29		1.772E+00	5.780E-01	4.242E-01	3.930E-02	4.177
	+	1764.49		1.768E+00	4.315E-01	2.718E-01	1.630E-02	6.507
AC-228	+	338.32		1.393E+00	7.226E-01	3.637E-01	1.482E-01	3.829
	+	911.07	*	1.529E+00	3.520E-01	2.206E-01	2.591E-02	6.931
	+	969.11		1.613E+00	5.080E-01	3.234E-01	7.551E-02	4.989
RA-228	+	338.32		1.393E+00	7.226E-01	3.637E-01	1.482E-01	3.829
	+	911.07	*	1.529E+00	3.520E-01	2.206E-01	2.591E-02	6.931
	+	969.11		1.613E+00	5.080E-01	3.234E-01	7.551E-02	4.989
TH-228	+	74.81		2.563E+00	5.364E-01	5.240E-01	3.982E-02	4.891
	+	77.11		2.006E+00	3.022E-01	3.008E-01	2.316E-02	6.671
	+	87.30		1.245E+00	3.686E-01	6.704E-01	5.814E-02	1.857
	+	238.63	*	1.577E+00	1.579E-01	9.275E-02	6.756E-03	17.003
	+	300.09		2.286E+00	1.753E+00	1.214E+00	7.156E-01	1.883
TH-230	+	609.31	*	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
	+	1120.29		1.772E+00	5.780E-01	4.242E-01	3.930E-02	4.177
	+	1764.49		1.768E+00	4.315E-01	2.718E-01	1.630E-02	6.507
TH-232	+	338.32		1.393E+00	4.542E-01	3.637E-01	2.090E-02	3.829
	+	911.07	*	1.529E+00	3.520E-01	2.206E-01	2.591E-02	6.931
	+	969.11		1.613E+00	5.080E-01	3.234E-01	7.551E-02	4.989
TH-234	+	63.29	*	2.790E+00	1.594E+00	1.850E+00	3.181E-01	1.508
	+	92.38		3.423E+00	9.346E-01	8.415E-01	1.512E-01	4.068
U-234	+	609.31	*	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
	+	1120.29		1.772E+00	5.780E-01	4.242E-01	3.930E-02	4.177
	+	1764.49		1.768E+00	4.315E-01	2.718E-01	1.630E-02	6.507
NP-237	+	86.50	*	7.796E-01	2.813E-01	3.859E-01	8.625E-02	2.020
	+	95.87		7.871E-01	1.083E+00	1.560E+00	3.817E-01	0.505
U-238	+	63.29	*	2.790E+00	1.594E+00	1.850E+00	3.181E-01	1.508
	+	92.38		3.423E+00	7.598E-01	8.415E-01	7.040E-02	4.068
AM-243	+	74.67	*	4.098E-01	8.563E-02	8.397E-02	6.302E-03	4.880
	+	86.72		2.924E+01	8.656E+00	1.520E+01	1.309E+00	1.923
	+	117.66		-1.972E+00	3.969E+00	6.268E+00	4.519E-01	-0.315



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		142.18		1.048E+01	1.852E+01	3.032E+01	1.906E+00	0.346
ANH-511	+	511.00	*	1.075E-01	6.767E-02	4.265E-02	2.506E-03	2.520

## ---- 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	*	1.307E-01	3.283E-01	5.516E-01	3.717E-02	0.237
NA-22		1274.54	*	-3.398E-02	3.987E-02	5.905E-02	3.857E-03	-0.575
NA-24		1368.53	*	-1.265E-01	3.987E-02	Half-Life too short		
AL-26		1129.67		7.418E-01	1.752E+00	2.816E+00	1.778E-01	0.263
		1808.65	*	5.649E-04	2.549E-02	4.139E-02	2.399E-03	0.014
TI-44		67.85		-4.889E-02	4.939E-02	6.668E-02	4.693E-03	-0.733
	+	78.38	*	3.651E-01	5.500E-02	7.927E-02	6.189E-03	4.606
SC-46		889.25	*	-2.384E-02	3.117E-02	4.764E-02	4.402E-03	-0.501
	+	1120.51		3.005E-01	9.598E-02	1.305E-01	8.450E-03	2.303
V-48		944.10		-2.639E-01	7.816E-01	1.261E+00	1.127E-01	-0.209
		983.50	*	-5.396E-02	5.954E-02	8.936E-02	7.588E-03	-0.604
		1312.09		-6.315E-03	7.172E-02	1.166E-01	8.060E-03	-0.054
CR-51		320.08	*	-1.209E-01	3.732E-01	6.098E-01	3.941E-02	-0.198
MN-52		744.21		8.236E-02	2.106E-01	3.503E-01	2.472E-02	0.235
		848.13		3.889E-01	5.517E+00	9.304E+00	7.995E-01	0.042
		935.52		3.981E-01	2.310E-01	4.318E-01	3.897E-02	0.922
		1246.25		1.760E+00	7.027E+00	1.028E+01	6.408E-01	0.171
		1333.61		-1.276E+00	3.713E+00	5.800E+00	4.133E-01	-0.220
		1434.06	*	5.634E-02	1.756E-01	3.015E-01	2.113E-02	0.187
MN-54		834.83	*	1.978E-02	3.523E-02	6.163E-02	5.169E-03	0.321
CO-56		846.75	*	1.953E-03	3.740E-02	6.298E-02	5.398E-03	0.031
		977.42		-6.456E-01	2.720E+00	4.207E+00	3.603E-01	-0.153
		1037.82		-1.821E-01	2.890E-01	4.494E-01	3.723E-02	-0.405
		1175.09		9.303E-02	2.047E+00	3.396E+00	1.877E-01	0.027
	+	1238.25		2.130E-01	1.249E-01	1.639E-01	1.065E-02	1.300
		1360.21		6.500E-02	9.225E-01	1.527E+00	1.085E-01	0.043
		1771.40		-1.689E-02	2.597E-01	3.523E-01	2.102E-02	-0.048
CO-57		122.06	*	-5.890E-03	2.553E-02	4.072E-02	2.897E-03	-0.145
		136.48		-1.831E-01	2.154E-01	3.335E-01	2.448E-02	-0.549
CO-58		810.76	*	1.120E-03	3.784E-02	6.088E-02	4.899E-03	0.018
FE-59		142.65		2.428E+00	2.783E+00	4.604E+00	2.887E-01	0.527
		192.34		-1.804E-01	1.101E+00	1.591E+00	1.858E-01	-0.113
		1099.22	*	2.436E-02	8.270E-02	1.409E-01	1.085E-02	0.173
		1291.56		1.348E-02	1.090E-01	1.817E-01	1.480E-02	0.074
CO-60		1173.22		-2.868E-02	4.484E-02	6.972E-02	3.840E-03	-0.411
		1332.49	*	-2.821E-02	3.408E-02	4.926E-02	3.510E-03	-0.573
ZN-65		1115.52	*	6.242E-02	8.600E-02	1.353E-01	8.895E-03	0.461
GE-68		1077.35	*	-2.674E-01	1.140E+00	1.846E+00	1.327E-01	-0.145
AS-73		53.44	*	1.470E-01	6.512E-01	1.072E+00	6.989E-02	0.137
AS-74		595.88	*	2.347E-02	8.905E-02	1.475E-01	8.824E-03	0.159
		634.78		-9.978E-02	3.357E-01	5.310E-01	3.171E-02	-0.188
SE-75		66.05		2.132E+00	4.861E+00	7.054E+00	6.415E-01	0.302

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		96.73		-2.997E-01	8.689E-01	1.206E+00	1.602E-01	-0.249
		121.11		-4.414E-03	1.372E-01	2.206E-01	2.232E-02	-0.020
		136.00		-2.401E-02	4.021E-02	6.299E-02	4.160E-03	-0.381
		198.60		1.038E+00	1.829E+00	3.082E+00	2.134E-01	0.337
		264.65	*	-1.544E-02	4.954E-02	6.959E-02	4.086E-03	-0.222
		279.53		-5.862E-02	1.077E-01	1.750E-01	1.102E-02	-0.335
		303.91		1.100E+00	2.253E+00	3.366E+00	3.217E-01	0.327
		400.65		1.505E-02	2.699E-01	4.464E-01	3.975E-02	0.034
BR-77	+	87.88		4.198E+02	1.243E+02	2.418E+02	2.112E+01	1.736
		200.40		-1.928E+01	1.191E+02	1.993E+02	1.108E+01	-0.097
	+	239.00		1.796E+02	1.609E+01	2.644E+01	1.518E+00	6.794
		249.79		-3.557E+01	4.716E+01	7.618E+01	4.400E+00	-0.467
		281.68		-5.904E+01	6.471E+01	1.031E+02	6.016E+00	-0.572
		297.23		2.991E+02	5.082E+01	9.556E+01	5.574E+00	3.130
		303.76		1.237E+02	1.361E+02	2.093E+02	1.220E+01	0.591
		439.47		2.153E+01	1.045E+02	1.740E+02	9.839E+00	0.124
		484.57		-4.151E+01	1.559E+02	2.505E+02	1.455E+01	-0.166
		520.65	*	4.330E+00	7.406E+00	1.259E+01	7.424E-01	0.344
		574.64		9.811E+01	1.700E+02	2.414E+02	1.441E+01	0.406
		578.91		1.003E+01	6.780E+01	9.153E+01	5.467E+00	0.110
		585.48		1.215E+03	2.074E+02	3.779E+02	2.259E+01	3.214
		755.35		3.067E+01	1.223E+02	2.011E+02	1.451E+01	0.153
		817.79		-2.418E+01	8.257E+01	1.348E+02	1.096E+01	-0.179
SR-82		698.33		9.993E+00	3.139E+01	5.202E+01	3.344E+00	0.192
		776.49	*	-6.469E-01	3.719E-01	4.910E-01	3.691E-02	-1.318
		1395.20		1.826E+00	9.775E+00	1.643E+01	1.161E+00	0.111
RB-83		520.41	*	4.170E-02	6.762E-02	1.152E-01	6.791E-03	0.362
		529.64		1.860E-02	1.038E-01	1.716E-01	1.015E-02	0.108
		552.65		-1.200E-01	1.843E-01	2.845E-01	1.692E-02	-0.422
RB-84		881.50	*	2.450E-02	5.811E-02	1.012E-01	9.222E-03	0.242
KR-85		513.99	*	1.254E+01	8.678E+00	1.369E+01	8.050E-01	0.916
SR-85		513.99	*	6.352E-02	4.397E-02	6.935E-02	4.079E-03	0.916
RB-86		1076.63	*	2.072E-01	6.911E-01	1.180E+00	8.497E-02	0.176
Y-88		898.02		-9.163E-03	3.564E-02	5.809E-02	5.472E-03	-0.158
		1836.01	*	-1.597E-02	3.079E-02	4.365E-02	2.479E-03	-0.366
ZR-88		392.90	*	-1.925E-02	3.161E-02	5.033E-02	2.741E-03	-0.383
Y-91		1204.90	*	3.560E+00	1.896E+01	3.178E+01	1.849E+00	0.112
NB-94		702.63	*	-9.935E-03	3.316E-02	5.220E-02	3.385E-03	-0.190
		871.10		5.206E-03	3.336E-02	5.660E-02	5.066E-03	0.092
NB-95		765.79	*	5.776E-02	4.519E-02	7.190E-02	5.294E-03	0.803
NB-95M		235.69	*	5.708E-01	1.549E-01	2.558E-01	1.912E-02	2.231
ZR-95		724.18		8.241E-02	1.127E-01	1.686E-01	1.299E-02	0.489
		756.15	*	2.715E-02	7.220E-02	1.198E-01	9.885E-03	0.227
NB-97		657.90	*	4.849E-02	7.220E-02	Half-Life	too short	
		1024.50		-2.374E+00	7.220E-02	Half-Life	too short	
ZR-97		254.15		3.114E-01	7.220E-02	Half-Life	too short	
		355.39		8.892E-01	7.220E-02	Half-Life	too short	
		507.63	*	1.251E+00	7.220E-02	Half-Life	too short	
		602.52		1.555E+00	7.220E-02	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
	1021.30		2.325E+00	7.220E-02	Half-Life	too short	
	1147.95		-5.198E-01	7.220E-02	Half-Life	too short	
	1362.66		2.204E+00	7.220E-02	Half-Life	too short	
	1750.46		6.538E-01	7.220E-02	Half-Life	too short	
MO-99	140.51		-1.215E+01	2.122E+01	3.276E+01	8.870E+00	-0.371
	181.06		5.063E-01	1.441E+01	2.122E+01	3.613E+00	0.024
	366.43		-1.359E+01	6.461E+01	1.056E+02	5.927E+00	-0.129
	739.58	*	-7.505E+00	9.669E+00	1.448E+01	2.075E+00	-0.518
	778.00		-3.178E+01	2.498E+01	3.493E+01	2.634E+00	-0.910
TC-99M	140.51	*	-1.034E+09	2.498E+01	Half-Life	too short	
RH-101	127.23		1.977E-03	3.304E-02	5.326E-02	3.664E-03	0.037
	198.01	*	6.686E-04	3.375E-02	5.581E-02	3.096E-03	0.012
	325.23		1.910E-03	2.414E-01	4.009E-01	2.320E-02	0.005
RH-102	418.52		-4.895E-02	2.871E-01	4.679E-01	2.604E-02	-0.105
	475.06	*	-6.435E-04	2.983E-02	4.883E-02	2.822E-03	-0.013
	631.29		-5.774E-02	5.395E-02	7.936E-02	4.742E-03	-0.728
	697.49		4.206E-02	7.106E-02	1.204E-01	7.728E-03	0.349
	766.84		2.346E-01	1.273E-01	2.093E-01	1.545E-02	1.121
	1046.59		-3.323E-02	1.126E-01	1.819E-01	1.392E-02	-0.183
	1112.84		2.316E-02	2.175E-01	3.151E-01	2.082E-02	0.074
RU-103	497.08	*	-4.678E-03	4.029E-02	6.541E-02	8.284E-03	-0.072
+	610.33		1.357E+01	2.692E+00	2.963E+00	4.589E-01	4.580
RH-106	511.85	+	5.356E-01	3.373E-01	4.271E-01	2.510E-02	1.254
	621.84	*	-2.856E-02	3.079E-01	4.958E-01	5.864E-02	-0.058
	1050.47		-1.902E+00	2.392E+00	3.582E+00	2.721E-01	-0.531
RU-106	511.85	+	5.356E-01	3.373E-01	4.271E-01	2.510E-02	1.254
	621.84	*	-2.856E-02	3.078E-01	4.958E-01	2.965E-02	-0.058
	1050.47		-1.902E+00	2.392E+00	3.582E+00	2.721E-01	-0.531
AG-108M	433.93	*	4.329E-03	3.402E-02	5.638E-02	3.463E-03	0.077
	614.37		-8.244E-03	4.399E-02	6.039E-02	3.901E-03	-0.137
	722.95		-1.356E-02	4.971E-02	6.690E-02	4.808E-03	-0.203
AG-110M	657.75	*	4.288E-02	3.975E-02	6.201E-02	3.917E-03	0.691
	677.61		5.970E-02	3.066E-01	5.037E-01	3.268E-02	0.119
	706.67		5.906E-02	2.091E-01	3.451E-01	2.364E-02	0.171
	763.93		2.100E-02	1.714E-01	2.415E-01	1.841E-02	0.087
	884.67		-7.110E-03	3.933E-02	6.454E-02	6.085E-03	-0.110
	937.48		2.035E-02	1.140E-01	1.930E-01	1.796E-02	0.105
	1384.27		9.593E-02	1.691E-01	2.637E-01	1.944E-02	0.364
IN-111	171.28		6.687E-01	7.632E-01	1.263E+00	6.813E-02	0.529
	245.39	*	3.147E-01	8.948E-01	1.331E+00	7.668E-02	0.236
IN-113M	391.69	*	-2.399E-02	4.655E-02	7.459E-02	4.365E-03	-0.322
SN-113	391.69	*	-2.399E-02	4.655E-02	7.459E-02	4.365E-03	-0.322
IN-114M	190.27	*	2.126E-03	2.017E-01	2.962E-01	1.630E-02	0.007
CD-115	260.90		-5.694E+01	9.128E+01	1.481E+02	8.598E+00	-0.384
	492.35		-7.082E+00	2.589E+01	4.159E+01	2.424E+00	-0.170
	527.90	*	1.564E+00	7.547E+00	1.251E+01	7.391E-01	0.125
SN-117M	156.02		2.417E+00	2.252E+00	3.748E+00	2.157E-01	0.645
	158.56	*	-2.133E-02	5.536E-02	8.720E-02	4.933E-03	-0.245
SB-122	563.90	*	-2.699E-01	1.754E+00	2.428E+00	1.447E-01	-0.111

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-123		692.80		-1.188E+01	3.071E+01	4.791E+01	3.044E+00	-0.248
		159.00	*	-6.418E-01	3.071E+01	Half-Life too short		
		528.96		5.259E+01	3.071E+01	Half-Life too short		
TE-123M		159.00	*	-1.318E-02	3.012E-02	4.734E-02	2.707E-03	-0.278
I-124		602.71	*	3.486E-01	6.260E-01	9.285E-01	5.554E-02	0.375
		722.78		-1.081E+00	4.311E+00	5.818E+00	3.932E-01	-0.186
		1325.50		1.112E+00	2.441E+01	4.033E+01	2.844E+00	0.028
SB-124		1376.25		3.612E+01	3.282E+01	5.332E+01	3.779E+00	0.677
		1509.49		7.167E+00	1.165E+01	2.074E+01	1.423E+00	0.346
		1691.02		-9.268E-01	2.862E+00	4.324E+00	2.724E-01	-0.214
		602.71		2.412E-02	4.331E-02	6.424E-02	3.845E-03	0.375
		645.85		1.920E-01	4.838E-01	8.091E-01	5.413E-02	0.237
		709.31		1.441E+00	2.766E+00	4.649E+00	3.057E-01	0.310
		713.82		-1.057E+00	1.712E+00	2.591E+00	2.774E-01	-0.408
		722.78		-1.085E-01	4.324E-01	5.835E-01	4.082E-02	-0.186
	+	968.20		1.639E+01	3.743E+00	7.463E+00	6.471E-01	2.197
		1045.16		4.624E-01	2.318E+00	3.922E+00	3.010E-01	0.118
		1325.50		1.191E-01	2.614E+00	4.321E+00	3.047E-01	0.028
		1368.21		-6.289E-01	1.667E+00	2.591E+00	3.254E-01	-0.243
		1436.60		-1.037E+00	3.339E+00	5.198E+00	3.641E-01	-0.199
		1691.02	*	-2.193E-02	6.771E-02	1.023E-01	6.915E-03	-0.214
SB-125		427.89	*	9.308E-02	9.655E-02	1.674E-01	9.809E-03	0.556
	+	463.38		4.474E-01	3.606E-01	5.314E-01	3.567E-02	0.842
		600.56		-4.590E-02	1.857E-01	2.964E-01	2.035E-02	-0.155
TE-125M		635.90		2.232E-02	2.682E-01	4.377E-01	3.037E-02	0.051
		109.28	*	-6.576E+00	9.814E+00	1.542E+01	1.447E+00	-0.426
		388.63		1.157E-01	2.035E-01	3.459E-01	1.889E-02	0.335
I-126		666.33	*	-6.200E-02	1.953E-01	2.624E-01	1.576E-02	-0.236
		753.82		1.088E+00	1.417E+00	2.424E+00	1.743E-01	0.449
		223.80		3.733E+00	3.714E+00	6.464E+00	3.671E-01	0.577
SB-126		278.60		-3.013E-01	2.283E+00	3.785E+00	2.206E-01	-0.080
	+	296.50		1.447E+01	1.975E+00	3.564E+00	2.079E-01	4.060
		414.70		-1.272E-02	7.120E-02	1.160E-01	6.439E-03	-0.110
		415.30		1.988E+00	5.829E+00	9.795E+00	5.438E-01	0.203
		555.20		-6.248E-01	3.554E+00	5.714E+00	3.400E-01	-0.109
		573.80		9.742E-01	1.064E+00	1.641E+00	9.794E-02	0.594
		593.00		2.743E-01	8.756E-01	1.457E+00	8.711E-02	0.188
		656.30		-7.822E-01	3.781E+00	5.159E+00	3.071E-01	-0.152
		666.33		-2.584E-02	8.141E-02	1.094E-01	6.569E-03	-0.236
		675.00		-1.721E+00	1.883E+00	2.805E+00	1.716E-01	-0.614
		695.00		-6.227E-02	7.096E-02	1.058E-01	6.751E-03	-0.589
		697.00		-2.046E-03	2.409E-01	3.889E-01	2.493E-02	-0.005
		720.50	*	4.810E-02	1.472E-01	2.302E-01	1.549E-02	0.209
		856.80		4.731E-02	4.615E-01	6.760E-01	5.900E-02	0.070
		989.30		4.662E-01	1.076E+00	1.851E+00	1.559E-01	0.252
SB-127		1034.80		4.266E-01	7.760E+00	1.297E+01	1.014E+00	0.033
		1213.00		-1.093E+00	4.210E+00	6.781E+00	3.999E-01	-0.161
		61.10		4.591E+01	4.712E+01	6.939E+01	6.503E+00	0.662
		252.40		-9.757E-01	3.551E+00	5.829E+00	2.416E+00	-0.167

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		290.80	-1.989E+01	1.996E+01	2.679E+01	2.352E+00	-0.742
		411.60	1.605E+00	9.966E+00	1.657E+01	2.322E+00	0.097
		444.90	-5.226E+00	8.214E+00	1.293E+01	1.342E+00	-0.404
		473.00	-9.173E-01	1.397E+00	2.185E+00	2.367E-01	-0.420
		543.00	-1.152E+01	1.391E+01	2.118E+01	2.687E+00	-0.544
		603.60	6.418E+00	1.067E+01	1.587E+01	1.670E+00	0.404
		685.20	* 7.483E-03	1.136E+00	1.837E+00	1.715E-01	0.004
		698.50	4.061E+00	1.181E+01	1.959E+01	2.839E+00	0.207
		722.20	8.855E+00	2.779E+01	4.006E+01	3.771E+00	0.221
		783.80	7.375E-01	2.886E+00	4.742E+00	5.423E-01	0.156
XE-127		57.60	-1.601E+00	5.225E+00	8.144E+00	5.364E-01	-0.197
		145.22	3.503E-01	7.270E-01	1.186E+00	7.320E-02	0.295
		172.10	3.492E-02	1.190E-01	1.924E-01	1.038E-02	0.182
		202.84	* -1.213E-02	5.298E-02	7.667E-02	4.274E-03	-0.158
		374.96	9.247E-03	2.000E-01	3.250E-01	1.807E-02	0.028
I-131		80.18	-4.700E+00	4.757E+00	6.454E+00	5.175E-01	-0.728
		284.30	1.093E+00	1.336E+00	2.308E+00	1.493E-01	0.474
		364.48	* 1.229E-01	1.024E-01	1.801E-01	1.136E-02	0.682
		636.97	1.046E+00	1.374E+00	2.361E+00	1.567E-01	0.443
		722.89	-2.014E+00	7.598E+00	1.024E+01	6.982E-01	-0.197
TE-132		49.72	-1.291E+01	1.165E+01	1.815E+01	1.611E+00	-0.711
		111.76	-1.182E+01	2.505E+01	3.969E+01	3.802E+00	-0.298
		116.30	-7.199E+00	2.285E+01	3.638E+01	3.447E+00	-0.198
		228.16	* -5.493E-01	5.452E-01	8.678E-01	1.224E-01	-0.633
BA-133		53.15	-3.138E-01	2.818E+00	4.587E+00	2.989E-01	-0.068
		79.62	3.161E+00	1.574E+00	2.305E+00	3.421E-01	1.371
		81.00	-2.362E-01	1.194E-01	1.471E-01	2.291E-02	-1.605
		276.40	6.179E-01	4.075E-01	6.367E-01	8.263E-02	0.970
		302.84	1.716E-01	1.535E-01	2.376E-01	2.773E-02	0.722
		356.01	* 1.397E-02	4.473E-02	6.591E-02	7.576E-03	0.212
		383.85	-2.949E-01	3.023E-01	4.680E-01	5.014E-02	-0.630
I-133	+	510.53	4.429E-01	3.023E-01	Half-Life	too short	
		529.87	* -2.355E-04	3.023E-01	Half-Life	too short	
		706.58	3.829E-02	3.023E-01	Half-Life	too short	
		856.28	-2.329E-02	3.023E-01	Half-Life	too short	
		875.33	-4.353E-03	3.023E-01	Half-Life	too short	
		1236.41	2.808E-01	3.023E-01	Half-Life	too short	
		1298.22	-1.250E-02	3.023E-01	Half-Life	too short	
CS-134		475.35	9.798E-01	1.934E+00	3.273E+00	1.891E-01	0.299
		563.23	1.864E-01	4.015E-01	5.927E-01	3.602E-02	0.314
	+	569.32	1.188E+00	3.853E-01	4.999E-01	3.066E-02	2.376
		604.70	4.908E-03	3.823E-02	5.435E-02	3.268E-03	0.090
	+	795.84	* 1.340E-01	6.607E-02	9.094E-02	7.158E-03	1.473
		801.93	6.943E-03	4.451E-01	6.166E-01	4.899E-02	0.011
		1038.57	-2.105E+00	3.651E+00	5.714E+00	4.439E-01	-0.368
		1167.94	2.410E+00	2.446E+00	4.383E+00	2.459E-01	0.550
		1365.15	-3.467E-01	1.155E+00	1.815E+00	1.374E-01	-0.191
CS-135		268.24	* 2.523E-01	1.793E-01	2.810E-01	2.155E-02	0.898
I-135		288.45	2.739E+08	1.793E-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
		417.63		1.852E+07	1.793E-01	Half-Life too short		
		546.56		3.228E+08	1.793E-01	Half-Life too short		
		836.80		3.806E+08	1.793E-01	Half-Life too short		
		1038.76		-5.471E+08	1.793E-01	Half-Life too short		
		1124.00		3.083E+09	1.793E-01	Half-Life too short		
		1131.51		-5.373E+07	1.793E-01	Half-Life too short		
		1260.41	*	-4.944E+07	1.793E-01	Half-Life too short		
		1457.56		9.702E+09	1.793E-01	Half-Life too short		
		1678.03		2.156E+07	1.793E-01	Half-Life too short		
		1706.46		-4.118E+08	1.793E-01	Half-Life too short		
		1791.20		-8.948E+07	1.793E-01	Half-Life too short		
CS-136		66.91		-6.982E-01	7.634E-01	1.036E+00	1.510E-01	-0.674
	+	86.29		3.264E+00	1.015E+00	1.888E+00	2.419E-01	1.729
		153.22		3.201E-01	6.620E-01	1.079E+00	7.848E-02	0.297
		163.89		8.693E-01	1.055E+00	1.739E+00	1.212E-01	0.500
		176.55		-1.090E-01	3.612E-01	5.634E-01	3.484E-02	-0.193
		273.65		5.531E-03	4.774E-01	6.930E-01	4.598E-02	0.008
		340.57		3.013E-01	1.462E-01	2.355E-01	1.438E-02	1.279
		818.51		-3.169E-02	6.112E-02	9.753E-02	7.946E-03	-0.325
		1048.07	*	-7.285E-02	1.011E-01	1.562E-01	1.256E-02	-0.466
		1235.34		2.416E-01	5.307E-01	7.982E-01	8.123E-02	0.303
CE-139		165.85	*	-2.681E-03	3.091E-02	4.923E-02	2.643E-03	-0.054
BA-140		162.64		4.373E-01	7.347E-01	1.202E+00	7.518E-02	0.364
		304.84		8.779E-02	1.342E+00	1.948E+00	5.318E-01	0.045
		423.70		-3.252E-02	1.856E+00	3.053E+00	9.691E-01	-0.011
		537.32	*	2.733E-01	2.627E-01	4.341E-01	1.413E-01	0.630
LA-140		328.77		4.056E-01	2.947E-01	5.171E-01	3.349E-02	0.784
		432.53		-1.633E+00	2.067E+00	3.235E+00	2.022E-01	-0.505
		487.03		-4.715E-02	1.233E-01	1.964E-01	1.292E-02	-0.240
		751.79		-7.737E-01	1.743E+00	2.702E+00	2.229E-01	-0.286
		815.85		-1.740E-01	2.628E-01	4.128E-01	3.777E-02	-0.422
		867.82		-5.288E-02	1.377E+00	2.132E+00	1.992E-01	-0.025
		919.63		-3.103E+00	3.155E+00	3.929E+00	4.364E-01	-0.790
		925.24		6.494E-01	1.019E+00	1.795E+00	1.730E-01	0.362
		1596.49	*	3.200E-03	7.875E-02	1.108E-01	7.347E-03	0.029
CE-141		145.44	*	5.685E-02	6.496E-02	1.074E-01	6.854E-03	0.529
CE-143		57.37		1.955E-05	6.496E-02	Half-Life too short		
		231.56		1.459E-03	6.496E-02	Half-Life too short		
		293.26	*	6.235E-04	6.496E-02	Half-Life too short		
	+	350.59		2.114E-02	6.496E-02	Half-Life too short		
		490.36		-2.246E-04	6.496E-02	Half-Life too short		
		664.57		3.487E-03	6.496E-02	Half-Life too short		
		721.93		3.149E-04	6.496E-02	Half-Life too short		
CE-144		80.11		-2.269E+00	2.409E+00	3.276E+00	2.608E-01	-0.692
		133.54	*	-1.749E-01	2.183E-01	3.375E-01	4.913E-02	-0.518
PM-144		476.78		3.633E-02	6.790E-02	1.151E-01	7.974E-03	0.316
		618.01		-7.881E-03	3.213E-02	5.116E-02	3.233E-03	-0.154
		696.49	*	9.625E-03	3.233E-02	5.353E-02	3.429E-03	0.180
		778.57		-1.019E+00	2.119E+00	3.241E+00	2.448E-01	-0.314

---- 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	*	6.518E-01	2.190E+00	3.625E+00	2.321E-01	0.180
		1489.15		-6.768E+00	1.053E+01	1.522E+01	1.051E+00	-0.445
PM-146		453.90	*	4.021E-03	4.398E-02	7.263E-02	6.218E-03	0.055
		633.02		-7.631E-01	1.355E+00	2.043E+00	7.529E-01	-0.374
		735.90		1.818E-01	1.757E-01	2.727E-01	7.674E-02	0.667
		747.13		-3.241E-02	9.626E-02	1.504E-01	1.980E-02	-0.215
ND-147	+	91.11		6.017E-01	2.913E-01	5.252E-01	4.828E-02	1.146
		319.41		-1.695E+00	3.195E+00	5.165E+00	2.998E-01	-0.328
		439.89		2.033E+00	5.526E+00	9.287E+00	5.254E-01	0.219
		531.02	*	-4.654E-01	5.389E-01	8.188E-01	1.111E-01	-0.568
PM-149		285.90	*	5.271E+01	6.354E+01	1.092E+02	1.550E+01	0.483
EU-152		121.78		-5.542E-02	7.539E-02	1.176E-01	1.017E-02	-0.471
		244.69		5.671E-01	3.722E-01	5.877E-01	3.385E-02	0.965
		344.27	*	-2.935E-02	1.209E-01	1.606E-01	1.039E-02	-0.183
		443.98		-2.229E-01	9.660E-01	1.564E+00	8.871E-02	-0.143
		778.89		-1.691E-02	2.406E-01	3.841E-01	2.901E-02	-0.044
		867.32		1.685E-01	8.852E-01	1.360E+00	1.209E-01	0.124
	+	964.01		9.061E-01	4.806E-01	5.783E-01	5.042E-02	1.567
		1085.78		-3.221E-01	3.457E-01	5.126E-01	3.616E-02	-0.628
		1112.02		-6.145E-02	3.174E-01	4.387E-01	2.905E-02	-0.140
	+	1407.95		5.464E-01	2.479E-01	3.789E-01	2.670E-02	1.442
GD-153		69.67		1.891E-01	1.845E+00	2.456E+00	1.756E-01	0.077
		83.37		9.303E+00	1.979E+01	2.419E+01	2.000E+00	0.385
		97.43	*	5.360E-03	8.679E-02	1.230E-01	9.868E-03	0.044
		103.18		-6.202E-02	1.095E-01	1.730E-01	1.335E-02	-0.358
EU-154		123.07		-3.292E-03	5.280E-02	8.476E-02	8.673E-03	-0.039
		247.94		-2.902E-01	3.810E-01	5.769E-01	5.494E-02	-0.503
		591.81		-2.860E-01	6.943E-01	1.024E+00	1.012E-01	-0.279
		723.30		-7.004E-02	2.091E-01	2.793E-01	2.204E-02	-0.251
		756.87		5.614E-01	7.557E-01	1.291E+00	1.423E-01	0.435
		873.19		1.487E-03	2.808E-01	4.703E-01	5.881E-02	0.003
		996.32		-3.141E-01	3.587E-01	5.404E-01	9.526E-02	-0.581
		1004.76		-1.707E-02	2.161E-01	3.571E-01	4.054E-02	-0.048
		1274.45	*	-9.053E-02	1.121E-01	1.668E-01	1.636E-02	-0.543
EU-155		48.70		-1.533E-01	1.811E+00	2.940E+00	1.884E-01	-0.052
		60.01		2.809E+00	4.848E+00	7.055E+00	4.690E-01	0.398
	+	86.54		3.196E-01	9.471E-02	1.821E-01	1.581E-02	1.755
		105.31	*	2.283E-02	1.123E-01	1.827E-01	1.414E-02	0.125
TB-160	+	86.79		8.449E-01	2.502E-01	4.770E-01	4.111E-02	1.771
		197.04		-5.191E-02	5.756E-01	9.487E-01	5.258E-02	-0.055
		215.65		-6.127E-02	7.069E-01	1.152E+00	6.500E-02	-0.053
	+	298.57		3.245E-01	1.604E-01	1.979E-01	1.154E-02	1.640
		879.36	*	-1.686E-02	1.218E-01	2.012E-01	1.828E-02	-0.084
		962.29		5.868E-01	5.051E-01	8.301E-01	7.254E-02	0.707
	+	966.15		6.156E-01	3.265E-01	4.644E-01	4.038E-02	1.326
		1177.93		-3.006E-01	3.264E-01	4.921E-01	2.733E-02	-0.611
		1271.85		1.425E-01	6.328E-01	1.067E+00	6.930E-02	0.134
HO-166M		80.57		-6.175E-01	3.181E-01	4.094E-01	3.277E-02	-1.508
	+	184.41		1.859E-01	6.853E-02	7.343E-02	4.016E-03	2.532

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		280.46		-7.914E-02	8.287E-02	1.317E-01	7.681E-03	-0.601
		410.95		7.403E-02	2.474E-01	4.146E-01	2.294E-02	0.179
		711.68	*	-2.394E-02	6.451E-02	1.001E-01	6.612E-03	-0.239
		752.31		-5.458E-02	2.909E-01	4.609E-01	3.305E-02	-0.118
		810.29		2.127E-02	5.676E-02	9.432E-02	7.561E-03	0.225
		51.35		-7.887E+00	2.351E+01	3.800E+01	2.464E+00	-0.208
		52.39		-1.123E+01	1.220E+01	1.927E+01	1.253E+00	-0.583
		59.40		1.251E+01	2.585E+01	3.749E+01	2.483E+00	0.334
		66.72	*	-1.392E+01	2.872E+01	4.007E+01	2.794E+00	-0.347
		88.36		6.297E-01	1.864E-01	3.708E-01	3.230E-02	1.698
LU-176	+	201.83		-1.673E-02	3.197E-02	4.778E-02	2.661E-03	-0.350
		306.84	*	8.147E-03	2.460E-02	4.056E-02	2.362E-03	0.201
LU-177		401.10		-1.748E-01	7.109E+00	1.171E+01	6.423E-01	-0.015
		112.95		6.332E-01	1.525E+00	2.495E+00	1.832E-01	0.254
LU-177M	+	208.36	*	1.423E+00	1.493E+00	1.762E+00	9.877E-02	0.807
		52.97		-5.244E-01	1.267E+00	2.041E+00	1.329E-01	-0.257
		54.07		4.181E-02	6.806E-01	1.114E+00	7.274E-02	0.038
		61.30		2.090E+00	1.482E+00	2.230E+00	1.495E-01	0.937
		121.62		-2.369E-01	3.837E-01	6.020E-01	4.282E-02	-0.394
		147.16		-3.255E-01	6.931E-01	1.090E+00	6.649E-02	-0.299
		171.86		1.296E-01	4.871E-01	7.865E-01	4.245E-02	0.165
		218.09		2.917E-01	7.958E-01	1.355E+00	7.662E-02	0.215
		268.79		1.442E+00	9.126E-01	1.443E+00	8.397E-02	0.999
		319.02		-1.905E-01	2.683E-01	4.297E-01	2.493E-02	-0.443
		367.43		-2.856E-01	9.197E-01	1.495E+00	8.378E-02	-0.191
HF-181		413.65	*	-5.707E-02	1.790E-01	2.893E-01	1.604E-02	-0.197
		56.28		-5.209E-02	7.774E-01	1.267E+00	8.312E-02	-0.041
		57.53		-1.359E-01	4.408E-01	6.869E-01	4.523E-02	-0.198
		65.20		1.205E+00	9.732E-01	1.452E+00	1.000E-01	0.830
		133.02		-6.653E-02	6.885E-02	1.063E-01	7.063E-03	-0.626
		136.25		-3.387E-01	4.621E-01	7.195E-01	4.689E-02	-0.471
		345.85		1.567E-01	2.277E-01	3.266E-01	1.867E-02	0.480
W-181		482.03	*	-3.407E-02	4.260E-02	6.595E-02	3.825E-03	-0.517
		56.28		-2.014E-02	3.080E-01	5.019E-01	3.293E-02	-0.040
		57.53		-5.390E-02	1.747E-01	2.723E-01	1.793E-02	-0.198
TA-182		65.20	*	4.739E-01	3.828E-01	5.711E-01	3.935E-02	0.830
		67.75		-1.191E-01	1.170E-01	1.577E-01	1.109E-02	-0.755
		100.10		1.822E-01	1.898E-01	2.947E-01	2.319E-02	0.618
		152.43		1.632E-01	3.567E-01	5.811E-01	3.426E-02	0.281
		222.10		1.021E-01	3.332E-01	5.658E-01	3.209E-02	0.180
		1001.68		1.946E+00	1.968E+00	3.540E+00	2.926E-01	0.550
	+	1121.28		8.320E-01	2.658E-01	3.576E-01	2.311E-02	2.327
		1189.05		-1.277E-01	2.756E-01	4.338E-01	2.456E-02	-0.294
		1221.42	*	1.101E-01	1.776E-01	3.093E-01	1.850E-02	0.356
RE-183		1230.97		-6.057E-02	4.780E-01	6.646E-01	4.039E-02	-0.091
		57.98		-1.230E-03	1.794E-01	2.708E-01	1.785E-02	-0.005
		59.32		5.206E-02	1.052E-01	1.527E-01	1.011E-02	0.341
		67.20		-1.804E-01	2.042E-01	2.795E-01	1.956E-02	-0.645
		162.32	*	4.220E-02	1.142E-01	1.853E-01	1.021E-02	0.228



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	208.81		1.421E+00	1.492E+00	1.744E+00	9.776E-02	0.815
		291.72		1.841E-01	1.008E+00	1.477E+00	8.616E-02	0.125
RE-184		57.98		-4.561E-03	6.656E-01	1.004E+00	6.622E-02	-0.005
		59.32		1.929E-01	3.900E-01	5.658E-01	3.747E-02	0.341
		67.20		-6.689E-01	7.572E-01	1.036E+00	7.254E-02	-0.645
		161.27		-8.082E-02	3.750E-01	5.944E-01	3.299E-02	-0.136
		216.55		3.522E-02	2.462E-01	4.159E-01	2.348E-02	0.085
	*	252.85		-9.762E-02	2.330E-01	3.824E-01	2.212E-02	-0.255
		318.01		-3.825E-01	4.597E-01	7.310E-01	4.243E-02	-0.523
		792.07		-4.245E-01	1.191E+00	1.574E+00	1.219E-01	-0.270
		903.28		7.094E-01	9.888E-01	1.685E+00	1.573E-01	0.421
		920.93		-2.519E-01	4.602E-01	6.914E-01	6.341E-02	-0.364
OS-185		59.72		1.296E-01	2.849E-01	4.126E-01	2.738E-02	0.314
		61.14		1.685E-01	1.629E-01	2.408E-01	1.613E-02	0.700
		69.30		-2.566E-02	3.674E-01	4.355E-01	3.104E-02	-0.059
		592.07		-7.323E-01	2.676E+00	4.139E+00	2.475E-01	-0.177
	*	646.12		2.357E-02	4.110E-02	6.968E-02	4.155E-03	0.338
		717.42		2.977E-01	8.991E-01	1.490E+00	9.961E-02	0.200
		874.81		1.180E-01	5.403E-01	9.220E-01	8.308E-02	0.128
		880.27		1.498E-01	6.547E-01	1.120E+00	1.019E-01	0.134
RE-188	*	155.03		1.531E-01	1.802E-01	2.975E-01	1.724E-02	0.515
		477.96		1.320E+00	3.174E+00	5.337E+00	3.089E-01	0.247
		633.10		-1.492E+00	2.654E+00	4.094E+00	2.446E-01	-0.364
W-188	+	63.58		1.109E+02	6.088E+01	8.306E+01	5.655E+00	1.335
		227.08		-9.364E+00	1.251E+01	2.033E+01	1.157E+00	-0.461
	*	290.67		-8.345E+00	8.358E+00	1.124E+01	6.559E-01	-0.742
IR-192	+	295.96		1.168E+00	1.599E-01	2.889E-01	1.711E-02	4.043
		308.46		-2.501E-02	9.240E-02	1.515E-01	8.920E-03	-0.165
	*	316.51		1.556E-02	3.408E-02	5.790E-02	3.379E-03	0.269
		468.07		2.577E-02	7.202E-02	1.058E-01	7.033E-03	0.244
		604.41		2.891E-01	4.998E-01	7.420E-01	8.492E-02	0.390
		612.46		3.160E+00	9.362E-01	1.626E+00	1.254E-01	1.944
AU-195		65.12		2.385E-01	1.782E-01	2.667E-01	1.836E-02	0.894
		66.83		-4.971E-02	9.461E-02	1.317E-01	9.192E-03	-0.377
	+	75.70		1.320E+00	2.759E-01	4.612E-01	3.498E-02	2.863
	*	98.88		3.018E-01	2.494E-01	3.724E-01	2.955E-02	0.810
		129.76		3.978E+00	2.964E+00	4.979E+00	3.374E-01	0.799
TL-200	*	367.94		1.612E-05	2.964E+00	Half-Life	too short	
		579.30		-5.340E-06	2.964E+00	Half-Life	too short	
		828.27		-2.336E-04	2.964E+00	Half-Life	too short	
		1205.75		-9.950E-05	2.964E+00	Half-Life	too short	
TL-201		68.90		-3.075E+00	5.538E+00	5.408E+00	3.841E-01	-0.569
		70.82		-2.282E-01	2.226E+00	3.156E+00	2.280E-01	-0.072
		80.30		-4.711E+00	4.413E+00	5.962E+00	4.756E-01	-0.790
		135.34		-7.595E+00	1.999E+01	3.161E+01	2.071E+00	-0.240
	*	167.43		-3.009E+00	5.631E+00	8.792E+00	4.723E-01	-0.342
TL-202		68.90		-3.355E-01	6.042E-01	5.901E-01	4.191E-02	-0.569
		70.82		-2.483E-02	2.423E-01	3.434E-01	2.481E-02	-0.072
		80.30		-5.127E-01	4.803E-01	6.489E-01	5.177E-02	-0.790

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HG-203		439.56	*	1.616E-02	6.615E-02	1.104E-01	6.240E-03	0.146
		70.83		-1.071E-01	1.101E+00	1.561E+00	1.993E-01	-0.069
		72.87		2.846E+00	7.624E-01	1.105E+00	1.373E-01	2.575
		82.60		9.040E-01	1.680E+00	1.775E+00	2.393E-01	0.509
BI-207		279.20	*	-1.473E-02	3.999E-02	6.556E-02	4.056E-03	-0.225
		72.80		7.883E-01	2.084E-01	3.252E-01	2.395E-02	2.424
	+	74.97		7.355E-01	1.537E-01	2.363E-01	1.779E-02	3.113
		84.90		3.794E-01	2.214E-01	3.306E-01	2.785E-02	1.147
	+	569.67		1.853E-01	6.005E-02	7.755E-02	4.627E-03	2.390
		1063.62	*	2.843E-02	5.264E-02	9.147E-02	6.770E-03	0.311
TL-207		1770.23		2.364E-01	4.963E-01	7.782E-01	4.648E-02	0.304
		81.07		-5.184E-01	2.542E-01	3.251E-01	2.616E-02	-1.595
		83.78		4.086E-02	1.553E-01	2.069E-01	1.719E-02	0.197
		94.90		1.127E+00	2.855E-01	4.480E-01	3.666E-02	2.514
		122.32		-2.196E-01	1.783E+00	2.856E+00	2.241E-01	-0.077
		144.24		2.421E-01	7.206E-01	1.170E+00	8.849E-02	0.207
		154.21		1.914E-01	4.289E-01	6.979E-01	4.910E-02	0.274
	+	269.46		3.666E-01	3.163E-01	3.417E-01	2.078E-02	1.073
		323.87	*	-6.385E-01	7.302E-01	1.151E+00	1.900E-01	-0.555
	+	338.28		5.815E+00	1.964E+00	2.392E+00	2.513E-01	2.431
		445.03		-1.303E+00	2.356E+00	3.731E+00	3.805E-01	-0.349
		260.50		-1.442E+00	9.698E+00	1.610E+01	9.342E-01	-0.090
PO-209		262.80		-2.449E+01	2.854E+01	4.225E+01	2.453E+00	-0.580
		896.60	*	1.048E+00	6.294E+00	1.070E+01	1.001E+00	0.098
BI-210		46.50	*	1.665E-01	2.490E+00	4.107E+00	3.045E-01	0.041
PB-210		46.50	*	1.665E-01	2.490E+00	4.107E+00	3.045E-01	0.041
PO-210		46.50	*	1.665E-01	2.490E+00	4.107E+00	2.577E-01	0.041
PB-211		404.84	*	-3.108E-01	1.007E+00	1.600E+00	9.972E-01	-0.194
		427.08		1.433E+00	2.325E+00	3.673E+00	2.270E+00	0.390
		831.96		-9.586E-01	1.355E+00	1.877E+00	1.176E+00	-0.511
BI-212	+	727.18	*	1.299E+00	5.020E-01	6.955E-01	5.916E-02	1.867
		785.46		2.563E+00	1.711E+00	3.085E+00	2.360E-01	0.831
		1620.62		1.533E+00	1.334E+00	2.510E+00	1.644E-01	0.611
PO-215		81.07		-5.184E-01	2.542E-01	3.251E-01	2.616E-02	-1.595
		83.78		4.086E-02	1.553E-01	2.069E-01	1.719E-02	0.197
		94.90		1.127E+00	2.855E-01	4.480E-01	3.666E-02	2.514
		122.32		-2.196E-01	1.783E+00	2.856E+00	2.241E-01	-0.077
		144.24		2.421E-01	7.206E-01	1.170E+00	8.849E-02	0.207
		154.21		1.914E-01	4.289E-01	6.979E-01	4.910E-02	0.274
	+	269.46		3.666E-01	3.163E-01	3.417E-01	2.078E-02	1.073
		323.87	*	-6.385E-01	7.302E-01	1.151E+00	1.900E-01	-0.555
	+	338.28		5.815E+00	1.964E+00	2.392E+00	2.513E-01	2.431
		445.03		-1.303E+00	2.356E+00	3.731E+00	3.805E-01	-0.349
	+	271.23		4.704E-01	4.066E-01	4.412E-01	3.582E-02	1.066
		401.81	*	9.274E-04	4.283E-01	7.063E-01	9.518E-02	0.001
RN-220		549.76	*	1.655E-02	2.516E+01	4.102E+01	2.438E+00	0.000
RA-223		81.07		-5.184E-01	2.542E-01	3.251E-01	2.616E-02	-1.595
		83.78		4.086E-02	1.553E-01	2.069E-01	1.719E-02	0.197
		94.90		1.127E+00	2.855E-01	4.480E-01	3.666E-02	2.514

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		-2.196E-01	1.783E+00	2.856E+00	2.241E-01	-0.077
		144.24		2.421E-01	7.206E-01	1.170E+00	8.849E-02	0.207
		154.21		1.914E-01	4.289E-01	6.979E-01	4.910E-02	0.274
	+	269.46		3.666E-01	3.163E-01	3.417E-01	2.078E-02	1.073
		323.87	*	-6.385E-01	7.302E-01	1.151E+00	1.900E-01	-0.555
	+	338.28		5.815E+00	1.964E+00	2.392E+00	2.513E-01	2.431
		445.03		-1.303E+00	2.356E+00	3.731E+00	3.805E-01	-0.349
		79.80		2.284E+00	1.928E+00	2.778E+00	5.899E-01	0.822
		236.00		2.019E+00	3.738E-01	5.695E-01	5.931E-02	3.546
		256.20	*	4.147E-01	3.888E-01	6.718E-01	9.377E-02	0.617
		286.10		7.288E-01	1.524E+00	2.593E+00	3.002E-01	0.281
	+	299.80		4.178E+00	2.160E+00	2.553E+00	4.160E-01	1.637
		304.40		8.886E-01	2.024E+00	3.009E+00	5.207E-01	0.295
		334.20		-1.781E+00	2.612E+00	3.539E+00	6.483E-01	-0.503
TH-227		79.80		2.284E+00	1.929E+00	2.778E+00	5.976E-01	0.822
	+	94.00		1.323E+01	3.952E+00	4.133E+00	8.940E-01	3.201
		236.00		2.019E+00	3.587E-01	5.695E-01	5.133E-02	3.546
		256.20	*	4.147E-01	3.908E-01	6.718E-01	1.135E-01	0.617
		286.10		7.288E-01	1.688E+00	2.593E+00	2.597E+00	0.281
	+	299.80		4.178E+00	2.160E+00	2.553E+00	4.160E-01	1.637
TH-229		304.40		8.886E-01	2.024E+00	3.009E+00	5.207E-01	0.295
		334.20		-1.781E+00	2.612E+00	3.539E+00	6.483E-01	-0.503
		85.43		6.548E-01	2.237E-01	3.415E-01	2.895E-02	1.917
	+	88.47		3.625E-01	1.073E-01	2.134E-01	1.857E-02	1.699
		100.00		1.936E-01	1.985E-01	3.083E-01	2.428E-02	0.628
		193.63	*	-8.355E-02	5.593E-01	8.765E-01	4.841E-02	-0.095
PA-231		210.97		1.778E+00	8.343E-01	1.348E+00	7.572E-02	1.319
		283.67	*	-9.607E-02	1.515E+00	2.518E+00	3.473E-01	-0.038
TH-231		301.29		8.053E-01	6.444E-01	9.993E-01	1.046E-01	0.806
		81.07		-5.184E-01	2.542E-01	3.251E-01	2.616E-02	-1.595
		83.78		4.086E-02	1.553E-01	2.069E-01	1.719E-02	0.197
		94.90		1.127E+00	2.855E-01	4.480E-01	3.666E-02	2.514
		122.32		-2.196E-01	1.783E+00	2.856E+00	2.241E-01	-0.077
		144.24		2.421E-01	7.206E-01	1.170E+00	8.849E-02	0.207
U-231		154.21		1.914E-01	4.289E-01	6.979E-01	4.910E-02	0.274
	+	269.46		3.666E-01	3.163E-01	3.417E-01	2.078E-02	1.073
		323.87	*	-6.385E-01	7.302E-01	1.151E+00	1.900E-01	-0.555
	+	338.28		5.815E+00	1.964E+00	2.392E+00	2.513E-01	2.431
		445.03		-1.303E+00	2.356E+00	3.731E+00	3.805E-01	-0.349
		84.21		5.906E+00	5.096E+00	7.504E+00	6.268E-01	0.787
	+	92.29		1.084E+01	2.406E+00	3.567E+00	2.987E-01	3.039
		95.87	*	7.402E-01	1.004E+00	1.467E+00	1.191E-01	0.505
		108.00		5.973E-01	1.783E+00	2.912E+00	2.188E-01	0.205
	+	75.28		2.146E+01	5.249E+00	7.216E+00	1.066E+00	2.974
PA-233	+	86.59		5.197E+00	2.027E+00	2.953E+00	7.918E-01	1.760
	+	300.12		1.165E+00	5.926E-01	7.100E-01	9.549E-02	1.641
		311.98	*	-1.193E-02	6.301E-02	1.037E-01	6.404E-03	-0.115
		340.50		1.733E+00	8.522E-01	1.237E+00	2.839E-01	1.401
		398.62		5.815E-01	2.180E+00	3.640E+00	9.386E-01	0.160

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		6.906E-01	1.658E+00	2.788E+00	5.720E-01	0.248
		63.00		3.252E+00	1.834E+00	2.506E+00	3.649E-01	1.298
		94.67		1.058E+00	2.351E-01	3.382E-01	4.097E-02	3.127
		98.44		8.862E-02	1.126E-01	1.494E-01	8.321E-02	0.593
		99.86		4.912E-01	5.033E-01	7.819E-01	6.162E-02	0.628
		111.00		3.888E-02	1.942E-01	3.154E-01	3.550E-02	0.123
		131.20		1.312E-01	1.107E-01	1.852E-01	1.244E-02	0.709
		152.70		1.680E-01	3.471E-01	5.645E-01	8.942E-02	0.298
		186.00		6.692E+00	3.181E+00	2.707E+00	8.257E-01	2.472
		226.40		-7.249E-02	3.968E-01	6.605E-01	7.599E-02	-0.110
		227.20		-3.372E-01	4.266E-01	6.919E-01	3.940E-02	-0.487
		248.90		-6.200E-01	8.298E-01	1.325E+00	2.846E-01	-0.468
		293.70		7.430E+00	1.507E+00	1.786E+00	2.875E-01	4.160
		369.80		-4.353E-01	8.604E-01	1.374E+00	2.853E-01	-0.317
		568.70		6.031E+00	1.954E+00	2.519E+00	1.503E-01	2.395
		569.50		1.645E+00	5.330E-01	6.906E-01	4.120E-02	2.382
		574.00		1.342E+00	1.617E+00	2.476E+00	1.478E-01	0.542
		699.00		1.304E-01	6.778E-01	1.112E+00	2.023E-01	0.117
		706.10		1.248E-01	1.042E+00	1.697E+00	7.505E-01	0.074
		733.00		-2.718E-01	4.647E-01	5.947E-01	1.284E-01	-0.457
		742.81		3.764E-02	1.442E+00	2.328E+00	1.561E+00	0.016
		796.30		2.606E+00	1.448E+00	1.738E+00	4.659E-01	1.499
		805.60		-1.722E-01	1.024E+00	1.617E+00	4.926E-01	-0.106
		819.60		1.218E-01	1.100E+00	1.863E+00	7.067E-01	0.065
		826.30		-2.324E-01	8.184E-01	1.330E+00	5.943E-01	-0.175
		831.60		-6.627E-01	6.568E-01	9.437E-01	2.809E-01	-0.702
		876.40		1.286E-01	7.590E-01	1.271E+00	1.307E+00	0.101
		880.51		6.677E-02	2.400E-01	4.124E-01	3.754E-02	0.162
		883.24		6.725E-02	2.397E-01	4.053E-01	2.727E-01	0.166
		899.00		-6.964E-01	8.333E-01	1.186E+00	5.204E-01	-0.587
		925.00		5.911E-01	1.141E+00	1.990E+00	1.817E-01	0.297
		926.50		8.350E-02	1.663E-01	2.880E-01	7.329E-02	0.290
		946.00	*	1.321E-01	2.686E-01	4.672E-01	8.832E-02	0.283
		949.00		4.582E-02	4.098E-01	6.908E-01	6.137E-02	0.066
		980.50		2.740E-01	6.136E-01	1.069E+00	9.115E-02	0.256
		1394.10		6.848E-01	1.178E+00	1.940E+00	1.259E+00	0.353
		766.42		2.002E+01	1.656E+01	2.120E+01	1.071E+01	0.944
		1001.03	*	3.935E+00	4.522E+00	8.055E+00	7.787E-01	0.489
U-235	+	89.95		2.574E+00	1.458E+00	1.946E+00	6.003E-01	1.322
		93.35		4.115E+00	1.428E+00	1.312E+00	3.664E-01	3.137
		105.00		5.470E-02	1.110E+00	1.795E+00	5.309E-01	0.030
		143.76	*	5.047E-02	2.234E-01	3.611E-01	5.944E-02	0.140
		163.35		2.710E-01	4.913E-01	7.992E-01	1.429E-01	0.339
NP-236	+	185.71		2.478E-01	9.137E-02	1.003E-01	5.491E-03	2.472
		205.31		-3.396E-01	5.996E-01	8.472E-01	1.518E-01	-0.401
		94.67		8.058E-01	1.635E-01	2.568E-01	2.106E-02	3.137
		98.44		6.696E-02	7.669E-02	1.129E-01	8.991E-03	0.593
		111.00		2.941E-02	1.469E-01	2.386E-01	1.767E-02	0.123
		160.31	*	-6.530E-02	8.443E-02	1.307E-01	7.302E-03	-0.500

---- 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		2.011E-01	1.765E-01	2.627E-01	2.075E-02	0.765
		117.00	*	-1.157E-01	2.031E-01	3.200E-01	2.312E-02	-0.361
	+	209.75		1.134E+00	1.190E+00	1.413E+00	7.931E-02	0.802
		228.18		-2.291E-01	2.248E-01	3.609E-01	2.057E-02	-0.635
		277.60		1.535E-01	1.799E-01	3.038E-01	1.771E-02	0.505
AM-241		334.30		-1.043E+00	1.468E+00	1.999E+00	1.152E-01	-0.522
		59.54	*	5.638E-02	1.509E-01	2.178E-01	1.617E-02	0.259
CM-243		99.55		2.069E-01	1.817E-01	2.703E-01	2.135E-02	0.765
		103.76	*	-2.761E-02	1.013E-01	1.620E-01	1.245E-02	-0.170
		117.00		-1.190E-01	2.089E-01	3.292E-01	2.379E-02	-0.361
	+	209.75		1.118E+00	1.173E+00	1.393E+00	7.817E-02	0.802
		228.18		-2.315E-01	2.272E-01	3.646E-01	2.078E-02	-0.635
AM-246		277.60		1.547E-01	1.813E-01	3.063E-01	1.785E-02	0.505
		798.80		-9.136E-02	1.538E-01	1.945E-01	1.526E-02	-0.470
		1036.00		-1.735E-01	2.847E-01	4.441E-01	3.466E-02	-0.391
		1062.04		5.251E-03	2.282E-01	3.797E-01	2.819E-02	0.014
		1078.86	*	9.250E-02	1.316E-01	2.327E-01	1.667E-02	0.397
CM-247		278.00		5.334E-01	7.451E-01	1.251E+00	7.294E-02	0.426
		287.40		1.298E-01	1.310E+00	2.072E+00	1.209E-01	0.063
		402.60	*	9.804E-03	3.836E-02	6.415E-02	3.524E-03	0.153
CF-249		252.85		-3.680E-01	8.783E-01	1.442E+00	8.339E-02	-0.255
		333.44		-1.633E-01	1.990E-01	2.690E-01	1.550E-02	-0.607
		387.95	*	4.189E-02	4.201E-02	7.291E-02	3.986E-03	0.575
CF-251		176.60	*	-3.916E-02	1.322E-01	2.063E-01	1.119E-02	-0.190
		227.00		-2.735E-01	3.800E-01	6.184E-01	3.521E-02	-0.442
		285.00		1.157E+00	1.732E+00	2.973E+00	1.735E-01	0.389

## 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]G244132014      *
* Acquisition date   : 19-JAN-2010 11:41:27 Detector SN#      :              *
* Detector ID        : GAM14                      Sensitivity   : 5.000        *
* Geometry           : CAN                          Energy tolerance: 1.500      *
* Elapsed live time   : 0 02:00:00.00              Abundance limit : 75.000      *
* Elapsed real time   : 0 02:00:01.45              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G244132014              Analyst initials: MXR1          *
* Batch Number       : 940270                  Sample Quantity : 1.2710E+02 GRAM   *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 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	2.092E+00	5.375E-01	0.000E+00
CD-109	2.697E+00	7.824E-01	1.338E+00	0.000E+00
SN-126	2.655E-01	7.703E-02	1.487E-01	0.000E+00
BA-137M	4.637E-01	7.873E-02	5.846E-02	0.000E+00
CS-137	4.902E-01	8.327E-02	6.180E-02	0.000E+00
TL-208	5.689E-01	8.802E-02	5.405E-02	0.000E+00
BI-211	4.714E+00	4.960E-01	3.487E-01	0.000E+00
PB-212	1.555E+00	1.526E-01	9.396E-02	0.000E+00
PO-212	1.555E+00	1.526E-01	9.396E-02	0.000E+00
BI-214	1.282E+00	1.847E-01	1.118E-01	0.000E+00
PB-214	1.640E+00	1.918E-01	1.046E-01	0.000E+00
PO-214	1.640E+00	1.918E-01	1.046E-01	0.000E+00
PO-216	1.555E+00	1.526E-01	9.396E-02	0.000E+00
PO-218	1.640E+00	1.918E-01	1.046E-01	0.000E+00
RA-224	4.271E+00	1.154E+00	1.069E+00	0.000E+00
RA-226	1.282E+00	1.847E-01	1.118E-01	0.000E+00
AC-228	1.529E+00	3.450E-01	2.221E-01	0.000E+00
RA-228	1.529E+00	3.450E-01	2.221E-01	0.000E+00
TH-228	1.577E+00	1.548E-01	9.528E-02	0.000E+00
TH-230	1.282E+00	1.847E-01	1.118E-01	0.000E+00
TH-232	1.529E+00	3.450E-01	2.221E-01	0.000E+00
TH-234	2.790E+00	1.562E+00	1.937E+00	0.000E+00
U-234	1.282E+00	1.847E-01	1.118E-01	0.000E+00
NP-237	7.796E-01	2.757E-01	4.023E-01	0.000E+00
U-238	2.790E+00	1.562E+00	1.937E+00	0.000E+00
AM-243	4.098E-01	8.392E-02	8.771E-02	0.000E+00
ANH-511	1.075E-01	6.632E-02	4.332E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	1.307E-01	3.217E-01	5.608E-01	0.000E+00	NOT IDENT.
NA-22	-3.398E-02	3.908E-02	5.916E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.000E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	5.649E-04	2.498E-02	4.124E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.390E-02	8.274E-02	0.000E+00	FAIL ABUN
SC-46	-2.384E-02	3.055E-02	4.799E-02	0.000E+00	FAIL ABUN
V-48	-5.396E-02	5.835E-02	8.988E-02	0.000E+00	NOT IDENT.
CR-51	-1.209E-01	3.657E-01	6.238E-01	0.000E+00	NOT IDENT.
MN-52	5.634E-02	1.721E-01	3.015E-01	0.000E+00	NOT IDENT.
MN-54	1.978E-02	3.453E-02	6.214E-02	0.000E+00	NOT IDENT.
CO-56	1.953E-03	3.665E-02	6.349E-02	0.000E+00	FAIL ABUN
CO-57	-5.890E-03	2.502E-02	4.224E-02	0.000E+00	NOT IDENT.
CO-58	1.120E-03	3.708E-02	6.142E-02	0.000E+00	NOT IDENT.
FE-59	2.436E-02	8.105E-02	1.415E-01	0.000E+00	NOT IDENT.
CO-60	-2.821E-02	3.340E-02	4.932E-02	0.000E+00	NOT IDENT.
ZN-65	6.242E-02	8.428E-02	1.358E-01	0.000E+00	NOT IDENT.
GE-68	-2.674E-01	1.117E+00	1.854E+00	0.000E+00	NOT IDENT.
AS-73	1.470E-01	6.381E-01	1.125E+00	0.000E+00	NOT IDENT.
AS-74	2.347E-02	8.727E-02	1.495E-01	0.000E+00	NOT IDENT.
SE-75	-1.544E-02	4.855E-02	7.138E-02	0.000E+00	NOT IDENT.
BR-77	4.330E+00	7.258E+00	1.279E+01	0.000E+00	FAIL ABUN
SR-82	-6.469E-01	3.644E-01	4.956E-01	0.000E+00	NOT IDENT.
RB-83	4.170E-02	6.627E-02	1.170E-01	0.000E+00	NOT IDENT.
RB-84	2.450E-02	5.695E-02	1.019E-01	0.000E+00	NOT IDENT.
KR-85	1.254E+01	8.504E+00	1.390E+01	0.000E+00	NOT IDENT.
SR-85	6.352E-02	4.309E-02	7.044E-02	0.000E+00	NOT IDENT.
RB-86	2.072E-01	6.773E-01	1.185E+00	0.000E+00	NOT IDENT.
Y-88	-1.597E-02	3.018E-02	4.349E-02	0.000E+00	NOT IDENT.
ZR-88	-1.925E-02	3.097E-02	5.133E-02	0.000E+00	NOT IDENT.
Y-91	3.560E+00	1.858E+01	3.187E+01	0.000E+00	NOT IDENT.
NB-94	-9.935E-03	3.249E-02	5.277E-02	0.000E+00	NOT IDENT.
NB-95	5.776E-02	4.429E-02	7.259E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.518E-01	2.628E-01	0.000E+00	NOT IDENT.
ZR-95	2.715E-02	7.076E-02	1.210E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.644E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.539E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-7.505E+00	9.476E+00	1.463E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.770E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	6.686E-04	3.307E-02	5.748E-02	0.000E+00	NOT IDENT.
RH-102	-6.435E-04	2.923E-02	4.966E-02	0.000E+00	NOT IDENT.
RU-103	-4.678E-03	3.948E-02	6.647E-02	0.000E+00	FAIL ABUN
RH-106	-2.856E-02	3.017E-01	5.022E-01	0.000E+00	FAIL ABUN
RU-106	-2.856E-02	3.017E-01	5.022E-01	0.000E+00	FAIL ABUN
AG-108M	4.329E-03	3.334E-02	5.741E-02	0.000E+00	NOT IDENT.
AG-110M	4.288E-02	3.895E-02	6.275E-02	0.000E+00	NOT IDENT.
IN-111	3.147E-01	8.769E-01	1.366E+00	0.000E+00	NOT IDENT.
IN-113M	-2.399E-02	4.562E-02	7.607E-02	0.000E+00	NOT IDENT.
SN-113	-2.399E-02	4.562E-02	7.607E-02	0.000E+00	NOT IDENT.
IN-114M	2.126E-03	1.976E-01	3.053E-01	0.000E+00	NOT IDENT.
CD-115	1.564E+00	7.396E+00	1.270E+01	0.000E+00	NOT IDENT.
SN-117M	-2.133E-02	5.426E-02	9.011E-02	0.000E+00	NOT IDENT.
SB-122	-2.699E-01	1.719E+00	2.463E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.437E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.318E-02	2.952E-02	4.891E-02	0.000E+00	NOT IDENT.
I-124	3.486E-01	6.134E-01	9.409E-01	0.000E+00	NOT IDENT.
SB-124	-2.193E-02	6.635E-02	1.020E-01	0.000E+00	FAIL ABUN
SB-125	9.308E-02	9.462E-02	1.705E-01	0.000E+00	FAIL ABUN
TE-125M	-6.576E+00	9.617E+00	1.602E+01	0.000E+00	NOT IDENT.
I-126	-6.200E-02	1.914E-01	2.655E-01	0.000E+00	NOT IDENT.
SB-126	4.810E-02	1.442E-01	2.326E-01	0.000E+00	FAIL ABUN
SB-127	7.483E-03	1.113E+00	1.858E+00	0.000E+00	NOT IDENT.
XE-127	-1.213E-02	5.192E-02	7.895E-02	0.000E+00	NOT IDENT.
I-131	1.229E-01	1.003E-01	1.839E-01	0.000E+00	NOT IDENT.
TE-132	-5.493E-01	5.343E-01	8.920E-01	0.000E+00	NOT IDENT.
BA-133	1.397E-02	4.383E-02	6.731E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.420E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.475E-02	9.177E-02	0.000E+00	FAIL ABUN
CS-135	2.523E-01	1.757E-01	2.881E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.879E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.285E-02	9.908E-02	1.570E-01	0.000E+00	FAIL ABUN
CE-139	-2.681E-03	3.029E-02	5.084E-02	0.000E+00	NOT IDENT.
BA-140	2.733E-01	2.575E-01	4.406E-01	0.000E+00	NOT IDENT.
LA-140	3.200E-03	7.717E-02	1.107E-01	0.000E+00	NOT IDENT.
CE-141	5.685E-02	6.366E-02	1.111E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.660E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.749E-01	2.139E-01	3.496E-01	0.000E+00	NOT IDENT.
PM-144	9.625E-03	3.168E-02	5.412E-02	0.000E+00	NOT IDENT.
PR-144	6.518E-01	2.146E+00	3.665E+00	0.000E+00	NOT IDENT.

PM-146	4.021E-03	4.310E-02	7.391E-02	0.000E+00	NOT IDENT.
ND-147	-4.654E-01	5.281E-01	8.313E-01	0.000E+00	FAIL ABUN
PM-149	5.271E+01	6.227E+01	1.119E+02	0.000E+00	NOT IDENT.
EU-152	-2.935E-02	1.185E-01	1.641E-01	0.000E+00	FAIL ABUN
GD-153	5.360E-03	8.505E-02	1.280E-01	0.000E+00	NOT IDENT.
EU-154	-9.053E-02	1.099E-01	1.671E-01	0.000E+00	NOT IDENT.
EU-155	2.283E-02	1.101E-01	1.899E-01	0.000E+00	FAIL ABUN
TB-160	-1.686E-02	1.194E-01	2.028E-01	0.000E+00	FAIL ABUN
HO-166M	-2.394E-02	6.322E-02	1.011E-01	0.000E+00	FAIL ABUN
TM-171	-1.392E+01	2.815E+01	4.192E+01	0.000E+00	NOT IDENT.
LU-176	8.147E-03	2.411E-02	4.151E-02	0.000E+00	FAIL ABUN
LU-177	1.423E+00	1.463E+00	1.814E+00	0.000E+00	FAIL ABUN
LU-177M	-5.707E-02	1.754E-01	2.948E-01	0.000E+00	NOT IDENT.
HF-181	-3.407E-02	4.175E-02	6.705E-02	0.000E+00	NOT IDENT.
W-181	4.739E-01	3.751E-01	5.977E-01	0.000E+00	NOT IDENT.
TA-182	1.101E-01	1.741E-01	3.100E-01	0.000E+00	FAIL ABUN
RE-183	4.220E-02	1.119E-01	1.914E-01	0.000E+00	FAIL ABUN
RE-184	-9.762E-02	2.283E-01	3.925E-01	0.000E+00	NOT IDENT.
OS-185	2.357E-02	4.028E-02	7.053E-02	0.000E+00	NOT IDENT.
RE-188	1.531E-01	1.766E-01	3.075E-01	0.000E+00	NOT IDENT.
W-188	-8.345E+00	8.191E+00	1.151E+01	0.000E+00	FAIL ABUN
IR-192	1.556E-02	3.340E-02	5.923E-02	0.000E+00	FAIL ABUN
AU-195	3.018E-01	2.445E-01	3.875E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.175E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.009E+00	5.518E+00	9.079E+00	0.000E+00	NOT IDENT.
TL-202	1.616E-02	6.482E-02	1.124E-01	0.000E+00	NOT IDENT.
HG-203	-1.473E-02	3.919E-02	6.719E-02	0.000E+00	NOT IDENT.
BI-207	2.843E-02	5.159E-02	9.190E-02	0.000E+00	FAIL ABUN
TL-207	-6.385E-01	7.156E-01	1.177E+00	0.000E+00	FAIL ABUN
PO-209	1.048E+00	6.169E+00	1.078E+01	0.000E+00	NOT IDENT.
BI-210	1.665E-01	2.440E+00	4.318E+00	0.000E+00	NOT IDENT.
PB-210	1.665E-01	2.440E+00	4.318E+00	0.000E+00	NOT IDENT.
PO-210	1.665E-01	2.440E+00	4.318E+00	0.000E+00	NOT IDENT.
PB-211	-3.108E-01	9.865E-01	1.631E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.920E-01	7.027E-01	0.000E+00	FAIL ABUN
PO-215	-6.385E-01	7.156E-01	1.177E+00	0.000E+00	FAIL ABUN
RN-219	9.274E-04	4.197E-01	7.200E-01	0.000E+00	FAIL ABUN
RN-220	1.655E-02	2.465E+01	4.162E+01	0.000E+00	NOT IDENT.
RA-223	-6.385E-01	7.156E-01	1.177E+00	0.000E+00	FAIL ABUN
AC-227	4.147E-01	3.810E-01	6.894E-01	0.000E+00	FAIL ABUN
TH-227	4.147E-01	3.830E-01	6.894E-01	0.000E+00	FAIL ABUN
TH-229	-8.355E-02	5.481E-01	9.032E-01	0.000E+00	FAIL ABUN
PA-231	-9.607E-02	1.485E+00	2.580E+00	0.000E+00	NOT IDENT.
TH-231	-6.385E-01	7.156E-01	1.177E+00	0.000E+00	FAIL ABUN
U-231	7.402E-01	9.839E-01	1.527E+00	0.000E+00	FAIL ABUN
PA-233	-1.193E-02	6.175E-02	1.061E-01	0.000E+00	FAIL ABUN
PA-234	1.321E-01	2.632E-01	4.703E-01	0.000E+00	FAIL ABUN
PA-234M	3.935E+00	4.432E+00	8.100E+00	0.000E+00	NOT IDENT.
U-235	5.047E-02	2.190E-01	3.737E-01	0.000E+00	FAIL ABUN
NP-236	-6.530E-02	8.274E-02	1.350E-01	0.000E+00	NOT IDENT.
NP-239	-1.157E-01	1.990E-01	3.321E-01	0.000E+00	FAIL ABUN
AM-241	5.638E-02	1.479E-01	2.283E-01	0.000E+00	NOT IDENT.
CM-243	-2.761E-02	9.925E-02	1.684E-01	0.000E+00	FAIL ABUN
AM-246	9.250E-02	1.290E-01	2.337E-01	0.000E+00	NOT IDENT.
CM-247	9.804E-03	3.760E-02	6.539E-02	0.000E+00	NOT IDENT.
CF-249	4.189E-02	4.117E-02	7.436E-02	0.000E+00	NOT IDENT.
CF-251	-3.916E-02	1.296E-01	2.128E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132014.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:41:27
Sample ID          : G244132014           Sample quantity  : 1.27100E+02 GRAM
Detector name      : GAM14                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time  : 0 02:00:01.45  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity        : 5.00000
Batch ID           : 940270                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	940	10.67*	1.211E+00	2.149E+01	2.149E+01	9.93
CD-109	88.03	235	3.72*	7.056E+00	2.641E+00	2.697E+00	29.61
SN-126	64.28	167	9.60	4.657E+00	1.104E+00	1.104E+00	56.31
	86.94	235	8.90	7.056E+00	1.104E+00	1.104E+00	50.13
	87.57	235	37.00*	7.056E+00	2.655E-01	2.655E-01	29.61
BA-137M	661.65	348	89.98*	2.468E+00	4.633E-01	4.637E-01	17.33
CS-137	661.65	348	85.12*	2.468E+00	4.897E-01	4.902E-01	17.33
TL-208	277.35	-----	6.80	5.002E+00	-----	Line Not Found	-----
	510.84	112	21.60	3.090E+00	4.975E-01	4.975E-01	63.52
	583.14	447	84.20*	2.758E+00	5.689E-01	5.689E-01	15.79
	860.37	77	12.46	1.944E+00	9.449E-01	9.449E-01	46.32
BI-211	72.87	-----	1.27	5.875E+00	-----	Line Not Found	-----
	351.07	863	12.94*	4.178E+00	4.714E+00	4.714E+00	10.74
PB-212	74.81	558	10.70	6.092E+00	2.527E+00	2.527E+00	22.89
	77.11	761	18.00	6.314E+00	1.979E+00	1.979E+00	15.06
	87.30	235	8.00	7.056E+00	1.228E+00	1.228E+00	31.25
	238.63	1308	44.60*	5.569E+00	1.555E+00	1.555E+00	10.02
	300.09	123	3.41	4.724E+00	2.254E+00	2.254E+00	49.76
PO-212	74.81	558	10.70	6.092E+00	2.527E+00	2.527E+00	22.89
	77.11	761	18.00	6.314E+00	1.979E+00	1.979E+00	15.06
	87.30	235	8.00	7.056E+00	1.228E+00	1.228E+00	31.25
	115.19	-----	0.60	7.689E+00	-----	Line Not Found	-----
	238.63	1308	44.60*	5.569E+00	1.555E+00	1.555E+00	10.02
	300.09	123	3.41	4.724E+00	2.254E+00	2.254E+00	49.76
BI-214	609.31	534	46.30*	2.654E+00	1.282E+00	1.282E+00	14.70
	1120.29	138	15.10	1.523E+00	1.772E+00	1.772E+00	32.62
	1764.49	100	15.80	1.059E+00	1.768E+00	1.768E+00	24.40
PB-214	74.81	558	6.21	6.092E+00	4.355E+00	4.355E+00	22.17
	77.11	761	10.50	6.314E+00	3.392E+00	3.392E+00	16.88
	87.30	235	4.67	7.056E+00	2.103E+00	2.104E+00	30.59
	241.98	315	7.49	5.521E+00	2.252E+00	2.252E+00	28.13
	295.21	481	19.20	4.777E+00	1.548E+00	1.548E+00	15.01

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	863	37.20*	4.178E+00	1.640E+00	1.640E+00	11.94
	74.81	558	6.21	6.092E+00	4.355E+00	4.355E+00	22.17
	77.11	761	10.50	6.314E+00	3.392E+00	3.392E+00	16.88
	87.30	235	4.67	7.056E+00	2.103E+00	2.104E+00	30.59
	241.98	315	7.49	5.521E+00	2.252E+00	2.252E+00	28.13
PO-216	295.21	481	19.20	4.777E+00	1.548E+00	1.548E+00	15.01
	351.92	863	37.20*	4.178E+00	1.640E+00	1.640E+00	11.94
	74.81	558	10.70	6.092E+00	2.527E+00	2.527E+00	22.89
	77.11	761	18.00	6.314E+00	1.979E+00	1.979E+00	15.06
	87.30	235	8.00	7.056E+00	1.228E+00	1.228E+00	31.25
PO-218	238.63	1308	44.60*	5.569E+00	1.555E+00	1.555E+00	10.02
	300.09	123	3.41	4.724E+00	2.254E+00	2.254E+00	49.76
	74.81	558	6.21	6.092E+00	4.355E+00	4.355E+00	22.17
	77.11	761	10.50	6.314E+00	3.392E+00	3.392E+00	16.88
	87.30	235	4.67	7.056E+00	2.103E+00	2.104E+00	30.59
RA-224	241.98	315	7.49	5.521E+00	2.252E+00	2.252E+00	28.13
	295.21	481	19.20	4.777E+00	1.548E+00	1.548E+00	15.01
	351.92	863	37.20*	4.178E+00	1.640E+00	1.640E+00	11.94
	240.98	315	3.95*	5.521E+00	4.271E+00	4.271E+00	27.57
	609.31	534	46.30*	2.654E+00	1.282E+00	1.282E+00	14.70
RA-226	1120.29	138	15.10	1.523E+00	1.772E+00	1.772E+00	32.62
	1764.49	100	15.80	1.059E+00	1.768E+00	1.768E+00	24.40
	338.32	232	11.40	4.307E+00	1.393E+00	1.393E+00	51.88
	911.07	264	27.70*	1.843E+00	1.529E+00	1.529E+00	23.02
	969.11	158	16.60	1.741E+00	1.613E+00	1.613E+00	31.49
TH-228	338.32	232	11.40	4.307E+00	1.393E+00	1.393E+00	51.88
	911.07	264	27.70*	1.843E+00	1.529E+00	1.529E+00	23.02
	969.11	158	16.60	1.741E+00	1.613E+00	1.613E+00	31.49
	74.81	558	10.70	6.092E+00	2.527E+00	2.563E+00	20.93
	77.11	761	18.00	6.314E+00	1.979E+00	2.006E+00	15.06
TH-230	87.30	235	8.00	7.056E+00	1.228E+00	1.245E+00	29.61
	238.63	1308	44.60*	5.569E+00	1.555E+00	1.577E+00	10.02
	300.09	123	3.41	4.724E+00	2.254E+00	2.286E+00	76.69
	609.31	534	46.30*	2.654E+00	1.282E+00	1.282E+00	14.70
	1120.29	138	15.10	1.523E+00	1.772E+00	1.772E+00	32.62
TH-232	1764.49	100	15.80	1.059E+00	1.768E+00	1.768E+00	24.40
	338.32	232	11.40	4.307E+00	1.393E+00	1.393E+00	32.62
	911.07	264	27.70*	1.843E+00	1.529E+00	1.529E+00	23.02
	969.11	158	16.60	1.741E+00	1.613E+00	1.613E+00	31.49
	63.29	167	3.80*	4.657E+00	2.790E+00	2.790E+00	57.13
TH-234	92.38	459	5.41	7.319E+00	3.423E+00	3.423E+00	27.30
	609.31	534	46.30*	2.654E+00	1.282E+00	1.282E+00	14.70
	1120.29	138	15.10	1.523E+00	1.772E+00	1.772E+00	32.62
	1764.49	100	15.80	1.059E+00	1.768E+00	1.768E+00	24.40
	86.50	235	12.60*	7.056E+00	7.796E-01	7.796E-01	36.09
NP-237	95.87	-----	2.60	7.425E+00	-----	Line Not Found	-----
	63.29	167	3.80*	4.657E+00	2.790E+00	2.790E+00	57.13
	92.38	459	5.41	7.319E+00	3.423E+00	3.423E+00	22.20
	74.67	558	66.00*	6.092E+00	4.098E-01	4.098E-01	20.90

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	235	0.34	7.056E+00	2.924E+01	2.924E+01	29.61
	117.66	-----	0.55	7.685E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.399E+00	-----	Line Not Found	-----
ANH-511	511.00	112	100.00*	3.090E+00	1.075E-01	1.075E-01	62.97

Flag: "\*" = Keyline

Total number of lines in spectrum 36  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 32 88.89%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.149E+01	2.149E+01	0.213E+01	9.93	
CD-109	464.00D	1.02	2.641E+00	2.697E+00	0.798E+00	29.61	
SN-126	1.00E+05Y	1.00	2.655E-01	2.655E-01	0.786E-01	29.61	
BA-137M	30.17Y	1.00	4.633E-01	4.637E-01	0.803E-01	17.33	
CS-137	30.17Y	1.00	4.897E-01	4.902E-01	0.850E-01	17.33	
TL-208	1.41E+10Y	1.00	5.689E-01	5.689E-01	0.898E-01	15.79	
BI-211	7.04E+08Y	1.00	4.714E+00	4.714E+00	0.506E+00	10.74	
PB-212	1.41E+10Y	1.00	1.555E+00	1.555E+00	0.156E+00	10.02	
PO-212	1.41E+10Y	1.00	1.555E+00	1.555E+00	0.156E+00	10.02	
BI-214	1600.00Y	1.00	1.282E+00	1.282E+00	0.189E+00	14.70	
PB-214	1600.00Y	1.00	1.640E+00	1.640E+00	0.196E+00	11.94	
PO-214	1600.00Y	1.00	1.640E+00	1.640E+00	0.196E+00	11.94	
PO-216	1.41E+10Y	1.00	1.555E+00	1.555E+00	0.156E+00	10.02	
PO-218	1600.00Y	1.00	1.640E+00	1.640E+00	0.196E+00	11.94	
RA-224	1.41E+10Y	1.00	4.271E+00	4.271E+00	1.177E+00	27.57	
RA-226	1600.00Y	1.00	1.282E+00	1.282E+00	0.189E+00	14.70	
AC-228	1.41E+10Y	1.00	1.529E+00	1.529E+00	0.352E+00	23.02	
RA-228	1.41E+10Y	1.00	1.529E+00	1.529E+00	0.352E+00	23.02	
TH-228	1.91Y	1.01	1.555E+00	1.577E+00	0.158E+00	10.02	
TH-230	4.47E+09Y	1.00	1.282E+00	1.282E+00	0.189E+00	14.70	
TH-232	1.41E+10Y	1.00	1.529E+00	1.529E+00	0.352E+00	23.02	
TH-234	4.47E+09Y	1.00	2.790E+00	2.790E+00	1.594E+00	57.13	
U-234	4.47E+09Y	1.00	1.282E+00	1.282E+00	0.189E+00	14.70	
NP-237	2.14E+06Y	1.00	7.796E-01	7.796E-01	2.813E-01	36.09	
U-238	4.47E+09Y	1.00	2.790E+00	2.790E+00	1.594E+00	57.13	
AM-243	7380.00Y	1.00	4.098E-01	4.098E-01	0.856E-01	20.90	
ANH-511	1.00E+09Y	1.00	1.075E-01	1.075E-01	0.677E-01	62.97	

Total Activity : 6.263E+01 6.271E+01

Grand Total Activity : 6.263E+01 6.271E+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
1	89.89	169	465	1.31	179.28	171	22	2.35E-02	47.5	7.19E+00	T
0	185.84	296	523	1.63	370.99	364	15	4.11E-02	36.5	6.53E+00	T
0	209.38	76	389	1.61	418.04	411	11	1.05E-02	****	6.07E+00	T
0	270.62	86	300	1.35	540.41	533	13	1.19E-02	86.1	5.09E+00	T
0	462.84	52	117	1.23	924.59	920	9	7.23E-03	80.3	3.35E+00	T
0	569.54	172	104	3.26	1137.89	1131	16	2.40E-02	31.9	2.82E+00	T
0	727.56	118	76	1.59	1453.82	1449	14	1.63E-02	37.7	2.27E+00	T
0	768.47	63	69	1.04	1535.61	1529	12	8.79E-03	58.2	2.16E+00	
0	795.33	72	51	1.45	1589.32	1583	14	9.99E-03	48.7	2.09E+00	T
4	965.12	77	34	2.77	1928.89	1921	23	1.07E-02	52.3	1.75E+00	T
0	1238.78	59	49	1.76	2476.32	2468	16	8.26E-03	58.3	1.39E+00	T
0	1378.68	42	26	2.77	2756.24	2749	13	5.89E-03	58.2	1.27E+00	
0	1408.55	48	12	3.38	2816.02	2808	17	6.62E-03	44.8	1.25E+00	T
0	1590.79	34	18	5.42	3180.74	3173	18	4.72E-03	67.8	1.14E+00	
0	1847.68	20	0	3.63	3695.00	3688	13	2.71E-03	53.0	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]G244132014.CNF;1  *
* Acquisition date   : 19-JAN-2010 11:41:27  Detector SN#      :              *
* Detector ID        : GAM14                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:01.45             Half life ratio : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID          *
* Sample ID          : G244132014             Analyst initials: MXR1          *
* Batch Number       : 940270                 Sample Quantity : 1.27100E+02 GRAM   *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06.61MS 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	2.135E+00	5.376E-01	3.904E-02	39.969
CD-109	2.697E+00	7.984E-01	1.284E+00	1.122E-01	2.101
SN-126	2.655E-01	7.860E-02	1.427E-01	1.241E-02	1.861
BA-137M	4.637E-01	8.034E-02	5.777E-02	3.435E-03	8.026
CS-137	4.902E-01	8.496E-02	6.107E-02	3.646E-03	8.026
TL-208	5.689E-01	8.982E-02	5.331E-02	3.646E-03	10.670
BI-211	4.714E+00	5.061E-01	3.414E-01	2.163E-02	13.810
PB-212	1.555E+00	1.558E-01	9.147E-02	6.662E-03	17.003
PO-212	1.555E+00	1.558E-01	9.147E-02	6.662E-03	17.003
BI-214	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
PB-214	1.640E+00	1.957E-01	1.024E-01	8.405E-03	16.009
PO-214	1.640E+00	1.957E-01	1.024E-01	8.405E-03	16.009
PO-216	1.555E+00	1.558E-01	9.147E-02	6.662E-03	17.003
PO-218	1.640E+00	1.957E-01	1.024E-01	8.405E-03	16.009
RA-224	4.271E+00	1.177E+00	1.040E+00	5.980E-02	4.105
RA-226	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
AC-228	1.529E+00	3.520E-01	2.206E-01	2.591E-02	6.931
RA-228	1.529E+00	3.520E-01	2.206E-01	2.591E-02	6.931

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.577E+00	1.579E-01	9.275E-02	6.756E-03	17.003
TH-230	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
TH-232	1.529E+00	3.520E-01	2.206E-01	2.591E-02	6.931
TH-234	2.790E+00	1.594E+00	1.850E+00	3.181E-01	1.508
U-234	1.282E+00	1.885E-01	1.104E-01	8.736E-03	11.617
NP-237	7.796E-01	2.813E-01	3.859E-01	8.625E-02	2.020
U-238	2.790E+00	1.594E+00	1.850E+00	3.181E-01	1.508
AM-243	4.098E-01	8.563E-02	8.397E-02	6.302E-03	4.880
ANH-511	1.075E-01	6.767E-02	4.265E-02	2.506E-03	2.520

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.307E-01		3.283E-01	5.516E-01	3.717E-02	0.237
NA-22	-3.398E-02		3.987E-02	5.905E-02	3.857E-03	-0.575
NA-24	-1.265E-01		1.021E-01	Half-Life too short		
AL-26	5.649E-04		2.549E-02	4.139E-02	2.399E-03	0.014
TI-44	3.651E-01	+	5.500E-02	7.927E-02	6.189E-03	4.606
SC-46	-2.384E-02		3.117E-02	4.764E-02	4.402E-03	-0.501
V-48	-5.396E-02		5.954E-02	8.936E-02	7.588E-03	-0.604
CR-51	-1.209E-01		3.732E-01	6.098E-01	3.941E-02	-0.198
MN-52	5.634E-02		1.756E-01	3.015E-01	2.113E-02	0.187
MN-54	1.978E-02		3.523E-02	6.163E-02	5.169E-03	0.321
CO-56	1.953E-03		3.740E-02	6.298E-02	5.398E-03	0.031
CO-57	-5.890E-03		2.553E-02	4.072E-02	2.897E-03	-0.145
CO-58	1.120E-03		3.784E-02	6.088E-02	4.899E-03	0.018
FE-59	2.436E-02		8.270E-02	1.409E-01	1.085E-02	0.173
CO-60	-2.821E-02		3.408E-02	4.926E-02	3.510E-03	-0.573
ZN-65	6.242E-02		8.600E-02	1.353E-01	8.895E-03	0.461
GE-68	-2.674E-01		1.140E+00	1.846E+00	1.327E-01	-0.145
AS-73	1.470E-01		6.512E-01	1.072E+00	6.989E-02	0.137
AS-74	2.347E-02		8.905E-02	1.475E-01	8.824E-03	0.159
SE-75	-1.544E-02		4.954E-02	6.959E-02	4.086E-03	-0.222
BR-77	4.330E+00		7.406E+00	1.259E+01	7.424E-01	0.344
SR-82	-6.469E-01		3.719E-01	4.910E-01	3.691E-02	-1.318
RB-83	4.170E-02		6.762E-02	1.152E-01	6.791E-03	0.362
RB-84	2.450E-02		5.811E-02	1.012E-01	9.222E-03	0.242
KR-85	1.254E+01		8.678E+00	1.369E+01	8.050E-01	0.916
SR-85	6.352E-02		4.397E-02	6.935E-02	4.079E-03	0.916
RB-86	2.072E-01		6.911E-01	1.180E+00	8.497E-02	0.176
Y-88	-1.597E-02		3.079E-02	4.365E-02	2.479E-03	-0.366
ZR-88	-1.925E-02		3.161E-02	5.033E-02	2.741E-03	-0.383
Y-91	3.560E+00		1.896E+01	3.178E+01	1.849E+00	0.112
NB-94	-9.935E-03		3.316E-02	5.220E-02	3.385E-03	-0.190
NB-95	5.776E-02		4.519E-02	7.190E-02	5.294E-03	0.803
NB-95M	5.708E-01		1.549E-01	2.558E-01	1.912E-02	2.231
ZR-95	2.715E-02		7.220E-02	1.198E-01	9.885E-03	0.227

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	4.849E-02		1.859E-02	Half-Life too short		
ZR-97	1.251E+00		3.336E-01	Half-Life too short		
MO-99	-7.505E+00		9.669E+00	1.448E+01	2.075E+00	-0.518
TC-99M	-1.034E+09		9.028E+08	Half-Life too short		
RH-101	6.686E-04		3.375E-02	5.581E-02	3.096E-03	0.012
RH-102	-6.435E-04		2.983E-02	4.883E-02	2.822E-03	-0.013
RU-103	-4.678E-03		4.029E-02	6.541E-02	8.284E-03	-0.072
RH-106	-2.856E-02		3.079E-01	4.958E-01	5.864E-02	-0.058
RU-106	-2.856E-02		3.078E-01	4.958E-01	2.965E-02	-0.058
AG-108M	4.329E-03		3.402E-02	5.638E-02	3.463E-03	0.077
AG-110M	4.288E-02		3.975E-02	6.201E-02	3.917E-03	0.691
IN-111	3.147E-01		8.948E-01	1.331E+00	7.668E-02	0.236
IN-113M	-2.399E-02		4.655E-02	7.459E-02	4.365E-03	-0.322
SN-113	-2.399E-02		4.655E-02	7.459E-02	4.365E-03	-0.322
IN-114M	2.126E-03		2.017E-01	2.962E-01	1.630E-02	0.007
CD-115	1.564E+00		7.547E+00	1.251E+01	7.391E-01	0.125
SN-117M	-2.133E-02		5.536E-02	8.720E-02	4.933E-03	-0.245
SB-122	-2.699E-01		1.754E+00	2.428E+00	1.447E-01	-0.111
I-123	-6.418E-01		7.334E-01	Half-Life too short		
TE-123M	-1.318E-02		3.012E-02	4.734E-02	2.707E-03	-0.278
I-124	3.486E-01		6.260E-01	9.285E-01	5.554E-02	0.375
SB-124	-2.193E-02		6.771E-02	1.023E-01	6.915E-03	-0.214
SB-125	9.308E-02		9.655E-02	1.674E-01	9.809E-03	0.556
TE-125M	-6.576E+00		9.814E+00	1.542E+01	1.447E+00	-0.426
I-126	-6.200E-02		1.953E-01	2.624E-01	1.576E-02	-0.236
SB-126	4.810E-02		1.472E-01	2.302E-01	1.549E-02	0.209
SB-127	7.483E-03		1.136E+00	1.837E+00	1.715E-01	0.004
XE-127	-1.213E-02		5.298E-02	7.667E-02	4.274E-03	-0.158
I-131	1.229E-01		1.024E-01	1.801E-01	1.136E-02	0.682
TE-132	-5.493E-01		5.452E-01	8.678E-01	1.224E-01	-0.633
BA-133	1.397E-02		4.473E-02	6.591E-02	7.576E-03	0.212
I-133	-2.355E-04		1.234E-03	Half-Life too short		
CS-134	1.340E-01	+	6.607E-02	9.094E-02	7.158E-03	1.473
CS-135	2.523E-01		1.793E-01	2.810E-01	2.155E-02	0.898
I-135	-4.944E+07		1.469E+08	Half-Life too short		
CS-136	-7.285E-02		1.011E-01	1.562E-01	1.256E-02	-0.466
CE-139	-2.681E-03		3.091E-02	4.923E-02	2.643E-03	-0.054
BA-140	2.733E-01		2.627E-01	4.341E-01	1.413E-01	0.630
LA-140	3.200E-03		7.875E-02	1.108E-01	7.347E-03	0.029
CE-141	5.685E-02		6.496E-02	1.074E-01	6.854E-03	0.529
CE-143	6.235E-04		8.468E-05	Half-Life too short		
CE-144	-1.749E-01		2.183E-01	3.375E-01	4.913E-02	-0.518
PM-144	9.625E-03		3.233E-02	5.353E-02	3.429E-03	0.180
PR-144	6.518E-01		2.190E+00	3.625E+00	2.321E-01	0.180
PM-146	4.021E-03		4.398E-02	7.263E-02	6.218E-03	0.055
ND-147	-4.654E-01		5.389E-01	8.188E-01	1.111E-01	-0.568
PM-149	5.271E+01		6.354E+01	1.092E+02	1.550E+01	0.483
EU-152	-2.935E-02		1.209E-01	1.606E-01	1.039E-02	-0.183



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	5.360E-03		8.679E-02	1.230E-01	9.868E-03	0.044
EU-154	-9.053E-02		1.121E-01	1.668E-01	1.636E-02	-0.543
EU-155	2.283E-02		1.123E-01	1.827E-01	1.414E-02	0.125
TB-160	-1.686E-02		1.218E-01	2.012E-01	1.828E-02	-0.084
HO-166M	-2.394E-02		6.451E-02	1.001E-01	6.612E-03	-0.239
TM-171	-1.392E+01		2.872E+01	4.007E+01	2.794E+00	-0.347
LU-176	8.147E-03		2.460E-02	4.056E-02	2.362E-03	0.201
LU-177	1.423E+00	+	1.493E+00	1.762E+00	9.877E-02	0.807
LU-177M	-5.707E-02		1.790E-01	2.893E-01	1.604E-02	-0.197
HF-181	-3.407E-02		4.260E-02	6.595E-02	3.825E-03	-0.517
W-181	4.739E-01		3.828E-01	5.711E-01	3.935E-02	0.830
TA-182	1.101E-01		1.776E-01	3.093E-01	1.850E-02	0.356
RE-183	4.220E-02		1.142E-01	1.853E-01	1.021E-02	0.228
RE-184	-9.762E-02		2.330E-01	3.824E-01	2.212E-02	-0.255
OS-185	2.357E-02		4.110E-02	6.968E-02	4.155E-03	0.338
RE-188	1.531E-01		1.802E-01	2.975E-01	1.724E-02	0.515
W-188	-8.345E+00		8.358E+00	1.124E+01	6.559E-01	-0.742
IR-192	1.556E-02		3.408E-02	5.790E-02	3.379E-03	0.269
AU-195	3.018E-01		2.494E-01	3.724E-01	2.955E-02	0.810
TL-200	1.612E-05		1.110E-04	Half-Life too short		
TL-201	-3.009E+00		5.631E+00	8.792E+00	4.723E-01	-0.342
TL-202	1.616E-02		6.615E-02	1.104E-01	6.240E-03	0.146
HG-203	-1.473E-02		3.999E-02	6.556E-02	4.056E-03	-0.225
BI-207	2.843E-02		5.264E-02	9.147E-02	6.770E-03	0.311
TL-207	-6.385E-01		7.302E-01	1.151E+00	1.900E-01	-0.555
PO-209	1.048E+00		6.294E+00	1.070E+01	1.001E+00	0.098
BI-210	1.665E-01		2.490E+00	4.107E+00	3.045E-01	0.041
PB-210	1.665E-01		2.490E+00	4.107E+00	3.045E-01	0.041
PO-210	1.665E-01		2.490E+00	4.107E+00	2.577E-01	0.041
PB-211	-3.108E-01		1.007E+00	1.600E+00	9.972E-01	-0.194
BI-212	1.299E+00	+	5.020E-01	6.955E-01	5.916E-02	1.867
PO-215	-6.385E-01		7.302E-01	1.151E+00	1.900E-01	-0.555
RN-219	9.274E-04		4.283E-01	7.063E-01	9.518E-02	0.001
RN-220	1.655E-02		2.516E+01	4.102E+01	2.438E+00	0.000
RA-223	-6.385E-01		7.302E-01	1.151E+00	1.900E-01	-0.555
AC-227	4.147E-01		3.888E-01	6.718E-01	9.377E-02	0.617
TH-227	4.147E-01		3.908E-01	6.718E-01	1.135E-01	0.617
TH-229	-8.355E-02		5.593E-01	8.765E-01	4.841E-02	-0.095
PA-231	-9.607E-02		1.515E+00	2.518E+00	3.473E-01	-0.038
TH-231	-6.385E-01		7.302E-01	1.151E+00	1.900E-01	-0.555
U-231	7.402E-01		1.004E+00	1.467E+00	1.191E-01	0.505
PA-233	-1.193E-02		6.301E-02	1.037E-01	6.404E-03	-0.115
PA-234	1.321E-01		2.686E-01	4.672E-01	8.832E-02	0.283
PA-234M	3.935E+00		4.522E+00	8.055E+00	7.787E-01	0.489
U-235	5.047E-02		2.234E-01	3.611E-01	5.944E-02	0.140
NP-236	-6.530E-02		8.443E-02	1.307E-01	7.302E-03	-0.500
NP-239	-1.157E-01		2.031E-01	3.200E-01	2.312E-02	-0.361
AM-241	5.638E-02		1.509E-01	2.178E-01	1.617E-02	0.259

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-2.761E-02		1.013E-01	1.620E-01	1.245E-02	-0.170
AM-246	9.250E-02		1.316E-01	2.327E-01	1.667E-02	0.397
CM-247	9.804E-03		3.836E-02	6.415E-02	3.524E-03	0.153
CF-249	4.189E-02		4.201E-02	7.291E-02	3.986E-03	0.575
CF-251	-3.916E-02		1.322E-01	2.063E-01	1.119E-02	-0.190

# 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]G244132014          *
* Acquisition date   : 19-JAN-2010 11:41:27 Detector SN#                  *
* Detector ID        : GAM14 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance : 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.45 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132014 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.2710E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 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	2.092E+00	2.689E-01	1.067E+00
CD-109	2.697E+00	7.824E-01	6.692E-01	3.992E-01
SN-126	2.655E-01	7.703E-02	7.438E-02	3.930E-02
BA-137M	4.637E-01	7.873E-02	2.925E-02	4.017E-02
CS-137	4.902E-01	8.327E-02	3.092E-02	4.248E-02
TL-208	5.689E-01	8.802E-02	2.704E-02	4.491E-02
BI-211	4.714E+00	4.960E-01	1.744E-01	2.530E-01
PB-212	1.555E+00	1.526E-01	4.701E-02	7.788E-02
PO-212	1.555E+00	1.526E-01	4.701E-02	7.788E-02
BI-214	1.282E+00	1.847E-01	5.594E-02	9.425E-02
PB-214	1.640E+00	1.918E-01	5.234E-02	9.787E-02
PO-214	1.640E+00	1.918E-01	5.234E-02	9.787E-02
PO-216	1.555E+00	1.526E-01	4.701E-02	7.788E-02
PO-218	1.640E+00	1.918E-01	5.234E-02	9.787E-02
RA-224	4.271E+00	1.154E+00	5.346E-01	5.887E-01
RA-226	1.282E+00	1.847E-01	5.594E-02	9.425E-02
AC-228	1.529E+00	3.450E-01	1.111E-01	1.760E-01
RA-228	1.529E+00	3.450E-01	1.111E-01	1.760E-01
TH-228	1.577E+00	1.548E-01	4.767E-02	7.897E-02
TH-230	1.282E+00	1.847E-01	5.594E-02	9.425E-02
TH-232	1.529E+00	3.450E-01	1.111E-01	1.760E-01
TH-234	2.790E+00	1.562E+00	9.692E-01	7.971E-01
U-234	1.282E+00	1.847E-01	5.594E-02	9.425E-02
NP-237	7.796E-01	2.757E-01	2.012E-01	1.407E-01
U-238	2.790E+00	1.562E+00	9.692E-01	7.971E-01
AM-243	4.098E-01	8.392E-02	4.388E-02	4.282E-02
ANH-511	1.075E-01	6.632E-02	2.168E-02	3.384E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	1.307E-01	3.217E-01	2.806E-01	1.642E-01	NOT IDENT.
NA-22	-3.398E-02	3.908E-02	2.960E-02	1.994E-02	NOT IDENT.
NA-24	-1.265E+05	2.000E+05	0.000E+00	1.021E+05	SHORT HLIF
AL-26	5.649E-04	2.498E-02	2.063E-02	1.274E-02	NOT IDENT.
TI-44	3.651E-01	5.390E-02	4.139E-02	2.750E-02	FAIL ABUN
SC-46	-2.384E-02	3.055E-02	2.401E-02	1.559E-02	FAIL ABUN
V-48	-5.396E-02	5.835E-02	4.497E-02	2.977E-02	NOT IDENT.
CR-51	-1.209E-01	3.657E-01	3.121E-01	1.866E-01	NOT IDENT.
MN-52	5.634E-02	1.721E-01	1.509E-01	8.781E-02	NOT IDENT.
MN-54	1.978E-02	3.453E-02	3.109E-02	1.762E-02	NOT IDENT.
CO-56	1.953E-03	3.665E-02	3.176E-02	1.870E-02	FAIL ABUN
CO-57	-5.890E-03	2.502E-02	2.113E-02	1.277E-02	NOT IDENT.
CO-58	1.120E-03	3.708E-02	3.073E-02	1.892E-02	NOT IDENT.
FE-59	2.436E-02	8.105E-02	7.080E-02	4.135E-02	NOT IDENT.
CO-60	-2.821E-02	3.340E-02	2.467E-02	1.704E-02	NOT IDENT.
ZN-65	6.242E-02	8.428E-02	6.796E-02	4.300E-02	NOT IDENT.
GE-68	-2.674E-01	1.117E+00	5.927E-01	5.699E-01	NOT IDENT.
AS-73	1.470E-01	6.381E-01	5.629E-01	3.256E-01	NOT IDENT.
AS-74	2.347E-02	8.727E-02	7.480E-02	4.452E-02	NOT IDENT.
SE-75	-1.544E-02	4.855E-02	3.571E-02	2.477E-02	NOT IDENT.
BR-77	4.330E+00	7.258E+00	6.398E+00	3.703E+00	FAIL ABUN
SR-82	-6.469E-01	3.644E-01	2.480E-01	1.859E-01	NOT IDENT.
RB-83	4.170E-02	6.627E-02	5.853E-02	3.381E-02	NOT IDENT.
RB-84	2.450E-02	5.695E-02	5.099E-02	2.906E-02	NOT IDENT.
KR-85	1.254E+01	8.504E+00	6.956E+00	4.339E+00	NOT IDENT.
SR-85	6.352E-02	4.309E-02	3.524E-02	2.198E-02	NOT IDENT.
RB-86	2.072E-01	6.773E-01	5.930E-01	3.455E-01	NOT IDENT.
Y-88	-1.597E-02	3.018E-02	2.176E-02	1.540E-02	NOT IDENT.
ZR-88	-1.925E-02	3.097E-02	2.568E-02	1.580E-02	NOT IDENT.
Y-91	3.560E+00	1.858E+01	1.594E+01	9.480E+00	NOT IDENT.
NB-94	-9.935E-03	3.249E-02	2.640E-02	1.658E-02	NOT IDENT.
NB-95	5.776E-02	4.429E-02	3.632E-02	2.260E-02	NOT IDENT.
NB-95M	5.708E-01	1.518E-01	1.315E-01	7.743E-02	NOT IDENT.
ZR-95	2.715E-02	7.076E-02	6.054E-02	3.610E-02	NOT IDENT.
NB-97	4.849E+04	3.644E+04	0.000E+00	1.859E+04	SHORT HLIF
ZR-97	1.251E+06	6.539E+05	0.000E+00	3.336E+05	SHORT HLIF
MO-99	-7.505E+00	9.476E+00	7.320E+00	4.834E+00	NOT IDENT.
TC-99M	-1.034E+15	1.770E+15	0.000E+00	9.028E+14	SHORT HLIF
RH-101	6.686E-04	3.307E-02	2.876E-02	1.687E-02	NOT IDENT.
RH-102	-6.435E-04	2.923E-02	2.484E-02	1.491E-02	NOT IDENT.
RU-103	-4.678E-03	3.948E-02	3.326E-02	2.014E-02	FAIL ABUN
RH-106	-2.856E-02	3.017E-01	2.512E-01	1.539E-01	FAIL ABUN
RU-106	-2.856E-02	3.017E-01	2.512E-01	1.539E-01	FAIL ABUN
AG-108M	4.329E-03	3.334E-02	2.872E-02	1.701E-02	NOT IDENT.
AG-110M	4.288E-02	3.895E-02	3.139E-02	1.987E-02	NOT IDENT.
IN-111	3.147E-01	8.769E-01	6.836E-01	4.474E-01	NOT IDENT.
IN-113M	-2.399E-02	4.562E-02	3.806E-02	2.327E-02	NOT IDENT.
SN-113	-2.399E-02	4.562E-02	3.806E-02	2.327E-02	NOT IDENT.
IN-114M	2.126E-03	1.976E-01	1.527E-01	1.008E-01	NOT IDENT.
CD-115	1.564E+00	7.396E+00	6.353E+00	3.774E+00	NOT IDENT.
SN-117M	-2.133E-02	5.426E-02	4.508E-02	2.768E-02	NOT IDENT.
SB-122	-2.699E-01	1.719E+00	1.232E+00	8.770E-01	NOT IDENT.
I-123	-6.418E+05	1.437E+06	0.000E+00	7.334E+05	SHORT HLIF
TE-123M	-1.318E-02	2.952E-02	2.447E-02	1.506E-02	NOT IDENT.
I-124	3.486E-01	6.134E-01	4.707E-01	3.130E-01	NOT IDENT.
SB-124	-2.193E-02	6.635E-02	5.105E-02	3.385E-02	FAIL ABUN
SB-125	9.308E-02	9.462E-02	8.529E-02	4.827E-02	FAIL ABUN
TE-125M	-6.576E+00	9.617E+00	8.017E+00	4.907E+00	NOT IDENT.
I-126	-6.200E-02	1.914E-01	1.328E-01	9.766E-02	NOT IDENT.
SB-126	4.810E-02	1.442E-01	1.164E-01	7.358E-02	FAIL ABUN
SB-127	7.483E-03	1.113E+00	9.294E-01	5.679E-01	NOT IDENT.
XE-127	-1.213E-02	5.192E-02	3.950E-02	2.649E-02	NOT IDENT.
I-131	1.229E-01	1.003E-01	9.201E-02	5.118E-02	NOT IDENT.
TE-132	-5.493E-01	5.343E-01	4.463E-01	2.726E-01	NOT IDENT.
BA-133	1.397E-02	4.383E-02	3.368E-02	2.236E-02	NOT IDENT.
I-133	-2.355E+02	2.420E+03	0.000E+00	1.234E+03	SHORT HLIF
CS-134	1.340E-01	6.475E-02	4.591E-02	3.304E-02	FAIL ABUN
CS-135	2.523E-01	1.757E-01	1.442E-01	8.965E-02	NOT IDENT.
I-135	-4.944E+13	2.879E+14	0.000E+00	1.469E+14	SHORT HLIF
CS-136	-7.285E-02	9.908E-02	7.854E-02	5.055E-02	FAIL ABUN
CE-139	-2.681E-03	3.029E-02	2.543E-02	1.546E-02	NOT IDENT.
BA-140	2.733E-01	2.575E-01	2.204E-01	1.314E-01	NOT IDENT.
LA-140	3.200E-03	7.717E-02	5.536E-02	3.937E-02	NOT IDENT.
CE-141	5.685E-02	6.366E-02	5.560E-02	3.248E-02	NOT IDENT.
CE-143	6.235E+02	1.660E+02	0.000E+00	8.468E+01	SHORT HLIF
CE-144	-1.749E-01	2.139E-01	1.749E-01	1.092E-01	NOT IDENT.
PM-144	9.625E-03	3.168E-02	2.708E-02	1.617E-02	NOT IDENT.
PR-144	6.518E-01	2.146E+00	1.834E+00	1.095E+00	NOT IDENT.

PM-146	4.021E-03	4.310E-02	3.698E-02	2.199E-02	NOT IDENT.
ND-147	-4.654E-01	5.281E-01	4.159E-01	2.695E-01	FAIL ABUN
PM-149	5.271E+01	6.227E+01	5.599E+01	3.177E+01	NOT IDENT.
EU-152	-2.935E-02	1.185E-01	8.212E-02	6.045E-02	FAIL ABUN
GD-153	5.360E-03	8.505E-02	6.406E-02	4.339E-02	NOT IDENT.
EU-154	-9.053E-02	1.099E-01	8.361E-02	5.605E-02	NOT IDENT.
EU-155	2.283E-02	1.101E-01	9.502E-02	5.617E-02	FAIL ABUN
TB-160	-1.686E-02	1.194E-01	1.014E-01	6.092E-02	FAIL ABUN
HO-166M	-2.394E-02	6.322E-02	5.060E-02	3.226E-02	FAIL ABUN
TM-171	-1.392E+01	2.815E+01	2.097E+01	1.436E+01	NOT IDENT.
LU-176	8.147E-03	2.411E-02	2.077E-02	1.230E-02	FAIL ABUN
LU-177	1.423E+00	1.463E+00	9.076E-01	7.466E-01	FAIL ABUN
LU-177M	-5.707E-02	1.754E-01	1.475E-01	8.948E-02	NOT IDENT.
HF-181	-3.407E-02	4.175E-02	3.355E-02	2.130E-02	NOT IDENT.
W-181	4.739E-01	3.751E-01	2.990E-01	1.914E-01	NOT IDENT.
TA-182	1.101E-01	1.741E-01	1.551E-01	8.881E-02	FAIL ABUN
RE-183	4.220E-02	1.119E-01	9.577E-02	5.711E-02	FAIL ABUN
RE-184	-9.762E-02	2.283E-01	1.964E-01	1.165E-01	NOT IDENT.
OS-185	2.357E-02	4.028E-02	3.529E-02	2.055E-02	NOT IDENT.
RE-188	1.531E-01	1.766E-01	1.539E-01	9.009E-02	NOT IDENT.
W-188	-8.345E+00	8.191E+00	5.760E+00	4.179E+00	FAIL ABUN
IR-192	1.556E-02	3.340E-02	2.963E-02	1.704E-02	FAIL ABUN
AU-195	3.018E-01	2.445E-01	1.938E-01	1.247E-01	FAIL ABUN
TL-200	1.612E+01	2.175E+02	0.000E+00	1.110E+02	SHORT HLIF
TL-201	-3.009E+00	5.518E+00	4.542E+00	2.816E+00	NOT IDENT.
TL-202	1.616E-02	6.482E-02	5.621E-02	3.307E-02	NOT IDENT.
HG-203	-1.473E-02	3.919E-02	3.362E-02	1.999E-02	NOT IDENT.
BI-207	2.843E-02	5.159E-02	4.598E-02	2.632E-02	FAIL ABUN
TL-207	-6.385E-01	7.156E-01	5.887E-01	3.651E-01	FAIL ABUN
PO-209	1.048E+00	6.169E+00	5.392E+00	3.147E+00	NOT IDENT.
BI-210	1.665E-01	2.440E+00	2.160E+00	1.245E+00	NOT IDENT.
PB-210	1.665E-01	2.440E+00	2.160E+00	1.245E+00	NOT IDENT.
PO-210	1.665E-01	2.440E+00	2.160E+00	1.245E+00	NOT IDENT.
PB-211	-3.108E-01	9.865E-01	8.161E-01	5.033E-01	NOT IDENT.
BI-212	1.299E+00	4.920E-01	3.516E-01	2.510E-01	FAIL ABUN
PO-215	-6.385E-01	7.156E-01	5.887E-01	3.651E-01	FAIL ABUN
RN-219	9.274E-04	4.197E-01	3.602E-01	2.141E-01	FAIL ABUN
RN-220	1.655E-02	2.465E+01	2.082E+01	1.258E+01	NOT IDENT.
RA-223	-6.385E-01	7.156E-01	5.887E-01	3.651E-01	FAIL ABUN
AC-227	4.147E-01	3.810E-01	3.449E-01	1.944E-01	FAIL ABUN
TH-227	4.147E-01	3.830E-01	3.449E-01	1.954E-01	FAIL ABUN
TH-229	-8.355E-02	5.481E-01	4.519E-01	2.796E-01	FAIL ABUN
PA-231	-9.607E-02	1.485E+00	1.291E+00	7.576E-01	NOT IDENT.
TH-231	-6.385E-01	7.156E-01	5.887E-01	3.651E-01	FAIL ABUN
U-231	7.402E-01	9.839E-01	7.640E-01	5.020E-01	FAIL ABUN
PA-233	-1.193E-02	6.175E-02	5.309E-02	3.150E-02	FAIL ABUN
PA-234	1.321E-01	2.632E-01	2.353E-01	1.343E-01	FAIL ABUN
PA-234M	3.935E+00	4.432E+00	4.052E+00	2.261E+00	NOT IDENT.
U-235	5.047E-02	2.190E-01	1.869E-01	1.117E-01	FAIL ABUN
NP-236	-6.530E-02	8.274E-02	6.755E-02	4.221E-02	NOT IDENT.
NP-239	-1.157E-01	1.990E-01	1.661E-01	1.015E-01	FAIL ABUN
AM-241	5.638E-02	1.479E-01	1.142E-01	7.546E-02	NOT IDENT.
CM-243	-2.761E-02	9.925E-02	8.424E-02	5.064E-02	FAIL ABUN
AM-246	9.250E-02	1.290E-01	1.169E-01	6.581E-02	NOT IDENT.
CM-247	9.804E-03	3.760E-02	3.272E-02	1.918E-02	NOT IDENT.
CF-249	4.189E-02	4.117E-02	3.720E-02	2.100E-02	NOT IDENT.
CF-251	-3.916E-02	1.296E-01	1.065E-01	6.612E-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	430.8151
46.50	430.8151
46.50	430.8151
48.70	459.4387
49.72	490.5789
51.35	459.8147
52.39	469.5591
52.97	461.6736
53.15	452.5508
53.44	446.5506
54.07	456.0849
56.28	491.0822
56.28	491.0835
57.37	0.0000
57.53	510.2560
57.53	510.2569
57.60	510.2938
57.98	494.0314
57.98	494.0314
59.32	484.8317
59.32	484.8317
59.40	484.8721
59.54	491.5408
59.72	491.6327
60.01	491.7800
61.10	520.4191
61.14	520.4402
61.30	520.5258
63.00	556.1857
63.29	561.3157
63.29	561.3157
63.58	569.3459
64.28	581.7615
65.12	557.3639
65.20	557.4084
65.20	557.4084
66.05	537.9505
66.72	561.5619
66.83	561.6238
66.91	591.5784
67.20	591.7457
67.20	591.7457
67.75	630.3119
67.85	630.3721
68.90	632.6754
68.90	632.6754
69.30	588.5014
69.67	581.0740
70.82	618.8187
70.82	618.8187
70.83	618.8232
72.80	574.8468
72.87	574.8835
72.87	574.8835
74.67	599.4834
74.81	599.5599
74.81	599.5599
74.81	599.5599
74.81	599.5599
74.81	599.5599
74.81	599.5599
74.81	599.5599
74.97	599.6473
75.28	599.8168
75.70	600.0452
77.11	600.8102
77.11	600.8102

77.11	600.8102
77.11	600.8102
77.11	600.8102
77.11	600.8102
77.11	600.8102
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79.62	598.5815
79.80	598.6771
79.80	598.6771
80.11	664.4434
80.18	664.4843
80.30	664.5543
80.30	664.5543
80.57	720.2437
81.00	722.1989
81.07	722.2434
81.07	722.2434
81.07	722.2434
81.07	722.2434
82.60	573.1689
83.37	584.7927
83.78	611.7188
83.78	611.7188
83.78	611.7188
83.78	611.7188
84.21	565.5211
84.90	577.6782
85.43	545.8293
86.29	615.5608
86.50	615.6697
86.54	615.6919
86.59	615.7163
86.72	681.7621
86.79	681.7991
86.94	681.8876
87.30	737.9454
87.30	737.9454
87.30	737.9454
87.30	737.9454
87.30	737.9454
87.30	737.9454
87.57	738.1130
87.88	583.1506
88.03	583.2221
88.36	583.3840
88.47	583.4365
89.95	584.1511
91.11	584.7061
92.29	585.2673
92.38	585.3114
92.38	585.3114
93.35	585.7696
94.00	586.0765
94.67	400.1483
94.67	400.1497
94.90	413.8475
94.90	413.8475
94.90	413.8475
94.90	413.8475
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95.87	429.5074
96.73	446.8568
97.43	401.0261
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98.44	372.3098
98.88	363.8954
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99.55	372.6318
99.86	380.4147
100.00	379.0319
100.10	379.0616
103.18	451.0207
103.76	441.5739
105.00	435.5505
105.31	424.9208
108.00	421.4736
109.28	465.9973

111.00	421.3261
111.00	421.3261
111.76	460.3724
112.95	415.4475
115.19	408.5493
116.30	417.5257
117.00	428.5554
117.00	428.5554
117.66	406.0178
121.11	361.4127
121.62	382.1694
121.78	386.5544
122.06	363.8223
122.32	366.0599
122.32	366.0599
122.32	366.0599
122.32	366.0599
123.07	367.3357
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131.20	364.9812
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135.34	373.6426
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136.25	387.0175
136.48	393.6560
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143.76	400.9910
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144.24	393.3967
144.24	393.3967
144.24	393.3967
145.22	395.8416
145.44	373.8409
147.16	413.9814
152.43	377.6621
152.70	377.7245
153.22	377.8416
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154.21	388.0463
154.21	388.0463
154.21	388.0463
155.03	360.5072
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159.00	382.4832
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162.32	350.9215
162.64	336.5013
163.35	335.5271
163.89	333.4003
165.85	351.6401
167.43	357.5464
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171.86	310.2788
172.10	310.3211
176.55	329.0639
176.60	329.0728
181.06	340.7632
184.41	336.5719
185.71	336.8087
186.00	336.8611
190.27	328.8783
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193.63	349.1083
197.04	345.1891
198.01	333.5469
198.60	317.2845
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201.83	353.8457
202.84	338.6264
205.31	351.2162



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208.81	312.5405
209.75	277.3341
209.75	277.3341
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215.65	266.9395
216.55	259.6159
218.09	255.2208
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223.80	255.0077
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227.08	300.5889
227.20	300.6049
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228.18	308.1264
228.18	308.1264
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236.00	274.6919
236.00	274.6919
238.63	273.4818
238.63	273.4818
238.63	273.4818
238.63	273.4818
239.00	273.5286
240.98	273.7789
241.98	270.8099
241.98	270.8099
241.98	270.8099
244.69	227.7615
245.39	238.6840
247.94	259.5196
248.90	261.7276
249.79	254.3779
252.40	244.4129
252.85	252.8600
252.85	252.8600
254.15	0.0000
256.20	219.5961
256.20	219.5961
260.50	241.5443
260.90	244.3976
262.80	242.4897
264.65	220.4100
268.24	211.3577
268.79	216.1079
269.46	234.9670
269.46	234.9670
269.46	234.9670
269.46	234.9670
271.23	244.5498
273.65	236.9574
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277.35	190.9611
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277.60	206.4401
278.00	208.5710
278.60	232.1055
279.20	237.8281
279.53	239.7466
280.46	234.1741
281.68	239.9636
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284.30	189.1528
285.00	193.9392
285.90	187.3870
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286.10	198.7592
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290.80	235.4953
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293.26	0.0000
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295.21	193.8025

295.21	193.8025
295.96	193.8598
296.50	193.9021
297.23	193.9594
298.57	194.0665
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299.80	194.1611
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300.09	196.7218
300.09	196.7218
300.09	196.7218
300.12	196.7244
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302.84	158.8216
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304.40	171.6350
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306.84	174.9813
308.46	186.2355
311.98	185.5385
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323.87	246.9233
323.87	246.9233
323.87	246.9233
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334.20	196.1278
334.30	196.1353
338.28	169.0549
338.28	169.0549
338.28	169.0549
338.28	169.0549
338.32	169.0591
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338.32	169.0591
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340.57	188.5373
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351.92	134.3076
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391.69	173.2801
392.90	169.4112
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400.65	163.9291
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404.84	171.0804
410.95	145.6631
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415.30	130.9865

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433.93	135.7692
439.47	127.0078
439.56	127.0124
439.89	125.0244
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445.03	141.2565
445.03	141.2565
445.03	141.2565
445.03	141.2565
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473.00	130.3479
475.06	121.3301
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511.85	97.0938
513.99	119.3106
513.99	119.3106
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546.56	0.0000
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563.90	98.5045
568.70	95.5174
569.32	95.5331
569.50	95.5376
569.67	95.5421
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574.00	76.2445
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591.81	108.3752
592.07	103.3046
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595.88	94.1111
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602.52	0.0000
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602.71	90.7863
603.60	90.8075
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604.70	99.5668
609.31	97.5864

609.31	97.5864
609.31	97.5864
609.31	97.5864
610.33	96.2120
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614.37	96.3104
618.01	94.6472
621.84	83.1602
621.84	83.1602
631.29	96.0188
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633.10	84.4492
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661.65	87.1710
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666.33	88.6881
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692.80	79.2519
695.00	91.0803
696.49	71.8173
696.49	71.8173
697.00	78.2576
697.49	66.4729
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698.50	73.9964
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713.82	86.0977
717.42	75.3970
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722.78	91.6655
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722.95	91.6697
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727.18	86.3613
733.00	91.8793
735.90	64.8984
739.58	98.5115
742.81	81.2494
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752.31	84.6784
753.82	67.3312
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756.15	72.7987
756.87	60.8563
763.93	63.4916
765.79	58.0729
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766.84	65.3467
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778.89	58.9676
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805.60	72.4856
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867.82	63.0417
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873.19	56.6129
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880.51	43.6838
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884.67	41.8597
889.25	47.4846
896.60	43.8244
898.02	50.3646
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903.28	51.5377
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911.07	67.3257
911.07	67.3257
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920.93	64.0819
925.00	51.5692
925.24	48.7585
926.50	48.7701
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946.00	43.3047
949.00	50.8645
962.29	42.0895
964.01	46.2864
966.15	46.3044
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969.11	46.3303
969.11	46.3303
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983.50	54.0394
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1004.76	62.8176
1021.30	0.0000
1024.50	0.0000
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1036.00	57.4292
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1038.57	56.4985
1038.76	0.0000
1045.16	49.8545
1046.59	58.4980
1048.07	64.2683

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1050.47	58.5378
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1063.62	51.9412
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1077.35	50.1380
1078.86	41.4708
1085.78	51.1777
1099.22	46.4570
1112.02	46.5586
1112.84	41.5754
1115.52	38.2670
1120.29	50.5083
1120.29	50.5083
1120.29	50.5083
1120.29	50.5083
1120.51	50.5104
1121.28	50.5168
1124.00	0.0000
1129.67	50.5887
1131.51	0.0000
1147.95	0.0000
1167.94	47.9752
1173.22	68.5958
1175.09	51.9541
1177.93	58.8428
1189.05	56.0027
1204.90	65.9967
1205.75	0.0000
1213.00	64.1087
1221.42	49.3815
1230.97	54.2612
1235.34	47.5117
1236.41	0.0000
1238.25	58.4262
1246.25	52.6931
1260.41	0.0000
1271.85	37.8299
1274.45	48.8006
1274.54	48.8006
1291.56	35.9473
1298.22	0.0000
1312.09	37.0617
1325.50	27.1000
1325.50	27.1000
1332.49	34.1619
1333.61	29.1440
1360.21	28.2507
1362.66	0.0000
1365.15	30.2905
1368.21	32.3242
1368.53	0.0000
1376.25	36.4087
1384.27	22.5650
1394.10	21.2939
1395.20	24.3398
1407.95	31.4970
1434.06	18.3574
1436.60	24.4854
1457.56	0.0000
1460.81	25.5931
1489.15	22.6114
1509.49	17.5216
1596.49	16.0896
1620.62	15.6927
1678.03	0.0000
1691.02	14.7799
1691.02	14.7799
1706.46	0.0000
1750.46	0.0000
1764.49	10.9591
1764.49	10.9591
1764.49	10.9591
1764.49	10.9591
1770.23	10.9667
1771.40	14.6244
1791.20	0.0000
1808.65	9.6412

1836.01

13.9717

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132014

Total Uranium Activity	8.3242E+00	ug/g
Total Uranium Counting Unc.	4.6487E+00	ug/g
Total Uranium Tpu	2.3718E-06	ug/g
Total Uranium Mda	2.8847E+00	ug/g



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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270          SAMPLE ID   : G244132014
*  ANALYST       : MXR1            DETECTOR    : GAM14
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 11:41:27.35  SAMPLE ALQT: 127.100 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.738E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.344E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.757E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.320E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:43:28.03

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132015.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:41:54
Sample ID          : G244132015          Sample quantity   : 1.21520E+02 GRAM
Detector name      : GAM17              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:09.28 0.1%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940270             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	46.51*	59	340	1.03	92.65	89	8	8.14E-03	59.2	
2	0	63.50*	209	622	1.02	126.64	121	12	2.90E-02	25.4	
3	3	74.89*	520	373	0.96	149.43	145	19	7.23E-02	7.3	1.45E+00
4	3	77.12*	729	312	0.93	153.88	145	19	1.01E-01	5.6	
5	0	84.12*	84	314	1.02	167.90	165	7	1.17E-02	37.5	
6	4	87.24	240	235	0.91	174.13	171	20	3.33E-02	11.3	7.42E+00
7	4	92.83*	193	342	1.30	185.33	171	20	2.68E-02	19.5	
8	0	185.95*	136	193	1.19	371.62	367	9	1.89E-02	21.4	
9	0	208.95	60	188	0.61	417.65	414	9	8.39E-03	42.8	
10	0	238.38*	806	314	1.14	476.53	470	11	1.12E-01	5.7	
11	0	241.50	150	179	0.92	482.78	481	7	2.09E-02	17.6	
12	0	270.26	63	112	1.22	540.32	536	8	8.70E-03	32.1	
13	0	295.12*	265	149	1.22	590.07	585	11	3.69E-02	11.1	
14	0	299.94	67	109	1.51	599.71	596	9	9.37E-03	30.4	
15	0	328.32	84	120	1.28	656.50	651	12	1.17E-02	28.5	
16	0	338.03*	185	102	1.35	675.92	670	11	2.57E-02	13.1	
17	0	351.71*	445	126	1.10	703.30	697	12	6.18E-02	7.0	
18	0	409.46	33	55	1.27	818.84	814	9	4.62E-03	43.5	
19	0	463.66	27	90	1.14	927.30	920	10	3.75E-03	68.5	
20	0	510.64*	93	114	2.42	1021.30	1013	19	1.28E-02	33.1	
21	0	582.79*	289	59	1.50	1165.68	1159	15	4.02E-02	8.4	
22	0	608.87	322	60	1.45	1217.86	1210	16	4.47E-02	7.7	
23	0	726.60	91	42	1.21	1453.48	1447	13	1.26E-02	18.1	
24	0	767.66	41	42	2.69	1535.64	1531	11	5.67E-03	34.3	
25	0	785.89	31	37	1.44	1572.11	1567	9	4.24E-03	40.6	
26	0	793.94	37	16	1.22	1588.24	1584	9	5.15E-03	25.4	
27	0	860.12	33	33	1.05	1720.68	1717	10	4.57E-03	36.9	
28	0	910.53*	162	40	1.25	1821.56	1816	13	2.26E-02	11.5	
29	0	968.19*	76	44	1.28	1936.96	1935	8	1.05E-02	20.2	
30	0	1119.45	75	26	1.50	2239.70	2234	13	1.04E-02	18.7	
31	0	1459.59*	652	32	2.08	2920.53	2910	22	9.06E-02	4.5	
32	0	1502.53	9	6	1.22	3006.50	3001	8	1.25E-03	57.9	
33	0	1762.88*	46	3	1.32	3527.69	3522	11	6.33E-03	17.9	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 13:43:31

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132015.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 5-JAN-2010 12:00:00 Acquisition date : 19-JAN-2010 11:41:54  
 Sample ID : G244132015 Sample quantity : 121.52 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA17 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:09.28 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

## 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	*	2.427E+01	3.076E+00	8.113E-01	7.203E-02	29.911
CD-109	+	88.03	*	3.050E+00	7.529E-01	9.037E-01	8.822E-02	3.375
SN-126	+	64.28		9.928E-01	5.280E-01	3.744E-01	5.976E-02	2.652
	+	86.94		1.248E+00	5.915E-01	3.643E-01	1.516E-01	3.427
	+	87.57	*	3.003E-01	7.413E-02	8.884E-02	8.670E-03	3.380
TL-208		277.35		8.007E-01	4.002E-01	7.309E-01	9.305E-02	1.096
	+	510.84		6.430E-01	4.330E-01	2.667E-01	3.257E-02	2.411
	+	583.14	*	5.860E-01	1.134E-01	6.681E-02	6.319E-03	8.771
	+	860.37		6.538E-01	4.864E-01	5.951E-01	5.599E-02	1.099
BI-210	+	46.50	*	7.087E-01	8.432E-01	8.291E-01	8.994E-02	0.855
PB-210	+	46.50	*	7.087E-01	8.432E-01	8.291E-01	8.994E-02	0.855
PO-210	+	46.50	*	7.087E-01	8.427E-01	8.291E-01	8.376E-02	0.855
BI-211		72.87		2.003E+00	2.063E+00	3.262E+00	3.189E-01	0.614
	+	351.07	*	3.652E+00	6.153E-01	3.247E-01	3.030E-02	11.249
BI-212	+	727.18	*	1.620E+00	6.097E-01	5.623E-01	5.642E-02	2.882
	+	785.46		3.525E+00	2.881E+00	3.778E+00	3.311E-01	0.933
		1620.62		3.556E-01	1.928E+00	3.269E+00	2.817E-01	0.109
PB-212	+	74.81		2.211E+00	4.402E-01	3.509E-01	4.742E-02	6.300
	+	77.11		1.845E+00	2.728E-01	2.095E-01	2.043E-02	8.804
	+	87.30		1.389E+00	3.699E-01	4.106E-01	5.736E-02	3.382
	+	238.63	*	1.388E+00	2.114E-01	1.122E-01	1.131E-02	12.365
	+	300.09		1.828E+00	1.127E+00	1.253E+00	1.365E-01	1.459
PO-212	+	74.81		2.211E+00	4.402E-01	3.509E-01	4.742E-02	6.300
	+	77.11		1.845E+00	2.728E-01	2.095E-01	2.043E-02	8.804
	+	87.30		1.389E+00	3.699E-01	4.106E-01	5.736E-02	3.382
		115.19		8.647E-01	3.418E+00	5.732E+00	6.453E-01	0.151
	+	238.63	*	1.388E+00	2.114E-01	1.122E-01	1.131E-02	12.365
	+	300.09		1.828E+00	1.127E+00	1.253E+00	1.365E-01	1.459
BI-214	+	609.31	*	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023
	+	1120.29		1.570E+00	6.096E-01	4.985E-01	5.330E-02	3.150
		1764.49		1.114E+00	5.214E-01	1.009E+00	8.531E-02	1.104
PB-214	+	74.81		3.809E+00	7.268E-01	6.046E-01	7.409E-02	6.300
	+	77.11		3.162E+00	5.260E-01	3.592E-01	4.444E-02	8.804
	+	87.30		2.379E+00	6.153E-01	7.033E-01	8.746E-02	3.382

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	241.98		1.555E+00	5.719E-01	6.467E-01	6.885E-02	2.404
	+	295.21		1.260E+00	3.118E-01	2.284E-01	2.537E-02	5.517
	+	351.92	*	1.270E+00	2.241E-01	1.132E-01	1.210E-02	11.221
	+	74.81		3.809E+00	7.268E-01	6.046E-01	7.409E-02	6.300
	+	77.11		3.162E+00	5.260E-01	3.592E-01	4.444E-02	8.804
	+	87.30		2.379E+00	6.153E-01	7.033E-01	8.746E-02	3.382
	+	241.98		1.555E+00	5.719E-01	6.467E-01	6.885E-02	2.404
PO-216	+	295.21		1.260E+00	3.118E-01	2.284E-01	2.537E-02	5.517
	+	351.92	*	1.270E+00	2.241E-01	1.132E-01	1.210E-02	11.221
	+	74.81		2.211E+00	4.402E-01	3.509E-01	4.742E-02	6.300
	+	77.11		1.845E+00	2.728E-01	2.095E-01	2.043E-02	8.804
	+	87.30		1.389E+00	3.699E-01	4.106E-01	5.736E-02	3.382
	+	238.63	*	1.388E+00	2.114E-01	1.122E-01	1.131E-02	12.365
	+	300.09		1.828E+00	1.127E+00	1.253E+00	1.365E-01	1.459
PO-218	+	74.81		3.809E+00	7.268E-01	6.046E-01	7.409E-02	6.300
	+	77.11		3.162E+00	5.260E-01	3.592E-01	4.444E-02	8.804
	+	87.30		2.379E+00	6.153E-01	7.033E-01	8.746E-02	3.382
	+	241.98		1.555E+00	5.719E-01	6.467E-01	6.885E-02	2.404
	+	295.21		1.260E+00	3.118E-01	2.284E-01	2.537E-02	5.517
	+	351.92	*	1.270E+00	2.241E-01	1.132E-01	1.210E-02	11.221
	+	240.98	*	2.948E+00	1.072E+00	1.547E+00	1.399E-01	1.905
RA-224	+	609.31	*	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023
RA-226	+	1120.29		1.570E+00	6.096E-01	4.985E-01	5.330E-02	3.150
AC-228	+	1764.49		1.114E+00	5.214E-01	1.009E+00	8.531E-02	1.104
	+	338.32		1.667E+00	8.166E-01	3.705E-01	1.532E-01	4.499
	+	911.07	*	1.533E+00	3.918E-01	2.217E-01	2.514E-02	6.916
	+	969.11		1.262E+00	5.883E-01	4.721E-01	1.104E-01	2.674
RA-228	+	338.32		1.667E+00	8.166E-01	3.705E-01	1.532E-01	4.499
	+	911.07	*	1.533E+00	3.918E-01	2.217E-01	2.514E-02	6.916
	+	969.11		1.262E+00	5.883E-01	4.721E-01	1.104E-01	2.674
	+	74.81		2.242E+00	3.950E-01	3.558E-01	3.496E-02	6.300
TH-228	+	77.11		1.871E+00	2.766E-01	2.125E-01	2.071E-02	8.803
	+	87.30		1.408E+00	3.477E-01	4.163E-01	4.062E-02	3.382
	+	238.63	*	1.407E+00	2.144E-01	1.138E-01	1.147E-02	12.365
	+	300.09		1.854E+00	1.574E+00	1.271E+00	7.544E-01	1.459
TH-230	+	609.31	*	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023
	+	1120.29		1.570E+00	6.096E-01	4.985E-01	5.330E-02	3.150
	+	1764.49		1.114E+00	5.214E-01	1.009E+00	8.531E-02	1.104
	+	338.32		1.667E+00	4.630E-01	3.705E-01	3.338E-02	4.499
TH-232	+	911.07	*	1.533E+00	3.918E-01	2.217E-01	2.514E-02	6.916
	+	969.11		1.262E+00	5.883E-01	4.721E-01	1.104E-01	2.674
	+	63.29	*	2.508E+00	1.356E+00	9.458E-01	1.765E-01	2.652
	+	92.38		1.671E+00	7.218E-01	6.171E-01	1.158E-01	2.707
U-234	+	609.31	*	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023
	+	1120.29		1.570E+00	6.096E-01	4.985E-01	5.330E-02	3.150
	+	1764.49		1.114E+00	5.214E-01	1.009E+00	8.531E-02	1.104
	+	86.50	*	8.817E-01	2.837E-01	2.401E-01	5.479E-02	3.673
NP-237	+	95.87		7.025E-01	8.442E-01	1.302E+00	3.281E-01	0.540
U-238	+	63.29	*	2.508E+00	1.356E+00	9.458E-01	1.765E-01	2.652

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.38		1.671E+00	6.712E-01	6.171E-01	6.150E-02	2.707
AM-243	+	74.67	*	3.584E-01	6.302E-02	5.687E-02	5.552E-03	6.302
	+	86.72		3.306E+01	8.163E+00	9.008E+00	8.786E-01	3.671
		117.66		-1.854E+00	3.683E+00	5.940E+00	6.783E-01	-0.312
		142.18		-5.539E+00	1.700E+01	2.740E+01	2.826E+00	-0.202
ANH-511	+	511.00	*	1.389E-01	9.280E-02	5.762E-02	5.146E-03	2.411

---- 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	*	-1.951E-02	3.474E-01	5.666E-01	5.391E-02	-0.034
NA-22		1274.54	*	-2.041E-02	5.479E-02	8.315E-02	7.005E-03	-0.245
NA-24		1368.53	*	-3.908E-02	5.479E-02	Half-Life too short		
AL-26		1129.67		2.454E+00	2.222E+00	4.045E+00	3.380E-01	0.607
		1808.65	*	-2.471E-02	3.461E-02	4.367E-02	3.660E-03	-0.566
TI-44		67.85		9.054E-03	2.661E-02	4.125E-02	4.062E-03	0.219
	+	78.38	*	3.404E-01	5.033E-02	5.841E-02	5.691E-03	5.828
SC-46		889.25	*	-8.783E-03	5.182E-02	8.418E-02	7.370E-03	-0.104
	+	1120.51		2.663E-01	1.019E-01	1.561E-01	1.310E-02	1.706
V-48		944.10		-4.017E-01	1.123E+00	1.772E+00	1.550E-01	-0.227
		983.50	*	5.158E-02	8.922E-02	1.559E-01	1.359E-02	0.331
		1312.09		5.598E-02	9.584E-02	1.725E-01	1.464E-02	0.325
CR-51		320.08	*	2.119E-01	3.549E-01	6.216E-01	5.936E-02	0.341
MN-52		744.21		7.617E-03	2.700E-01	4.542E-01	3.948E-02	0.017
		848.13		-1.971E+00	7.403E+00	1.193E+01	1.049E+00	-0.165
		935.52		1.491E-01	2.784E-01	4.859E-01	4.252E-02	0.307
		1246.25		-1.467E+00	9.125E+00	1.442E+01	1.205E+00	-0.102
		1333.61		1.135E+00	5.243E+00	9.056E+00	7.720E-01	0.125
		1434.06	*	-1.165E-01	2.655E-01	4.097E-01	3.532E-02	-0.284
MN-54		834.83	*	7.824E-03	5.154E-02	8.691E-02	7.642E-03	0.090
CO-56		846.75	*	-2.557E-02	5.030E-02	7.887E-02	6.933E-03	-0.324
		977.42		6.714E-01	3.185E+00	5.384E+00	4.700E-01	0.125
		1037.82		-3.476E-01	4.171E-01	6.099E-01	5.546E-02	-0.570
		1175.09		2.139E-01	3.056E+00	4.983E+00	4.073E-01	0.043
		1238.25		5.079E-02	1.275E-01	2.133E-01	1.833E-02	0.238
		1360.21		5.511E-01	1.302E+00	2.303E+00	1.971E-01	0.239
		1771.40		1.893E-02	2.946E-01	4.889E-01	4.129E-02	0.039
CO-57		122.06	*	-8.436E-03	2.447E-02	3.973E-02	4.655E-03	-0.212
		136.48		1.326E-01	2.070E-01	3.504E-01	3.944E-02	0.378
CO-58		810.76	*	-3.846E-02	4.305E-02	6.344E-02	5.587E-03	-0.606
FE-59		142.65		-5.401E-01	2.667E+00	4.274E+00	4.393E-01	-0.126
		192.34		2.538E-01	9.335E-01	1.531E+00	2.056E-01	0.166
		1099.22	*	-9.950E-02	1.204E-01	1.750E-01	1.606E-02	-0.569
		1291.56		5.579E-02	1.727E-01	2.885E-01	2.779E-02	0.193
CO-60		1173.22		-6.212E-03	6.022E-02	9.601E-02	7.843E-03	-0.065
		1332.49	*	2.796E-02	4.766E-02	8.623E-02	7.349E-03	0.324
ZN-65		1115.52	*	3.108E-02	1.356E-01	1.974E-01	1.662E-02	0.157
GE-68		1077.35	*	-7.864E-01	1.766E+00	2.727E+00	2.328E-01	-0.288

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-73	53.44	*		1.385E-03	2.159E-01	3.650E-01	3.652E-02	0.004
AS-74	595.88	*		-4.974E-02	1.111E-01	1.712E-01	1.508E-02	-0.291
	634.78			-3.636E-02	4.327E-01	6.627E-01	5.708E-02	-0.055
SE-75	66.05			-4.123E-02	2.629E+00	3.962E+00	4.557E-01	-0.010
	96.73			-1.017E-01	6.907E-01	1.026E+00	1.505E-01	-0.099
	121.11			-1.034E-01	1.302E-01	2.053E-01	2.809E-02	-0.504
	136.00			-3.114E-03	3.867E-02	6.334E-02	6.850E-03	-0.049
	198.60			-2.106E-01	1.728E+00	2.762E+00	2.661E-01	-0.076
	264.65	*		1.094E-02	4.579E-02	7.036E-02	6.464E-03	0.155
	279.53			6.420E-02	1.111E-01	1.945E-01	1.845E-02	0.330
	303.91			-9.572E-01	2.465E+00	3.537E+00	4.207E-01	-0.271
	400.65			1.718E-01	2.805E-01	4.861E-01	5.351E-02	0.353
BR-77	87.88	+		4.748E+02	1.172E+02	2.057E+02	2.007E+01	2.308
	200.40			-5.275E+01	1.219E+02	1.911E+02	1.666E+01	-0.276
	239.00	+		1.603E+02	2.334E+01	3.041E+01	2.746E+00	5.272
	249.79			-3.747E+01	5.187E+01	7.793E+01	7.085E+00	-0.481
	281.68			-8.345E+01	6.506E+01	1.003E+02	9.211E+00	-0.832
	297.23			1.068E+02	5.721E+01	7.835E+01	7.192E+00	1.364
	303.76			-5.190E+01	1.524E+02	2.199E+02	2.016E+01	-0.236
	439.47			2.770E+01	1.110E+02	1.871E+02	1.630E+01	0.148
	484.57			2.352E+01	1.819E+02	3.015E+02	2.679E+01	0.078
	520.65	*		8.389E-01	9.418E+00	1.547E+01	1.383E+00	0.054
	574.64			-1.119E+00	1.826E+02	2.951E+02	2.621E+01	-0.004
	578.91			-4.332E+01	9.002E+01	1.188E+02	1.054E+01	-0.365
	585.48			3.730E+02	1.705E+02	2.982E+02	2.638E+01	1.251
	755.35			5.020E+01	1.489E+02	2.575E+02	2.244E+01	0.195
	817.79			4.927E+01	1.092E+02	1.912E+02	1.680E+01	0.258
SR-82	698.33			4.109E+00	4.292E+01	7.290E+01	6.243E+00	0.056
	776.49	*		-1.152E-01	4.822E-01	7.876E-01	6.892E-02	-0.146
	1395.20			-2.065E+00	1.464E+01	2.393E+01	2.056E+00	-0.086
RB-83	520.41	*		-6.662E-03	8.451E-02	1.367E-01	1.222E-02	-0.049
	529.64			-9.966E-03	1.175E-01	1.895E-01	1.694E-02	-0.053
	552.65			3.413E-02	2.449E-01	3.919E-01	3.497E-02	0.087
RB-84	881.50	*		2.783E-02	9.091E-02	1.551E-01	1.359E-02	0.179
KR-85	513.99	*		4.787E-01	9.941E+00	1.427E+01	1.275E+00	0.034
SR-85	513.99	*		2.426E-03	5.037E-02	7.231E-02	6.460E-03	0.034
RB-86	1076.63	*		-2.686E-01	1.031E+00	1.627E+00	1.389E-01	-0.165
Y-88	898.02			-1.880E-04	5.637E-02	9.320E-02	8.186E-03	-0.002
	1836.01	*		3.952E-03	4.110E-02	6.867E-02	5.726E-03	0.058
ZR-88	392.90	*		1.944E-02	3.786E-02	6.502E-02	5.478E-03	0.299
Y-91	1204.90	*		-4.791E-01	2.372E+01	3.821E+01	3.153E+00	-0.013
NB-94	702.63	*		-1.064E-04	4.321E-02	7.278E-02	6.243E-03	-0.001
	871.10			9.790E-03	4.794E-02	8.109E-02	7.116E-03	0.121
NB-95	765.79	*		2.147E-02	6.670E-02	1.008E-01	8.803E-03	0.213
NB-95M	235.69	*		-2.392E-03	1.462E-01	2.070E-01	2.114E-02	-0.012
ZR-95	724.18			1.824E-01	1.281E-01	2.188E-01	2.054E-02	0.834
	756.15	*		2.471E-02	8.796E-02	1.513E-01	1.450E-02	0.163
NB-97	657.90	*		-1.117E-02	8.796E-02	Half-Life too short		
	1024.50			-1.957E+00	8.796E-02	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
ZR-97	254.15			-5.586E-01	8.796E-02	Half-Life	too short	
	355.39			-5.991E-01	8.796E-02	Half-Life	too short	
	507.63	*		7.388E-01	8.796E-02	Half-Life	too short	
	602.52			-1.899E-01	8.796E-02	Half-Life	too short	
	1021.30			-2.072E+00	8.796E-02	Half-Life	too short	
	1147.95			-1.546E-01	8.796E-02	Half-Life	too short	
	1362.66			-1.060E+00	8.796E-02	Half-Life	too short	
	1750.46			1.615E+00	8.796E-02	Half-Life	too short	
MO-99	140.51			-3.097E+01	2.200E+01	2.982E+01	8.442E+00	-1.039
	181.06			-9.800E+00	1.546E+01	2.113E+01	3.854E+00	-0.464
	366.43			-1.057E+01	7.072E+01	1.167E+02	1.021E+01	-0.091
	739.58	*		-1.956E+00	1.123E+01	1.853E+01	2.820E+00	-0.106
	778.00			-1.226E+01	3.231E+01	5.191E+01	4.544E+00	-0.236
TC-99M	140.51	*		-2.639E+09	3.231E+01	Half-Life	too short	
RH-101	127.23			-3.364E-02	3.203E-02	4.975E-02	5.658E-03	-0.676
	198.01	*		-9.344E-04	3.113E-02	5.007E-02	4.353E-03	-0.019
	325.23			-3.733E-02	2.663E-01	3.894E-01	3.540E-02	-0.096
RH-102	418.52			-1.879E-02	3.261E-01	5.369E-01	4.616E-02	-0.035
	475.06	*		1.813E-02	3.093E-02	5.347E-02	4.736E-03	0.339
	631.29			2.639E-02	6.479E-02	1.086E-01	9.381E-03	0.243
	697.49			1.564E-02	1.012E-01	1.728E-01	1.479E-02	0.091
	+ 766.84			2.693E-01	1.864E-01	2.673E-01	2.335E-02	1.008
	1046.59			-7.542E-03	1.679E-01	2.730E-01	2.352E-02	-0.028
	1112.84			9.598E-02	3.442E-01	5.053E-01	4.254E-02	0.190
RU-103	497.08	*		-4.274E-02	4.890E-02	7.284E-02	1.045E-02	-0.587
	+ 610.33			1.310E+01	2.988E+00	3.268E+00	5.474E-01	4.007
RH-106	+ 511.85			6.923E-01	4.625E-01	5.224E-01	4.666E-02	1.325
	621.84	*		-1.717E-01	3.686E-01	5.595E-01	7.498E-02	-0.307
	1050.47			-1.140E+00	3.347E+00	5.258E+00	4.525E-01	-0.217
RU-106	+ 511.85			6.923E-01	4.625E-01	5.224E-01	4.666E-02	1.325
	621.84	*		-1.717E-01	3.681E-01	5.595E-01	4.861E-02	-0.307
	1050.47			-1.140E+00	3.347E+00	5.258E+00	4.525E-01	-0.217
AG-108M	433.93	*		5.604E-03	3.582E-02	5.991E-02	5.407E-03	0.094
	614.37			-1.122E-02	4.956E-02	6.715E-02	6.085E-03	-0.167
	722.95			1.711E-02	5.372E-02	8.218E-02	7.376E-03	0.208
AG-110M	657.75	*		-1.329E-02	4.199E-02	6.478E-02	5.646E-03	-0.205
	677.61			-1.014E-01	3.633E-01	5.607E-01	4.897E-02	-0.181
	706.67			-1.656E-01	2.643E-01	4.191E-01	3.700E-02	-0.395
	763.93			8.997E-02	2.468E-01	3.759E-01	3.373E-02	0.239
	884.67			3.129E-02	6.656E-02	1.155E-01	1.043E-02	0.271
	937.48			3.023E-02	1.411E-01	2.381E-01	2.157E-02	0.127
	1384.27			-3.798E-02	1.998E-01	3.239E-01	2.859E-02	-0.117
IN-111	171.28			4.081E-02	7.782E-01	1.268E+00	1.065E-01	0.032
	245.39	*		7.433E-01	9.422E-01	1.424E+00	1.291E-01	0.522
IN-113M	391.69	*		1.010E-02	5.608E-02	9.428E-02	8.192E-03	0.107
SN-113	391.69	*		1.010E-02	5.608E-02	9.428E-02	8.192E-03	0.107
IN-114M	190.27	*		1.130E-01	2.042E-01	3.061E-01	2.637E-02	0.369
CD-115	260.90			-1.292E+02	9.808E+01	1.382E+02	1.263E+01	-0.935
	492.35			2.970E+01	3.064E+01	5.412E+01	4.818E+00	0.549

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA	
SN-117M		527.90	*	-3.997E+00	9.105E+00	1.417E+01	1.267E+00	-0.282	
		156.02		-7.906E-01	2.126E+00	3.399E+00	3.129E-01	-0.233	
		158.56	*	-3.932E-02	5.094E-02	7.925E-02	7.124E-03	-0.496	
SB-122		563.90	*	9.984E-01	1.921E+00	3.258E+00	2.901E-01	0.306	
		692.80		-6.232E+00	4.313E+01	7.184E+01	6.138E+00	-0.087	
I-123		159.00	*	-8.534E-01	4.313E+01	Half-Life	too short		
		528.96		-1.710E+01	4.313E+01	Half-Life	too short		
TE-123M		159.00	*	-1.752E-02	2.750E-02	4.315E-02	3.884E-03	-0.406	
I-124		602.71	*	-3.722E-01	7.683E-01	1.006E+00	8.831E-02	-0.370	
		722.78		1.273E+00	4.632E+00	7.047E+00	6.088E-01	0.181	
SB-124		1325.50		1.925E+00	3.940E+01	6.644E+01	5.655E+00	0.029	
		1376.25		4.744E+01	3.545E+01	6.817E+01	5.845E+00	0.696	
		1509.49		9.147E+00	1.501E+01	2.752E+01	2.380E+00	0.332	
		1691.02		-1.390E+00	3.585E+00	5.701E+00	4.877E-01	-0.244	
		602.71		-2.575E-02	5.316E-02	6.957E-02	6.111E-03	-0.370	
		645.85		-8.224E-02	6.004E-01	9.476E-01	8.587E-02	-0.087	
		709.31		-2.328E+00	3.588E+00	5.691E+00	4.894E-01	-0.409	
		713.82		3.202E-01	1.997E+00	3.410E+00	4.103E-01	0.094	
		722.78		1.276E-01	4.646E-01	7.068E-01	6.237E-02	0.181	
	+	968.20		1.283E+01	5.291E+00	9.067E+00	7.921E-01	1.415	
		1045.16		-4.108E-01	3.502E+00	5.647E+00	4.867E-01	-0.073	
		1325.50		2.062E-01	4.220E+00	7.117E+00	6.057E-01	0.029	
SB-125		1368.21		-1.259E-01	2.150E+00	3.561E+00	4.787E-01	-0.035	
		1436.60		7.796E-01	4.670E+00	7.985E+00	6.886E-01	0.098	
		1691.02	*	-3.289E-02	8.481E-02	1.349E-01	1.200E-02	-0.244	
		427.89	*	6.639E-02	1.077E-01	1.862E-01	1.642E-02	0.357	
	+	463.38		3.608E-01	4.954E-01	6.445E-01	6.110E-02	0.560	
TE-125M		600.56		5.668E-02	2.268E-01	3.621E-01	3.409E-02	0.157	
		635.90		-1.554E-02	3.385E-01	5.199E-01	4.836E-02	-0.030	
		109.28	*	1.177E+00	8.643E+00	1.445E+01	1.775E+00	0.081	
	I-126		388.63		-3.135E-02	2.247E-01	3.698E-01	3.129E-02	-0.085
			666.33	*	7.821E-02	2.271E-01	3.754E-01	3.169E-02	0.208
SB-126		753.82		-8.087E-01	1.749E+00	2.796E+00	2.436E-01	-0.289	
		223.80		4.002E-01	4.114E+00	6.621E+00	5.910E-01	0.060	
		278.60		4.735E+00	2.426E+00	4.493E+00	4.125E-01	1.054	
	+	296.50		1.178E+01	2.820E+00	3.565E+00	3.272E-01	3.304	
		414.70		-2.532E-02	8.563E-02	1.274E-01	1.093E-02	-0.199	
		415.30		-4.630E+00	6.684E+00	1.042E+01	8.939E-01	-0.444	
		555.20		1.961E+00	4.364E+00	7.389E+00	6.591E-01	0.265	
		573.80		-8.843E-01	1.174E+00	1.746E+00	1.550E-01	-0.507	
		593.00		-4.625E-01	1.080E+00	1.665E+00	1.469E-01	-0.278	
		656.30		-3.971E-01	3.748E+00	5.930E+00	5.019E-01	-0.067	
		666.33		3.260E-02	9.465E-02	1.565E-01	1.321E-02	0.208	
		675.00		1.340E+00	2.085E+00	3.584E+00	3.039E-01	0.374	
		695.00		-4.208E-03	9.839E-02	1.653E-01	1.414E-02	-0.025	
		697.00		1.568E-02	3.322E-01	5.622E-01	4.812E-02	0.028	
		720.50	*	1.505E-01	1.519E-01	2.566E-01	2.215E-02	0.586	
	856.80		-9.337E-02	6.791E-01	9.588E-01	8.424E-02	-0.097		
	989.30		-1.013E+00	1.431E+00	2.119E+00	1.847E-01	-0.478		



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1034.80		-1.131E+00	1.067E+01	1.721E+01	1.488E+00	-0.066
	1213.00		3.395E+00	6.096E+00	1.041E+01	8.614E-01	0.326
	61.10		1.202E+01	2.071E+01	3.259E+01	3.903E+00	0.369
	252.40		7.895E-01	3.639E+00	5.848E+00	2.459E+00	0.135
	290.80		-2.608E+00	2.062E+01	3.047E+01	3.440E+00	-0.086
	411.60		3.979E+00	1.211E+01	1.825E+01	2.822E+00	0.218
	444.90		-1.242E+00	8.476E+00	1.377E+01	1.698E+00	-0.090
	473.00		-1.236E-01	1.528E+00	2.488E+00	3.170E-01	-0.050
	543.00		6.158E+00	1.726E+01	2.890E+01	4.143E+00	0.213
	603.60		-1.310E+01	1.318E+01	1.567E+01	1.931E+00	-0.836
	685.20	*	-5.481E-01	1.595E+00	2.455E+00	2.696E-01	-0.223
	698.50		5.316E-01	1.612E+01	2.724E+01	4.238E+00	0.020
XE-127	722.20		-2.402E+00	3.135E+01	4.539E+01	4.923E+00	-0.053
	783.80		4.971E+00	4.563E+00	7.472E+00	9.133E-01	0.665
	57.60		1.449E+00	2.038E+00	3.562E+00	3.577E-01	0.407
	145.22		1.936E-01	6.949E-01	1.140E+00	1.150E-01	0.170
	172.10		5.716E-03	1.157E-01	1.885E-01	1.584E-02	0.030
I-131	202.84	*	2.226E-02	4.837E-02	7.986E-02	6.981E-03	0.279
	374.96		7.878E-02	2.015E-01	3.457E-01	2.991E-02	0.228
	80.18		-1.555E+00	3.156E+00	4.652E+00	4.551E-01	-0.334
	284.30		3.340E-01	1.366E+00	2.350E+00	2.256E-01	0.142
TE-132	364.48	*	1.127E-02	1.130E-01	1.900E-01	1.753E-02	0.059
	636.97		2.556E-01	1.590E+00	2.600E+00	2.359E-01	0.098
	722.89		2.591E+00	8.206E+00	1.255E+01	1.090E+00	0.206
	49.72		-2.435E+00	3.247E+00	4.785E+00	5.618E-01	-0.509
	111.76		-3.363E+00	2.195E+01	3.618E+01	4.566E+00	-0.093
BA-133	116.30		5.071E+00	2.126E+01	3.560E+01	4.582E+00	0.142
	228.16	*	-1.907E-01	5.927E-01	9.266E-01	1.455E-01	-0.206
	53.15		5.915E-01	9.192E-01	1.591E+00	1.592E-01	0.372
	79.62		-4.935E-01	9.696E-01	1.426E+00	2.265E-01	-0.346
	81.00		5.220E-02	8.473E-02	1.071E-01	1.768E-02	0.487
I-133	276.40		4.214E-01	3.891E-01	6.915E-01	1.022E-01	0.609
	302.84		1.544E-02	1.663E-01	2.499E-01	3.411E-02	0.062
	356.01	*	-3.621E-02	5.142E-02	6.955E-02	9.292E-03	-0.521
	383.85		1.162E-01	3.270E-01	5.582E-01	7.001E-02	0.208
	510.53	+	5.726E-01	3.270E-01	Half-Life	too short	
CS-134	529.87	*	-4.308E-04	3.270E-01	Half-Life	too short	
	706.58		-1.275E-01	3.270E-01	Half-Life	too short	
	856.28		-5.234E-02	3.270E-01	Half-Life	too short	
	875.33		-4.172E-04	3.270E-01	Half-Life	too short	
	1236.41		2.366E-01	3.270E-01	Half-Life	too short	
CS-134	1298.22		-1.238E-01	3.270E-01	Half-Life	too short	
	475.35		-7.249E-01	2.137E+00	3.392E+00	3.004E-01	-0.214
	563.23		2.020E-01	4.515E-01	7.609E-01	6.837E-02	0.266
	569.32		2.261E-01	2.399E-01	4.211E-01	3.792E-02	0.537
	604.70		-2.942E-02	4.559E-02	5.798E-02	5.099E-03	-0.507
	795.84	*	2.669E-02	6.796E-02	1.038E-01	9.176E-03	0.257
	801.93		1.790E-01	5.374E-01	9.237E-01	8.154E-02	0.194
	1038.57		-1.358E+00	5.150E+00	8.148E+00	7.035E-01	-0.167

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135		1167.94		-1.419E+00	3.072E+00	4.666E+00	3.823E-01	-0.304
		1365.15		-3.332E-01	1.560E+00	2.523E+00	2.260E-01	-0.132
		268.24	*	1.694E-01	1.801E-01	2.750E-01	2.870E-02	0.616
		288.45		2.726E+07	1.801E-01	Half-Life	too short	
		417.63		3.348E+08	1.801E-01	Half-Life	too short	
		546.56		-3.834E+08	1.801E-01	Half-Life	too short	
		836.80		1.420E+09	1.801E-01	Half-Life	too short	
		1038.76		-3.041E+08	1.801E-01	Half-Life	too short	
		1124.00		-3.092E+09	1.801E-01	Half-Life	too short	
		1131.51		2.855E+08	1.801E-01	Half-Life	too short	
		1260.41	*	-2.382E+08	1.801E-01	Half-Life	too short	
		1457.56		5.418E+10	1.801E-01	Half-Life	too short	
		1678.03		6.383E+08	1.801E-01	Half-Life	too short	
		1706.46		5.627E+08	1.801E-01	Half-Life	too short	
		1791.20		2.519E+08	1.801E-01	Half-Life	too short	
CS-136		66.91		4.062E-03	4.123E-01	6.217E-01	1.005E-01	0.007
	+	86.29		3.692E+00	9.771E-01	1.533E+00	2.091E-01	2.408
		153.22		2.828E-02	6.292E-01	1.031E+00	1.070E-01	0.027
		163.89		5.538E-01	1.005E+00	1.685E+00	1.611E-01	0.329
		176.55		-3.098E-01	3.574E-01	5.488E-01	4.920E-02	-0.565
		273.65		-3.531E-01	4.973E-01	6.444E-01	6.255E-02	-0.548
		340.57		2.495E-02	1.271E-01	1.915E-01	1.768E-02	0.130
		818.51		2.453E-02	7.947E-02	1.371E-01	1.206E-02	0.179
		1048.07	*	1.403E-01	1.409E-01	2.541E-01	2.281E-02	0.552
		1235.34		8.105E-01	7.668E-01	1.355E+00	1.577E-01	0.598
BA-137M		661.65	*	1.104E-02	4.630E-02	7.520E-02	6.334E-03	0.147
CS-137		661.65	*	1.167E-02	4.895E-02	7.949E-02	6.710E-03	0.147
CE-139		165.85	*	-2.589E-02	2.978E-02	4.592E-02	3.829E-03	-0.564
BA-140		162.64		4.647E-01	7.092E-01	1.195E+00	1.091E-01	0.389
		304.84		6.021E-01	1.353E+00	2.084E+00	5.875E-01	0.289
LA-140		423.70		2.088E-01	2.046E+00	3.408E+00	1.105E+00	0.061
		537.32	*	2.143E-01	2.944E-01	4.975E-01	1.653E-01	0.431
	+	328.77		8.760E-01	5.061E-01	5.787E-01	5.515E-02	1.514
		432.53		1.015E+00	2.194E+00	3.756E+00	3.416E-01	0.270
		487.03		-4.347E-02	1.470E-01	2.339E-01	2.200E-02	-0.186
		751.79		-2.474E+00	1.988E+00	2.868E+00	2.759E-01	-0.863
		815.85		2.821E-02	3.382E-01	5.691E-01	5.557E-02	0.050
		867.82		4.540E-01	1.794E+00	2.979E+00	2.748E-01	0.152
		919.63		2.717E-01	3.187E+00	5.387E+00	5.792E-01	0.050
		925.24		-1.596E-01	1.206E+00	1.954E+00	1.815E-01	-0.082
CE-141		1596.49	*	-1.354E-01	1.099E-01	1.366E-01	1.179E-02	-0.992
		145.44	*	5.480E-04	6.299E-02	1.020E-01	1.041E-02	0.005
CE-143		57.37		1.283E-04	6.299E-02	Half-Life	too short	
		231.56		1.227E-03	6.299E-02	Half-Life	too short	
		293.26	*	2.759E-04	6.299E-02	Half-Life	too short	
	+	350.59		1.638E-02	6.299E-02	Half-Life	too short	
		490.36		6.405E-04	6.299E-02	Half-Life	too short	
		664.57		4.360E-04	6.299E-02	Half-Life	too short	
		721.93		-7.765E-05	6.299E-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
CE-144	80.11			-7.194E-01	1.597E+00	2.361E+00	2.299E-01	-0.305
	133.54	*		-5.661E-02	1.986E-01	3.218E-01	5.458E-02	-0.176
PM-144	476.78			-2.851E-02	7.660E-02	1.212E-01	1.169E-02	-0.235
	618.01			1.279E-02	3.803E-02	6.333E-02	5.664E-03	0.202
	696.49	*		1.079E-02	4.485E-02	7.709E-02	6.599E-03	0.140
	778.57			-1.338E-01	2.942E+00	4.769E+00	4.176E-01	-0.028
PR-144	696.49	*		7.310E-01	3.037E+00	5.221E+00	4.468E-01	0.140
	1489.15			-7.550E+00	1.156E+01	1.600E+01	1.383E+00	-0.472
PM-146	453.90	*		1.531E-02	5.068E-02	8.544E-02	9.274E-03	0.179
	633.02			5.567E-01	1.687E+00	2.785E+00	1.041E+00	0.200
	735.90			-3.164E-02	1.816E-01	2.992E-01	8.563E-02	-0.106
	747.13			-1.757E-02	1.162E-01	1.919E-01	2.703E-02	-0.092
ND-147	91.11			7.384E-01	2.337E-01	3.839E-01	4.043E-02	1.923
	319.41			-1.210E+00	3.120E+00	5.103E+00	4.653E-01	-0.237
	439.89			-1.216E+00	5.848E+00	9.459E+00	8.247E-01	-0.129
	531.02	*		-1.606E-01	5.979E-01	9.453E-01	1.431E-01	-0.170
PM-149	285.90	*		4.446E+01	6.598E+01	1.157E+02	1.836E+01	0.384
EU-152	121.78			-5.522E-02	7.162E-02	1.133E-01	1.437E-02	-0.488
	244.69			7.538E-02	3.856E-01	5.550E-01	5.031E-02	0.136
	344.27	*		4.927E-02	9.885E-02	1.714E-01	1.621E-02	0.287
	443.98			-5.410E-01	1.014E+00	1.586E+00	1.385E-01	-0.341
	778.89			5.554E-02	3.395E-01	5.467E-01	4.786E-02	0.102
	867.32			-4.155E-02	1.190E+00	1.854E+00	1.628E-01	-0.022
	964.01			4.533E-01	4.466E-01	7.204E-01	6.296E-02	0.629
	1085.78			-2.673E-02	4.873E-01	7.880E-01	6.705E-02	-0.034
	1112.02			-1.044E-01	4.690E-01	6.963E-01	5.864E-02	-0.150
	1407.95			7.055E-02	2.373E-01	4.127E-01	3.551E-02	0.171
GD-153	69.67			-6.961E-03	9.465E-01	1.532E+00	1.504E-01	-0.005
	83.37	+		1.834E+01	1.388E+01	1.831E+01	1.784E+00	1.002
	97.43	*		-8.344E-02	7.616E-02	1.050E-01	1.074E-02	-0.794
	103.18			-9.950E-02	9.223E-02	1.447E-01	1.525E-02	-0.687
EU-154	123.07			-2.187E-02	5.005E-02	8.074E-02	1.115E-02	-0.271
	247.94			-1.632E-01	3.966E-01	6.117E-01	7.234E-02	-0.267
	591.81			3.923E-01	7.364E-01	1.251E+00	1.479E-01	0.314
	723.30			7.155E-02	2.246E-01	3.435E-01	3.280E-02	0.208
	756.87			2.269E-01	9.353E-01	1.604E+00	1.933E-01	0.141
	873.19			3.723E-02	4.142E-01	6.927E-01	8.557E-02	0.054
	996.32			2.577E-01	4.854E-01	8.401E-01	1.496E-01	0.307
	1004.76			2.207E-01	2.427E-01	4.415E-01	5.164E-02	0.500
	1274.45	*		-3.569E-02	1.499E-01	2.321E-01	2.590E-02	-0.154
EU-155	48.70			-1.594E-01	4.673E-01	7.087E-01	7.119E-02	-0.225
	60.01			-1.092E+00	2.124E+00	3.169E+00	3.188E-01	-0.344
	86.54	+		3.615E-01	8.935E-02	1.552E-01	1.525E-02	2.330
	105.31	*		4.510E-02	9.680E-02	1.644E-01	1.766E-02	0.274
TB-160	86.79	+		9.555E-01	2.359E-01	4.071E-01	3.971E-02	2.347
	197.04			-2.086E-01	5.316E-01	8.348E-01	7.250E-02	-0.250
	215.65			4.668E-02	7.794E-01	1.254E+00	1.111E-01	0.037
	298.57	+		2.631E-01	1.616E-01	2.114E-01	1.940E-02	1.245
	879.36	*		-3.295E-02	1.847E-01	3.001E-01	2.631E-02	-0.110

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		962.29		3.581E-01	7.370E-01	1.238E+00	1.082E-01	0.289
		966.15		9.715E-01	3.935E-01	6.861E-01	5.995E-02	1.416
		1177.93		-6.907E-02	4.980E-01	7.929E-01	6.487E-02	-0.087
		1271.85		-1.463E-01	8.548E-01	1.338E+00	1.125E-01	-0.109
		80.57		1.828E-01	2.335E-01	2.997E-01	2.919E-02	0.610
		184.41		4.080E-02	4.145E-02	6.592E-02	5.635E-03	0.619
		280.46		-1.453E-01	8.977E-02	1.352E-01	1.242E-02	-1.075
	+	410.95		3.623E-01	3.167E-01	4.711E-01	4.028E-02	0.769
		711.68	*	7.122E-02	7.671E-02	1.391E-01	1.197E-02	0.512
		752.31		-1.431E-01	3.418E-01	5.486E-01	4.778E-02	-0.261
TM-171		810.29		-5.821E-02	6.555E-02	9.669E-02	8.495E-03	-0.602
		51.35		-8.758E-01	6.761E+00	1.151E+01	1.152E+00	-0.076
		52.39		2.921E+00	3.859E+00	6.708E+00	6.712E-01	0.435
		59.40		-5.993E+00	1.113E+01	1.659E+01	1.672E+00	-0.361
LU-176		66.72	*	3.238E-01	1.580E+01	2.384E+01	2.353E+00	0.014
	+	88.36		7.121E-01	1.758E-01	3.069E-01	3.001E-02	2.320
		201.83		1.004E-02	3.002E-02	4.926E-02	4.301E-03	0.204
LU-177		306.84	*	-1.462E-02	2.587E-02	4.193E-02	3.841E-03	-0.349
		401.10		3.359E+00	7.503E+00	1.286E+01	1.091E+00	0.261
		112.95		-5.986E-01	1.396E+00	2.268E+00	2.521E-01	-0.264
LU-177M	+	208.36	*	1.629E+00	1.401E+00	1.757E+00	1.545E-01	0.927
		52.97		3.054E-01	4.113E-01	7.144E-01	7.147E-02	0.427
		54.07		-1.615E-01	2.350E-01	3.848E-01	3.851E-02	-0.420
HF-181		61.30		6.146E-01	6.591E-01	1.053E+00	1.054E-01	0.584
		121.62		-3.348E-01	3.630E-01	5.686E-01	6.641E-02	-0.589
		147.16		-2.788E-01	6.403E-01	1.024E+00	1.017E-01	-0.272
		171.86		1.482E-01	4.731E-01	7.823E-01	6.575E-02	0.189
		218.09		1.683E-01	9.010E-01	1.460E+00	1.297E-01	0.115
	+	268.79		1.659E+00	1.074E+00	1.485E+00	1.360E-01	1.117
		319.02		-1.183E-01	2.626E-01	4.276E-01	3.899E-02	-0.277
		367.43		3.395E-01	9.862E-01	1.686E+00	1.474E-01	0.201
		413.65	*	2.153E-01	2.015E-01	3.282E-01	2.812E-02	0.656
		56.28		5.319E-02	2.905E-01	4.993E-01	5.005E-02	0.107
W-181		57.53		1.177E-01	1.712E-01	2.990E-01	3.003E-02	0.394
		65.20		1.017E-01	4.984E-01	7.595E-01	7.522E-02	0.134
		133.02		-3.377E-02	6.322E-02	1.011E-01	1.109E-02	-0.334
		136.25		4.934E-02	4.504E-01	7.446E-01	8.004E-02	0.066
		345.85		5.014E-02	2.155E-01	3.255E-01	2.914E-02	0.154
TA-182		482.03	*	1.309E-02	4.699E-02	7.894E-02	7.008E-03	0.166
		56.28		2.141E-02	1.151E-01	1.979E-01	1.984E-02	0.108
		57.53		4.660E-02	6.787E-02	1.185E-01	1.190E-02	0.393
TA-182		65.20	*	3.998E-02	1.960E-01	2.987E-01	2.959E-02	0.134
		67.75		2.940E-02	6.228E-02	9.714E-02	9.568E-03	0.303
		100.10		5.732E-02	1.553E-01	2.598E-01	2.693E-02	0.221
		152.43		-1.850E-02	3.224E-01	5.254E-01	4.995E-02	-0.035
		222.10		1.997E-01	3.671E-01	6.068E-01	5.408E-02	0.329
		1001.68		-2.912E+00	2.535E+00	3.521E+00	3.063E-01	-0.827
		1121.28		5.407E-01	2.093E-01	3.941E-01	3.306E-02	1.372
		1189.05		2.683E-01	4.113E-01	7.123E-01	5.849E-02	0.377

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		1221.42	*	9.442E-02	2.696E-01	4.510E-01	3.741E-02	0.209
		1230.97		1.317E-01	6.820E-01	1.121E+00	9.321E-02	0.118
		57.98		7.173E-02	7.156E-02	1.213E-01	1.219E-02	0.591
		59.32		-2.431E-02	4.517E-02	6.731E-02	6.782E-03	-0.361
		67.20		1.621E-02	1.110E-01	1.684E-01	1.661E-02	0.096
		162.32	*	1.104E-01	1.070E-01	1.835E-01	1.589E-02	0.602
RE-184	+	208.81		1.628E+00	1.400E+00	1.760E+00	1.549E-01	0.925
		291.72		3.644E-01	1.068E+00	1.641E+00	1.508E-01	0.222
		57.98		2.661E-01	2.654E-01	4.498E-01	4.520E-02	0.591
		59.32		-9.010E-02	1.674E-01	2.495E-01	2.513E-02	-0.361
		67.20		6.009E-02	4.116E-01	6.246E-01	6.159E-02	0.096
		161.27		-6.811E-02	3.536E-01	5.702E-01	4.989E-02	-0.119
OS-185		216.55		-1.374E-01	2.839E-01	4.409E-01	3.910E-02	-0.312
		252.85	*	-9.132E-02	2.426E-01	3.741E-01	3.406E-02	-0.244
		318.01		-2.815E-01	4.570E-01	7.343E-01	6.700E-02	-0.383
		792.07		9.874E-01	1.432E+00	2.176E+00	1.909E-01	0.454
		903.28		-2.722E-01	1.333E+00	2.022E+00	1.769E-01	-0.135
		920.93		-9.990E-02	5.452E-01	8.795E-01	7.696E-02	-0.114
		59.72		-6.731E-02	1.235E-01	1.839E-01	1.853E-02	-0.366
		61.14		4.449E-02	7.177E-02	1.132E-01	1.134E-02	0.393
		69.30		1.468E-02	1.606E-01	2.728E-01	2.680E-02	0.054
		592.07		1.014E+00	3.016E+00	5.032E+00	4.441E-01	0.201
		646.12	*	-1.477E-02	5.178E-02	8.032E-02	6.858E-03	-0.184
		717.42		-5.698E-01	1.017E+00	1.608E+00	1.387E-01	-0.354
RE-188		874.81		2.284E-01	7.625E-01	1.304E+00	1.144E-01	0.175
		880.27		-2.685E-01	1.032E+00	1.657E+00	1.453E-01	-0.162
		155.03	*	1.342E-01	1.705E-01	2.891E-01	2.686E-02	0.464
		477.96		5.166E-01	3.289E+00	5.471E+00	4.851E-01	0.094
		633.10		1.059E+00	3.343E+00	5.551E+00	4.786E-01	0.191
		63.58	+	9.968E+01	5.152E+01	4.906E+01	4.879E+00	2.032
W-188		227.08		-1.151E+01	1.387E+01	2.093E+01	1.873E+00	-0.550
		290.67	*	-1.434E+00	8.630E+00	1.271E+01	1.168E+00	-0.113
IR-192	+	295.96		9.507E-01	2.278E-01	3.124E-01	2.887E-02	3.043
		308.46		-3.931E-02	1.007E-01	1.653E-01	1.521E-02	-0.238
		316.51	*	-1.682E-02	3.519E-02	5.722E-02	5.235E-03	-0.294
		468.07		-1.268E-02	7.683E-02	1.145E-01	1.081E-02	-0.111
		604.41		-3.853E-01	6.124E-01	7.795E-01	1.023E-01	-0.494
		612.46		-1.385E-01	8.694E-01	1.191E+00	1.192E-01	-0.116
AU-195		65.12		3.912E-02	9.157E-02	1.410E-01	1.396E-02	0.278
		66.83		8.163E-04	5.224E-02	7.880E-02	7.776E-03	0.010
	+	75.70		1.155E+00	2.031E-01	3.446E-01	3.362E-02	3.352
		98.88	*	2.760E-04	1.933E-01	3.185E-01	3.281E-02	0.001
		129.76		5.124E+00	2.892E+00	5.060E+00	5.668E-01	1.013
		367.94	*	8.155E-05	2.892E+00	Half-Life	too short	
TL-200		579.30		-5.696E-04	2.892E+00	Half-Life	too short	
		828.27		-7.682E-05	2.892E+00	Half-Life	too short	
		1205.75		5.242E-04	2.892E+00	Half-Life	too short	
		68.90		5.161E-01	2.072E+00	3.389E+00	3.332E-01	0.152
TL-201		70.82		-6.408E-01	1.339E+00	1.990E+00	1.950E-01	-0.322

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		80.30		-1.643E+00	2.930E+00	4.302E+00	4.190E-01	-0.382
		135.34		-1.295E+01	1.969E+01	3.123E+01	3.377E+00	-0.415
		167.43	*	-2.128E+00	5.474E+00	8.705E+00	7.269E-01	-0.245
		68.90		5.630E-02	2.260E-01	3.698E-01	3.635E-02	0.152
		70.82		-6.972E-02	1.456E-01	2.165E-01	2.122E-02	-0.322
HG-203		80.30		-1.789E-01	3.189E-01	4.682E-01	4.560E-02	-0.382
		439.56	*	1.237E-02	6.962E-02	1.166E-01	1.016E-02	0.106
		70.83		-3.147E-01	6.627E-01	9.840E-01	1.415E-01	-0.320
		72.87		3.918E-01	4.053E-01	6.379E-01	8.922E-02	0.614
		82.60		5.785E-01	9.656E-01	1.219E+00	1.765E-01	0.474
BI-207		279.20	*	3.466E-02	4.189E-02	7.418E-02	6.981E-03	0.467
		72.80		9.951E-02	1.195E-01	1.881E-01	1.839E-02	0.529
	+	74.97		6.433E-01	1.131E-01	1.705E-01	1.664E-02	3.774
	+	84.90		2.380E-01	1.800E-01	2.442E-01	2.380E-02	0.975
		569.67		3.149E-02	3.707E-02	6.465E-02	5.749E-03	0.487
TL-207		1063.62	*	4.575E-02	7.518E-02	1.305E-01	1.119E-02	0.351
		1770.23		-4.821E-01	7.147E-01	1.003E+00	8.473E-02	-0.481
		81.07		1.160E-01	1.856E-01	2.355E-01	2.294E-02	0.493
	+	83.78		1.569E-01	1.187E-01	1.610E-01	1.569E-02	0.975
		94.90		2.755E-01	2.060E-01	3.294E-01	3.324E-02	0.837
PO-209		122.32		-4.294E-01	1.706E+00	2.783E+00	3.387E-01	-0.154
		144.24		4.096E-01	6.964E-01	1.159E+00	1.279E-01	0.354
		154.21		1.034E-01	3.939E-01	6.524E-01	6.625E-02	0.158
	+	269.46		3.903E-01	2.529E-01	3.686E-01	3.439E-02	1.059
		323.87	*	-4.084E-01	7.720E-01	1.079E+00	1.936E-01	-0.378
PB-211		338.28		6.962E+00	2.028E+00	2.767E+00	3.483E-01	2.516
		445.03		-1.498E-01	2.439E+00	3.995E+00	4.863E-01	-0.037
		260.50		-9.263E+00	9.963E+00	1.457E+01	1.331E+00	-0.636
		262.80		1.591E+01	2.602E+01	4.316E+01	3.946E+00	0.369
		896.60	*	-6.759E-01	9.909E+00	1.627E+01	1.423E+00	-0.042
PO-215		404.84	*	-6.986E-01	1.233E+00	1.562E+00	9.787E-01	-0.447
		427.08		1.248E+00	2.458E+00	4.019E+00	2.497E+00	0.310
		831.96		5.164E-01	1.666E+00	2.800E+00	1.755E+00	0.184
		81.07		1.160E-01	1.856E-01	2.355E-01	2.294E-02	0.493
	+	83.78		1.569E-01	1.187E-01	1.610E-01	1.569E-02	0.975
RN-219		94.90		2.755E-01	2.060E-01	3.294E-01	3.324E-02	0.837
		122.32		-4.294E-01	1.706E+00	2.783E+00	3.387E-01	-0.154
		144.24		4.096E-01	6.964E-01	1.159E+00	1.279E-01	0.354
		154.21		1.034E-01	3.939E-01	6.524E-01	6.625E-02	0.158
	+	269.46		3.903E-01	2.529E-01	3.686E-01	3.439E-02	1.059
RN-220		323.87	*	-4.084E-01	7.720E-01	1.079E+00	1.936E-01	-0.378
		338.28		6.962E+00	2.028E+00	2.767E+00	3.483E-01	2.516
		445.03		-1.498E-01	2.439E+00	3.995E+00	4.863E-01	-0.037
	+	271.23		5.007E-01	3.256E-01	4.620E-01	4.978E-02	1.084
		401.81	*	1.305E-01	4.566E-01	7.733E-01	1.156E-01	0.169
RA-223		549.76	*	-1.572E+01	3.283E+01	5.078E+01	4.533E+00	-0.310
		81.07		1.160E-01	1.856E-01	2.355E-01	2.294E-02	0.493
	+	83.78		1.569E-01	1.187E-01	1.610E-01	1.569E-02	0.975
		94.90		2.755E-01	2.060E-01	3.294E-01	3.324E-02	0.837

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		-4.294E-01	1.706E+00	2.783E+00	3.387E-01	-0.154
		144.24		4.096E-01	6.964E-01	1.159E+00	1.279E-01	0.354
		154.21		1.034E-01	3.939E-01	6.524E-01	6.625E-02	0.158
	+	269.46		3.903E-01	2.529E-01	3.686E-01	3.439E-02	1.059
		323.87	*	-4.084E-01	7.720E-01	1.079E+00	1.936E-01	-0.378
	+	338.28		6.962E+00	2.028E+00	2.767E+00	3.483E-01	2.516
		445.03		-1.498E-01	2.439E+00	3.995E+00	4.863E-01	-0.037
		79.80		-5.727E-01	1.238E+00	1.821E+00	4.002E-01	-0.314
		236.00		2.300E-01	2.860E-01	4.283E-01	5.364E-02	0.537
		256.20	*	1.489E-01	3.945E-01	6.422E-01	1.004E-01	0.232
		286.10		7.465E-01	1.593E+00	2.770E+00	3.761E-01	0.269
	+	299.80		3.388E+00	2.143E+00	2.887E+00	5.131E-01	1.173
TH-227		304.40		5.360E-02	2.127E+00	3.176E+00	5.938E-01	0.017
		334.20		1.585E+00	2.835E+00	3.819E+00	7.485E-01	0.415
		79.80		-5.727E-01	1.238E+00	1.821E+00	4.051E-01	-0.314
	+	94.00		6.456E+00	2.897E+00	3.237E+00	7.244E-01	1.995
		236.00		2.300E-01	2.857E-01	4.283E-01	4.876E-02	0.537
		256.20	*	1.489E-01	3.947E-01	6.422E-01	1.176E-01	0.232
		286.10		7.465E-01	1.758E+00	2.770E+00	2.782E+00	0.269
	+	299.80		3.388E+00	2.143E+00	2.887E+00	5.131E-01	1.173
		304.40		5.360E-02	2.127E+00	3.176E+00	5.938E-01	0.017
		334.20		1.585E+00	2.835E+00	3.819E+00	7.485E-01	0.415
	+	85.43		2.349E-01	1.777E-01	2.440E-01	2.379E-02	0.963
	+	88.47		4.099E-01	1.012E-01	1.744E-01	1.706E-02	2.351
PA-231		100.00		3.184E-02	1.627E-01	2.704E-01	2.801E-02	0.118
		193.63	*	-2.670E-02	5.054E-01	8.130E-01	7.031E-02	-0.033
		210.97		2.645E-01	8.353E-01	1.225E+00	1.080E-01	0.216
		283.62	*	-2.455E-01	1.533E+00	2.570E+00	3.987E-01	-0.096
	+	301.29		1.355E+00	8.403E-01	1.122E+00	1.418E-01	1.207
		81.07		1.160E-01	1.856E-01	2.355E-01	2.294E-02	0.493
	+	83.78		1.569E-01	1.187E-01	1.610E-01	1.569E-02	0.975
		94.90		2.755E-01	2.060E-01	3.294E-01	3.324E-02	0.837
		122.32		-4.294E-01	1.706E+00	2.783E+00	3.387E-01	-0.154
		144.24		4.096E-01	6.964E-01	1.159E+00	1.279E-01	0.354
		154.21		1.034E-01	3.939E-01	6.524E-01	6.625E-02	0.158
	+	269.46		3.903E-01	2.529E-01	3.686E-01	3.439E-02	1.059
U-231		323.87	*	-4.084E-01	7.720E-01	1.079E+00	1.936E-01	-0.378
	+	338.28		6.962E+00	2.028E+00	2.767E+00	3.483E-01	2.516
		445.03		-1.498E-01	2.439E+00	3.995E+00	4.863E-01	-0.037
	+	84.21		5.609E+00	4.243E+00	5.812E+00	5.664E-01	0.965
	+	92.29		5.291E+00	2.126E+00	2.803E+00	2.793E-01	1.887
		95.87	*	6.607E-01	7.792E-01	1.224E+00	1.242E-01	0.540
		108.00		-1.366E-01	1.600E+00	2.650E+00	2.867E-01	-0.052
	+	75.28		1.877E+01	4.072E+00	5.200E+00	8.327E-01	3.610
	+	86.59		5.878E+00	2.082E+00	2.521E+00	6.860E-01	2.331
	+	300.12		9.444E-01	5.911E-01	8.128E-01	1.236E-01	1.162
		311.98	*	3.114E-02	7.011E-02	1.214E-01	1.138E-02	0.257
		340.50		2.888E-01	6.687E-01	1.025E+00	2.457E-01	0.282
PA-233		398.62		-1.161E+00	2.428E+00	3.849E+00	1.023E+00	-0.302

## ----- 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		-2.204E+00	1.928E+00	2.788E+00	6.005E-01	-0.791
		63.00		2.924E+00	1.557E+00	1.459E+00	2.376E-01	2.004
		94.67		2.850E-01	1.539E-01	2.467E-01	3.320E-02	1.155
		98.44		-1.171E-02	7.889E-02	1.287E-01	7.213E-02	-0.091
		99.86		6.697E-02	4.109E-01	6.817E-01	7.058E-02	0.098
		111.00		2.672E-02	1.745E-01	2.918E-01	4.051E-02	0.092
		131.20		-8.713E-02	1.076E-01	1.696E-01	1.883E-02	-0.514
		152.70		1.807E-02	3.228E-01	5.294E-01	9.263E-02	0.034
		186.00		4.383E+00	2.319E+00	2.699E+00	8.420E-01	1.624
		226.40		-7.126E-02	4.284E-01	6.774E-01	9.089E-02	-0.105
		227.20		-3.929E-01	4.755E-01	7.179E-01	6.427E-02	-0.547
		248.90		-2.800E-01	8.563E-01	1.324E+00	2.993E-01	-0.211
		293.70		6.048E+00	1.709E+00	1.869E+00	3.287E-01	3.236
		369.80		2.965E-01	9.071E-01	1.547E+00	3.374E-01	0.192
		568.70		5.290E-01	1.267E+00	2.128E+00	1.892E-01	0.249
		569.50		3.357E-01	3.285E-01	5.805E-01	5.162E-02	0.578
		574.00		-1.281E+00	1.802E+00	2.695E+00	2.393E-01	-0.475
		699.00		6.025E-02	9.197E-01	1.558E+00	2.969E-01	0.039
		706.10		-4.817E-01	1.340E+00	2.156E+00	9.611E-01	-0.223
		733.00		-7.384E-02	5.045E-01	7.570E-01	1.682E-01	-0.098
		742.81		1.648E+00	2.093E+00	3.226E+00	2.169E+00	0.511
		796.30		3.149E-01	1.307E+00	1.956E+00	5.301E-01	0.161
		805.60		6.061E-01	1.282E+00	2.217E+00	6.804E-01	0.273
		819.60		7.139E-01	1.424E+00	2.466E+00	9.386E-01	0.290
		826.30		-2.988E-01	1.014E+00	1.617E+00	7.241E-01	-0.185
		831.60		-6.265E-02	8.449E-01	1.395E+00	4.171E-01	-0.045
		876.40		-1.258E-01	1.107E+00	1.800E+00	1.850E+00	-0.070
		880.51		-7.043E-02	3.706E-01	5.996E-01	5.256E-02	-0.117
		883.24		-1.261E-02	3.872E-01	6.389E-01	4.296E-01	-0.020
		899.00		-1.107E-01	1.109E+00	1.813E+00	7.929E-01	-0.061
		925.00		-1.697E-01	1.309E+00	2.123E+00	1.858E-01	-0.080
		926.50		5.049E-02	1.915E-01	3.264E-01	8.265E-02	0.155
		946.00	*	3.183E-01	4.016E-01	7.108E-01	1.338E-01	0.448
		949.00		2.627E-01	6.427E-01	1.101E+00	9.634E-02	0.239
		980.50		-5.264E-01	9.320E-01	1.421E+00	1.240E-01	-0.371
		1394.10		-4.138E-01	1.659E+00	2.632E+00	1.713E+00	-0.157
PA-234M	+	766.42		2.835E+01	2.421E+01	2.849E+01	1.446E+01	0.995
		1001.03	*	-4.662E+00	5.771E+00	8.470E+00	8.499E-01	-0.550
U-235		89.95		2.960E+00	1.312E+00	1.615E+00	5.042E-01	1.833
	+	93.35		2.008E+00	9.685E-01	1.100E+00	3.132E-01	1.827
		105.00		2.558E-01	9.407E-01	1.581E+00	4.819E-01	0.162
		143.76	*	6.723E-02	2.151E-01	3.534E-01	6.478E-02	0.190
		163.35		3.931E-01	4.709E-01	7.925E-01	1.510E-01	0.496
	+	185.71		1.623E-01	7.075E-02	1.003E-01	8.586E-03	1.619
		205.31		-1.963E-01	6.081E-01	8.469E-01	1.621E-01	-0.232
NP-236		94.67		2.179E-01	1.152E-01	1.873E-01	1.888E-02	1.163
		98.44		-8.840E-03	5.944E-02	9.726E-02	9.994E-03	-0.091
		111.00		2.021E-02	1.320E-01	2.207E-01	2.427E-02	0.092
		160.31	*	-5.610E-02	7.887E-02	1.231E-01	1.088E-02	-0.456



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55	3.353E-02	1.362E-01	2.268E-01	2.344E-02	0.148
		117.00 *	-7.543E-02	1.827E-01	2.963E-01	3.370E-02	-0.255
	+	209.75	1.299E+00	1.117E+00	1.394E+00	1.227E-01	0.932
		228.18	-7.876E-02	2.463E-01	3.855E-01	3.454E-02	-0.204
		277.60	4.127E-01	1.890E-01	3.526E-01	3.236E-02	1.170
		334.30	8.682E-01	1.597E+00	2.157E+00	1.949E-01	0.403
AM-241		59.54 *	-3.506E-02	6.516E-02	9.707E-02	1.031E-02	-0.361
CM-243		99.55	3.450E-02	1.402E-01	2.334E-01	2.412E-02	0.148
		103.76 *	-4.998E-02	8.483E-02	1.371E-01	1.449E-02	-0.365
		117.00	-7.760E-02	1.880E-01	3.048E-01	3.467E-02	-0.255
	+	209.75	1.280E+00	1.101E+00	1.374E+00	1.210E-01	0.932
		228.18	-7.958E-02	2.489E-01	3.895E-01	3.490E-02	-0.204
		277.60	4.161E-01	1.905E-01	3.555E-01	3.263E-02	1.170
AM-246		798.80	-5.299E-02	2.101E-01	2.939E-01	2.579E-02	-0.180
		1036.00	-1.893E-01	3.895E-01	5.974E-01	5.160E-02	-0.317
		1062.04	2.404E-02	3.290E-01	5.411E-01	4.641E-02	0.044
		1078.86 *	-4.386E-02	1.919E-01	3.040E-01	2.593E-02	-0.144
CM-247		278.00	1.460E+00	8.021E-01	1.475E+00	1.354E-01	0.989
		287.40	9.257E-02	1.294E+00	2.201E+00	2.022E-01	0.042
		402.60 *	6.949E-03	4.055E-02	6.814E-02	5.789E-03	0.102
CF-249		252.85	-3.443E-01	9.144E-01	1.410E+00	1.284E-01	-0.244
		333.44	1.800E-01	2.214E-01	2.763E-01	2.499E-02	0.652
		387.95 *	1.304E-03	4.597E-02	7.657E-02	6.488E-03	0.017
CF-251		176.60 *	-1.088E-01	1.310E-01	2.017E-01	1.706E-02	-0.539
		227.00	-2.463E-01	4.135E-01	6.347E-01	5.681E-02	-0.388
		285.00	9.556E-01	1.790E+00	3.129E+00	2.874E-01	0.305

# 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]G244132015      *
* Acquisition date   : 19-JAN-2010 11:41:54 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 02:00:09.28              Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G244132015              Analyst initials: MXR1          *
* Batch Number       : 940270                  Sample Quantity : 1.2152E+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	2.427E+01	3.015E+00	8.097E-01	0.000E+00
CD-109	3.050E+00	7.379E-01	9.337E-01	0.000E+00
SN-126	3.003E-01	7.265E-02	9.181E-02	0.000E+00
TL-208	5.860E-01	1.111E-01	6.746E-02	0.000E+00
BI-210	7.087E-01	8.263E-01	8.632E-01	0.000E+00
PB-210	7.087E-01	8.263E-01	8.632E-01	0.000E+00
PO-210	7.087E-01	8.259E-01	8.632E-01	0.000E+00
BI-211	3.652E+00	6.030E-01	3.299E-01	0.000E+00
BI-212	1.620E+00	5.975E-01	5.662E-01	0.000E+00
PB-212	1.388E+00	2.072E-01	1.146E-01	0.000E+00
PO-212	1.388E+00	2.072E-01	1.146E-01	0.000E+00
BI-214	1.237E+00	2.246E-01	1.246E-01	0.000E+00
PB-214	1.270E+00	2.196E-01	1.150E-01	0.000E+00
PO-214	1.270E+00	2.196E-01	1.150E-01	0.000E+00
PO-216	1.388E+00	2.072E-01	1.146E-01	0.000E+00
PO-218	1.270E+00	2.196E-01	1.150E-01	0.000E+00
RA-224	2.948E+00	1.050E+00	1.579E+00	0.000E+00
RA-226	1.237E+00	2.246E-01	1.246E-01	0.000E+00
AC-228	1.533E+00	3.840E-01	2.226E-01	0.000E+00
RA-228	1.533E+00	3.840E-01	2.226E-01	0.000E+00
TH-228	1.407E+00	2.101E-01	1.162E-01	0.000E+00
TH-230	1.237E+00	2.246E-01	1.246E-01	0.000E+00
TH-232	1.533E+00	3.840E-01	2.226E-01	0.000E+00
TH-234	2.508E+00	1.329E+00	9.811E-01	0.000E+00
U-234	1.237E+00	2.246E-01	1.246E-01	0.000E+00
NP-237	8.817E-01	2.780E-01	2.481E-01	0.000E+00
U-238	2.508E+00	1.329E+00	9.811E-01	0.000E+00
AM-243	3.584E-01	6.176E-02	5.888E-02	0.000E+00
ANH-511	1.389E-01	9.094E-02	5.827E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Key-Line	Activity	K.L. Act error	MDA
----------	----------	----------------	-----

Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)	
BE-7	-1.951E-02	3.405E-01	5.735E-01	0.000E+00	NOT IDENT.
NA-22	-2.041E-02	5.369E-02	8.314E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.596E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-2.471E-02	3.392E-02	4.347E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.933E-02	6.043E-02	0.000E+00	FAIL ABUN
SC-46	-8.783E-03	5.079E-02	8.455E-02	0.000E+00	FAIL ABUN
V-48	5.158E-02	8.743E-02	1.563E-01	0.000E+00	NOT IDENT.
CR-51	2.119E-01	3.478E-01	6.323E-01	0.000E+00	NOT IDENT.
MN-52	-1.165E-01	2.602E-01	4.090E-01	0.000E+00	NOT IDENT.
MN-54	7.824E-03	5.051E-02	8.736E-02	0.000E+00	NOT IDENT.
CO-56	-2.557E-02	4.929E-02	7.927E-02	0.000E+00	NOT IDENT.
CO-57	-8.436E-03	2.398E-02	4.089E-02	0.000E+00	NOT IDENT.
CO-58	-3.846E-02	4.219E-02	6.379E-02	0.000E+00	NOT IDENT.
FE-59	-9.950E-02	1.180E-01	1.753E-01	0.000E+00	NOT IDENT.
CO-60	2.796E-02	4.671E-02	8.616E-02	0.000E+00	NOT IDENT.
ZN-65	3.108E-02	1.329E-01	1.977E-01	0.000E+00	NOT IDENT.
GE-68	-7.864E-01	1.730E+00	2.733E+00	0.000E+00	NOT IDENT.
AS-73	1.385E-03	2.116E-01	3.794E-01	0.000E+00	NOT IDENT.
AS-74	-4.974E-02	1.089E-01	1.728E-01	0.000E+00	NOT IDENT.
SE-75	1.094E-02	4.487E-02	7.174E-02	0.000E+00	NOT IDENT.
BR-77	8.389E-01	9.230E+00	1.564E+01	0.000E+00	FAIL ABUN
SR-82	-1.152E-01	4.725E-01	7.924E-01	0.000E+00	NOT IDENT.
RB-83	-6.662E-03	8.282E-02	1.382E-01	0.000E+00	NOT IDENT.
RB-84	2.783E-02	8.909E-02	1.558E-01	0.000E+00	NOT IDENT.
KR-85	4.787E-01	9.742E+00	1.443E+01	0.000E+00	NOT IDENT.
SR-85	2.426E-03	4.936E-02	7.313E-02	0.000E+00	NOT IDENT.
RB-86	-2.686E-01	1.010E+00	1.630E+00	0.000E+00	NOT IDENT.
Y-88	3.952E-03	4.028E-02	6.833E-02	0.000E+00	NOT IDENT.
ZR-88	1.944E-02	3.710E-02	6.597E-02	0.000E+00	NOT IDENT.
Y-91	-4.791E-01	2.325E+01	3.823E+01	0.000E+00	NOT IDENT.
NB-94	-1.064E-04	4.235E-02	7.331E-02	0.000E+00	NOT IDENT.
NB-95	2.147E-02	6.536E-02	1.014E-01	0.000E+00	NOT IDENT.
NB-95M	-2.392E-03	1.433E-01	2.114E-01	0.000E+00	NOT IDENT.
ZR-95	2.471E-02	8.620E-02	1.523E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.841E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.882E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.956E+00	1.100E+01	1.865E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.832E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-9.344E-04	3.050E-02	5.123E-02	0.000E+00	NOT IDENT.
RH-102	1.813E-02	3.031E-02	5.413E-02	0.000E+00	FAIL ABUN
RU-103	-4.274E-02	4.792E-02	7.369E-02	0.000E+00	FAIL ABUN
RH-106	-1.717E-01	3.612E-01	5.644E-01	0.000E+00	FAIL ABUN
RU-106	-1.717E-01	3.608E-01	5.644E-01	0.000E+00	FAIL ABUN
AG-108M	5.604E-03	3.511E-02	6.071E-02	0.000E+00	NOT IDENT.
AG-110M	-1.329E-02	4.115E-02	6.531E-02	0.000E+00	NOT IDENT.
IN-111	7.433E-01	9.233E-01	1.453E+00	0.000E+00	NOT IDENT.
IN-113M	1.010E-02	5.496E-02	9.567E-02	0.000E+00	NOT IDENT.
SN-113	1.010E-02	5.496E-02	9.567E-02	0.000E+00	NOT IDENT.
IN-114M	1.130E-01	2.001E-01	3.134E-01	0.000E+00	NOT IDENT.
CD-115	-3.997E+00	8.923E+00	1.433E+01	0.000E+00	NOT IDENT.
SN-117M	-3.932E-02	4.993E-02	8.132E-02	0.000E+00	NOT IDENT.
SB-122	9.984E-01	1.882E+00	3.291E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.313E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.752E-02	2.695E-02	4.427E-02	0.000E+00	NOT IDENT.
I-124	-3.722E-01	7.529E-01	1.015E+00	0.000E+00	NOT IDENT.
SB-124	-3.289E-02	8.312E-02	1.344E-01	0.000E+00	FAIL ABUN
SB-125	6.639E-02	1.056E-01	1.888E-01	0.000E+00	FAIL ABUN
TE-125M	1.177E+00	8.470E+00	1.489E+01	0.000E+00	NOT IDENT.
I-126	7.821E-02	2.225E-01	3.784E-01	0.000E+00	NOT IDENT.
SB-126	1.505E-01	1.489E-01	2.584E-01	0.000E+00	FAIL ABUN
SB-127	-5.481E-01	1.563E+00	2.474E+00	0.000E+00	NOT IDENT.
XE-127	2.226E-02	4.740E-02	8.169E-02	0.000E+00	NOT IDENT.
I-131	1.127E-02	1.107E-01	1.929E-01	0.000E+00	NOT IDENT.
TE-132	-1.907E-01	5.809E-01	9.465E-01	0.000E+00	NOT IDENT.
BA-133	-3.621E-02	5.040E-02	7.065E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.677E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.669E-02	6.660E-02	1.044E-01	0.000E+00	NOT IDENT.
CS-135	1.694E-01	1.765E-01	2.804E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.435E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.403E-01	1.380E-01	2.546E-01	0.000E+00	FAIL ABUN
BA-137M	1.104E-02	4.538E-02	7.580E-02	0.000E+00	NOT IDENT.
CS-137	1.167E-02	4.797E-02	8.013E-02	0.000E+00	NOT IDENT.
CE-139	-2.589E-02	2.918E-02	4.709E-02	0.000E+00	NOT IDENT.
BA-140	2.143E-01	2.885E-01	5.029E-01	0.000E+00	NOT IDENT.
LA-140	-1.354E-01	1.077E-01	1.362E-01	0.000E+00	FAIL ABUN
CE-141	5.480E-04	6.173E-02	1.048E-01	0.000E+00	NOT IDENT.

CE-143	0.000E+00	1.196E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.661E-02	1.947E-01	3.308E-01	0.000E+00	NOT IDENT.
PM-144	1.079E-02	4.395E-02	7.767E-02	0.000E+00	NOT IDENT.
PR-144	7.310E-01	2.976E+00	5.260E+00	0.000E+00	NOT IDENT.
PM-146	1.531E-02	4.967E-02	8.654E-02	0.000E+00	NOT IDENT.
ND-147	-1.606E-01	5.859E-01	9.555E-01	0.000E+00	NOT IDENT.
PM-149	4.446E+01	6.466E+01	1.179E+02	0.000E+00	NOT IDENT.
EU-152	4.927E-02	9.687E-02	1.742E-01	0.000E+00	NOT IDENT.
GD-153	-8.344E-02	7.464E-02	1.084E-01	0.000E+00	FAIL ABUN
EU-154	-3.569E-02	1.469E-01	2.321E-01	0.000E+00	NOT IDENT.
EU-155	4.510E-02	9.486E-02	1.695E-01	0.000E+00	FAIL ABUN
TB-160	-3.295E-02	1.810E-01	3.014E-01	0.000E+00	FAIL ABUN
HO-166M	7.122E-02	7.517E-02	1.401E-01	0.000E+00	FAIL ABUN
TM-171	3.238E-01	1.549E+01	2.472E+01	0.000E+00	NOT IDENT.
LU-176	-1.462E-02	2.535E-02	4.268E-02	0.000E+00	FAIL ABUN
LU-177	1.629E+00	1.373E+00	1.796E+00	0.000E+00	FAIL ABUN
LU-177M	2.153E-01	1.975E-01	3.328E-01	0.000E+00	FAIL ABUN
HF-181	1.309E-02	4.605E-02	7.989E-02	0.000E+00	NOT IDENT.
W-181	3.998E-02	1.921E-01	3.098E-01	0.000E+00	NOT IDENT.
TA-182	9.442E-02	2.642E-01	4.511E-01	0.000E+00	NOT IDENT.
RE-183	1.104E-01	1.048E-01	1.882E-01	0.000E+00	FAIL ABUN
RE-184	-9.132E-02	2.377E-01	3.816E-01	0.000E+00	NOT IDENT.
OS-185	-1.477E-02	5.075E-02	8.099E-02	0.000E+00	NOT IDENT.
RE-188	1.342E-01	1.670E-01	2.967E-01	0.000E+00	NOT IDENT.
W-188	-1.434E+00	8.457E+00	1.295E+01	0.000E+00	FAIL ABUN
IR-192	-1.682E-02	3.449E-02	5.821E-02	0.000E+00	FAIL ABUN
AU-195	2.760E-04	1.895E-01	3.286E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.321E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-2.128E+00	5.365E+00	8.926E+00	0.000E+00	NOT IDENT.
TL-202	1.237E-02	6.823E-02	1.181E-01	0.000E+00	NOT IDENT.
HG-203	3.466E-02	4.105E-02	7.559E-02	0.000E+00	NOT IDENT.
BI-207	4.575E-02	7.368E-02	1.308E-01	0.000E+00	FAIL ABUN
TL-207	-4.084E-01	7.566E-01	1.098E+00	0.000E+00	FAIL ABUN
PO-209	-6.759E-01	9.711E+00	1.634E+01	0.000E+00	NOT IDENT.
PB-211	-6.986E-01	1.209E+00	1.585E+00	0.000E+00	NOT IDENT.
PO-215	-4.084E-01	7.566E-01	1.098E+00	0.000E+00	FAIL ABUN
RN-219	1.305E-01	4.474E-01	7.844E-01	0.000E+00	FAIL ABUN
RN-220	-1.572E+01	3.217E+01	5.131E+01	0.000E+00	NOT IDENT.
RA-223	-4.084E-01	7.566E-01	1.098E+00	0.000E+00	FAIL ABUN
AC-227	1.489E-01	3.866E-01	6.551E-01	0.000E+00	FAIL ABUN
TH-227	1.489E-01	3.868E-01	6.551E-01	0.000E+00	FAIL ABUN
TH-229	-2.670E-02	4.953E-01	8.321E-01	0.000E+00	FAIL ABUN
PA-231	-2.455E-01	1.502E+00	2.619E+00	0.000E+00	FAIL ABUN
TH-231	-4.084E-01	7.566E-01	1.098E+00	0.000E+00	FAIL ABUN
U-231	6.607E-01	7.636E-01	1.264E+00	0.000E+00	FAIL ABUN
PA-233	3.114E-02	6.871E-02	1.235E-01	0.000E+00	FAIL ABUN
PA-234	3.183E-01	3.936E-01	7.133E-01	0.000E+00	FAIL ABUN
PA-234M	-4.662E+00	5.656E+00	8.494E+00	0.000E+00	FAIL ABUN
U-235	6.723E-02	2.108E-01	3.630E-01	0.000E+00	FAIL ABUN
NP-236	-5.610E-02	7.729E-02	1.263E-01	0.000E+00	NOT IDENT.
NP-239	-7.543E-02	1.790E-01	3.051E-01	0.000E+00	FAIL ABUN
AM-241	-3.506E-02	6.386E-02	1.008E-01	0.000E+00	NOT IDENT.
CM-243	-4.998E-02	8.314E-02	1.414E-01	0.000E+00	FAIL ABUN
AM-246	-4.386E-02	1.880E-01	3.046E-01	0.000E+00	NOT IDENT.
CM-247	6.949E-03	3.974E-02	6.912E-02	0.000E+00	NOT IDENT.
CF-249	1.304E-03	4.505E-02	7.771E-02	0.000E+00	NOT IDENT.
CF-251	-1.088E-01	1.284E-01	2.067E-01	0.000E+00	NOT IDENT.

## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:43:29.00

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132015.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:41:54
Sample ID          : G244132015          Sample quantity  : 1.21520E+02 GRAM
Detector name      : GAM17              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:09.28 0.1%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID          : 940270              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	652	10.67*	7.783E-01	2.427E+01	2.427E+01	12.68
CD-109	88.03	240	3.72*	6.675E+00	2.986E+00	3.050E+00	24.69
SN-126	64.28	209	9.60	6.778E+00	9.928E-01	9.928E-01	53.18
	86.94	240	8.90	6.675E+00	1.248E+00	1.248E+00	47.39
	87.57	240	37.00*	6.675E+00	3.003E-01	3.003E-01	24.69
TL-208	277.35	-----	6.80	3.568E+00	-----	Line Not Found	-----
	510.84	93	21.60	2.057E+00	6.430E-01	6.430E-01	67.33
	583.14	289	84.20*	1.812E+00	5.860E-01	5.860E-01	19.35
	860.37	33	12.46	1.247E+00	6.538E-01	6.538E-01	74.39
BI-210	46.50	59	4.05*	6.312E+00	7.078E-01	7.087E-01	118.98
PB-210	46.50	59	4.05*	6.312E+00	7.078E-01	7.087E-01	118.98
PO-210	46.50	59	4.05*	6.312E+00	7.078E-01	7.087E-01	118.91
BI-211	72.87	-----	1.27	6.803E+00	-----	Line Not Found	-----
	351.07	445	12.94*	2.909E+00	3.652E+00	3.652E+00	16.85
BI-212	727.18	91	11.80*	1.465E+00	1.620E+00	1.620E+00	37.63
	785.46	31	1.97	1.359E+00	3.525E+00	3.525E+00	81.74
	1620.62	-----	2.75	7.161E-01	-----	Line Not Found	-----
PB-212	74.81	520	10.70	6.795E+00	2.211E+00	2.211E+00	19.91
	77.11	729	18.00	6.782E+00	1.845E+00	1.845E+00	14.79
	87.30	240	8.00	6.675E+00	1.389E+00	1.389E+00	26.64
	238.63	806	44.60*	4.025E+00	1.388E+00	1.388E+00	15.24
	300.09	67	3.41	3.342E+00	1.828E+00	1.828E+00	61.68
PO-212	74.81	520	10.70	6.795E+00	2.211E+00	2.211E+00	19.91
	77.11	729	18.00	6.782E+00	1.845E+00	1.845E+00	14.79
	87.30	240	8.00	6.675E+00	1.389E+00	1.389E+00	26.64
	115.19	-----	0.60	6.177E+00	-----	Line Not Found	-----
	238.63	806	44.60*	4.025E+00	1.388E+00	1.388E+00	15.24
	300.09	67	3.41	3.342E+00	1.828E+00	1.828E+00	61.68
BI-214	609.31	322	46.30*	1.737E+00	1.237E+00	1.237E+00	18.53
	1120.29	75	15.10	9.775E-01	1.570E+00	1.570E+00	38.83
	1764.49	-----	15.80	6.714E-01	-----	Line Not Found	-----
PB-214	74.81	520	6.21	6.795E+00	3.809E+00	3.809E+00	19.08

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	729	10.50	6.782E+00	3.162E+00	3.162E+00	16.63
	87.30	240	4.67	6.675E+00	2.379E+00	2.379E+00	25.86
	241.98	150	7.49	3.985E+00	1.555E+00	1.555E+00	36.79
	295.21	265	19.20	3.388E+00	1.260E+00	1.260E+00	24.75
	351.92	445	37.20*	2.909E+00	1.270E+00	1.270E+00	17.64
PO-214	74.81	520	6.21	6.795E+00	3.809E+00	3.809E+00	19.08
	77.11	729	10.50	6.782E+00	3.162E+00	3.162E+00	16.63
	87.30	240	4.67	6.675E+00	2.379E+00	2.379E+00	25.86
	241.98	150	7.49	3.985E+00	1.555E+00	1.555E+00	36.79
	295.21	265	19.20	3.388E+00	1.260E+00	1.260E+00	24.75
	351.92	445	37.20*	2.909E+00	1.270E+00	1.270E+00	17.64
PO-216	74.81	520	10.70	6.795E+00	2.211E+00	2.211E+00	19.91
	77.11	729	18.00	6.782E+00	1.845E+00	1.845E+00	14.79
	87.30	240	8.00	6.675E+00	1.389E+00	1.389E+00	26.64
	238.63	806	44.60*	4.025E+00	1.388E+00	1.388E+00	15.24
	300.09	67	3.41	3.342E+00	1.828E+00	1.828E+00	61.68
PO-218	74.81	520	6.21	6.795E+00	3.809E+00	3.809E+00	19.08
	77.11	729	10.50	6.782E+00	3.162E+00	3.162E+00	16.63
	87.30	240	4.67	6.675E+00	2.379E+00	2.379E+00	25.86
	241.98	150	7.49	3.985E+00	1.555E+00	1.555E+00	36.79
	295.21	265	19.20	3.388E+00	1.260E+00	1.260E+00	24.75
	351.92	445	37.20*	2.909E+00	1.270E+00	1.270E+00	17.64
RA-224	240.98	150	3.95*	3.985E+00	2.948E+00	2.948E+00	36.36
RA-226	609.31	322	46.30*	1.737E+00	1.237E+00	1.237E+00	18.53
	1120.29	75	15.10	9.775E-01	1.570E+00	1.570E+00	38.83
	1764.49	-----	15.80	6.714E-01	-----	Line Not Found	-----
AC-228	338.32	185	11.40	3.013E+00	1.667E+00	1.667E+00	48.99
	911.07	162	27.70*	1.182E+00	1.533E+00	1.533E+00	25.56
	969.11	76	16.60	1.116E+00	1.262E+00	1.262E+00	46.61
RA-228	338.32	185	11.40	3.013E+00	1.667E+00	1.667E+00	48.99
	911.07	162	27.70*	1.182E+00	1.533E+00	1.533E+00	25.56
	969.11	76	16.60	1.116E+00	1.262E+00	1.262E+00	46.61
TH-228	74.81	520	10.70	6.795E+00	2.211E+00	2.242E+00	17.62
	77.11	729	18.00	6.782E+00	1.845E+00	1.871E+00	14.79
	87.30	240	8.00	6.675E+00	1.389E+00	1.408E+00	24.69
	238.63	806	44.60*	4.025E+00	1.388E+00	1.407E+00	15.24
	300.09	67	3.41	3.342E+00	1.828E+00	1.854E+00	84.91
TH-230	609.31	322	46.30*	1.737E+00	1.237E+00	1.237E+00	18.53
	1120.29	75	15.10	9.775E-01	1.570E+00	1.570E+00	38.83
	1764.49	-----	15.80	6.714E-01	-----	Line Not Found	-----
TH-232	338.32	185	11.40	3.013E+00	1.667E+00	1.667E+00	27.77
	911.07	162	27.70*	1.182E+00	1.533E+00	1.533E+00	25.56
	969.11	76	16.60	1.116E+00	1.262E+00	1.262E+00	46.61
TH-234	63.29	209	3.80*	6.778E+00	2.508E+00	2.508E+00	54.05
	92.38	193	5.41	6.593E+00	1.671E+00	1.671E+00	43.21
U-234	609.31	322	46.30*	1.737E+00	1.237E+00	1.237E+00	18.53
	1120.29	75	15.10	9.775E-01	1.570E+00	1.570E+00	38.83
	1764.49	-----	15.80	6.714E-01	-----	Line Not Found	-----
NP-237	86.50	240	12.60*	6.675E+00	8.817E-01	8.817E-01	32.18

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	95.87	-----	2.60	6.543E+00	-----	Line Not Found	-----
U-238	63.29	209	3.80*	6.778E+00	2.508E+00	2.508E+00	54.05
	92.38	193	5.41	6.593E+00	1.671E+00	1.671E+00	40.18
AM-243	74.67	520	66.00*	6.795E+00	3.584E-01	3.584E-01	17.58
	86.72	240	0.34	6.675E+00	3.306E+01	3.306E+01	24.69
	117.66	-----	0.55	6.127E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.624E+00	-----	Line Not Found	-----
ANH-511	511.00	93	100.00*	2.057E+00	1.389E-01	1.389E-01	66.81

Flag: "\*" = Keyline

Total number of lines in spectrum 33  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 30 90.91%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.427E+01	2.427E+01	0.308E+01	12.68	
CD-109	464.00D	1.02	2.986E+00	3.050E+00	0.753E+00	24.69	
SN-126	1.00E+05Y	1.00	3.003E-01	3.003E-01	0.741E-01	24.69	
TL-208	1.41E+10Y	1.00	5.860E-01	5.860E-01	1.134E-01	19.35	
BI-210	22.26Y	1.00	7.078E-01	7.087E-01	8.432E-01	118.98	
PB-210	22.26Y	1.00	7.078E-01	7.087E-01	8.432E-01	118.98	
PO-210	22.26Y	1.00	7.078E-01	7.087E-01	8.427E-01	118.91	
BI-211	7.04E+08Y	1.00	3.652E+00	3.652E+00	0.615E+00	16.85	
BI-212	1.41E+10Y	1.00	1.620E+00	1.620E+00	0.610E+00	37.63	
PB-212	1.41E+10Y	1.00	1.388E+00	1.388E+00	0.211E+00	15.24	
PO-212	1.41E+10Y	1.00	1.388E+00	1.388E+00	0.211E+00	15.24	
BI-214	1600.00Y	1.00	1.237E+00	1.237E+00	0.229E+00	18.53	
PB-214	1600.00Y	1.00	1.270E+00	1.270E+00	0.224E+00	17.64	
PO-214	1600.00Y	1.00	1.270E+00	1.270E+00	0.224E+00	17.64	
PO-216	1.41E+10Y	1.00	1.388E+00	1.388E+00	0.211E+00	15.24	
PO-218	1600.00Y	1.00	1.270E+00	1.270E+00	0.224E+00	17.64	
RA-224	1.41E+10Y	1.00	2.948E+00	2.948E+00	1.072E+00	36.36	
RA-226	1600.00Y	1.00	1.237E+00	1.237E+00	0.229E+00	18.53	
AC-228	1.41E+10Y	1.00	1.533E+00	1.533E+00	0.392E+00	25.56	
RA-228	1.41E+10Y	1.00	1.533E+00	1.533E+00	0.392E+00	25.56	
TH-228	1.91Y	1.01	1.388E+00	1.407E+00	0.214E+00	15.24	
TH-230	4.47E+09Y	1.00	1.237E+00	1.237E+00	0.229E+00	18.53	
TH-232	1.41E+10Y	1.00	1.533E+00	1.533E+00	0.392E+00	25.56	
TH-234	4.47E+09Y	1.00	2.508E+00	2.508E+00	1.356E+00	54.05	
U-234	4.47E+09Y	1.00	1.237E+00	1.237E+00	0.229E+00	18.53	
NP-237	2.14E+06Y	1.00	8.817E-01	8.817E-01	2.837E-01	32.18	
U-238	4.47E+09Y	1.00	2.508E+00	2.508E+00	1.356E+00	54.05	
AM-243	7380.00Y	1.00	3.584E-01	3.584E-01	0.630E-01	17.58	
ANH-511	1.00E+09Y	1.00	1.389E-01	1.389E-01	0.928E-01	66.81	

Total Activity : 6.379E+01 6.387E+01

Grand Total Activity : 6.379E+01 6.387E+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	84.12	84	314	1.02	167.90	165	7	1.17E-02	75.0	6.71E+00	T
0	185.95	136	193	1.19	371.62	367	9	1.89E-02	42.7	4.81E+00	T
0	208.95	60	188	0.61	417.65	414	9	8.39E-03	85.5	4.44E+00	T
0	270.26	63	112	1.22	540.32	536	8	8.70E-03	64.1	3.64E+00	T
0	328.32	84	120	1.28	656.50	651	12	1.17E-02	57.0	3.09E+00	T
0	409.46	33	55	1.27	818.84	814	9	4.62E-03	87.0	2.53E+00	T
0	463.66	27	90	1.14	927.30	920	10	3.75E-03	****	2.26E+00	T
0	767.66	41	42	2.69	1535.64	1531	11	5.67E-03	68.7	1.39E+00	T
0	793.94	37	16	1.22	1588.24	1584	9	5.15E-03	50.8	1.35E+00	
0	1502.53	9	6	1.22	3006.50	3001	8	1.25E-03	****	7.60E-01	
0	1762.88	46	3	1.32	3527.69	3522	11	6.33E-03	35.7	6.72E-01	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132015.CNF;1
* Acquisition date   : 19-JAN-2010 11:41:54   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 02:00:09.28           Half life ratio      : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library   : SOLID
* Sample ID          : G244132015             Analyst initials    : MXR1
* Batch Number       : 940270                 Sample Quantity     : 1.21520E+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	2.427E+01	3.076E+00	8.113E-01	7.203E-02	29.911
CD-109	3.050E+00	7.529E-01	9.037E-01	8.822E-02	3.375
SN-126	3.003E-01	7.413E-02	8.884E-02	8.670E-03	3.380
TL-208	5.860E-01	1.134E-01	6.681E-02	6.319E-03	8.771
BI-210	7.087E-01	8.432E-01	8.291E-01	8.994E-02	0.855
PB-210	7.087E-01	8.432E-01	8.291E-01	8.994E-02	0.855
PO-210	7.087E-01	8.427E-01	8.291E-01	8.376E-02	0.855
BI-211	3.652E+00	6.153E-01	3.247E-01	3.030E-02	11.249
BI-212	1.620E+00	6.097E-01	5.623E-01	5.642E-02	2.882
PB-212	1.388E+00	2.114E-01	1.122E-01	1.131E-02	12.365
PO-212	1.388E+00	2.114E-01	1.122E-01	1.131E-02	12.365
BI-214	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023
PB-214	1.270E+00	2.241E-01	1.132E-01	1.210E-02	11.221
PO-214	1.270E+00	2.241E-01	1.132E-01	1.210E-02	11.221
PO-216	1.388E+00	2.114E-01	1.122E-01	1.131E-02	12.365
PO-218	1.270E+00	2.241E-01	1.132E-01	1.210E-02	11.221
RA-224	2.948E+00	1.072E+00	1.547E+00	1.399E-01	1.905
RA-226	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.533E+00	3.918E-01	2.217E-01	2.514E-02	6.916
RA-228	1.533E+00	3.918E-01	2.217E-01	2.514E-02	6.916
TH-228	1.407E+00	2.144E-01	1.138E-01	1.147E-02	12.365
TH-230	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023
TH-232	1.533E+00	3.918E-01	2.217E-01	2.514E-02	6.916
TH-234	2.508E+00	1.356E+00	9.458E-01	1.765E-01	2.652
U-234	1.237E+00	2.292E-01	1.234E-01	1.255E-02	10.023
NP-237	8.817E-01	2.837E-01	2.401E-01	5.479E-02	3.673
U-238	2.508E+00	1.356E+00	9.458E-01	1.765E-01	2.652
AM-243	3.584E-01	6.302E-02	5.687E-02	5.552E-03	6.302
ANH-511	1.389E-01	9.280E-02	5.762E-02	5.146E-03	2.411

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.951E-02		3.474E-01	5.666E-01	5.391E-02	-0.034
NA-22	-2.041E-02		5.479E-02	8.315E-02	7.005E-03	-0.245
NA-24	-3.908E-02		1.324E-01	Half-Life too short		
AL-26	-2.471E-02		3.461E-02	4.367E-02	3.660E-03	-0.566
TI-44	3.404E-01	+	5.033E-02	5.841E-02	5.691E-03	5.828
SC-46	-8.783E-03		5.182E-02	8.418E-02	7.370E-03	-0.104
V-48	5.158E-02		8.922E-02	1.559E-01	1.359E-02	0.331
CR-51	2.119E-01		3.549E-01	6.216E-01	5.936E-02	0.341
MN-52	-1.165E-01		2.655E-01	4.097E-01	3.532E-02	-0.284
MN-54	7.824E-03		5.154E-02	8.691E-02	7.642E-03	0.090
CO-56	-2.557E-02		5.030E-02	7.887E-02	6.933E-03	-0.324
CO-57	-8.436E-03		2.447E-02	3.973E-02	4.655E-03	-0.212
CO-58	-3.846E-02		4.305E-02	6.344E-02	5.587E-03	-0.606
FE-59	-9.950E-02		1.204E-01	1.750E-01	1.606E-02	-0.569
CO-60	2.796E-02		4.766E-02	8.623E-02	7.349E-03	0.324
ZN-65	3.108E-02		1.356E-01	1.974E-01	1.662E-02	0.157
GE-68	-7.864E-01		1.766E+00	2.727E+00	2.328E-01	-0.288
AS-73	1.385E-03		2.159E-01	3.650E-01	3.652E-02	0.004
AS-74	-4.974E-02		1.111E-01	1.712E-01	1.508E-02	-0.291
SE-75	1.094E-02		4.579E-02	7.036E-02	6.464E-03	0.155
BR-77	8.389E-01		9.418E+00	1.547E+01	1.383E+00	0.054
SR-82	-1.152E-01		4.822E-01	7.876E-01	6.892E-02	-0.146
RB-83	-6.662E-03		8.451E-02	1.367E-01	1.222E-02	-0.049
RB-84	2.783E-02		9.091E-02	1.551E-01	1.359E-02	0.179
KR-85	4.787E-01		9.941E+00	1.427E+01	1.275E+00	0.034
SR-85	2.426E-03		5.037E-02	7.231E-02	6.460E-03	0.034
RB-86	-2.686E-01		1.031E+00	1.627E+00	1.389E-01	-0.165
Y-88	3.952E-03		4.110E-02	6.867E-02	5.726E-03	0.058
ZR-88	1.944E-02		3.786E-02	6.502E-02	5.478E-03	0.299
Y-91	-4.791E-01		2.372E+01	3.821E+01	3.153E+00	-0.013
NB-94	-1.064E-04		4.321E-02	7.278E-02	6.243E-03	-0.001
NB-95	2.147E-02		6.670E-02	1.008E-01	8.803E-03	0.213

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	-2.392E-03		1.462E-01	2.070E-01	2.114E-02	-0.012
ZR-95	2.471E-02		8.796E-02	1.513E-01	1.450E-02	0.163
NB-97	-1.117E-02		1.960E-02	Half-Life too short		
ZR-97	7.388E-01		4.021E-01	Half-Life too short		
MO-99	-1.956E+00		1.123E+01	1.853E+01	2.820E+00	-0.106
TC-99M	-2.639E+09		9.348E+08	Half-Life too short		
RH-101	-9.344E-04		3.113E-02	5.007E-02	4.353E-03	-0.019
RH-102	1.813E-02		3.093E-02	5.347E-02	4.736E-03	0.339
RU-103	-4.274E-02		4.890E-02	7.284E-02	1.045E-02	-0.587
RH-106	-1.717E-01		3.686E-01	5.595E-01	7.498E-02	-0.307
RU-106	-1.717E-01		3.681E-01	5.595E-01	4.861E-02	-0.307
AG-108M	5.604E-03		3.582E-02	5.991E-02	5.407E-03	0.094
AG-110M	-1.329E-02		4.199E-02	6.478E-02	5.646E-03	-0.205
IN-111	7.433E-01		9.422E-01	1.424E+00	1.291E-01	0.522
IN-113M	1.010E-02		5.608E-02	9.428E-02	8.192E-03	0.107
SN-113	1.010E-02		5.608E-02	9.428E-02	8.192E-03	0.107
IN-114M	1.130E-01		2.042E-01	3.061E-01	2.637E-02	0.369
CD-115	-3.997E+00		9.105E+00	1.417E+01	1.267E+00	-0.282
SN-117M	-3.932E-02		5.094E-02	7.925E-02	7.124E-03	-0.496
SB-122	9.984E-01		1.921E+00	3.258E+00	2.901E-01	0.306
I-123	-8.534E-01		6.699E-01	Half-Life too short		
TE-123M	-1.752E-02		2.750E-02	4.315E-02	3.884E-03	-0.406
I-124	-3.722E-01		7.683E-01	1.006E+00	8.831E-02	-0.370
SB-124	-3.289E-02		8.481E-02	1.349E-01	1.200E-02	-0.244
SB-125	6.639E-02		1.077E-01	1.862E-01	1.642E-02	0.357
TE-125M	1.177E+00		8.643E+00	1.445E+01	1.775E+00	0.081
I-126	7.821E-02		2.271E-01	3.754E-01	3.169E-02	0.208
SB-126	1.505E-01		1.519E-01	2.566E-01	2.215E-02	0.586
SB-127	-5.481E-01		1.595E+00	2.455E+00	2.696E-01	-0.223
XE-127	2.226E-02		4.837E-02	7.986E-02	6.981E-03	0.279
I-131	1.127E-02		1.130E-01	1.900E-01	1.753E-02	0.059
TE-132	-1.907E-01		5.927E-01	9.266E-01	1.455E-01	-0.206
BA-133	-3.621E-02		5.142E-02	6.955E-02	9.292E-03	-0.521
I-133	-4.308E-04		1.366E-03	Half-Life too short		
CS-134	2.669E-02		6.796E-02	1.038E-01	9.176E-03	0.257
CS-135	1.694E-01		1.801E-01	2.750E-01	2.870E-02	0.616
I-135	-2.382E+08		2.263E+08	Half-Life too short		
CS-136	1.403E-01		1.409E-01	2.541E-01	2.281E-02	0.552
BA-137M	1.104E-02		4.630E-02	7.520E-02	6.334E-03	0.147
CS-137	1.167E-02		4.895E-02	7.949E-02	6.710E-03	0.147
CE-139	-2.589E-02		2.978E-02	4.592E-02	3.829E-03	-0.564
BA-140	2.143E-01		2.944E-01	4.975E-01	1.653E-01	0.431
LA-140	-1.354E-01		1.099E-01	1.366E-01	1.179E-02	-0.992
CE-141	5.480E-04		6.299E-02	1.020E-01	1.041E-02	0.005
CE-143	2.759E-04		6.103E-05	Half-Life too short		
CE-144	-5.661E-02		1.986E-01	3.218E-01	5.458E-02	-0.176
PM-144	1.079E-02		4.485E-02	7.709E-02	6.599E-03	0.140
PR-144	7.310E-01		3.037E+00	5.221E+00	4.468E-01	0.140

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-146	1.531E-02		5.068E-02	8.544E-02	9.274E-03	0.179
ND-147	-1.606E-01		5.979E-01	9.453E-01	1.431E-01	-0.170
PM-149	4.446E+01		6.598E+01	1.157E+02	1.836E+01	0.384
EU-152	4.927E-02		9.885E-02	1.714E-01	1.621E-02	0.287
GD-153	-8.344E-02		7.616E-02	1.050E-01	1.074E-02	-0.794
EU-154	-3.569E-02		1.499E-01	2.321E-01	2.590E-02	-0.154
EU-155	4.510E-02		9.680E-02	1.644E-01	1.766E-02	0.274
TB-160	-3.295E-02		1.847E-01	3.001E-01	2.631E-02	-0.110
HO-166M	7.122E-02		7.671E-02	1.391E-01	1.197E-02	0.512
TM-171	3.238E-01		1.580E+01	2.384E+01	2.353E+00	0.014
LU-176	-1.462E-02		2.587E-02	4.193E-02	3.841E-03	-0.349
LU-177	1.629E+00	+	1.401E+00	1.757E+00	1.545E-01	0.927
LU-177M	2.153E-01		2.015E-01	3.282E-01	2.812E-02	0.656
HF-181	1.309E-02		4.699E-02	7.894E-02	7.008E-03	0.166
W-181	3.998E-02		1.960E-01	2.987E-01	2.959E-02	0.134
TA-182	9.442E-02		2.696E-01	4.510E-01	3.741E-02	0.209
RE-183	1.104E-01		1.070E-01	1.835E-01	1.589E-02	0.602
RE-184	-9.132E-02		2.426E-01	3.741E-01	3.406E-02	-0.244
OS-185	-1.477E-02		5.178E-02	8.032E-02	6.858E-03	-0.184
RE-188	1.342E-01		1.705E-01	2.891E-01	2.686E-02	0.464
W-188	-1.434E+00		8.630E+00	1.271E+01	1.168E+00	-0.113
IR-192	-1.682E-02		3.519E-02	5.722E-02	5.235E-03	-0.294
AU-195	2.760E-04		1.933E-01	3.185E-01	3.281E-02	0.001
TL-200	8.155E-05		1.184E-04	Half-Life	too short	
TL-201	-2.128E+00		5.474E+00	8.705E+00	7.269E-01	-0.245
TL-202	1.237E-02		6.962E-02	1.166E-01	1.016E-02	0.106
HG-203	3.466E-02		4.189E-02	7.418E-02	6.981E-03	0.467
BI-207	4.575E-02		7.518E-02	1.305E-01	1.119E-02	0.351
TL-207	-4.084E-01		7.720E-01	1.079E+00	1.936E-01	-0.378
PO-209	-6.759E-01		9.909E+00	1.627E+01	1.423E+00	-0.042
PB-211	-6.986E-01		1.233E+00	1.562E+00	9.787E-01	-0.447
PO-215	-4.084E-01		7.720E-01	1.079E+00	1.936E-01	-0.378
RN-219	1.305E-01		4.566E-01	7.733E-01	1.156E-01	0.169
RN-220	-1.572E+01		3.283E+01	5.078E+01	4.533E+00	-0.310
RA-223	-4.084E-01		7.720E-01	1.079E+00	1.936E-01	-0.378
AC-227	1.489E-01		3.945E-01	6.422E-01	1.004E-01	0.232
TH-227	1.489E-01		3.947E-01	6.422E-01	1.176E-01	0.232
TH-229	-2.670E-02		5.054E-01	8.130E-01	7.031E-02	-0.033
PA-231	-2.455E-01		1.533E+00	2.570E+00	3.987E-01	-0.096
TH-231	-4.084E-01		7.720E-01	1.079E+00	1.936E-01	-0.378
U-231	6.607E-01		7.792E-01	1.224E+00	1.242E-01	0.540
PA-233	3.114E-02		7.011E-02	1.214E-01	1.138E-02	0.257
PA-234	3.183E-01		4.016E-01	7.108E-01	1.338E-01	0.448
PA-234M	-4.662E+00		5.771E+00	8.470E+00	8.499E-01	-0.550
U-235	6.723E-02		2.151E-01	3.534E-01	6.478E-02	0.190
NP-236	-5.610E-02		7.887E-02	1.231E-01	1.088E-02	-0.456
NP-239	-7.543E-02		1.827E-01	2.963E-01	3.370E-02	-0.255
AM-241	-3.506E-02		6.516E-02	9.707E-02	1.031E-02	-0.361

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-4.998E-02		8.483E-02	1.371E-01	1.449E-02	-0.365
AM-246	-4.386E-02		1.919E-01	3.040E-01	2.593E-02	-0.144
CM-247	6.949E-03		4.055E-02	6.814E-02	5.789E-03	0.102
CF-249	1.304E-03		4.597E-02	7.657E-02	6.488E-03	0.017
CF-251	-1.088E-01		1.310E-01	2.017E-01	1.706E-02	-0.539

# 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]G244132015          *
* Acquisition date   : 19-JAN-2010 11:41:54 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 02:00:09.28 Half life ratio : 8.000     *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132015 Analyst initials: MXR1           *
* Batch Number       : 940270 Sample Quantity : 1.2152E+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	2.427E+01	3.015E+00	4.051E-01	1.538E+00
CD-109	3.050E+00	7.379E-01	4.671E-01	3.765E-01
SN-126	3.003E-01	7.265E-02	4.593E-02	3.706E-02
TL-208	5.860E-01	1.111E-01	3.375E-02	5.669E-02
BI-210	7.087E-01	8.263E-01	4.319E-01	4.216E-01
PB-210	7.087E-01	8.263E-01	4.319E-01	4.216E-01
PO-210	7.087E-01	8.259E-01	4.319E-01	4.214E-01
BI-211	3.652E+00	6.030E-01	1.650E-01	3.076E-01
BI-212	1.620E+00	5.975E-01	2.832E-01	3.048E-01
PB-212	1.388E+00	2.072E-01	5.731E-02	1.057E-01
PO-212	1.388E+00	2.072E-01	5.731E-02	1.057E-01
BI-214	1.237E+00	2.246E-01	6.231E-02	1.146E-01
PB-214	1.270E+00	2.196E-01	5.755E-02	1.120E-01
PO-214	1.270E+00	2.196E-01	5.755E-02	1.120E-01
PO-216	1.388E+00	2.072E-01	5.731E-02	1.057E-01
PO-218	1.270E+00	2.196E-01	5.755E-02	1.120E-01
RA-224	2.948E+00	1.050E+00	7.902E-01	5.359E-01
RA-226	1.237E+00	2.246E-01	6.231E-02	1.146E-01
AC-228	1.533E+00	3.840E-01	1.114E-01	1.959E-01
RA-228	1.533E+00	3.840E-01	1.114E-01	1.959E-01
TH-228	1.407E+00	2.101E-01	5.812E-02	1.072E-01
TH-230	1.237E+00	2.246E-01	6.231E-02	1.146E-01
TH-232	1.533E+00	3.840E-01	1.114E-01	1.959E-01
TH-234	2.508E+00	1.329E+00	4.909E-01	6.778E-01
U-234	1.237E+00	2.246E-01	6.231E-02	1.146E-01
NP-237	8.817E-01	2.780E-01	1.241E-01	1.419E-01
U-238	2.508E+00	1.329E+00	4.909E-01	6.778E-01
AM-243	3.584E-01	6.176E-02	2.946E-02	3.151E-02
ANH-511	1.389E-01	9.094E-02	2.915E-02	4.640E-02

### ---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )		
BE-7	-1.951E-02	3.405E-01	2.869E-01	1.737E-01	NOT IDENT.
NA-22	-2.041E-02	5.369E-02	4.159E-02	2.739E-02	NOT IDENT.
NA-24	-3.908E+04	2.596E+05	0.000E+00	1.324E+05	SHORT HLIF
AL-26	-2.471E-02	3.392E-02	2.175E-02	1.731E-02	NOT IDENT.
TI-44	3.404E-01	4.933E-02	3.023E-02	2.517E-02	FAIL ABUN
SC-46	-8.783E-03	5.079E-02	4.230E-02	2.591E-02	FAIL ABUN
V-48	5.158E-02	8.743E-02	7.821E-02	4.461E-02	NOT IDENT.
CR-51	2.119E-01	3.478E-01	3.163E-01	1.775E-01	NOT IDENT.
MN-52	-1.165E-01	2.602E-01	2.046E-01	1.327E-01	NOT IDENT.
MN-54	7.824E-03	5.051E-02	4.371E-02	2.577E-02	NOT IDENT.
CO-56	-2.557E-02	4.929E-02	3.966E-02	2.515E-02	NOT IDENT.
CO-57	-8.436E-03	2.398E-02	2.046E-02	1.224E-02	NOT IDENT.
CO-58	-3.846E-02	4.219E-02	3.192E-02	2.152E-02	NOT IDENT.
FE-59	-9.950E-02	1.180E-01	8.769E-02	6.018E-02	NOT IDENT.
CO-60	2.796E-02	4.671E-02	4.311E-02	2.383E-02	NOT IDENT.
ZN-65	3.108E-02	1.329E-01	9.891E-02	6.781E-02	NOT IDENT.
GE-68	-7.864E-01	1.730E+00	1.367E+00	8.828E-01	NOT IDENT.
AS-73	1.385E-03	2.116E-01	1.898E-01	1.080E-01	NOT IDENT.
AS-74	-4.974E-02	1.089E-01	8.644E-02	5.557E-02	NOT IDENT.
SE-75	1.094E-02	4.487E-02	3.589E-02	2.289E-02	NOT IDENT.
BR-77	8.389E-01	9.230E+00	7.825E+00	4.709E+00	FAIL ABUN
SR-82	-1.152E-01	4.725E-01	3.964E-01	2.411E-01	NOT IDENT.
RB-83	-6.662E-03	8.282E-02	6.916E-02	4.226E-02	NOT IDENT.
RB-84	2.783E-02	8.909E-02	7.792E-02	4.546E-02	NOT IDENT.
KR-85	4.787E-01	9.742E+00	7.221E+00	4.971E+00	NOT IDENT.
SR-85	2.426E-03	4.936E-02	3.659E-02	2.518E-02	NOT IDENT.
RB-86	-2.686E-01	1.010E+00	8.157E-01	5.153E-01	NOT IDENT.
Y-88	3.952E-03	4.028E-02	3.419E-02	2.055E-02	NOT IDENT.
ZR-88	1.944E-02	3.710E-02	3.300E-02	1.893E-02	NOT IDENT.
Y-91	-4.791E-01	2.325E+01	1.912E+01	1.186E+01	NOT IDENT.
NB-94	-1.064E-04	4.235E-02	3.668E-02	2.161E-02	NOT IDENT.
NB-95	2.147E-02	6.536E-02	5.074E-02	3.335E-02	NOT IDENT.
NB-95M	-2.392E-03	1.433E-01	1.058E-01	7.310E-02	NOT IDENT.
ZR-95	2.471E-02	8.620E-02	7.618E-02	4.398E-02	NOT IDENT.
NB-97	-1.117E+04	3.841E+04	0.000E+00	1.960E+04	SHORT HLIF
ZR-97	7.388E+05	7.882E+05	0.000E+00	4.021E+05	SHORT HLIF
MO-99	-1.956E+00	1.100E+01	9.331E+00	5.614E+00	NOT IDENT.
TC-99M	-2.639E+15	1.832E+15	0.000E+00	9.348E+14	SHORT HLIF
RH-101	-9.344E-04	3.050E-02	2.563E-02	1.556E-02	NOT IDENT.
RH-102	1.813E-02	3.031E-02	2.708E-02	1.546E-02	FAIL ABUN
RU-103	-4.274E-02	4.792E-02	3.687E-02	2.445E-02	FAIL ABUN
RH-106	-1.717E-01	3.612E-01	2.824E-01	1.843E-01	FAIL ABUN
RU-106	-1.717E-01	3.608E-01	2.824E-01	1.841E-01	FAIL ABUN
AG-108M	5.604E-03	3.511E-02	3.037E-02	1.791E-02	NOT IDENT.
AG-110M	-1.329E-02	4.115E-02	3.268E-02	2.100E-02	NOT IDENT.
IN-111	7.433E-01	9.233E-01	7.271E-01	4.711E-01	NOT IDENT.
IN-113M	1.010E-02	5.496E-02	4.786E-02	2.804E-02	NOT IDENT.
SN-113	1.010E-02	5.496E-02	4.786E-02	2.804E-02	NOT IDENT.
IN-114M	1.130E-01	2.001E-01	1.568E-01	1.021E-01	NOT IDENT.
CD-115	-3.997E+00	8.923E+00	7.168E+00	4.553E+00	NOT IDENT.
SN-117M	-3.932E-02	4.993E-02	4.068E-02	2.547E-02	NOT IDENT.
SB-122	9.984E-01	1.882E+00	1.646E+00	9.604E-01	NOT IDENT.
I-123	-8.534E+05	1.313E+06	0.000E+00	6.699E+05	SHORT HLIF
TE-123M	-1.752E-02	2.695E-02	2.215E-02	1.375E-02	NOT IDENT.
I-124	-3.722E-01	7.529E-01	5.078E-01	3.842E-01	NOT IDENT.
SB-124	-3.289E-02	8.312E-02	6.722E-02	4.241E-02	FAIL ABUN
SB-125	6.639E-02	1.056E-01	9.443E-02	5.386E-02	FAIL ABUN
TE-125M	1.177E+00	8.470E+00	7.451E+00	4.321E+00	NOT IDENT.
I-126	7.821E-02	2.225E-01	1.893E-01	1.135E-01	NOT IDENT.
SB-126	1.505E-01	1.489E-01	1.293E-01	7.595E-02	FAIL ABUN
SB-127	-5.481E-01	1.563E+00	1.238E+00	7.973E-01	NOT IDENT.
XE-127	2.226E-02	4.740E-02	4.087E-02	2.418E-02	NOT IDENT.
I-131	1.127E-02	1.107E-01	9.652E-02	5.648E-02	NOT IDENT.
TE-132	-1.907E-01	5.809E-01	4.735E-01	2.964E-01	NOT IDENT.
BA-133	-3.621E-02	5.040E-02	3.535E-02	2.571E-02	NOT IDENT.
I-133	-4.308E+02	2.677E+03	0.000E+00	1.366E+03	SHORT HLIF
CS-134	2.669E-02	6.660E-02	5.225E-02	3.398E-02	NOT IDENT.
CS-135	1.694E-01	1.765E-01	1.403E-01	9.007E-02	NOT IDENT.
I-135	-2.382E+14	4.435E+14	0.000E+00	2.263E+14	SHORT HLIF
CS-136	1.403E-01	1.380E-01	1.274E-01	7.043E-02	FAIL ABUN
BA-137M	1.104E-02	4.538E-02	3.792E-02	2.315E-02	NOT IDENT.
CS-137	1.167E-02	4.797E-02	4.009E-02	2.447E-02	NOT IDENT.
CE-139	-2.589E-02	2.918E-02	2.356E-02	1.489E-02	NOT IDENT.
BA-140	2.143E-01	2.885E-01	2.516E-01	1.472E-01	NOT IDENT.
LA-140	-1.354E-01	1.077E-01	6.812E-02	5.496E-02	FAIL ABUN
CE-141	5.480E-04	6.173E-02	5.243E-02	3.150E-02	NOT IDENT.



CE-143	2.759E+02	1.196E+02	0.000E+00	6.103E+01	SHORT HLIF
CE-144	-5.661E-02	1.947E-01	1.655E-01	9.931E-02	NOT IDENT.
PM-144	1.079E-02	4.395E-02	3.886E-02	2.242E-02	NOT IDENT.
PR-144	7.310E-01	2.976E+00	2.632E+00	1.519E+00	NOT IDENT.
PM-146	1.531E-02	4.967E-02	4.330E-02	2.534E-02	NOT IDENT.
ND-147	-1.606E-01	5.859E-01	4.781E-01	2.989E-01	NOT IDENT.
PM-149	4.446E+01	6.466E+01	5.899E+01	3.299E+01	NOT IDENT.
EU-152	4.927E-02	9.687E-02	8.715E-02	4.943E-02	NOT IDENT.
GD-153	-8.344E-02	7.464E-02	5.423E-02	3.808E-02	FAIL ABUN
EU-154	-3.569E-02	1.469E-01	1.161E-01	7.493E-02	NOT IDENT.
EU-155	4.510E-02	9.486E-02	8.479E-02	4.840E-02	FAIL ABUN
TB-160	-3.295E-02	1.810E-01	1.508E-01	9.235E-02	FAIL ABUN
HO-166M	7.122E-02	7.517E-02	7.011E-02	3.835E-02	FAIL ABUN
TM-171	3.238E-01	1.549E+01	1.237E+01	7.901E+00	NOT IDENT.
LU-176	-1.462E-02	2.535E-02	2.135E-02	1.293E-02	FAIL ABUN
LU-177	1.629E+00	1.373E+00	8.988E-01	7.005E-01	FAIL ABUN
LU-177M	2.153E-01	1.975E-01	1.665E-01	1.007E-01	FAIL ABUN
HF-181	1.309E-02	4.605E-02	3.997E-02	2.350E-02	NOT IDENT.
W-181	3.998E-02	1.921E-01	1.550E-01	9.801E-02	NOT IDENT.
TA-182	9.442E-02	2.642E-01	2.257E-01	1.348E-01	NOT IDENT.
RE-183	1.104E-01	1.048E-01	9.416E-02	5.349E-02	FAIL ABUN
RE-184	-9.132E-02	2.377E-01	1.909E-01	1.213E-01	NOT IDENT.
OS-185	-1.477E-02	5.075E-02	4.052E-02	2.589E-02	NOT IDENT.
RE-188	1.342E-01	1.670E-01	1.485E-01	8.523E-02	NOT IDENT.
W-188	-1.434E+00	8.457E+00	6.477E+00	4.315E+00	FAIL ABUN
IR-192	-1.682E-02	3.449E-02	2.912E-02	1.760E-02	FAIL ABUN
AU-195	2.760E-04	1.895E-01	1.644E-01	9.667E-02	FAIL ABUN
TL-200	8.155E+01	2.321E+02	0.000E+00	1.184E+02	SHORT HLIF
TL-201	-2.128E+00	5.365E+00	4.466E+00	2.737E+00	NOT IDENT.
TL-202	1.237E-02	6.823E-02	5.910E-02	3.481E-02	NOT IDENT.
HG-203	3.466E-02	4.105E-02	3.782E-02	2.094E-02	NOT IDENT.
BI-207	4.575E-02	7.368E-02	6.542E-02	3.759E-02	FAIL ABUN
TL-207	-4.084E-01	7.566E-01	5.492E-01	3.860E-01	FAIL ABUN
PO-209	-6.759E-01	9.711E+00	8.174E+00	4.954E+00	NOT IDENT.
PB-211	-6.986E-01	1.209E+00	7.927E-01	6.167E-01	NOT IDENT.
PO-215	-4.084E-01	7.566E-01	5.492E-01	3.860E-01	FAIL ABUN
RN-219	1.305E-01	4.474E-01	3.924E-01	2.283E-01	FAIL ABUN
RN-220	-1.572E+01	3.217E+01	2.567E+01	1.642E+01	NOT IDENT.
RA-223	-4.084E-01	7.566E-01	5.492E-01	3.860E-01	FAIL ABUN
AC-227	1.489E-01	3.866E-01	3.277E-01	1.972E-01	FAIL ABUN
TH-227	1.489E-01	3.868E-01	3.277E-01	1.974E-01	FAIL ABUN
TH-229	-2.670E-02	4.953E-01	4.163E-01	2.527E-01	FAIL ABUN
PA-231	-2.455E-01	1.502E+00	1.310E+00	7.665E-01	FAIL ABUN
TH-231	-4.084E-01	7.566E-01	5.492E-01	3.860E-01	FAIL ABUN
U-231	6.607E-01	7.636E-01	6.322E-01	3.896E-01	FAIL ABUN
PA-233	3.114E-02	6.871E-02	6.178E-02	3.506E-02	FAIL ABUN
PA-234	3.183E-01	3.936E-01	3.569E-01	2.008E-01	FAIL ABUN
PA-234M	-4.662E+00	5.656E+00	4.249E+00	2.886E+00	FAIL ABUN
U-235	6.723E-02	2.108E-01	1.816E-01	1.076E-01	FAIL ABUN
NP-236	-5.610E-02	7.729E-02	6.320E-02	3.943E-02	NOT IDENT.
NP-239	-7.543E-02	1.790E-01	1.526E-01	9.135E-02	FAIL ABUN
AM-241	-3.506E-02	6.386E-02	5.041E-02	3.258E-02	NOT IDENT.
CM-243	-4.998E-02	8.314E-02	7.072E-02	4.242E-02	FAIL ABUN
AM-246	-4.386E-02	1.880E-01	1.524E-01	9.594E-02	NOT IDENT.
CM-247	6.949E-03	3.974E-02	3.458E-02	2.027E-02	NOT IDENT.
CF-249	1.304E-03	4.505E-02	3.888E-02	2.298E-02	NOT IDENT.
CF-251	-1.088E-01	1.284E-01	1.034E-01	6.550E-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	217.2172
46.50	217.2172
46.50	217.2172
48.70	224.9292
49.72	236.9421
51.35	228.7665
52.39	203.1927
52.97	203.5223
53.15	203.6237
53.44	221.6193
54.07	242.4184
56.28	243.0167
56.28	243.0181
57.37	0.0000
57.53	245.5434
57.53	245.5449
57.60	245.5885
57.98	237.2387
57.98	237.2387
59.32	293.7031
59.32	293.7031
59.40	293.7637
59.54	293.8702
59.72	294.0062
60.01	295.5214
61.10	272.9486
61.14	272.9758
61.30	265.2839
63.00	287.3128
63.29	287.5193
63.29	287.5193
63.58	287.7257
64.28	288.2213
65.12	309.8180
65.20	309.8778
65.20	309.8778
66.05	309.1995
66.72	305.7426
66.83	305.8240
66.91	305.8824
67.20	298.1786
67.20	298.1786
67.75	294.6032
67.85	303.9246
68.90	312.6237
68.90	312.6237
69.30	321.7566
69.67	321.6823
70.82	349.9470
70.82	349.9470
70.83	349.9550
72.80	328.8077
72.87	328.8583
72.87	328.8583
74.67	315.4227
74.81	315.5195
74.81	315.5195
74.81	315.5195
74.81	315.5195
74.81	315.5195
74.81	315.5195
74.97	315.6324
75.28	315.8476
75.70	316.1416
77.11	317.1170
77.11	317.1170

77.11	317.1170
77.11	317.1170
77.11	317.1170
77.11	317.1170
77.11	317.1170
78.38	317.9883
79.62	318.8328
79.80	318.9547
79.80	318.9547
80.11	319.1645
80.18	319.2129
80.30	319.2935
80.30	319.2935
80.57	236.5472
81.00	236.7622
81.07	234.0750
81.07	234.0750
81.07	234.0750
81.07	234.0750
82.60	234.8242
83.37	226.9924
83.78	227.1862
83.78	227.1862
83.78	227.1862
83.78	227.1862
84.21	271.2198
84.90	197.5287
85.43	197.7418
86.29	198.0868
86.50	198.1703
86.54	198.1857
86.59	198.2065
86.72	198.2582
86.79	198.2845
86.94	227.2703
87.30	232.9488
87.30	232.9488
87.30	232.9488
87.30	232.9488
87.30	232.9488
87.30	232.9488
87.57	233.0738
87.88	233.2182
88.03	233.2879
88.36	233.4400
88.47	233.4916
89.95	234.1737
91.11	234.7036
92.29	235.2400
92.38	235.2812
92.38	235.2812
93.35	235.7196
94.00	236.0110
94.67	218.1313
94.67	218.1336
94.90	218.2289
94.90	218.2289
94.90	218.2289
94.90	218.2289
95.87	199.0071
95.87	199.0071
96.73	221.7885
97.43	250.1876
98.44	216.8586
98.44	216.8586
98.88	213.2766
99.55	207.8945
99.55	207.8945
99.86	211.7775
100.00	211.8313
100.10	206.2214
103.18	233.8817
103.76	220.8527
105.00	206.1394
105.31	206.2520
108.00	231.0957
109.28	223.9501

111.00	218.8491
111.00	218.8491
111.76	222.9753
112.95	235.9418
115.19	209.7585
116.30	214.0162
117.00	214.2624
117.00	214.2624
117.66	217.4056
121.11	208.8592
121.62	212.9372
121.78	212.9915
122.06	203.3112
122.32	203.3948
122.32	203.3948
122.32	203.3948
122.32	203.3948
123.07	203.6371
127.23	235.5124
129.76	178.0627
131.20	231.9886
133.02	204.7888
133.54	194.9991
135.34	211.4824
136.00	194.7144
136.25	194.7858
136.48	179.8627
140.51	221.1257
140.51	0.0000
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142.65	183.4941
143.76	179.7455
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144.24	172.7934
144.24	172.7934
144.24	172.7934
145.22	178.0929
145.44	184.2198
147.16	194.8105
152.43	172.7237
152.70	181.9890
153.22	189.2795
154.21	176.2150
154.21	176.2150
154.21	176.2150
154.21	176.2150
155.03	168.2041
156.02	184.8596
158.56	181.3639
159.00	0.0000
159.00	175.2831
160.31	181.7829
161.27	175.8054
162.32	147.0514
162.64	160.5801
163.35	151.3957
163.89	159.8026
165.85	185.1740
167.43	177.2079
171.28	166.5502
171.86	149.8981
172.10	155.1859
176.55	183.4554
176.60	183.4678
181.06	197.1841
184.41	158.0622
185.71	165.2346
186.00	165.2914
190.27	151.1149
192.34	147.1805
193.63	149.5511
197.04	145.8119
198.01	136.2411
198.60	143.9047
200.40	166.9649
201.83	156.3721
202.84	155.4607
205.31	168.4209

208.36	142.7330
208.81	132.4077
209.75	123.2323
209.75	123.2323
210.97	138.2021
215.65	148.8153
216.55	162.1989
218.09	145.8843
222.10	137.6193
223.80	148.9780
226.40	146.0331
227.00	156.1613
227.08	165.0983
227.20	166.2351
228.16	154.1129
228.18	154.1157
228.18	154.1157
231.56	0.0000
235.69	158.6594
236.00	158.7096
236.00	158.7096
238.63	196.3642
238.63	196.3642
238.63	196.3642
238.63	196.3642
239.00	287.8789
240.98	288.4392
241.98	180.0250
241.98	180.0250
241.98	180.0250
244.69	122.6041
245.39	110.7587
247.94	133.2365
248.90	118.5414
249.79	133.4722
252.40	104.0690
252.85	117.8427
252.85	117.8427
254.15	0.0000
256.20	103.2935
256.20	103.2935
260.50	118.6872
260.90	130.2585
262.80	84.2963
264.65	92.9985
268.24	93.9990
268.79	102.7531
269.46	102.8143
269.46	102.8143
269.46	102.8143
269.46	102.8143
271.23	80.2880
273.65	120.6931
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277.35	89.5006
277.60	85.1325
277.60	85.1325
278.00	97.4536
278.60	88.7202
279.20	107.2247
279.53	107.2545
280.46	144.2958
281.68	125.0734
283.67	104.9948
284.30	99.7561
285.00	98.0498
285.90	95.4739
286.10	101.6796
286.10	101.6796
287.40	110.6453
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290.67	116.4576
290.80	116.4696
291.72	105.1898
293.26	0.0000
293.70	119.6057
295.21	106.9263
295.21	106.9263

295.21	106.9263
295.96	106.9940
296.50	82.0652
297.23	82.1158
298.57	82.2084
299.80	98.7495
299.80	98.7495
300.09	98.7748
300.09	98.7748
300.09	98.7748
300.09	98.7748
300.12	98.7765
301.29	106.0372
302.84	101.8684
303.76	110.5615
303.91	110.5747
304.40	96.2536
304.40	96.2536
304.84	87.6652
306.84	107.0630
308.46	106.3019
311.98	98.4752
316.51	97.9277
318.01	98.0447
319.02	95.3982
319.41	92.7005
320.08	74.5627
323.87	99.2292
323.87	99.2292
323.87	99.2292
323.87	99.2292
325.23	102.2571
328.77	79.6509
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334.20	68.6453
334.20	68.6453
334.30	68.6510
338.28	78.3892
338.28	78.3892
338.28	78.3892
338.28	78.3892
338.32	78.3918
338.32	78.3918
338.32	78.3918
340.50	79.8148
340.57	79.8187
344.27	75.0390
345.85	77.1685
350.59	0.0000
351.07	72.6263
351.92	72.6715
351.92	72.6715
351.92	72.6715
355.39	0.0000
356.01	89.7100
364.48	78.9794
366.43	86.6220
367.43	77.2616
367.94	0.0000
369.80	72.6727
374.96	68.2020
383.85	73.3906
387.95	86.9788
388.63	91.8003
391.69	101.5747
391.69	101.5747
392.90	92.0684
398.62	90.4974
400.65	69.4116
401.10	74.2542
401.81	74.2894
402.60	74.3282
404.84	81.9792
410.95	76.0971
411.60	68.3611
413.65	51.3401
414.70	79.1379
415.30	85.6582

415.76	90.5521
417.63	0.0000
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423.70	73.4001
427.08	65.7119
427.89	68.6894
432.53	63.9705
433.93	63.0420
439.47	59.3069
439.56	59.3097
439.89	64.2661
443.98	64.4287
444.90	60.4983
445.03	60.5030
445.03	60.5030
445.03	60.5030
445.03	60.5030
453.90	65.8177
463.38	59.3734
468.07	60.3442
473.00	60.5200
475.06	47.4640
475.35	63.6335
476.78	65.7082
477.59	57.6480
477.96	53.6138
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484.57	54.8355
487.03	62.0313
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492.35	53.0402
497.08	75.6824
507.63	0.0000
510.53	0.0000
510.84	68.0217
511.00	68.0278
511.85	68.0600
511.85	68.0600
513.99	75.9859
513.99	75.9859
520.41	64.2365
520.65	64.2440
527.90	62.4170
528.96	0.0000
529.64	52.0630
529.87	0.0000
531.02	55.2272
537.32	47.0490
543.00	59.7745
546.56	0.0000
549.76	66.3011
552.65	51.6453
555.20	47.4925
563.23	57.2267
563.90	55.1262
568.70	58.4492
569.32	47.8372
569.50	45.7151
569.67	47.8455
573.80	62.8622
574.00	62.8676
574.64	56.4937
578.91	68.3652
579.30	0.0000
583.14	50.3119
585.48	39.4392
591.81	45.1531
592.07	48.3838
593.00	59.1626
595.88	63.5554
600.56	55.5265
602.52	0.0000
602.71	62.2547
602.71	62.2547
603.60	67.4711
604.41	62.3057
604.70	62.3145
609.31	47.7074

609.31	47.7074
609.31	47.7074
609.31	47.7074
610.33	47.7302
612.46	48.6486
614.37	48.6924
618.01	45.7286
621.84	49.0842
621.84	49.0842
631.29	41.6332
633.02	43.8599
633.10	43.8623
634.78	44.9939
635.90	42.8217
636.97	39.5475
645.85	47.4315
646.12	49.6431
656.30	46.5489
657.75	49.9068
657.90	0.0000
661.65	47.7727
661.65	47.7727
664.57	0.0000
666.33	54.5538
666.33	54.5538
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677.61	44.7571
685.20	65.1155
692.80	63.0786
695.00	64.9441
696.49	57.7641
696.49	57.7641
697.00	61.3893
697.49	60.4979
698.33	59.6175
698.50	60.5257
699.00	58.7301
702.63	58.8221
706.10	59.8173
706.58	0.0000
706.67	62.5515
709.31	55.3602
711.68	42.6982
713.82	48.1930
717.42	47.3561
720.50	24.3164
721.93	0.0000
722.20	44.1053
722.78	41.0735
722.78	41.0735
722.89	41.0757
722.95	41.0757
723.30	41.0823
724.18	38.0534
727.18	45.7214
733.00	48.4515
735.90	46.8052
739.58	51.4719
742.81	41.4163
744.21	50.6494
747.13	49.7878
751.79	57.2728
752.31	50.8173
753.82	52.6972
755.35	43.4784
756.15	44.4188
756.87	41.6547
763.93	52.6034
765.79	61.9320
766.42	58.8508
766.84	58.8601
776.49	52.2457
778.00	49.4766
778.57	45.6483
778.89	40.8554
783.80	43.6634
785.46	49.6215
792.07	37.5469



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796.30	45.4447
798.80	51.7626
801.93	43.3451
805.60	39.6313
810.29	39.7031
810.76	39.7103
815.85	31.2614
817.79	29.3887
818.51	30.3453
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826.30	40.8962
828.27	0.0000
831.60	50.5079
831.96	46.7019
834.83	53.4311
836.80	0.0000
846.75	46.9591
848.13	42.1889
856.28	0.0000
856.80	48.0957
860.37	41.4158
867.32	44.6590
867.82	40.7770
871.10	44.4783
873.19	44.5120
874.81	37.7603
875.33	0.0000
876.40	41.6573
879.36	43.6410
880.27	41.7150
880.51	39.7778
881.50	35.9097
883.24	42.7303
884.67	37.8936
889.25	42.8216
896.60	41.9575
898.02	43.9310
899.00	41.9932
903.28	40.3446
911.07	25.4985
911.07	25.4985
911.07	25.4985
919.63	27.5413
920.93	34.4420
925.00	28.5780
925.24	29.5657
926.50	24.6490
935.52	32.6375
937.48	35.6282
944.10	41.6596
946.00	31.7609
949.00	42.7218
962.29	47.6798
964.01	41.6056
966.15	53.2930
968.20	55.9945
969.11	37.0081
969.11	37.0081
969.11	37.0081
977.42	24.0709
980.50	39.1552
983.50	32.1586
989.30	36.2470
996.32	33.3021
1001.03	42.4491
1001.68	45.4911
1004.76	21.2502
1021.30	0.0000
1024.50	0.0000
1034.80	34.7338
1036.00	38.8350
1037.82	44.9926
1038.57	38.8665
1038.76	0.0000
1045.16	44.0708
1046.59	45.1150
1048.07	30.7749

1050.47	47.2241
1050.47	47.2241
1062.04	42.2412
1063.62	37.1074
1076.63	40.3597
1077.35	45.5447
1078.86	39.3508
1085.78	31.1323
1099.22	44.8015
1112.02	44.4507
1112.84	36.6150
1115.52	38.3890
1120.29	26.2109
1120.29	26.2109
1120.29	26.2109
1120.29	26.2109
1120.51	26.2122
1121.28	19.2267
1124.00	0.0000
1129.67	27.3343
1131.51	0.0000
1147.95	0.0000
1167.94	37.2029
1173.22	37.2593
1175.09	41.5384
1177.93	44.7706
1189.05	35.2865
1204.90	38.6631
1205.75	0.0000
1213.00	40.9038
1221.42	43.1543
1230.97	50.8394
1235.34	41.1524
1236.41	0.0000
1238.25	53.1081
1246.25	46.7058
1260.41	0.0000
1271.85	27.3401
1274.45	28.4527
1274.54	30.6428
1291.56	30.7795
1298.22	0.0000
1312.09	21.1816
1325.50	27.7234
1325.50	27.7234
1332.49	17.5891
1333.61	19.4465
1360.21	19.5773
1362.66	0.0000
1365.15	21.4680
1368.21	19.6157
1368.53	0.0000
1376.25	17.7831
1384.27	20.6322
1394.10	24.4417
1395.20	23.5087
1407.95	18.8647
1434.06	20.8828
1436.60	16.1464
1457.56	0.0000
1460.81	21.9705
1489.15	11.5391
1509.49	10.6267
1596.49	23.6406
1620.62	17.8235
1678.03	0.0000
1691.02	7.0353
1691.02	7.0353
1706.46	0.0000
1750.46	0.0000
1764.49	10.4937
1764.49	10.4937
1764.49	10.4937
1764.49	10.4937
1770.23	17.3638
1771.40	9.1948
1791.20	0.0000
1808.65	9.2626

1836.01

7.2430

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132015

Total Uranium Activity	7.4928E+00	ug/g
Total Uranium Counting Unc.	3.9536E+00	ug/g
Total Uranium Tpu	2.0171E-06	ug/g
Total Uranium Mda	1.4627E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270          SAMPLE ID   : G244132015
*  ANALYST       : MXR1            DETECTOR    : GAM17
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 11:41:54.38  SAMPLE ALQT: 121.520 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.409E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.421E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.054E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.957E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:44:22.23

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132016.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:42:23
Sample ID        : G244132016           Sample quantity  : 1.29130E+02 GRAM
Detector name    : GAM18                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.59  0.0%
Energy tolerance : 1.50000 keV          Analyst Initials : MXR1
Abundance limit  : 75.00000             Sensitivity       : 5.00000
Batch ID        : 940270                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	63.08*	15	483	0.94	125.28	123	8	2.02E-03	270.1	
2	2	75.06*	407	417	1.16	149.23	144	14	5.65E-02	9.9	1.28E+00
3	2	77.31*	643	327	1.02	153.74	144	14	8.93E-02	6.2	
4	0	87.47	164	691	1.13	174.05	169	9	2.28E-02	29.7	
5	0	90.17	106	384	1.18	179.45	177	6	1.47E-02	30.9	
6	0	93.25*	207	477	1.33	185.60	182	8	2.87E-02	20.7	
7	0	129.13	54	481	0.93	257.33	252	10	7.44E-03	77.7	
8	0	185.86*	222	387	1.39	370.77	365	10	3.08E-02	18.6	
9	0	209.48	122	373	1.36	417.98	413	10	1.70E-02	31.1	
10	2	238.79*	1567	244	1.16	476.57	469	19	2.18E-01	3.1	2.36E+00
11	2	241.86	329	332	1.54	482.73	469	19	4.57E-02	12.2	
12	0	270.15	118	254	1.49	539.27	534	11	1.63E-02	27.8	
13	0	295.28*	561	234	1.24	589.53	584	11	7.80E-02	7.0	
14	0	300.60	111	210	1.32	600.17	596	10	1.54E-02	26.2	
15	0	328.43	91	161	1.15	655.79	652	9	1.26E-02	27.4	
16	0	338.44*	352	321	1.42	675.81	668	16	4.88E-02	12.7	
17	0	351.91*	956	199	1.33	702.75	696	15	1.33E-01	4.6	
18	0	462.62	122	150	1.35	924.10	918	13	1.69E-02	22.6	
19	0	511.00*	184	224	1.60	1020.83	1013	17	2.56E-02	22.5	
20	0	583.17*	589	129	1.58	1165.14	1158	16	8.17E-02	6.1	
21	0	609.16*	777	130	1.73	1217.10	1209	15	1.08E-01	4.9	
22	2	661.24	49	74	1.99	1321.23	1315	29	6.79E-03	35.9	1.87E+00
23	2	665.51	62	62	2.23	1329.77	1315	29	8.56E-03	30.8	
24	0	727.08*	88	177	1.59	1452.89	1447	16	1.22E-02	36.3	
25	0	768.22	63	172	1.74	1535.14	1526	16	8.81E-03	47.9	
26	0	794.67	130	58	2.23	1588.03	1582	13	1.81E-02	15.0	
27	0	860.35	86	63	2.35	1719.37	1713	12	1.19E-02	21.4	
28	0	910.75*	436	78	1.75	1820.14	1812	18	6.06E-02	6.9	
29	0	969.26*	172	158	2.03	1937.14	1928	15	2.39E-02	18.4	
30	0	1119.83*	171	29	1.75	2238.22	2232	13	2.37E-02	10.4	
31	0	1239.68	44	159	0.91	2477.88	2465	23	6.18E-03	75.5	
32	0	1377.24	45	25	1.60	2752.98	2748	10	6.25E-03	25.6	
33	0	1460.16*	1394	60	2.05	2918.81	2908	22	1.94E-01	3.1	
34	0	1510.72	35	43	1.48	3019.91	3010	20	4.89E-03	49.5	
35	0	1589.77	59	36	4.67	3178.00	3166	21	8.16E-03	28.9	
36	0	1730.17	26	36	0.98	3458.78	3448	14	3.68E-03	51.3	
37	0	1763.86*	126	35	3.04	3526.16	3517	18	1.74E-02	14.8	
38	0	1846.97	33	13	0.78	3692.39	3683	17	4.62E-03	30.1	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132016.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 11:42:23
Sample ID        : G244132016             Sample quantity  : 129.13 GRAM
Sample type      : SOLID                   Sample geometry  :
Detector name    : GAMMA18                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.59   0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance : 1.50 keV                Half life ratio  : 8.00
Errors propagated: Yes                     Systematic Error : 0.00 %
Efficiency type  : Empirical                Efficiencies at  : Peak Energy
Abundance limit  : 75.00                   WTM error limit  : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.007E+01	1.954E+00	3.957E-01	3.003E-02	50.706
CD-109	+	88.03	*	2.023E+00	1.217E+00	1.003E+00	9.275E-02	2.017
SN-126	+	64.28		1.447E-01	7.818E-01	8.480E-01	1.253E-01	0.171
	+	86.94		8.282E-01	6.004E-01	5.255E-01	2.180E-01	1.576
	+	87.57	*	1.992E-01	1.198E-01	1.253E-01	1.154E-02	1.590
BA-137M	+	661.65	*	4.405E-02	3.180E-02	3.981E-02	3.034E-03	1.107
CS-137	+	661.65	*	4.656E-02	3.362E-02	4.208E-02	3.215E-03	1.107
TL-208		277.35		7.339E-01	3.101E-01	5.428E-01	5.700E-02	1.352
	+	510.84		5.760E-01	2.659E-01	1.551E-01	1.649E-02	3.714
	+	583.14	*	5.166E-01	7.499E-02	4.258E-02	3.338E-03	12.134
	+	860.37		6.885E-01	3.042E-01	3.491E-01	3.905E-02	1.972
BI-211		72.87		2.332E+00	3.090E+00	4.731E+00	3.906E-01	0.493
	+	351.07	*	3.941E+00	4.451E-01	2.392E-01	1.535E-02	16.476
PB-212	+	74.81		2.236E+00	5.243E-01	4.962E-01	6.220E-02	4.505
	+	77.11		1.973E+00	2.954E-01	2.776E-01	2.353E-02	7.106
	+	87.30		9.214E-01	5.619E-01	5.817E-01	7.900E-02	1.584
	+	238.63	*	1.504E+00	1.418E-01	7.299E-02	5.214E-03	20.611
	+	300.09		1.583E+00	8.396E-01	9.057E-01	7.437E-02	1.747
PO-212	+	74.81		2.236E+00	5.243E-01	4.962E-01	6.220E-02	4.505
	+	77.11		1.973E+00	2.954E-01	2.776E-01	2.353E-02	7.106
	+	87.30		9.214E-01	5.619E-01	5.817E-01	7.900E-02	1.584
	+	115.19		3.031E+00	3.038E+00	5.088E+00	3.205E-01	0.596
	+	238.63	*	1.504E+00	1.418E-01	7.299E-02	5.214E-03	20.611
	+	300.09		1.583E+00	8.396E-01	9.057E-01	7.437E-02	1.747
BI-214	+	609.31	*	1.280E+00	1.705E-01	8.434E-02	7.534E-03	15.178
	+	1120.29		1.408E+00	3.215E-01	3.313E-01	3.172E-02	4.250
	+	1764.49		1.364E+00	4.133E-01	2.330E-01	1.417E-02	5.851
PB-214	+	74.81		3.852E+00	8.763E-01	8.550E-01	9.545E-02	4.505
	+	77.11		3.382E+00	5.682E-01	4.759E-01	5.424E-02	7.106
	+	87.30		1.578E+00	9.573E-01	9.964E-01	1.195E-01	1.584
	+	241.98		1.894E+00	4.851E-01	4.387E-01	3.469E-02	4.316
	+	295.21		1.407E+00	2.300E-01	1.701E-01	1.443E-02	8.272
	+	351.92	*	1.371E+00	1.706E-01	8.335E-02	6.895E-03	16.446
PO-214	+	74.81		3.852E+00	8.763E-01	8.550E-01	9.545E-02	4.505



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		3.382E+00	5.682E-01	4.759E-01	5.424E-02	7.106
	+	87.30		1.578E+00	9.573E-01	9.964E-01	1.195E-01	1.584
	+	241.98		1.894E+00	4.851E-01	4.387E-01	3.469E-02	4.316
	+	295.21		1.407E+00	2.300E-01	1.701E-01	1.443E-02	8.272
	+	351.92	*	1.371E+00	1.706E-01	8.335E-02	6.895E-03	16.446
	+	74.81		2.236E+00	5.243E-01	4.962E-01	6.220E-02	4.505
	+	77.11		1.973E+00	2.954E-01	2.776E-01	2.353E-02	7.106
	+	87.30		9.214E-01	5.619E-01	5.817E-01	7.900E-02	1.584
	+	238.63	*	1.504E+00	1.418E-01	7.299E-02	5.214E-03	20.611
	+	300.09		1.583E+00	8.396E-01	9.057E-01	7.437E-02	1.747
PO-218	+	74.81		3.852E+00	8.763E-01	8.550E-01	9.545E-01	4.505
	+	77.11		3.382E+00	5.682E-01	4.759E-01	5.424E-02	7.106
	+	87.30		1.578E+00	9.573E-01	9.964E-01	1.195E-01	1.584
	+	241.98		1.894E+00	4.851E-01	4.387E-01	3.469E-02	4.316
RA-224	+	295.21		1.407E+00	2.300E-01	1.701E-01	1.443E-02	8.272
	+	351.92	*	1.371E+00	1.706E-01	8.335E-02	6.895E-03	16.446
	+	240.98	*	3.591E+00	8.976E-01	8.296E-01	4.621E-02	4.329
	+	609.31	*	1.280E+00	1.705E-01	8.434E-02	7.534E-03	15.178
RA-226	+	1120.29		1.408E+00	3.215E-01	3.313E-01	3.172E-02	4.250
	+	1764.49		1.364E+00	4.133E-01	2.330E-01	1.417E-02	5.851
	+	338.32		1.607E+00	7.721E-01	2.742E-01	1.118E-01	5.860
	+	911.07	*	1.647E+00	3.147E-01	1.472E-01	1.950E-02	11.192
AC-228	+	969.11		1.141E+00	5.013E-01	2.237E-01	5.357E-02	5.102
	+	338.32		1.607E+00	7.721E-01	2.742E-01	1.118E-01	5.860
	+	911.07	*	1.647E+00	3.147E-01	1.472E-01	1.950E-02	11.192
	+	969.11		1.141E+00	5.013E-01	2.237E-01	5.357E-02	5.102
RA-228	+	74.81		2.267E+00	4.883E-01	5.032E-01	4.240E-02	4.505
	+	77.11		2.001E+00	2.995E-01	2.815E-01	2.386E-02	7.106
	+	87.30		9.343E-01	5.620E-01	5.898E-01	5.421E-02	1.584
	+	238.63	*	1.525E+00	1.438E-01	7.401E-02	5.287E-03	20.611
TH-228	+	300.09		1.605E+00	1.266E+00	9.184E-01	5.413E-01	1.747
	+	609.31	*	1.280E+00	1.705E-01	8.433E-02	7.534E-03	15.178
	+	1120.29		1.408E+00	3.215E-01	3.313E-01	3.172E-02	4.250
	+	1764.49		1.364E+00	4.133E-01	2.330E-01	1.417E-02	5.851
TH-230	+	338.32		1.607E+00	4.192E-01	2.742E-01	1.586E-02	5.860
	+	911.07	*	1.647E+00	3.147E-01	1.472E-01	1.950E-02	11.192
	+	969.11		1.141E+00	5.013E-01	2.237E-01	5.357E-02	5.102
	+	63.29	*	3.656E-01	1.975E+00	2.110E+00	3.720E-01	0.173
TH-232	+	92.38		1.590E+00	7.188E-01	5.884E-01	1.061E-01	2.702
	+	609.31	*	1.280E+00	1.705E-01	8.433E-02	7.534E-03	15.178
	+	1120.29		1.408E+00	3.215E-01	3.313E-01	3.172E-02	4.250
	+	1764.49		1.364E+00	4.133E-01	2.330E-01	1.417E-02	5.851
TH-234	+	86.50	*	5.850E-01	3.720E-01	3.736E-01	8.430E-02	1.566
	+	95.87		2.437E-02	9.191E-01	1.339E+00	3.271E-01	0.018
	+	63.29	*	3.656E-01	1.975E+00	2.110E+00	3.720E-01	0.173
	+	92.38		1.590E+00	6.729E-01	5.884E-01	5.002E-02	2.702
U-234	+	74.67	*	3.624E-01	7.796E-02	8.077E-02	6.740E-03	4.487
	+	86.72		2.194E+01	1.320E+01	1.397E+01	1.277E+00	1.571
	+	117.66		-2.156E+00	3.317E+00	5.181E+00	3.187E-01	-0.416

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		142.18		-9.655E+00	1.531E+01	2.364E+01	1.302E+00	-0.408
ANH-511	+	511.00	*	1.244E-01	5.649E-02	3.351E-02	2.213E-03	3.713

## ---- 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	*	2.148E-01	2.356E-01	4.093E-01	2.966E-02	0.525
NA-22		1274.54	*	-1.876E-02	3.475E-02	5.448E-02	3.707E-03	-0.344
NA-24		1368.53	*	-2.240E-01	3.475E-02	Half-Life too short		
AL-26		1129.67		-5.385E-01	1.172E+00	1.831E+00	1.223E-01	-0.294
		1808.65	*	6.355E-03	2.256E-02	3.860E-02	2.253E-03	0.165
TI-44		67.85		1.058E-02	5.026E-02	7.559E-02	6.078E-03	0.140
	+	78.38	*	3.640E-01	5.451E-02	7.415E-02	6.340E-03	4.910
SC-46		889.25	*	-2.775E-02	3.060E-02	4.610E-02	5.142E-03	-0.602
	+	1120.51		2.388E-01	5.218E-02	9.242E-02	6.385E-03	2.584
V-48		944.10		-4.656E-02	6.896E-01	1.115E+00	1.180E-01	-0.042
		983.50	*	5.693E-03	4.754E-02	7.779E-02	7.694E-03	0.073
		1312.09		-5.702E-02	5.564E-02	8.119E-02	5.914E-03	-0.702
CR-51		320.08	*	-7.899E-02	2.747E-01	4.349E-01	2.800E-02	-0.182
MN-52		744.21		-1.986E-02	1.453E-01	2.388E-01	2.106E-02	-0.083
		848.13		6.377E+00	4.546E+00	8.135E+00	8.511E-01	0.784
		935.52		8.713E-02	1.997E-01	3.233E-01	3.467E-02	0.270
		1246.25		3.316E+00	5.205E+00	7.853E+00	5.050E-01	0.422
		1333.61		7.137E-01	3.046E+00	5.103E+00	3.855E-01	0.140
		1434.06	*	7.550E-02	1.830E-01	3.088E-01	2.276E-02	0.244
MN-54		834.83	*	2.125E-02	3.177E-02	5.428E-02	5.560E-03	0.391
CO-56		846.75	*	3.849E-02	2.895E-02	5.178E-02	5.405E-03	0.743
		977.42		8.231E-01	2.046E+00	3.290E+00	3.291E-01	0.250
		1037.82		-1.876E-01	2.189E-01	3.391E-01	3.142E-02	-0.553
		1175.09		4.765E-01	1.643E+00	2.779E+00	1.542E-01	0.171
	+	1238.25		1.018E-01	1.539E-01	1.274E-01	8.489E-03	0.799
		1360.21		3.917E-01	7.027E-01	1.216E+00	9.135E-02	0.322
		1771.40		1.845E-02	1.788E-01	2.558E-01	1.546E-02	0.072
CO-57		122.06	*	-8.837E-03	2.175E-02	3.426E-02	2.029E-03	-0.258
		136.48		1.122E-01	1.777E-01	2.905E-01	1.901E-02	0.386
CO-58		810.76	*	-3.135E-02	3.023E-02	4.568E-02	4.509E-03	-0.686
FE-59		142.65		-3.381E-01	2.349E+00	3.662E+00	2.015E-01	-0.092
		192.34		4.722E-01	7.289E-01	1.247E+00	1.446E-01	0.379
		1099.22	*	8.063E-03	6.833E-02	1.148E-01	9.447E-03	0.070
		1291.56		3.637E-02	9.223E-02	1.563E-01	1.314E-02	0.233
CO-60		1173.22		-6.472E-03	3.333E-02	5.435E-02	3.004E-03	-0.119
		1332.49	*	-1.683E-02	2.795E-02	4.265E-02	3.222E-03	-0.395
ZN-65		1115.52	*	4.977E-02	7.410E-02	1.131E-01	7.969E-03	0.440
GE-68		1077.35	*	2.457E-01	9.649E-01	1.639E+00	1.302E-01	0.150
AS-73		53.44	*	4.683E-01	9.965E-01	1.705E+00	1.352E-01	0.275
AS-74		595.88	*	-1.237E-02	7.105E-02	1.136E-01	8.165E-03	-0.109
		634.78		-1.265E-01	2.463E-01	3.798E-01	2.828E-02	-0.333
SE-75		66.05		-7.122E+00	5.599E+00	7.689E+00	7.615E-01	-0.926

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77		96.73		-9.533E-01	7.719E-01	1.032E+00	1.361E-01	-0.923
		121.11		4.487E-02	1.160E-01	1.892E-01	1.766E-02	0.237
		136.00		9.976E-03	3.365E-02	5.428E-02	3.091E-03	0.184
		198.60		7.637E-01	1.457E+00	2.449E+00	1.662E-01	0.312
		264.65	*	-3.246E-03	3.947E-02	5.620E-02	3.214E-03	-0.058
		279.53		1.111E-01	8.896E-02	1.527E-01	9.432E-03	0.728
		303.91		1.282E-01	1.785E+00	2.536E+00	2.413E-01	0.051
		400.65		-1.447E-02	1.934E-01	3.223E-01	2.936E-02	-0.045
	+	87.88		3.150E+02	1.895E+02	2.241E+02	2.071E+01	1.406
		200.40		8.498E+01	9.406E+01	1.622E+02	8.734E+00	0.524
	+	239.00		1.738E+02	1.441E+01	2.268E+01	1.262E+00	7.662
		249.79		-1.314E+01	3.584E+01	5.776E+01	3.238E+00	-0.228
		281.68		-1.106E+02	5.448E+01	7.910E+01	4.514E+00	-1.398
		297.23		2.322E+02	5.524E+01	7.609E+01	4.368E+00	3.052
		303.76		1.314E+01	1.103E+02	1.574E+02	9.053E+00	0.083
		439.47		-3.330E+01	7.816E+01	1.265E+02	7.713E+00	-0.263
		484.57		-2.352E+00	1.218E+02	2.005E+02	1.287E+01	-0.012
		520.65	*	4.934E+00	5.369E+00	9.317E+00	6.216E-01	0.530
		574.64		-6.250E+01	1.230E+02	1.871E+02	1.317E+01	-0.334
		578.91		1.923E+01	5.578E+01	8.057E+01	5.696E+00	0.239
SR-82		585.48		1.087E+03	1.619E+02	2.862E+02	2.036E+01	3.798
		755.35		6.130E+01	9.178E+01	1.587E+02	1.426E+01	0.386
		817.79		1.450E+01	6.998E+01	1.171E+02	1.167E+01	0.124
		698.33		-2.037E+01	2.593E+01	4.111E+01	3.347E+00	-0.496
RB-83		776.49	*	-2.235E-01	3.140E-01	4.674E-01	4.353E-02	-0.478
		1395.20		-6.795E+00	8.469E+00	1.254E+01	9.342E-01	-0.542
		520.41	*	4.653E-02	4.901E-02	8.518E-02	5.681E-03	0.546
		529.64		2.626E-02	7.625E-02	1.260E-01	8.482E-03	0.208
RB-84		552.65		-9.835E-02	1.538E-01	2.396E-01	1.651E-02	-0.410
		881.50	*	2.367E-02	5.249E-02	8.874E-02	9.781E-03	0.267
KR-85		513.99	*	1.932E+01	6.725E+00	1.135E+01	7.516E-01	1.703
SR-85		513.99	*	9.789E-02	3.407E-02	5.749E-02	3.808E-03	1.703
RB-86		1076.63	*	1.013E-01	5.776E-01	9.762E-01	7.771E-02	0.104
Y-88		898.02		-3.220E-03	3.163E-02	5.123E-02	5.807E-03	-0.063
		1836.01	*	8.577E-03	2.672E-02	4.208E-02	2.397E-03	0.204
ZR-88		392.90	*	-1.150E-02	2.280E-02	3.715E-02	2.136E-03	-0.310
Y-91		1204.90	*	-6.327E+00	1.364E+01	2.170E+01	1.283E+00	-0.292
NB-94		702.63	*	8.979E-03	2.720E-02	4.625E-02	3.794E-03	0.194
		871.10		2.942E-03	2.743E-02	4.527E-02	4.909E-03	0.065
NB-95		765.79	*	6.151E-02	4.098E-02	6.499E-02	5.945E-03	0.946
NB-95M		235.69	*	6.166E-02	1.087E-01	1.623E-01	1.191E-02	0.380
ZR-95		724.18		9.476E-02	8.899E-02	1.381E-01	1.280E-02	0.686
		756.15	*	1.236E-02	5.324E-02	8.967E-02	8.823E-03	0.138
NB-97		657.90	*	-4.826E-03	5.324E-02	Half-Life	too short	
		1024.50		-8.463E-01	5.324E-02	Half-Life	too short	
ZR-97		254.15		-4.538E-01	5.324E-02	Half-Life	too short	
		355.39		1.313E-01	5.324E-02	Half-Life	too short	
		507.63	*	1.135E+00	5.324E-02	Half-Life	too short	
		602.52		-6.560E-01	5.324E-02	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1021.30			2.495E-01	5.324E-02	Half-Life	too short	
	1147.95			-1.106E+00	5.324E-02	Half-Life	too short	
	1362.66			2.157E+00	5.324E-02	Half-Life	too short	
	1750.46			7.387E-01	5.324E-02	Half-Life	too short	
MO-99	140.51			-1.439E+01	1.815E+01	2.683E+01	7.215E+00	-0.536
	181.06			4.494E+00	1.118E+01	1.688E+01	2.866E+00	0.266
	366.43			-3.118E+01	4.600E+01	7.455E+01	4.307E+00	-0.418
	739.58	*		-2.069E-01	6.024E+00	9.985E+00	1.523E+00	-0.021
	778.00			-2.733E+01	2.098E+01	3.134E+01	2.926E+00	-0.872
TC-99M	140.51	*		-1.227E+09	2.098E+01	Half-Life	too short	
RH-101	127.23			9.771E-03	2.971E-02	4.310E-02	2.490E-03	0.227
	198.01	*		4.665E-03	2.674E-02	4.438E-02	2.385E-03	0.105
	325.23			3.079E-02	1.971E-01	2.800E-01	1.618E-02	0.110
RH-102	418.52			3.045E-02	2.201E-01	3.696E-01	2.196E-02	0.082
	475.06	*		-5.831E-03	2.150E-02	3.487E-02	2.214E-03	-0.167
	631.29			-9.057E-03	4.033E-02	6.379E-02	4.734E-03	-0.142
	697.49			-4.115E-02	5.962E-02	9.515E-02	7.735E-03	-0.432
+	766.84			1.713E-01	1.648E-01	1.719E-01	1.575E-02	0.996
	1046.59			3.352E-03	8.356E-02	1.402E-01	1.210E-02	0.024
	1112.84			1.194E-01	1.782E-01	2.735E-01	1.942E-02	0.437
RU-103	497.08	*		6.213E-03	2.845E-02	4.742E-02	6.158E-03	0.131
+	610.33			1.355E+01	2.551E+00	2.407E+00	3.859E-01	5.629
RH-106	511.85	+		6.201E-01	2.816E-01	3.594E-01	2.376E-02	1.725
	621.84	*		5.884E-02	2.436E-01	3.992E-01	5.022E-01	0.147
	1050.47			-8.482E-01	1.666E+00	2.669E+00	2.281E-01	-0.318
RU-106	511.85	+		6.201E-01	2.816E-01	3.594E-01	2.376E-02	1.725
	621.84	*		5.884E-02	2.435E-01	3.992E-01	2.938E-02	0.147
	1050.47			-8.482E-01	1.666E+00	2.669E+00	2.281E-01	-0.318
AG-108M	433.93	*		1.582E-02	2.514E-02	4.322E-02	2.824E-03	0.366
	614.37			-2.213E-04	3.271E-02	4.547E-02	3.504E-03	-0.005
	722.95			-3.403E-02	3.859E-02	5.063E-02	4.478E-03	-0.672
AG-110M	657.75	*		-4.713E-03	2.764E-02	3.936E-02	3.104E-03	-0.120
	677.61			-6.791E-02	2.211E-01	3.445E-01	2.795E-02	-0.197
	706.67			-4.118E-02	1.693E-01	2.782E-01	2.368E-02	-0.148
	763.93			1.367E-01	1.430E-01	2.214E-01	2.070E-02	0.617
	884.67			1.602E-02	3.793E-02	6.398E-02	7.224E-03	0.250
	937.48			-2.747E-02	9.281E-02	1.475E-01	1.615E-02	-0.186
	1384.27			-8.613E-04	1.375E-01	1.975E-01	1.531E-02	-0.004
IN-111	171.28			1.045E-01	6.149E-01	1.043E+00	5.489E-02	0.100
	245.39	*		8.692E-02	7.083E-01	1.030E+00	5.754E-02	0.084
IN-113M	391.69	*		-4.478E-02	3.365E-02	5.211E-02	3.197E-03	-0.859
SN-113	391.69	*		-4.478E-02	3.365E-02	5.211E-02	3.197E-03	-0.859
IN-114M	190.27	*		5.833E-02	1.630E-01	2.449E-01	1.307E-02	0.238
CD-115	260.90			2.173E+01	7.296E+01	1.211E+02	6.836E+00	0.179
	492.35			8.711E+00	1.847E+01	3.130E+01	2.026E+00	0.278
	527.90	*		-4.275E-01	5.510E+00	8.842E+00	5.943E-01	-0.048
SN-117M	156.02			-7.469E-01	1.706E+00	2.846E+00	1.520E-01	-0.262
	158.56	*		-1.042E-02	4.076E-02	6.839E-02	3.635E-03	-0.152
SB-122	563.90	*		3.171E-01	1.154E+00	1.911E+00	1.331E-01	0.166

## ---- 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		-5.173E+00	2.537E+01	4.186E+01	3.375E+00	-0.124
		159.00	*	-7.914E-01	2.537E+01	Half-Life	too short	
		528.96		4.245E+01	2.537E+01	Half-Life	too short	
TE-123M		159.00	*	-1.624E-02	2.230E-02	3.672E-02	1.981E-03	-0.442
I-124		602.71	*	-4.828E-01	5.350E-01	6.748E-01	4.879E-02	-0.716
		722.78		-2.979E+00	3.341E+00	4.379E+00	3.721E-01	-0.680
		1325.50		-7.393E+00	2.092E+01	3.295E+01	2.459E+00	-0.224
	+	1376.25		4.186E+01	2.164E+01	4.111E+01	3.078E+00	1.018
	+	1509.49		1.945E+01	1.931E+01	2.081E+01	1.491E+00	0.935
		1691.02		2.316E+00	2.333E+00	4.361E+00	2.813E-01	0.531
SB-124		602.71		-3.340E-02	3.702E-02	4.668E-02	3.376E-03	-0.716
		645.85		-1.212E-02	4.123E-01	6.609E-01	5.358E-02	-0.018
		709.31		1.594E-01	2.160E+00	3.619E+00	3.004E-01	0.044
		713.82		-1.112E+00	1.276E+00	1.995E+00	2.365E-01	-0.557
		722.78		-2.987E-01	3.351E-01	4.391E-01	3.815E-02	-0.680
	+	968.20		1.160E+01	4.430E+00	5.547E+00	5.641E-01	2.091
		1045.16		1.072E+00	1.773E+00	3.098E+00	2.683E-01	0.346
		1325.50		-7.919E-01	2.241E+00	3.530E+00	2.634E-01	-0.224
		1368.21		-1.744E+00	1.506E+00	2.006E+00	2.566E-01	-0.870
		1436.60		4.523E-01	3.198E+00	5.265E+00	3.876E-01	0.086
		1691.02	*	5.477E-02	5.521E-02	1.032E-01	7.117E-03	0.531
SB-125		427.89	*	1.615E-02	6.891E-02	1.162E-01	7.260E-03	0.139
	+	463.38		7.500E-01	3.436E-01	4.320E-01	3.097E-02	1.736
		600.56		1.794E-01	1.499E-01	2.470E-01	1.968E-02	0.726
		635.90		-2.395E-01	2.040E-01	2.962E-01	2.443E-02	-0.809
TE-125M		109.28	*	-1.891E+00	7.843E+00	1.254E+01	1.102E+00	-0.151
I-126		388.63		1.706E-01	1.463E-01	2.593E-01	1.490E-02	0.658
	+	666.33	*	2.648E-01	1.645E-01	2.320E-01	1.784E-02	1.141
		753.82		4.480E-01	1.023E+00	1.748E+00	1.567E-01	0.256
SB-126		223.80		-1.324E+00	3.066E+00	4.981E+00	2.738E-01	-0.266
		278.60		4.437E+00	1.894E+00	3.379E+00	1.926E-01	1.313
	+	296.50		1.315E+01	1.987E+00	2.959E+00	1.698E-01	4.446
		414.70		-3.914E-02	5.460E-02	8.744E-02	5.172E-03	-0.448
		415.30		-1.844E-01	4.468E+00	7.438E+00	4.402E-01	-0.025
		555.20		1.717E+00	2.888E+00	4.882E+00	3.373E-01	0.352
		573.80		-2.139E-01	7.648E-01	1.218E+00	8.572E-02	-0.176
		593.00		-1.263E-01	6.514E-01	1.040E+00	7.450E-02	-0.122
		656.30		4.310E-01	2.476E+00	3.652E+00	2.771E-01	0.118
	+	666.33		1.104E-01	6.858E-02	9.672E-02	7.435E-03	1.141
		675.00		-1.380E-01	1.415E+00	2.023E+00	1.580E-01	-0.068
		695.00		3.879E-03	5.552E-02	9.317E-02	7.541E-03	0.042
		697.00		-4.329E-02	1.967E-01	3.240E-01	2.632E-02	-0.134
		720.50	*	-1.427E-02	1.192E-01	1.690E-01	1.431E-02	-0.084
		856.80		3.213E-01	3.950E-01	6.008E-01	6.372E-02	0.535
		989.30		4.005E-01	8.648E-01	1.454E+00	1.423E-01	0.275
		1034.80		-1.654E+00	6.187E+00	9.723E+00	8.633E-01	-0.170
		1213.00		1.029E+00	3.298E+00	5.563E+00	3.345E-01	0.185
SB-127		61.10		-1.636E+01	5.101E+01	7.516E+01	7.611E+00	-0.218
		252.40		5.549E-01	2.707E+00	4.470E+00	1.852E+00	0.124

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		290.80		-5.687E+00	1.540E+01	2.127E+01	1.852E+00	-0.267
		411.60		6.850E+00	7.883E+00	1.363E+01	1.931E+00	0.502
		444.90		-2.591E+00	6.116E+00	9.500E+00	1.011E+00	-0.273
		473.00		-1.039E+00	1.022E+00	1.565E+00	1.744E-01	-0.664
		543.00		4.973E+00	1.054E+01	1.768E+01	2.320E+00	0.281
		603.60		-9.822E+00	9.103E+00	1.119E+01	1.262E+00	-0.878
		685.20	*	4.861E-01	8.730E-01	1.508E+00	1.591E-01	0.322
		698.50		-7.428E+00	9.783E+00	1.546E+01	2.370E+00	-0.480
		722.20		-1.711E+01	2.232E+01	2.961E+01	3.177E+00	-0.578
		783.80		3.382E+00	2.366E+00	4.199E+00	5.337E-01	0.805
XE-127		57.60		1.662E+00	6.350E+00	1.075E+01	8.284E-01	0.155
		145.22		5.786E-01	5.933E-01	9.666E-01	5.284E-02	0.599
		172.10		-5.529E-03	9.500E-02	1.598E-01	8.411E-03	-0.035
		202.84	*	-2.751E-02	3.752E-02	6.072E-02	3.278E-03	-0.453
		374.96		1.134E-01	1.453E-01	2.538E-01	1.464E-02	0.447
I-131		80.18		3.163E+00	3.736E+00	5.730E+00	4.990E-01	0.552
		284.30		-1.956E-01	1.088E+00	1.753E+00	1.115E-01	-0.112
		364.48	*	5.085E-03	7.627E-02	1.290E-01	8.313E-03	0.039
		636.97		-8.988E-01	1.073E+00	1.612E+00	1.290E-01	-0.558
		722.89		-5.219E+00	5.895E+00	7.732E+00	6.609E-01	-0.675
TE-132		49.72		3.297E+00	1.938E+01	3.292E+01	3.256E+00	0.100
		111.76		-9.633E+00	1.963E+01	3.098E+01	2.768E+00	-0.311
		116.30		-3.147E+00	1.880E+01	3.005E+01	2.622E+00	-0.105
		228.16	*	-4.260E-01	4.427E-01	6.949E-01	9.750E-02	-0.613
BA-133		53.15		1.734E+00	4.347E+00	7.421E+00	5.889E-01	0.234
		79.62		3.265E-02	1.197E+00	1.766E+00	2.690E-01	0.018
		81.00		-4.774E-02	9.321E-02	1.332E-01	2.122E-02	-0.358
		276.40		2.212E-01	3.105E-01	5.040E-01	6.510E-02	0.439
		302.84		9.949E-02	1.276E-01	1.898E-01	2.208E-02	0.524
		356.01	*	-1.951E-03	3.583E-02	4.959E-02	5.729E-03	-0.039
		383.85		-1.944E-01	2.398E-01	3.844E-01	4.169E-02	-0.506
I-133	+	510.53		5.130E-01	2.398E-01	Half-Life	too short	
		529.87	*	3.906E-05	2.398E-01	Half-Life	too short	
		706.58		-3.309E-02	2.398E-01	Half-Life	too short	
		856.28		1.324E-01	2.398E-01	Half-Life	too short	
		875.33		-2.639E-05	2.398E-01	Half-Life	too short	
		1236.41		4.015E-01	2.398E-01	Half-Life	too short	
		1298.22		-4.333E-02	2.398E-01	Half-Life	too short	
CS-134		475.35		-1.411E-01	1.409E+00	2.310E+00	1.468E-01	-0.061
		563.23		7.547E-02	2.685E-01	4.447E-01	3.142E-02	0.170
		569.32		2.881E-03	1.501E-01	2.441E-01	1.745E-02	0.012
		604.70		-2.949E-02	3.227E-02	4.065E-02	2.955E-03	-0.726
	+	795.84	*	1.602E-01	5.034E-02	7.643E-02	7.393E-03	2.096
		801.93		-2.719E-01	3.548E-01	4.961E-01	4.840E-02	-0.548
		1038.57		-1.072E+00	2.746E+00	4.447E+00	3.913E-01	-0.241
		1167.94		-6.526E-01	1.845E+00	2.971E+00	1.685E-01	-0.220
		1365.15		3.425E-01	9.396E-01	1.591E+00	1.265E-01	0.215
CS-135		268.24	*	1.061E-01	1.390E-01	2.084E-01	1.576E-02	0.509
I-135		288.45		-3.703E+08	1.390E-01	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		417.63		1.319E+08	1.390E-01	Half-Life too short		
		546.56		-8.212E+07	1.390E-01	Half-Life too short		
		836.80		2.067E+09	1.390E-01	Half-Life too short		
		1038.76		-4.910E+08	1.390E-01	Half-Life too short		
		1124.00		2.291E+09	1.390E-01	Half-Life too short		
		1131.51		-2.107E+08	1.390E-01	Half-Life too short		
		1260.41	*	-2.531E+08	1.390E-01	Half-Life too short		
		1457.56		4.568E+10	1.390E-01	Half-Life too short		
		1678.03		-1.275E+05	1.390E-01	Half-Life too short		
		1706.46		5.371E+08	1.390E-01	Half-Life too short		
		1791.20		-8.299E+07	1.390E-01	Half-Life too short		
CS-136		66.91		-3.306E-01	8.377E-01	1.209E+00	1.825E-01	-0.274
	+	86.29		2.450E+00	1.492E+00	1.758E+00	2.317E-01	1.394
		153.22		2.081E-01	5.002E-01	8.613E-01	5.927E-02	0.242
		163.89		7.156E-01	8.008E-01	1.395E+00	9.529E-02	0.513
		176.55		-1.074E-01	2.752E-01	4.560E-01	2.762E-02	-0.236
		273.65		-7.186E-01	4.008E-01	4.991E-01	3.251E-02	-1.440
		340.57		4.355E-01	1.124E-01	1.920E-01	1.181E-02	2.268
		818.51		-2.481E-02	5.275E-02	8.362E-02	8.349E-03	-0.297
		1048.07	*	8.416E-03	7.369E-02	1.243E-01	1.114E-02	0.068
		1235.34		5.959E-01	5.249E-01	7.920E-01	8.142E-02	0.752
CE-139		165.85	*	-1.979E-02	2.361E-02	3.860E-02	2.026E-03	-0.513
BA-140		162.64		4.742E-01	5.594E-01	9.741E-01	5.905E-02	0.487
		304.84		-1.158E-01	1.032E+00	1.445E+00	3.941E-01	-0.080
		423.70		2.551E-01	1.348E+00	2.264E+00	7.204E-01	0.113
		537.32	*	-1.260E-02	1.833E-01	2.978E-01	9.742E-02	-0.042
LA-140	+	328.77		4.858E-01	2.682E-01	3.905E-01	2.530E-02	1.244
		432.53		-3.512E-02	1.487E+00	2.469E+00	1.637E-01	-0.014
		487.03		1.502E-04	9.473E-02	1.560E-01	1.113E-02	0.001
		751.79		-2.782E-01	1.205E+00	1.967E+00	1.933E-01	-0.141
		815.85		6.245E-02	2.209E-01	3.716E-01	4.016E-02	0.168
		867.82		-5.763E-01	1.127E+00	1.623E+00	1.811E-01	-0.355
		919.63		5.132E-01	2.132E+00	3.185E+00	4.023E-01	0.161
		925.24		-6.570E-02	8.529E-01	1.380E+00	1.563E-01	-0.048
		1596.49	*	-4.810E-03	6.211E-02	8.641E-02	5.929E-03	-0.056
CE-141		145.44	*	5.237E-02	5.371E-02	8.747E-02	4.993E-03	0.599
CE-143		57.37		-1.520E-04	5.371E-02	Half-Life too short		
		231.56		1.001E-03	5.371E-02	Half-Life too short		
		293.26	*	3.836E-04	5.371E-02	Half-Life too short		
	+	350.59		1.768E-02	5.371E-02	Half-Life too short		
		490.36		5.359E-05	5.371E-02	Half-Life too short		
	+	664.57		1.138E-03	5.371E-02	Half-Life too short		
		721.93		-5.702E-04	5.371E-02	Half-Life too short		
CE-144		80.11		1.503E+00	1.887E+00	2.889E+00	2.501E-01	0.520
		133.54	*	-1.876E-01	1.997E-01	2.649E-01	3.746E-02	-0.708
PM-144		476.78		2.976E-02	5.029E-02	8.585E-02	6.370E-03	0.347
		618.01		-8.732E-03	2.441E-02	3.835E-02	2.919E-03	-0.228
		696.49	*	4.838E-03	2.684E-02	4.531E-02	3.679E-03	0.107
		778.57		-1.655E+00	1.846E+00	2.856E+00	2.669E-01	-0.579

## ---- 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		*	3.277E-01	1.818E+00	3.069E+00	2.490E-01	0.107
	1489.15			-3.823E+00	9.675E+00	1.489E+01	1.076E+00	-0.257
PM-146	453.90		*	3.451E-03	3.341E-02	5.566E-02	4.952E-03	0.062
	633.02			2.454E-01	9.815E-01	1.604E+00	5.953E-01	0.153
	735.90			-9.222E-03	1.126E-01	1.664E-01	4.764E-02	-0.055
	747.13			-2.561E-03	6.395E-02	1.059E-01	1.502E-02	-0.024
ND-147	91.11			3.963E-01	2.477E-01	4.117E-01	3.872E-02	0.963
	319.41			-1.640E+00	2.372E+00	3.664E+00	2.116E-01	-0.448
	439.89			-1.786E+00	4.133E+00	6.688E+00	4.080E-01	-0.267
	531.02		*	-2.080E-01	3.916E-01	6.151E-01	8.582E-02	-0.338
PM-149	285.90		*	2.936E+01	5.115E+01	8.525E+01	1.205E+01	0.344
EU-152	121.78			7.395E-03	6.252E-02	1.009E-01	7.772E-03	0.073
	244.69			1.425E-01	2.962E-01	4.398E-01	2.457E-02	0.324
	344.27		*	3.617E-03	8.879E-02	1.143E-01	7.461E-03	0.032
	443.98			-2.128E-01	7.383E-01	1.159E+00	7.103E-02	-0.184
	778.89			-8.253E-02	2.118E-01	3.409E-01	3.187E-02	-0.242
	867.32			-5.592E-01	7.541E-01	1.017E+00	1.097E-01	-0.550
	964.01			4.652E-01	2.977E-01	4.644E-01	4.757E-02	1.002
	1085.78			1.048E-01	2.999E-01	5.129E-01	3.974E-02	0.204
	1112.02			1.445E-01	2.488E-01	3.897E-01	2.774E-02	0.371
	1407.95			9.426E-02	1.600E-01	2.740E-01	2.035E-02	0.344
GD-153	69.67			-6.405E-01	1.640E+00	2.555E+00	2.073E-01	-0.251
	83.37			-3.915E+00	1.489E+01	2.131E+01	1.893E+00	-0.184
	97.43		*	-2.819E-02	7.682E-02	1.094E-01	8.550E-03	-0.258
	103.18			-1.436E-01	9.343E-02	1.408E-01	1.016E-02	-1.020
EU-154	123.07			-4.284E-02	4.777E-02	6.935E-02	6.559E-03	-0.618
	247.94			-2.130E-01	2.898E-01	4.407E-01	4.152E-02	-0.483
	591.81			-5.172E-02	4.813E-01	7.267E-01	7.730E-02	-0.071
	723.30			-1.063E-01	1.611E-01	2.165E-01	2.040E-02	-0.491
	756.87			-1.062E-01	5.972E-01	9.782E-01	1.199E-01	-0.109
	873.19			2.534E-01	2.379E-01	4.156E-01	5.788E-02	0.610
	996.32			-2.893E-01	2.950E-01	4.298E-01	7.860E-02	-0.673
	1004.76			-1.512E-01	1.589E-01	2.329E-01	2.864E-02	-0.649
	1274.45		*	-4.016E-02	9.623E-02	1.524E-01	1.522E-02	-0.264
EU-155	48.70			-9.437E-01	3.207E+00	5.354E+00	4.062E-01	-0.176
	60.01			-2.412E+00	5.657E+00	8.299E+00	6.333E-01	-0.291
	86.54		+	2.398E-01	1.443E-01	1.737E-01	1.600E-02	1.381
	105.31		*	1.021E-01	9.685E-02	1.630E-01	1.165E-02	0.627
TB-160	86.79		+	6.340E-01	3.814E-01	4.606E-01	4.214E-02	1.376
	197.04			-2.610E-01	4.471E-01	7.198E-01	3.866E-02	-0.363
	215.65			2.418E-01	5.820E-01	9.517E-01	5.195E-02	0.254
	298.57			8.017E-02	1.415E-01	1.532E-01	8.802E-03	0.523
	879.36		*	-1.013E-01	1.121E-01	1.697E-01	1.864E-02	-0.597
	962.29			6.967E-01	5.290E-01	8.149E-01	8.371E-02	0.855
	966.15			9.832E-01	2.625E-01	4.294E-01	4.382E-02	2.290
	1177.93			-6.896E-03	2.666E-01	4.402E-01	2.458E-02	-0.016
	1271.85			-1.384E-01	5.363E-01	8.613E-01	5.820E-02	-0.161
HO-166M	80.57			2.847E-02	2.518E-01	3.730E-01	3.240E-02	0.076
	184.41		+	1.172E-01	4.400E-02	5.427E-02	2.883E-03	2.159



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		280.46		-5.821E-02	7.147E-02	1.117E-01	6.372E-03	-0.521
		410.95		2.727E-01	1.952E-01	3.470E-01	2.043E-02	0.786
		711.68	*	-1.844E-02	4.794E-02	7.795E-02	6.497E-03	-0.237
		752.31		-2.614E-02	2.055E-01	3.380E-01	3.022E-02	-0.077
		810.29		-3.983E-02	4.506E-02	6.899E-02	6.792E-03	-0.577
TM-171		51.35		-3.454E+01	3.910E+01	6.347E+01	5.031E+00	-0.544
		52.39		1.665E+00	1.948E+01	3.290E+01	2.614E+00	0.051
		59.40		1.410E+00	3.000E+01	4.518E+01	3.430E+00	0.031
		66.72	*	-2.574E+01	3.268E+01	4.628E+01	3.701E+00	-0.556
LU-176	+	88.36		4.725E-01	2.842E-01	3.325E-01	3.053E-02	1.421
		201.83		-7.151E-03	2.351E-02	3.875E-02	2.090E-03	-0.185
		306.84	*	-8.835E-03	2.054E-02	2.973E-02	1.712E-03	-0.297
		401.10		-7.894E-01	5.124E+00	8.501E+00	4.941E-01	-0.093
LU-177		112.95		1.766E-01	1.242E+00	2.015E+00	1.299E-01	0.088
	+	208.36	*	1.897E+00	1.184E+00	1.472E+00	7.985E-02	1.289
LU-177M		52.97		8.101E-01	1.942E+00	3.319E+00	2.635E-01	0.244
		54.07		6.518E-01	1.010E+00	1.738E+00	1.374E-01	0.375
		61.30		-4.659E-01	1.603E+00	2.366E+00	1.828E-01	-0.197
		121.62		5.616E-02	3.199E-01	5.174E-01	3.069E-02	0.109
		147.16		-5.618E-01	5.712E-01	8.651E-01	4.707E-02	-0.649
		171.86		-2.708E-02	3.897E-01	6.551E-01	3.448E-02	-0.041
		218.09		-2.366E-01	6.643E-01	1.085E+00	5.934E-02	-0.218
	+	268.79		1.683E+00	9.397E-01	1.112E+00	6.308E-02	1.513
		319.02		-1.158E-01	1.949E-01	3.029E-01	1.749E-02	-0.382
		367.43		-1.686E-02	6.493E-01	1.092E+00	6.307E-02	-0.015
		413.65	*	-2.413E-01	1.422E-01	2.147E-01	1.268E-02	-1.124
HF-181		56.28		-9.160E-01	1.063E+00	1.719E+00	1.339E-01	-0.533
		57.53		-9.658E-02	5.446E-01	9.063E-01	6.989E-02	-0.107
		65.20		-1.224E+00	1.099E+00	1.531E+00	1.214E-01	-0.800
		133.02		-2.860E-02	6.167E-02	8.507E-02	4.812E-03	-0.336
		136.25		1.341E-01	3.872E-01	6.258E-01	3.504E-02	0.214
		345.85		9.135E-02	1.871E-01	2.311E-01	1.337E-02	0.395
		482.03	*	-1.356E-02	3.194E-02	5.123E-02	3.279E-03	-0.265
W-181		56.28		-3.624E-01	4.210E-01	6.812E-01	5.307E-02	-0.532
		57.53		-3.844E-02	2.159E-01	3.593E-01	2.771E-02	-0.107
		65.20	*	-4.815E-01	4.322E-01	6.020E-01	4.775E-02	-0.800
TA-182		67.75		-4.377E-02	1.239E-01	1.792E-01	1.440E-02	-0.244
		100.10		2.058E-01	1.503E-01	2.567E-01	1.930E-02	0.802
		152.43		5.389E-02	2.880E-01	4.588E-01	2.468E-02	0.117
		222.10		9.448E-02	2.755E-01	4.627E-01	2.540E-02	0.204
		1001.68		1.089E+00	1.601E+00	2.638E+00	2.518E-01	0.413
	+	1121.28		6.612E-01	1.445E-01	2.524E-01	1.739E-02	2.619
		1189.05		-3.450E-02	2.242E-01	3.662E-01	2.094E-02	-0.094
		1221.42	*	2.053E-02	1.331E-01	2.221E-01	1.359E-02	0.092
		1230.97		8.735E-03	3.972E-01	5.598E-01	3.491E-02	0.016
RE-183		57.98		1.308E-01	2.098E-01	3.594E-01	2.761E-02	0.364
		59.32		6.477E-03	1.224E-01	1.843E-01	1.400E-02	0.035
		67.20		3.686E-02	2.201E-01	3.265E-01	2.617E-02	0.113
		162.32	*	6.328E-02	8.601E-02	1.493E-01	7.880E-03	0.424

---- Non-Identified Nuclides ----

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RE-184	+	208.81		1.895E+00	1.183E+00	1.462E+00	7.933E-02	1.296
		291.72		-7.510E-01	8.427E-01	1.118E+00	6.405E-02	-0.672
		57.98		4.852E-01	7.780E-01	1.333E+00	1.024E-01	0.364
		59.32		2.400E-02	4.535E-01	6.831E-01	5.190E-02	0.035
		67.20		1.367E-01	8.162E-01	1.211E+00	9.703E-02	0.113
		161.27		4.810E-03	2.781E-01	4.710E-01	2.491E-02	0.010
		216.55		5.289E-02	2.043E-01	3.427E-01	1.872E-02	0.154
		252.85	*	-4.837E-02	1.796E-01	2.908E-01	1.633E-02	-0.166
		318.01		-2.226E-03	3.357E-01	5.408E-01	3.122E-02	-0.004
		792.07		1.648E+00	9.240E-01	1.502E+00	1.435E-01	1.097
		903.28		-4.375E-01	8.818E-01	1.158E+00	1.300E-01	-0.378
		920.93		9.226E-02	3.616E-01	5.740E-01	6.290E-02	0.161
	OS-185	59.72		-1.030E-01	3.328E-01	4.915E-01	3.738E-02	-0.210
		61.14		-5.575E-02	1.762E-01	2.597E-01	2.004E-02	-0.215
RE-188		69.30		-2.790E-02	2.909E-01	4.589E-01	3.718E-02	-0.061
		592.07		-2.643E-01	1.883E+00	2.932E+00	2.099E-01	-0.090
		646.12	*	-2.085E-03	3.470E-02	5.551E-02	4.174E-03	-0.038
		717.42		6.088E-01	6.759E-01	1.188E+00	1.000E-01	0.512
		874.81		1.571E-01	4.574E-01	7.675E-01	8.372E-02	0.205
		880.27		-4.905E-01	6.108E-01	9.319E-01	1.025E-01	-0.526
		155.03	*	1.294E-01	1.351E-01	2.366E-01	1.266E-02	0.547
		477.96		1.704E+00	2.285E+00	3.933E+00	2.506E-01	0.433
		633.10		5.103E-02	1.981E+00	3.194E+00	2.375E-01	0.016
	W-188	63.58	+	1.453E+01	7.847E+01	9.076E+01	7.131E+00	0.160
IR-192		227.08		-4.745E+00	1.010E+01	1.637E+01	9.021E-01	-0.290
		290.67	*	-1.918E+00	6.481E+00	9.001E+00	5.156E-01	-0.213
		295.96	+	1.062E+00	1.608E-01	2.446E-01	1.426E-02	4.341
		308.46		-1.181E-02	7.436E-02	1.191E-01	6.937E-03	-0.099
		316.51	*	5.034E-03	2.567E-02	4.185E-02	2.427E-03	0.120
AU-195		468.07		4.574E-02	5.252E-02	8.102E-02	5.774E-03	0.565
		604.41		-4.481E-01	4.320E-01	5.332E-01	6.479E-02	-0.840
		612.46		2.672E+00	7.701E-01	1.284E+00	1.126E-01	2.081
		65.12		-2.054E-01	2.013E-01	2.820E-01	2.236E-02	-0.728
		66.83		-4.660E-02	1.062E-01	1.531E-01	1.225E-02	-0.304
		75.70	+	1.168E+00	2.512E-01	4.127E-01	3.466E-02	2.830
		98.88	*	2.703E-01	1.943E-01	3.318E-01	2.539E-02	0.815
		129.76	+	2.460E+00	3.826E+00	4.213E+00	2.410E-01	0.584
TL-200		367.94	*	-2.112E-05	3.826E+00	Half-Life	too short	
		579.30		1.629E-03	3.826E+00	Half-Life	too short	
		828.27		-1.512E-03	3.826E+00	Half-Life	too short	
		1205.75		-1.677E-05	3.826E+00	Half-Life	too short	
TL-201		68.90		-8.167E-01	3.543E+00	5.835E+00	4.717E-01	-0.140
		70.82		-1.022E+00	2.182E+00	3.167E+00	2.586E-01	-0.323
		80.30		3.126E-01	3.603E+00	5.331E+00	4.622E-01	0.059
		135.34		-2.562E+00	1.678E+01	2.656E+01	1.491E+00	-0.096
TL-202		167.43	*	-1.101E+00	4.303E+00	7.195E+00	3.777E-01	-0.153
		68.90		-8.910E-02	3.866E-01	6.365E-01	5.146E-02	-0.140
		70.82		-1.112E-01	2.374E-01	3.445E-01	2.813E-02	-0.323
		80.30		3.402E-02	3.922E-01	5.802E-01	5.030E-02	0.059

---- 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	*	-2.102E-02	4.933E-02	7.986E-02	4.869E-03	-0.263	
		70.83		-5.077E-01	1.080E+00	1.565E+00	2.085E-01	-0.324	
		72.87		4.561E-01	6.060E-01	9.254E-01	1.200E-01	0.493	
		82.60		-3.114E-01	1.055E+00	1.528E+00	2.119E-01	-0.204	
BI-207		279.20	*	7.502E-02	3.274E-02	5.832E-02	3.537E-03	1.286	
	+	72.80		1.066E-01	1.794E-01	2.731E-01	2.254E-02	0.390	
		74.97		6.505E-01	1.399E-01	2.099E-01	1.755E-02	3.099	
		84.90		3.615E-01	1.881E-01	2.922E-01	2.630E-02	1.237	
		569.67		3.055E-03	2.339E-02	3.832E-02	2.685E-03	0.080	
TL-207		1063.62	*	-1.665E-02	3.921E-02	6.330E-02	5.225E-03	-0.263	
		1770.23		4.641E-02	3.767E-01	5.407E-01	3.271E-02	0.086	
		81.07		-1.106E-01	2.050E-01	2.933E-01	2.558E-02	-0.377	
		83.78		6.791E-02	1.268E-01	1.881E-01	1.677E-02	0.361	
		94.90		6.294E-01	2.245E-01	3.626E-01	2.951E-02	1.736	
		122.32		-6.736E-01	1.505E+00	2.366E+00	1.607E-01	-0.285	
		144.24		3.759E-01	6.062E-01	9.741E-01	6.797E-02	0.386	
		154.21		3.048E-01	3.200E-01	5.600E-01	3.726E-02	0.544	
		269.46		3.959E-01	2.212E-01	2.709E-01	1.610E-02	1.461	
	+	323.87	*	4.213E-01	5.694E-01	8.400E-01	1.387E-01	0.501	
		338.28		6.710E+00	1.847E+00	2.024E+00	2.130E-01	3.315	
		445.03		-5.479E-01	1.739E+00	2.720E+00	2.846E-01	-0.201	
PO-209		260.50		-4.790E-01	7.778E+00	1.269E+01	7.165E-01	-0.038	
	262.80		-1.286E+01	2.137E+01	3.392E+01	1.917E+00	-0.379		
	896.60	*	1.462E+00	5.606E+00	9.342E+00	1.054E+00	0.156		
	46.50	*	-1.735E+00	4.903E+00	8.185E+00	6.332E-01	-0.212		
PB-210	46.50	*	-1.735E+00	4.903E+00	8.185E+00	6.332E-01	-0.212		
PO-210	46.50	*	-1.735E+00	4.903E+00	8.185E+00	5.444E-01	-0.212		
PB-211	404.84	*	-9.098E-01	9.309E-01	1.154E+00	7.195E-01	-0.788		
BI-212		427.08		2.725E-01	1.551E+00	2.593E+00	1.603E+00	0.105	
	+	831.96		-2.487E-01	9.872E-01	1.575E+00	9.904E-01	-0.158	
		727.18	*	6.485E-01	4.746E-01	5.190E-01	5.169E-02	1.250	
		785.46		1.550E+00	1.373E+00	2.424E+00	2.291E-01	0.639	
		1620.62		1.426E-01	1.044E+00	1.757E+00	1.188E-01	0.081	
PO-215		81.07		-1.106E-01	2.050E-01	2.933E-01	2.558E-02	-0.377	
		83.78		6.791E-02	1.268E-01	1.881E-01	1.677E-02	0.361	
		94.90		6.294E-01	2.245E-01	3.626E-01	2.951E-02	1.736	
		122.32		-6.736E-01	1.505E+00	2.366E+00	1.607E-01	-0.285	
		144.24		3.759E-01	6.062E-01	9.741E-01	6.797E-02	0.386	
		154.21		3.048E-01	3.200E-01	5.600E-01	3.726E-02	0.544	
		269.46		3.959E-01	2.212E-01	2.709E-01	1.610E-02	1.461	
	+	323.87	*	4.213E-01	5.694E-01	8.400E-01	1.387E-01	0.501	
		338.28		6.710E+00	1.847E+00	2.024E+00	2.130E-01	3.315	
		445.03		-5.479E-01	1.739E+00	2.720E+00	2.846E-01	-0.201	
		271.23	+	5.079E-01	2.851E-01	3.600E-01	2.886E-02	1.411	
	RN-219		401.81	*	9.869E-02	3.108E-01	5.280E-01	7.189E-02	0.187
		549.76	*	-7.434E+00	2.030E+01	3.226E+01	2.217E+00	-0.230	
RA-223	81.07		-1.106E-01	2.050E-01	2.933E-01	2.558E-02	-0.377		
	83.78		6.791E-02	1.268E-01	1.881E-01	1.677E-02	0.361		
	94.90		6.294E-01	2.245E-01	3.626E-01	2.951E-02	1.736		

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32	-6.736E-01	1.505E+00	2.366E+00	1.607E-01	-0.285
		144.24	3.759E-01	6.062E-01	9.741E-01	6.797E-02	0.386
		154.21	3.048E-01	3.200E-01	5.600E-01	3.726E-02	0.544
	+	269.46	3.959E-01	2.212E-01	2.709E-01	1.610E-02	1.461
		323.87	* 4.213E-01	5.694E-01	8.400E-01	1.387E-01	0.501
	+	338.28	6.710E+00	1.847E+00	2.024E+00	2.130E-01	3.315
		445.03	-5.479E-01	1.739E+00	2.720E+00	2.846E-01	-0.201
		79.80	8.299E-01	1.464E+00	2.205E+00	4.744E-01	0.376
		236.00	3.886E-01	2.201E-01	3.423E-01	3.531E-02	1.135
		256.20	* 4.681E-03	3.004E-01	4.926E-01	6.842E-02	0.010
		286.10	7.012E-01	1.220E+00	2.035E+00	2.344E-01	0.345
	+	299.80	2.933E+00	1.610E+00	2.083E+00	3.389E-01	1.408
TH-227		304.40	4.658E-01	1.560E+00	2.253E+00	3.894E-01	0.207
		334.20	1.055E+00	2.373E+00	2.908E+00	5.330E-01	0.363
		79.80	8.299E-01	1.464E+00	2.205E+00	4.804E-01	0.376
	+	94.00	6.144E+00	2.876E+00	3.434E+00	7.431E-01	1.789
		236.00	3.886E-01	2.192E-01	3.423E-01	3.046E-02	1.135
		256.20	* 4.681E-03	3.004E-01	4.926E-01	8.296E-02	0.010
		286.10	7.012E-01	1.405E+00	2.035E+00	2.039E+00	0.345
	+	299.80	2.933E+00	1.610E+00	2.083E+00	3.389E-01	1.408
		304.40	4.658E-01	1.560E+00	2.253E+00	3.894E-01	0.207
		334.20	1.055E+00	2.373E+00	2.908E+00	5.330E-01	0.363
		85.43	3.040E-01	1.916E-01	2.942E-01	2.659E-02	1.033
	+	88.47	2.720E-01	1.636E-01	1.907E-01	1.747E-02	1.426
TH-229		100.00	2.230E-01	1.575E-01	2.694E-01	2.028E-02	0.828
		193.63	* -3.847E-01	3.942E-01	6.321E-01	3.384E-02	-0.609
	+	210.97	1.501E+00	9.369E-01	1.065E+00	5.788E-02	1.409
		283.67	* -5.814E-02	1.218E+00	1.976E+00	2.716E-01	-0.029
PA-231	+	301.29	1.173E+00	6.269E-01	8.457E-01	8.816E-02	1.387
TH-231		81.07	-1.106E-01	2.050E-01	2.933E-01	2.558E-02	-0.377
		83.78	6.791E-02	1.268E-01	1.881E-01	1.677E-02	0.361
		94.90	6.294E-01	2.245E-01	3.626E-01	2.951E-02	1.736
U-231		122.32	-6.736E-01	1.505E+00	2.366E+00	1.607E-01	-0.285
		144.24	3.759E-01	6.062E-01	9.741E-01	6.797E-02	0.386
		154.21	3.048E-01	3.200E-01	5.600E-01	3.726E-02	0.544
	+	269.46	3.959E-01	2.212E-01	2.709E-01	1.610E-02	1.461
		323.87	* 4.213E-01	5.694E-01	8.400E-01	1.387E-01	0.501
	+	338.28	6.710E+00	1.847E+00	2.024E+00	2.130E-01	3.315
		445.03	-5.479E-01	1.739E+00	2.720E+00	2.846E-01	-0.201
		84.21	4.836E+00	4.534E+00	6.861E+00	6.138E-01	0.705
	+	92.29	5.036E+00	2.131E+00	2.920E+00	2.486E-01	1.725
		95.87	* 2.292E-02	8.644E-01	1.259E+00	1.009E-01	0.018
		108.00	-5.480E-01	1.527E+00	2.433E+00	1.655E-01	-0.225
	+	75.28	1.898E+01	4.742E+00	6.203E+00	9.436E-01	3.060
PA-233	+	86.59	3.900E+00	2.547E+00	2.830E+00	7.638E-01	1.378
	+	300.12	8.178E-01	4.424E-01	5.847E-01	7.843E-02	1.399
		311.98	* 3.287E-03	5.015E-02	8.123E-02	4.976E-03	0.040
		340.50	2.410E+00	7.936E-01	1.009E+00	2.318E-01	2.388
		398.62	-1.054E-01	1.576E+00	2.628E+00	6.795E-01	-0.040

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		3.360E-01	1.258E+00	2.125E+00	4.382E-01	0.158
		63.00		4.261E-01	2.302E+00	2.754E+00	4.152E-01	0.155
	+	94.67		5.478E-01	2.370E-01	2.717E-01	3.287E-02	2.016
		98.44		6.743E-02	8.769E-02	1.333E-01	7.421E-02	0.506
		99.86		5.917E-01	4.003E-01	6.857E-01	5.173E-02	0.863
		111.00		-1.555E-01	1.589E-01	2.444E-01	2.622E-02	-0.636
		131.20		3.927E-02	9.942E-02	1.444E-01	8.218E-03	0.272
		152.70		9.447E-02	2.792E-01	4.470E-01	6.999E-02	0.211
	+	186.00		4.219E+00	2.028E+00	2.117E+00	6.450E-01	1.993
		226.40		3.624E-02	3.201E-01	5.319E-01	6.073E-02	0.068
		227.20		-8.415E-02	3.423E-01	5.599E-01	3.086E-02	-0.150
		248.90		-1.677E-01	6.190E-01	1.001E+00	2.147E-01	-0.167
		293.70		5.459E+00	1.181E+00	1.452E+00	2.331E-01	3.761
		369.80		-2.198E-01	6.209E-01	1.022E+00	2.128E-01	-0.215
		568.70		2.172E-01	7.510E-01	1.244E+00	8.706E-02	0.175
		569.50		2.260E-02	2.072E-01	3.391E-01	2.376E-02	0.067
		574.00		-5.434E-01	1.181E+00	1.859E+00	1.308E-01	-0.292
		699.00		-2.980E-01	5.721E-01	9.208E-01	1.738E-01	-0.324
		706.10		-7.609E-02	8.504E-01	1.410E+00	6.279E-01	-0.054
		733.00		1.090E-01	2.980E-01	4.421E-01	9.819E-02	0.247
		742.81		-5.530E-03	9.377E-01	1.557E+00	1.047E+00	-0.004
		796.30		2.140E+00	1.035E+00	1.470E+00	4.026E-01	1.456
		805.60		8.205E-01	8.044E-01	1.352E+00	4.192E-01	0.607
		819.60		8.316E-02	9.227E-01	1.529E+00	5.865E-01	0.054
		826.30		-6.060E-01	6.670E-01	9.214E-01	4.151E-01	-0.658
		831.60		-1.817E-01	5.039E-01	8.028E-01	2.435E-01	-0.226
		876.40		-2.786E-01	7.079E-01	1.023E+00	1.054E+00	-0.272
		880.51		-2.821E-02	2.151E-01	3.482E-01	3.831E-02	-0.081
		883.24		1.854E-01	2.512E-01	3.794E-01	2.564E-01	0.489
		899.00		-3.117E-01	6.544E-01	1.003E+00	4.447E-01	-0.311
		925.00		-6.166E-02	9.485E-01	1.537E+00	1.674E-01	-0.040
		926.50		-7.343E-02	1.418E-01	2.192E-01	5.728E-02	-0.335
		946.00	*	6.052E-02	2.420E-01	4.003E-01	7.896E-02	0.151
		949.00		7.320E-02	3.534E-01	5.832E-01	6.125E-02	0.126
		980.50		-1.448E-01	5.145E-01	8.110E-01	8.066E-02	-0.179
		1394.10		-5.555E-01	9.589E-01	1.341E+00	8.709E-01	-0.414
	PA-234M	766.42		1.274E+01	1.202E+01	1.788E+01	9.087E+00	0.713
		1001.03	*	2.793E+00	3.662E+00	6.064E+00	6.542E-01	0.461
	U-235	+	89.95	1.695E+00	1.171E+00	1.697E+00	5.250E-01	0.999
		+	93.35	1.911E+00	9.562E-01	1.122E+00	3.134E-01	1.704
			105.00	1.219E+00	9.991E-01	1.589E+00	4.677E-01	0.767
			143.76	* 7.422E-02	1.862E-01	2.962E-01	4.797E-02	0.251
			163.35	2.007E-01	3.770E-01	6.470E-01	1.153E-01	0.310
		+	185.71	1.563E-01	5.867E-02	7.857E-02	4.179E-03	1.989
			205.31	-3.235E-02	4.764E-01	6.953E-01	1.242E-01	-0.047
	NP-236	+	94.67	4.155E-01	1.759E-01	2.064E-01	1.686E-02	2.014
			98.44	5.090E-02	6.004E-02	1.008E-01	7.762E-03	0.505
			111.00	-1.176E-01	1.198E-01	1.849E-01	1.216E-02	-0.636
			160.31	* -6.492E-02	6.333E-02	1.030E-01	5.454E-03	-0.631

---- 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		2.169E-01	1.337E-01	2.301E-01	1.743E-02	0.943
		117.00	*	1.034E-02	1.644E-01	2.652E-01	1.642E-02	0.039
	+	209.75		1.512E+00	9.439E-01	1.154E+00	6.269E-02	1.310
		228.18		-1.779E-01	1.827E-01	2.889E-01	1.594E-02	-0.616
		277.60		3.690E-01	1.471E-01	2.639E-01	1.503E-02	1.398
AM-241		334.30		6.030E-01	1.341E+00	1.649E+00	9.535E-02	0.366
		59.54	*	6.368E-03	1.740E-01	2.617E-01	2.171E-02	0.024
CM-243		99.55		2.232E-01	1.376E-01	2.367E-01	1.794E-02	0.943
		103.76	*	-3.010E-03	8.429E-02	1.365E-01	9.768E-03	-0.022
		117.00		1.063E-02	1.691E-01	2.728E-01	1.689E-02	0.039
	+	209.75		1.490E+00	9.304E-01	1.138E+00	6.179E-02	1.310
		228.18		-1.798E-01	1.845E-01	2.919E-01	1.610E-02	-0.616
AM-246		277.60		3.719E-01	1.483E-01	2.661E-01	1.515E-02	1.398
		798.80		1.682E-02	1.162E-01	1.674E-01	1.618E-02	0.100
		1036.00		-6.410E-02	2.200E-01	3.598E-01	3.185E-02	-0.178
		1062.04		-6.326E-02	1.710E-01	2.774E-01	2.300E-02	-0.228
		1078.86	*	1.489E-02	1.114E-01	1.876E-01	1.484E-02	0.079
CM-247		278.00		1.345E+00	6.153E-01	1.091E+00	6.218E-02	1.232
		287.40		-1.539E-02	9.984E-01	1.621E+00	9.271E-02	-0.009
CF-249		402.60	*	1.120E-02	2.790E-02	4.764E-02	2.775E-03	0.235
		252.85		-1.823E-01	6.771E-01	1.096E+00	6.157E-02	-0.166
		333.44		1.874E-01	1.877E-01	2.149E-01	1.243E-02	0.872
CF-251		387.95	*	1.061E-02	3.121E-02	5.322E-02	3.059E-03	0.199
		176.60	*	-4.035E-02	1.007E-01	1.667E-01	8.804E-03	-0.242
		227.00		-1.472E-01	3.065E-01	4.963E-01	2.735E-02	-0.297
		285.00		-3.764E-02	1.402E+00	2.276E+00	1.301E-01	-0.017

# 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]G244132016      *
* Acquisition date   : 19-JAN-2010 11:42:23 Detector SN#                   *
* Detector ID        : GAM18 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.59 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244132016 Analyst initials: MXR1                  *
* Batch Number      : 940270 Sample Quantity : 1.2913E+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	2.007E+01	1.915E+00	3.959E-01	0.000E+00
CD-109	2.023E+00	1.193E+00	1.049E+00	0.000E+00
SN-126	1.992E-01	1.174E-01	1.310E-01	0.000E+00
BA-137M	4.405E-02	3.117E-02	4.033E-02	0.000E+00
CS-137	4.656E-02	3.295E-02	4.264E-02	0.000E+00
TL-208	5.166E-01	7.349E-02	4.323E-02	0.000E+00
BI-211	3.941E+00	4.362E-01	2.448E-01	0.000E+00
PB-212	1.504E+00	1.390E-01	7.514E-02	0.000E+00
PO-212	1.504E+00	1.390E-01	7.514E-02	0.000E+00
BI-214	1.280E+00	1.670E-01	8.557E-02	0.000E+00
PB-214	1.371E+00	1.672E-01	8.530E-02	0.000E+00
PO-214	1.371E+00	1.672E-01	8.530E-02	0.000E+00
PO-216	1.504E+00	1.390E-01	7.514E-02	0.000E+00
PO-218	1.371E+00	1.672E-01	8.530E-02	0.000E+00
RA-224	3.591E+00	8.796E-01	8.540E-01	0.000E+00
RA-226	1.280E+00	1.670E-01	8.557E-02	0.000E+00
AC-228	1.647E+00	3.084E-01	1.483E-01	0.000E+00
RA-228	1.647E+00	3.084E-01	1.483E-01	0.000E+00
TH-228	1.525E+00	1.409E-01	7.620E-02	0.000E+00
TH-230	1.280E+00	1.670E-01	8.556E-02	0.000E+00
TH-232	1.647E+00	3.084E-01	1.483E-01	0.000E+00
TH-234	3.656E-01	1.936E+00	2.217E+00	0.000E+00
U-234	1.280E+00	1.670E-01	8.556E-02	0.000E+00
NP-237	5.850E-01	3.646E-01	3.907E-01	0.000E+00
U-238	3.656E-01	1.936E+00	2.217E+00	0.000E+00
AM-243	3.624E-01	7.640E-02	8.463E-02	0.000E+00
ANH-511	1.244E-01	5.536E-02	3.410E-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	2.148E-01	2.309E-01	4.168E-01	0.000E+00	NOT IDENT.
NA-22	-1.876E-02	3.406E-02	5.462E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.897E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	6.355E-03	2.211E-02	3.848E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.342E-02	7.764E-02	0.000E+00	FAIL ABUN
SC-46	-2.775E-02	2.999E-02	4.649E-02	0.000E+00	FAIL ABUN
V-48	5.693E-03	4.658E-02	7.832E-02	0.000E+00	NOT IDENT.
CR-51	-7.899E-02	2.692E-01	4.457E-01	0.000E+00	NOT IDENT.
MN-52	7.550E-02	1.793E-01	3.090E-01	0.000E+00	NOT IDENT.
MN-54	2.125E-02	3.114E-02	5.479E-02	0.000E+00	NOT IDENT.
CO-56	3.849E-02	2.838E-02	5.226E-02	0.000E+00	FAIL ABUN
CO-57	-8.837E-03	2.131E-02	3.564E-02	0.000E+00	NOT IDENT.
CO-58	-3.135E-02	2.962E-02	4.613E-02	0.000E+00	NOT IDENT.
FE-59	8.063E-03	6.696E-02	1.153E-01	0.000E+00	NOT IDENT.
CO-60	-1.683E-02	2.739E-02	4.273E-02	0.000E+00	NOT IDENT.
ZN-65	4.977E-02	7.262E-02	1.137E-01	0.000E+00	NOT IDENT.
GE-68	2.457E-01	9.456E-01	1.648E+00	0.000E+00	NOT IDENT.
AS-73	4.683E-01	9.766E-01	1.795E+00	0.000E+00	NOT IDENT.
AS-74	-1.237E-02	6.963E-02	1.153E-01	0.000E+00	NOT IDENT.
SE-75	-3.246E-03	3.868E-02	5.777E-02	0.000E+00	NOT IDENT.
BR-77	4.934E+00	5.262E+00	9.477E+00	0.000E+00	FAIL ABUN
SR-82	-2.235E-01	3.077E-01	4.724E-01	0.000E+00	NOT IDENT.
RB-83	4.653E-02	4.803E-02	8.664E-02	0.000E+00	NOT IDENT.
RB-84	2.367E-02	5.144E-02	8.951E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	6.590E+00	1.154E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.339E-02	5.848E-02	0.000E+00	NOT IDENT.
RB-86	1.013E-01	5.661E-01	9.815E-01	0.000E+00	NOT IDENT.
Y-88	8.577E-03	2.618E-02	4.194E-02	0.000E+00	NOT IDENT.
ZR-88	-1.150E-02	2.235E-02	3.795E-02	0.000E+00	NOT IDENT.
Y-91	-6.327E+00	1.336E+01	2.178E+01	0.000E+00	NOT IDENT.
NB-94	8.979E-03	2.665E-02	4.682E-02	0.000E+00	NOT IDENT.
NB-95	6.151E-02	4.016E-02	6.570E-02	0.000E+00	NOT IDENT.
NB-95M	6.166E-02	1.065E-01	1.671E-01	0.000E+00	NOT IDENT.
ZR-95	1.236E-02	5.217E-02	9.066E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.490E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.263E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-2.069E-01	5.904E+00	1.010E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.515E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	4.665E-03	2.620E-02	4.582E-02	0.000E+00	NOT IDENT.
RH-102	-5.831E-03	2.107E-02	3.551E-02	0.000E+00	FAIL ABUN
RU-103	6.213E-03	2.788E-02	4.827E-02	0.000E+00	FAIL ABUN
RH-106	5.884E-02	2.387E-01	4.049E-01	0.000E+00	FAIL ABUN
RU-106	5.884E-02	2.386E-01	4.049E-01	0.000E+00	FAIL ABUN
AG-108M	1.582E-02	2.464E-02	4.408E-02	0.000E+00	NOT IDENT.
AG-110M	-4.713E-03	2.709E-02	3.988E-02	0.000E+00	NOT IDENT.
IN-111	8.692E-02	6.942E-01	1.060E+00	0.000E+00	NOT IDENT.
IN-113M	-4.478E-02	3.298E-02	5.324E-02	0.000E+00	NOT IDENT.
SN-113	-4.478E-02	3.298E-02	5.324E-02	0.000E+00	NOT IDENT.
IN-114M	5.833E-02	1.597E-01	2.530E-01	0.000E+00	NOT IDENT.
CD-115	-4.275E-01	5.399E+00	8.991E+00	0.000E+00	NOT IDENT.
SN-117M	-1.042E-02	3.994E-02	7.086E-02	0.000E+00	NOT IDENT.
SB-122	3.171E-01	1.131E+00	1.941E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.065E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.624E-02	2.186E-02	3.805E-02	0.000E+00	NOT IDENT.
I-124	-4.828E-01	5.243E-01	6.847E-01	0.000E+00	FAIL ABUN
SB-124	5.477E-02	5.411E-02	1.030E-01	0.000E+00	FAIL ABUN
SB-125	1.615E-02	6.753E-02	1.185E-01	0.000E+00	FAIL ABUN
TE-125M	-1.891E+00	7.686E+00	1.307E+01	0.000E+00	NOT IDENT.
I-126	0.000E+00	1.612E-01	2.351E-01	0.000E+00	FAIL ABUN
SB-126	-1.427E-02	1.168E-01	1.710E-01	0.000E+00	FAIL ABUN
SB-127	4.861E-01	8.556E-01	1.527E+00	0.000E+00	NOT IDENT.
XE-127	-2.751E-02	3.677E-02	6.267E-02	0.000E+00	NOT IDENT.
I-131	5.085E-03	7.474E-02	1.319E-01	0.000E+00	NOT IDENT.
TE-132	-4.260E-01	4.338E-01	7.160E-01	0.000E+00	NOT IDENT.
BA-133	-1.951E-03	3.511E-02	5.074E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.768E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.934E-02	7.722E-02	0.000E+00	FAIL ABUN
CS-135	1.061E-01	1.362E-01	2.142E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.400E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.416E-03	7.221E-02	1.250E-01	0.000E+00	FAIL ABUN
CE-139	-1.979E-02	2.314E-02	3.996E-02	0.000E+00	NOT IDENT.
BA-140	-1.260E-02	1.796E-01	3.028E-01	0.000E+00	NOT IDENT.
LA-140	-4.810E-03	6.087E-02	8.632E-02	0.000E+00	FAIL ABUN
CE-141	5.237E-02	5.263E-02	9.074E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.136E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.876E-01	1.957E-01	2.752E-01	0.000E+00	NOT IDENT.
PM-144	4.838E-03	2.630E-02	4.588E-02	0.000E+00	NOT IDENT.
PR-144	3.277E-01	1.781E+00	3.107E+00	0.000E+00	NOT IDENT.



PM-146	3.451E-03	3.274E-02	5.673E-02	0.000E+00	NOT IDENT.
ND-147	-2.080E-01	3.838E-01	6.255E-01	0.000E+00	FAIL ABUN
PM-149	2.936E+01	5.013E+01	8.753E+01	0.000E+00	NOT IDENT.
EU-152	3.617E-03	8.701E-02	1.171E-01	0.000E+00	NOT IDENT.
GD-153	-2.819E-02	7.529E-02	1.141E-01	0.000E+00	NOT IDENT.
EU-154	-4.016E-02	9.430E-02	1.528E-01	0.000E+00	NOT IDENT.
EU-155	1.021E-01	9.492E-02	1.699E-01	0.000E+00	FAIL ABUN
TB-160	-1.013E-01	1.099E-01	1.712E-01	0.000E+00	FAIL ABUN
HO-166M	-1.844E-02	4.698E-02	7.889E-02	0.000E+00	FAIL ABUN
TM-171	-2.574E+01	3.203E+01	4.858E+01	0.000E+00	NOT IDENT.
LU-176	-8.835E-03	2.013E-02	3.049E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.161E+00	1.519E+00	0.000E+00	FAIL ABUN
LU-177M	-2.413E-01	1.394E-01	2.192E-01	0.000E+00	FAIL ABUN
HF-181	-1.356E-02	3.130E-02	5.217E-02	0.000E+00	NOT IDENT.
W-181	-4.815E-01	4.236E-01	6.321E-01	0.000E+00	NOT IDENT.
TA-182	2.053E-02	1.304E-01	2.228E-01	0.000E+00	FAIL ABUN
RE-183	6.328E-02	8.429E-02	1.546E-01	0.000E+00	FAIL ABUN
RE-184	-4.837E-02	1.760E-01	2.991E-01	0.000E+00	NOT IDENT.
OS-185	-2.085E-03	3.401E-02	5.627E-02	0.000E+00	NOT IDENT.
RE-188	1.294E-01	1.324E-01	2.452E-01	0.000E+00	NOT IDENT.
W-188	-1.918E+00	6.351E+00	9.239E+00	0.000E+00	FAIL ABUN
IR-192	5.034E-03	2.516E-02	4.290E-02	0.000E+00	FAIL ABUN
AU-195	2.703E-01	1.904E-01	3.462E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.594E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.101E+00	4.217E+00	7.448E+00	0.000E+00	NOT IDENT.
TL-202	-2.102E-02	4.835E-02	8.144E-02	0.000E+00	NOT IDENT.
HG-203	0.000E+00	3.209E-02	5.990E-02	0.000E+00	NOT IDENT.
BI-207	-1.665E-02	3.843E-02	6.365E-02	0.000E+00	FAIL ABUN
TL-207	4.213E-01	5.580E-01	8.608E-01	0.000E+00	FAIL ABUN
PO-209	1.462E+00	5.494E+00	9.420E+00	0.000E+00	NOT IDENT.
BI-210	-1.735E+00	4.805E+00	8.637E+00	0.000E+00	NOT IDENT.
PB-210	-1.735E+00	4.805E+00	8.637E+00	0.000E+00	NOT IDENT.
PO-210	-1.735E+00	4.805E+00	8.637E+00	0.000E+00	NOT IDENT.
PB-211	-9.098E-01	9.123E-01	1.179E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.651E-01	5.251E-01	0.000E+00	FAIL ABUN
PO-215	4.213E-01	5.580E-01	8.608E-01	0.000E+00	FAIL ABUN
RN-219	9.869E-02	3.046E-01	5.393E-01	0.000E+00	FAIL ABUN
RN-220	-7.434E+00	1.989E+01	3.278E+01	0.000E+00	NOT IDENT.
RA-223	4.213E-01	5.580E-01	8.608E-01	0.000E+00	FAIL ABUN
AC-227	4.681E-03	2.943E-01	5.066E-01	0.000E+00	FAIL ABUN
TH-227	4.681E-03	2.943E-01	5.066E-01	0.000E+00	FAIL ABUN
TH-229	-3.847E-01	3.863E-01	6.528E-01	0.000E+00	FAIL ABUN
PA-231	-5.814E-02	1.194E+00	2.029E+00	0.000E+00	FAIL ABUN
TH-231	4.213E-01	5.580E-01	8.608E-01	0.000E+00	FAIL ABUN
U-231	2.292E-02	8.471E-01	1.315E+00	0.000E+00	FAIL ABUN
PA-233	3.287E-03	4.915E-02	8.329E-02	0.000E+00	FAIL ABUN
PA-234	6.052E-02	2.371E-01	4.033E-01	0.000E+00	FAIL ABUN
PA-234M	2.793E+00	3.589E+00	6.104E+00	0.000E+00	NOT IDENT.
U-235	7.422E-02	1.824E-01	3.073E-01	0.000E+00	FAIL ABUN
NP-236	-6.492E-02	6.206E-02	1.066E-01	0.000E+00	FAIL ABUN
NP-239	1.034E-02	1.611E-01	2.760E-01	0.000E+00	FAIL ABUN
AM-241	6.368E-03	1.705E-01	2.752E-01	0.000E+00	NOT IDENT.
CM-243	-3.010E-03	8.260E-02	1.423E-01	0.000E+00	FAIL ABUN
AM-246	1.489E-02	1.092E-01	1.886E-01	0.000E+00	NOT IDENT.
CM-247	1.120E-02	2.735E-02	4.865E-02	0.000E+00	NOT IDENT.
CF-249	1.061E-02	3.058E-02	5.438E-02	0.000E+00	NOT IDENT.
CF-251	-4.035E-02	9.865E-02	1.724E-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]G244132016.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:42:23
Sample ID         : G244132016          Sample quantity   : 1.29130E+02 GRAM
Detector name     : GAM18              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00      Elapsed real time: 0 02:00:01.59  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 940270             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	1394	10.67*	1.893E+00	2.007E+01	2.007E+01	9.74
CD-109	88.03	164	3.72*	6.464E+00	1.981E+00	2.023E+00	60.16
SN-126	64.28	15	9.60	3.045E+00	1.447E-01	1.447E-01	540.31
	86.94	164	8.90	6.464E+00	8.282E-01	8.282E-01	72.49
	87.57	164	37.00*	6.464E+00	1.992E-01	1.992E-01	60.16
BA-137M	661.65	49	89.98*	3.589E+00	4.401E-02	4.405E-02	72.20
CS-137	661.65	49	85.12*	3.589E+00	4.652E-02	4.656E-02	72.20
TL-208	277.35	-----	6.80	6.258E+00	-----	Line Not Found	-----
	510.84	184	21.60	4.309E+00	5.760E-01	5.760E-01	46.16
	583.14	589	84.20*	3.933E+00	5.166E-01	5.166E-01	14.52
	860.37	86	12.46	2.915E+00	6.885E-01	6.885E-01	44.18
BI-211	72.87	-----	1.27	4.622E+00	-----	Line Not Found	-----
	351.07	956	12.94*	5.451E+00	3.941E+00	3.941E+00	11.30
PB-212	74.81	407	10.70	4.945E+00	2.236E+00	2.236E+00	23.45
	77.11	643	18.00	5.261E+00	1.973E+00	1.973E+00	14.97
	87.30	164	8.00	6.464E+00	9.214E-01	9.214E-01	60.98
	238.63	1567	44.60*	6.791E+00	1.504E+00	1.504E+00	9.43
	300.09	111	3.41	5.979E+00	1.583E+00	1.583E+00	53.05
PO-212	74.81	407	10.70	4.945E+00	2.236E+00	2.236E+00	23.45
	77.11	643	18.00	5.261E+00	1.973E+00	1.973E+00	14.97
	87.30	164	8.00	6.464E+00	9.214E-01	9.214E-01	60.98
	115.19	-----	0.60	8.058E+00	-----	Line Not Found	-----
	238.63	1567	44.60*	6.791E+00	1.504E+00	1.504E+00	9.43
	300.09	111	3.41	5.979E+00	1.583E+00	1.583E+00	53.05
BI-214	609.31	777	46.30*	3.812E+00	1.280E+00	1.280E+00	13.32
	1120.29	171	15.10	2.335E+00	1.408E+00	1.408E+00	22.83
	1764.49	126	15.80	1.695E+00	1.364E+00	1.364E+00	30.31
PB-214	74.81	407	6.21	4.945E+00	3.852E+00	3.852E+00	22.75
	77.11	643	10.50	5.261E+00	3.382E+00	3.382E+00	16.80
	87.30	164	4.67	6.464E+00	1.578E+00	1.578E+00	60.65
	241.98	329	7.49	6.745E+00	1.894E+00	1.894E+00	25.62
	295.21	561	19.20	6.040E+00	1.407E+00	1.407E+00	16.35

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	956	37.20*	5.451E+00	1.371E+00	1.371E+00	12.44
	74.81	407	6.21	4.945E+00	3.852E+00	3.852E+00	22.75
	77.11	643	10.50	5.261E+00	3.382E+00	3.382E+00	16.80
	87.30	164	4.67	6.464E+00	1.578E+00	1.578E+00	60.65
	241.98	329	7.49	6.745E+00	1.894E+00	1.894E+00	25.62
PO-216	295.21	561	19.20	6.040E+00	1.407E+00	1.407E+00	16.35
	351.92	956	37.20*	5.451E+00	1.371E+00	1.371E+00	12.44
	74.81	407	10.70	4.945E+00	2.236E+00	2.236E+00	23.45
	77.11	643	18.00	5.261E+00	1.973E+00	1.973E+00	14.97
	87.30	164	8.00	6.464E+00	9.214E-01	9.214E-01	60.98
PO-218	238.63	1567	44.60*	6.791E+00	1.504E+00	1.504E+00	9.43
	300.09	111	3.41	5.979E+00	1.583E+00	1.583E+00	53.05
	74.81	407	6.21	4.945E+00	3.852E+00	3.852E+00	22.75
	77.11	643	10.50	5.261E+00	3.382E+00	3.382E+00	16.80
	87.30	164	4.67	6.464E+00	1.578E+00	1.578E+00	60.65
RA-224	241.98	329	7.49	6.745E+00	1.894E+00	1.894E+00	25.62
	295.21	561	19.20	6.040E+00	1.407E+00	1.407E+00	16.35
	351.92	956	37.20*	5.451E+00	1.371E+00	1.371E+00	12.44
	240.98	329	3.95*	6.745E+00	3.591E+00	3.591E+00	24.99
	609.31	777	46.30*	3.812E+00	1.280E+00	1.280E+00	13.32
AC-228	1120.29	171	15.10	2.335E+00	1.408E+00	1.408E+00	22.83
	1764.49	126	15.80	1.695E+00	1.364E+00	1.364E+00	30.31
	338.32	352	11.40	5.579E+00	1.607E+00	1.607E+00	48.05
	911.07	436	27.70*	2.780E+00	1.647E+00	1.647E+00	19.11
	969.11	172	16.60	2.638E+00	1.141E+00	1.141E+00	43.92
RA-228	338.32	352	11.40	5.579E+00	1.607E+00	1.607E+00	48.05
	911.07	436	27.70*	2.780E+00	1.647E+00	1.647E+00	19.11
	969.11	172	16.60	2.638E+00	1.141E+00	1.141E+00	43.92
	74.81	407	10.70	4.945E+00	2.236E+00	2.267E+00	21.54
	77.11	643	18.00	5.261E+00	1.973E+00	2.001E+00	14.97
TH-228	87.30	164	8.00	6.464E+00	9.214E-01	9.343E-01	60.16
	238.63	1567	44.60*	6.791E+00	1.504E+00	1.525E+00	9.43
	300.09	111	3.41	5.979E+00	1.583E+00	1.605E+00	78.86
	609.31	777	46.30*	3.812E+00	1.280E+00	1.280E+00	13.32
	1120.29	171	15.10	2.335E+00	1.408E+00	1.408E+00	22.83
TH-230	1764.49	126	15.80	1.695E+00	1.364E+00	1.364E+00	30.31
	338.32	352	11.40	5.579E+00	1.607E+00	1.607E+00	26.09
	911.07	436	27.70*	2.780E+00	1.647E+00	1.647E+00	19.11
	969.11	172	16.60	2.638E+00	1.141E+00	1.141E+00	43.92
	63.29	15	3.80*	3.045E+00	3.656E-01	3.656E-01	540.39
TH-234	92.38	207	5.41	6.982E+00	1.590E+00	1.590E+00	45.21
	609.31	777	46.30*	3.812E+00	1.280E+00	1.280E+00	13.32
	1120.29	171	15.10	2.335E+00	1.408E+00	1.408E+00	22.83
	1764.49	126	15.80	1.695E+00	1.364E+00	1.364E+00	30.31
	86.50	164	12.60*	6.464E+00	5.850E-01	5.850E-01	63.60
NP-237	95.87	---	2.60	7.180E+00	---	Line Not Found	---
	63.29	15	3.80*	3.045E+00	3.656E-01	3.656E-01	540.39
	92.38	207	5.41	6.982E+00	1.590E+00	1.590E+00	42.32
	74.67	407	66.00*	4.945E+00	3.624E-01	3.624E-01	21.51

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	164	0.34	6.464E+00	2.194E+01	2.194E+01	60.16
	117.66	-----	0.55	8.112E+00	-----	Line Not Found	-----
	142.18	-----	0.13	8.232E+00	-----	Line Not Found	-----
ANH-511	511.00	184	100.00*	4.309E+00	1.244E-01	1.244E-01	45.41

Flag: "\*" = Keyline

Total number of lines in spectrum 38  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 35 92.11%

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	2.007E+01	2.007E+01	0.195E+01	9.74	
CD-109	464.00D	1.02	1.981E+00	2.023E+00	1.217E+00	60.16	
SN-126	1.00E+05Y	1.00	1.992E-01	1.992E-01	1.198E-01	60.16	
BA-137M	30.17Y	1.00	4.401E-02	4.405E-02	3.180E-02	72.20	
CS-137	30.17Y	1.00	4.652E-02	4.656E-02	3.362E-02	72.20	
TL-208	1.41E+10Y	1.00	5.166E-01	5.166E-01	0.750E-01	14.52	
BI-211	7.04E+08Y	1.00	3.941E+00	3.941E+00	0.445E+00	11.30	
PB-212	1.41E+10Y	1.00	1.504E+00	1.504E+00	0.142E+00	9.43	
PO-212	1.41E+10Y	1.00	1.504E+00	1.504E+00	0.142E+00	9.43	
BI-214	1600.00Y	1.00	1.280E+00	1.280E+00	0.170E+00	13.32	
PB-214	1600.00Y	1.00	1.371E+00	1.371E+00	0.171E+00	12.44	
PO-214	1600.00Y	1.00	1.371E+00	1.371E+00	0.171E+00	12.44	
PO-216	1.41E+10Y	1.00	1.504E+00	1.504E+00	0.142E+00	9.43	
PO-218	1600.00Y	1.00	1.371E+00	1.371E+00	0.171E+00	12.44	
RA-224	1.41E+10Y	1.00	3.591E+00	3.591E+00	0.898E+00	24.99	
RA-226	1600.00Y	1.00	1.280E+00	1.280E+00	0.170E+00	13.32	
AC-228	1.41E+10Y	1.00	1.647E+00	1.647E+00	0.315E+00	19.11	
RA-228	1.41E+10Y	1.00	1.647E+00	1.647E+00	0.315E+00	19.11	
TH-228	1.91Y	1.01	1.504E+00	1.525E+00	0.144E+00	9.43	
TH-230	4.47E+09Y	1.00	1.280E+00	1.280E+00	0.170E+00	13.32	
TH-232	1.41E+10Y	1.00	1.647E+00	1.647E+00	0.315E+00	19.11	
TH-234	4.47E+09Y	1.00	3.656E-01	3.656E-01	19.75E-01	540.39	
U-234	4.47E+09Y	1.00	1.280E+00	1.280E+00	0.170E+00	13.32	
NP-237	2.14E+06Y	1.00	5.850E-01	5.850E-01	3.720E-01	63.60	
U-238	4.47E+09Y	1.00	3.656E-01	3.656E-01	19.75E-01	540.39	
AM-243	7380.00Y	1.00	3.624E-01	3.624E-01	0.780E-01	21.51	
ANH-511	1.00E+09Y	1.00	1.244E-01	1.244E-01	0.565E-01	45.41	

Total Activity : 5.238E+01 5.244E+01

Grand Total Activity : 5.238E+01 5.244E+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	90.17	106	384	1.18	179.45	177	6	1.47E-02	61.8	6.72E+00	T
0	129.13	54	481	0.93	257.33	252	10	7.44E-03	****	8.25E+00	T
0	185.86	222	387	1.39	370.77	365	10	3.08E-02	37.2	7.65E+00	T
0	209.48	122	373	1.36	417.98	413	10	1.70E-02	62.2	7.25E+00	T
0	270.15	118	254	1.49	539.27	534	11	1.63E-02	55.6	6.35E+00	T
0	328.43	91	161	1.15	655.79	652	9	1.26E-02	54.8	5.68E+00	T
0	462.62	122	150	1.35	924.10	918	13	1.69E-02	45.3	4.60E+00	T
2	665.51	62	62	2.23	1329.77	1315	29	8.56E-03	61.7	3.57E+00	T
0	727.08	88	177	1.59	1452.89	1447	16	1.22E-02	72.5	3.34E+00	T
0	768.22	63	172	1.74	1535.14	1526	16	8.81E-03	95.8	3.20E+00	T
0	794.67	130	58	2.23	1588.03	1582	13	1.81E-02	29.9	3.11E+00	T
0	1239.68	44	159	0.91	2477.88	2465	23	6.18E-03	****	2.15E+00	T
0	1377.24	45	25	1.60	2752.98	2748	10	6.25E-03	51.2	1.98E+00	T
0	1510.72	35	43	1.48	3019.91	3010	20	4.89E-03	99.0	1.85E+00	T
0	1589.77	59	36	4.67	3178.00	3166	21	8.16E-03	57.7	1.79E+00	
0	1730.17	26	36	0.98	3458.78	3448	14	3.68E-03	****	1.71E+00	
0	1846.97	33	13	0.78	3692.39	3683	17	4.62E-03	60.2	1.66E+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]G244132016.CNF;1
* Acquisition date   : 19-JAN-2010 11:42:23   Detector SN#      :
* Detector ID        : GAM18                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:01.59           Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library   : SOLID
* Sample ID          : G244132016             Analyst initials  : MXR1
* Batch Number       : 940270                 Sample Quantity   : 1.29130E+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	2.007E+01	1.954E+00	3.957E-01	3.003E-02	50.706
CD-109	2.023E+00	1.217E+00	1.003E+00	9.275E-02	2.017
SN-126	1.992E-01	1.198E-01	1.253E-01	1.154E-02	1.590
BA-137M	4.405E-02	3.180E-02	3.981E-02	3.034E-03	1.107
CS-137	4.656E-02	3.362E-02	4.208E-02	3.215E-03	1.107
TL-208	5.166E-01	7.499E-02	4.258E-02	3.338E-03	12.134
BI-211	3.941E+00	4.451E-01	2.392E-01	1.535E-02	16.476
PB-212	1.504E+00	1.418E-01	7.299E-02	5.214E-03	20.611
PO-212	1.504E+00	1.418E-01	7.299E-02	5.214E-03	20.611
BI-214	1.280E+00	1.705E-01	8.434E-02	7.534E-03	15.178
PB-214	1.371E+00	1.706E-01	8.335E-02	6.895E-03	16.446
PO-214	1.371E+00	1.706E-01	8.335E-02	6.895E-03	16.446
PO-216	1.504E+00	1.418E-01	7.299E-02	5.214E-03	20.611
PO-218	1.371E+00	1.706E-01	8.335E-02	6.895E-03	16.446
RA-224	3.591E+00	8.976E-01	8.296E-01	4.621E-02	4.329
RA-226	1.280E+00	1.705E-01	8.434E-02	7.534E-03	15.178
AC-228	1.647E+00	3.147E-01	1.472E-01	1.950E-02	11.192
RA-228	1.647E+00	3.147E-01	1.472E-01	1.950E-02	11.192

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.525E+00	1.438E-01	7.401E-02	5.287E-03	20.611
TH-230	1.280E+00	1.705E-01	8.433E-02	7.534E-03	15.178
TH-232	1.647E+00	3.147E-01	1.472E-01	1.950E-02	11.192
TH-234	3.656E-01	1.975E+00	2.110E+00	3.720E-01	0.173
U-234	1.280E+00	1.705E-01	8.433E-02	7.534E-03	15.178
NP-237	5.850E-01	3.720E-01	3.736E-01	8.430E-02	1.566
U-238	3.656E-01	1.975E+00	2.110E+00	3.720E-01	0.173
AM-243	3.624E-01	7.796E-02	8.077E-02	6.740E-03	4.487
ANH-511	1.244E-01	5.649E-02	3.351E-02	2.213E-03	3.713

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.148E-01		2.356E-01	4.093E-01	2.966E-02	0.525
NA-22	-1.876E-02		3.475E-02	5.448E-02	3.707E-03	-0.344
NA-24	-2.240E-01		9.677E-02	Half-Life too short		
AL-26	6.355E-03		2.256E-02	3.860E-02	2.253E-03	0.165
TI-44	3.640E-01	+	5.451E-02	7.415E-02	6.340E-03	4.910
SC-46	-2.775E-02		3.060E-02	4.610E-02	5.142E-03	-0.602
V-48	5.693E-03		4.754E-02	7.779E-02	7.694E-03	0.073
CR-51	-7.899E-02		2.747E-01	4.349E-01	2.800E-02	-0.182
MN-52	7.550E-02		1.830E-01	3.088E-01	2.276E-02	0.244
MN-54	2.125E-02		3.177E-02	5.428E-02	5.560E-03	0.391
CO-56	3.849E-02		2.895E-02	5.178E-02	5.405E-03	0.743
CO-57	-8.837E-03		2.175E-02	3.426E-02	2.029E-03	-0.258
CO-58	-3.135E-02		3.023E-02	4.568E-02	4.509E-03	-0.686
FE-59	8.063E-03		6.833E-02	1.148E-01	9.447E-03	0.070
CO-60	-1.683E-02		2.795E-02	4.265E-02	3.222E-03	-0.395
ZN-65	4.977E-02		7.410E-02	1.131E-01	7.969E-03	0.440
GE-68	2.457E-01		9.649E-01	1.639E+00	1.302E-01	0.150
AS-73	4.683E-01		9.965E-01	1.705E+00	1.352E-01	0.275
AS-74	-1.237E-02		7.105E-02	1.136E-01	8.165E-03	-0.109
SE-75	-3.246E-03		3.947E-02	5.620E-02	3.214E-03	-0.058
BR-77	4.934E+00		5.369E+00	9.317E+00	6.216E-01	0.530
SR-82	-2.235E-01		3.140E-01	4.674E-01	4.353E-02	-0.478
RB-83	4.653E-02		4.901E-02	8.518E-02	5.681E-03	0.546
RB-84	2.367E-02		5.249E-02	8.874E-02	9.781E-03	0.267
KR-85	1.932E+01		6.725E+00	1.135E+01	7.516E-01	1.703
SR-85	9.789E-02		3.407E-02	5.749E-02	3.808E-03	1.703
RB-86	1.013E-01		5.776E-01	9.762E-01	7.771E-02	0.104
Y-88	8.577E-03		2.672E-02	4.208E-02	2.397E-03	0.204
ZR-88	-1.150E-02		2.280E-02	3.715E-02	2.136E-03	-0.310
Y-91	-6.327E+00		1.364E+01	2.170E+01	1.283E+00	-0.292
NB-94	8.979E-03		2.720E-02	4.625E-02	3.794E-03	0.194
NB-95	6.151E-02		4.098E-02	6.499E-02	5.945E-03	0.946
NB-95M	6.166E-02		1.087E-01	1.623E-01	1.191E-02	0.380
ZR-95	1.236E-02		5.324E-02	8.967E-02	8.823E-03	0.138



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	-4.826E-03		1.271E-02	Half-Life	too short	
ZR-97	1.135E+00		2.685E-01	Half-Life	too short	
MO-99	-2.069E-01		6.024E+00	9.985E+00	1.523E+00	-0.021
TC-99M	-1.227E+09		7.732E+08	Half-Life	too short	
RH-101	4.665E-03		2.674E-02	4.438E-02	2.385E-03	0.105
RH-102	-5.831E-03		2.150E-02	3.487E-02	2.214E-03	-0.167
RU-103	6.213E-03		2.845E-02	4.742E-02	6.158E-03	0.131
RH-106	5.884E-02		2.436E-01	3.992E-01	5.022E-02	0.147
RU-106	5.884E-02		2.435E-01	3.992E-01	2.938E-02	0.147
AG-108M	1.582E-02		2.514E-02	4.322E-02	2.824E-03	0.366
AG-110M	-4.713E-03		2.764E-02	3.936E-02	3.104E-03	-0.120
IN-111	8.692E-02		7.083E-01	1.030E+00	5.754E-02	0.084
IN-113M	-4.478E-02		3.365E-02	5.211E-02	3.197E-03	-0.859
SN-113	-4.478E-02		3.365E-02	5.211E-02	3.197E-03	-0.859
IN-114M	5.833E-02		1.630E-01	2.449E-01	1.307E-02	0.238
CD-115	-4.275E-01		5.510E+00	8.842E+00	5.943E-01	-0.048
SN-117M	-1.042E-02		4.076E-02	6.839E-02	3.635E-03	-0.152
SB-122	3.171E-01		1.154E+00	1.911E+00	1.331E-01	0.166
I-123	-7.914E-01		5.434E-01	Half-Life	too short	
TE-123M	-1.624E-02		2.230E-02	3.672E-02	1.981E-03	-0.442
I-124	-4.828E-01		5.350E-01	6.748E-01	4.879E-02	-0.716
SB-124	5.477E-02		5.521E-02	1.032E-01	7.117E-03	0.531
SB-125	1.615E-02		6.891E-02	1.162E-01	7.260E-03	0.139
TE-125M	-1.891E+00		7.843E+00	1.254E+01	1.102E+00	-0.151
I-126	2.648E-01	+	1.645E-01	2.320E-01	1.784E-02	1.141
SB-126	-1.427E-02		1.192E-01	1.690E-01	1.431E-02	-0.084
SB-127	4.861E-01		8.730E-01	1.508E+00	1.591E-01	0.322
XE-127	-2.751E-02		3.752E-02	6.072E-02	3.278E-03	-0.453
I-131	5.085E-03		7.627E-02	1.290E-01	8.313E-03	0.039
TE-132	-4.260E-01		4.427E-01	6.949E-01	9.750E-02	-0.613
BA-133	-1.951E-03		3.583E-02	4.959E-02	5.729E-03	-0.039
I-133	3.906E-05		9.023E-04	Half-Life	too short	
CS-134	1.602E-01	+	5.034E-02	7.643E-02	7.393E-03	2.096
CS-135	1.061E-01		1.390E-01	2.084E-01	1.576E-02	0.509
I-135	-2.531E+08		1.224E+08	Half-Life	too short	
CS-136	8.416E-03		7.369E-02	1.243E-01	1.114E-02	0.068
CE-139	-1.979E-02		2.361E-02	3.860E-02	2.026E-03	-0.513
BA-140	-1.260E-02		1.833E-01	2.978E-01	9.742E-02	-0.042
LA-140	-4.810E-03		6.211E-02	8.641E-02	5.929E-03	-0.056
CE-141	5.237E-02		5.371E-02	8.747E-02	4.993E-03	0.599
CE-143	3.836E-04		5.796E-05	Half-Life	too short	
CE-144	-1.876E-01		1.997E-01	2.649E-01	3.746E-02	-0.708
PM-144	4.838E-03		2.684E-02	4.531E-02	3.679E-03	0.107
PR-144	3.277E-01		1.818E+00	3.069E+00	2.490E-01	0.107
PM-146	3.451E-03		3.341E-02	5.566E-02	4.952E-03	0.062
ND-147	-2.080E-01		3.916E-01	6.151E-01	8.582E-02	-0.338
PM-149	2.936E+01		5.115E+01	8.525E+01	1.205E+01	0.344
EU-152	3.617E-03		8.879E-02	1.143E-01	7.461E-03	0.032

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-2.819E-02		7.682E-02	1.094E-01	8.550E-03	-0.258
EU-154	-4.016E-02		9.623E-02	1.524E-01	1.522E-02	-0.264
EU-155	1.021E-01		9.685E-02	1.630E-01	1.165E-02	0.627
TB-160	-1.013E-01		1.121E-01	1.697E-01	1.864E-02	-0.597
HO-166M	-1.844E-02		4.794E-02	7.795E-02	6.497E-03	-0.237
TM-171	-2.574E+01		3.268E+01	4.628E+01	3.701E+00	-0.556
LU-176	-8.835E-03		2.054E-02	2.973E-02	1.712E-03	-0.297
LU-177	1.897E+00	+	1.184E+00	1.472E+00	7.985E-02	1.289
LU-177M	-2.413E-01		1.422E-01	2.147E-01	1.268E-02	-1.124
HF-181	-1.356E-02		3.194E-02	5.123E-02	3.279E-03	-0.265
W-181	-4.815E-01		4.322E-01	6.020E-01	4.775E-02	-0.800
TA-182	2.053E-02		1.331E-01	2.221E-01	1.359E-02	0.092
RE-183	6.328E-02		8.601E-02	1.493E-01	7.880E-03	0.424
RE-184	-4.837E-02		1.796E-01	2.908E-01	1.633E-02	-0.166
OS-185	-2.085E-03		3.470E-02	5.551E-02	4.174E-03	-0.038
RE-188	1.294E-01		1.351E-01	2.366E-01	1.266E-02	0.547
W-188	-1.918E+00		6.481E+00	9.001E+00	5.156E-01	-0.213
IR-192	5.034E-03		2.567E-02	4.185E-02	2.427E-03	0.120
AU-195	2.703E-01		1.943E-01	3.318E-01	2.539E-02	0.815
TL-200	-2.112E-05		8.135E-05	Half-Life too short		
TL-201	-1.101E+00		4.303E+00	7.195E+00	3.777E-01	-0.153
TL-202	-2.102E-02		4.933E-02	7.986E-02	4.869E-03	-0.263
HG-203	7.502E-02		3.274E-02	5.832E-02	3.537E-03	1.286
BI-207	-1.665E-02		3.921E-02	6.330E-02	5.225E-03	-0.263
TL-207	4.213E-01		5.694E-01	8.400E-01	1.387E-01	0.501
PO-209	1.462E+00		5.606E+00	9.342E+00	1.054E+00	0.156
BI-210	-1.735E+00		4.903E+00	8.185E+00	6.332E-01	-0.212
PB-210	-1.735E+00		4.903E+00	8.185E+00	6.332E-01	-0.212
PO-210	-1.735E+00		4.903E+00	8.185E+00	5.444E-01	-0.212
PB-211	-9.098E-01		9.309E-01	1.154E+00	7.195E-01	-0.788
BI-212	6.485E-01	+	4.746E-01	5.190E-01	5.169E-02	1.250
PO-215	4.213E-01		5.694E-01	8.400E-01	1.387E-01	0.501
RN-219	9.869E-02		3.108E-01	5.280E-01	7.189E-02	0.187
RN-220	-7.434E+00		2.030E+01	3.226E+01	2.217E+00	-0.230
RA-223	4.213E-01		5.694E-01	8.400E-01	1.387E-01	0.501
AC-227	4.681E-03		3.004E-01	4.926E-01	6.842E-02	0.010
TH-227	4.681E-03		3.004E-01	4.926E-01	8.296E-02	0.010
TH-229	-3.847E-01		3.942E-01	6.321E-01	3.384E-02	-0.609
PA-231	-5.814E-02		1.218E+00	1.976E+00	2.716E-01	-0.029
TH-231	4.213E-01		5.694E-01	8.400E-01	1.387E-01	0.501
U-231	2.292E-02		8.644E-01	1.259E+00	1.009E-01	0.018
PA-233	3.287E-03		5.015E-02	8.123E-02	4.976E-03	0.040
PA-234	6.052E-02		2.420E-01	4.003E-01	7.896E-02	0.151
PA-234M	2.793E+00		3.662E+00	6.064E+00	6.542E-01	0.461
U-235	7.422E-02		1.862E-01	2.962E-01	4.797E-02	0.251
NP-236	-6.492E-02		6.333E-02	1.030E-01	5.454E-03	-0.631
NP-239	1.034E-02		1.644E-01	2.652E-01	1.642E-02	0.039
AM-241	6.368E-03		1.740E-01	2.617E-01	2.171E-02	0.024

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-3.010E-03		8.429E-02	1.365E-01	9.768E-03	-0.022
AM-246	1.489E-02		1.114E-01	1.876E-01	1.484E-02	0.079
CM-247	1.120E-02		2.790E-02	4.764E-02	2.775E-03	0.235
CF-249	1.061E-02		3.121E-02	5.322E-02	3.059E-03	0.199
CF-251	-4.035E-02		1.007E-01	1.667E-01	8.804E-03	-0.242

# 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]G244132016          *
* Acquisition date   : 19-JAN-2010 11:42:23 Detector SN#                   *
* Detector ID        : GAM18 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.59 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132016 Analyst initials: MXR1                  *
* Batch Number       : 940270 Sample Quantity : 1.2913E+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	2.007E+01	1.915E+00	1.981E-01	9.770E-01
CD-109	2.023E+00	1.193E+00	5.247E-01	6.086E-01
SN-126	1.992E-01	1.174E-01	6.552E-02	5.992E-02
BA-137M	4.405E-02	3.117E-02	2.018E-02	1.590E-02
CS-137	4.656E-02	3.295E-02	2.133E-02	1.681E-02
TL-208	5.166E-01	7.349E-02	2.163E-02	3.750E-02
BI-211	3.941E+00	4.362E-01	1.225E-01	2.226E-01
PB-212	1.504E+00	1.390E-01	3.759E-02	7.092E-02
PO-212	1.504E+00	1.390E-01	3.759E-02	7.092E-02
BI-214	1.280E+00	1.670E-01	4.281E-02	8.523E-02
PB-214	1.371E+00	1.672E-01	4.268E-02	8.529E-02
PO-214	1.371E+00	1.672E-01	4.268E-02	8.529E-02
PO-216	1.504E+00	1.390E-01	3.759E-02	7.092E-02
PO-218	1.371E+00	1.672E-01	4.268E-02	8.529E-02
RA-224	3.591E+00	8.796E-01	4.272E-01	4.488E-01
RA-226	1.280E+00	1.670E-01	4.281E-02	8.523E-02
AC-228	1.647E+00	3.084E-01	7.421E-02	1.574E-01
RA-228	1.647E+00	3.084E-01	7.421E-02	1.574E-01
TH-228	1.525E+00	1.409E-01	3.812E-02	7.191E-02
TH-230	1.280E+00	1.670E-01	4.281E-02	8.523E-02
TH-232	1.647E+00	3.084E-01	7.421E-02	1.574E-01
TH-234	3.656E-01	1.936E+00	1.109E+00	9.877E-01
U-234	1.280E+00	1.670E-01	4.281E-02	8.523E-02
NP-237	5.850E-01	3.646E-01	1.954E-01	1.860E-01
U-238	3.656E-01	1.936E+00	1.109E+00	9.877E-01
AM-243	3.624E-01	7.640E-02	4.234E-02	3.898E-02
ANH-511	1.244E-01	5.536E-02	1.706E-02	2.825E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	2.148E-01	2.309E-01	2.085E-01	1.178E-01	NOT IDENT.
NA-22	-1.876E-02	3.406E-02	2.733E-02	1.738E-02	NOT IDENT.
NA-24	-2.240E+05	1.897E+05	0.000E+00	9.677E+04	SHORT HLIF
AL-26	6.355E-03	2.211E-02	1.925E-02	1.128E-02	NOT IDENT.
TI-44	3.640E-01	5.342E-02	3.884E-02	2.725E-02	FAIL ABUN
SC-46	-2.775E-02	2.999E-02	2.326E-02	1.530E-02	FAIL ABUN
V-48	5.693E-03	4.658E-02	3.918E-02	2.377E-02	NOT IDENT.
CR-51	-7.899E-02	2.692E-01	2.230E-01	1.373E-01	NOT IDENT.
MN-52	7.550E-02	1.793E-01	1.546E-01	9.150E-02	NOT IDENT.
MN-54	2.125E-02	3.114E-02	2.741E-02	1.589E-02	NOT IDENT.
CO-56	3.849E-02	2.838E-02	2.614E-02	1.448E-02	FAIL ABUN
CO-57	-8.837E-03	2.131E-02	1.783E-02	1.087E-02	NOT IDENT.
CO-58	-3.135E-02	2.962E-02	2.308E-02	1.511E-02	NOT IDENT.
FE-59	8.063E-03	6.696E-02	5.771E-02	3.416E-02	NOT IDENT.
CO-60	-1.683E-02	2.739E-02	2.138E-02	1.397E-02	NOT IDENT.
ZN-65	4.977E-02	7.262E-02	5.687E-02	3.705E-02	NOT IDENT.
GE-68	2.457E-01	9.456E-01	8.246E-01	4.825E-01	NOT IDENT.
AS-73	4.683E-01	9.766E-01	8.982E-01	4.982E-01	NOT IDENT.
AS-74	-1.237E-02	6.963E-02	5.771E-02	3.552E-02	NOT IDENT.
SE-75	-3.246E-03	3.868E-02	2.890E-02	1.973E-02	NOT IDENT.
BR-77	4.934E+00	5.262E+00	4.741E+00	2.685E+00	FAIL ABUN
SR-82	-2.235E-01	3.077E-01	2.363E-01	1.570E-01	NOT IDENT.
RB-83	4.653E-02	4.803E-02	4.335E-02	2.450E-02	NOT IDENT.
RB-84	2.367E-02	5.144E-02	4.478E-02	2.625E-02	NOT IDENT.
KR-85	1.932E+01	6.590E+00	5.775E+00	3.362E+00	NOT IDENT.
SR-85	9.789E-02	3.339E-02	2.926E-02	1.704E-02	NOT IDENT.
RB-86	1.013E-01	5.661E-01	4.910E-01	2.888E-01	NOT IDENT.
Y-88	8.577E-03	2.618E-02	2.098E-02	1.336E-02	NOT IDENT.
ZR-88	-1.150E-02	2.235E-02	1.899E-02	1.140E-02	NOT IDENT.
Y-91	-6.327E+00	1.336E+01	1.090E+01	6.818E+00	NOT IDENT.
NB-94	8.979E-03	2.665E-02	2.342E-02	1.360E-02	NOT IDENT.
NB-95	6.151E-02	4.016E-02	3.287E-02	2.049E-02	NOT IDENT.
NB-95M	6.166E-02	1.065E-01	8.361E-02	5.436E-02	NOT IDENT.
ZR-95	1.236E-02	5.217E-02	4.536E-02	2.662E-02	NOT IDENT.
NB-97	-4.826E+03	2.490E+04	0.000E+00	1.271E+04	SHORT HLIF
ZR-97	1.135E+06	5.263E+05	0.000E+00	2.685E+05	SHORT HLIF
MO-99	-2.069E-01	5.904E+00	5.053E+00	3.012E+00	NOT IDENT.
TC-99M	-1.227E+15	1.515E+15	0.000E+00	7.732E+14	SHORT HLIF
RH-101	4.665E-03	2.620E-02	2.293E-02	1.337E-02	NOT IDENT.
RH-102	-5.831E-03	2.107E-02	1.777E-02	1.075E-02	FAIL ABUN
RU-103	6.213E-03	2.788E-02	2.415E-02	1.422E-02	FAIL ABUN
RH-106	5.884E-02	2.387E-01	2.026E-01	1.218E-01	FAIL ABUN
RU-106	5.884E-02	2.386E-01	2.026E-01	1.217E-01	FAIL ABUN
AG-108M	1.582E-02	2.464E-02	2.206E-02	1.257E-02	NOT IDENT.
AG-110M	-4.713E-03	2.709E-02	1.995E-02	1.382E-02	NOT IDENT.
IN-111	8.692E-02	6.942E-01	5.301E-01	3.542E-01	NOT IDENT.
IN-113M	-4.478E-02	3.298E-02	2.664E-02	1.683E-02	NOT IDENT.
SN-113	-4.478E-02	3.298E-02	2.664E-02	1.683E-02	NOT IDENT.
IN-114M	5.833E-02	1.597E-01	1.266E-01	8.150E-02	NOT IDENT.
CD-115	-4.275E-01	5.399E+00	4.498E+00	2.755E+00	NOT IDENT.
SN-117M	-1.042E-02	3.994E-02	3.545E-02	2.038E-02	NOT IDENT.
SB-122	3.171E-01	1.131E+00	9.711E-01	5.770E-01	NOT IDENT.
I-123	-7.914E+05	1.065E+06	0.000E+00	5.434E+05	SHORT HLIF
TE-123M	-1.624E-02	2.186E-02	1.903E-02	1.115E-02	NOT IDENT.
I-124	-4.828E-01	5.243E-01	3.426E-01	2.675E-01	FAIL ABUN
SB-124	5.477E-02	5.411E-02	5.151E-02	2.761E-02	FAIL ABUN
SB-125	1.615E-02	6.753E-02	5.931E-02	3.445E-02	FAIL ABUN
TE-125M	-1.891E+00	7.686E+00	6.538E+00	3.922E+00	NOT IDENT.
I-126	2.648E-01	1.612E-01	1.176E-01	8.227E-02	FAIL ABUN
SB-126	-1.427E-02	1.168E-01	8.556E-02	5.959E-02	FAIL ABUN
SB-127	4.861E-01	8.556E-01	7.639E-01	4.365E-01	NOT IDENT.
XE-127	-2.751E-02	3.677E-02	3.135E-02	1.876E-02	NOT IDENT.
I-131	5.085E-03	7.474E-02	6.600E-02	3.813E-02	NOT IDENT.
TE-132	-4.260E-01	4.338E-01	3.582E-01	2.213E-01	NOT IDENT.
BA-133	-1.951E-03	3.511E-02	2.539E-02	1.791E-02	NOT IDENT.
I-133	3.906E+01	1.768E+03	0.000E+00	9.023E+02	SHORT HLIF
CS-134	1.602E-01	4.934E-02	3.863E-02	2.517E-02	FAIL ABUN
CS-135	1.061E-01	1.362E-01	1.072E-01	6.949E-02	NOT IDENT.
I-135	-2.531E+14	2.400E+14	0.000E+00	1.224E+14	SHORT HLIF
CS-136	8.416E-03	7.221E-02	6.256E-02	3.684E-02	FAIL ABUN
CE-139	-1.979E-02	2.314E-02	1.999E-02	1.181E-02	NOT IDENT.
BA-140	-1.260E-02	1.796E-01	1.515E-01	9.164E-02	NOT IDENT.
LA-140	-4.810E-03	6.087E-02	4.319E-02	3.106E-02	FAIL ABUN
CE-141	5.237E-02	5.263E-02	4.540E-02	2.685E-02	NOT IDENT.
CE-143	3.836E+02	1.136E+02	0.000E+00	5.796E+01	SHORT HLIF
CE-144	-1.876E-01	1.957E-01	1.377E-01	9.984E-02	NOT IDENT.
PM-144	4.838E-03	2.630E-02	2.295E-02	1.342E-02	NOT IDENT.
PR-144	3.277E-01	1.781E+00	1.554E+00	9.088E-01	NOT IDENT.

PM-146	3.451E-03	3.274E-02	2.838E-02	1.670E-02	NOT IDENT.
ND-147	-2.080E-01	3.838E-01	3.129E-01	1.958E-01	FAIL ABUN
PM-149	2.936E+01	5.013E+01	4.379E+01	2.558E+01	NOT IDENT.
EU-152	3.617E-03	8.701E-02	5.856E-02	4.439E-02	NOT IDENT.
GD-153	-2.819E-02	7.529E-02	5.710E-02	3.841E-02	NOT IDENT.
EU-154	-4.016E-02	9.430E-02	7.644E-02	4.811E-02	NOT IDENT.
EU-155	1.021E-01	9.492E-02	8.499E-02	4.843E-02	FAIL ABUN
TB-160	-1.013E-01	1.099E-01	8.564E-02	5.605E-02	FAIL ABUN
HO-166M	-1.844E-02	4.698E-02	3.947E-02	2.397E-02	FAIL ABUN
TM-171	-2.574E+01	3.203E+01	2.430E+01	1.634E+01	NOT IDENT.
LU-176	-8.835E-03	2.013E-02	1.526E-02	1.027E-02	FAIL ABUN
LU-177	1.897E+00	1.161E+00	7.598E-01	5.922E-01	FAIL ABUN
LU-177M	-2.413E-01	1.394E-01	1.097E-01	7.110E-02	FAIL ABUN
HF-181	-1.356E-02	3.130E-02	2.610E-02	1.597E-02	NOT IDENT.
W-181	-4.815E-01	4.236E-01	3.162E-01	2.161E-01	NOT IDENT.
TA-182	2.053E-02	1.304E-01	1.115E-01	6.653E-02	FAIL ABUN
RE-183	6.328E-02	8.429E-02	7.735E-02	4.301E-02	FAIL ABUN
RE-184	-4.837E-02	1.760E-01	1.497E-01	8.981E-02	NOT IDENT.
OS-185	-2.085E-03	3.401E-02	2.815E-02	1.735E-02	NOT IDENT.
RE-188	1.294E-01	1.324E-01	1.227E-01	6.754E-02	NOT IDENT.
W-188	-1.918E+00	6.351E+00	4.622E+00	3.240E+00	FAIL ABUN
IR-192	5.034E-03	2.516E-02	2.146E-02	1.284E-02	FAIL ABUN
AU-195	2.703E-01	1.904E-01	1.732E-01	9.715E-02	FAIL ABUN
TL-200	-2.112E+01	1.594E+02	0.000E+00	8.135E+01	SHORT HLIF
TL-201	-1.101E+00	4.217E+00	3.726E+00	2.152E+00	NOT IDENT.
TL-202	-2.102E-02	4.835E-02	4.074E-02	2.467E-02	NOT IDENT.
HG-203	7.502E-02	3.209E-02	2.997E-02	1.637E-02	NOT IDENT.
BI-207	-1.665E-02	3.843E-02	3.184E-02	1.961E-02	FAIL ABUN
TL-207	4.213E-01	5.580E-01	4.306E-01	2.847E-01	FAIL ABUN
PO-209	1.462E+00	5.494E+00	4.713E+00	2.803E+00	NOT IDENT.
BI-210	-1.735E+00	4.805E+00	4.321E+00	2.452E+00	NOT IDENT.
PB-210	-1.735E+00	4.805E+00	4.321E+00	2.452E+00	NOT IDENT.
PO-210	-1.735E+00	4.805E+00	4.321E+00	2.451E+00	NOT IDENT.
PB-211	-9.098E-01	9.123E-01	5.896E-01	4.654E-01	NOT IDENT.
BI-212	6.485E-01	4.651E-01	2.627E-01	2.373E-01	FAIL ABUN
PO-215	4.213E-01	5.580E-01	4.306E-01	2.847E-01	FAIL ABUN
RN-219	9.869E-02	3.046E-01	2.698E-01	1.554E-01	FAIL ABUN
RN-220	-7.434E+00	1.989E+01	1.640E+01	1.015E+01	NOT IDENT.
RA-223	4.213E-01	5.580E-01	4.306E-01	2.847E-01	FAIL ABUN
AC-227	4.681E-03	2.943E-01	2.535E-01	1.502E-01	FAIL ABUN
TH-227	4.681E-03	2.943E-01	2.535E-01	1.502E-01	FAIL ABUN
TH-229	-3.847E-01	3.863E-01	3.266E-01	1.971E-01	FAIL ABUN
PA-231	-5.814E-02	1.194E+00	1.015E+00	6.091E-01	FAIL ABUN
TH-231	4.213E-01	5.580E-01	4.306E-01	2.847E-01	FAIL ABUN
U-231	2.292E-02	8.471E-01	6.577E-01	4.322E-01	FAIL ABUN
PA-233	3.287E-03	4.915E-02	4.167E-02	2.508E-02	FAIL ABUN
PA-234	6.052E-02	2.371E-01	2.018E-01	1.210E-01	FAIL ABUN
PA-234M	2.793E+00	3.589E+00	3.054E+00	1.831E+00	NOT IDENT.
U-235	7.422E-02	1.824E-01	1.538E-01	9.308E-02	FAIL ABUN
NP-236	-6.492E-02	6.206E-02	5.336E-02	3.167E-02	FAIL ABUN
NP-239	1.034E-02	1.611E-01	1.381E-01	8.219E-02	FAIL ABUN
AM-241	6.368E-03	1.705E-01	1.377E-01	8.698E-02	NOT IDENT.
CM-243	-3.010E-03	8.260E-02	7.119E-02	4.214E-02	FAIL ABUN
AM-246	1.489E-02	1.092E-01	9.436E-02	5.570E-02	NOT IDENT.
CM-247	1.120E-02	2.735E-02	2.434E-02	1.395E-02	NOT IDENT.
CF-249	1.061E-02	3.058E-02	2.721E-02	1.560E-02	NOT IDENT.
CF-251	-4.035E-02	9.865E-02	8.627E-02	5.033E-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	292.3940
46.50	292.3940
46.50	292.3940
48.70	285.2159
49.72	267.5343
51.35	316.2440
52.39	289.3972
52.97	273.6746
53.15	281.1408
53.44	283.2729
54.07	276.6435
56.28	326.7835
56.28	326.7871
57.37	0.0000
57.53	300.5309
57.53	300.5326
57.60	281.1824
57.98	276.0094
57.98	276.0094
59.32	290.3545
59.32	290.3545
59.40	290.4362
59.54	290.5790
59.72	310.3329
60.01	319.0438
61.10	311.8259
61.14	311.8691
61.30	312.0410
63.00	284.1652
63.29	333.9726
63.29	333.9726
63.58	334.2976
64.28	381.9354
65.12	401.5082
65.20	401.6142
65.20	401.6142
66.05	398.4507
66.72	387.8671
66.83	369.3948
66.91	369.4893
67.20	341.1663
67.20	341.1663
67.75	367.6172
67.85	374.9187
68.90	389.1447
68.90	389.1447
69.30	377.5150
69.67	392.9839
70.82	398.7429
70.82	398.7429
70.83	398.7555
72.80	374.9178
72.87	374.9982
72.87	374.9982
74.67	371.6581
74.81	371.8137
74.81	371.8137
74.81	371.8137
74.81	371.8137
74.81	371.8137
74.81	371.8137
74.97	371.9905
75.28	372.3346
75.70	372.7985
77.11	374.3447
77.11	374.3447

77.11	374.3447
77.11	374.3447
77.11	374.3447
77.11	374.3447
77.11	374.3447
78.38	369.2997
79.62	340.8479
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80.18	301.1399
80.30	345.9804
80.30	345.9804
80.57	346.2459
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81.07	378.1199
81.07	378.1199
81.07	378.1199
81.07	378.1199
82.60	391.7469
83.37	407.6206
83.78	388.5098
83.78	388.5098
83.78	388.5098
83.78	388.5098
84.21	378.4150
84.90	338.3447
85.43	384.2111
86.29	491.2355
86.50	491.5124
86.54	491.5643
86.59	491.6310
86.72	491.8016
86.79	491.8906
86.94	492.0908
87.30	492.5654
87.30	492.5654
87.30	492.5654
87.30	492.5654
87.30	492.5654
87.30	492.5654
87.57	492.9189
87.88	310.6116
88.03	310.7361
88.36	311.0069
88.47	311.0972
89.95	496.0187
91.11	264.1125
92.29	264.9156
92.38	264.9773
92.38	264.9773
93.35	369.1050
94.00	301.6496
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94.67	283.5640
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94.90	283.7274
94.90	283.7274
94.90	283.7274
95.87	340.3663
95.87	340.3663
96.73	376.9194
97.43	335.4421
98.44	296.1280
98.44	296.1280
98.88	279.7446
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99.55	263.4716
99.86	267.8542
100.00	267.9453
100.10	268.0117
103.18	367.0100
103.76	316.8198
105.00	294.4375
105.31	311.6094
108.00	351.9342
109.28	318.7318



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111.00	337.1450
111.76	316.2046
112.95	313.8025
115.19	282.8336
116.30	319.3606
117.00	307.8745
117.00	307.8745
117.66	330.0994
121.11	290.8129
121.62	293.3200
121.78	293.4178
122.06	313.3814
122.32	313.5496
122.32	313.5496
122.32	313.5496
122.32	313.5496
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133.02	323.7393
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140.51	0.0000
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144.24	321.4828
144.24	321.4828
144.24	321.4828
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145.44	298.0250
147.16	369.3620
152.43	321.5760
152.70	317.0649
153.22	320.2723
154.21	305.0469
154.21	305.0469
154.21	305.0469
154.21	305.0469
155.03	295.8263
156.02	331.5059
158.56	309.9904
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159.00	323.4780
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162.64	286.3391
163.35	298.2520
163.89	286.9360
165.85	330.7790
167.43	312.8145
171.28	303.9459
171.86	313.2563
172.10	312.4723
176.55	309.2249
176.60	309.2482
181.06	282.8209
184.41	279.8511
185.71	291.4692
186.00	314.4818
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193.63	306.1111
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198.01	282.6950
198.60	276.3540
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201.83	325.7854
202.84	333.8138
205.31	317.3192

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209.75	291.2011
210.97	254.0072
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216.55	257.2751
218.09	276.1504
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223.80	289.9039
226.40	266.4787
227.00	282.3148
227.08	282.3434
227.20	272.6163
228.16	298.3891
228.18	298.3961
228.18	298.3961
231.56	0.0000
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236.00	290.8871
236.00	290.8871
238.63	267.6517
238.63	267.6517
238.63	267.6517
238.63	267.6517
239.00	267.7732
240.98	268.4262
241.98	268.7558
241.98	268.7558
241.98	268.7558
244.69	241.2811
245.39	231.8903
247.94	236.0411
248.90	214.8033
249.79	214.0270
252.40	205.6202
252.85	223.8817
252.85	223.8817
254.15	0.0000
256.20	224.7650
256.20	224.7650
260.50	234.0289
260.90	217.8499
262.80	237.7108
264.65	220.8318
268.24	210.2344
268.79	207.0787
269.46	210.7275
269.46	210.7275
269.46	210.7275
269.46	210.7275
271.23	205.9967
273.65	292.4778
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277.35	184.5837
277.60	184.6326
277.60	184.6326
278.00	196.1290
278.60	187.9516
279.20	183.9168
279.53	212.0466
280.46	264.2901
281.68	283.3928
283.67	210.9139
284.30	216.2799
285.00	212.2616
285.90	195.7200
286.10	195.7599
286.10	195.7599
287.40	217.0000
288.45	0.0000
290.67	212.0713
290.80	212.1021
291.72	235.8979
293.26	0.0000
293.70	197.5518
295.21	213.0864
295.21	213.0864

295.21	213.0864
295.96	177.7104
296.50	220.1462
297.23	220.3113
298.57	220.6191
299.80	220.8984
299.80	220.8984
300.09	186.9705
300.09	186.9705
300.09	186.9705
300.09	186.9705
300.12	186.9758
301.29	173.5843
302.84	184.0878
303.76	180.8496
303.91	180.8754
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304.40	165.6010
304.84	182.7568
306.84	186.8333
308.46	188.5684
311.98	181.7080
316.51	163.0849
318.01	166.5717
319.02	179.7286
319.41	186.2957
320.08	175.5783
323.87	158.3880
323.87	158.3880
323.87	158.3880
323.87	158.3880
325.23	184.7366
328.77	195.6392
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334.20	169.9172
334.20	169.9172
334.30	169.9337
338.28	166.5249
338.28	166.5249
338.28	166.5249
338.28	166.5249
338.32	166.5318
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338.32	166.5318
340.50	141.4531
340.57	141.4629
344.27	146.3831
345.85	142.1523
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351.92	156.3422
351.92	156.3422
351.92	156.3422
355.39	0.0000
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364.48	149.9694
366.43	160.1815
367.43	147.6411
367.94	0.0000
369.80	156.1144
374.96	144.9594
383.85	192.9067
387.95	165.9177
388.63	141.1104
391.69	184.9268
391.69	184.9268
392.90	164.7499
398.62	158.0863
400.65	162.0715
401.10	165.8603
401.81	151.9698
402.60	151.1334
404.84	199.0739
410.95	151.2107
411.60	155.9877
413.65	209.8900
414.70	172.3846
415.30	154.5608

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427.89	138.0013
432.53	146.1326
433.93	134.8158
439.47	148.8242
439.56	148.8337
439.89	149.8320
443.98	135.8399
444.90	135.9328
445.03	133.0541
445.03	133.0541
445.03	133.0541
445.03	133.0541
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463.38	140.0649
468.07	102.9518
473.00	142.6707
475.06	129.0827
475.35	127.1387
476.78	118.3872
477.59	111.5447
477.96	116.5106
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484.57	123.0010
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492.35	107.7060
497.08	108.0541
507.63	0.0000
510.53	0.0000
510.84	114.1063
511.00	114.1180
511.85	114.1828
511.85	114.1828
513.99	119.7403
513.99	119.7403
520.41	93.4869
520.65	93.5026
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528.96	0.0000
529.64	98.1375
529.87	0.0000
531.02	122.7803
537.32	117.1144
543.00	115.4727
546.56	0.0000
549.76	127.3542
552.65	132.7688
555.20	110.1225
563.23	111.7126
563.90	111.7570
568.70	113.1337
569.32	120.5114
569.50	118.4265
569.67	118.4403
573.80	129.2431
574.00	134.5125
574.64	136.6682
578.91	122.9643
579.30	0.0000
583.14	108.8340
585.48	89.9390
591.81	104.8785
592.07	105.0429
593.00	110.5305
595.88	133.0750
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602.52	0.0000
602.71	153.1980
602.71	153.1980
603.60	155.0573
604.41	155.1316
604.70	155.1564
609.31	121.2350

609.31	121.2350
609.31	121.2350
609.31	121.2350
610.33	121.6646
612.46	121.8112
614.37	109.3910
618.01	116.4454
621.84	104.8102
621.84	104.8102
631.29	101.0217
633.02	85.8951
633.10	91.3356
634.78	100.1286
635.90	116.5245
636.97	115.5053
645.85	122.6367
646.12	119.3704
656.30	89.6669
657.75	96.0337
657.90	0.0000
661.65	90.1882
661.65	90.1882
664.57	0.0000
666.33	90.4115
666.33	90.4115
675.00	82.6175
677.61	93.5484
685.20	107.1504
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695.00	115.1824
696.49	119.9557
696.49	119.9557
697.00	126.5488
697.49	133.1452
698.33	137.8903
698.50	137.9022
699.00	137.9381
702.63	126.9113
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706.58	0.0000
706.67	134.7084
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711.68	123.7133
713.82	128.5736
717.42	92.8161
720.50	110.5735
721.93	0.0000
722.20	133.4502
722.78	138.3740
722.78	138.3740
722.89	138.3800
722.95	138.3829
723.30	135.1529
724.18	123.8075
727.18	84.6996
733.00	80.1702
735.90	81.7166
739.58	83.2989
742.81	82.4709
744.21	87.3231
747.13	85.5252
751.79	101.1249
752.31	100.1872
753.82	89.6548
755.35	93.5800
756.15	97.4759
756.87	107.1631
763.93	94.6528
765.79	116.3428
766.42	138.6825
766.84	138.7087
776.49	122.7726
778.00	131.6327
778.57	122.8905
778.89	114.1293
783.80	88.9690
785.46	90.0159
792.07	89.1676

795.84	91.0063
796.30	84.2826
798.80	86.0661
801.93	104.9898
805.60	79.9832
810.29	102.9103
810.76	108.8721
815.85	77.3748
817.79	78.4359
818.51	92.3643
819.60	83.4668
826.30	96.6704
828.27	0.0000
831.60	109.8814
831.96	109.8993
834.83	114.0371
836.80	0.0000
846.75	65.3584
848.13	69.4225
856.28	0.0000
856.80	83.0977
860.37	87.9930
867.32	104.9887
867.82	98.7551
871.10	90.4250
873.19	74.2342
874.81	83.4431
875.33	0.0000
876.40	90.6260
879.36	105.0117
880.27	98.9320
880.51	84.6616
881.50	77.5540
883.24	70.4614
884.67	77.6560
889.25	98.2793
896.60	77.0126
898.02	85.2780
899.00	89.4232
903.28	90.0202
911.07	70.2384
911.07	70.2384
911.07	70.2384
919.63	69.9623
920.93	77.1549
925.00	89.3296
925.24	88.2996
926.50	94.5806
935.52	97.0056
937.48	103.3445
944.10	90.0085
946.00	84.8381
949.00	83.8900
962.29	108.4152
964.01	110.2966
966.15	126.6748
968.20	118.3210
969.11	52.5392
969.11	52.5392
969.11	52.5392
977.42	54.7053
980.50	67.9310
983.50	63.7573
989.30	63.8977
996.32	97.1670
1001.03	65.2494
1001.68	66.3341
1004.76	85.6917
1021.30	0.0000
1024.50	0.0000
1034.80	73.6445
1036.00	78.0117
1037.82	79.9201
1038.57	74.3638
1038.76	0.0000
1045.16	66.1564
1046.59	73.6492
1048.07	71.8223

1050.47	79.3525
1050.47	79.3525
1062.04	82.4908
1063.62	83.4747
1076.63	78.2062
1077.35	80.1085
1078.86	82.9819
1085.78	73.7289
1099.22	80.7192
1112.02	65.2815
1112.84	61.7758
1115.52	71.8591
1120.29	74.6049
1120.29	74.6049
1120.29	74.6049
1120.29	74.6049
1120.51	65.2841
1121.28	65.3007
1124.00	0.0000
1129.67	72.3321
1131.51	0.0000
1147.95	0.0000
1167.94	86.4826
1173.22	85.6582
1175.09	78.8925
1177.93	84.8153
1189.05	85.1187
1204.90	92.4329
1205.75	0.0000
1213.00	87.7429
1221.42	75.1226
1230.97	88.4843
1235.34	95.5551
1236.41	0.0000
1238.25	82.4731
1246.25	66.2426
1260.41	0.0000
1271.85	73.2877
1274.45	80.3767
1274.54	83.3937
1291.56	60.5922
1298.22	0.0000
1312.09	64.0107
1325.50	53.0410
1325.50	53.0410
1332.49	52.1277
1333.61	41.9195
1360.21	36.0596
1362.66	0.0000
1365.15	42.3013
1368.21	65.0544
1368.53	0.0000
1376.25	45.5392
1384.27	45.1810
1394.10	47.8482
1395.20	55.1461
1407.95	53.2519
1434.06	50.4794
1436.60	49.4621
1457.56	0.0000
1460.81	34.9555
1489.15	42.6897
1509.49	44.1242
1596.49	27.2986
1620.62	37.6515
1678.03	0.0000
1691.02	16.6908
1691.02	16.6908
1706.46	0.0000
1750.46	0.0000
1764.49	21.3021
1764.49	21.3021
1764.49	21.3021
1764.49	21.3021
1770.23	19.5520
1771.40	17.7794
1791.20	0.0000
1808.65	19.1600

1836.01

17.7076



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132016

Total Uranium Activity	1.1219E+00	ug/g
Total Uranium Counting Unc.	5.7601E+00	ug/g
Total Uranium Tpu	2.9388E-06	ug/g
Total Uranium Mda	3.3001E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270                SAMPLE ID   : G244132016
*  ANALYST       : MXR1                  DETECTOR    : GAM18
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00  COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 11:42:23.68  SAMPLE ALQT  : 129.130 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.152E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.512E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.804E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.359E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 13:45:20.08

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132017.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:42:49
Sample ID          : G244132017          Sample quantity  : 1.13630E+02 GRAM
Detector name      : GAM23              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.56  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940270             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	1	74.63	410	342	1.38	149.25	141	19	5.70E-02	9.2	3.13E+00
2	1	76.97*	576	280	1.21	153.94	141	19	8.01E-02	6.8	
3	3	86.98	187	387	1.12	173.97	169	22	2.59E-02	18.3	2.06E+00
4	3	89.68*	119	403	1.40	179.37	169	22	1.65E-02	31.2	
5	3	92.86*	161	308	1.25	185.72	169	22	2.24E-02	21.4	
6	0	185.31*	277	267	1.14	370.61	364	13	3.85E-02	14.0	
7	0	208.82	126	239	1.65	417.65	413	10	1.75E-02	24.5	
8	3	238.31*	1078	176	1.17	476.61	471	18	1.50E-01	3.7	2.27E+00
9	3	241.25	248	245	1.95	482.49	471	18	3.45E-02	17.9	
10	0	269.58*	85	175	2.06	539.15	535	10	1.18E-02	31.6	
11	0	277.41	60	135	0.91	554.82	551	8	8.33E-03	35.9	
12	0	294.80	353	206	1.36	589.60	582	15	4.90E-02	10.3	
13	0	299.73	85	142	1.54	599.45	596	10	1.18E-02	28.4	
14	0	328.19	85	131	1.01	656.38	650	12	1.18E-02	29.4	
15	0	337.54	188	206	1.21	675.09	669	13	2.61E-02	17.3	
16	0	351.34*	550	160	1.36	702.68	695	13	7.63E-02	6.5	
17	0	462.43	92	83	0.72	924.86	918	13	1.28E-02	23.5	
18	0	510.07*	59	131	1.64	1020.15	1011	17	8.19E-03	52.3	
19	0	582.50*	326	87	1.53	1164.99	1156	15	4.53E-02	8.4	
20	0	608.57*	384	104	1.35	1217.14	1209	16	5.33E-02	8.0	
21	0	726.31	85	31	1.90	1452.63	1448	9	1.18E-02	16.0	
22	0	768.00	19	66	1.20	1536.00	1532	8	2.58E-03	78.7	
23	0	910.29	212	52	1.90	1820.57	1814	17	2.94E-02	10.5	
24	0	968.06	101	60	1.57	1936.12	1931	12	1.40E-02	18.5	
25	0	1119.49	73	60	0.67	2238.99	2233	17	1.01E-02	27.7	
26	0	1406.51	30	10	3.37	2813.02	2805	15	4.14E-03	30.4	
27	0	1459.33*	645	26	2.22	2918.66	2910	17	8.95E-02	4.4	
28	0	1763.25*	67	4	2.32	3526.49	3519	16	9.25E-03	14.3	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 13:45:23

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132017.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 11:42:49
Sample ID        : G244132017             Sample quantity  : 113.63 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA23               Detector geometry: CAN
Elapsed live time : 0 02:00:00.00          Elapsed real time: 0 02:00:01.56    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	*	2.001E+01	2.300E+00	5.184E-01	3.878E-02	38.594
CD-109	+	88.03	*	3.251E+00	1.228E+00	1.513E+00	1.477E-01	2.149
SN-126		64.28		9.346E-01	6.755E-01	1.159E+00	1.765E-01	0.806
	+	86.94		1.331E+00	7.365E-01	6.283E-01	2.613E-01	2.118
	+	87.57	*	3.201E-01	1.209E-01	1.498E-01	1.458E-02	2.136
CS-135	+	268.24	*	4.153E-01	2.642E-01	2.549E-01	1.947E-02	1.629
TL-208	+	277.35		7.040E-01	5.106E-01	6.799E-01	7.184E-02	1.035
	+	510.84		3.542E-01	3.721E-01	2.646E-01	2.688E-02	1.339
	+	583.14	*	5.617E-01	1.009E-01	6.822E-02	4.429E-03	8.234
		860.37		5.582E-01	3.612E-01	6.728E-01	6.082E-02	0.830
BI-211		72.87		1.721E+01	4.398E+00	7.725E+00	6.814E-01	2.228
	+	351.07	*	4.075E+00	5.892E-01	3.919E-01	2.554E-02	10.399
PB-212	+	74.81		3.141E+00	7.079E-01	6.582E-01	8.491E-02	4.773
	+	77.11		2.463E+00	4.017E-01	3.688E-01	3.318E-02	6.680
	+	87.30		1.480E+00	5.786E-01	6.955E-01	9.693E-02	2.129
	+	238.63	*	1.721E+00	1.777E-01	1.027E-01	7.385E-03	16.756
	+	300.09		2.104E+00	1.206E+00	1.440E+00	1.196E-01	1.462
PO-212	+	74.81		3.141E+00	7.079E-01	6.582E-01	8.491E-02	4.773
	+	77.11		2.463E+00	4.017E-01	3.688E-01	3.318E-02	6.680
	+	87.30		1.480E+00	5.786E-01	6.955E-01	9.693E-02	2.129
		115.19		7.170E-01	4.246E+00	7.043E+00	4.493E-01	0.102
	+	238.63	*	1.721E+00	1.777E-01	1.027E-01	7.385E-03	16.756
	+	300.09		2.104E+00	1.206E+00	1.440E+00	1.196E-01	1.462
BI-214	+	609.31	*	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
	+	1120.29		1.263E+00	7.085E-01	5.782E-01	5.373E-02	2.184
	+	1764.49		1.592E+00	4.668E-01	2.048E-01	1.274E-02	7.774
PB-214	+	74.81		5.413E+00	1.180E+00	1.134E+00	1.313E-01	4.773
	+	77.11		4.223E+00	7.601E-01	6.322E-01	7.454E-02	6.680
	+	87.30		2.536E+00	9.779E-01	1.191E+00	1.477E-01	2.129
	+	241.98		2.381E+00	8.735E-01	6.186E-01	4.920E-02	3.849
	+	295.21		1.538E+00	3.443E-01	2.394E-01	2.053E-02	6.423
	+	351.92	*	1.418E+00	2.179E-01	1.440E-01	1.202E-02	9.844
PO-214	+	74.81		5.413E+00	1.180E+00	1.134E+00	1.313E-01	4.773
	+	77.11		4.223E+00	7.601E-01	6.322E-01	7.454E-02	6.680

## ----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	87.30		2.536E+00	9.779E-01	1.191E+00	1.477E-01	2.129
	+	241.98		2.381E+00	8.735E-01	6.186E-01	4.920E-02	3.849
	+	295.21		1.538E+00	3.443E-01	2.394E-01	2.053E-02	6.423
	+	351.92	*	1.418E+00	2.179E-01	1.440E-01	1.202E-02	9.844
	+	74.81		3.141E+00	7.079E-01	6.582E-01	8.491E-02	4.773
	+	77.11		2.463E+00	4.017E-01	3.688E-01	3.318E-02	6.680
	+	87.30		1.480E+00	5.786E-01	6.955E-01	9.693E-02	2.129
PO-218	+	238.63	*	1.721E+00	1.777E-01	1.027E-01	7.385E-03	16.756
	+	300.09		2.104E+00	1.206E+00	1.440E+00	1.196E-01	1.462
	+	74.81		5.413E+00	1.180E+00	1.134E+00	1.313E-01	4.773
	+	77.11		4.223E+00	7.601E-01	6.322E-01	7.454E-02	6.680
	+	87.30		2.536E+00	9.779E-01	1.191E+00	1.477E-01	2.129
	+	241.98		2.381E+00	8.735E-01	6.186E-01	4.920E-02	3.849
	+	295.21		1.538E+00	3.443E-01	2.394E-01	2.053E-02	6.423
RA-224	+	351.92	*	1.418E+00	2.179E-01	1.440E-01	1.202E-02	9.844
RA-226	+	240.98	*	4.515E+00	1.637E+00	1.169E+00	6.587E-02	3.862
AC-228	+	609.31	*	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
	+	1120.29		1.263E+00	7.085E-01	5.782E-01	5.373E-02	2.184
	+	1764.49		1.592E+00	4.668E-01	2.048E-01	1.274E-02	7.774
	+	338.32		1.534E+00	8.204E-01	4.196E-01	1.711E-01	3.656
	+	911.07	*	1.654E+00	3.977E-01	2.534E-01	2.924E-02	6.526
	+	969.11		1.395E+00	6.102E-01	4.137E-01	9.631E-02	3.373
	+	338.32		1.534E+00	8.204E-01	4.196E-01	1.711E-01	3.656
RA-228	+	911.07	*	1.654E+00	3.977E-01	2.534E-01	2.924E-02	6.526
TH-228	+	969.11		1.395E+00	6.102E-01	4.137E-01	9.631E-02	3.373
	+	74.81		3.185E+00	6.542E-01	6.674E-01	5.982E-02	4.773
	+	77.11		2.498E+00	4.073E-01	3.740E-01	3.365E-02	6.680
	+	87.30		1.501E+00	5.672E-01	7.053E-01	6.846E-02	2.129
	+	238.63	*	1.745E+00	1.802E-01	1.042E-01	7.489E-03	16.756
	+	300.09		2.134E+00	1.746E+00	1.460E+00	8.606E-01	1.462
	+	609.31	*	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
TH-230	+	1120.29		1.263E+00	7.085E-01	5.782E-01	5.373E-02	2.184
TH-232	+	1764.49		1.592E+00	4.668E-01	2.048E-01	1.273E-02	7.774
	+	338.32		1.534E+00	5.386E-01	4.196E-01	2.478E-02	3.656
	+	911.07	*	1.654E+00	3.977E-01	2.534E-01	2.924E-02	6.526
	+	969.11		1.395E+00	6.102E-01	4.137E-01	9.631E-02	3.373
	+	609.31	*	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
	+	1120.29		1.263E+00	7.085E-01	5.782E-01	5.373E-02	2.184
	+	1764.49		1.592E+00	4.668E-01	2.048E-01	1.273E-02	7.774
NP-237	+	86.50	*	9.399E-01	4.046E-01	4.465E-01	1.017E-01	2.105
AM-243		95.87		-6.769E-01	1.279E+00	1.791E+00	4.398E-01	-0.378
	+	74.67	*	5.093E-01	1.044E-01	1.071E-01	9.520E-03	4.754
	+	86.72		3.525E+01	1.332E+01	1.669E+01	1.612E+00	2.112
		117.66		3.100E+00	4.529E+00	7.659E+00	4.743E-01	0.405
		142.18		1.097E+01	2.052E+01	3.432E+01	1.869E+00	0.320
	+	511.00	*	7.651E-02	8.012E-02	5.717E-02	3.321E-03	1.338

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	8.166E-02	3.732E-01	6.245E-01	4.244E-02	0.131

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		1.032E-02	5.661E-02	9.406E-02	6.317E-03	0.110
NA-24	1368.53	*		-2.898E-01	5.661E-02	Half-Life too short		
AL-26	1129.67			-2.379E+00	2.399E+00	3.183E+00	2.028E-01	-0.748
	1808.65	*		1.692E-02	2.880E-02	5.441E-02	3.270E-03	0.311
TI-44	67.85			-4.868E-02	6.685E-02	9.415E-02	8.198E-03	-0.517
	78.38	*	+	4.546E-01	7.412E-02	9.923E-02	8.995E-03	4.581
SC-46	889.25	*		-1.001E-02	4.509E-02	7.343E-02	6.560E-03	-0.136
	1120.51		+	2.142E-01	1.193E-01	1.436E-01	9.354E-03	1.492
V-48	944.10			-4.455E-01	1.015E+00	1.608E+00	1.401E-01	-0.277
	983.50	*		-5.001E-02	7.480E-02	1.141E-01	9.494E-03	-0.438
	1312.09			1.277E-02	7.833E-02	1.305E-01	9.286E-03	0.098
CR-51	320.08	*		-1.086E-01	4.438E-01	7.145E-01	4.685E-02	-0.152
MN-52	744.21			2.532E-02	2.548E-01	4.135E-01	2.633E-02	0.061
	848.13			-2.371E+00	6.896E+00	1.114E+01	9.088E-01	-0.213
	935.52			2.289E-01	2.728E-01	4.865E-01	4.278E-02	0.471
	1246.25			-2.313E-02	8.001E+00	1.305E+01	8.354E-01	-0.002
	1333.61			-5.653E+00	5.007E+00	6.644E+00	4.877E-01	-0.851
	1434.06	*		9.212E-03	2.423E-01	3.942E-01	2.852E-02	0.023
MN-54	834.83	*		2.533E-02	4.495E-02	7.863E-02	6.226E-03	0.322
CO-56	846.75	*		2.148E-02	4.500E-02	7.848E-02	6.384E-03	0.274
	977.42			5.058E-01	3.115E+00	5.255E+00	4.406E-01	0.096
	1037.82			-6.215E-02	3.369E-01	5.441E-01	4.460E-02	-0.114
	1175.09			-5.780E-01	2.695E+00	4.317E+00	2.444E-01	-0.134
	1238.25			1.522E-01	1.127E-01	2.042E-01	1.359E-02	0.745
	1360.21			-9.899E-01	1.225E+00	1.741E+00	1.275E-01	-0.569
	1771.40			-1.532E-01	2.658E-01	3.855E-01	2.385E-02	-0.398
CO-57	122.06	*		-1.413E-02	2.914E-02	4.688E-02	2.764E-03	-0.302
	136.48			-2.099E-01	2.487E-01	3.923E-01	2.551E-02	-0.535
CO-58	810.76	*		-1.291E-02	4.559E-02	7.434E-02	5.585E-03	-0.174
FE-59	142.65			1.035E-01	3.232E+00	5.190E+00	2.822E-01	0.020
	192.34			-3.729E-02	1.155E+00	1.802E+00	2.085E-01	-0.021
	1099.22	*		3.369E-02	1.039E-01	1.768E-01	1.362E-02	0.191
	1291.56			-5.814E-02	1.435E-01	2.214E-01	1.838E-02	-0.263
CO-60	1173.22			-2.603E-02	5.588E-02	8.716E-02	4.917E-03	-0.299
	1332.49	*		-3.422E-02	4.511E-02	6.471E-02	4.750E-03	-0.529
ZN-65	1115.52	*		1.542E-01	1.377E-01	2.210E-01	1.460E-02	0.698
GE-68	1077.35	*		2.880E-01	1.483E+00	2.492E+00	1.783E-01	0.116
AS-73	53.44	*		9.207E-01	1.244E+00	2.149E+00	1.897E-01	0.428
AS-74	595.88	*		2.020E-02	1.070E-01	1.770E-01	9.760E-03	0.114
	634.78			-2.697E-01	4.250E-01	6.501E-01	3.441E-02	-0.415
SE-75	66.05			-4.444E+00	6.304E+00	1.016E+01	1.066E+00	-0.437
	96.73			-1.073E+00	1.046E+00	1.420E+00	1.904E-01	-0.756
	121.11			-3.554E-02	1.566E-01	2.550E-01	2.378E-02	-0.139
	136.00			-2.630E-03	4.612E-02	7.541E-02	4.258E-03	-0.035
	198.60			-6.235E-01	2.143E+00	3.375E+00	2.279E-01	-0.185
	264.65	*		-4.193E-02	5.781E-02	7.525E-02	4.380E-03	-0.557
	279.53			1.664E-01	1.451E-01	2.297E-01	1.444E-02	0.725
	303.91			-1.174E+00	2.700E+00	3.810E+00	3.656E-01	-0.308
	400.65			-1.252E-01	3.029E-01	4.890E-01	4.450E-02	-0.256

## ---- 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		5.062E+02	1.913E+02	3.170E+02	3.093E+01	1.597
		200.40		-5.069E+01	1.385E+02	2.199E+02	1.176E+01	-0.230
	+	239.00		1.989E+02	1.849E+01	3.234E+01	1.818E+00	6.150
		249.79		-1.602E+01	5.669E+01	8.932E+01	5.078E+00	-0.179
		281.68		-5.314E+00	8.483E+01	1.241E+02	7.231E+00	-0.043
		297.23		2.679E+02	6.490E+01	9.804E+01	5.757E+00	2.733
		303.76		-6.068E+01	1.671E+02	2.374E+02	1.397E+01	-0.256
		439.47		3.671E+01	1.274E+02	2.147E+02	1.256E+01	0.171
		484.57		3.526E+01	1.893E+02	3.160E+02	1.847E+01	0.112
		520.65	*	1.907E+00	9.081E+00	1.513E+01	8.759E-01	0.126
		574.64		-1.192E+02	2.280E+02	3.025E+02	1.698E+01	-0.394
		578.91		2.947E+01	8.854E+01	1.294E+02	7.238E+00	0.228
		585.48		3.821E+02	1.902E+02	3.161E+02	1.759E+01	1.209
		755.35		1.412E+02	1.527E+02	2.653E+02	1.737E+01	0.532
		817.79		-6.008E+01	1.131E+02	1.796E+02	1.367E+01	-0.335
		698.33		1.320E+01	4.042E+01	6.709E+01	3.790E+00	0.197
SR-82		776.49	*	2.646E-02	4.360E-01	7.358E-01	5.076E-02	0.036
		1395.20		-2.451E+00	1.085E+01	1.684E+01	1.227E+00	-0.146
RB-83		520.41	*	2.044E-02	8.292E-02	1.385E-01	8.021E-03	0.148
		529.64		-5.606E-02	1.244E-01	1.962E-01	1.131E-02	-0.286
		552.65		-8.810E-02	2.304E-01	3.642E-01	2.075E-02	-0.242
RB-84		881.50	*	-4.921E-02	8.363E-02	1.313E-01	1.153E-02	-0.375
KR-85		513.99	*	8.032E+00	9.832E+00	1.508E+01	8.749E-01	0.533
SR-85		513.99	*	4.070E-02	4.981E-02	7.640E-02	4.433E-03	0.533
RB-86		1076.63	*	4.666E-01	9.149E-01	1.585E+00	1.136E-01	0.294
Y-88		898.02		1.487E-02	4.736E-02	8.128E-02	7.432E-03	0.183
		1836.01	*	1.959E-02	4.336E-02	7.761E-02	4.570E-03	0.252
ZR-88		392.90	*	1.154E-02	3.571E-02	6.058E-02	3.497E-03	0.190
Y-91		1204.90	*	-1.132E+01	2.155E+01	3.323E+01	1.983E+00	-0.340
NB-94		702.63	*	-1.967E-02	4.240E-02	6.557E-02	3.747E-03	-0.300
		871.10		-1.572E-02	4.224E-02	6.739E-02	5.787E-03	-0.233
NB-95		765.79	*	1.084E-01	5.980E-02	9.995E-02	6.717E-03	1.085
NB-95M		235.69	*	6.991E-01	1.991E-01	3.229E-01	2.382E-02	2.165
ZR-95		724.18		2.878E-01	1.349E-01	2.302E-01	1.627E-02	1.251
		756.15	*	6.884E-02	8.935E-02	1.533E-01	1.177E-02	0.449
NB-97		657.90	*	1.180E-02	8.935E-02	Half-Life	too short	
		1024.50		3.103E+00	8.935E-02	Half-Life	too short	
ZR-97		254.15		1.079E+00	8.935E-02	Half-Life	too short	
		355.39		-2.973E-01	8.935E-02	Half-Life	too short	
		507.63	*	2.496E+00	8.935E-02	Half-Life	too short	
		602.52		-4.908E+00	8.935E-02	Half-Life	too short	
		1021.30		-2.330E+00	8.935E-02	Half-Life	too short	
		1147.95		-2.550E-01	8.935E-02	Half-Life	too short	
		1362.66		1.816E+00	8.935E-02	Half-Life	too short	
		1750.46		-1.657E-01	8.935E-02	Half-Life	too short	
MO-99		140.51		-1.821E+01	2.432E+01	3.694E+01	9.930E+00	-0.493
		181.06		5.152E+00	1.638E+01	2.369E+01	4.015E+00	0.217
		366.43		1.727E+00	7.569E+01	1.264E+02	7.406E+00	0.014
		739.58	*	1.814E+00	1.039E+01	1.700E+01	2.380E+00	0.107

---- 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			1.549E+01	3.036E+01	5.312E+01	3.679E+00	0.292
	140.51	*		-1.554E+09	3.036E+01	Half-Life	too short	
RH-101	127.23			1.169E-02	3.874E-02	6.438E-02	3.697E-03	0.182
	198.01	*		-1.193E-02	3.920E-02	6.169E-02	3.289E-03	-0.193
	325.23			1.221E-01	3.055E-01	4.590E-01	2.712E-02	0.266
RH-102	418.52			-5.095E-02	3.457E-01	5.673E-01	3.305E-02	-0.090
	475.06	*		-2.135E-02	3.520E-02	5.530E-02	3.237E-03	-0.386
	631.29			2.513E-02	6.115E-02	1.031E-01	5.479E-03	0.244
	697.49			2.119E-03	9.674E-02	1.564E-01	8.816E-03	0.014
	766.84	+		1.019E-01	1.604E-01	2.586E-01	1.742E-02	0.394
	1046.59			2.351E-02	1.289E-01	2.170E-01	1.643E-02	0.108
	1112.84			2.242E-02	3.129E-01	4.463E-01	2.961E-02	0.050
RU-103	497.08	*		9.874E-03	5.034E-02	8.311E-02	1.052E-02	0.119
	610.33			1.171E+01	2.446E+00	3.321E+00	5.077E-01	3.527
RH-106	511.85			7.571E-02	2.796E-01	4.811E-01	2.794E-02	0.157
	621.84	*		1.787E-01	3.600E-01	6.103E-01	7.039E-02	0.293
	1050.47			7.422E-01	2.682E+00	4.554E+00	3.426E-01	0.163
RU-106	511.85			7.571E-02	2.796E-01	4.811E-01	2.794E-02	0.157
	621.84	*		1.787E-01	3.595E-01	6.103E-01	3.280E-02	0.293
	1050.47			7.422E-01	2.682E+00	4.554E+00	3.426E-01	0.163
AG-108M	433.93	*		-1.478E-02	4.121E-02	6.653E-02	4.218E-03	-0.222
	614.37			9.000E-03	4.862E-02	6.989E-02	4.152E-03	0.129
	722.95			-1.638E-03	5.593E-02	7.730E-02	5.026E-03	-0.021
AG-110M	657.75	*		1.548E-02	4.100E-02	6.864E-02	3.814E-03	0.226
	677.61			2.503E-01	3.950E-01	6.725E-01	3.849E-02	0.372
	706.67			1.627E-01	2.479E-01	4.232E-01	2.592E-02	0.384
	763.93			9.534E-02	2.147E-01	3.153E-01	2.207E-02	0.302
	884.67			1.712E-02	5.680E-02	9.745E-02	8.885E-03	0.176
	937.48			-1.203E-01	1.398E-01	2.121E-01	1.926E-02	-0.567
	1384.27			-7.695E-02	1.768E-01	2.653E-01	2.012E-02	-0.290
IN-111	171.28			-2.298E-01	8.919E-01	1.433E+00	7.350E-02	-0.160
	245.39	*		9.022E-01	1.007E+00	1.510E+00	8.545E-02	0.598
IN-113M	391.69	*		2.959E-02	5.238E-02	9.011E-02	5.551E-03	0.328
SN-113	391.69	*		2.959E-02	5.238E-02	9.011E-02	5.551E-03	0.328
IN-114M	190.27	*		3.365E-02	2.413E-01	3.447E-01	1.817E-02	0.098
CD-115	260.90			1.308E+02	1.089E+02	1.858E+02	1.067E+01	0.704
	492.35			1.878E+00	3.000E+01	4.957E+01	2.894E+00	0.038
	527.90	*		5.222E+00	8.761E+00	1.504E+01	8.682E-01	0.347
SN-117M	156.02			-2.182E-02	2.606E+00	4.250E+00	2.224E-01	-0.005
	158.56	*		2.672E-02	6.238E-02	1.036E-01	5.382E-03	0.258
SB-122	563.90	*		1.370E-01	1.793E+00	2.946E+00	1.667E-01	0.046
	692.80			2.585E+01	4.052E+01	6.898E+01	3.839E+00	0.375
I-123	159.00	*		1.104E+00	4.052E+01	Half-Life	too short	
	528.96			-2.847E+01	4.052E+01	Half-Life	too short	
TE-123M	159.00	*		2.265E-02	3.383E-02	5.672E-02	2.993E-03	0.399
I-124	602.71	*		-1.204E+00	8.061E-01	9.127E-01	5.002E-02	-1.319
	722.78			-1.086E+00	4.772E+00	6.408E+00	3.861E-01	-0.169
	1325.50			4.294E+01	3.349E+01	6.323E+01	4.593E+00	0.679
	1376.25			3.485E+01	2.895E+01	5.440E+01	3.975E+00	0.641



## ---- 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		5.933E+00	1.402E+01	2.428E+01	1.722E+00	0.244
		1691.02		-1.629E+00	3.643E+00	5.494E+00	3.586E-01	-0.296
		602.71		-8.331E-02	5.576E-02	6.314E-02	3.462E-03	-1.319
		645.85		4.409E-01	5.564E-01	9.682E-01	5.844E-02	0.455
		709.31		-2.012E+00	3.357E+00	5.103E+00	2.968E-01	-0.394
		713.82		8.109E-02	1.875E+00	3.035E+00	3.114E-01	0.027
		722.78		-1.089E-01	4.786E-01	6.427E-01	4.042E-02	-0.169
	+	968.20		1.418E+01	5.385E+00	8.247E+00	6.993E-01	1.719
		1045.16		-1.195E+00	2.790E+00	4.379E+00	3.324E-01	-0.273
		1325.50		4.599E+00	3.587E+00	6.773E+00	4.919E-01	0.679
SB-125		1368.21		-2.407E+00	2.121E+00	2.899E+00	3.676E-01	-0.830
		1436.60		-1.400E+00	4.498E+00	6.897E+00	4.988E-01	-0.203
		1691.02	*	-3.852E-02	8.617E-02	1.299E-01	9.060E-03	-0.296
		427.89	*	8.498E-03	1.028E-01	1.712E-01	1.042E-02	0.050
	+	463.38		1.077E+00	5.117E-01	6.448E-01	4.393E-02	1.671
		600.56		6.181E-02	2.273E-01	3.450E-01	2.223E-02	0.179
TE-125M		635.90		-9.088E-02	3.385E-01	5.361E-01	3.409E-02	-0.170
		109.28	*	3.098E-01	1.079E+01	1.783E+01	1.590E+00	0.017
		388.63		-1.465E-01	2.314E-01	3.646E-01	2.108E-02	-0.402
I-126		666.33	*	9.653E-02	1.994E-01	3.365E-01	1.741E-02	0.287
		753.82		2.349E+00	1.774E+00	3.174E+00	2.070E-01	0.740
SB-126		223.80		-3.969E+00	4.582E+00	7.034E+00	3.884E-01	-0.564
	+	278.60		4.370E+00	3.146E+00	5.160E+00	3.002E-01	0.847
		296.50		1.439E+01	2.472E+00	3.961E+00	2.326E-01	3.633
		414.70		3.044E-02	8.650E-02	1.466E-01	8.532E-03	0.208
		415.30		3.130E+00	7.194E+00	1.225E+01	7.133E-01	0.255
		555.20		-6.291E-01	4.327E+00	6.982E+00	3.972E-01	-0.090
		573.80		3.195E-01	1.336E+00	2.023E+00	1.136E-01	0.158
		593.00		-3.226E-01	1.058E+00	1.678E+00	9.277E-02	-0.192
		656.30		2.571E+00	3.744E+00	6.401E+00	3.295E-01	0.402
		666.33		4.023E-02	8.309E-02	1.403E-01	7.258E-03	0.287
SB-127		675.00		2.028E+00	2.383E+00	4.126E+00	2.187E-01	0.491
		695.00		1.029E-02	9.242E-02	1.506E-01	8.432E-03	0.068
		697.00		5.537E-02	3.223E-01	5.277E-01	2.970E-02	0.105
		720.50	*	-1.341E-01	1.792E-01	2.201E-01	1.319E-02	-0.609
		856.80		-1.757E-01	5.464E-01	8.860E-01	7.372E-02	-0.198
		989.30		1.462E+00	1.310E+00	2.417E+00	1.996E-01	0.605
		1034.80		-2.480E+00	9.524E+00	1.486E+01	1.148E+00	-0.167
		1213.00		-4.443E+00	5.097E+00	7.527E+00	4.554E-01	-0.590
		61.10		1.955E+01	6.360E+01	1.077E+02	1.172E+01	0.182
		252.40		2.749E+00	4.514E+00	7.238E+00	3.000E+00	0.380
		290.80		-8.059E+00	2.186E+01	3.111E+01	2.736E+00	-0.259
		411.60		-5.349E+00	1.243E+01	2.002E+01	2.829E+00	-0.267
		444.90		5.092E+00	9.440E+00	1.617E+01	1.694E+00	0.315
		473.00		6.561E-02	1.621E+00	2.678E+00	2.913E-01	0.025
		543.00		-1.345E+01	1.551E+01	2.326E+01	2.928E+00	-0.578
		603.60		-2.008E+01	1.368E+01	1.536E+01	1.574E+00	-1.307
		685.20	*	1.660E+00	1.421E+00	2.509E+00	2.213E-01	0.662
		698.50		3.369E+00	1.538E+01	2.528E+01	3.580E+00	0.133

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127	722.20			-1.167E+01	3.041E+01	3.971E+01	3.535E+00	-0.294
	783.80			6.892E-01	3.473E+00	5.923E+00	6.542E-01	0.116
	57.60			-3.488E+00	8.459E+00	1.395E+01	1.222E+00	-0.250
	145.22			1.767E-01	8.339E-01	1.349E+00	7.275E-02	0.131
	172.10			1.761E-01	1.337E-01	2.301E-01	1.182E-02	0.765
I-131	202.84	*		-5.949E-03	5.916E-02	8.776E-02	4.711E-03	-0.068
	374.96			3.461E-02	2.292E-01	3.853E-01	2.248E-02	0.090
	80.18			-5.107E+00	5.645E+00	7.856E+00	7.239E-01	-0.650
	284.30			-7.454E-02	1.577E+00	2.651E+00	1.716E-01	-0.028
	364.48	*		-9.733E-02	1.280E-01	2.032E-01	1.326E-02	-0.479
TE-132	636.97			4.121E-01	1.711E+00	2.835E+00	1.707E-01	0.145
	722.89			-8.378E-01	8.501E+00	1.164E+01	7.091E-01	-0.072
	49.72			-4.079E+01	2.573E+01	3.984E+01	4.136E+00	-1.024
	111.76			-1.604E+01	2.709E+01	4.350E+01	3.929E+00	-0.369
	116.30			1.256E+01	2.587E+01	4.342E+01	3.807E+00	0.289
BA-133	228.16	*		3.158E-01	6.684E-01	1.098E+00	1.542E-01	0.288
	53.15			3.389E+00	5.449E+00	9.375E+00	8.269E-01	0.361
	79.62			9.581E-02	1.746E+00	2.564E+00	3.980E-01	0.037
	81.00			-1.886E-01	1.639E-01	1.826E-01	2.960E-02	-1.033
	276.40	+		6.956E-01	5.072E-01	7.686E-01	9.967E-02	0.905
I-133	302.84			1.142E-01	1.844E-01	2.822E-01	3.302E-02	0.405
	356.01	*		-5.268E-02	6.304E-02	8.465E-02	9.822E-03	-0.622
	383.85			1.773E-01	3.415E-01	5.865E-01	6.378E-02	0.302
	510.53	+		3.155E-01	3.415E-01	Half-Life	too short	
	529.87	*		-2.069E-03	3.415E-01	Half-Life	too short	
CS-134	706.58			1.354E-01	3.415E-01	Half-Life	too short	
	856.28			-1.233E-01	3.415E-01	Half-Life	too short	
	875.33			3.642E-02	3.415E-01	Half-Life	too short	
	1236.41			3.891E-01	3.415E-01	Half-Life	too short	
	1298.22			1.371E-01	3.415E-01	Half-Life	too short	
I-135	475.35			-8.864E-01	2.275E+00	3.636E+00	2.128E-01	-0.244
	563.23			5.496E-02	4.216E-01	6.959E-01	4.025E-02	0.079
	569.32			1.587E-01	2.326E-01	4.001E-01	2.326E-02	0.397
	604.70			4.371E-03	4.476E-02	6.363E-02	3.502E-03	0.069
	795.84	*		6.050E-02	5.926E-02	1.068E-01	7.797E-03	0.567
I-135	801.93			7.691E-02	4.416E-01	7.520E-01	5.558E-02	0.102
	1038.57			6.346E-01	4.231E+00	7.104E+00	5.453E-01	0.089
	1167.94			4.103E-01	2.984E+00	4.961E+00	2.844E-01	0.083
	1365.15			9.039E-01	1.410E+00	2.504E+00	1.947E-01	0.361
	288.45			-1.340E+09	1.410E+00	Half-Life	too short	
I-135	417.63			2.581E+08	1.410E+00	Half-Life	too short	
	546.56			1.343E+09	1.410E+00	Half-Life	too short	
	836.80			1.244E+09	1.410E+00	Half-Life	too short	
	1038.76			5.852E+08	1.410E+00	Half-Life	too short	
	1124.00			1.431E+09	1.410E+00	Half-Life	too short	
I-135	1131.51			5.316E+08	1.410E+00	Half-Life	too short	
	1260.41	*		-1.673E+08	1.410E+00	Half-Life	too short	
	1457.56			4.955E+10	1.410E+00	Half-Life	too short	
	1678.03			1.478E+08	1.410E+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
	1706.46		3.087E+08	1.410E+00	Half-Life	too short	
	1791.20		-4.017E+08	1.410E+00	Half-Life	too short	
CS-136	66.91		-1.000E+00	1.051E+00	1.535E+00	2.377E-01	-0.651
	86.29	+	3.936E+00	1.534E+00	2.394E+00	3.242E-01	1.644
	153.22		9.088E-02	7.468E-01	1.225E+00	8.339E-02	0.074
	163.89		-2.807E-01	1.204E+00	1.940E+00	1.304E-01	-0.145
	176.55		-5.689E-01	4.118E-01	6.225E-01	3.710E-02	-0.914
	273.65		-3.333E-01	7.888E-01	7.316E-01	4.838E-02	-0.455
	340.57		7.992E-02	1.586E-01	2.397E-01	1.502E-02	0.333
	818.51		-5.660E-02	8.212E-02	1.281E-01	9.780E-03	-0.442
	1048.07	*	-1.471E-02	1.189E-01	1.936E-01	1.542E-02	-0.076
	1235.34		8.586E-01	7.292E-01	1.298E+00	1.333E-01	0.662
BA-137M	661.65	*	1.554E-03	4.281E-02	6.951E-02	3.551E-03	0.022
CS-137	661.65	*	1.643E-03	4.525E-02	7.348E-02	3.774E-03	0.022
CE-139	165.85	*	2.769E-02	3.441E-02	5.799E-02	2.956E-03	0.478
BA-140	162.64		-4.998E-03	8.410E-01	1.370E+00	8.141E-02	-0.004
	304.84		-8.439E-02	1.564E+00	2.279E+00	6.223E-01	-0.037
	423.70		-1.585E+00	2.038E+00	3.072E+00	9.767E-01	-0.516
	537.32	*	-1.403E-02	2.685E-01	4.375E-01	1.422E-01	-0.032
LA-140	328.77	+	8.031E-01	4.759E-01	5.839E-01	3.850E-02	1.376
	432.53		1.019E+00	2.304E+00	3.926E+00	2.531E-01	0.259
	487.03		-1.799E-01	1.501E-01	2.218E-01	1.465E-02	-0.811
	751.79		2.025E-01	2.119E+00	3.434E+00	2.634E-01	0.059
	815.85		2.775E-02	3.559E-01	6.002E-01	5.216E-02	0.046
	867.82		-8.227E-01	1.567E+00	2.507E+00	2.253E-01	-0.328
	919.63		-1.534E+00	3.349E+00	4.858E+00	5.295E-01	-0.316
	925.24		1.111E-01	1.228E+00	2.061E+00	1.939E-01	0.054
	1596.49	*	-5.756E-02	9.862E-02	1.491E-01	1.023E-02	-0.386
CE-141	145.44	*	2.265E-03	7.427E-02	1.216E-01	6.858E-03	0.019
CE-143	57.37		-9.861E-05	7.427E-02	Half-Life	too short	
	231.56		-1.314E-03	7.427E-02	Half-Life	too short	
	293.26	*	7.036E-04	7.427E-02	Half-Life	too short	
	350.59	+	1.829E-02	7.427E-02	Half-Life	too short	
	490.36		3.843E-06	7.427E-02	Half-Life	too short	
	664.57		9.859E-04	7.427E-02	Half-Life	too short	
	721.93		-3.415E-04	7.427E-02	Half-Life	too short	
CE-144	80.11		-2.464E+00	2.860E+00	3.992E+00	3.659E-01	-0.617
	133.54	*	-9.622E-02	2.496E-01	4.022E-01	5.680E-02	-0.239
PM-144	476.78		-1.465E-02	8.031E-02	1.305E-01	9.114E-03	-0.112
	618.01		-1.253E-02	3.646E-02	5.734E-02	3.308E-03	-0.218
	696.49	*	2.272E-02	4.337E-02	7.307E-02	4.110E-03	0.311
	778.57		1.598E+00	2.773E+00	4.873E+00	3.380E-01	0.328
PR-144	696.49	*	1.538E+00	2.937E+00	4.949E+00	2.782E-01	0.311
	1489.15		-2.681E-01	1.551E+01	2.494E+01	1.779E+00	-0.011
PM-146	453.90	*	1.362E-02	5.302E-02	8.688E-02	7.525E-03	0.157
	633.02		-2.055E-01	1.631E+00	2.613E+00	9.603E-01	-0.079
	735.90		2.613E-02	1.793E-01	2.923E-01	8.178E-02	0.089
	747.13		7.539E-02	1.136E-01	1.933E-01	2.475E-02	0.390
ND-147	91.11	+	6.287E-01	3.979E-01	5.921E-01	5.821E-02	1.062

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149 EU-152		319.41		1.392E-01	3.670E+00	6.168E+00	3.644E-01	0.023
		439.89		1.944E+00	6.593E+00	1.112E+01	6.507E-01	0.175
		531.02	*	1.522E-01	6.151E-01	1.027E+00	1.387E-01	0.148
		285.90	*	4.868E+01	7.273E+01	1.263E+02	1.792E+01	0.385
		121.78		-4.216E-02	8.477E-02	1.363E-01	1.048E-02	-0.309
		244.69		3.680E-01	4.202E-01	6.276E-01	3.550E-02	0.586
		344.27	*	-1.863E-02	1.648E-01	1.860E-01	1.233E-02	-0.100
		443.98		3.820E-01	1.107E+00	1.874E+00	1.097E-01	0.204
		778.89		1.566E-01	3.181E-01	5.556E-01	3.855E-02	0.282
		867.32		-4.310E-01	9.832E-01	1.587E+00	1.352E-01	-0.272
		964.01		8.360E-01	3.890E-01	6.905E-01	5.884E-02	1.211
		1085.78		-3.314E-01	4.806E-01	7.302E-01	5.139E-02	-0.454
		1112.02		-5.491E-02	4.323E-01	6.246E-01	4.151E-02	-0.088
	+	1407.95		4.642E-01	2.841E-01	4.334E-01	3.152E-02	1.071
GD-153		69.67		5.565E-01	2.279E+00	3.391E+00	2.963E-01	0.164
		83.37		3.443E+00	2.169E+01	2.985E+01	2.802E+00	0.115
		97.43	*	4.364E-02	1.019E-01	1.518E-01	1.240E-02	0.288
		103.18		-8.189E-02	1.279E-01	2.058E-01	1.538E-02	-0.398
EU-154		123.07		-2.287E-02	5.916E-02	9.555E-02	9.019E-03	-0.239
		247.94		-3.720E-01	4.707E-01	6.545E-01	6.195E-02	-0.568
		591.81		1.909E-01	7.428E-01	1.236E+00	1.189E-01	0.155
		723.30		1.531E-01	2.393E-01	3.592E-01	2.613E-02	0.426
EU-155		756.87		5.251E-01	9.553E-01	1.612E+00	1.708E-01	0.326
		873.19		-1.110E-01	3.637E-01	5.885E-01	7.208E-02	-0.189
		996.32		-2.122E-01	3.945E-01	6.087E-01	1.069E-01	-0.349
		1004.76		1.089E-01	2.697E-01	4.626E-01	5.204E-02	0.235
		1274.45	*	3.033E-02	1.584E-01	2.634E-01	2.615E-02	0.115
		48.70		-6.202E+00	4.149E+00	6.496E+00	5.240E-01	-0.955
		60.01		-3.795E+00	6.970E+00	1.143E+01	9.928E-01	-0.332
	+	86.54		3.853E-01	1.457E-01	2.329E-01	2.263E-02	1.655
		105.31	*	3.561E-02	1.291E-01	2.155E-01	1.589E-02	0.165
	+	86.79		1.019E+00	3.849E-01	6.129E-01	5.922E-02	1.662
TB-160		197.04		-3.007E-02	6.575E-01	1.061E+00	5.650E-02	-0.028
		215.65		9.994E-01	8.897E-01	1.510E+00	8.248E-02	0.662
	+	298.57		3.029E-01	1.727E-01	2.399E-01	1.410E-02	1.262
		879.36	*	5.093E-03	1.696E-01	2.835E-01	2.479E-02	0.018
HO-166M		962.29		1.166E+00	6.520E-01	1.140E+00	9.737E-02	1.022
		966.15		1.196E+00	3.827E-01	6.718E-01	5.710E-02	1.780
		1177.93		2.870E-01	4.441E-01	7.724E-01	4.394E-02	0.372
		1271.85		-2.300E-01	8.703E-01	1.375E+00	9.175E-02	-0.167
		80.57		-4.167E-01	3.989E-01	5.084E-01	4.675E-02	-0.820
	+	184.41		2.313E-01	6.581E-02	8.397E-02	4.389E-03	2.754
		280.46		5.524E-02	1.092E-01	1.664E-01	9.692E-03	0.332
		410.95		-3.133E-02	3.110E-01	5.126E-01	2.980E-02	-0.061
TM-171		711.68	*	-2.375E-03	7.077E-02	1.137E-01	6.655E-03	-0.021
		752.31		2.451E-01	3.554E-01	6.058E-01	3.937E-02	0.405
		810.29		-2.607E-02	7.114E-02	1.152E-01	8.614E-03	-0.226
		51.35		2.731E+01	4.780E+01	8.219E+01	7.144E+00	0.332
		52.39		1.998E+01	2.427E+01	4.205E+01	3.694E+00	0.475

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	59.40		-7.430E+00	3.730E+01	6.205E+01	5.391E+00	-0.120
		66.72	*	-3.441E+01	3.845E+01	5.936E+01	5.162E+00	-0.580
		88.36		4.654E-01	2.941E-01	4.773E-01	4.627E-02	0.975
		201.83		1.146E-03	3.411E-02	5.521E-02	2.960E-03	0.021
LU-177	+	306.84	*	-7.051E-03	2.994E-02	4.679E-02	2.756E-03	-0.151
		401.10		-3.963E+00	7.954E+00	1.277E+01	7.399E-01	-0.310
		112.95		-6.872E-01	1.677E+00	2.717E+00	1.781E-01	-0.253
		208.36	*	3.172E+00	1.565E+00	2.103E+00	1.137E-01	1.509
LU-177M	+	52.97		1.521E+00	2.464E+00	4.238E+00	3.736E-01	0.359
		54.07		-5.014E-03	1.263E+00	2.121E+00	1.874E-01	-0.002
		61.30		-1.075E-01	2.075E+00	3.438E+00	2.986E-01	-0.031
		121.62		-1.456E-01	4.306E-01	6.976E-01	4.123E-02	-0.209
HF-181	+	147.16		-2.548E-01	7.940E-01	1.281E+00	6.870E-02	-0.199
		171.86		6.315E-01	5.433E-01	9.298E-01	4.774E-02	0.679
		218.09		-5.803E-01	1.026E+00	1.605E+00	8.798E-02	-0.362
		268.79		2.077E+00	1.317E+00	1.790E+00	1.034E-01	1.160
W-181	+	319.02		2.403E-02	3.065E-01	5.162E-01	3.049E-02	0.047
		367.43		-2.534E-01	1.098E+00	1.804E+00	1.056E-01	-0.140
		413.65	*	-3.814E-02	2.236E-01	3.668E-01	2.134E-02	-0.104
		56.28		-2.763E-01	1.335E+00	2.222E+00	1.956E-01	-0.124
TA-182	+	57.53		-2.129E-01	7.112E-01	1.178E+00	1.033E-01	-0.181
		65.20		3.431E-02	1.224E+00	2.033E+00	1.766E-01	0.017
		133.02		-1.004E-01	8.101E-02	1.259E-01	7.066E-03	-0.798
		136.25		-3.030E-01	5.347E-01	8.547E-01	4.744E-02	-0.355
RE-183	+	345.85		9.878E-02	2.422E-01	3.646E-01	2.151E-02	0.271
		482.03	*	2.874E-02	5.049E-02	8.650E-02	5.059E-03	0.332
		56.28		-1.087E-01	5.289E-01	8.802E-01	7.750E-02	-0.124
		57.53		-8.443E-02	2.820E-01	4.672E-01	4.094E-02	-0.181
RE-184	+	65.20	*	1.350E-02	4.816E-01	7.997E-01	6.948E-02	0.017
		67.75		-1.118E-01	1.588E-01	2.239E-01	1.950E-02	-0.499
		100.10		1.366E-01	2.078E-01	3.523E-01	2.757E-02	0.388
		152.43		5.110E-02	4.051E-01	6.649E-01	3.514E-02	0.077
RE-183	+	222.10		-1.429E-01	4.048E-01	6.396E-01	3.524E-02	-0.223
		1001.68		5.312E-01	2.510E+00	4.168E+00	3.384E-01	0.127
		1121.28		3.704E-01	2.001E-01	3.733E-01	2.427E-02	0.992
		1189.05		7.273E-03	3.685E-01	6.044E-01	3.507E-02	0.012
RE-184	+	1221.42	*	8.727E-02	2.342E-01	3.965E-01	2.434E-02	0.220
		1230.97		-3.005E-01	6.039E-01	9.397E-01	5.862E-02	-0.320
		57.98		-8.061E-03	2.774E-01	4.648E-01	4.064E-02	-0.017
		59.32		-3.826E-02	1.518E-01	2.520E-01	2.190E-02	-0.152
RE-184	+	67.20		-1.517E-01	2.733E-01	4.108E-01	3.574E-02	-0.369
		162.32	*	4.173E-02	1.286E-01	2.124E-01	1.093E-02	0.196
		208.81		3.169E+00	1.564E+00	2.123E+00	1.149E-01	1.492
		291.72		2.949E-01	1.188E+00	1.775E+00	1.040E-01	0.166
RE-184	+	57.98		-2.990E-02	1.029E+00	1.724E+00	1.507E-01	-0.017
		59.32		-1.418E-01	5.625E-01	9.338E-01	8.116E-02	-0.152
		67.20		-5.623E-01	1.014E+00	1.523E+00	1.325E-01	-0.369
		161.27		-7.059E-02	4.251E-01	6.876E-01	3.547E-02	-0.103
RE-184	+	216.55		2.143E-01	3.162E-01	5.263E-01	2.879E-02	0.407

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185	252.85	*		2.672E-01	2.815E-01	4.739E-01	2.702E-02	0.564
	318.01			6.988E-02	5.198E-01	8.785E-01	5.188E-02	0.080
	792.07			3.053E+00	1.309E+00	2.525E+00	1.809E-01	1.209
	903.28			-2.228E-01	1.398E+00	1.959E+00	1.776E-01	-0.114
	920.93			1.177E-01	5.340E-01	8.892E-01	7.931E-02	0.132
	59.72			-1.215E-01	4.107E-01	6.805E-01	5.910E-02	-0.179
	61.14			6.100E-02	2.206E-01	3.732E-01	3.242E-02	0.163
	69.30			-9.672E-02	4.148E-01	6.026E-01	5.261E-02	-0.161
	592.07			1.310E-01	3.019E+00	4.934E+00	2.731E-01	0.027
	646.12	*		4.280E-02	4.716E-02	8.290E-02	4.326E-03	0.516
	717.42			2.605E-01	9.886E-01	1.636E+00	9.718E-02	0.159
	874.81			7.576E-02	7.116E-01	1.199E+00	1.038E-01	0.063
RE-188	880.27			-1.945E-02	9.259E-01	1.540E+00	1.350E-01	-0.013
	155.03	*		1.359E-01	2.045E-01	3.428E-01	1.799E-02	0.396
	477.96			2.264E-02	3.652E+00	6.017E+00	3.521E-01	0.004
W-188	633.10			-3.881E-01	3.260E+00	5.231E+00	2.775E-01	-0.074
	63.58			2.600E+01	6.985E+01	1.174E+02	1.019E+01	0.221
	227.08			2.137E+01	1.528E+01	2.621E+01	1.453E+00	0.815
IR-192	290.67	*		-3.695E+00	9.153E+00	1.299E+01	7.608E-01	-0.284
	295.96			1.160E+00	2.497E-01	3.272E-01	1.950E-02	3.546
	308.46			2.979E-02	1.088E-01	1.855E-01	1.105E-02	0.161
AU-195	316.51	*		1.845E-02	4.062E-02	6.982E-02	4.142E-03	0.264
	468.07			2.732E-02	8.816E-02	1.300E-01	8.758E-03	0.210
	604.41			-1.268E-01	5.866E-01	8.018E-01	8.969E-02	-0.158
	612.46			4.007E-01	9.010E-01	1.333E+00	9.719E-02	0.301
	65.12			1.642E-02	2.242E-01	3.730E-01	3.240E-02	0.044
	66.83			-1.143E-01	1.265E-01	1.952E-01	1.698E-02	-0.585
TL-200	75.70			1.641E+00	3.365E-01	6.151E-01	5.493E-02	2.668
	98.88	*		1.388E-01	2.745E-01	4.483E-01	3.577E-02	0.310
	129.76			6.205E+00	3.494E+00	6.094E+00	3.464E-01	1.018
TL-201	367.94	*		-1.282E-04	3.494E+00	Half-Life too short		
	579.30			3.832E-03	3.494E+00	Half-Life too short		
	828.27			-1.325E-03	3.494E+00	Half-Life too short		
TL-202	1205.75			-9.124E-05	3.494E+00	Half-Life too short		
	68.90			-2.445E+00	5.199E+00	7.455E+00	6.503E-01	-0.328
	70.82			2.770E+00	2.885E+00	4.426E+00	3.879E-01	0.626
	80.30			-4.760E+00	5.238E+00	7.288E+00	6.689E-01	-0.653
TL-203	135.34			9.206E+00	2.326E+01	3.875E+01	2.158E+00	0.238
	167.43	*		-3.658E+00	6.348E+00	1.005E+01	5.130E-01	-0.364
	68.90			-2.667E-01	5.671E-01	8.132E-01	7.094E-02	-0.328
	70.82			3.014E-01	3.139E-01	4.815E-01	4.219E-02	0.626
HG-203	80.30			-5.180E-01	5.700E-01	7.931E-01	7.279E-02	-0.653
	439.56	*		2.166E-02	8.031E-02	1.352E-01	7.908E-03	0.160
	70.83			1.375E+00	1.433E+00	2.188E+00	2.997E-01	0.628
	72.87			3.366E+00	9.236E-01	1.511E+00	2.015E-01	2.228
BI-207	82.60			2.894E-01	2.056E+00	2.204E+00	3.130E-01	0.131
	279.20	*		8.471E-02	5.445E-02	8.805E-02	5.439E-03	0.962
	72.80			9.378E-01	2.528E-01	4.449E-01	3.923E-02	2.108
	74.97	+		9.141E-01	1.875E-01	3.118E-01	2.774E-02	2.932

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207		84.90		3.214E-01	2.702E-01	4.123E-01	3.920E-02	0.779
		569.67		1.730E-02	3.738E-02	6.322E-02	3.561E-03	0.274
		1063.62	*	1.834E-02	5.769E-02	9.848E-02	7.235E-03	0.186
		1770.23		2.966E-01	4.224E-01	7.620E-01	4.718E-02	0.389
		81.07		-4.174E-01	3.573E-01	4.027E-01	3.716E-02	-1.036
		83.78		2.732E-02	1.725E-01	2.534E-01	2.387E-02	0.108
		94.90		4.518E-01	3.114E-01	4.828E-01	4.119E-02	0.936
		122.32		-1.069E+00	2.024E+00	3.250E+00	2.199E-01	-0.329
		144.24		-1.450E-02	8.483E-01	1.360E+00	9.419E-02	-0.011
		154.21		3.305E-01	4.791E-01	8.036E-01	5.282E-02	0.411
	+	269.46		4.886E-01	3.100E-01	4.247E-01	2.568E-02	1.150
		323.87	*	-4.069E-01	8.850E-01	1.238E+00	2.050E-01	-0.329
	+	338.28		6.405E+00	2.318E+00	2.907E+00	3.079E-01	2.203
		445.03		1.453E+00	2.695E+00	4.614E+00	4.753E-01	0.315
PO-209		260.50		1.872E+01	1.161E+01	2.016E+01	1.158E+00	0.929
		262.80		-4.577E+01	3.278E+01	4.779E+01	2.749E+00	-0.958
		896.60	*	2.485E+00	8.644E+00	1.480E+01	1.343E+00	0.168
BI-210		46.50	*	2.167E+00	6.546E+00	1.079E+01	8.403E-01	0.201
PB-210		46.50	*	2.167E+00	6.546E+00	1.079E+01	8.403E-01	0.201
PO-210		46.50	*	2.167E+00	6.546E+00	1.079E+01	7.240E-01	0.201
PB-211		404.84	*	-1.085E+00	1.368E+00	1.863E+00	1.161E+00	-0.582
		427.08		-3.582E-01	2.287E+00	3.725E+00	2.303E+00	-0.096
		831.96		1.228E+00	1.631E+00	2.582E+00	1.616E+00	0.476
BI-212	+	727.18	*	1.271E+00	4.198E-01	7.748E-01	6.150E-02	1.641
		785.46		4.360E-02	2.090E+00	3.513E+00	2.477E-01	0.012
		1620.62		1.708E+00	1.629E+00	3.110E+00	2.109E-01	0.549
PO-215		81.07		-4.174E-01	3.573E-01	4.027E-01	3.716E-02	-1.036
		83.78		2.732E-02	1.725E-01	2.534E-01	2.387E-02	0.108
		94.90		4.518E-01	3.114E-01	4.828E-01	4.119E-02	0.936
		122.32		-1.069E+00	2.024E+00	3.250E+00	2.199E-01	-0.329
		144.24		-1.450E-02	8.483E-01	1.360E+00	9.419E-02	-0.011
		154.21		3.305E-01	4.791E-01	8.036E-01	5.282E-02	0.411
	+	269.46		4.886E-01	3.100E-01	4.247E-01	2.568E-02	1.150
		323.87	*	-4.069E-01	8.850E-01	1.238E+00	2.050E-01	-0.329
	+	338.28		6.405E+00	2.318E+00	2.907E+00	3.079E-01	2.203
		445.03		1.453E+00	2.695E+00	4.614E+00	4.753E-01	0.315
RN-219		271.23		6.513E-01	3.659E-01	5.409E-01	4.379E-02	1.204
		401.81	*	4.502E-02	4.867E-01	8.128E-01	1.106E-01	0.055
RN-220		549.76	*	-8.218E+00	3.225E+01	5.164E+01	2.947E+00	-0.159
RA-223		81.07		-4.174E-01	3.573E-01	4.027E-01	3.716E-02	-1.036
		83.78		2.732E-02	1.725E-01	2.534E-01	2.387E-02	0.108
		94.90		4.518E-01	3.114E-01	4.828E-01	4.119E-02	0.936
		122.32		-1.069E+00	2.024E+00	3.250E+00	2.199E-01	-0.329
		144.24		-1.450E-02	8.483E-01	1.360E+00	9.419E-02	-0.011
		154.21		3.305E-01	4.791E-01	8.036E-01	5.282E-02	0.411
	+	269.46		4.886E-01	3.100E-01	4.247E-01	2.568E-02	1.150
		323.87	*	-4.069E-01	8.850E-01	1.238E+00	2.050E-01	-0.329
	+	338.28		6.405E+00	2.318E+00	2.907E+00	3.079E-01	2.203
		445.03		1.453E+00	2.695E+00	4.614E+00	4.753E-01	0.315

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		79.80		-3.853E-01	2.198E+00	3.187E+00	6.923E-01	-0.121
		236.00		2.703E+00	4.924E-01	7.426E-01	7.682E-02	3.639
		256.20	*	-3.734E-01	4.988E-01	7.615E-01	1.061E-01	-0.490
		286.10		1.464E+00	1.762E+00	3.017E+00	3.494E-01	0.485
	+	299.80		3.900E+00	2.302E+00	3.156E+00	5.149E-01	1.236
		304.40		-4.672E-01	2.443E+00	3.519E+00	6.097E-01	-0.133
TH-227		334.20		2.468E+00	3.571E+00	4.449E+00	8.171E-01	0.555
		79.80		-3.853E-01	2.198E+00	3.187E+00	7.009E-01	-0.121
	+	94.00		6.785E+00	3.260E+00	4.529E+00	9.872E-01	1.498
		236.00		2.703E+00	4.718E-01	7.426E-01	6.633E-02	3.639
		256.20	*	-3.734E-01	5.001E-01	7.615E-01	1.285E-01	-0.490
		286.10		1.464E+00	2.286E+00	3.017E+00	3.022E+00	0.485
TH-229	+	299.80		3.900E+00	2.302E+00	3.156E+00	5.149E-01	1.236
		304.40		-4.672E-01	2.443E+00	3.519E+00	6.097E-01	-0.133
		334.20		2.468E+00	3.571E+00	4.449E+00	8.171E-01	0.555
		85.43		6.216E-01	2.770E-01	4.331E-01	4.135E-02	1.435
	+	88.47		2.679E-01	1.693E-01	2.720E-01	2.630E-02	0.985
		100.00		1.363E-01	2.169E-01	3.674E-01	2.880E-02	0.371
PA-231		193.63	*	1.731E-01	6.081E-01	9.972E-01	5.282E-02	0.174
		210.97		1.227E+00	1.036E+00	1.567E+00	8.509E-02	0.783
		283.67	*	-5.076E-01	1.822E+00	2.943E+00	4.060E-01	-0.172
		301.29		1.491E+00	7.687E-01	1.255E+00	1.317E-01	1.188
	TH-231	81.07		-4.174E-01	3.573E-01	4.027E-01	3.716E-02	-1.036
		83.78		2.732E-02	1.725E-01	2.534E-01	2.387E-02	0.108
TH-231		94.90		4.518E-01	3.114E-01	4.828E-01	4.119E-02	0.936
		122.32		-1.069E+00	2.024E+00	3.250E+00	2.199E-01	-0.329
		144.24		-1.450E-02	8.483E-01	1.360E+00	9.419E-02	-0.011
		154.21		3.305E-01	4.791E-01	8.036E-01	5.282E-02	0.411
	+	269.46		4.886E-01	3.100E-01	4.247E-01	2.568E-02	1.150
		323.87	*	-4.069E-01	8.850E-01	1.238E+00	2.050E-01	-0.329
U-231	+	338.28		6.405E+00	2.318E+00	2.907E+00	3.079E-01	2.203
		445.03		1.453E+00	2.695E+00	4.614E+00	4.753E-01	0.315
		84.21		6.176E-01	6.158E+00	9.019E+00	8.525E-01	0.068
	+	92.29		5.562E+00	2.429E+00	3.889E+00	3.481E-01	1.430
		95.87	*	-6.366E-01	1.194E+00	1.685E+00	1.413E-01	-0.378
		108.00		1.939E-02	2.031E+00	3.354E+00	2.344E-01	0.006
PA-233	+	75.28		2.668E+01	6.434E+00	9.693E+00	1.504E+00	2.752
	+	86.59		6.266E+00	2.853E+00	3.782E+00	1.027E+00	1.657
	+	300.12		1.087E+00	6.339E-01	8.801E-01	1.186E-01	1.235
		311.98	*	-1.876E-02	7.441E-02	1.231E-01	7.698E-03	-0.152
		340.50		6.238E-01	8.392E-01	1.272E+00	2.925E-01	0.490
		398.62		-4.347E-01	2.429E+00	3.983E+00	1.030E+00	-0.109
PA-234		415.76		1.257E+00	2.036E+00	3.480E+00	7.166E-01	0.361
		63.00		3.997E-01	2.120E+00	3.541E+00	5.502E-01	0.113
		94.67		4.850E-01	2.322E-01	3.609E-01	4.462E-02	1.344
		98.44		1.870E-03	1.185E-01	1.819E-01	1.013E-01	0.010
		99.86		3.228E-01	5.484E-01	9.276E-01	7.287E-02	0.348
		111.00		-9.156E-02	2.171E-01	3.515E-01	3.802E-02	-0.260
		131.20		4.289E-02	1.300E-01	2.161E-01	1.221E-02	0.198



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		152.70	-1.506E-02	3.996E-01	6.514E-01	1.018E-01	-0.023
	+	186.00	8.326E+00	3.443E+00	3.005E+00	9.150E-01	2.771
		226.40	5.230E-01	4.855E-01	8.175E-01	9.345E-02	0.640
		227.20	7.068E-01	5.208E-01	8.920E-01	4.947E-02	0.792
		248.90	-9.810E-01	1.014E+00	1.498E+00	3.213E-01	-0.655
	+	293.70	7.382E+00	1.935E+00	2.105E+00	3.391E-01	3.506
		369.80	6.085E-01	1.050E+00	1.797E+00	3.745E-01	0.339
		568.70	5.422E-01	1.205E+00	2.037E+00	1.148E-01	0.266
		569.50	1.404E-01	3.307E-01	5.577E-01	3.142E-02	0.252
		574.00	-6.268E-01	2.146E+00	3.079E+00	1.729E-01	-0.204
		699.00	1.369E-01	8.897E-01	1.454E+00	2.609E-01	0.094
		706.10	9.174E-01	1.333E+00	2.179E+00	9.614E-01	0.421
		733.00	1.289E-01	4.493E-01	7.232E-01	1.545E-01	0.178
		742.81	-6.235E-01	1.731E+00	2.602E+00	1.743E+00	-0.240
		796.30	1.072E-01	1.149E+00	1.939E+00	5.166E-01	0.055
		805.60	1.474E+00	1.235E+00	2.143E+00	6.498E-01	0.688
		819.60	-1.095E+00	1.485E+00	2.206E+00	8.342E-01	-0.496
		826.30	1.873E-02	9.349E-01	1.567E+00	6.987E-01	0.012
		831.60	3.666E-01	7.390E-01	1.277E+00	3.784E-01	0.287
		876.40	5.309E-01	1.149E+00	1.768E+00	1.818E+00	0.300
		880.51	-2.363E-03	3.349E-01	5.579E-01	4.891E-02	-0.004
		883.24	5.864E-02	3.380E-01	5.691E-01	3.827E-01	0.103
		899.00	4.863E-01	9.850E-01	1.681E+00	7.363E-01	0.289
		925.00	2.279E-01	1.353E+00	2.288E+00	2.033E-01	0.100
		926.50	-1.397E-02	2.028E-01	3.346E-01	8.487E-02	-0.042
		946.00	* -3.688E-01	3.678E-01	5.354E-01	1.006E-01	-0.689
		949.00	3.857E-01	5.389E-01	9.538E-01	8.266E-02	0.404
		980.50	-2.425E-01	7.723E-01	1.231E+00	1.028E-01	-0.197
		1394.10	3.066E-01	1.319E+00	2.193E+00	1.424E+00	0.140
PA-234M		766.42	3.182E+01	2.260E+01	2.720E+01	1.372E+01	1.170
		1001.03	* 8.998E-01	5.703E+00	9.419E+00	8.988E-01	0.096
TH-234		63.29	* 8.284E-02	1.795E+00	2.984E+00	5.377E-01	0.028
	+	92.38	1.756E+00	8.161E-01	1.225E+00	2.234E-01	1.433
U-235	+	89.95	2.689E+00	1.877E+00	2.319E+00	7.205E-01	1.160
	+	93.35	2.111E+00	1.080E+00	1.444E+00	4.054E-01	1.462
		105.00	-2.695E-01	1.285E+00	2.101E+00	6.193E-01	-0.128
		143.76	* -7.793E-02	2.589E-01	4.095E-01	6.622E-02	-0.190
		163.35	-3.384E-01	5.712E-01	9.008E-01	1.601E-01	-0.376
	+	185.71	3.084E-01	8.775E-02	1.121E-01	5.872E-03	2.750
		205.31	5.152E-01	6.783E-01	9.975E-01	1.781E-01	0.517
NP-236		94.67	3.705E-01	1.732E-01	2.740E-01	2.347E-02	1.352
		98.44	1.374E-03	8.959E-02	1.375E-01	1.105E-02	0.010
		111.00	-6.926E-02	1.641E-01	2.659E-01	1.787E-02	-0.260
		160.31	* -4.958E-02	9.781E-02	1.559E-01	8.062E-03	-0.318
U-238		63.29	* 8.284E-02	1.795E+00	2.984E+00	5.377E-01	0.028
	+	92.38	1.756E+00	7.669E-01	1.225E+00	1.095E-01	1.433
NP-239		99.55	3.368E-03	1.879E-01	3.111E-01	2.456E-02	0.011
		117.00	* 2.373E-01	2.259E-01	3.872E-01	2.416E-02	0.613
	+	209.75	2.528E+00	1.248E+00	1.694E+00	9.183E-02	1.492

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		228.18		1.311E-01	2.774E-01	4.566E-01	2.535E-02	0.287
	+	277.60		3.395E-01	2.444E-01	3.851E-01	2.239E-02	0.882
		334.30		1.435E+00	2.011E+00	2.528E+00	1.494E-01	0.568
AM-241		59.54	*	-8.124E-02	2.190E-01	3.619E-01	3.367E-02	-0.225
CM-243		99.55		3.465E-03	1.934E-01	3.201E-01	2.527E-02	0.011
		103.76	*	5.764E-02	1.180E-01	1.986E-01	1.472E-02	0.290
		117.00		2.441E-01	2.324E-01	3.983E-01	2.486E-02	0.613
	+	209.75		2.492E+00	1.230E+00	1.670E+00	9.052E-02	1.492
		228.18		1.324E-01	2.803E-01	4.613E-01	2.561E-02	0.287
	+	277.60		3.423E-01	2.464E-01	3.882E-01	2.257E-02	0.882
AM-246		798.80		-4.417E-01	1.765E-01	2.217E-01	1.614E-02	-1.992
		1036.00		-3.323E-01	3.499E-01	4.977E-01	3.836E-02	-0.668
		1062.04		1.658E-01	2.620E-01	4.607E-01	3.394E-02	0.360
		1078.86	*	6.506E-02	1.734E-01	2.964E-01	2.115E-02	0.219
CM-247	+	278.00		1.408E+00	1.014E+00	1.611E+00	9.367E-02	0.874
		287.40		4.145E-01	1.524E+00	2.383E+00	1.393E-01	0.174
		402.60	*	7.738E-03	4.390E-02	7.371E-02	4.272E-03	0.105
CF-249		252.85		1.007E+00	1.061E+00	1.787E+00	1.019E-01	0.564
		333.44		2.581E-01	2.769E-01	3.170E-01	1.873E-02	0.814
		387.95	*	-3.553E-02	4.731E-02	7.381E-02	4.271E-03	-0.481
CF-251		176.60	*	-2.089E-01	1.506E-01	2.277E-01	1.177E-02	-0.917
		227.00		6.461E-01	4.647E-01	7.968E-01	4.418E-02	0.811
		285.00		2.776E-01	1.990E+00	3.377E+00	1.972E-01	0.082

## VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132017      *
* Acquisition date   : 19-JAN-2010 11:42:49 Detector SN#                   *
* Detector ID        : GAM23 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.56 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244132017 Analyst initials: MXR1                  *
* Batch Number      : 940270 Sample Quantity : 1.1363E+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	2.001E+01	2.254E+00	5.161E-01	0.000E+00
CD-109	3.251E+00	1.204E+00	1.544E+00	0.000E+00
SN-126	3.201E-01	1.185E-01	1.529E-01	0.000E+00
CS-135	4.153E-01	2.589E-01	2.576E-01	0.000E+00
TL-208	5.617E-01	9.891E-02	6.848E-02	0.000E+00
BI-211	4.075E+00	5.775E-01	3.952E-01	0.000E+00
PB-212	1.721E+00	1.741E-01	1.039E-01	0.000E+00
PO-212	1.721E+00	1.741E-01	1.039E-01	0.000E+00
BI-214	1.249E+00	2.162E-01	1.130E-01	0.000E+00
PB-214	1.418E+00	2.136E-01	1.452E-01	0.000E+00
PO-214	1.418E+00	2.136E-01	1.452E-01	0.000E+00
PO-216	1.721E+00	1.741E-01	1.039E-01	0.000E+00
PO-218	1.418E+00	2.136E-01	1.452E-01	0.000E+00
RA-224	4.515E+00	1.604E+00	1.183E+00	0.000E+00
RA-226	1.249E+00	2.162E-01	1.130E-01	0.000E+00
AC-228	1.654E+00	3.897E-01	2.533E-01	0.000E+00
RA-228	1.654E+00	3.897E-01	2.533E-01	0.000E+00
TH-228	1.745E+00	1.765E-01	1.054E-01	0.000E+00
TH-230	1.249E+00	2.162E-01	1.130E-01	0.000E+00
TH-232	1.654E+00	3.897E-01	2.533E-01	0.000E+00
U-234	1.249E+00	2.162E-01	1.130E-01	0.000E+00
NP-237	9.399E-01	3.965E-01	4.558E-01	0.000E+00
AM-243	5.093E-01	1.023E-01	1.095E-01	0.000E+00
ANH-511	7.651E-02	7.852E-02	5.746E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	8.166E-02	3.657E-01	6.280E-01	0.000E+00 NOT IDENT.
NA-22	1.032E-02	5.548E-02	9.376E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.538E+05	0.000E+00	0.000E+00 SHORT HLIF

AL-26	1.692E-02	2.822E-02	5.407E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	7.264E-02	1.014E-01	0.000E+00	FAIL ABUN
SC-46	-1.001E-02	4.419E-02	7.343E-02	0.000E+00	FAIL ABUN
V-48	-5.001E-02	7.330E-02	1.140E-01	0.000E+00	NOT IDENT.
CR-51	-1.086E-01	4.350E-01	7.211E-01	0.000E+00	NOT IDENT.
MN-52	9.212E-03	2.375E-01	3.925E-01	0.000E+00	NOT IDENT.
MN-54	2.533E-02	4.405E-02	7.868E-02	0.000E+00	NOT IDENT.
CO-56	2.148E-02	4.410E-02	7.852E-02	0.000E+00	NOT IDENT.
CO-57	-1.413E-02	2.855E-02	4.771E-02	0.000E+00	NOT IDENT.
CO-58	-1.291E-02	4.468E-02	7.441E-02	0.000E+00	NOT IDENT.
FE-59	3.369E-02	1.018E-01	1.765E-01	0.000E+00	NOT IDENT.
CO-60	-3.422E-02	4.421E-02	6.448E-02	0.000E+00	NOT IDENT.
ZN-65	1.542E-01	1.350E-01	2.206E-01	0.000E+00	NOT IDENT.
GE-68	2.880E-01	1.453E+00	2.488E+00	0.000E+00	NOT IDENT.
AS-73	9.207E-01	1.219E+00	2.203E+00	0.000E+00	NOT IDENT.
AS-74	2.020E-02	1.049E-01	1.776E-01	0.000E+00	NOT IDENT.
SE-75	-4.193E-02	5.666E-02	7.607E-02	0.000E+00	NOT IDENT.
BR-77	1.907E+00	8.899E+00	1.521E+01	0.000E+00	FAIL ABUN
SR-82	2.646E-02	4.273E-01	7.368E-01	0.000E+00	NOT IDENT.
RB-83	2.044E-02	8.126E-02	1.392E-01	0.000E+00	NOT IDENT.
RB-84	-4.921E-02	8.196E-02	1.313E-01	0.000E+00	NOT IDENT.
KR-85	8.032E+00	9.635E+00	1.515E+01	0.000E+00	NOT IDENT.
SR-85	4.070E-02	4.882E-02	7.678E-02	0.000E+00	NOT IDENT.
RB-86	4.666E-01	8.966E-01	1.582E+00	0.000E+00	NOT IDENT.
Y-88	1.959E-02	4.250E-02	7.711E-02	0.000E+00	NOT IDENT.
ZR-88	1.154E-02	3.500E-02	6.102E-02	0.000E+00	NOT IDENT.
Y-91	-1.132E+01	2.112E+01	3.314E+01	0.000E+00	NOT IDENT.
NB-94	-1.967E-02	4.155E-02	6.571E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.861E-02	1.001E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.951E-01	3.268E-01	0.000E+00	NOT IDENT.
ZR-95	6.884E-02	8.756E-02	1.536E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.678E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.414E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.814E+00	1.019E+01	1.703E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.032E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.193E-02	3.841E-02	6.253E-02	0.000E+00	NOT IDENT.
RH-102	-2.135E-02	3.449E-02	5.561E-02	0.000E+00	FAIL ABUN
RU-103	9.874E-03	4.934E-02	8.355E-02	0.000E+00	NOT IDENT.
RH-106	1.787E-01	3.528E-01	6.123E-01	0.000E+00	NOT IDENT.
RU-106	1.787E-01	3.523E-01	6.123E-01	0.000E+00	NOT IDENT.
AG-108M	-1.478E-02	4.038E-02	6.696E-02	0.000E+00	NOT IDENT.
AG-110M	1.548E-02	4.018E-02	6.883E-02	0.000E+00	NOT IDENT.
IN-111	9.022E-01	9.871E-01	1.527E+00	0.000E+00	NOT IDENT.
IN-113M	2.959E-02	5.133E-02	9.078E-02	0.000E+00	NOT IDENT.
SN-113	2.959E-02	5.133E-02	9.078E-02	0.000E+00	NOT IDENT.
IN-114M	3.365E-02	2.364E-01	3.495E-01	0.000E+00	NOT IDENT.
CD-115	5.222E+00	8.586E+00	1.512E+01	0.000E+00	NOT IDENT.
SN-117M	2.672E-02	6.113E-02	1.052E-01	0.000E+00	NOT IDENT.
SB-122	1.370E-01	1.757E+00	2.959E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.616E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	2.265E-02	3.316E-02	5.760E-02	0.000E+00	NOT IDENT.
I-124	-1.204E+00	7.899E-01	9.159E-01	0.000E+00	NOT IDENT.
SB-124	-3.852E-02	8.444E-02	1.292E-01	0.000E+00	FAIL ABUN
SB-125	8.498E-03	1.007E-01	1.723E-01	0.000E+00	FAIL ABUN
TE-125M	3.098E-01	1.057E+01	1.816E+01	0.000E+00	NOT IDENT.
I-126	9.653E-02	1.954E-01	3.374E-01	0.000E+00	NOT IDENT.
SB-126	-1.341E-01	1.756E-01	2.206E-01	0.000E+00	FAIL ABUN
SB-127	1.660E+00	1.392E+00	2.515E+00	0.000E+00	NOT IDENT.
XE-127	-5.949E-03	5.798E-02	8.893E-02	0.000E+00	NOT IDENT.
I-131	-9.733E-02	1.255E-01	2.049E-01	0.000E+00	NOT IDENT.
TE-132	3.158E-01	6.550E-01	1.111E+00	0.000E+00	NOT IDENT.
BA-133	-5.268E-02	6.178E-02	8.536E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.917E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.050E-02	5.807E-02	1.069E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.342E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.471E-02	1.165E-01	1.933E-01	0.000E+00	FAIL ABUN
BA-137M	1.554E-03	4.195E-02	6.970E-02	0.000E+00	NOT IDENT.
CS-137	1.643E-03	4.434E-02	7.368E-02	0.000E+00	NOT IDENT.
CE-139	2.769E-02	3.372E-02	5.886E-02	0.000E+00	NOT IDENT.
BA-140	-1.403E-02	2.632E-01	4.395E-01	0.000E+00	NOT IDENT.
LA-140	-5.756E-02	9.664E-02	1.483E-01	0.000E+00	FAIL ABUN
CE-141	2.265E-03	7.278E-02	1.236E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.899E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.622E-02	2.446E-01	4.090E-01	0.000E+00	NOT IDENT.
PM-144	2.272E-02	4.250E-02	7.324E-02	0.000E+00	NOT IDENT.
PR-144	1.538E+00	2.878E+00	4.960E+00	0.000E+00	NOT IDENT.
PM-146	1.362E-02	5.196E-02	8.741E-02	0.000E+00	NOT IDENT.
ND-147	1.522E-01	6.028E-01	1.032E+00	0.000E+00	FAIL ABUN

PM-149	4.868E+01	7.128E+01	1.276E+02	0.000E+00	NOT IDENT.
EU-152	-1.863E-02	1.615E-01	1.876E-01	0.000E+00	FAIL ABUN
GD-153	4.364E-02	9.990E-02	1.548E-01	0.000E+00	NOT IDENT.
EU-154	3.033E-02	1.552E-01	2.626E-01	0.000E+00	NOT IDENT.
EU-155	3.561E-02	1.265E-01	2.196E-01	0.000E+00	FAIL ABUN
TB-160	5.093E-03	1.662E-01	2.836E-01	0.000E+00	FAIL ABUN
HO-166M	-2.375E-03	6.935E-02	1.139E-01	0.000E+00	FAIL ABUN
TM-171	-3.441E+01	3.768E+01	6.073E+01	0.000E+00	NOT IDENT.
LU-176	-7.051E-03	2.934E-02	4.724E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.534E+00	2.130E+00	0.000E+00	FAIL ABUN
LU-177M	-3.814E-02	2.191E-01	3.693E-01	0.000E+00	FAIL ABUN
HF-181	2.874E-02	4.948E-02	8.698E-02	0.000E+00	NOT IDENT.
W-181	1.350E-02	4.720E-01	8.184E-01	0.000E+00	NOT IDENT.
TA-182	8.727E-02	2.295E-01	3.954E-01	0.000E+00	NOT IDENT.
RE-183	4.173E-02	1.260E-01	2.157E-01	0.000E+00	FAIL ABUN
RE-184	2.672E-01	2.759E-01	4.793E-01	0.000E+00	NOT IDENT.
OS-185	4.280E-02	4.621E-02	8.314E-02	0.000E+00	NOT IDENT.
RE-188	1.359E-01	2.004E-01	3.482E-01	0.000E+00	NOT IDENT.
W-188	-3.695E+00	8.970E+00	1.312E+01	0.000E+00	NOT IDENT.
IR-192	1.845E-02	3.981E-02	7.047E-02	0.000E+00	FAIL ABUN
AU-195	1.388E-01	2.690E-01	4.571E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.653E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.658E+00	6.221E+00	1.020E+01	0.000E+00	NOT IDENT.
TL-202	2.166E-02	7.870E-02	1.360E-01	0.000E+00	NOT IDENT.
HG-203	8.471E-02	5.336E-02	8.897E-02	0.000E+00	NOT IDENT.
BI-207	1.834E-02	5.653E-02	9.832E-02	0.000E+00	FAIL ABUN
TL-207	-4.069E-01	8.673E-01	1.250E+00	0.000E+00	FAIL ABUN
PO-209	2.485E+00	8.471E+00	1.480E+01	0.000E+00	NOT IDENT.
BI-210	2.167E+00	6.416E+00	1.108E+01	0.000E+00	NOT IDENT.
PB-210	2.167E+00	6.416E+00	1.108E+01	0.000E+00	NOT IDENT.
PO-210	2.167E+00	6.415E+00	1.108E+01	0.000E+00	NOT IDENT.
PB-211	-1.085E+00	1.341E+00	1.876E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.114E-01	7.763E-01	0.000E+00	FAIL ABUN
PO-215	-4.069E-01	8.673E-01	1.250E+00	0.000E+00	FAIL ABUN
RN-219	4.502E-02	4.770E-01	8.187E-01	0.000E+00	NOT IDENT.
RN-220	-8.218E+00	3.160E+01	5.187E+01	0.000E+00	NOT IDENT.
RA-223	-4.069E-01	8.673E-01	1.250E+00	0.000E+00	FAIL ABUN
AC-227	-3.734E-01	4.889E-01	7.700E-01	0.000E+00	FAIL ABUN
TH-227	-3.734E-01	4.901E-01	7.700E-01	0.000E+00	FAIL ABUN
TH-229	1.731E-01	5.959E-01	1.011E+00	0.000E+00	FAIL ABUN
PA-231	-5.076E-01	1.785E+00	2.974E+00	0.000E+00	NOT IDENT.
TH-231	-4.069E-01	8.673E-01	1.250E+00	0.000E+00	FAIL ABUN
U-231	-6.366E-01	1.170E+00	1.718E+00	0.000E+00	FAIL ABUN
PA-233	-1.876E-02	7.292E-02	1.243E-01	0.000E+00	FAIL ABUN
PA-234	-3.688E-01	3.605E-01	5.351E-01	0.000E+00	FAIL ABUN
PA-234M	8.998E-01	5.589E+00	9.410E+00	0.000E+00	NOT IDENT.
TH-234	8.284E-02	1.759E+00	3.054E+00	0.000E+00	FAIL ABUN
U-235	-7.793E-02	2.537E-01	4.162E-01	0.000E+00	FAIL ABUN
NP-236	-4.958E-02	9.585E-02	1.583E-01	0.000E+00	NOT IDENT.
U-238	8.284E-02	1.759E+00	3.054E+00	0.000E+00	FAIL ABUN
NP-239	2.373E-01	2.214E-01	3.942E-01	0.000E+00	FAIL ABUN
AM-241	-8.124E-02	2.147E-01	3.706E-01	0.000E+00	NOT IDENT.
CM-243	5.764E-02	1.156E-01	2.024E-01	0.000E+00	FAIL ABUN
AM-246	6.506E-02	1.699E-01	2.959E-01	0.000E+00	NOT IDENT.
CM-247	7.738E-03	4.302E-02	7.424E-02	0.000E+00	FAIL ABUN
CF-249	-3.553E-02	4.636E-02	7.436E-02	0.000E+00	NOT IDENT.
CF-251	-2.089E-01	1.475E-01	2.310E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132017.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 11:42:49
Sample ID          : G244132017          Sample quantity   : 1.13630E+02 GRAM
Detector name      : GAM23              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time  : 0 02:00:01.56  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 940270             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	645	10.67*	9.975E-01	2.001E+01	2.001E+01	11.50
CD-109	88.03	187	3.72*	5.208E+00	3.184E+00	3.251E+00	37.78
SN-126	64.28	-----	9.60	2.723E+00	-----	Line Not Found	-----
	86.94	187	8.90	5.208E+00	1.331E+00	1.331E+00	55.35
	87.57	187	37.00*	5.208E+00	3.201E-01	3.201E-01	37.78
CS-135	268.24	85	16.00*	4.230E+00	4.153E-01	4.153E-01	63.63
TL-208	277.35	60	6.80	4.139E+00	7.040E-01	7.040E-01	72.53
	510.84	59	21.60	2.547E+00	3.542E-01	3.542E-01	105.06
	583.14	326	84.20*	2.278E+00	5.617E-01	5.617E-01	17.97
	860.37	-----	12.46	1.609E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.829E+00	-----	Line Not Found	-----
	351.07	550	12.94*	3.443E+00	4.075E+00	4.075E+00	14.46
PB-212	74.81	410	10.70	4.035E+00	3.141E+00	3.141E+00	22.54
	77.11	576	18.00	4.295E+00	2.463E+00	2.463E+00	16.31
	87.30	187	8.00	5.208E+00	1.480E+00	1.480E+00	39.08
	238.63	1078	44.60*	4.638E+00	1.721E+00	1.721E+00	10.32
	300.09	85	3.41	3.899E+00	2.104E+00	2.104E+00	57.32
PO-212	74.81	410	10.70	4.035E+00	3.141E+00	3.141E+00	22.54
	77.11	576	18.00	4.295E+00	2.463E+00	2.463E+00	16.31
	87.30	187	8.00	5.208E+00	1.480E+00	1.480E+00	39.08
	115.19	-----	0.60	6.293E+00	-----	Line Not Found	-----
	238.63	1078	44.60*	4.638E+00	1.721E+00	1.721E+00	10.32
	300.09	85	3.41	3.899E+00	2.104E+00	2.104E+00	57.32
BI-214	609.31	384	46.30*	2.194E+00	1.249E+00	1.249E+00	17.67
	1120.29	73	15.10	1.259E+00	1.263E+00	1.263E+00	56.10
	1764.49	67	15.80	8.743E-01	1.592E+00	1.592E+00	29.31
PB-214	74.81	410	6.21	4.035E+00	5.412E+00	5.413E+00	21.80
	77.11	576	10.50	4.295E+00	4.223E+00	4.223E+00	18.00
	87.30	187	4.67	5.208E+00	2.536E+00	2.536E+00	38.56
	241.98	248	7.49	4.597E+00	2.381E+00	2.381E+00	36.69
	295.21	353	19.20	3.950E+00	1.538E+00	1.538E+00	22.39
	351.92	550	37.20*	3.443E+00	1.418E+00	1.418E+00	15.37

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	74.81	410	6.21	4.035E+00	5.412E+00	5.413E+00	21.80
	77.11	576	10.50	4.295E+00	4.223E+00	4.223E+00	18.00
	87.30	187	4.67	5.208E+00	2.536E+00	2.536E+00	38.56
	241.98	248	7.49	4.597E+00	2.381E+00	2.381E+00	36.69
	295.21	353	19.20	3.950E+00	1.538E+00	1.538E+00	22.39
PO-216	351.92	550	37.20*	3.443E+00	1.418E+00	1.418E+00	15.37
	74.81	410	10.70	4.035E+00	3.141E+00	3.141E+00	22.54
	77.11	576	18.00	4.295E+00	2.463E+00	2.463E+00	16.31
	87.30	187	8.00	5.208E+00	1.480E+00	1.480E+00	39.08
	238.63	1078	44.60*	4.638E+00	1.721E+00	1.721E+00	10.32
PO-218	300.09	85	3.41	3.899E+00	2.104E+00	2.104E+00	57.32
	74.81	410	6.21	4.035E+00	5.412E+00	5.413E+00	21.80
	77.11	576	10.50	4.295E+00	4.223E+00	4.223E+00	18.00
	87.30	187	4.67	5.208E+00	2.536E+00	2.536E+00	38.56
	241.98	248	7.49	4.597E+00	2.381E+00	2.381E+00	36.69
RA-224	295.21	353	19.20	3.950E+00	1.538E+00	1.538E+00	22.39
	351.92	550	37.20*	3.443E+00	1.418E+00	1.418E+00	15.37
	240.98	248	3.95*	4.597E+00	4.515E+00	4.515E+00	36.25
	609.31	384	46.30*	2.194E+00	1.249E+00	1.249E+00	17.67
	1120.29	73	15.10	1.259E+00	1.263E+00	1.263E+00	56.10
AC-228	1764.49	67	15.80	8.743E-01	1.592E+00	1.592E+00	29.31
	338.32	188	11.40	3.553E+00	1.534E+00	1.534E+00	53.49
	911.07	212	27.70*	1.527E+00	1.654E+00	1.654E+00	24.05
	969.11	101	16.60	1.442E+00	1.395E+00	1.395E+00	43.73
	338.32	188	11.40	3.553E+00	1.534E+00	1.534E+00	53.49
RA-228	911.07	212	27.70*	1.527E+00	1.654E+00	1.654E+00	24.05
	969.11	101	16.60	1.442E+00	1.395E+00	1.395E+00	43.73
	74.81	410	10.70	4.035E+00	3.141E+00	3.185E+00	20.54
	77.11	576	18.00	4.295E+00	2.463E+00	2.498E+00	16.31
	87.30	187	8.00	5.208E+00	1.480E+00	1.501E+00	37.78
TH-228	238.63	1078	44.60*	4.638E+00	1.721E+00	1.745E+00	10.32
	300.09	85	3.41	3.899E+00	2.104E+00	2.134E+00	81.80
	609.31	384	46.30*	2.194E+00	1.249E+00	1.249E+00	17.67
	1120.29	73	15.10	1.259E+00	1.263E+00	1.263E+00	56.10
	1764.49	67	15.80	8.743E-01	1.592E+00	1.592E+00	29.31
TH-232	338.32	188	11.40	3.553E+00	1.534E+00	1.534E+00	35.11
	911.07	212	27.70*	1.527E+00	1.654E+00	1.654E+00	24.05
	969.11	101	16.60	1.442E+00	1.395E+00	1.395E+00	43.73
	609.31	384	46.30*	2.194E+00	1.249E+00	1.249E+00	17.67
	1120.29	73	15.10	1.259E+00	1.263E+00	1.263E+00	56.10
U-234	1764.49	67	15.80	8.743E-01	1.592E+00	1.592E+00	29.31
	86.50	187	12.60*	5.208E+00	9.399E-01	9.399E-01	43.05
	95.87	-----	2.60	5.757E+00	-----	Line Not Found	-----
	74.67	410	66.00*	4.035E+00	5.093E-01	5.093E-01	20.51
	86.72	187	0.34	5.208E+00	3.525E+01	3.525E+01	37.78
AM-243	117.66	-----	0.55	6.314E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.209E+00	-----	Line Not Found	-----
	511.00	59	100.00*	2.547E+00	7.651E-02	7.651E-02	104.73

Flag: "\*" = Keyline



Total number of lines in spectrum 28  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 28 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.001E+01	2.001E+01	0.230E+01	11.50	
CD-109	464.00D	1.02	3.184E+00	3.251E+00	1.228E+00	37.78	
SN-126	1.00E+05Y	1.00	3.201E-01	3.201E-01	1.209E-01	37.78	
CS-135	2.30E+06Y	1.00	4.153E-01	4.153E-01	2.642E-01	63.63	
TL-208	1.41E+10Y	1.00	5.617E-01	5.617E-01	1.009E-01	17.97	
BI-211	7.04E+08Y	1.00	4.075E+00	4.075E+00	0.589E+00	14.46	
PB-212	1.41E+10Y	1.00	1.721E+00	1.721E+00	0.178E+00	10.32	
PO-212	1.41E+10Y	1.00	1.721E+00	1.721E+00	0.178E+00	10.32	
BI-214	1600.00Y	1.00	1.249E+00	1.249E+00	0.221E+00	17.67	
PB-214	1600.00Y	1.00	1.418E+00	1.418E+00	0.218E+00	15.37	
PO-214	1600.00Y	1.00	1.418E+00	1.418E+00	0.218E+00	15.37	
PO-216	1.41E+10Y	1.00	1.721E+00	1.721E+00	0.178E+00	10.32	
PO-218	1600.00Y	1.00	1.418E+00	1.418E+00	0.218E+00	15.37	
RA-224	1.41E+10Y	1.00	4.515E+00	4.515E+00	1.637E+00	36.25	
RA-226	1600.00Y	1.00	1.249E+00	1.249E+00	0.221E+00	17.67	
AC-228	1.41E+10Y	1.00	1.654E+00	1.654E+00	0.398E+00	24.05	
RA-228	1.41E+10Y	1.00	1.654E+00	1.654E+00	0.398E+00	24.05	
TH-228	1.91Y	1.01	1.721E+00	1.745E+00	0.180E+00	10.32	
TH-230	4.47E+09Y	1.00	1.249E+00	1.249E+00	0.221E+00	17.67	
TH-232	1.41E+10Y	1.00	1.654E+00	1.654E+00	0.398E+00	24.05	
U-234	4.47E+09Y	1.00	1.249E+00	1.249E+00	0.221E+00	17.67	
NP-237	2.14E+06Y	1.00	9.399E-01	9.399E-01	4.046E-01	43.05	
AM-243	7380.00Y	1.00	5.093E-01	5.093E-01	1.044E-01	20.51	
ANH-511	1.00E+09Y	1.00	7.651E-02	7.651E-02	8.012E-02	104.73	
Total Activity :			5.570E+01	5.579E+01			

Grand Total Activity : 5.570E+01 5.579E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244132017

Page : 5  
Acquisition date : 19-JAN-2010 11:42:49

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	89.68	119	403	1.40	179.37	169	22	1.65E-02	62.5	5.40E+00	T
3	92.86	161	308	1.25	185.72	169	22	2.24E-02	42.8	5.60E+00	T
0	185.31	277	267	1.14	370.61	364	13	3.85E-02	28.0	5.50E+00	T
0	208.82	126	239	1.65	417.65	413	10	1.75E-02	49.1	5.09E+00	T
0	328.19	85	131	1.01	656.38	650	12	1.18E-02	58.9	3.63E+00	T
0	462.43	92	83	0.72	924.86	918	13	1.28E-02	47.0	2.76E+00	T
0	726.31	85	31	1.90	1452.63	1448	9	1.18E-02	32.1	1.88E+00	T
0	768.00	19	66	1.20	1536.00	1532	8	2.58E-03	****	1.79E+00	T
0	1406.51	30	10	3.37	2813.02	2805	15	4.14E-03	60.8	1.03E+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]G244132017.CNF;1
* Acquisition date   : 19-JAN-2010 11:42:49   Detector SN#      :
* Detector ID        : GAM23                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:01.56           Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G244132017             Analyst initials: MXR1
* Batch Number       : 940270                 Sample Quantity : 1.13630E+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	2.001E+01	2.300E+00	5.184E-01	3.878E-02	38.594
CD-109	3.251E+00	1.228E+00	1.513E+00	1.477E-01	2.149
SN-126	3.201E-01	1.209E-01	1.498E-01	1.458E-02	2.136
CS-135	4.153E-01	2.642E-01	2.549E-01	1.947E-02	1.629
TL-208	5.617E-01	1.009E-01	6.822E-02	4.429E-03	8.234
BI-211	4.075E+00	5.892E-01	3.919E-01	2.554E-02	10.399
PB-212	1.721E+00	1.777E-01	1.027E-01	7.385E-03	16.756
PO-212	1.721E+00	1.777E-01	1.027E-01	7.385E-03	16.756
BI-214	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
PB-214	1.418E+00	2.179E-01	1.440E-01	1.202E-02	9.844
PO-214	1.418E+00	2.179E-01	1.440E-01	1.202E-02	9.844
PO-216	1.721E+00	1.777E-01	1.027E-01	7.385E-03	16.756
PO-218	1.418E+00	2.179E-01	1.440E-01	1.202E-02	9.844
RA-224	4.515E+00	1.637E+00	1.169E+00	6.587E-02	3.862
RA-226	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
AC-228	1.654E+00	3.977E-01	2.534E-01	2.924E-02	6.526
RA-228	1.654E+00	3.977E-01	2.534E-01	2.924E-02	6.526
TH-228	1.745E+00	1.802E-01	1.042E-01	7.489E-03	16.756

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
TH-232	1.654E+00	3.977E-01	2.534E-01	2.924E-02	6.526
U-234	1.249E+00	2.206E-01	1.126E-01	8.466E-03	11.088
NP-237	9.399E-01	4.046E-01	4.465E-01	1.017E-01	2.105
AM-243	5.093E-01	1.044E-01	1.071E-01	9.520E-03	4.754
ANH-511	7.651E-02	8.012E-02	5.717E-02	3.321E-03	1.338

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.166E-02		3.732E-01	6.245E-01	4.244E-02	0.131
NA-22	1.032E-02		5.661E-02	9.406E-02	6.317E-03	0.110
NA-24	-2.898E-01		1.295E-01	Half-Life	too short	
AL-26	1.692E-02		2.880E-02	5.441E-02	3.270E-03	0.311
TI-44	4.546E-01	+	7.412E-02	9.923E-02	8.995E-03	4.581
SC-46	-1.001E-02		4.509E-02	7.343E-02	6.560E-03	-0.136
V-48	-5.001E-02		7.480E-02	1.141E-01	9.494E-03	-0.438
CR-51	-1.086E-01		4.438E-01	7.145E-01	4.685E-02	-0.152
MN-52	9.212E-03		2.423E-01	3.942E-01	2.852E-02	0.023
MN-54	2.533E-02		4.495E-02	7.863E-02	6.226E-03	0.322
CO-56	2.148E-02		4.500E-02	7.848E-02	6.384E-03	0.274
CO-57	-1.413E-02		2.914E-02	4.688E-02	2.764E-03	-0.302
CO-58	-1.291E-02		4.559E-02	7.434E-02	5.585E-03	-0.174
FE-59	3.369E-02		1.039E-01	1.768E-01	1.362E-02	0.191
CO-60	-3.422E-02		4.511E-02	6.471E-02	4.750E-03	-0.529
ZN-65	1.542E-01		1.377E-01	2.210E-01	1.460E-02	0.698
GE-68	2.880E-01		1.483E+00	2.492E+00	1.783E-01	0.116
AS-73	9.207E-01		1.244E+00	2.149E+00	1.897E-01	0.428
AS-74	2.020E-02		1.070E-01	1.770E-01	9.760E-03	0.114
SE-75	-4.193E-02		5.781E-02	7.525E-02	4.380E-03	-0.557
BR-77	1.907E+00		9.081E+00	1.513E+01	8.759E-01	0.126
SR-82	2.646E-02		4.360E-01	7.358E-01	5.076E-02	0.036
RB-83	2.044E-02		8.292E-02	1.385E-01	8.021E-03	0.148
RB-84	-4.921E-02		8.363E-02	1.313E-01	1.153E-02	-0.375
KR-85	8.032E+00		9.832E+00	1.508E+01	8.749E-01	0.533
SR-85	4.070E-02		4.981E-02	7.640E-02	4.433E-03	0.533
RB-86	4.666E-01		9.149E-01	1.585E+00	1.136E-01	0.294
Y-88	1.959E-02		4.336E-02	7.761E-02	4.570E-03	0.252
ZR-88	1.154E-02		3.571E-02	6.058E-02	3.497E-03	0.190
Y-91	-1.132E+01		2.155E+01	3.323E+01	1.983E+00	-0.340
NB-94	-1.967E-02		4.240E-02	6.557E-02	3.747E-03	-0.300
NB-95	1.084E-01		5.980E-02	9.995E-02	6.717E-03	1.085
NB-95M	6.991E-01		1.991E-01	3.229E-01	2.382E-02	2.165
ZR-95	6.884E-02		8.935E-02	1.533E-01	1.177E-02	0.449
NB-97	1.180E-02		1.877E-02	Half-Life	too short	
ZR-97	2.496E+00		4.293E-01	Half-Life	too short	
MO-99	1.814E+00		1.039E+01	1.700E+01	2.380E+00	0.107

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	-1.554E+09		1.037E+09	Half-Life too short		
RH-101	-1.193E-02		3.920E-02	6.169E-02	3.289E-03	-0.193
RH-102	-2.135E-02		3.520E-02	5.530E-02	3.237E-03	-0.386
RU-103	9.874E-03		5.034E-02	8.311E-02	1.052E-02	0.119
RH-106	1.787E-01		3.600E-01	6.103E-01	7.039E-02	0.293
RU-106	1.787E-01		3.595E-01	6.103E-01	3.280E-02	0.293
AG-108M	-1.478E-02		4.121E-02	6.653E-02	4.218E-03	-0.222
AG-110M	1.548E-02		4.100E-02	6.864E-02	3.814E-03	0.226
IN-111	9.022E-01		1.007E+00	1.510E+00	8.545E-02	0.598
IN-113M	2.959E-02		5.238E-02	9.011E-02	5.551E-03	0.328
SN-113	2.959E-02		5.238E-02	9.011E-02	5.551E-03	0.328
IN-114M	3.365E-02		2.413E-01	3.447E-01	1.817E-02	0.098
CD-115	5.222E+00		8.761E+00	1.504E+01	8.682E-01	0.347
SN-117M	2.672E-02		6.238E-02	1.036E-01	5.382E-03	0.258
SB-122	1.370E-01		1.793E+00	2.946E+00	1.667E-01	0.046
I-123	1.104E+00		8.247E-01	Half-Life too short		
TE-123M	2.265E-02		3.383E-02	5.672E-02	2.993E-03	0.399
I-124	-1.204E+00		8.061E-01	9.127E-01	5.002E-02	-1.319
SB-124	-3.852E-02		8.617E-02	1.299E-01	9.060E-03	-0.296
SB-125	8.498E-03		1.028E-01	1.712E-01	1.042E-02	0.050
TE-125M	3.098E-01		1.079E+01	1.783E+01	1.590E+00	0.017
I-126	9.653E-02		1.994E-01	3.365E-01	1.741E-02	0.287
SB-126	-1.341E-01		1.792E-01	2.201E-01	1.319E-02	-0.609
SB-127	1.660E+00		1.421E+00	2.509E+00	2.213E-01	0.662
XE-127	-5.949E-03		5.916E-02	8.776E-02	4.711E-03	-0.068
I-131	-9.733E-02		1.280E-01	2.032E-01	1.326E-02	-0.479
TE-132	3.158E-01		6.684E-01	1.098E+00	1.542E-01	0.288
BA-133	-5.268E-02		6.304E-02	8.465E-02	9.822E-03	-0.622
I-133	-2.069E-03		1.488E-03	Half-Life too short		
CS-134	6.050E-02		5.926E-02	1.068E-01	7.797E-03	0.567
I-135	-1.673E+08		1.705E+08	Half-Life too short		
CS-136	-1.471E-02		1.189E-01	1.936E-01	1.542E-02	-0.076
BA-137M	1.554E-03		4.281E-02	6.951E-02	3.551E-03	0.022
CS-137	1.643E-03		4.525E-02	7.348E-02	3.774E-03	0.022
CE-139	2.769E-02		3.441E-02	5.799E-02	2.956E-03	0.478
BA-140	-1.403E-02		2.685E-01	4.375E-01	1.422E-01	-0.032
LA-140	-5.756E-02		9.862E-02	1.491E-01	1.023E-02	-0.386
CE-141	2.265E-03		7.427E-02	1.216E-01	6.858E-03	0.019
CE-143	7.036E-04		9.688E-05	Half-Life too short		
CE-144	-9.622E-02		2.496E-01	4.022E-01	5.680E-02	-0.239
PM-144	2.272E-02		4.337E-02	7.307E-02	4.110E-03	0.311
PR-144	1.538E+00		2.937E+00	4.949E+00	2.782E-01	0.311
PM-146	1.362E-02		5.302E-02	8.688E-02	7.525E-03	0.157
ND-147	1.522E-01		6.151E-01	1.027E+00	1.387E-01	0.148
PM-149	4.868E+01		7.273E+01	1.263E+02	1.792E+01	0.385
EU-152	-1.863E-02		1.648E-01	1.860E-01	1.233E-02	-0.100
GD-153	4.364E-02		1.019E-01	1.518E-01	1.240E-02	0.288
EU-154	3.033E-02		1.584E-01	2.634E-01	2.615E-02	0.115

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	3.561E-02		1.291E-01	2.155E-01	1.589E-02	0.165
TB-160	5.093E-03		1.696E-01	2.835E-01	2.479E-02	0.018
HO-166M	-2.375E-03		7.077E-02	1.137E-01	6.655E-03	-0.021
TM-171	-3.441E+01		3.845E+01	5.936E+01	5.162E+00	-0.580
LU-176	-7.051E-03		2.994E-02	4.679E-02	2.756E-03	-0.151
LU-177	3.172E+00	+	1.565E+00	2.103E+00	1.137E-01	1.509
LU-177M	-3.814E-02		2.236E-01	3.668E-01	2.134E-02	-0.104
HF-181	2.874E-02		5.049E-02	8.650E-02	5.059E-03	0.332
W-181	1.350E-02		4.816E-01	7.997E-01	6.948E-02	0.017
TA-182	8.727E-02		2.342E-01	3.965E-01	2.434E-02	0.220
RE-183	4.173E-02		1.286E-01	2.124E-01	1.093E-02	0.196
RE-184	2.672E-01		2.815E-01	4.739E-01	2.702E-02	0.564
OS-185	4.280E-02		4.716E-02	8.290E-02	4.326E-03	0.516
RE-188	1.359E-01		2.045E-01	3.428E-01	1.799E-02	0.396
W-188	-3.695E+00		9.153E+00	1.299E+01	7.608E-01	-0.284
IR-192	1.845E-02		4.062E-02	6.982E-02	4.142E-03	0.264
AU-195	1.388E-01		2.745E-01	4.483E-01	3.577E-02	0.310
TL-200	-1.282E-04		1.354E-04	Half-Life too short		
TL-201	-3.658E+00		6.348E+00	1.005E+01	5.130E-01	-0.364
TL-202	2.166E-02		8.031E-02	1.352E-01	7.908E-03	0.160
HG-203	8.471E-02		5.445E-02	8.805E-02	5.439E-03	0.962
BI-207	1.834E-02		5.769E-02	9.848E-02	7.235E-03	0.186
TL-207	-4.069E-01		8.850E-01	1.238E+00	2.050E-01	-0.329
PO-209	2.485E+00		8.644E+00	1.480E+01	1.343E+00	0.168
BI-210	2.167E+00		6.546E+00	1.079E+01	8.403E-01	0.201
PB-210	2.167E+00		6.546E+00	1.079E+01	8.403E-01	0.201
PO-210	2.167E+00		6.546E+00	1.079E+01	7.240E-01	0.201
PB-211	-1.085E+00		1.368E+00	1.863E+00	1.161E+00	-0.582
BI-212	1.271E+00	+	4.198E-01	7.748E-01	6.150E-02	1.641
PO-215	-4.069E-01		8.850E-01	1.238E+00	2.050E-01	-0.329
RN-219	4.502E-02		4.867E-01	8.128E-01	1.106E-01	0.055
RN-220	-8.218E+00		3.225E+01	5.164E+01	2.947E+00	-0.159
RA-223	-4.069E-01		8.850E-01	1.238E+00	2.050E-01	-0.329
AC-227	-3.734E-01		4.988E-01	7.615E-01	1.061E-01	-0.490
TH-227	-3.734E-01		5.001E-01	7.615E-01	1.285E-01	-0.490
TH-229	1.731E-01		6.081E-01	9.972E-01	5.282E-02	0.174
PA-231	-5.076E-01		1.822E+00	2.943E+00	4.060E-01	-0.172
TH-231	-4.069E-01		8.850E-01	1.238E+00	2.050E-01	-0.329
U-231	-6.366E-01		1.194E+00	1.685E+00	1.413E-01	-0.378
PA-233	-1.876E-02		7.441E-02	1.231E-01	7.698E-03	-0.152
PA-234	-3.688E-01		3.678E-01	5.354E-01	1.006E-01	-0.689
PA-234M	8.998E-01		5.703E+00	9.419E+00	8.988E-01	0.096
TH-234	8.284E-02		1.795E+00	2.984E+00	5.377E-01	0.028
U-235	-7.793E-02		2.589E-01	4.095E-01	6.622E-02	-0.190
NP-236	-4.958E-02		9.781E-02	1.559E-01	8.062E-03	-0.318
U-238	8.284E-02		1.795E+00	2.984E+00	5.377E-01	0.028
NP-239	2.373E-01		2.259E-01	3.872E-01	2.416E-02	0.613
AM-241	-8.124E-02		2.190E-01	3.619E-01	3.367E-02	-0.225

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	5.764E-02		1.180E-01	1.986E-01	1.472E-02	0.290
AM-246	6.506E-02		1.734E-01	2.964E-01	2.115E-02	0.219
CM-247	7.738E-03		4.390E-02	7.371E-02	4.272E-03	0.105
CF-249	-3.553E-02		4.731E-02	7.381E-02	4.271E-03	-0.481
CF-251	-2.089E-01		1.506E-01	2.277E-01	1.177E-02	-0.917

# 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]G244132017          *
* Acquisition date   : 19-JAN-2010 11:42:49 Detector SN#      :             *
* Detector ID        : GAM23                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.56           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G244132017           Analyst initials: MXR1           *
* Batch Number       : 940270              Sample Quantity : 1.1363E+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	2.001E+01	2.254E+00	2.582E-01	1.150E+00
CD-109	3.251E+00	1.204E+00	7.724E-01	6.142E-01
SN-126	3.201E-01	1.185E-01	7.652E-02	6.047E-02
CS-135	4.153E-01	2.589E-01	1.289E-01	1.321E-01
TL-208	5.617E-01	9.891E-02	3.426E-02	5.046E-02
BI-211	4.075E+00	5.775E-01	1.977E-01	2.946E-01
PB-212	1.721E+00	1.741E-01	5.200E-02	8.883E-02
PO-212	1.721E+00	1.741E-01	5.200E-02	8.883E-02
BI-214	1.249E+00	2.162E-01	5.653E-02	1.103E-01
PB-214	1.418E+00	2.136E-01	7.265E-02	1.090E-01
PO-214	1.418E+00	2.136E-01	7.265E-02	1.090E-01
PO-216	1.721E+00	1.741E-01	5.200E-02	8.883E-02
PO-218	1.418E+00	2.136E-01	7.265E-02	1.090E-01
RA-224	4.515E+00	1.604E+00	5.918E-01	8.185E-01
RA-226	1.249E+00	2.162E-01	5.653E-02	1.103E-01
AC-228	1.654E+00	3.897E-01	1.267E-01	1.988E-01
RA-228	1.654E+00	3.897E-01	1.267E-01	1.988E-01
TH-228	1.745E+00	1.765E-01	5.273E-02	9.008E-02
TH-230	1.249E+00	2.162E-01	5.653E-02	1.103E-01
TH-232	1.654E+00	3.897E-01	1.267E-01	1.988E-01
U-234	1.249E+00	2.162E-01	5.653E-02	1.103E-01
NP-237	9.399E-01	3.965E-01	2.280E-01	2.023E-01
AM-243	5.093E-01	1.023E-01	5.478E-02	5.222E-02
ANH-511	7.651E-02	7.852E-02	2.875E-02	4.006E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	8.166E-02	3.657E-01	3.142E-01	1.866E-01 NOT IDENT.
NA-22	1.032E-02	5.548E-02	4.691E-02	2.830E-02 NOT IDENT.
NA-24	-2.898E+05	2.538E+05	0.000E+00	1.295E+05 SHORT HLIF



AL-26	1.692E-02	2.822E-02	2.705E-02	1.440E-02	NOT IDENT.
TI-44	4.546E-01	7.264E-02	5.072E-02	3.706E-02	FAIL ABUN
SC-46	-1.001E-02	4.419E-02	3.674E-02	2.255E-02	FAIL ABUN
V-48	-5.001E-02	7.330E-02	5.705E-02	3.740E-02	NOT IDENT.
CR-51	-1.086E-01	4.350E-01	3.608E-01	2.219E-01	NOT IDENT.
MN-52	9.212E-03	2.375E-01	1.964E-01	1.212E-01	NOT IDENT.
MO-54	2.533E-02	4.405E-02	3.936E-02	2.248E-02	NOT IDENT.
CO-56	2.148E-02	4.410E-02	3.928E-02	2.250E-02	NOT IDENT.
CO-57	-1.413E-02	2.855E-02	2.387E-02	1.457E-02	NOT IDENT.
CO-58	-1.291E-02	4.468E-02	3.723E-02	2.280E-02	NOT IDENT.
FE-59	3.369E-02	1.018E-01	8.830E-02	5.195E-02	NOT IDENT.
CO-60	-3.422E-02	4.421E-02	3.226E-02	2.255E-02	NOT IDENT.
ZN-65	1.542E-01	1.350E-01	1.103E-01	6.886E-02	NOT IDENT.
GE-68	2.880E-01	1.453E+00	1.245E+00	7.413E-01	NOT IDENT.
AS-73	9.207E-01	1.219E+00	1.102E+00	6.221E-01	NOT IDENT.
AS-74	2.020E-02	1.049E-01	8.886E-02	5.352E-02	NOT IDENT.
SE-75	-4.193E-02	5.666E-02	8.06E-02	2.891E-02	NOT IDENT.
BR-77	1.907E+00	8.899E+00	7.607E+00	4.540E+00	FAIL ABUN
SR-82	2.646E-02	4.273E-01	3.686E-01	2.180E-01	NOT IDENT.
RB-83	2.044E-02	8.126E-02	6.965E-02	4.146E-02	NOT IDENT.
RB-84	-4.921E-02	8.196E-02	6.568E-02	4.182E-02	NOT IDENT.
KR-85	8.032E+00	9.635E+00	7.581E+00	4.916E+00	NOT IDENT.
SR-85	4.070E-02	4.882E-02	3.841E-02	2.491E-02	NOT IDENT.
RB-86	4.666E-01	8.966E-01	7.917E-01	4.575E-01	NOT IDENT.
Y-88	1.959E-02	4.250E-02	3.858E-02	2.168E-02	NOT IDENT.
ZR-88	1.154E-02	3.500E-02	3.053E-02	1.786E-02	NOT IDENT.
Y-91	-1.132E+01	2.112E+01	1.658E+01	1.077E+01	NOT IDENT.
NB-94	-1.967E-02	4.155E-02	3.287E-02	2.120E-02	NOT IDENT.
NB-95	1.084E-01	5.861E-02	5.008E-02	2.990E-02	NOT IDENT.
NB-95M	6.991E-01	1.951E-01	1.635E-01	9.954E-02	NOT IDENT.
ZR-95	6.884E-02	8.756E-02	7.683E-02	4.467E-02	NOT IDENT.
NB-97	1.180E+04	3.678E+04	0.000E+00	1.877E+04	SHORT HLIF
ZR-97	2.496E+06	8.414E+05	0.000E+00	4.293E+05	SHORT HLIF
MO-99	1.814E+00	1.019E+01	8.522E+00	5.197E+00	NOT IDENT.
TC-99M	-1.554E+15	2.032E+15	0.000E+00	1.037E+15	SHORT HLIF
RH-101	-1.193E-02	3.841E-02	3.128E-02	1.960E-02	NOT IDENT.
RH-102	-2.135E-02	3.449E-02	2.782E-02	1.760E-02	FAIL ABUN
RU-103	9.874E-03	4.934E-02	4.180E-02	2.517E-02	NOT IDENT.
RH-106	1.787E-01	3.528E-01	3.064E-01	1.800E-01	NOT IDENT.
RU-106	1.787E-01	3.523E-01	3.064E-01	1.797E-01	NOT IDENT.
AG-108M	-1.478E-02	4.038E-02	3.350E-02	2.060E-02	NOT IDENT.
AG-110M	1.548E-02	4.018E-02	3.444E-02	2.050E-02	NOT IDENT.
IN-111	9.022E-01	9.871E-01	7.640E-01	5.036E-01	NOT IDENT.
IN-113M	2.959E-02	5.133E-02	4.542E-02	2.619E-02	NOT IDENT.
SN-113	2.959E-02	5.133E-02	4.542E-02	2.619E-02	NOT IDENT.
IN-114M	3.365E-02	2.364E-01	1.749E-01	1.206E-01	NOT IDENT.
CD-115	5.222E+00	8.586E+00	7.562E+00	4.381E+00	NOT IDENT.
SN-117M	2.672E-02	6.113E-02	5.261E-02	3.119E-02	NOT IDENT.
SB-122	1.370E-01	1.757E+00	1.480E+00	8.965E-01	NOT IDENT.
I-123	1.104E+06	1.616E+06	0.000E+00	8.247E+05	SHORT HLIF
TE-123M	2.265E-02	3.316E-02	2.882E-02	1.692E-02	NOT IDENT.
I-124	-1.204E+00	7.899E-01	4.582E-01	4.030E-01	NOT IDENT.
SB-124	-3.852E-02	8.444E-02	6.464E-02	4.308E-02	FAIL ABUN
SB-125	8.498E-03	1.007E-01	8.622E-02	5.140E-02	FAIL ABUN
TE-125M	3.098E-01	1.057E+01	9.086E+00	5.395E+00	NOT IDENT.
I-126	9.653E-02	1.954E-01	1.688E-01	9.968E-02	NOT IDENT.
SB-126	-1.341E-01	1.756E-01	1.104E-01	8.958E-02	FAIL ABUN
SB-127	1.660E+00	1.392E+00	1.258E+00	7.103E-01	NOT IDENT.
XE-127	-5.949E-03	5.798E-02	4.449E-02	2.958E-02	NOT IDENT.
I-131	-9.733E-02	1.255E-01	1.025E-01	6.401E-02	NOT IDENT.
TE-132	3.158E-01	6.550E-01	5.561E-01	3.342E-01	NOT IDENT.
BA-133	-5.268E-02	6.178E-02	4.270E-02	3.152E-02	FAIL ABUN
I-133	-2.069E+03	2.917E+03	0.000E+00	1.488E+03	SHORT HLIF
CS-134	6.050E-02	5.807E-02	5.347E-02	2.963E-02	NOT IDENT.
I-135	-1.673E+14	3.342E+14	0.000E+00	1.705E+14	SHORT HLIF
CS-136	-1.471E-02	1.165E-01	9.670E-02	5.946E-02	FAIL ABUN
BA-137M	1.554E-03	4.195E-02	3.487E-02	2.140E-02	NOT IDENT.
CS-137	1.643E-03	4.434E-02	3.686E-02	2.262E-02	NOT IDENT.
CE-139	2.769E-02	3.372E-02	2.945E-02	1.720E-02	NOT IDENT.
BA-140	-1.403E-02	2.632E-01	2.199E-01	1.343E-01	NOT IDENT.
LA-140	-5.756E-02	9.664E-02	7.420E-02	4.931E-02	FAIL ABUN
CE-141	2.265E-03	7.278E-02	6.183E-02	3.713E-02	NOT IDENT.
CE-143	7.036E+02	1.899E+02	0.000E+00	9.688E+01	SHORT HLIF
CE-144	-9.622E-02	2.446E-01	2.046E-01	1.248E-01	NOT IDENT.
PM-144	2.272E-02	4.250E-02	3.664E-02	2.168E-02	NOT IDENT.
PR-144	1.538E+00	2.878E+00	2.481E+00	1.468E+00	NOT IDENT.
PM-146	1.362E-02	5.196E-02	4.373E-02	2.651E-02	NOT IDENT.
ND-147	1.522E-01	6.028E-01	5.163E-01	3.075E-01	FAIL ABUN

PM-149	4.868E+01	7.128E+01	6.383E+01	3.637E+01	NOT IDENT.
EU-152	-1.863E-02	1.615E-01	9.386E-02	8.240E-02	FAIL ABUN
GD-153	4.364E-02	9.990E-02	7.744E-02	5.097E-02	NOT IDENT.
EU-154	3.033E-02	1.552E-01	1.314E-01	7.919E-02	NOT IDENT.
EU-155	3.561E-02	1.265E-01	1.099E-01	6.454E-02	FAIL ABUN
TB-160	5.093E-03	1.662E-01	1.419E-01	8.479E-02	FAIL ABUN
HO-166M	-2.375E-03	6.935E-02	5.701E-02	3.539E-02	FAIL ABUN
TM-171	-3.441E+01	3.768E+01	3.038E+01	1.922E+01	NOT IDENT.
LU-176	-7.051E-03	2.934E-02	2.363E-02	1.497E-02	FAIL ABUN
LU-177	3.172E+00	1.534E+00	1.066E+00	7.827E-01	FAIL ABUN
LU-177M	-3.814E-02	2.191E-01	1.848E-01	1.118E-01	FAIL ABUN
HF-181	2.874E-02	4.948E-02	4.352E-02	2.525E-02	NOT IDENT.
W-181	1.350E-02	4.720E-01	4.094E-01	2.408E-01	NOT IDENT.
TA-182	8.727E-02	2.295E-01	1.978E-01	1.171E-01	NOT IDENT.
RE-183	4.173E-02	1.260E-01	1.079E-01	6.428E-02	FAIL ABUN
RE-184	2.672E-01	2.759E-01	2.398E-01	1.408E-01	NOT IDENT.
OS-185	4.280E-02	4.621E-02	4.160E-02	2.358E-02	NOT IDENT.
RE-188	1.359E-01	2.004E-01	1.742E-01	1.023E-01	NOT IDENT.
W-188	-3.695E+00	8.970E+00	6.565E+00	4.577E+00	NOT IDENT.
IR-192	1.845E-02	3.981E-02	3.526E-02	2.031E-02	FAIL ABUN
AU-195	1.388E-01	2.690E-01	2.287E-01	1.372E-01	FAIL ABUN
TL-200	-1.282E+02	2.653E+02	0.000E+00	1.354E+02	SHORT HLIF
TL-201	-3.658E+00	6.221E+00	5.104E+00	3.174E+00	NOT IDENT.
TL-202	2.166E-02	7.870E-02	6.806E-02	4.015E-02	NOT IDENT.
HG-203	8.471E-02	5.336E-02	4.451E-02	2.722E-02	NOT IDENT.
BI-207	1.834E-02	5.653E-02	4.919E-02	2.884E-02	FAIL ABUN
TL-207	-4.069E-01	8.673E-01	6.252E-01	4.425E-01	FAIL ABUN
PO-209	2.485E+00	8.471E+00	7.403E+00	4.322E+00	NOT IDENT.
BI-210	2.167E+00	6.416E+00	5.541E+00	3.273E+00	NOT IDENT.
PB-210	2.167E+00	6.416E+00	5.541E+00	3.273E+00	NOT IDENT.
PO-210	2.167E+00	6.415E+00	5.541E+00	3.273E+00	NOT IDENT.
PB-211	-1.085E+00	1.341E+00	9.386E-01	6.840E-01	NOT IDENT.
BI-212	1.271E+00	4.114E-01	3.884E-01	2.099E-01	FAIL ABUN
PO-215	-4.069E-01	8.673E-01	6.252E-01	4.425E-01	FAIL ABUN
RN-219	4.502E-02	4.770E-01	4.096E-01	2.433E-01	NOT IDENT.
RN-220	-8.218E+00	3.160E+01	2.595E+01	1.612E+01	NOT IDENT.
RA-223	-4.069E-01	8.673E-01	6.252E-01	4.425E-01	FAIL ABUN
AC-227	-3.734E-01	4.889E-01	3.853E-01	2.494E-01	FAIL ABUN
TH-227	-3.734E-01	4.901E-01	3.853E-01	2.501E-01	FAIL ABUN
TH-229	1.731E-01	5.959E-01	5.058E-01	3.040E-01	FAIL ABUN
PA-231	-5.076E-01	1.785E+00	1.488E+00	9.109E-01	NOT IDENT.
TH-231	-4.069E-01	8.673E-01	6.252E-01	4.425E-01	FAIL ABUN
U-231	-6.366E-01	1.170E+00	8.597E-01	5.969E-01	FAIL ABUN
PA-233	-1.876E-02	7.292E-02	6.218E-02	3.720E-02	FAIL ABUN
PA-234	-3.688E-01	3.605E-01	2.677E-01	1.839E-01	FAIL ABUN
PA-234M	8.998E-01	5.589E+00	4.708E+00	2.851E+00	NOT IDENT.
TH-234	8.284E-02	1.759E+00	1.528E+00	8.975E-01	FAIL ABUN
U-235	-7.793E-02	2.537E-01	2.082E-01	1.294E-01	FAIL ABUN
NP-236	-4.958E-02	9.585E-02	7.918E-02	4.890E-02	NOT IDENT.
U-238	8.284E-02	1.759E+00	1.528E+00	8.975E-01	FAIL ABUN
NP-239	2.373E-01	2.214E-01	1.972E-01	1.130E-01	FAIL ABUN
AM-241	-8.124E-02	2.147E-01	1.854E-01	1.095E-01	NOT IDENT.
CM-243	5.764E-02	1.156E-01	1.013E-01	5.900E-02	FAIL ABUN
AM-246	6.506E-02	1.699E-01	1.480E-01	8.668E-02	NOT IDENT.
CM-247	7.738E-03	4.302E-02	3.714E-02	2.195E-02	FAIL ABUN
CF-249	-3.553E-02	4.636E-02	3.720E-02	2.365E-02	NOT IDENT.
CF-251	-2.089E-01	1.475E-01	1.156E-01	7.528E-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	243.0224
46.50	243.0224
46.50	243.0224
48.70	297.5015
49.72	303.4902
51.35	236.9203
52.39	235.5171
52.97	243.0589
53.15	243.1330
53.44	241.4228
54.07	258.1561
56.28	275.6372
56.28	275.6384
57.37	0.0000
57.53	289.0872
57.53	289.0879
57.60	294.6442
57.98	285.6110
57.98	285.6110
59.32	315.7666
59.32	315.7666
59.40	315.8064
59.54	327.8831
59.72	326.1288
60.01	337.3692
61.10	317.5750
61.14	321.2984
61.30	321.3785
63.00	331.5062
63.29	337.2263
63.29	337.2263
63.58	323.4344
64.28	315.4033
65.12	344.6802
65.20	344.7212
65.20	344.7212
66.05	366.6145
66.72	376.7138
66.83	376.7769
66.91	382.3369
67.20	357.5807
67.20	357.5807
67.75	357.6189
67.85	357.6714
68.90	358.2184
68.90	358.2184
69.30	358.4256
69.67	336.1107
70.82	329.1469
70.82	329.1469
70.83	329.1523
72.80	344.7641
72.87	344.7976
72.87	344.7976
74.67	345.6605
74.81	345.7275
74.81	345.7275
74.81	345.7275
74.81	345.7275
74.81	345.7275
74.81	345.7275
74.81	345.7275
74.97	345.8029
75.28	345.9509
75.70	346.1491
77.11	346.8137
77.11	346.8137

77.11	346.8137
77.11	346.8137
77.11	346.8137
77.11	346.8137
77.11	346.8137
78.38	350.8242
79.62	372.7009
79.80	372.7891
79.80	372.7891
80.11	397.2986
80.18	397.3352
80.30	397.3974
80.30	397.3974
80.57	411.2474
81.00	426.7197
81.07	426.7590
81.07	426.7590
81.07	426.7590
81.07	426.7590
82.60	389.4322
83.37	374.5312
83.78	374.7301
83.78	374.7301
83.78	374.7301
83.78	374.7301
84.21	381.0594
84.90	384.4586
85.43	380.1193
86.29	358.6687
86.50	358.7643
86.54	358.7814
86.59	358.8043
86.72	358.8642
86.79	358.8941
86.94	358.9626
87.30	359.1253
87.30	359.1253
87.30	359.1253
87.30	359.1253
87.30	359.1253
87.30	359.1253
87.30	359.1253
87.57	359.2465
87.88	359.3864
88.03	359.4534
88.36	359.6003
88.47	359.6503
89.95	360.3094
91.11	360.8230
92.29	361.3409
92.38	361.3809
92.38	361.3809
93.35	289.4437
94.00	298.9639
94.67	310.0531
94.67	310.0549
94.90	316.3432
94.90	316.3432
94.90	316.3432
94.90	316.3432
95.87	335.3379
95.87	335.3379
96.73	343.4497
97.43	276.8517
98.44	311.4355
98.44	311.4368
98.88	290.4515
99.55	309.8894
99.55	309.8894
99.86	279.7797
100.00	279.8246
100.10	279.8585
103.18	330.7499
103.76	300.6116
105.00	317.7003
105.31	298.1924
108.00	304.0021
109.28	295.5620

111.00	304.0123
111.00	304.0123
111.76	302.2857
112.95	296.7373
115.19	293.4797
116.30	281.9113
117.00	261.2573
117.00	261.2573
117.66	271.3785
121.11	272.3481
121.62	270.4945
121.78	276.5277
122.06	276.6069
122.32	278.6775
122.32	278.6775
122.32	278.6775
122.32	278.6775
123.07	270.8935
127.23	305.1521
129.76	279.7519
131.20	311.3858
133.02	356.3530
133.54	315.1230
135.34	277.2214
136.00	285.4940
136.25	300.7524
136.48	308.9209
140.51	301.9624
140.51	0.0000
142.18	274.9377
142.65	288.3006
143.76	303.8931
144.24	304.0272
144.24	304.0272
144.24	304.0272
144.24	304.0272
145.22	286.9406
145.44	305.3828
147.16	317.1143
152.43	292.9213
152.70	307.3834
153.22	290.0401
154.21	276.9096
154.21	276.9096
154.21	276.9096
154.21	276.9096
155.03	275.0504
156.02	294.8786
158.56	268.6646
159.00	0.0000
159.00	259.4623
160.31	301.1505
161.27	280.6845
162.32	261.2381
162.64	271.6787
163.35	291.5564
163.89	278.1958
165.85	236.0265
167.43	269.6547
171.28	253.8048
171.86	205.8586
172.10	205.8992
176.55	283.2207
176.60	283.2310
181.06	225.7112
184.41	250.1635
185.71	250.4184
186.00	250.4763
190.27	244.3078
192.34	250.0351
193.63	241.3209
197.04	247.2735
198.01	235.7213
198.60	239.0254
200.40	245.7595
201.83	241.7406
202.84	244.0626
205.31	209.3316

208.36	254.5087
208.81	234.3793
209.75	204.8436
209.75	204.8436
210.97	222.2526
215.65	203.1178
216.55	208.6524
218.09	237.0183
222.10	215.9786
223.80	235.7925
226.40	190.4957
227.00	187.3075
227.08	186.2289
227.20	186.2446
228.16	211.4326
228.18	211.4356
228.18	211.4356
231.56	0.0000
235.69	233.1056
236.00	234.9073
236.00	234.9073
238.63	190.9776
238.63	190.9776
238.63	190.9776
238.63	190.9776
239.00	191.0240
240.98	191.2749
241.98	191.4011
241.98	191.4011
241.98	191.4011
244.69	155.1559
245.39	144.6431
247.94	192.8820
248.90	200.0001
249.79	179.1082
252.40	172.7638
252.85	161.7359
252.85	161.7359
254.15	0.0000
256.20	219.8073
256.20	219.8073
260.50	141.3693
260.90	143.6330
262.80	199.5396
264.65	164.2793
268.24	127.0616
268.79	137.8462
269.46	145.0663
269.46	145.0663
269.46	145.0663
269.46	145.0663
271.23	147.9139
273.65	170.5756
276.40	157.3697
277.35	155.2100
277.60	147.3590
277.60	147.3590
278.00	137.7187
278.60	141.0688
279.20	153.1307
279.53	156.1629
280.46	150.2401
281.68	162.3779
283.67	165.5796
284.30	161.7271
285.00	150.9462
285.90	138.3668
286.10	132.6535
286.10	132.6535
287.40	146.1173
288.45	0.0000
290.67	152.6589
290.80	152.6692
291.72	151.2390
293.26	0.0000
293.70	139.3009
295.21	139.4207
295.21	139.4207

295.21	139.4207
295.96	139.4824
296.50	81.8954
297.23	81.9294
298.57	81.9921
299.80	164.1006
299.80	164.1006
300.09	155.0088
300.09	155.0088
300.09	155.0088
300.09	155.0088
300.12	155.0109
301.29	132.3036
302.84	135.4646
303.76	152.2868
303.91	152.2990
304.40	149.2949
304.40	149.2949
304.84	146.2832
306.84	144.1609
308.46	134.6722
311.98	145.0333
316.51	137.1138
318.01	136.3074
319.02	143.7535
319.41	143.7839
320.08	150.5988
323.87	149.3700
323.87	149.3700
323.87	149.3700
323.87	149.3700
325.23	147.9375
328.77	128.1491
333.44	88.2252
334.20	111.4878
334.20	111.4878
334.30	111.4937
338.28	121.9698
338.28	121.9698
338.28	121.9698
338.28	121.9698
338.32	121.9714
338.32	121.9714
338.32	121.9714
340.50	142.9302
340.57	142.9339
344.27	130.7578
345.85	113.7269
350.59	0.0000
351.07	129.3430
351.92	143.7762
351.92	143.7762
351.92	143.7762
355.39	0.0000
356.01	147.2078
364.48	138.7151
366.43	119.0156
367.43	128.5243
367.94	0.0000
369.80	116.3755
374.96	114.7742
383.85	98.1241
387.95	117.4085
388.63	119.3558
391.69	105.1862
391.69	105.1862
392.90	106.2034
398.62	110.3281
400.65	120.0363
401.10	121.0228
401.81	110.4938
402.60	110.5345
404.84	146.2499
410.95	132.1903
411.60	131.2652
413.65	129.4559
414.70	109.2205
415.30	107.3172

415.76	103.4721
417.63	0.0000
418.52	110.3791
423.70	99.9623
427.08	90.3946
427.89	88.4828
432.53	92.5635
433.93	116.0192
439.47	101.6437
439.56	101.6476
439.89	97.7527
443.98	86.1760
444.90	87.1900
445.03	87.1954
445.03	87.1954
445.03	87.1954
445.03	87.1954
453.90	90.6991
463.38	90.5186
468.07	85.7505
473.00	88.2417
475.06	100.2245
475.35	95.2746
476.78	92.3518
477.59	84.4366
477.96	90.4101
482.03	82.6008
484.57	78.7020
487.03	96.7324
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497.08	85.1121
507.63	0.0000
510.53	0.0000
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511.00	89.6133
511.85	94.0089
511.85	94.0089
513.99	89.0472
513.99	89.0472
520.41	79.8390
520.65	79.8467
527.90	65.8823
528.96	0.0000
529.64	84.1834
529.87	0.0000
531.02	73.0652
537.32	67.1376
543.00	80.5353
546.56	0.0000
549.76	84.8298
552.65	77.7590
555.20	72.7126
563.23	73.9564
563.90	72.9483
568.70	74.1059
569.32	67.9465
569.50	75.1583
569.67	75.1618
573.80	79.5479
574.00	94.2857
574.64	97.9919
578.91	80.9247
579.30	0.0000
583.14	72.4268
585.48	81.1178
591.81	69.5387
592.07	72.6592
593.00	77.8748
595.88	74.8354
600.56	69.9033
602.52	0.0000
602.71	98.9800
602.71	98.9800
603.60	97.2754
604.41	74.7146
604.70	74.7216
609.31	55.3485



609.31	55.3485
609.31	55.3485
609.31	55.3485
610.33	74.8686
612.46	66.2124
614.37	61.0264
618.01	68.0865
621.84	55.5892
621.84	55.5892
631.29	53.6658
633.02	65.2786
633.10	65.2801
634.78	79.0137
635.90	74.8273
636.97	65.3664
645.85	48.6425
646.12	46.5319
656.30	53.0566
657.75	60.5138
657.90	0.0000
661.65	68.0328
661.65	68.0328
664.57	0.0000
666.33	59.6203
666.33	59.6203
675.00	61.9238
677.61	65.1818
685.20	56.7719
692.80	63.3530
695.00	73.0685
696.49	67.7281
696.49	67.7281
697.00	74.1902
697.49	74.2020
698.33	66.6909
698.50	69.9226
699.00	71.0096
702.63	79.7072
706.10	59.3063
706.58	0.0000
706.67	57.1600
709.31	73.3988
711.68	59.4110
713.82	57.2881
717.42	49.7779
720.50	63.1840
721.93	0.0000
722.20	55.9926
722.78	61.4216
722.78	61.4216
722.89	61.4244
722.95	61.4258
723.30	57.8190
724.18	50.6053
727.18	48.8430
733.00	53.1583
735.90	56.5919
739.58	54.4751
742.81	64.3440
744.21	58.9162
747.13	53.5088
751.79	67.7989
752.31	59.0599
753.82	50.3338
755.35	54.7351
756.15	55.8435
756.87	54.7607
763.93	51.2171
765.79	49.4154
766.42	47.5937
766.84	64.8093
776.49	58.7513
778.00	53.2670
778.57	55.1123
778.89	55.1172
783.80	58.8763
785.46	61.6661
792.07	46.1080

795.84	59.0820
796.30	70.1692
798.80	95.1669
801.93	49.0136
805.60	39.8068
810.29	60.2538
810.76	56.5533
815.85	51.0646
817.79	57.5952
818.51	58.5357
819.60	57.6242
826.30	48.4210
828.27	0.0000
831.60	49.4255
831.96	47.5656
834.83	55.0712
836.80	0.0000
846.75	44.9512
848.13	54.3372
856.28	0.0000
856.80	62.9175
860.37	43.2392
867.32	51.7964
867.82	53.6868
871.10	50.9063
873.19	54.7078
874.81	50.9579
875.33	0.0000
876.40	45.3145
879.36	51.9642
880.27	50.0875
880.51	49.1457
881.50	57.6665
883.24	45.3975
884.67	42.5766
889.25	48.3126
896.60	43.6613
898.02	42.7277
899.00	40.8391
903.28	53.7896
911.07	48.5907
911.07	48.5907
911.07	48.5907
919.63	50.9267
920.93	42.7235
925.00	42.0727
925.24	43.0316
926.50	44.9594
935.52	44.1049
937.48	63.3118
944.10	50.9275
946.00	57.6819
949.00	41.3702
962.29	31.4416
964.01	34.7659
966.15	67.9134
968.20	64.7713
969.11	41.4411
969.11	41.4411
969.11	41.4411
977.42	34.8823
980.50	37.8177
983.50	44.6392
989.30	28.1823
996.32	41.8592
1001.03	43.8565
1001.68	43.8629
1004.76	47.7977
1021.30	0.0000
1024.50	0.0000
1034.80	38.3192
1036.00	46.1910
1037.82	38.3462
1038.57	35.4023
1038.76	0.0000
1045.16	44.3225
1046.59	37.4403
1048.07	43.3662

1050.47	39.4466
1050.47	39.4466
1062.04	34.6098
1063.62	34.6226
1076.63	39.6875
1077.35	41.6787
1078.86	41.6924
1085.78	50.7074
1099.22	38.8953
1112.02	49.5101
1112.84	46.3046
1115.52	49.7628
1120.29	51.1058
1120.29	51.1058
1120.29	51.1058
1120.29	51.1058
1120.51	51.1079
1121.28	51.1162
1124.00	0.0000
1129.67	64.2656
1131.51	0.0000
1147.95	0.0000
1167.94	45.5676
1173.22	55.7587
1175.09	50.7100
1177.93	44.6517
1189.05	48.8281
1204.90	52.0542
1205.75	0.0000
1213.00	56.2331
1221.42	48.1398
1230.97	66.7086
1235.34	55.4700
1236.41	0.0000
1238.25	50.3638
1246.25	51.4770
1260.41	0.0000
1271.85	42.4331
1274.45	42.4548
1274.54	42.4564
1291.56	37.4063
1298.22	0.0000
1312.09	21.9100
1325.50	17.7837
1325.50	17.7837
1332.49	31.4270
1333.61	33.5286
1360.21	32.6499
1362.66	0.0000
1365.15	17.9214
1368.21	27.4261
1368.53	0.0000
1376.25	16.9036
1384.27	23.2783
1394.10	18.0210
1395.20	18.0251
1407.95	12.7539
1434.06	20.2926
1436.60	23.5075
1457.56	0.0000
1460.81	12.8799
1489.15	21.5771
1509.49	14.0759
1596.49	23.5570
1620.62	13.2461
1678.03	0.0000
1691.02	14.3591
1691.02	14.3591
1706.46	0.0000
1750.46	0.0000
1764.49	3.3903
1764.49	3.3903
1764.49	3.3903
1764.49	3.3903
1770.23	3.3933
1771.40	14.5454
1791.20	0.0000
1808.65	4.8769

1836.01

10.7744

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132017

Total Uranium Activity	2.1040E-01	ug/g
Total Uranium Counting Unc.	5.2347E+00	ug/g
Total Uranium Tpu	2.6708E-06	ug/g
Total Uranium Mda	4.5472E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 940270                      SAMPLE ID   : G244132017          *
*  ANALYST       : MXR1                        DETECTOR    : GAM23           *
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00      *
*  ANALYSIS DATE : 19-JAN-2010 11:42:49.06    SAMPLE ALQT  : 113.630 GRAM       *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.305E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.254E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.141E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.519E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 14:05:56.10

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132018.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 12:04:37
Sample ID          : G244132018      Sample quantity   : 1.34790E+02 GRAM
Detector name      : GAM15           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.21  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000         Sensitivity      : 5.00000
Batch ID           : 940270           Detector SN#     :
Matrix Spike ID    :                  LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.03	278	410	1.58	148.55	143	16	3.85E-02	15.1	3.78E+00
2	2	76.52*	471	370	1.36	153.52	143	16	6.54E-02	9.0	
3	3	86.59*	192	407	1.58	173.66	170	22	2.66E-02	19.3	1.05E+00
4	3	89.35	112	326	1.12	179.18	170	22	1.55E-02	28.6	
5	3	92.15*	141	297	1.24	184.78	170	22	1.96E-02	24.9	
6	0	185.22*	198	425	1.42	370.82	364	14	2.75E-02	23.9	
7	0	208.21	212	377	1.75	416.79	409	16	2.94E-02	21.7	
8	3	238.06*	1083	194	1.40	476.46	468	24	1.50E-01	4.0	1.03E+00
9	3	240.96	249	261	2.02	482.26	468	24	3.46E-02	19.4	
10	0	269.22	73	204	1.13	538.76	534	10	1.02E-02	38.2	
11	0	294.64*	323	192	1.29	589.57	584	11	4.48E-02	10.2	
12	0	299.10	61	157	1.16	598.49	595	9	8.46E-03	39.1	
13	0	337.74	231	198	1.51	675.74	668	15	3.20E-02	14.9	
14	0	351.22*	557	198	1.56	702.70	694	15	7.74E-02	7.1	
15	0	510.44*	103	146	2.07	1021.03	1014	16	1.42E-02	32.0	
16	0	582.61*	266	168	1.16	1165.31	1159	13	3.69E-02	12.2	
17	0	608.68*	408	71	1.74	1217.43	1212	12	5.67E-02	6.7	
18	0	726.78*	111	66	1.23	1453.56	1450	11	1.54E-02	17.3	
19	0	835.86	28	22	1.34	1671.67	1668	8	3.94E-03	34.2	
20	0	910.68*	249	43	1.81	1821.26	1812	19	3.46E-02	9.1	
21	1	963.50	44	46	2.18	1926.88	1920	25	6.07E-03	33.2	2.72E+00
22	1	968.21*	135	32	2.19	1936.31	1920	25	1.88E-02	12.7	
23	0	1119.42*	119	53	2.11	2238.66	2229	21	1.65E-02	18.1	
24	0	1376.76	32	16	2.42	2753.26	2743	16	4.38E-03	33.6	
25	0	1460.22*	788	22	2.15	2920.16	2908	20	1.09E-01	3.9	
26	0	1764.09*	87	0	1.33	3527.87	3521	17	1.21E-02	11.6	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132018.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 12:04:37
Sample ID        : G244132018             Sample quantity  : 134.79 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA15                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.21   0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance  : 1.50 keV               Half life ratio   : 8.00
Errors propagated: Yes                     Systematic Error  : 0.00 %
Efficiency type   : Empirical               Efficiencies at   : Peak Energy
Abundance limit   : 75.00                  WTM error limit   : 3.00

```

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.059E+01	2.240E+00	4.415E-01	3.375E-02	46.632
MN-54	+	834.83	*	4.926E-02	3.387E-02	6.656E-02	4.989E-03	0.740
CD-109	+	88.03	*	1.845E+00	1.075E+00	1.595E+00	1.844E-01	1.157
SN-126		64.28		2.281E-01	8.324E-01	1.379E+00	2.363E-01	0.165
	+	86.94		1.363E+00	7.787E-01	6.652E-01	2.797E-01	2.049
	+	87.57	*	3.279E-01	1.323E-01	1.583E-01	1.826E-02	2.072
CS-135	+	268.24	*	3.295E-01	2.534E-01	2.753E-01	2.354E-02	1.197
TL-208		277.35		5.575E-01	4.348E-01	7.625E-01	8.544E-02	0.731
	+	510.84		5.369E-01	3.481E-01	2.407E-01	2.423E-02	2.231
	+	583.14	*	3.939E-01	9.906E-02	6.100E-02	3.884E-03	6.457
		860.37		5.451E-01	3.479E-01	6.315E-01	5.428E-02	0.863
BI-211	+	72.87		1.944E+01	6.241E+00	6.755E+00	7.532E-01	2.879
	+	351.07	*	3.741E+00	5.918E-01	3.471E-01	2.385E-02	10.776
PB-212	+	74.81		2.308E+00	7.715E-01	7.480E-01	1.086E-01	3.085
	+	77.11		2.132E+00	4.500E-01	4.050E-01	4.498E-02	5.264
	+	87.30		1.517E+00	6.302E-01	7.354E-01	1.122E-01	2.062
	+	238.63	*	1.602E+00	1.842E-01	1.004E-01	8.314E-03	15.945
	+	300.09		1.385E+00	1.090E+00	1.348E+00	1.209E-01	1.028
PO-212	+	74.81		2.308E+00	7.715E-01	7.480E-01	1.086E-01	3.085
	+	77.11		2.132E+00	4.500E-01	4.050E-01	4.498E-02	5.264
	+	87.30		1.517E+00	6.302E-01	7.354E-01	1.122E-01	2.062
		115.19		3.969E+00	4.225E+00	7.133E+00	5.458E-01	0.556
	+	238.63	*	1.602E+00	1.842E-01	1.004E-01	8.314E-03	15.945
	+	300.09		1.385E+00	1.090E+00	1.348E+00	1.209E-01	1.028
BI-214	+	609.31	*	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
	+	1120.29		1.737E+00	6.492E-01	4.567E-01	4.214E-02	3.803
	+	1764.49		1.741E+00	4.189E-01	3.339E-01	2.078E-02	5.215
PB-214	+	74.81		3.977E+00	1.310E+00	1.289E+00	1.721E-01	3.085
	+	77.11		3.655E+00	8.201E-01	6.943E-01	9.350E-02	5.264
	+	87.30		2.598E+00	1.067E+00	1.260E+00	1.746E-01	2.062
	+	241.98		2.210E+00	8.802E-01	6.047E-01	5.405E-02	3.656
	+	295.21		1.289E+00	2.897E-01	2.245E-01	2.077E-02	5.743
	+	351.92	*	1.301E+00	2.168E-01	1.219E-01	1.051E-02	10.672
PO-214	+	74.81		3.977E+00	1.310E+00	1.289E+00	1.721E-01	3.085



----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		3.655E+00	8.201E-01	6.943E-01	9.350E-02	5.264
	+	87.30		2.598E+00	1.067E+00	1.260E+00	1.746E-01	2.062
	+	241.98		2.210E+00	8.802E-01	6.047E-01	5.405E-02	3.656
	+	295.21		1.289E+00	2.897E-01	2.245E-01	2.077E-02	5.743
	+	351.92	*	1.301E+00	2.168E-01	1.219E-01	1.051E-02	10.672
PO-216	+	74.81		2.308E+00	7.715E-01	7.480E-01	1.086E-01	3.085
	+	77.11		2.132E+00	4.500E-01	4.050E-01	4.498E-02	5.264
	+	87.30		1.517E+00	6.302E-01	7.354E-01	1.122E-01	2.062
	+	238.63	*	1.602E+00	1.842E-01	1.004E-01	8.314E-03	15.945
	+	300.09		1.385E+00	1.090E+00	1.348E+00	1.209E-01	1.028
PO-218	+	74.81		3.977E+00	1.310E+00	1.289E+00	1.721E-01	3.085
	+	77.11		3.655E+00	8.201E-01	6.943E-01	9.350E-02	5.264
	+	87.30		2.598E+00	1.067E+00	1.260E+00	1.746E-01	2.062
	+	241.98		2.210E+00	8.802E-01	6.047E-01	5.405E-02	3.656
	+	295.21		1.289E+00	2.897E-01	2.245E-01	2.077E-02	5.743
	+	351.92	*	1.301E+00	2.168E-01	1.219E-01	1.051E-02	10.672
RA-224	+	240.98	*	4.191E+00	1.652E+00	1.143E+00	7.954E-02	3.668
RA-226	+	609.31	*	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
	+	1120.29		1.737E+00	6.492E-01	4.567E-01	4.214E-02	3.803
	+	1764.49		1.741E+00	4.189E-01	3.339E-01	2.078E-02	5.215
AC-228	+	338.32		1.709E+00	8.633E-01	4.279E-01	1.748E-01	3.993
	+	911.07	*	1.636E+00	3.477E-01	2.136E-01	2.374E-02	7.662
	+	969.11		1.568E+00	5.391E-01	3.087E-01	7.139E-02	5.077
RA-228	+	338.32		1.709E+00	8.633E-01	4.279E-01	1.748E-01	3.993
	+	911.07	*	1.636E+00	3.477E-01	2.136E-01	2.374E-02	7.662
	+	969.11		1.568E+00	5.391E-01	3.087E-01	7.139E-02	5.077
TH-228	+	74.81		2.340E+00	7.516E-01	7.585E-01	8.471E-02	3.085
	+	77.11		2.162E+00	4.563E-01	4.107E-01	4.561E-02	5.264
	+	87.30		1.538E+00	6.203E-01	7.457E-01	8.590E-02	2.062
	+	238.63	*	1.624E+00	1.867E-01	1.019E-01	8.431E-03	15.945
	+	300.09		1.405E+00	1.377E+00	1.367E+00	8.070E-01	1.028
TH-230	+	609.31	*	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
	+	1120.29		1.737E+00	6.491E-01	4.567E-01	4.214E-02	3.803
	+	1764.49		1.741E+00	4.189E-01	3.339E-01	2.078E-02	5.215
TH-232	+	338.32		1.709E+00	5.197E-01	4.279E-01	2.754E-02	3.993
	+	911.07	*	1.636E+00	3.477E-01	2.136E-01	2.374E-02	7.662
	+	969.11		1.568E+00	5.391E-01	3.087E-01	7.139E-02	5.077
U-234	+	609.31	*	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
	+	1120.29		1.737E+00	6.491E-01	4.567E-01	4.214E-02	3.803
	+	1764.49		1.741E+00	4.189E-01	3.339E-01	2.078E-02	5.215
NP-237	+	86.50	*	9.630E-01	4.363E-01	4.841E-01	1.143E-01	1.989
		95.87		-7.212E-01	1.314E+00	1.817E+00	4.559E-01	-0.397
AM-243	+	74.67	*	3.742E-01	1.201E-01	1.219E-01	1.354E-02	3.070
	+	86.72		3.611E+01	1.456E+01	1.769E+01	2.031E+00	2.041
		117.66		1.563E+00	4.422E+00	7.316E+00	5.465E-01	0.214
		142.18		-1.418E+00	2.145E+01	3.417E+01	2.328E+00	-0.041
ANH-511	+	511.00	*	1.160E-01	7.457E-02	5.199E-02	2.936E-03	2.230

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-6.064E-02	3.657E-01	5.906E-01	3.936E-02	-0.103

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22		1274.54	*	-1.903E-02	4.613E-02	7.101E-02	4.874E-03	-0.268
NA-24		1368.53	*	1.133E-01	4.613E-02	Half-Life too short		
AL-26		1129.67		-3.773E-01	1.808E+00	2.650E+00	1.669E-01	-0.142
		1808.65	*	-9.624E-03	2.790E-02	4.208E-02	2.518E-03	-0.229
TI-44		67.85		1.054E-02	7.351E-02	1.135E-01	1.295E-02	0.093
		78.38	*	2.214E-01	6.045E-02	9.246E-02	1.028E-02	2.395
SC-46		889.25	*	1.927E-02	3.882E-02	6.731E-02	5.646E-03	0.286
	+	1120.51		2.946E-01	1.084E-01	1.372E-01	8.808E-03	2.147
V-48		944.10		-2.210E-01	8.689E-01	1.396E+00	1.147E-01	-0.158
		983.50	*	-1.018E-02	7.061E-02	1.145E-01	9.042E-03	-0.089
		1312.09		-3.396E-02	7.816E-02	1.188E-01	8.672E-03	-0.286
CR-51		320.08	*	4.995E-01	4.121E-01	7.270E-01	5.243E-02	0.687
MN-52		744.21		9.099E-02	2.030E-01	3.524E-01	2.161E-02	0.258
		848.13		-1.879E+00	6.218E+00	1.003E+01	7.731E-01	-0.187
		935.52		2.074E-01	2.240E-01	4.012E-01	3.323E-02	0.517
		1246.25		-2.930E+00	6.585E+00	1.016E+01	6.623E-01	-0.288
		1333.61		-1.288E+00	4.429E+00	6.848E+00	5.168E-01	-0.188
		1434.06	*	1.700E-01	2.116E-01	3.902E-01	2.893E-02	0.436
CO-56		846.75	*	7.016E-03	4.134E-02	6.965E-02	5.353E-03	0.101
		977.42		-3.123E-01	2.886E+00	4.467E+00	3.552E-01	-0.070
		1037.82		-2.006E-01	3.405E-01	5.245E-01	4.151E-02	-0.382
		1175.09		4.514E-01	2.229E+00	3.674E+00	2.100E-01	0.123
		1238.25		1.172E-01	9.440E-02	1.691E-01	1.143E-02	0.693
		1360.21		-4.084E-02	9.910E-01	1.588E+00	1.194E-01	-0.026
		1771.40		-1.093E-01	2.017E-01	2.136E-01	1.321E-02	-0.512
CO-57		122.06	*	-1.728E-02	2.983E-02	4.740E-02	3.408E-03	-0.364
		136.48		1.770E-01	2.453E-01	4.093E-01	3.141E-02	0.432
CO-58		810.76	*	-2.613E-02	3.780E-02	5.852E-02	4.180E-03	-0.447
FE-59		142.65		-8.800E-01	3.246E+00	5.127E+00	3.491E-01	-0.172
		192.34		3.139E-01	1.168E+00	1.805E+00	2.225E-01	0.174
		1099.22	*	-6.252E-02	9.587E-02	1.457E-01	1.103E-02	-0.429
		1291.56		-7.724E-03	1.205E-01	1.933E-01	1.631E-02	-0.040
CO-60		1173.22		-1.096E-02	4.747E-02	7.481E-02	4.261E-03	-0.146
		1332.49	*	7.141E-03	3.815E-02	6.324E-02	4.773E-03	0.113
ZN-65		1115.52	*	6.896E-02	1.109E-01	1.683E-01	1.093E-02	0.410
GE-68		1077.35	*	1.144E+00	1.348E+00	2.385E+00	1.657E-01	0.480
AS-73		53.44	*	7.153E-01	1.862E+00	3.145E+00	4.297E-01	0.227
AS-74		595.88	*	-5.216E-02	1.038E-01	1.572E-01	8.451E-03	-0.332
		634.78		-2.194E-01	3.678E-01	5.599E-01	2.904E-02	-0.392
SE-75		66.05		-1.079E+01	7.778E+00	1.191E+01	1.544E+00	-0.906
		96.73		1.344E-01	1.040E+00	1.507E+00	2.161E-01	0.089
		121.11		-5.656E-02	1.589E-01	2.549E-01	2.600E-02	-0.222
		136.00		3.391E-02	4.623E-02	7.719E-02	5.375E-03	0.439
		198.60		5.652E-01	2.209E+00	3.517E+00	2.807E-01	0.161
		264.65	*	-6.243E-02	5.773E-02	7.748E-02	5.419E-03	-0.806
		279.53		-6.800E-02	1.223E-01	1.989E-01	1.451E-02	-0.342
		303.91		-1.516E+00	2.763E+00	3.834E+00	3.892E-01	-0.395
		400.65		-1.163E-01	3.073E-01	4.777E-01	4.314E-02	-0.244
BR-77	+	87.88		5.209E+02	2.101E+02	3.155E+02	3.648E+01	1.651

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		200.40		4.229E+01	1.559E+02	2.338E+02	1.598E+01	0.181
	+	239.00		1.859E+02	1.968E+01	3.142E+01	2.186E+00	5.915
		249.79		-1.239E+00	5.662E+01	8.982E+01	6.253E+00	-0.014
		281.68		-1.261E+02	7.290E+01	1.100E+02	7.574E+00	-1.146
		297.23		1.720E+02	7.100E+01	8.984E+01	6.112E+00	1.914
		303.76		-9.633E+01	1.710E+02	2.371E+02	1.603E+01	-0.406
		439.47		-4.188E+01	1.162E+02	1.858E+02	1.062E+01	-0.225
		484.57		-1.391E+02	1.861E+02	2.867E+02	1.631E+01	-0.485
		520.65	*	-2.987E+00	8.107E+00	1.280E+01	7.201E-01	-0.233
		574.64		-5.648E+01	1.770E+02	2.616E+02	1.429E+01	-0.216
		578.91		7.532E+01	8.162E+01	1.248E+02	6.798E+00	0.603
		585.48		6.129E+02	1.762E+02	3.146E+02	1.705E+01	1.948
		755.35		1.658E+02	1.186E+02	2.203E+02	1.387E+01	0.752
		817.79		3.909E+00	9.790E+01	1.634E+02	1.181E+01	0.024
SR-82		698.33		-2.450E+01	3.748E+01	5.987E+01	3.296E+00	-0.409
		776.49	*	-2.335E-01	3.759E-01	5.915E-01	3.905E-02	-0.395
		1395.20		-3.747E+00	1.091E+01	1.739E+01	1.300E+00	-0.215
RB-83		520.41	*	-2.941E-02	7.378E-02	1.162E-01	6.538E-03	-0.253
		529.64		-2.500E-02	1.146E-01	1.831E-01	1.026E-02	-0.137
		552.65		-1.247E-01	2.143E-01	3.307E-01	1.832E-02	-0.377
RB-84		881.50	*	2.019E-02	7.325E-02	1.243E-01	1.027E-02	0.162
KR-85		513.99	*	1.901E+01	9.007E+00	1.506E+01	8.493E-01	1.262
SR-85		513.99	*	9.631E-02	4.565E-02	7.631E-02	4.304E-03	1.262
RB-86		1076.63	*	7.210E-01	8.081E-01	1.436E+00	9.992E-02	0.502
Y-88		898.02		1.097E-02	4.325E-02	7.323E-02	6.282E-03	0.150
		1836.01	*	-2.820E-03	3.272E-02	5.275E-02	3.081E-03	-0.053
ZR-88		392.90	*	-8.915E-03	3.580E-02	5.815E-02	3.298E-03	-0.153
Y-91		1204.90	*	-2.132E+01	2.062E+01	3.000E+01	1.814E+00	-0.711
NB-94		702.63	*	-3.762E-03	3.635E-02	6.047E-02	3.363E-03	-0.062
		871.10		-1.467E-02	3.364E-02	5.320E-02	4.301E-03	-0.276
NB-95		765.79	*	8.104E-02	4.675E-02	8.692E-02	5.601E-03	0.932
NB-95M		235.69	*	1.569E+00	2.444E-01	3.913E-01	3.306E-02	4.010
ZR-95		724.18		3.289E-01	1.237E-01	2.194E-01	1.515E-02	1.499
		756.15	*	4.524E-02	7.155E-02	1.256E-01	9.366E-03	0.360
NB-97		657.90	*	1.600E-03	7.155E-02	Half-Life	too short	
		1024.50		5.436E+00	7.155E-02	Half-Life	too short	
ZR-97		254.15		9.055E-01	7.155E-02	Half-Life	too short	
		355.39		-1.104E-01	7.155E-02	Half-Life	too short	
		507.63	*	2.581E+00	7.155E-02	Half-Life	too short	
		602.52		5.796E-01	7.155E-02	Half-Life	too short	
		1021.30		-1.021E+00	7.155E-02	Half-Life	too short	
		1147.95		-2.123E+00	7.155E-02	Half-Life	too short	
		1362.66		-1.671E+00	7.155E-02	Half-Life	too short	
		1750.46		-7.450E-01	7.155E-02	Half-Life	too short	
MO-99		140.51		6.078E+00	2.334E+01	3.816E+01	1.038E+01	0.159
		181.06		8.664E+00	1.668E+01	2.408E+01	4.209E+00	0.360
		366.43		-2.945E+01	7.148E+01	1.152E+02	6.996E+00	-0.256
		739.58	*	-5.664E+00	9.585E+00	1.520E+01	2.112E+00	-0.373
		778.00		-1.353E+01	2.537E+01	4.019E+01	2.662E+00	-0.337

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	140.51	*		5.388E+08	2.537E+01	Half-Life	too short	
RH-101	127.23			3.238E-02	3.860E-02	6.474E-02	4.561E-03	0.500
	198.01	*		1.080E-02	4.077E-02	6.497E-02	4.432E-03	0.166
	325.23			7.576E-02	2.681E-01	4.520E-01	2.972E-02	0.168
RH-102	418.52			2.984E-01	3.215E-01	5.592E-01	3.190E-02	0.534
	475.06	*		1.841E-02	3.314E-02	5.622E-02	3.205E-03	0.327
	631.29			-1.523E-03	5.964E-02	9.587E-02	4.990E-03	-0.016
	697.49			-3.828E-02	8.597E-02	1.395E-01	7.664E-03	-0.274
	766.84			2.200E-01	1.229E-01	2.284E-01	1.475E-02	0.963
	1046.59			-2.208E-03	1.309E-01	2.142E-01	1.562E-02	-0.010
	1112.84			2.309E-01	2.574E-01	4.079E-01	2.659E-02	0.566
RU-103	497.08	*		-2.660E-02	4.328E-02	6.698E-02	8.431E-03	-0.397
	610.33			1.206E+01	2.320E+00	2.973E+00	4.531E-01	4.056
RH-106	+ 511.85			5.780E-01	3.717E-01	4.889E-01	2.760E-02	1.182
	621.84	*		2.708E-01	3.603E-01	6.138E-01	7.044E-02	0.441
	1050.47			3.101E+00	2.531E+00	4.607E+00	3.339E-01	0.673
RU-106	+ 511.85			5.780E-01	3.717E-01	4.889E-01	2.760E-02	1.182
	621.84	*		2.708E-01	3.592E-01	6.138E-01	3.225E-02	0.441
	1050.47			3.101E+00	2.531E+00	4.607E+00	3.339E-01	0.673
AG-108M	433.93	*		-1.720E-02	3.666E-02	5.822E-02	3.620E-03	-0.296
	614.37			-9.280E-03	4.373E-02	5.911E-02	3.444E-03	-0.157
	722.95			1.914E-02	4.853E-02	7.326E-02	4.634E-03	0.261
AG-110M	657.75	*		-5.546E-04	3.597E-02	5.773E-02	3.164E-03	-0.010
	677.61			1.647E-02	3.445E-01	5.550E-01	3.122E-02	0.030
	706.67			-8.063E-02	2.246E-01	3.661E-01	2.188E-02	-0.220
	763.93			-1.031E-01	1.853E-01	2.962E-01	1.996E-02	-0.348
	884.67			1.060E-02	5.025E-02	8.488E-02	7.298E-03	0.125
	937.48			-2.064E-02	1.147E-01	1.858E-01	1.597E-02	-0.111
	1384.27			2.450E-01	1.697E-01	3.179E-01	2.471E-02	0.771
IN-111	171.28			1.930E-01	9.015E-01	1.466E+00	9.787E-02	0.132
	245.39	*		3.916E-01	9.694E-01	1.459E+00	1.016E-01	0.268
IN-113M	391.69	*		-4.636E-02	5.250E-02	8.183E-02	4.964E-03	-0.566
SN-113	391.69	*		-4.636E-02	5.250E-02	8.183E-02	4.964E-03	-0.566
IN-114M	190.27	*		3.244E-02	2.461E-01	3.475E-01	2.356E-02	0.093
CD-115	260.90			-1.316E+00	1.060E+02	1.778E+02	1.236E+01	-0.007
	492.35			-1.732E+01	2.890E+01	4.503E+01	2.557E+00	-0.385
	527.90	*		-2.711E-01	8.519E+00	1.382E+01	7.751E-01	-0.020
SN-117M	156.02			2.250E-01	2.532E+00	4.108E+00	2.753E-01	0.055
	158.56	*		-3.414E-02	6.233E-02	9.831E-02	6.573E-03	-0.347
SB-122	563.90	*		2.352E-01	1.765E+00	2.890E+00	1.590E-01	0.081
	692.80			7.102E+00	3.551E+01	6.045E+01	3.283E+00	0.117
I-123	159.00	*		1.845E-01	3.551E+01	Half-Life	too short	
	528.96			-4.362E+01	3.551E+01	Half-Life	too short	
TE-123M	159.00	*		3.712E-03	3.335E-02	5.414E-02	3.655E-03	0.069
I-124	602.71	*		2.290E-01	7.255E-01	1.045E+00	5.585E-02	0.219
	722.78			1.288E+00	4.186E+00	6.261E+00	3.654E-01	0.206
	1325.50			-8.736E+00	2.917E+01	4.510E+01	3.366E+00	-0.194
	+ 1376.25			5.310E+01	3.585E+01	5.027E+01	3.772E+00	1.056
	1509.49			2.815E+00	1.543E+01	2.520E+01	1.825E+00	0.112

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124	1691.02			-1.122E+00	3.449E+00	5.582E+00	3.674E-01	-0.201
	602.71			1.581E-02	5.008E-02	7.210E-02	3.856E-03	0.219
	645.85			7.577E-02	5.054E-01	8.246E-01	4.909E-02	0.092
	709.31			3.286E-01	2.968E+00	5.014E+00	2.834E-01	0.066
	713.82			-1.422E+00	1.740E+00	2.713E+00	2.757E-01	-0.524
	722.78			1.289E-01	4.188E-01	6.264E-01	3.826E-02	0.206
	968.20		+	1.593E+01	4.252E+00	7.331E+00	5.886E-01	2.173
	1045.16			-2.099E+00	2.811E+00	4.215E+00	3.079E-01	-0.498
	1325.50			-9.335E-01	3.118E+00	4.820E+00	3.597E-01	-0.194
	1368.21			8.335E-01	1.997E+00	2.997E+00	3.835E-01	0.278
	1436.60			1.615E+00	3.915E+00	6.891E+00	5.106E-01	0.234
	1691.02		*	-2.648E-02	8.140E-02	1.317E-01	9.251E-03	-0.201
	427.89		*	8.944E-02	9.888E-02	1.722E-01	1.026E-02	0.520
SB-125	463.38			5.239E-01	3.194E-01	5.734E-01	3.834E-02	0.914
	600.56			-9.071E-04	2.107E-01	3.309E-01	2.094E-02	-0.003
	635.90			-1.742E-01	2.927E-01	4.455E-01	2.794E-02	-0.391
TE-125M	109.28		*	-4.786E-01	1.097E+01	1.791E+01	1.779E+00	-0.027
	388.63			2.099E-01	2.244E-01	3.899E-01	2.231E-02	0.538
I-126	666.33		*	1.613E-01	2.020E-01	3.442E-01	1.752E-02	0.469
	753.82			7.722E-01	1.420E+00	2.477E+00	1.553E-01	0.312
SB-126	223.80			-2.072E+00	4.502E+00	7.012E+00	4.858E-01	-0.296
	278.60			4.076E+00	2.605E+00	4.653E+00	3.211E-01	0.876
	296.50			1.115E+01	2.634E+00	3.674E+00	2.501E-01	3.035
	414.70			-4.805E-02	8.189E-02	1.296E-01	7.390E-03	-0.371
	415.30			-3.557E+00	6.884E+00	1.095E+01	6.244E-01	-0.325
	555.20			1.668E-01	4.101E+00	6.673E+00	3.690E-01	0.025
	573.80			-8.148E-01	1.075E+00	1.631E+00	8.914E-02	-0.500
	593.00			9.957E-02	9.289E-01	1.515E+00	8.164E-02	0.066
	656.30			-9.670E-01	3.158E+00	4.925E+00	2.494E-01	-0.196
	666.33			6.724E-02	8.419E-02	1.434E-01	7.301E-03	0.469
	675.00			1.310E+00	2.095E+00	3.539E+00	1.840E-01	0.370
	695.00			5.285E-02	8.006E-02	1.405E-01	7.673E-03	0.376
	697.00			1.671E-02	2.762E-01	4.652E-01	2.553E-02	0.036
	720.50		*	6.881E-02	1.451E-01	2.297E-01	1.334E-02	0.299
	856.80			-3.604E-01	5.021E-01	7.805E-01	6.126E-02	-0.462
	989.30			1.568E+00	1.324E+00	2.403E+00	1.886E-01	0.652
	1034.80			3.250E+00	8.816E+00	1.499E+01	1.112E+00	0.217
	1213.00			5.755E-01	4.788E+00	7.791E+00	4.783E-01	0.074
SB-127	61.10			9.068E+01	8.638E+01	1.472E+02	2.026E+01	0.616
	252.40			-5.439E-01	4.125E+00	6.877E+00	2.863E+00	-0.079
	290.80			-2.416E+01	2.394E+01	3.212E+01	3.047E+00	-0.752
	411.60			4.007E+00	1.179E+01	1.977E+01	2.784E+00	0.203
	444.90			8.044E+00	8.519E+00	1.483E+01	1.543E+00	0.542
	473.00			1.352E+00	1.537E+00	2.655E+00	2.867E-01	0.509
	543.00			-1.653E+01	1.608E+01	2.382E+01	2.982E+00	-0.694
	603.60			-2.689E-01	1.241E+01	1.723E+01	1.754E+00	-0.016
	685.20		*	1.044E+00	1.237E+00	2.197E+00	1.922E-01	0.475
	698.50			-7.680E+00	1.402E+01	2.252E+01	3.177E+00	-0.341
	722.20			-7.334E+00	2.874E+01	4.023E+01	3.532E+00	-0.182

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		783.80		2.424E+00	3.061E+00	5.412E+00	5.873E-01	0.448
		57.60		-5.174E+00	1.165E+01	1.899E+01	2.418E+00	-0.272
		145.22		2.546E-01	7.893E-01	1.296E+00	8.789E-02	0.196
		172.10		4.220E-02	1.391E-01	2.271E-01	1.517E-02	0.186
I-131		202.84	*	-1.077E-02	6.603E-02	8.965E-02	6.138E-03	-0.120
		374.96		-7.261E-02	2.146E-01	3.470E-01	2.063E-02	-0.209
		80.18		-7.595E+00	6.231E+00	8.390E+00	9.392E-01	-0.905
		284.30		-3.871E-01	1.504E+00	2.481E+00	1.841E-01	-0.156
TE-132		364.48	*	-6.106E-02	1.167E-01	1.867E-01	1.257E-02	-0.327
		636.97		-7.649E-03	1.489E+00	2.396E+00	1.421E-01	-0.003
		722.89		2.696E+00	7.407E+00	1.115E+01	6.584E-01	0.242
		49.72		-2.740E+00	4.396E+01	7.310E+01	1.081E+01	-0.037
BA-133		111.76		-1.473E+01	2.847E+01	4.517E+01	4.522E+00	-0.326
		116.30		6.131E+00	2.589E+01	4.264E+01	4.149E+00	0.144
		228.16	*	6.046E-01	6.340E-01	1.100E+00	1.611E-01	0.550
		53.15		-4.022E-01	8.326E+00	1.383E+01	1.896E+00	-0.029
I-133		79.62		-1.215E+00	1.896E+00	2.641E+00	4.432E-01	-0.460
		81.00		-2.430E-01	1.615E-01	1.910E-01	3.324E-02	-1.272
		276.40		6.160E-01	4.461E-01	7.635E-01	1.030E-01	0.807
		302.84		-9.999E-02	1.891E-01	2.627E-01	3.197E-02	-0.381
CS-134		356.01	*	-8.902E-03	5.508E-02	7.805E-02	9.191E-03	-0.114
		383.85		-3.481E-01	3.578E-01	5.527E-01	6.009E-02	-0.630
	+	510.53		4.841E-01	3.578E-01	Half-Life	too short	
		529.87	*	-7.131E-04	3.578E-01	Half-Life	too short	
I-135		706.58		-6.692E-02	3.578E-01	Half-Life	too short	
		856.28		-4.241E-01	3.578E-01	Half-Life	too short	
		875.33		-3.582E-05	3.578E-01	Half-Life	too short	
		1236.41		1.741E-01	3.578E-01	Half-Life	too short	
I-135		1298.22		-1.941E-02	3.578E-01	Half-Life	too short	
		475.35		-4.560E-02	2.226E+00	3.634E+00	2.071E-01	-0.013
		563.23		-5.635E-02	4.101E-01	6.577E-01	3.704E-02	-0.086
		569.32		2.980E-02	2.217E-01	3.628E-01	2.055E-02	0.082
I-135		604.70		4.085E-03	4.562E-02	6.410E-02	3.443E-03	0.064
		795.84	*	8.105E-02	5.281E-02	9.726E-02	6.777E-03	0.833
		801.93		-5.166E-01	4.164E-01	6.128E-01	4.315E-02	-0.843
		1038.57		-7.549E-01	4.283E+00	6.902E+00	5.090E-01	-0.109
I-135		1167.94		-1.268E+00	2.718E+00	4.216E+00	2.433E-01	-0.301
		1365.15		-3.542E-01	1.304E+00	1.963E+00	1.564E-01	-0.180
		288.45		-6.390E+07	1.304E+00	Half-Life	too short	
		417.63		1.511E+09	1.304E+00	Half-Life	too short	
I-135		546.56		9.616E+08	1.304E+00	Half-Life	too short	
	+	836.80		1.603E+09	1.304E+00	Half-Life	too short	
		1038.76		-1.892E+08	1.304E+00	Half-Life	too short	
		1124.00		5.974E+07	1.304E+00	Half-Life	too short	
I-135		1131.51		2.545E+08	1.304E+00	Half-Life	too short	
		1260.41	*	3.995E+08	1.304E+00	Half-Life	too short	
		1457.56		4.330E+10	1.304E+00	Half-Life	too short	
		1678.03		-1.684E+08	1.304E+00	Half-Life	too short	
I-135		1706.46		-3.716E+08	1.304E+00	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		1791.20		6.510E+08	1.304E+00	Half-Life	too short	
		66.91		-1.225E+00	1.173E+00	1.821E+00	3.131E-01	-0.673
	+	86.29		4.036E+00	1.673E+00	2.420E+00	3.605E-01	1.667
		153.22		5.335E-01	7.351E-01	1.222E+00	9.754E-02	0.436
		163.89		-1.976E-01	1.214E+00	1.946E+00	1.548E-01	-0.102
		176.55		-2.176E-01	4.097E-01	6.432E-01	4.715E-02	-0.338
		273.65		-8.757E-01	6.059E-01	7.946E-01	6.050E-02	-1.102
		340.57		2.714E-01	1.524E-01	2.466E-01	1.663E-02	1.101
		818.51		-2.015E-03	7.329E-02	1.216E-01	8.808E-03	-0.017
		1048.07	*	2.360E-02	1.134E-01	1.896E-01	1.461E-02	0.124
BA-137M		1235.34		3.167E-01	5.796E-01	9.857E-01	1.019E-01	0.321
		661.65	*	1.088E-02	4.053E-02	6.654E-02	3.348E-03	0.163
		661.65	*	1.150E-02	4.284E-02	7.034E-02	3.559E-03	0.163
		165.85	*	1.669E-02	3.517E-02	5.786E-02	3.848E-03	0.288
CE-139		162.64		-2.897E-02	8.466E-01	1.365E+00	9.967E-02	-0.021
		304.84		-5.024E-01	1.582E+00	2.230E+00	6.133E-01	-0.225
BA-140		423.70		-2.991E+00	2.139E+00	2.789E+00	8.860E-01	-1.072
		537.32	*	7.023E-02	2.699E-01	4.458E-01	1.448E-01	0.158
		328.77		6.656E-01	3.445E-01	6.076E-01	4.354E-02	1.095
		432.53		-7.464E-01	2.198E+00	3.525E+00	2.231E-01	-0.212
		487.03		6.050E-02	1.438E-01	2.419E-01	1.564E-02	0.250
		751.79		-1.055E+00	1.614E+00	2.535E+00	1.892E-01	-0.416
		815.85		5.840E-02	2.986E-01	5.058E-01	4.228E-02	0.115
		867.82		-7.152E-01	1.322E+00	2.071E+00	1.764E-01	-0.345
		919.63		-2.676E-01	3.389E+00	4.964E+00	5.196E-01	-0.054
		925.24		4.329E-01	1.143E+00	1.953E+00	1.741E-01	0.222
CE-141		1596.49	*	-7.328E-02	8.485E-02	1.206E-01	8.404E-03	-0.608
		145.44	*	1.893E-02	7.128E-02	1.168E-01	8.149E-03	0.162
CE-143		57.37		-5.815E-04	7.128E-02	Half-Life	too short	
		231.56		-1.366E-03	7.128E-02	Half-Life	too short	
	+	293.26	*	7.003E-04	7.128E-02	Half-Life	too short	
	+	350.59		1.691E-02	7.128E-02	Half-Life	too short	
		490.36		1.651E-04	7.128E-02	Half-Life	too short	
		664.57		-3.346E-04	7.128E-02	Half-Life	too short	
		721.93		-2.391E-04	7.128E-02	Half-Life	too short	
		80.11		-3.709E+00	3.154E+00	4.260E+00	4.752E-01	-0.871
		133.54	*	5.125E-02	2.387E-01	3.911E-01	5.748E-02	0.131
		476.78		-1.189E-03	7.797E-02	1.273E-01	8.730E-03	-0.009
PM-144		618.01		-1.589E-03	3.398E-02	5.458E-02	3.086E-03	-0.029
		696.49	*	1.238E-02	3.828E-02	6.566E-02	3.601E-03	0.188
PR-144		778.57		-7.646E-01	2.298E+00	3.716E+00	2.465E-01	-0.206
		696.49	*	8.381E-01	2.592E+00	4.447E+00	2.437E-01	0.188
PM-146		1489.15		-6.895E+00	1.332E+01	2.052E+01	1.497E+00	-0.336
		453.90	*	5.816E-02	4.743E-02	8.382E-02	7.179E-03	0.694
ND-147		633.02		-1.285E+00	1.597E+00	2.272E+00	8.344E-01	-0.566
		735.90		1.497E-01	1.686E-01	2.875E-01	8.030E-02	0.521
		747.13		1.205E-02	9.045E-02	1.529E-01	1.939E-02	0.079
	+	91.11		7.056E-01	3.602E-01	6.120E-01	6.960E-02	1.153
		319.41		4.730E+00	3.464E+00	6.163E+00	4.088E-01	0.767

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149 EU-152		439.89		1.012E-01	6.003E+00	9.861E+00	5.638E-01	0.010
		531.02	*	8.157E-02	5.777E-01	9.492E-01	1.276E-01	0.086
		285.90	*	9.112E+01	7.438E+01	1.298E+02	1.900E+01	0.702
		121.78		-5.687E-02	8.705E-02	1.378E-01	1.202E-02	-0.413
		244.69		2.122E-01	3.973E-01	6.026E-01	4.196E-02	0.352
		344.27	*	-3.179E-02	1.899E-01	1.779E-01	1.254E-02	-0.179
		443.98		-6.455E-01	1.083E+00	1.701E+00	9.721E-02	-0.380
		778.89		-1.072E-01	2.597E-01	4.164E-01	2.763E-02	-0.257
		867.32		-5.865E-01	8.714E-01	1.349E+00	1.082E-01	-0.435
	+	964.01		5.824E-01	3.896E-01	6.447E-01	5.199E-02	0.903
GD-153		1085.78		-4.411E-02	4.401E-01	7.125E-01	4.881E-02	-0.062
		1112.02		3.734E-01	3.470E-01	5.653E-01	3.691E-02	0.661
		1407.95		2.104E-01	1.931E-01	3.638E-01	2.714E-02	0.578
		69.67		6.048E-01	2.686E+00	3.947E+00	4.456E-01	0.153
		83.37		6.300E-01	2.117E+01	3.040E+01	3.430E+00	0.021
		97.43	*	7.261E-02	1.080E-01	1.605E-01	1.540E-02	0.452
		103.18		4.410E-04	1.246E-01	2.040E-01	1.795E-02	0.002
		123.07		1.638E-02	6.135E-02	1.010E-01	1.040E-02	0.162
		247.94		-2.967E-01	4.700E-01	6.569E-01	6.759E-02	-0.452
		591.81		-3.197E-01	6.697E-01	1.037E+00	9.894E-02	-0.308
EU-154		723.30		1.730E-01	2.077E-01	3.271E-01	2.327E-02	0.529
		756.87		3.764E-01	7.948E-01	1.378E+00	1.438E-01	0.273
		873.19		-5.334E-02	2.988E-01	4.860E-01	5.782E-02	-0.110
		996.32		-4.421E-01	3.749E-01	5.216E-01	9.064E-02	-0.848
		1004.76		-1.957E-01	2.205E-01	3.263E-01	3.583E-02	-0.600
		1274.45	*	-5.192E-02	1.291E-01	1.989E-01	1.995E-02	-0.261
		48.70		-4.930E+00	7.573E+00	1.225E+01	1.577E+00	-0.402
		60.01		4.876E+00	9.395E+00	1.586E+01	1.939E+00	0.307
	+	86.54		3.948E-01	1.593E-01	2.358E-01	2.719E-02	1.675
		105.31	*	5.106E-02	1.288E-01	2.139E-01	1.852E-02	0.239
TB-160	+	86.79		1.044E+00	4.210E-01	6.243E-01	7.169E-02	1.672
		197.04		-3.425E-01	6.962E-01	1.072E+00	7.309E-02	-0.319
		215.65		7.078E-01	9.616E-01	1.475E+00	1.018E-01	0.480
	+	298.57		1.995E-01	1.566E-01	2.276E-01	1.547E-02	0.876
		879.36	*	7.834E-02	1.475E-01	2.559E-01	2.104E-02	0.306
	+	962.29		1.064E+00	7.118E-01	1.116E+00	9.012E-02	0.954
		966.15		1.514E+00	3.022E-01	5.962E-01	4.797E-02	2.539
		1177.93		-3.653E-02	3.672E-01	5.913E-01	3.398E-02	-0.062
		1271.85		-2.692E-01	7.288E-01	1.127E+00	7.686E-02	-0.239
		80.57		-7.408E-01	4.450E-01	5.318E-01	5.940E-02	-1.393
HO-166M	+	184.41		1.538E-01	7.424E-02	8.148E-02	5.498E-03	1.887
		280.46		-1.788E-01	9.739E-02	1.463E-01	1.009E-02	-1.221
		410.95		2.896E-01	2.960E-01	5.136E-01	2.926E-02	0.564
		711.68	*	2.015E-02	6.556E-02	1.124E-01	6.387E-03	0.179
		752.31		-1.354E-01	2.760E-01	4.409E-01	2.755E-02	-0.307
		810.29		-3.563E-02	5.738E-02	8.953E-02	6.366E-03	-0.398
		51.35		7.885E+01	7.923E+01	1.361E+02	1.880E+01	0.579
		52.39		2.398E+01	3.826E+01	6.512E+01	8.983E+00	0.368
		59.40		2.568E+01	5.150E+01	8.693E+01	1.070E+01	0.295
TM-171								



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	66.72	*	-5.015E+01	4.492E+01	7.010E+01	8.061E+00	-0.715
		88.36		4.309E-01	2.511E-01	4.528E-01	5.195E-02	0.952
		201.83		-7.513E-03	4.039E-02	5.575E-02	3.814E-03	-0.135
		306.84	*	1.057E-02	2.828E-02	4.805E-02	3.237E-03	0.220
		401.10		-4.837E+00	8.031E+00	1.229E+01	6.988E-01	-0.394
LU-177	+	112.95		-2.551E-01	1.761E+00	2.839E+00	2.222E-01	-0.090
		208.36	*	4.939E+00	2.171E+00	2.085E+00	1.432E-01	2.369
LU-177M	+	52.97		-5.249E-01	3.805E+00	6.297E+00	8.648E-01	-0.083
		54.07		-5.284E-01	1.872E+00	3.076E+00	4.169E-01	-0.172
		61.30		1.874E+00	2.763E+00	4.640E+00	5.602E-01	0.404
		121.62		-2.847E-01	4.444E-01	7.043E-01	5.075E-02	-0.404
		147.16		-6.859E-04	7.505E-01	1.216E+00	8.226E-02	-0.001
		171.86		2.305E-01	5.703E-01	9.348E-01	6.242E-02	0.247
		218.09		1.197E-01	1.044E+00	1.676E+00	1.158E-01	0.071
		268.79		1.648E+00	1.264E+00	1.697E+00	1.176E-01	0.971
		319.02		3.599E-01	2.925E-01	5.169E-01	3.429E-02	0.696
		367.43		-2.907E-01	1.021E+00	1.660E+00	1.005E-01	-0.175
		413.65	*	-2.948E-01	2.139E-01	3.210E-01	1.830E-02	-0.919
		56.28		-3.426E+00	1.971E+00	2.954E+00	3.858E-01	-1.160
		57.53		-5.483E-01	9.904E-01	1.605E+00	2.047E-01	-0.342
		65.20		-1.428E+00	1.515E+00	2.386E+00	2.777E-01	-0.598
		133.02		-3.147E-02	7.569E-02	1.209E-01	8.382E-03	-0.260
HF-181		136.25		4.482E-01	5.301E-01	8.888E-01	6.120E-02	0.504
		345.85		-1.681E-01	2.612E-01	3.326E-01	2.111E-02	-0.505
		482.03	*	6.935E-04	4.566E-02	7.467E-02	4.251E-03	0.009
		56.28		-1.355E+00	7.806E-01	1.170E+00	1.528E-01	-1.158
		57.53		-2.174E-01	3.926E-01	6.364E-01	8.116E-02	-0.342
W-181		65.20	*	-5.615E-01	5.956E-01	9.383E-01	1.092E-01	-0.598
		67.75		3.114E-02	1.749E-01	2.705E-01	3.088E-02	0.115
		100.10		1.065E-02	2.143E-01	3.519E-01	3.236E-02	0.030
		152.43		4.238E-01	3.948E-01	6.649E-01	4.472E-02	0.637
		222.10		6.879E-02	4.041E-01	6.503E-01	4.502E-02	0.106
TA-182		1001.68		8.641E-01	2.030E+00	3.511E+00	2.716E-01	0.246
		1121.28		6.042E-01	1.964E-01	3.738E-01	2.396E-02	1.617
		1189.05		-1.888E-01	3.062E-01	4.639E-01	2.723E-02	-0.407
		1221.42	*	1.207E-01	2.125E-01	3.629E-01	2.263E-02	0.333
		1230.97		-1.846E-01	5.022E-01	7.765E-01	4.926E-02	-0.238
		57.98		-6.776E-02	3.846E-01	6.345E-01	8.023E-02	-0.107
		59.32		9.720E-02	2.100E-01	3.541E-01	4.365E-02	0.274
		67.20		-5.489E-02	3.083E-01	4.900E-01	5.615E-02	-0.112
		162.32	*	-4.737E-02	1.308E-01	2.079E-01	1.386E-02	-0.228
		208.81		4.927E+00	2.166E+00	2.082E+00	1.431E-01	2.367
RE-183	+	291.72		6.200E-01	1.316E+00	1.969E+00	1.346E-01	0.315
		57.98		-2.513E-01	1.426E+00	2.353E+00	2.975E-01	-0.107
		59.32		3.602E-01	7.782E-01	1.312E+00	1.617E-01	0.274
		67.20		-2.035E-01	1.143E+00	1.817E+00	2.082E-01	-0.112
		161.27		6.396E-02	4.227E-01	6.869E-01	4.583E-02	0.093
RE-184		216.55		9.233E-02	3.251E-01	5.261E-01	3.632E-02	0.176
		252.85	*	3.476E-02	2.747E-01	4.639E-01	3.229E-02	0.075

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA	
OS-185		318.01	4.407E-01	5.102E-01	8.868E-01	5.892E-02	0.497	
		792.07	6.733E-01	1.104E+00	1.923E+00	1.314E-01	0.350	
		903.28	-4.924E-02	1.096E+00	1.547E+00	1.316E-01	-0.032	
		920.93	-8.024E-02	5.337E-01	8.500E-01	7.129E-02	-0.094	
		59.72	3.514E-01	5.579E-01	9.448E-01	1.158E-01	0.372	
		61.14	3.213E-01	2.971E-01	5.077E-01	6.139E-02	0.633	
		69.30	1.508E-01	4.796E-01	7.077E-01	8.005E-02	0.213	
		592.07	8.276E-02	2.594E+00	4.204E+00	2.267E-01	0.020	
		646.12	*	1.202E-02	4.258E-02	7.032E-02	3.603E-03	0.171
		717.42	-4.987E-01	9.233E-01	1.477E+00	8.508E-02	-0.338	
RE-188		874.81	1.108E-01	5.982E-01	1.008E+00	8.214E-02	0.110	
		880.27	4.147E-01	8.151E-01	1.412E+00	1.163E-01	0.294	
		155.03	*	-5.832E-02	2.027E-01	3.238E-01	2.172E-02	-0.180
		477.96	3.985E-01	3.464E+00	5.707E+00	3.251E-01	0.070	
		633.10	-2.628E+00	3.049E+00	4.525E+00	2.351E-01	-0.581	
W-188		63.58	-1.417E+00	8.782E+01	1.444E+02	1.705E+01	-0.010	
		227.08	3.721E+00	1.456E+01	2.481E+01	1.721E+00	0.150	
IR-192	+	290.67	*	-1.010E+01	9.999E+00	1.345E+01	9.201E-01	-0.751
		295.96	9.730E-01	2.102E-01	3.150E-01	2.170E-02	3.089	
		308.46	4.956E-02	1.090E-01	1.860E-01	1.261E-02	0.267	
		316.51	*	-2.662E-02	3.879E-02	6.206E-02	4.147E-03	-0.429
AU-195		468.07	-7.420E-02	7.558E-02	1.148E-01	7.584E-03	-0.646	
		604.41	-1.185E-01	6.010E-01	8.187E-01	9.105E-02	-0.145	
		612.46	2.931E-02	8.436E-01	1.178E+00	8.481E-02	0.025	
		65.12	-2.549E-01	2.773E-01	4.374E-01	5.094E-02	-0.583	
		66.83	-1.595E-01	1.477E-01	2.310E-01	2.654E-02	-0.690	
	+	75.70	1.874E+00	3.955E-01	6.127E-01	6.803E-02	3.058	
		98.88	*	1.603E-01	2.896E-01	4.505E-01	4.222E-02	0.356
TL-200		129.76	2.868E+00	3.283E+00	5.514E+00	3.856E-01	0.520	
		367.94	*	6.321E-05	3.283E+00	Half-Life	too short	
		579.30	5.184E-03	3.283E+00	Half-Life	too short		
		828.27	1.017E-03	3.283E+00	Half-Life	too short		
TL-201		1205.75	-6.643E-04	3.283E+00	Half-Life	too short		
		68.90	3.737E+00	6.017E+00	9.002E+00	1.020E+00	0.415	
		70.82	2.853E+00	3.356E+00	5.056E+00	5.677E-01	0.564	
		80.30	-7.478E+00	5.785E+00	7.747E+00	8.646E-01	-0.965	
		135.34	7.799E+00	2.335E+01	3.842E+01	2.651E+00	0.203	
TL-202		167.43	*	5.785E-02	6.440E+00	1.039E+01	6.915E-01	0.006
		68.90	4.067E-01	6.547E-01	9.795E-01	1.110E-01	0.415	
		70.82	3.096E-01	3.642E-01	5.487E-01	6.160E-02	0.564	
		80.30	-8.116E-01	6.279E-01	8.408E-01	9.385E-02	-0.965	
HG-203		439.56	*	-2.678E-02	7.302E-02	1.168E-01	6.673E-03	-0.229
		70.83	1.412E+00	1.660E+00	2.491E+00	3.834E-01	0.567	
	+	72.87	3.804E+00	1.279E+00	1.690E+00	2.531E-01	2.251	
		82.60	-3.296E-01	1.681E+00	2.228E+00	3.459E-01	-0.148	
BI-207		279.20	*	8.644E-03	4.499E-02	7.598E-02	5.472E-03	0.114
	+	72.80	1.134E+00	3.638E-01	5.016E-01	5.594E-02	2.260	
		74.97	6.716E-01	2.155E-01	3.438E-01	3.819E-02	1.954	
		84.90	9.170E-01	2.908E-01	4.502E-01	5.116E-02	2.037	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207		569.67	7.316E-03	3.440E-02	5.663E-02	3.104E-03	0.129
		1063.62 *	2.030E-02	5.360E-02	9.122E-02	6.481E-03	0.223
		1770.23	5.010E-02	3.628E-01	5.401E-01	3.345E-02	0.093
		81.07	-3.554E-01	3.734E-01	4.221E-01	4.721E-02	-0.842
		83.78	9.068E-02	1.807E-01	2.649E-01	2.994E-02	0.342
		94.90	3.808E-02	3.058E-01	4.429E-01	4.441E-02	0.086
		122.32	-1.298E+00	2.092E+00	3.318E+00	2.627E-01	-0.391
		144.24	-5.387E-02	8.235E-01	1.311E+00	1.055E-01	-0.041
		154.21	-2.741E-02	4.725E-01	7.625E-01	5.936E-02	-0.036
	+	269.46	3.877E-01	2.975E-01	4.055E-01	2.901E-02	0.956
		323.87 *	-1.484E+00	8.446E-01	1.212E+00	2.038E-01	-1.224
	+	338.28	7.134E+00	2.259E+00	2.710E+00	2.953E-01	2.633
PO-209		445.03	2.404E+00	2.434E+00	4.247E+00	4.341E-01	0.566
		260.50	3.160E-01	1.121E+01	1.884E+01	1.309E+00	0.017
		262.80	-1.518E+01	3.396E+01	5.041E+01	3.503E+00	-0.301
		896.60 *	-4.047E+00	8.036E+00	1.265E+01	1.076E+00	-0.320
BI-210		46.50 *	-5.147E+00	1.303E+01	2.082E+01	2.163E+00	-0.247
PB-210		46.50 *	-5.147E+00	1.303E+01	2.082E+01	2.163E+00	-0.247
PO-210		46.50 *	-5.147E+00	1.303E+01	2.082E+01	2.000E+00	-0.247
PB-211		404.84 *	-1.050E+00	1.324E+00	1.793E+00	1.118E+00	-0.586
		427.08	1.158E+00	2.352E+00	3.809E+00	2.354E+00	0.304
		831.96	3.496E-01	1.367E+00	1.999E+00	1.250E+00	0.175
BI-212	+	727.18 *	1.404E+00	4.991E-01	7.910E-01	6.158E-02	1.775
		785.46	1.818E+00	1.830E+00	3.287E+00	2.213E-01	0.553
PO-215		1620.62	1.551E+00	1.071E+00	2.218E+00	1.526E-01	0.699
		81.07	-3.554E-01	3.734E-01	4.221E-01	4.721E-02	-0.842
		83.78	9.068E-02	1.807E-01	2.649E-01	2.994E-02	0.342
		94.90	3.808E-02	3.058E-01	4.429E-01	4.441E-02	0.086
		122.32	-1.298E+00	2.092E+00	3.318E+00	2.627E-01	-0.391
		144.24	-5.387E-02	8.235E-01	1.311E+00	1.055E-01	-0.041
		154.21	-2.741E-02	4.725E-01	7.625E-01	5.936E-02	-0.036
	+	269.46	3.877E-01	2.975E-01	4.055E-01	2.901E-02	0.956
		323.87 *	-1.484E+00	8.446E-01	1.212E+00	2.038E-01	-1.224
	+	338.28	7.134E+00	2.259E+00	2.710E+00	2.953E-01	2.633
		445.03	2.404E+00	2.434E+00	4.247E+00	4.341E-01	0.566
RN-219		271.23	4.018E-01	3.267E-01	5.099E-01	4.561E-02	0.788
		401.81 *	-1.863E-01	4.755E-01	7.634E-01	1.035E-01	-0.244
RN-220		549.76 *	-6.336E+00	2.845E+01	4.532E+01	2.515E+00	-0.140
RA-223		81.07	-3.554E-01	3.734E-01	4.221E-01	4.721E-02	-0.842
		83.78	9.068E-02	1.807E-01	2.649E-01	2.994E-02	0.342
		94.90	3.808E-02	3.058E-01	4.429E-01	4.441E-02	0.086
		122.32	-1.298E+00	2.092E+00	3.318E+00	2.627E-01	-0.391
		144.24	-5.387E-02	8.235E-01	1.311E+00	1.055E-01	-0.041
		154.21	-2.741E-02	4.725E-01	7.625E-01	5.936E-02	-0.036
	+	269.46	3.877E-01	2.975E-01	4.055E-01	2.901E-02	0.956
		323.87 *	-1.484E+00	8.446E-01	1.212E+00	2.038E-01	-1.224
	+	338.28	7.134E+00	2.259E+00	2.710E+00	2.953E-01	2.633
		445.03	2.404E+00	2.434E+00	4.247E+00	4.341E-01	0.566
AC-227		79.80	-1.552E+00	2.411E+00	3.341E+00	7.562E-01	-0.465

---- 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		4.448E+00	6.320E-01	8.353E-01	9.301E-02	5.326
		256.20	*	4.078E-01	4.620E-01	7.989E-01	1.157E-01	0.510
		286.10		2.291E+00	1.754E+00	3.083E+00	3.740E-01	0.743
	+	299.80		2.568E+00	2.053E+00	2.981E+00	4.967E-01	0.861
		304.40		5.085E-02	2.378E+00	3.452E+00	6.090E-01	0.015
		334.20		-1.878E+00	3.034E+00	4.132E+00	7.670E-01	-0.454
		79.80		-1.552E+00	2.412E+00	3.341E+00	7.649E-01	-0.465
		94.00		5.587E+00	2.868E+00	4.098E+00	9.200E-01	1.363
		236.00		4.448E+00	5.878E-01	8.353E-01	8.216E-02	5.326
		256.20	*	4.078E-01	4.636E-01	7.989E-01	1.385E-01	0.510
TH-229	+	286.10		2.291E+00	2.876E+00	3.083E+00	3.090E+00	0.743
		299.80		2.568E+00	2.053E+00	2.981E+00	4.967E-01	0.861
		304.40		5.085E-02	2.378E+00	3.452E+00	6.090E-01	0.015
		334.20		-1.878E+00	3.034E+00	4.132E+00	7.670E-01	-0.454
	+	85.43		7.353E-01	2.966E-01	4.478E-01	5.103E-02	1.642
	+	88.47		2.480E-01	1.445E-01	2.573E-01	2.945E-02	0.964
		100.00		-2.013E-02	2.258E-01	3.688E-01	3.398E-02	-0.055
		193.63	*	-4.294E-01	6.194E-01	9.447E-01	6.423E-02	-0.454
		210.97		9.998E-01	1.013E+00	1.498E+00	1.031E-01	0.668
		283.67	*	-1.506E+00	1.724E+00	2.730E+00	3.895E-01	-0.552
PA-231		301.29		9.210E-01	7.482E-01	1.167E+00	1.286E-01	0.789
TH-231		81.07		-3.554E-01	3.734E-01	4.221E-01	4.721E-02	-0.842
		83.78		9.068E-02	1.807E-01	2.649E-01	2.994E-02	0.342
		94.90		3.808E-02	3.058E-01	4.429E-01	4.441E-02	0.086
		122.32		-1.298E+00	2.092E+00	3.318E+00	2.627E-01	-0.391
		144.24		-5.387E-02	8.235E-01	1.311E+00	1.055E-01	-0.041
		154.21		-2.741E-02	4.725E-01	7.625E-01	5.936E-02	-0.036
	+	269.46		3.877E-01	2.975E-01	4.055E-01	2.901E-02	0.956
		323.87	*	-1.484E+00	8.446E-01	1.212E+00	2.038E-01	-1.224
	+	338.28		7.134E+00	2.259E+00	2.710E+00	2.953E-01	2.633
		445.03		2.404E+00	2.434E+00	4.247E+00	4.341E-01	0.566
U-231		84.21		8.918E+00	6.548E+00	9.873E+00	1.118E+00	0.903
	+	92.29		4.778E+00	2.433E+00	3.843E+00	4.050E-01	1.243
		95.87	*	-6.800E-01	1.229E+00	1.713E+00	1.688E-01	-0.397
		108.00		-2.453E-01	2.060E+00	3.354E+00	2.774E-01	-0.073
PA-233	+	75.28		3.046E+01	7.502E+00	1.012E+01	1.708E+00	3.009
	+	86.59		6.420E+00	3.060E+00	3.835E+00	1.069E+00	1.674
	+	300.12		7.158E-01	5.685E-01	8.335E-01	1.158E-01	0.859
		311.98	*	-1.009E-02	7.102E-02	1.174E-01	8.227E-03	-0.086
PA-234		340.50		1.484E+00	8.545E-01	1.282E+00	2.966E-01	1.157
		398.62		1.009E-01	2.524E+00	4.033E+00	1.042E+00	0.025
		415.76		-2.795E-02	1.879E+00	3.088E+00	6.350E-01	-0.009
		63.00		3.799E-01	2.687E+00	4.441E+00	7.781E-01	0.086
		94.67		1.090E-01	2.218E-01	3.266E-01	4.393E-02	0.334
		98.44		9.345E-02	1.342E-01	1.851E-01	1.035E-01	0.505
		99.86		7.294E-02	5.683E-01	9.362E-01	8.642E-02	0.078
		111.00		-9.183E-02	2.197E-01	3.527E-01	4.109E-02	-0.260
		131.20		-2.446E-01	1.280E-01	1.900E-01	1.323E-02	-1.288
		152.70		3.514E-01	3.862E-01	6.411E-01	1.037E-01	0.548

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	186.00		5.535E+00	3.147E+00	2.973E+00	9.143E-01	1.862
		226.40		-7.334E-02	4.558E-01	7.634E-01	9.290E-02	-0.096
		227.20		1.325E-01	4.977E-01	8.483E-01	5.885E-02	0.156
		248.90		-2.492E-01	9.941E-01	1.496E+00	3.266E-01	-0.167
	+	293.70		6.189E+00	1.626E+00	2.017E+00	3.324E-01	3.069
		369.80		8.920E-01	9.773E-01	1.674E+00	3.497E-01	0.533
		568.70		1.243E-02	1.147E+00	1.859E+00	1.020E-01	0.007
		569.50		7.675E-02	3.043E-01	5.025E-01	2.755E-02	0.153
		574.00		-1.696E+00	1.672E+00	2.477E+00	1.354E-01	-0.685
		699.00		-4.215E-02	7.680E-01	1.283E+00	2.295E-01	-0.033
		706.10		-2.750E-01	1.129E+00	1.846E+00	8.143E-01	-0.149
		733.00		-1.058E-01	4.643E-01	6.508E-01	1.387E-01	-0.163
		742.81		2.688E-01	1.398E+00	2.355E+00	1.576E+00	0.114
		796.30		1.499E+00	1.091E+00	1.875E+00	4.977E-01	0.800
		805.60		4.429E-01	9.946E-01	1.707E+00	5.162E-01	0.259
		819.60		3.620E-01	1.316E+00	2.230E+00	8.416E-01	0.162
		826.30		-5.522E-01	9.211E-01	1.393E+00	6.199E-01	-0.396
		831.60		2.522E-01	6.862E-01	1.026E+00	3.030E-01	0.246
		876.40		-1.972E-01	8.979E-01	1.418E+00	1.457E+00	-0.139
		880.51		2.102E-01	2.924E-01	5.156E-01	4.249E-02	0.408
		883.24		1.267E-01	3.075E-01	5.092E-01	3.421E-01	0.249
		899.00		5.014E-01	8.769E-01	1.484E+00	6.483E-01	0.338
		925.00		3.894E-01	1.252E+00	2.129E+00	1.779E-01	0.183
		926.50		2.096E-02	1.880E-01	3.135E-01	7.896E-02	0.067
		946.00	*	-3.488E-02	3.197E-01	5.215E-01	9.688E-02	-0.067
		949.00		3.806E-01	4.523E-01	8.051E-01	6.587E-02	0.473
		980.50		-1.992E-01	7.318E-01	1.169E+00	9.263E-02	-0.170
		1394.10		-4.353E-01	1.244E+00	1.927E+00	1.252E+00	-0.226
PA-234M		766.42		2.369E+01	1.752E+01	2.405E+01	1.212E+01	0.985
		1001.03	*	1.910E+00	4.679E+00	8.074E+00	7.442E-01	0.237
TH-234		63.29	*	-2.928E-02	2.261E+00	3.718E+00	7.338E-01	-0.008
	+	92.38		1.505E+00	8.027E-01	1.211E+00	2.308E-01	1.243
	+	89.95		2.489E+00	1.627E+00	2.462E+00	7.788E-01	1.011
	+	93.35		1.809E+00	1.040E+00	1.403E+00	4.012E-01	1.289
		105.00		3.322E-01	1.273E+00	2.098E+00	6.259E-01	0.158
		143.76	*	-1.305E-02	2.539E-01	4.044E-01	6.748E-02	-0.032
		163.35		3.992E-02	5.647E-01	9.141E-01	1.671E-01	0.044
	+	185.71		2.050E-01	9.899E-02	1.102E-01	7.444E-03	1.860
		205.31		1.035E-01	7.189E-01	9.936E-01	1.823E-01	0.104
		94.67		8.405E-02	1.681E-01	2.479E-01	2.496E-02	0.339
		98.44		7.066E-02	9.372E-02	1.399E-01	1.321E-02	0.505
		111.00		-6.946E-02	1.661E-01	2.668E-01	2.132E-02	-0.260
		160.31	*	3.396E-02	9.359E-02	1.535E-01	1.025E-02	0.221
U-238		63.29	*	-2.928E-02	2.261E+00	3.718E+00	7.338E-01	-0.008
	+	92.38		1.505E+00	7.663E-01	1.211E+00	1.274E-01	1.243
		99.55		3.571E-02	1.903E-01	3.143E-01	2.915E-02	0.114
		117.00	*	6.195E-02	2.209E-01	3.646E-01	2.740E-02	0.170
		209.75		1.653E+00	9.710E-01	1.652E+00	1.136E-01	1.000
		228.18		2.516E-01	2.609E-01	4.561E-01	3.165E-02	0.552

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		277.60		2.711E-01	2.067E-01	3.653E-01	2.522E-02	0.742
		334.30		-9.124E-01	1.716E+00	2.370E+00	1.536E-01	-0.385
AM-241		59.54	*	1.867E-01	2.977E-01	5.041E-01	6.415E-02	0.370
CM-243		99.55		3.674E-02	1.958E-01	3.233E-01	2.999E-02	0.114
		103.76	*	2.979E-02	1.162E-01	1.921E-01	1.677E-02	0.155
		117.00		6.373E-02	2.273E-01	3.750E-01	2.819E-02	0.170
		209.75		1.629E+00	9.571E-01	1.629E+00	1.120E-01	1.000
		228.18		2.542E-01	2.636E-01	4.608E-01	3.198E-02	0.552
		277.60		2.732E-01	2.084E-01	3.683E-01	2.543E-02	0.742
AM-246		798.80		-1.971E-01	1.549E-01	2.291E-01	1.589E-02	-0.860
		1036.00		7.785E-02	3.196E-01	5.370E-01	3.975E-02	0.145
		1062.04		-4.447E-02	2.333E-01	3.743E-01	2.666E-02	-0.119
		1078.86	*	1.154E-01	1.576E-01	2.756E-01	1.910E-02	0.419
CM-247		278.00		1.400E+00	8.485E-01	1.519E+00	1.048E-01	0.922
		287.40		6.043E-01	1.497E+00	2.417E+00	1.658E-01	0.250
		402.60	*	3.760E-04	4.331E-02	7.140E-02	4.060E-03	0.005
CF-249		252.85		1.310E-01	1.035E+00	1.749E+00	1.217E-01	0.075
		333.44		-1.909E-01	2.254E-01	3.027E-01	1.965E-02	-0.631
		387.95	*	2.633E-02	4.679E-02	7.971E-02	4.570E-03	0.330
CF-251		176.60	*	-7.680E-02	1.499E-01	2.356E-01	1.579E-02	-0.326
		227.00		1.096E-01	4.417E-01	7.524E-01	5.219E-02	0.146
		285.00		6.927E-01	1.964E+00	3.341E+00	2.296E-01	0.207

# 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]G244132018      *
* Acquisition date   : 19-JAN-2010 12:04:37 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 02:00:01.21 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244132018 Analyst initials: MXR1                  *
* Batch Number      : 940270 Sample Quantity : 1.3479E+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	2.059E+01	2.195E+00	4.425E-01	0.000E+00
MN-54	4.926E-02	3.319E-02	6.741E-02	0.000E+00
CD-109	1.845E+00	1.054E+00	1.681E+00	0.000E+00
SN-126	3.279E-01	1.296E-01	1.668E-01	0.000E+00
CS-135	3.295E-01	2.483E-01	2.847E-01	0.000E+00
TL-208	3.939E-01	9.708E-02	6.218E-02	0.000E+00
BI-211	3.741E+00	5.800E-01	3.572E-01	0.000E+00
PB-212	1.602E+00	1.805E-01	1.041E-01	0.000E+00
PO-212	1.602E+00	1.805E-01	1.041E-01	0.000E+00
BI-214	1.138E+00	1.716E-01	8.850E-02	0.000E+00
PB-214	1.301E+00	2.124E-01	1.254E-01	0.000E+00
PO-214	1.301E+00	2.124E-01	1.254E-01	0.000E+00
PO-216	1.602E+00	1.805E-01	1.041E-01	0.000E+00
PO-218	1.301E+00	2.124E-01	1.254E-01	0.000E+00
RA-224	4.191E+00	1.619E+00	1.184E+00	0.000E+00
RA-226	1.138E+00	1.716E-01	8.850E-02	0.000E+00
AC-228	1.636E+00	3.407E-01	2.160E-01	0.000E+00
RA-228	1.636E+00	3.407E-01	2.160E-01	0.000E+00
TH-228	1.624E+00	1.830E-01	1.055E-01	0.000E+00
TH-230	1.138E+00	1.716E-01	8.850E-02	0.000E+00
TH-232	1.636E+00	3.407E-01	2.160E-01	0.000E+00
U-234	1.138E+00	1.716E-01	8.850E-02	0.000E+00
NP-237	9.630E-01	4.276E-01	5.104E-01	0.000E+00
AM-243	3.742E-01	1.177E-01	1.288E-01	0.000E+00
ANH-511	1.160E-01	7.308E-02	5.313E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-6.064E-02	3.583E-01	6.043E-01	0.000E+00 NOT IDENT.
NA-22	-1.903E-02	4.521E-02	7.135E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.442E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-9.624E-03	2.734E-02	4.200E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.924E-02	9.765E-02	0.000E+00	NOT IDENT.
SC-46	1.927E-02	3.804E-02	6.809E-02	0.000E+00	FAIL ABUN
V-48	-1.018E-02	6.920E-02	1.156E-01	0.000E+00	NOT IDENT.
CR-51	4.995E-01	4.038E-01	7.492E-01	0.000E+00	NOT IDENT.
MN-52	1.700E-01	2.073E-01	3.912E-01	0.000E+00	NOT IDENT.
CO-56	7.016E-03	4.052E-02	7.051E-02	0.000E+00	NOT IDENT.
CO-57	-1.728E-02	2.923E-02	4.969E-02	0.000E+00	NOT IDENT.
CO-58	-2.613E-02	3.705E-02	5.929E-02	0.000E+00	NOT IDENT.
FE-59	-6.252E-02	9.395E-02	1.468E-01	0.000E+00	NOT IDENT.
CO-60	7.141E-03	3.738E-02	6.349E-02	0.000E+00	NOT IDENT.
ZN-65	6.896E-02	1.087E-01	1.696E-01	0.000E+00	NOT IDENT.
GE-68	1.144E+00	1.321E+00	2.403E+00	0.000E+00	NOT IDENT.
AS-73	7.153E-01	1.824E+00	3.343E+00	0.000E+00	NOT IDENT.
AS-74	-5.216E-02	1.017E-01	1.602E-01	0.000E+00	NOT IDENT.
SE-75	-6.243E-02	5.658E-02	8.012E-02	0.000E+00	NOT IDENT.
BR-77	-2.987E+00	7.945E+00	1.307E+01	0.000E+00	FAIL ABUN
SR-82	-2.335E-01	3.684E-01	5.999E-01	0.000E+00	NOT IDENT.
RB-83	-2.941E-02	7.230E-02	1.187E-01	0.000E+00	NOT IDENT.
RB-84	2.019E-02	7.179E-02	1.258E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	8.827E+00	1.539E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.473E-02	7.797E-02	0.000E+00	NOT IDENT.
RB-86	7.210E-01	7.920E-01	1.448E+00	0.000E+00	NOT IDENT.
Y-88	-2.820E-03	3.207E-02	5.263E-02	0.000E+00	NOT IDENT.
ZR-88	-8.915E-03	3.508E-02	5.971E-02	0.000E+00	NOT IDENT.
Y-91	-2.132E+01	2.021E+01	3.017E+01	0.000E+00	NOT IDENT.
NB-94	-3.762E-03	3.562E-02	6.143E-02	0.000E+00	NOT IDENT.
NB-95	8.104E-02	4.582E-02	8.817E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.395E-01	4.054E-01	0.000E+00	NOT IDENT.
ZR-95	4.524E-02	7.012E-02	1.275E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.311E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.365E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-5.664E+00	9.393E+00	1.543E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.027E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.080E-02	3.996E-02	6.753E-02	0.000E+00	NOT IDENT.
RH-102	1.841E-02	3.247E-02	5.753E-02	0.000E+00	NOT IDENT.
RU-103	-2.660E-02	4.241E-02	6.848E-02	0.000E+00	NOT IDENT.
RH-106	2.708E-01	3.531E-01	6.250E-01	0.000E+00	FAIL ABUN
RU-106	2.708E-01	3.520E-01	6.250E-01	0.000E+00	FAIL ABUN
AG-108M	-1.720E-02	3.593E-02	5.967E-02	0.000E+00	NOT IDENT.
AG-110M	-5.546E-04	3.525E-02	5.872E-02	0.000E+00	NOT IDENT.
IN-111	3.916E-01	9.500E-01	1.511E+00	0.000E+00	NOT IDENT.
IN-113M	-4.636E-02	5.145E-02	8.403E-02	0.000E+00	NOT IDENT.
SN-113	-4.636E-02	5.145E-02	8.403E-02	0.000E+00	NOT IDENT.
IN-114M	3.244E-02	2.412E-01	3.614E-01	0.000E+00	NOT IDENT.
CD-115	-2.711E-01	8.349E+00	1.411E+01	0.000E+00	NOT IDENT.
SN-117M	-3.414E-02	6.108E-02	1.026E-01	0.000E+00	NOT IDENT.
SB-122	2.352E-01	1.730E+00	2.947E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.624E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	3.712E-03	3.268E-02	5.649E-02	0.000E+00	NOT IDENT.
I-124	2.290E-01	7.110E-01	1.064E+00	0.000E+00	FAIL ABUN
SB-124	-2.648E-02	7.977E-02	1.316E-01	0.000E+00	FAIL ABUN
SB-125	8.944E-02	9.690E-02	1.765E-01	0.000E+00	NOT IDENT.
TE-125M	-4.786E-01	1.075E+01	1.881E+01	0.000E+00	NOT IDENT.
I-126	1.613E-01	1.980E-01	3.500E-01	0.000E+00	NOT IDENT.
SB-126	6.881E-02	1.422E-01	2.333E-01	0.000E+00	NOT IDENT.
SB-127	1.044E+00	1.212E+00	2.233E+00	0.000E+00	NOT IDENT.
XE-127	-1.077E-02	6.471E-02	9.314E-02	0.000E+00	NOT IDENT.
I-131	-6.106E-02	1.144E-01	1.919E-01	0.000E+00	NOT IDENT.
TE-132	6.046E-01	6.213E-01	1.140E+00	0.000E+00	NOT IDENT.
BA-133	-8.902E-03	5.398E-02	8.028E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.671E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.105E-02	5.176E-02	9.858E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.668E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.360E-02	1.112E-01	1.912E-01	0.000E+00	FAIL ABUN
BA-137M	1.088E-02	3.972E-02	6.768E-02	0.000E+00	NOT IDENT.
CS-137	1.150E-02	4.198E-02	7.154E-02	0.000E+00	NOT IDENT.
CE-139	1.669E-02	3.446E-02	6.032E-02	0.000E+00	NOT IDENT.
BA-140	7.023E-02	2.645E-01	4.552E-01	0.000E+00	NOT IDENT.
LA-140	-7.328E-02	8.316E-02	1.206E-01	0.000E+00	NOT IDENT.
CE-141	1.893E-02	6.986E-02	1.220E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.061E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.125E-02	2.339E-01	4.093E-01	0.000E+00	NOT IDENT.
PM-144	1.238E-02	3.751E-02	6.672E-02	0.000E+00	NOT IDENT.
PR-144	8.381E-01	2.540E+00	4.518E+00	0.000E+00	NOT IDENT.
PM-146	5.816E-02	4.648E-02	8.584E-02	0.000E+00	NOT IDENT.
ND-147	8.157E-02	5.661E-01	9.693E-01	0.000E+00	FAIL ABUN



PM-149	9.112E+01	7.289E+01	1.340E+02	0.000E+00	NOT IDENT.
EU-152	-3.179E-02	1.861E-01	1.831E-01	0.000E+00	FAIL ABUN
GD-153	7.261E-02	1.058E-01	1.689E-01	0.000E+00	NOT IDENT.
EU-154	-5.192E-02	1.265E-01	1.999E-01	0.000E+00	NOT IDENT.
EU-155	5.106E-02	1.262E-01	2.248E-01	0.000E+00	FAIL ABUN
TB-160	7.834E-02	1.446E-01	2.589E-01	0.000E+00	FAIL ABUN
HO-166M	2.015E-02	6.425E-02	1.141E-01	0.000E+00	FAIL ABUN
TM-171	-5.015E+01	4.402E+01	7.425E+01	0.000E+00	NOT IDENT.
LU-176	1.057E-02	2.772E-02	4.956E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	2.127E+00	2.165E+00	0.000E+00	FAIL ABUN
LU-177M	-2.948E-01	2.096E-01	3.293E-01	0.000E+00	FAIL ABUN
HF-181	6.935E-04	4.474E-02	7.638E-02	0.000E+00	NOT IDENT.
W-181	-5.615E-01	5.837E-01	9.942E-01	0.000E+00	NOT IDENT.
TA-182	1.207E-01	2.082E-01	3.649E-01	0.000E+00	NOT IDENT.
RE-183	-4.737E-02	1.282E-01	2.168E-01	0.000E+00	FAIL ABUN
RE-184	3.476E-02	2.692E-01	4.801E-01	0.000E+00	NOT IDENT.
OS-185	1.202E-02	4.172E-02	7.155E-02	0.000E+00	NOT IDENT.
RE-188	-5.832E-02	1.987E-01	3.380E-01	0.000E+00	NOT IDENT.
W-188	-1.010E+01	9.799E+00	1.388E+01	0.000E+00	NOT IDENT.
IR-192	-2.662E-02	3.802E-02	6.397E-02	0.000E+00	FAIL ABUN
AU-195	1.603E-01	2.838E-01	4.739E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.510E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	5.785E-02	6.311E+00	1.083E+01	0.000E+00	NOT IDENT.
TL-202	-2.678E-02	7.156E-02	1.196E-01	0.000E+00	NOT IDENT.
HG-203	8.644E-03	4.409E-02	7.849E-02	0.000E+00	FAIL ABUN
BI-207	2.030E-02	5.253E-02	9.197E-02	0.000E+00	FAIL ABUN
TL-207	-1.484E+00	8.277E-01	1.249E+00	0.000E+00	FAIL ABUN
PO-209	-4.047E+00	7.875E+00	1.279E+01	0.000E+00	NOT IDENT.
BI-210	-5.147E+00	1.277E+01	2.219E+01	0.000E+00	NOT IDENT.
PB-210	-5.147E+00	1.277E+01	2.219E+01	0.000E+00	NOT IDENT.
PO-210	-5.147E+00	1.277E+01	2.219E+01	0.000E+00	NOT IDENT.
PB-211	-1.050E+00	1.297E+00	1.840E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.891E-01	8.031E-01	0.000E+00	FAIL ABUN
PO-215	-1.484E+00	8.277E-01	1.249E+00	0.000E+00	FAIL ABUN
RN-219	-1.863E-01	4.660E-01	7.835E-01	0.000E+00	NOT IDENT.
RN-220	-6.336E+00	2.788E+01	4.626E+01	0.000E+00	NOT IDENT.
RA-223	-1.484E+00	8.277E-01	1.249E+00	0.000E+00	FAIL ABUN
AC-227	4.078E-01	4.528E-01	8.266E-01	0.000E+00	FAIL ABUN
TH-227	4.078E-01	4.544E-01	8.266E-01	0.000E+00	FAIL ABUN
TH-229	-4.294E-01	6.070E-01	9.823E-01	0.000E+00	FAIL ABUN
PA-231	-1.506E+00	1.690E+00	2.819E+00	0.000E+00	NOT IDENT.
TH-231	-1.484E+00	8.277E-01	1.249E+00	0.000E+00	FAIL ABUN
U-231	-6.800E-01	1.204E+00	1.803E+00	0.000E+00	FAIL ABUN
PA-233	-1.009E-02	6.960E-02	1.210E-01	0.000E+00	FAIL ABUN
PA-234	-3.488E-02	3.133E-01	5.269E-01	0.000E+00	FAIL ABUN
PA-234M	1.910E+00	4.586E+00	8.149E+00	0.000E+00	NOT IDENT.
TH-234	-2.928E-02	2.216E+00	3.941E+00	0.000E+00	FAIL ABUN
U-235	-1.305E-02	2.488E-01	4.227E-01	0.000E+00	FAIL ABUN
NP-236	3.396E-02	9.171E-02	1.601E-01	0.000E+00	NOT IDENT.
U-238	-2.928E-02	2.216E+00	3.941E+00	0.000E+00	FAIL ABUN
NP-239	6.195E-02	2.165E-01	3.824E-01	0.000E+00	NOT IDENT.
AM-241	1.867E-01	2.917E-01	5.349E-01	0.000E+00	NOT IDENT.
CM-243	2.979E-02	1.139E-01	2.020E-01	0.000E+00	NOT IDENT.
AM-246	1.154E-01	1.544E-01	2.777E-01	0.000E+00	NOT IDENT.
CM-247	3.760E-04	4.245E-02	7.328E-02	0.000E+00	NOT IDENT.
CF-249	2.633E-02	4.585E-02	8.187E-02	0.000E+00	NOT IDENT.
CF-251	-7.680E-02	1.469E-01	2.454E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132018.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 12:04:37
Sample ID          : G244132018      Sample quantity   : 1.34790E+02 GRAM
Detector name      : GAM15           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.21  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 940270          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	788	10.67*	9.990E-01	2.059E+01	2.059E+01	10.88
MN-54	834.83	28	99.97*	1.655E+00	4.775E-02	4.926E-02	68.76
CD-109	88.03	112	3.72*	4.620E+00	1.807E+00	1.845E+00	58.27
SN-126	64.28	-----	9.60	1.930E+00	-----	Line Not Found	-----
	86.94	192	8.90	4.403E+00	1.363E+00	1.363E+00	57.12
	87.57	192	37.00*	4.403E+00	3.279E-01	3.279E-01	40.33
CS-135	268.24	73	16.00*	3.869E+00	3.295E-01	3.295E-01	76.89
TL-208	277.35	-----	6.80	3.788E+00	-----	Line Not Found	-----
	510.84	103	21.60	2.462E+00	5.369E-01	5.369E-01	64.84
	583.14	266	84.20*	2.230E+00	3.939E-01	3.939E-01	25.15
	860.37	-----	12.46	1.613E+00	-----	Line Not Found	-----
BI-211	72.87	278	1.27	3.130E+00	1.944E+01	1.944E+01	32.09
	351.07	557	12.94*	3.207E+00	3.741E+00	3.741E+00	15.82
PB-212	74.81	278	10.70	3.130E+00	2.308E+00	2.308E+00	33.43
	77.11	471	18.00	3.416E+00	2.132E+00	2.132E+00	21.11
	87.30	192	8.00	4.403E+00	1.517E+00	1.517E+00	41.56
	238.63	1083	44.60*	4.220E+00	1.602E+00	1.602E+00	11.50
	300.09	61	3.41	3.591E+00	1.385E+00	1.385E+00	78.71
PO-212	74.81	278	10.70	3.130E+00	2.308E+00	2.308E+00	33.43
	77.11	471	18.00	3.416E+00	2.132E+00	2.132E+00	21.11
	87.30	192	8.00	4.403E+00	1.517E+00	1.517E+00	41.56
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	1083	44.60*	4.220E+00	1.602E+00	1.602E+00	11.50
	300.09	61	3.41	3.591E+00	1.385E+00	1.385E+00	78.71
BI-214	609.31	408	46.30*	2.156E+00	1.138E+00	1.138E+00	15.38
	1120.29	119	15.10	1.264E+00	1.737E+00	1.737E+00	37.38
	1764.49	87	15.80	8.816E-01	1.741E+00	1.741E+00	24.06
PB-214	74.81	278	6.21	3.130E+00	3.977E+00	3.977E+00	32.94
	77.11	471	10.50	3.416E+00	3.655E+00	3.655E+00	22.44
	87.30	192	4.67	4.403E+00	2.598E+00	2.598E+00	41.06
	241.98	249	7.49	4.185E+00	2.210E+00	2.210E+00	39.82
	295.21	323	19.20	3.629E+00	1.289E+00	1.289E+00	22.46

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	557	37.20*	3.207E+00	1.301E+00	1.301E+00	16.66
	74.81	278	6.21	3.130E+00	3.977E+00	3.977E+00	32.94
	77.11	471	10.50	3.416E+00	3.655E+00	3.655E+00	22.44
	87.30	192	4.67	4.403E+00	2.598E+00	2.598E+00	41.06
	241.98	249	7.49	4.185E+00	2.210E+00	2.210E+00	39.82
PO-216	295.21	323	19.20	3.629E+00	1.289E+00	1.289E+00	22.46
	351.92	557	37.20*	3.207E+00	1.301E+00	1.301E+00	16.66
	74.81	278	10.70	3.130E+00	2.308E+00	2.308E+00	33.43
	77.11	471	18.00	3.416E+00	2.132E+00	2.132E+00	21.11
	87.30	192	8.00	4.403E+00	1.517E+00	1.517E+00	41.56
PO-218	238.63	1083	44.60*	4.220E+00	1.602E+00	1.602E+00	11.50
	300.09	61	3.41	3.591E+00	1.385E+00	1.385E+00	78.71
	74.81	278	6.21	3.130E+00	3.977E+00	3.977E+00	32.94
	77.11	471	10.50	3.416E+00	3.655E+00	3.655E+00	22.44
	87.30	192	4.67	4.403E+00	2.598E+00	2.598E+00	41.06
RA-224	241.98	249	7.49	4.185E+00	2.210E+00	2.210E+00	39.82
	295.21	323	19.20	3.629E+00	1.289E+00	1.289E+00	22.46
	351.92	557	37.20*	3.207E+00	1.301E+00	1.301E+00	16.66
	240.98	249	3.95*	4.185E+00	4.191E+00	4.191E+00	39.42
	609.31	408	46.30*	2.156E+00	1.138E+00	1.138E+00	15.38
RA-226	1120.29	119	15.10	1.264E+00	1.737E+00	1.737E+00	37.38
	1764.49	87	15.80	8.816E-01	1.741E+00	1.741E+00	24.06
	338.32	231	11.40	3.296E+00	1.709E+00	1.709E+00	50.53
	911.07	249	27.70*	1.532E+00	1.636E+00	1.636E+00	21.25
	969.11	135	16.60	1.448E+00	1.568E+00	1.568E+00	34.39
RA-228	338.32	231	11.40	3.296E+00	1.709E+00	1.709E+00	50.53
	911.07	249	27.70*	1.532E+00	1.636E+00	1.636E+00	21.25
	969.11	135	16.60	1.448E+00	1.568E+00	1.568E+00	34.39
	74.81	278	10.70	3.130E+00	2.308E+00	2.340E+00	32.11
	77.11	471	18.00	3.416E+00	2.132E+00	2.162E+00	21.11
TH-228	87.30	192	8.00	4.403E+00	1.517E+00	1.538E+00	40.33
	238.63	1083	44.60*	4.220E+00	1.602E+00	1.624E+00	11.50
	300.09	61	3.41	3.591E+00	1.385E+00	1.405E+00	97.98
	609.31	408	46.30*	2.156E+00	1.138E+00	1.138E+00	15.38
	1120.29	119	15.10	1.264E+00	1.737E+00	1.737E+00	37.38
TH-230	1764.49	87	15.80	8.816E-01	1.741E+00	1.741E+00	24.06
	338.32	231	11.40	3.296E+00	1.709E+00	1.709E+00	30.42
	911.07	249	27.70*	1.532E+00	1.636E+00	1.636E+00	21.25
	969.11	135	16.60	1.448E+00	1.568E+00	1.568E+00	34.39
	609.31	408	46.30*	2.156E+00	1.138E+00	1.138E+00	15.38
U-234	1120.29	119	15.10	1.264E+00	1.737E+00	1.737E+00	37.38
	1764.49	87	15.80	8.816E-01	1.741E+00	1.741E+00	24.06
	86.50	192	12.60*	4.403E+00	9.630E-01	9.630E-01	45.31
	95.87	-----	2.60	5.041E+00	-----	Line Not Found	-----
	74.67	278	66.00*	3.130E+00	3.742E-01	3.742E-01	32.09
AM-243	86.72	192	0.34	4.403E+00	3.611E+01	3.611E+01	40.33
	117.66	-----	0.55	5.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.637E+00	-----	Line Not Found	-----
	511.00	103	100.00*	2.462E+00	1.160E-01	1.160E-01	64.30

Flag: "\*" = Keyline

Total number of lines in spectrum 26  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 26 100.00%

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	2.059E+01	2.059E+01	0.224E+01	10.88	
MN-54	312.70D	1.03	4.775E-02	4.926E-02	3.387E-02	68.76	
CD-109	464.00D	1.02	1.807E+00	1.845E+00	1.075E+00	58.27	
SN-126	1.00E+05Y	1.00	3.279E-01	3.279E-01	1.323E-01	40.33	
CS-135	2.30E+06Y	1.00	3.295E-01	3.295E-01	2.534E-01	76.89	
TL-208	1.41E+10Y	1.00	3.939E-01	3.939E-01	0.991E-01	25.15	
BI-211	7.04E+08Y	1.00	3.741E+00	3.741E+00	0.592E+00	15.82	
PB-212	1.41E+10Y	1.00	1.602E+00	1.602E+00	0.184E+00	11.50	
PO-212	1.41E+10Y	1.00	1.602E+00	1.602E+00	0.184E+00	11.50	
BI-214	1600.00Y	1.00	1.138E+00	1.138E+00	0.175E+00	15.38	
PB-214	1600.00Y	1.00	1.301E+00	1.301E+00	0.217E+00	16.66	
PO-214	1600.00Y	1.00	1.301E+00	1.301E+00	0.217E+00	16.66	
PO-216	1.41E+10Y	1.00	1.602E+00	1.602E+00	0.184E+00	11.50	
PO-218	1600.00Y	1.00	1.301E+00	1.301E+00	0.217E+00	16.66	
RA-224	1.41E+10Y	1.00	4.191E+00	4.191E+00	1.652E+00	39.42	
RA-226	1600.00Y	1.00	1.138E+00	1.138E+00	0.175E+00	15.38	
AC-228	1.41E+10Y	1.00	1.636E+00	1.636E+00	0.348E+00	21.25	
RA-228	1.41E+10Y	1.00	1.636E+00	1.636E+00	0.348E+00	21.25	
TH-228	1.91Y	1.01	1.602E+00	1.624E+00	0.187E+00	11.50	
TH-230	4.47E+09Y	1.00	1.138E+00	1.138E+00	0.175E+00	15.38	
TH-232	1.41E+10Y	1.00	1.636E+00	1.636E+00	0.348E+00	21.25	
U-234	4.47E+09Y	1.00	1.138E+00	1.138E+00	0.175E+00	15.38	
NP-237	2.14E+06Y	1.00	9.630E-01	9.630E-01	4.363E-01	45.31	
AM-243	7380.00Y	1.00	3.742E-01	3.742E-01	1.201E-01	32.09	
ANH-511	1.00E+09Y	1.00	1.160E-01	1.160E-01	0.746E-01	64.30	

Total Activity : 5.265E+01 5.272E+01

Grand Total Activity : 5.265E+01 5.272E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G244132018

Page : 5  
Acquisition date : 19-JAN-2010 12:04:37

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	92.15	141	297	1.24	184.78	170	22	1.96E-02	49.8	4.82E+00	T
0	185.22	198	425	1.42	370.82	364	14	2.75E-02	47.8	4.99E+00	T
0	208.21	212	377	1.75	416.79	409	16	2.94E-02	43.4	4.63E+00	T
0	726.78	111	66	1.23	1453.56	1450	11	1.54E-02	34.7	1.87E+00	T
1	963.50	44	46	2.18	1926.88	1920	25	6.07E-03	66.4	1.45E+00	T
0	1376.76	32	16	2.42	2753.26	2743	16	4.38E-03	67.1	1.05E+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]G244132018.CNF;1 *
* Acquisition date   : 19-JAN-2010 12:04:37   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 02:00:01.21           Half life ratio  : 8.00000    *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 5-JAN-2010 12:00:00.   Nuclide Library : SOLID        *
* Sample ID          : G244132018             Analyst initials: MXR1         *
* Batch Number       : 940270                 Sample Quantity  : 1.34790E+02 GRAM *
*****
*
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 16-FEB-2009 10:54:12.9MS Isotope          :          *
* MSD ID              :                      MSD Isotope         :          *
* LCS ID              : 1032-A                LCS Isotope        :          *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.059E+01	2.240E+00	4.415E-01	3.375E-02	46.632
MN-54	4.926E-02	3.387E-02	6.656E-02	4.989E-03	0.740
CD-109	1.845E+00	1.075E+00	1.595E+00	1.844E-01	1.157
SN-126	3.279E-01	1.323E-01	1.583E-01	1.826E-02	2.072
CS-135	3.295E-01	2.534E-01	2.753E-01	2.354E-02	1.197
TL-208	3.939E-01	9.906E-02	6.100E-02	3.884E-03	6.457
BI-211	3.741E+00	5.918E-01	3.471E-01	2.385E-02	10.776
PB-212	1.602E+00	1.842E-01	1.004E-01	8.314E-03	15.945
PO-212	1.602E+00	1.842E-01	1.004E-01	8.314E-03	15.945
BI-214	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
PB-214	1.301E+00	2.168E-01	1.219E-01	1.051E-02	10.672
PO-214	1.301E+00	2.168E-01	1.219E-01	1.051E-02	10.672
PO-216	1.602E+00	1.842E-01	1.004E-01	8.314E-03	15.945
PO-218	1.301E+00	2.168E-01	1.219E-01	1.051E-02	10.672
RA-224	4.191E+00	1.652E+00	1.143E+00	7.954E-02	3.668
RA-226	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
AC-228	1.636E+00	3.477E-01	2.136E-01	2.374E-02	7.662
RA-228	1.636E+00	3.477E-01	2.136E-01	2.374E-02	7.662

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.624E+00	1.867E-01	1.019E-01	8.431E-03	15.945
TH-230	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
TH-232	1.636E+00	3.477E-01	2.136E-01	2.374E-02	7.662
U-234	1.138E+00	1.751E-01	8.689E-02	6.451E-03	13.102
NP-237	9.630E-01	4.363E-01	4.841E-01	1.143E-01	1.989
AM-243	3.742E-01	1.201E-01	1.219E-01	1.354E-02	3.070
ANH-511	1.160E-01	7.457E-02	5.199E-02	2.936E-03	2.230

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.064E-02		3.657E-01	5.906E-01	3.936E-02	-0.103
NA-22	-1.903E-02		4.613E-02	7.101E-02	4.874E-03	-0.268
NA-24	1.133E-01		1.246E-01	Half-Life too short		
AL-26	-9.624E-03		2.790E-02	4.208E-02	2.518E-03	-0.229
TI-44	2.214E-01		6.045E-02	9.246E-02	1.028E-02	2.395
SC-46	1.927E-02		3.882E-02	6.731E-02	5.646E-03	0.286
V-48	-1.018E-02		7.061E-02	1.145E-01	9.042E-03	-0.089
CR-51	4.995E-01		4.121E-01	7.270E-01	5.243E-02	0.687
MN-52	1.700E-01		2.116E-01	3.902E-01	2.893E-02	0.436
CO-56	7.016E-03		4.134E-02	6.965E-02	5.353E-03	0.101
CO-57	-1.728E-02		2.983E-02	4.740E-02	3.408E-03	-0.364
CO-58	-2.613E-02		3.780E-02	5.852E-02	4.180E-03	-0.447
FE-59	-6.252E-02		9.587E-02	1.457E-01	1.103E-02	-0.429
CO-60	7.141E-03		3.815E-02	6.324E-02	4.773E-03	0.113
ZN-65	6.896E-02		1.109E-01	1.683E-01	1.093E-02	0.410
GE-68	1.144E+00		1.348E+00	2.385E+00	1.657E-01	0.480
AS-73	7.153E-01		1.862E+00	3.145E+00	4.297E-01	0.227
AS-74	-5.216E-02		1.038E-01	1.572E-01	8.451E-03	-0.332
SE-75	-6.243E-02		5.773E-02	7.748E-02	5.419E-03	-0.806
BR-77	-2.987E+00		8.107E+00	1.280E+01	7.201E-01	-0.233
SR-82	-2.335E-01		3.759E-01	5.915E-01	3.905E-02	-0.395
RB-83	-2.941E-02		7.378E-02	1.162E-01	6.538E-03	-0.253
RB-84	2.019E-02		7.325E-02	1.243E-01	1.027E-02	0.162
KR-85	1.901E+01		9.007E+00	1.506E+01	8.493E-01	1.262
SR-85	9.631E-02		4.565E-02	7.631E-02	4.304E-03	1.262
RB-86	7.210E-01		8.081E-01	1.436E+00	9.992E-02	0.502
Y-88	-2.820E-03		3.272E-02	5.275E-02	3.081E-03	-0.053
ZR-88	-8.915E-03		3.580E-02	5.815E-02	3.298E-03	-0.153
Y-91	-2.132E+01		2.062E+01	3.000E+01	1.814E+00	-0.711
NB-94	-3.762E-03		3.635E-02	6.047E-02	3.363E-03	-0.062
NB-95	8.104E-02		4.675E-02	8.692E-02	5.601E-03	0.932
NB-95M	1.569E+00		2.444E-01	3.913E-01	3.306E-02	4.010
ZR-95	4.524E-02		7.155E-02	1.256E-01	9.366E-03	0.360
NB-97	1.600E-03		1.689E-02	Half-Life too short		
ZR-97	2.581E+00		4.268E-01	Half-Life too short		
MO-99	-5.664E+00		9.585E+00	1.520E+01	2.112E+00	-0.373



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	5.388E+08		1.034E+09	Half-Life too short		
RH-101	1.080E-02		4.077E-02	6.497E-02	4.432E-03	0.166
RH-102	1.841E-02		3.314E-02	5.622E-02	3.205E-03	0.327
RU-103	-2.660E-02		4.328E-02	6.698E-02	8.431E-03	-0.397
RH-106	2.708E-01		3.603E-01	6.138E-01	7.044E-02	0.441
RU-106	2.708E-01		3.592E-01	6.138E-01	3.225E-02	0.441
AG-108M	-1.720E-02		3.666E-02	5.822E-02	3.620E-03	-0.296
AG-110M	-5.546E-04		3.597E-02	5.773E-02	3.164E-03	-0.010
IN-111	3.916E-01		9.694E-01	1.459E+00	1.016E-01	0.268
IN-113M	-4.636E-02		5.250E-02	8.183E-02	4.964E-03	-0.566
SN-113	-4.636E-02		5.250E-02	8.183E-02	4.964E-03	-0.566
IN-114M	3.244E-02		2.461E-01	3.475E-01	2.356E-02	0.093
CD-115	-2.711E-01		8.519E+00	1.382E+01	7.751E-01	-0.020
SN-117M	-3.414E-02		6.233E-02	9.831E-02	6.573E-03	-0.347
SB-122	2.352E-01		1.765E+00	2.890E+00	1.590E-01	0.081
I-123	1.845E-01		8.286E-01	Half-Life too short		
TE-123M	3.712E-03		3.335E-02	5.414E-02	3.655E-03	0.069
I-124	2.290E-01		7.255E-01	1.045E+00	5.585E-02	0.219
SB-124	-2.648E-02		8.140E-02	1.317E-01	9.251E-03	-0.201
SB-125	8.944E-02		9.888E-02	1.722E-01	1.026E-02	0.520
TE-125M	-4.786E-01		1.097E+01	1.791E+01	1.779E+00	-0.027
I-126	1.613E-01		2.020E-01	3.442E-01	1.752E-02	0.469
SB-126	6.881E-02		1.451E-01	2.297E-01	1.334E-02	0.299
SB-127	1.044E+00		1.237E+00	2.197E+00	1.922E-01	0.475
XE-127	-1.077E-02		6.603E-02	8.965E-02	6.138E-03	-0.120
I-131	-6.106E-02		1.167E-01	1.867E-01	1.257E-02	-0.327
TE-132	6.046E-01		6.340E-01	1.100E+00	1.611E-01	0.550
BA-133	-8.902E-03		5.508E-02	7.805E-02	9.191E-03	-0.114
I-133	-7.131E-04		1.363E-03	Half-Life too short		
CS-134	8.105E-02		5.281E-02	9.726E-02	6.777E-03	0.833
I-135	3.995E+08		1.872E+08	Half-Life too short		
CS-136	2.360E-02		1.134E-01	1.896E-01	1.461E-02	0.124
BA-137M	1.088E-02		4.053E-02	6.654E-02	3.348E-03	0.163
CS-137	1.150E-02		4.284E-02	7.034E-02	3.559E-03	0.163
CE-139	1.669E-02		3.517E-02	5.786E-02	3.848E-03	0.288
BA-140	7.023E-02		2.699E-01	4.458E-01	1.448E-01	0.158
LA-140	-7.328E-02		8.485E-02	1.206E-01	8.404E-03	-0.608
CE-141	1.893E-02		7.128E-02	1.168E-01	8.149E-03	0.162
CE-143	7.003E-04	+	1.052E-04	Half-Life too short		
CE-144	5.125E-02		2.387E-01	3.911E-01	5.748E-02	0.131
PM-144	1.238E-02		3.828E-02	6.566E-02	3.601E-03	0.188
PR-144	8.381E-01		2.592E+00	4.447E+00	2.437E-01	0.188
PM-146	5.816E-02		4.743E-02	8.382E-02	7.179E-03	0.694
ND-147	8.157E-02		5.777E-01	9.492E-01	1.276E-01	0.086
PM-149	9.112E+01		7.438E+01	1.298E+02	1.900E+01	0.702
EU-152	-3.179E-02		1.899E-01	1.779E-01	1.254E-02	-0.179
GD-153	7.261E-02		1.080E-01	1.605E-01	1.540E-02	0.452
EU-154	-5.192E-02		1.291E-01	1.989E-01	1.995E-02	-0.261

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	5.106E-02		1.288E-01	2.139E-01	1.852E-02	0.239
TB-160	7.834E-02		1.475E-01	2.559E-01	2.104E-02	0.306
HO-166M	2.015E-02		6.556E-02	1.124E-01	6.387E-03	0.179
TM-171	-5.015E+01		4.492E+01	7.010E+01	8.061E+00	-0.715
LU-176	1.057E-02		2.828E-02	4.805E-02	3.237E-03	0.220
LU-177	4.939E+00	+	2.171E+00	2.085E+00	1.432E-01	2.369
LU-177M	-2.948E-01		2.139E-01	3.210E-01	1.830E-02	-0.919
HF-181	6.935E-04		4.566E-02	7.467E-02	4.251E-03	0.009
W-181	-5.615E-01		5.956E-01	9.383E-01	1.092E-01	-0.598
TA-182	1.207E-01		2.125E-01	3.629E-01	2.263E-02	0.333
RE-183	-4.737E-02		1.308E-01	2.079E-01	1.386E-02	-0.228
RE-184	3.476E-02		2.747E-01	4.639E-01	3.229E-02	0.075
OS-185	1.202E-02		4.258E-02	7.032E-02	3.603E-03	0.171
RE-188	-5.832E-02		2.027E-01	3.238E-01	2.172E-02	-0.180
W-188	-1.010E+01		9.999E+00	1.345E+01	9.201E-01	-0.751
IR-192	-2.662E-02		3.879E-02	6.206E-02	4.147E-03	-0.429
AU-195	1.603E-01		2.896E-01	4.505E-01	4.222E-02	0.356
TL-200	6.321E-05		1.281E-04	Half-Life too short		
TL-201	5.785E-02		6.440E+00	1.039E+01	6.915E-01	0.006
TL-202	-2.678E-02		7.302E-02	1.168E-01	6.673E-03	-0.229
HG-203	8.644E-03		4.499E-02	7.598E-02	5.472E-03	0.114
BI-207	2.030E-02		5.360E-02	9.122E-02	6.481E-03	0.223
TL-207	-1.484E+00		8.446E-01	1.212E+00	2.038E-01	-1.224
PO-209	-4.047E+00		8.036E+00	1.265E+01	1.076E+00	-0.320
BI-210	-5.147E+00		1.303E+01	2.082E+01	2.163E+00	-0.247
PB-210	-5.147E+00		1.303E+01	2.082E+01	2.163E+00	-0.247
PO-210	-5.147E+00		1.303E+01	2.082E+01	2.000E+00	-0.247
PB-211	-1.050E+00		1.324E+00	1.793E+00	1.118E+00	-0.586
BI-212	1.404E+00	+	4.991E-01	7.910E-01	6.158E-02	1.775
PO-215	-1.484E+00		8.446E-01	1.212E+00	2.038E-01	-1.224
RN-219	-1.863E-01		4.755E-01	7.634E-01	1.035E-01	-0.244
RN-220	-6.336E+00		2.845E+01	4.532E+01	2.515E+00	-0.140
RA-223	-1.484E+00		8.446E-01	1.212E+00	2.038E-01	-1.224
AC-227	4.078E-01		4.620E-01	7.989E-01	1.157E-01	0.510
TH-227	4.078E-01		4.636E-01	7.989E-01	1.385E-01	0.510
TH-229	-4.294E-01		6.194E-01	9.447E-01	6.423E-02	-0.454
PA-231	-1.506E+00		1.724E+00	2.730E+00	3.895E-01	-0.552
TH-231	-1.484E+00		8.446E-01	1.212E+00	2.038E-01	-1.224
U-231	-6.800E-01		1.229E+00	1.713E+00	1.688E-01	-0.397
PA-233	-1.009E-02		7.102E-02	1.174E-01	8.227E-03	-0.086
PA-234	-3.488E-02		3.197E-01	5.215E-01	9.688E-02	-0.067
PA-234M	1.910E+00		4.679E+00	8.074E+00	7.442E-01	0.237
TH-234	-2.928E-02		2.261E+00	3.718E+00	7.338E-01	-0.008
U-235	-1.305E-02		2.539E-01	4.044E-01	6.748E-02	-0.032
NP-236	3.396E-02		9.359E-02	1.535E-01	1.025E-02	0.221
U-238	-2.928E-02		2.261E+00	3.718E+00	7.338E-01	-0.008
NP-239	6.195E-02		2.209E-01	3.646E-01	2.740E-02	0.170
AM-241	1.867E-01		2.977E-01	5.041E-01	6.415E-02	0.370

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.979E-02		1.162E-01	1.921E-01	1.677E-02	0.155
AM-246	1.154E-01		1.576E-01	2.756E-01	1.910E-02	0.419
CM-247	3.760E-04		4.331E-02	7.140E-02	4.060E-03	0.005
CF-249	2.633E-02		4.679E-02	7.971E-02	4.570E-03	0.330
CF-251	-7.680E-02		1.499E-01	2.356E-01	1.579E-02	-0.326

# 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]G244132018          *
* Acquisition date   : 19-JAN-2010 12:04:37 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 02:00:01.21 Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132018 Analyst initials: MXR1           *
* Batch Number       : 940270 Sample Quantity : 1.3479E+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	2.059E+01	2.195E+00	2.214E-01	1.120E+00
MN-54	4.926E-02	3.319E-02	3.372E-02	1.693E-02
CD-109	1.845E+00	1.054E+00	8.411E-01	5.376E-01
SN-126	3.279E-01	1.296E-01	8.346E-02	6.613E-02
CS-135	3.295E-01	2.483E-01	1.424E-01	1.267E-01
TL-208	3.939E-01	9.708E-02	3.111E-02	4.953E-02
BI-211	3.741E+00	5.800E-01	1.787E-01	2.959E-01
PB-212	1.602E+00	1.805E-01	5.206E-02	9.208E-02
PO-212	1.602E+00	1.805E-01	5.206E-02	9.208E-02
BI-214	1.138E+00	1.716E-01	4.428E-02	8.753E-02
PB-214	1.301E+00	2.124E-01	6.276E-02	1.084E-01
PO-214	1.301E+00	2.124E-01	6.276E-02	1.084E-01
PO-216	1.602E+00	1.805E-01	5.206E-02	9.208E-02
PO-218	1.301E+00	2.124E-01	6.276E-02	1.084E-01
RA-224	4.191E+00	1.619E+00	5.922E-01	8.262E-01
RA-226	1.138E+00	1.716E-01	4.428E-02	8.753E-02
AC-228	1.636E+00	3.407E-01	1.080E-01	1.738E-01
RA-228	1.636E+00	3.407E-01	1.080E-01	1.738E-01
TH-228	1.624E+00	1.830E-01	5.279E-02	9.337E-02
TH-230	1.138E+00	1.716E-01	4.428E-02	8.753E-02
TH-232	1.636E+00	3.407E-01	1.080E-01	1.738E-01
U-234	1.138E+00	1.716E-01	4.428E-02	8.753E-02
NP-237	9.630E-01	4.276E-01	2.554E-01	2.181E-01
AM-243	3.742E-01	1.177E-01	6.445E-02	6.004E-02
ANH-511	1.160E-01	7.308E-02	2.658E-02	3.728E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-6.064E-02	3.583E-01	3.023E-01	1.828E-01 NOT IDENT.
NA-22	-1.903E-02	4.521E-02	3.570E-02	2.307E-02 NOT IDENT.

NA-24	1.133E+05	2.442E+05	0.000E+00	1.246E+05	SHORT HLIF
AL-26	-9.624E-03	2.734E-02	2.101E-02	1.395E-02	NOT IDENT.
TI-44	2.214E-01	5.924E-02	4.886E-02	3.022E-02	NOT IDENT.
SC-46	1.927E-02	3.804E-02	3.406E-02	1.941E-02	FAIL ABUN
V-48	-1.018E-02	6.920E-02	5.782E-02	3.531E-02	NOT IDENT.
CR-51	4.995E-01	4.038E-01	3.748E-01	2.060E-01	NOT IDENT.
MN-52	1.700E-01	2.073E-01	1.957E-01	1.058E-01	NOT IDENT.
CO-56	7.016E-03	4.052E-02	3.528E-02	2.067E-02	NOT IDENT.
CO-57	-1.728E-02	2.923E-02	2.486E-02	1.491E-02	NOT IDENT.
CO-58	-2.613E-02	3.705E-02	2.966E-02	1.890E-02	NOT IDENT.
FE-59	-6.252E-02	9.395E-02	7.345E-02	4.794E-02	NOT IDENT.
CO-60	7.141E-03	3.738E-02	3.176E-02	1.907E-02	NOT IDENT.
ZN-65	6.896E-02	1.087E-01	8.483E-02	5.547E-02	NOT IDENT.
GE-68	1.144E+00	1.321E+00	1.202E+00	6.742E-01	NOT IDENT.
AS-73	7.153E-01	1.824E+00	1.673E+00	9.308E-01	NOT IDENT.
AS-74	-5.216E-02	1.017E-01	8.014E-02	5.190E-02	NOT IDENT.
SE-75	-6.243E-02	5.658E-02	4.009E-02	2.887E-02	NOT IDENT.
BR-77	-2.987E+00	7.945E+00	6.541E+00	4.054E+00	FAIL ABUN
SR-82	-2.335E-01	3.684E-01	3.001E-01	1.879E-01	NOT IDENT.
RB-83	-2.941E-02	7.230E-02	5.939E-02	3.689E-02	NOT IDENT.
RB-84	2.019E-02	7.179E-02	6.293E-02	3.663E-02	NOT IDENT.
KR-85	1.901E+01	8.827E+00	7.697E+00	4.504E+00	NOT IDENT.
SR-85	9.631E-02	4.473E-02	3.901E-02	2.282E-02	NOT IDENT.
RB-86	7.210E-01	7.920E-01	7.242E-01	4.041E-01	NOT IDENT.
Y-88	-2.820E-03	3.207E-02	2.633E-02	1.636E-02	NOT IDENT.
ZR-88	-8.915E-03	3.508E-02	2.987E-02	1.790E-02	NOT IDENT.
Y-91	-2.132E+01	2.021E+01	1.509E+01	1.031E+01	NOT IDENT.
NB-94	-3.762E-03	3.562E-02	3.073E-02	1.817E-02	NOT IDENT.
NB-95	8.104E-02	4.582E-02	4.411E-02	2.338E-02	NOT IDENT.
NB-95M	1.569E+00	2.395E-01	2.028E-01	1.222E-01	NOT IDENT.
ZR-95	4.524E-02	7.012E-02	6.377E-02	3.578E-02	NOT IDENT.
NB-97	1.600E+03	3.311E+04	0.000E+00	1.689E+04	SHORT HLIF
ZR-97	2.581E+06	8.365E+05	0.000E+00	4.268E+05	SHORT HLIF
MO-99	-5.664E+00	9.393E+00	7.718E+00	4.792E+00	NOT IDENT.
TC-99M	5.388E+14	2.027E+15	0.000E+00	1.034E+15	SHORT HLIF
RH-101	1.080E-02	3.996E-02	3.378E-02	2.039E-02	NOT IDENT.
RH-102	1.841E-02	3.247E-02	2.878E-02	1.657E-02	NOT IDENT.
RU-103	-2.660E-02	4.241E-02	3.426E-02	2.164E-02	NOT IDENT.
RH-106	2.708E-01	3.531E-01	3.127E-01	1.801E-01	FAIL ABUN
RU-106	2.708E-01	3.520E-01	3.127E-01	1.796E-01	FAIL ABUN
AG-108M	-1.720E-02	3.593E-02	2.985E-02	1.833E-02	NOT IDENT.
AG-110M	-5.546E-04	3.525E-02	2.938E-02	1.798E-02	NOT IDENT.
IN-111	3.916E-01	9.500E-01	7.558E-01	4.847E-01	NOT IDENT.
IN-113M	-4.636E-02	5.145E-02	4.204E-02	2.625E-02	NOT IDENT.
SN-113	-4.636E-02	5.145E-02	4.204E-02	2.625E-02	NOT IDENT.
IN-114M	3.244E-02	2.412E-01	1.808E-01	1.230E-01	NOT IDENT.
CD-115	-2.711E-01	8.349E+00	7.061E+00	4.259E+00	NOT IDENT.
SN-117M	-3.414E-02	6.108E-02	5.132E-02	3.116E-02	NOT IDENT.
SB-122	2.352E-01	1.730E+00	1.475E+00	8.826E-01	NOT IDENT.
I-123	1.845E+05	1.624E+06	0.000E+00	8.286E+05	SHORT HLIF
TE-123M	3.712E-03	3.268E-02	2.826E-02	1.668E-02	NOT IDENT.
I-124	2.290E-01	7.110E-01	5.325E-01	3.628E-01	FAIL ABUN
SB-124	-2.648E-02	7.977E-02	6.586E-02	4.070E-02	FAIL ABUN
SB-125	8.944E-02	9.690E-02	8.830E-02	4.944E-02	NOT IDENT.
TE-125M	-4.786E-01	1.075E+01	9.409E+00	5.485E+00	NOT IDENT.
I-126	1.613E-01	1.980E-01	1.751E-01	1.010E-01	NOT IDENT.
SB-126	6.881E-02	1.422E-01	1.167E-01	7.257E-02	NOT IDENT.
SB-127	1.044E+00	1.212E+00	1.117E+00	6.184E-01	NOT IDENT.
XE-127	-1.077E-02	6.471E-02	4.660E-02	3.302E-02	NOT IDENT.
I-131	-6.106E-02	1.144E-01	9.603E-02	5.835E-02	NOT IDENT.
TE-132	6.046E-01	6.213E-01	5.705E-01	3.170E-01	NOT IDENT.
BA-133	-8.902E-03	5.398E-02	4.017E-02	2.754E-02	NOT IDENT.
I-133	-7.131E+02	2.671E+03	0.000E+00	1.363E+03	SHORT HLIF
CS-134	8.105E-02	5.176E-02	4.932E-02	2.641E-02	NOT IDENT.
I-135	3.995E+14	3.668E+14	0.000E+00	1.872E+14	SHORT HLIF
CS-136	2.360E-02	1.112E-01	9.567E-02	5.671E-02	FAIL ABUN
BA-137M	1.088E-02	3.972E-02	3.386E-02	2.026E-02	NOT IDENT.
CS-137	1.150E-02	4.198E-02	3.579E-02	2.142E-02	NOT IDENT.
CE-139	1.669E-02	3.446E-02	3.018E-02	1.758E-02	NOT IDENT.
BA-140	7.023E-02	2.645E-01	2.277E-01	1.350E-01	NOT IDENT.
LA-140	-7.328E-02	8.316E-02	6.035E-02	4.243E-02	NOT IDENT.
CE-141	1.893E-02	6.986E-02	6.104E-02	3.564E-02	NOT IDENT.
CE-143	7.003E+02	2.061E+02	0.000E+00	1.052E+02	SHORT HLIF
CE-144	5.125E-02	2.339E-01	2.048E-01	1.193E-01	NOT IDENT.
PM-144	1.238E-02	3.751E-02	3.338E-02	1.914E-02	NOT IDENT.
PR-144	8.381E-01	2.540E+00	2.260E+00	1.296E+00	NOT IDENT.
PM-146	5.816E-02	4.648E-02	4.295E-02	2.371E-02	NOT IDENT.
ND-147	8.157E-02	5.661E-01	4.850E-01	2.888E-01	FAIL ABUN

PM-149	9.112E+01	7.289E+01	6.705E+01	3.719E+01	NOT IDENT.
EU-152	-3.179E-02	1.861E-01	9.160E-02	9.495E-02	FAIL ABUN
GD-153	7.261E-02	1.058E-01	8.450E-02	5.399E-02	NOT IDENT.
EU-154	-5.192E-02	1.265E-01	1.000E-01	6.456E-02	NOT IDENT.
EU-155	5.106E-02	1.262E-01	1.125E-01	6.438E-02	FAIL ABUN
TB-160	7.834E-02	1.446E-01	1.295E-01	7.376E-02	FAIL ABUN
HO-166M	2.015E-02	6.425E-02	5.710E-02	3.278E-02	FAIL ABUN
TM-171	-5.015E+01	4.402E+01	3.715E+01	2.246E+01	NOT IDENT.
LU-176	1.057E-02	2.772E-02	2.479E-02	1.414E-02	FAIL ABUN
LU-177	4.939E+00	2.127E+00	1.083E+00	1.085E+00	FAIL ABUN
LU-177M	-2.948E-01	2.096E-01	1.647E-01	1.069E-01	FAIL ABUN
HF-181	6.935E-04	4.474E-02	3.821E-02	2.283E-02	NOT IDENT.
W-181	-5.615E-01	5.837E-01	4.974E-01	2.978E-01	NOT IDENT.
TA-182	1.207E-01	2.082E-01	1.826E-01	1.062E-01	NOT IDENT.
RE-183	-4.737E-02	1.282E-01	1.085E-01	6.539E-02	FAIL ABUN
RE-184	3.476E-02	2.692E-01	2.402E-01	1.373E-01	NOT IDENT.
OS-185	1.202E-02	4.172E-02	3.580E-02	2.129E-02	NOT IDENT.
RE-188	-5.832E-02	1.987E-01	1.691E-01	1.014E-01	NOT IDENT.
W-188	-1.010E+01	9.799E+00	6.944E+00	4.999E+00	NOT IDENT.
IR-192	-2.662E-02	3.802E-02	3.200E-02	1.940E-02	FAIL ABUN
AU-195	1.603E-01	2.838E-01	2.371E-01	1.448E-01	FAIL ABUN
TL-200	6.321E+01	2.510E+02	0.000E+00	1.281E+02	SHORT HLIF
TL-201	5.785E-02	6.311E+00	5.419E+00	3.220E+00	NOT IDENT.
TL-202	-2.678E-02	7.156E-02	5.986E-02	3.651E-02	NOT IDENT.
HG-203	8.644E-03	4.409E-02	3.927E-02	2.250E-02	FAIL ABUN
BI-207	2.030E-02	5.253E-02	4.601E-02	2.680E-02	FAIL ABUN
TL-207	-1.484E+00	8.277E-01	6.250E-01	4.223E-01	FAIL ABUN
PO-209	-4.047E+00	7.875E+00	6.398E+00	4.018E+00	NOT IDENT.
BI-210	-5.147E+00	1.277E+01	1.110E+01	6.515E+00	NOT IDENT.
PB-210	-5.147E+00	1.277E+01	1.110E+01	6.515E+00	NOT IDENT.
PO-210	-5.147E+00	1.277E+01	1.110E+01	6.515E+00	NOT IDENT.
PB-211	-1.050E+00	1.297E+00	9.208E-01	6.619E-01	NOT IDENT.
BI-212	1.404E+00	4.891E-01	4.018E-01	2.496E-01	FAIL ABUN
PO-215	-1.484E+00	8.277E-01	6.250E-01	4.223E-01	FAIL ABUN
RN-219	-1.863E-01	4.660E-01	3.920E-01	2.378E-01	NOT IDENT.
RN-220	-6.336E+00	2.788E+01	2.314E+01	1.422E+01	NOT IDENT.
RA-223	-1.484E+00	8.277E-01	6.250E-01	4.223E-01	FAIL ABUN
AC-227	4.078E-01	4.528E-01	4.135E-01	2.310E-01	FAIL ABUN
TH-227	4.078E-01	4.544E-01	4.135E-01	2.318E-01	FAIL ABUN
TH-229	-4.294E-01	6.070E-01	4.914E-01	3.097E-01	FAIL ABUN
PA-231	-1.506E+00	1.690E+00	1.410E+00	8.622E-01	NOT IDENT.
TH-231	-1.484E+00	8.277E-01	6.250E-01	4.223E-01	FAIL ABUN
U-231	-6.800E-01	1.204E+00	9.021E-01	6.144E-01	FAIL ABUN
PA-233	-1.009E-02	6.960E-02	6.054E-02	3.551E-02	FAIL ABUN
PA-234	-3.488E-02	3.133E-01	2.636E-01	1.598E-01	FAIL ABUN
PA-234M	1.910E+00	4.586E+00	4.077E+00	2.340E+00	NOT IDENT.
TH-234	-2.928E-02	2.216E+00	1.972E+00	1.130E+00	FAIL ABUN
U-235	-1.305E-02	2.488E-01	2.115E-01	1.270E-01	FAIL ABUN
NP-236	3.396E-02	9.171E-02	8.009E-02	4.679E-02	NOT IDENT.
U-238	-2.928E-02	2.216E+00	1.972E+00	1.130E+00	FAIL ABUN
NP-239	6.195E-02	2.165E-01	1.913E-01	1.105E-01	NOT IDENT.
AM-241	1.867E-01	2.917E-01	2.676E-01	1.488E-01	NOT IDENT.
CM-243	2.979E-02	1.139E-01	1.010E-01	5.810E-02	NOT IDENT.
AM-246	1.154E-01	1.544E-01	1.389E-01	7.878E-02	NOT IDENT.
CM-247	3.760E-04	4.245E-02	3.666E-02	2.166E-02	NOT IDENT.
CF-249	2.633E-02	4.585E-02	4.096E-02	2.339E-02	NOT IDENT.
CF-251	-7.680E-02	1.469E-01	1.228E-01	7.495E-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	295.0691
46.50	295.0691
46.50	295.0691
48.70	302.8055
49.72	279.7092
51.35	241.6272
52.39	249.6370
52.97	269.8268
53.15	265.1545
53.44	249.1156
54.07	267.4546
56.28	331.4392
56.28	331.4406
57.37	0.0000
57.53	310.0794
57.53	310.0806
57.60	305.3276
57.98	308.3809
57.98	308.3809
59.32	333.9702
59.32	333.9702
59.40	334.0113
59.54	329.2823
59.72	331.2938
60.01	339.1254
61.10	337.7604
61.14	337.7805
61.30	337.8615
63.00	357.0532
63.29	362.0324
63.29	362.0324
63.58	359.2898
64.28	365.4593
65.12	399.7861
65.20	399.8322
65.20	399.8322
66.05	415.8311
66.72	409.4371
66.83	409.5031
66.91	409.5498
67.20	375.0439
67.20	375.0439
67.75	357.5683
67.85	357.6188
68.90	342.5764
68.90	342.5764
69.30	361.4649
69.67	369.4460
70.82	360.6654
70.82	360.6654
70.83	360.6710
72.80	392.9535
72.87	392.9903
72.87	392.9903
74.67	396.2974
74.81	396.3714
74.81	396.3714
74.81	396.3714
74.81	396.3714
74.81	396.3714
74.81	396.3714
74.97	396.4561
75.28	396.6195
75.70	396.8399
77.11	384.1928
77.11	384.1928

77.11	384.1928
77.11	384.1928
77.11	384.1928
77.11	384.1928
77.11	384.1928
78.38	345.3995
79.62	420.1985
79.80	420.2959
79.80	420.2959
80.11	452.0769
80.18	452.1171
80.30	452.1869
80.30	452.1869
80.57	480.4159
81.00	468.8106
81.07	432.5837
81.07	432.5837
81.07	432.5837
81.07	432.5837
82.60	400.3845
83.37	399.9762
83.78	392.2422
83.78	392.2422
83.78	392.2422
83.78	392.2422
84.21	378.1518
84.90	353.0320
85.43	342.1235
86.29	428.5037
86.50	428.6137
86.54	410.3105
86.59	410.3356
86.72	410.4001
86.79	410.4346
86.94	410.5101
87.30	410.6908
87.30	410.6908
87.30	410.6908
87.30	410.6908
87.30	410.6908
87.30	410.6908
87.57	410.8244
87.88	410.9784
88.03	411.0539
88.36	411.2173
88.47	411.2723
89.95	412.0016
91.11	412.5705
92.29	413.1442
92.38	413.1882
92.38	413.1882
93.35	413.6565
94.00	339.2150
94.67	357.1742
94.67	357.1756
94.90	357.2704
94.90	357.2704
94.90	357.2704
94.90	357.2704
95.87	372.1703
95.87	372.1703
96.73	338.6705
97.43	324.4131
98.44	308.6263
98.44	308.6263
98.88	317.9400
99.55	337.7293
99.55	337.7293
99.86	337.8465
100.00	348.0155
100.10	338.9501
103.18	325.8932
103.76	325.0842
105.00	328.5755
105.31	322.5795
108.00	346.9869
109.28	340.3055



111.00	345.0180
111.00	345.0180
111.76	351.4408
112.95	341.6164
115.19	304.3614
116.30	322.2069
117.00	301.8338
117.00	301.8338
117.66	299.9739
121.11	318.5978
121.62	331.1792
121.78	331.2317
122.06	328.2171
122.32	336.5857
122.32	336.5857
122.32	336.5857
122.32	336.5857
123.07	311.9609
127.23	328.8368
129.76	305.6429
131.20	395.8924
133.02	333.7901
133.54	313.0156
135.34	317.7348
136.00	305.3378
136.25	299.1117
136.48	301.2742
140.51	324.5124
140.51	0.0000
142.18	330.2772
142.65	336.7508
143.76	323.3484
144.24	323.4861
144.24	323.4861
144.24	323.4861
144.24	323.4861
145.22	314.2460
145.44	314.3072
147.16	314.7853
152.43	291.7417
152.70	296.0707
153.22	303.6605
154.21	327.3773
154.21	327.3773
154.21	327.3773
154.21	327.3773
155.03	332.9425
156.02	313.9990
158.56	329.6586
159.00	0.0000
159.00	301.9400
160.31	292.6244
161.27	307.8760
162.32	325.3218
162.64	313.5961
163.35	310.5551
163.89	319.2945
165.85	290.7333
167.43	298.6544
171.28	281.1952
171.86	280.2441
172.10	282.4619
176.55	297.5761
176.60	297.5866
181.06	258.0786
184.41	298.2959
185.71	298.5917
186.00	298.6563
190.27	287.9850
192.34	270.0885
193.63	293.7658
197.04	300.0172
198.01	273.7400
198.60	272.7512
200.40	283.0605
201.83	297.5191
202.84	288.8733
205.31	266.3049

208.36	273.5519
208.81	273.6382
209.75	273.8203
209.75	273.8203
210.97	245.9793
215.65	241.4163
216.55	261.6950
218.09	263.0913
222.10	233.5001
223.80	249.5027
226.40	245.8849
227.00	244.1812
227.08	244.1944
227.20	244.2126
228.16	226.3351
228.18	226.3382
228.18	226.3382
231.56	0.0000
235.69	246.1863
236.00	212.0954
236.00	212.0954
238.63	212.4567
238.63	212.4567
238.63	212.4567
238.63	212.4567
239.00	212.5067
240.98	212.7780
241.98	212.9137
241.98	212.9137
241.98	212.9137
244.69	183.8116
245.39	179.3335
247.94	216.1562
248.90	198.4437
249.79	197.7386
252.40	212.4859
252.85	217.1261
252.85	217.1261
254.15	0.0000
256.20	205.6414
256.20	205.6414
260.50	206.1842
260.90	200.7106
262.80	209.3696
264.65	215.3149
268.24	174.1647
268.79	189.6400
269.46	209.7690
269.46	209.7690
269.46	209.7690
269.46	209.7690
271.23	199.1794
273.65	273.6852
276.40	179.6546
277.35	178.5141
277.60	174.8203
277.60	174.8203
278.00	162.7701
278.60	160.0364
279.20	185.2240
279.53	202.0150
280.46	226.3412
281.68	211.5877
283.67	190.3685
284.30	174.5683
285.00	167.1679
285.90	153.2375
286.10	150.4521
286.10	150.4521
287.40	174.1774
288.45	0.0000
290.67	220.1748
290.80	220.1920
291.72	212.4945
293.26	0.0000
293.70	183.0125
295.21	145.5944
295.21	145.5944

295.21	145.5944
295.96	145.6550
296.50	145.7004
297.23	145.7590
298.57	145.8688
299.80	149.1062
299.80	149.1062
300.09	161.6898
300.09	161.6898
300.09	161.6898
300.09	161.6898
300.12	161.6919
301.29	164.9384
302.84	187.0899
303.76	187.1844
303.91	187.2013
304.40	162.0733
304.40	162.0733
304.84	177.8522
306.84	157.8794
308.46	156.1256
311.98	153.5797
316.51	168.2105
318.01	141.7137
319.02	133.2256
319.41	126.5903
320.08	134.2529
323.87	222.2971
323.87	222.2971
323.87	222.2971
323.87	222.2971
325.23	180.4475
328.77	150.9174
333.44	180.5811
334.20	174.2576
334.20	174.2576
334.30	174.2665
338.28	153.7969
338.28	153.7969
338.28	153.7969
338.28	153.7969
338.32	153.8008
338.32	153.8008
338.32	153.8008
340.50	134.7244
340.57	134.7295
344.27	149.4448
345.85	156.3185
350.59	0.0000
351.07	123.8359
351.92	125.8232
351.92	125.8232
351.92	125.8232
355.39	0.0000
356.01	137.3935
364.48	135.3689
366.43	134.5231
367.43	135.5640
367.94	0.0000
369.80	114.2378
374.96	130.1815
383.85	157.2715
387.95	129.0123
388.63	121.1727
391.69	154.8880
391.69	154.8880
392.90	141.1549
398.62	124.7019
400.65	132.7421
401.10	134.7516
401.81	137.7681
402.60	135.8360
404.84	167.7333
410.95	129.3827
411.60	132.4058
413.65	166.4068
414.70	136.5769
415.30	137.6109

415.76	121.6813
417.63	0.0000
418.52	101.8581
423.70	127.1132
427.08	99.2356
427.89	90.2461
432.53	117.5570
433.93	116.6216
439.47	114.8851
439.56	114.8892
439.89	105.8344
443.98	118.1354
444.90	82.8278
445.03	82.8328
445.03	82.8328
445.03	82.8328
445.03	82.8328
453.90	82.1292
463.38	92.6329
468.07	125.4489
473.00	87.8897
475.06	96.1457
475.35	110.4785
476.78	108.4960
477.59	109.5548
477.96	102.4036
482.03	94.3651
484.57	109.8631
487.03	90.4438
490.36	0.0000
492.35	106.0842
497.08	98.0279
507.63	0.0000
510.53	0.0000
510.84	97.5170
511.00	97.5233
511.85	97.5554
511.85	97.5554
513.99	79.6315
513.99	79.6315
520.41	90.5875
520.65	89.5546
527.90	89.8003
528.96	0.0000
529.64	89.8591
529.87	0.0000
531.02	85.7236
537.32	83.8301
543.00	112.3605
546.56	0.0000
549.76	86.3222
552.65	90.6296
555.20	83.3300
563.23	96.2676
563.90	92.0573
568.70	95.3965
569.32	90.1174
569.50	86.9408
569.67	88.0072
573.80	95.5701
574.00	101.9484
574.64	90.2876
578.91	83.3324
579.30	0.0000
583.14	78.1297
585.48	71.0856
591.81	84.4235
592.07	71.6046
593.00	74.8364
595.88	94.1725
600.56	96.4688
602.52	0.0000
602.71	91.1779
602.71	91.1779
603.60	96.5698
604.41	103.7526
604.70	103.7633
609.31	44.7957

609.31	44.7957
609.31	44.7957
609.31	44.7957
610.33	59.1519
612.46	82.5121
614.37	70.0020
618.01	75.4790
621.84	72.3374
621.84	72.3374
631.29	74.7326
633.02	85.6135
633.10	85.6155
634.78	79.1576
635.90	79.1861
636.97	69.4484
645.85	62.0334
646.12	58.7738
656.30	66.6130
657.75	67.7368
657.90	0.0000
661.65	79.8544
661.65	79.8544
664.57	0.0000
666.33	79.9739
666.33	79.9739
675.00	68.1107
677.61	74.7651
685.20	68.8812
692.80	78.2522
695.00	74.6208
696.49	82.0288
696.49	82.0288
697.00	82.9633
697.49	94.0396
698.33	99.5955
698.50	96.8353
699.00	82.0921
702.63	83.1079
706.10	82.2714
706.58	0.0000
706.67	84.1350
709.31	76.8010
711.68	72.2268
713.82	84.3183
717.42	75.1349
720.50	55.7080
721.93	0.0000
722.20	73.2531
722.78	65.3023
722.78	65.3023
722.89	65.3051
722.95	65.3066
723.30	63.7207
724.18	58.9571
727.18	63.2630
733.00	73.4922
735.90	59.0182
739.58	78.4390
742.81	59.8203
744.21	52.3644
747.13	57.0882
751.79	67.4751
752.31	66.5480
753.82	57.2012
755.35	43.1540
756.15	55.3629
756.87	58.1906
763.93	91.2276
765.79	61.1650
766.42	63.9990
766.84	64.9486
776.49	67.9614
778.00	62.3248
778.57	62.3342
778.89	60.4518
783.80	55.8070
785.46	53.9408
792.07	69.2113

795.84	58.8440
796.30	58.8516
798.80	87.3899
801.93	67.5014
805.60	49.4884
810.29	57.1765
810.76	58.1381
815.85	48.6758
817.79	53.4764
818.51	57.3071
819.60	55.4134
826.30	67.9593
828.27	0.0000
831.60	46.0107
831.96	49.3025
834.83	68.1182
836.80	0.0000
846.75	56.7877
848.13	60.6608
856.28	0.0000
856.80	78.1738
860.37	54.0973
867.32	61.9388
867.82	56.1403
871.10	51.3448
873.19	50.4036
874.81	49.4550
875.33	0.0000
876.40	55.2964
879.36	49.5142
880.27	48.5555
880.51	44.6739
881.50	52.4564
883.24	46.6494
884.67	47.6392
889.25	42.8291
896.60	61.4401
898.02	50.7305
899.00	43.9133
903.28	45.2169
911.07	48.9431
911.07	48.9431
911.07	48.9431
919.63	63.2744
920.93	64.2321
925.00	49.1170
925.24	49.1201
926.50	52.0835
935.52	40.3827
937.48	53.2123
944.10	50.3391
946.00	53.3254
949.00	39.5296
962.29	39.0933
964.01	32.7328
966.15	32.7502
968.20	32.7664
969.11	32.7737
969.11	32.7737
969.11	32.7737
977.42	40.6024
980.50	46.8068
983.50	49.8311
989.30	41.9163
996.32	56.9826
1001.03	38.0309
1001.68	37.0361
1004.76	57.0974
1021.30	0.0000
1024.50	0.0000
1034.80	44.3867
1036.00	46.4174
1037.82	58.5522
1038.57	54.5229
1038.76	0.0000
1045.16	62.6963
1046.59	56.6471
1048.07	51.6060

1050.47	39.4856
1050.47	39.4856
1062.04	46.6963
1063.62	41.6356
1076.63	39.7220
1077.35	41.7657
1078.86	44.8361
1085.78	53.0706
1099.22	56.3025
1112.02	31.6770
1112.84	36.9639
1115.52	49.3125
1120.29	45.2515
1120.29	45.2515
1120.29	45.2515
1120.29	45.2515
1120.51	45.2533
1121.28	45.2604
1124.00	0.0000
1129.67	45.3446
1131.51	0.0000
1147.95	0.0000
1167.94	59.2266
1173.22	49.9316
1175.09	40.5853
1177.93	49.9805
1189.05	53.2288
1204.90	71.2069
1205.75	0.0000
1213.00	53.4944
1221.42	53.5878
1230.97	60.0082
1235.34	55.8467
1236.41	0.0000
1238.25	46.3919
1246.25	52.8035
1260.41	0.0000
1271.85	42.4609
1274.45	44.6062
1274.54	44.6062
1291.56	34.1016
1298.22	0.0000
1312.09	35.3082
1325.50	31.1087
1325.50	31.1087
1332.49	24.7061
1333.61	30.0838
1360.21	24.8371
1362.66	0.0000
1365.15	27.1206
1368.21	20.3940
1368.53	0.0000
1376.25	22.2815
1384.27	14.3188
1394.10	27.9450
1395.20	27.9513
1407.95	19.6121
1434.06	17.8291
1436.60	21.5930
1457.56	0.0000
1460.81	13.2007
1489.15	27.4828
1509.49	22.8265
1596.49	26.0649
1620.62	4.8462
1678.03	0.0000
1691.02	13.7261
1691.02	13.7261
1706.46	0.0000
1750.46	0.0000
1764.49	12.8944
1764.49	12.8944
1764.49	12.8944
1764.49	12.8944
1770.23	5.2119
1771.40	8.6880
1791.20	0.0000
1808.65	10.9847





TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132018

Total Uranium Activity	-9.3146E-02	ug/g
Total Uranium Counting Unc.	6.5928E+00	ug/g
Total Uranium Tpu	3.3636E-06	ug/g
Total Uranium Mda	5.8668E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132018
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 12:04:37.89          SAMPLE ALQT  : 134.790 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.848E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.150E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.763E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.337E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 16:21:06.23

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132019.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 14:20:12
Sample ID        : G244132019      Sample quantity   : 1.14680E+02 GRAM
Detector name    : GAM15           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00    Elapsed real time: 0 02:00:01.16  0.0%
Energy tolerance : 1.50000 keV      Analyst Initials : MXR1
Abundance limit  : 75.00000         Sensitivity    : 5.00000
Batch ID        : 940270            Detector SN#   :
Matrix Spike ID  :                  LCS ID          : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	74.26	344	461	1.83	149.00	144	15	4.78E-02	14.3	1.35E+00
2	4	76.51*	401	306	1.18	153.51	144	15	5.57E-02	9.3	
3	1	86.80*	77	478	1.27	174.07	168	23	1.07E-02	48.1	3.28E+00
4	1	89.13	83	483	1.45	178.73	168	23	1.15E-02	49.1	
5	1	92.20*	95	355	1.33	184.88	168	23	1.31E-02	41.6	
6	0	129.57	42	355	1.36	259.57	252	10	5.79E-03	86.0	
7	0	185.48*	170	384	1.34	371.34	366	12	2.36E-02	25.3	
8	0	208.76	119	158	1.25	417.90	415	7	1.66E-02	19.8	
9	2	238.04*	1106	172	1.38	476.42	469	23	1.54E-01	3.9	1.42E+00
10	2	241.01	257	245	1.84	482.36	469	23	3.57E-02	16.2	
11	0	277.34	50	228	0.97	555.00	550	11	7.01E-03	59.9	
12	1	294.73*	338	153	1.72	589.76	584	21	4.69E-02	9.1	1.28E+00
13	1	299.73	68	162	1.73	599.76	584	21	9.48E-03	36.6	
14	0	337.52	182	215	1.18	675.31	670	12	2.53E-02	17.7	
15	0	351.20*	550	152	1.30	702.65	696	13	7.63E-02	6.5	
16	0	462.78	88	96	1.62	925.72	920	13	1.22E-02	25.7	
17	0	510.18*	82	128	1.41	1020.50	1013	16	1.13E-02	38.3	
18	0	582.65*	355	91	1.52	1165.39	1158	16	4.94E-02	8.3	
19	0	608.58*	396	101	1.71	1217.23	1211	13	5.49E-02	7.5	
20	0	718.43	36	30	1.65	1436.86	1431	11	4.97E-03	34.2	
21	0	727.46*	77	82	2.10	1454.91	1447	16	1.07E-02	30.1	
22	0	910.66*	207	59	1.63	1821.23	1813	17	2.88E-02	11.1	
23	0	963.75	31	38	0.86	1927.39	1921	10	4.33E-03	39.3	
24	0	968.41*	153	43	2.11	1936.70	1931	14	2.13E-02	12.7	
25	0	1119.55*	70	59	1.38	2238.91	2232	15	9.65E-03	27.1	
26	0	1237.84*	74	51	2.72	2475.47	2466	23	1.03E-02	28.1	
27	0	1376.96	46	18	1.94	2753.66	2744	18	6.44E-03	26.0	
28	0	1460.15*	667	15	1.97	2920.03	2912	15	9.27E-02	4.1	
29	0	1589.12	47	11	5.00	3177.96	3166	22	6.54E-03	23.1	
30	0	1728.92	28	3	1.94	3457.54	3450	13	3.92E-03	22.8	
31	0	1763.92*	74	7	1.32	3527.53	3520	14	1.03E-02	14.8	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 16:21:09

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132019.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 14:20:12
Sample ID        : G244132019             Sample quantity  : 114.68 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA15                Detector geometry: CAN
Elapsed live time : 0 02:00:00.00          Elapsed real time: 0 02:00:01.16    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)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.048E+01	2.305E+00	4.494E-01	3.435E-02	45.578
CD-109	+	88.03	*	1.621E+00	1.601E+00	1.772E+00	2.049E-01	0.915
SN-126		64.28		-3.385E-01	9.279E-01	1.498E+00	2.568E-01	-0.226
	+	86.94		6.412E-01	6.733E-01	7.389E-01	3.107E-01	0.868
	+	87.57	*	1.542E-01	1.495E-01	1.758E-01	2.028E-02	0.877
TL-208	+	277.35		6.411E-01	7.713E-01	7.894E-01	8.845E-02	0.812
	+	510.84		5.018E-01	3.878E-01	2.527E-01	2.543E-02	1.986
	+	583.14	*	6.196E-01	1.105E-01	6.904E-02	4.395E-03	8.975
		860.37		4.839E-01	4.097E-01	7.273E-01	6.251E-02	0.665
BI-211	+	72.87		2.811E+01	8.626E+00	7.666E+00	8.548E-01	3.667
	+	351.07	*	4.334E+00	6.373E-01	4.358E-01	2.994E-02	9.947
PB-212	+	74.81		3.337E+00	1.070E+00	8.391E-01	1.218E-01	3.976
	+	77.11		2.136E+00	4.620E-01	4.479E-01	4.974E-02	4.770
	+	87.30		7.133E-01	6.949E-01	8.168E-01	1.246E-01	0.873
	+	238.63	*	1.923E+00	2.176E-01	1.225E-01	1.014E-02	15.698
	+	300.09		1.826E+00	1.347E+00	1.553E+00	1.393E-01	1.176
PO-212	+	74.81		3.337E+00	1.070E+00	8.391E-01	1.218E-01	3.976
	+	77.11		2.136E+00	4.620E-01	4.479E-01	4.974E-02	4.770
	+	87.30		7.133E-01	6.949E-01	8.168E-01	1.246E-01	0.873
		115.19		2.093E+00	4.807E+00	7.983E+00	6.108E-01	0.262
	+	238.63	*	1.923E+00	2.176E-01	1.225E-01	1.014E-02	15.698
	+	300.09		1.826E+00	1.347E+00	1.553E+00	1.393E-01	1.176
BI-214	+	609.31	*	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070
	+	1120.29		1.192E+00	6.565E-01	5.506E-01	5.080E-02	2.165
	+	1764.49		1.741E+00	5.280E-01	2.494E-01	1.552E-02	6.980
PB-214	+	74.81		5.749E+00	1.815E+00	1.446E+00	1.931E-01	3.976
	+	77.11		3.662E+00	8.398E-01	7.678E-01	1.034E-01	4.770
	+	87.30		1.222E+00	1.188E+00	1.399E+00	1.940E-01	0.873
	+	241.98		2.686E+00	9.017E-01	7.375E-01	6.592E-02	3.642
	+	295.21		1.587E+00	3.232E-01	2.899E-01	2.681E-02	5.474
	+	351.92	*	1.508E+00	2.352E-01	1.451E-01	1.251E-02	10.389
PO-214	+	74.81		5.749E+00	1.815E+00	1.446E+00	1.931E-01	3.976
	+	77.11		3.662E+00	8.398E-01	7.678E-01	1.034E-01	4.770
	+	87.30		1.222E+00	1.188E+00	1.399E+00	1.940E-01	0.873

## ----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.686E+00	9.017E-01	7.375E-01	6.592E-02	3.642
	+	295.21		1.587E+00	3.232E-01	2.899E-01	2.681E-02	5.474
	+	351.92	*	1.508E+00	2.352E-01	1.451E-01	1.251E-02	10.389
	+	74.81		3.337E+00	1.070E+00	8.391E-01	1.218E-01	3.976
	+	77.11		2.136E+00	4.620E-01	4.479E-01	4.974E-02	4.770
	+	87.30		7.133E-01	6.949E-01	8.168E-01	1.246E-01	0.873
PO-218	+	238.63	*	1.923E+00	2.176E-01	1.225E-01	1.014E-02	15.698
	+	300.09		1.826E+00	1.347E+00	1.553E+00	1.393E-01	1.176
	+	74.81		5.749E+00	1.815E+00	1.446E+00	1.931E-01	3.976
	+	77.11		3.662E+00	8.398E-01	7.678E-01	1.034E-01	4.770
	+	87.30		1.222E+00	1.188E+00	1.399E+00	1.940E-01	0.873
	+	241.98		2.686E+00	9.017E-01	7.375E-01	6.592E-02	3.642
RA-224	+	295.21		1.587E+00	3.232E-01	2.899E-01	2.681E-02	5.474
	+	351.92	*	1.508E+00	2.352E-01	1.451E-01	1.251E-02	10.389
	+	240.98	*	5.093E+00	1.686E+00	1.394E+00	9.702E-02	3.654
RA-226	+	609.31	*	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070
	+	1120.29		1.192E+00	6.565E-01	5.506E-01	5.080E-02	2.165
	+	1764.49		1.741E+00	5.280E-01	2.494E-01	1.552E-02	6.980
AC-228	+	338.32		1.584E+00	8.561E-01	4.950E-01	2.023E-01	3.199
	+	911.07	*	1.599E+00	3.981E-01	2.535E-01	2.819E-02	6.305
	+	969.11		2.089E+00	7.175E-01	3.879E-01	8.970E-02	5.384
RA-228	+	338.32		1.584E+00	8.561E-01	4.950E-01	2.023E-01	3.199
	+	911.07	*	1.599E+00	3.981E-01	2.535E-01	2.819E-02	6.305
	+	969.11		2.089E+00	7.175E-01	3.879E-01	8.970E-02	5.384
TH-228	+	74.81		3.384E+00	1.039E+00	8.510E-01	9.504E-02	3.976
	+	77.11		2.167E+00	4.686E-01	4.542E-01	5.044E-02	4.770
	+	87.30		7.234E-01	7.010E-01	8.284E-01	9.543E-02	0.873
TH-230	+	238.63	*	1.950E+00	2.206E-01	1.242E-01	1.028E-02	15.698
	+	300.09		1.852E+00	1.742E+00	1.575E+00	9.300E-01	1.176
	+	609.31	*	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070
TH-232	+	1120.29		1.192E+00	6.565E-01	5.506E-01	5.080E-02	2.165
	+	1764.49		1.741E+00	5.279E-01	2.494E-01	1.552E-02	6.980
	+	338.32		1.584E+00	5.697E-01	4.950E-01	3.186E-02	3.199
U-234	+	911.07	*	1.599E+00	3.981E-01	2.535E-01	2.819E-02	6.305
	+	969.11		2.089E+00	7.175E-01	3.879E-01	8.970E-02	5.384
	+	609.31	*	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070
NP-237	+	1120.29		1.192E+00	6.565E-01	5.506E-01	5.080E-02	2.165
	+	1764.49		1.741E+00	5.279E-01	2.494E-01	1.552E-02	6.980
	+	86.50	*	4.529E-01	4.487E-01	5.261E-01	1.242E-01	0.861
AM-243	+	95.87		-2.995E-01	1.444E+00	2.051E+00	5.145E-01	-0.146
	+	74.67	*	5.410E-01	1.660E-01	1.367E-01	1.519E-02	3.957
	+	86.72		1.698E+01	1.646E+01	1.965E+01	2.256E+00	0.864
ANH-511	+	117.66		-1.029E+00	5.177E+00	8.376E+00	6.257E-01	-0.123
	+	142.18		7.186E+00	2.438E+01	3.936E+01	2.682E+00	0.183
	+	511.00	*	1.084E-01	8.327E-02	5.459E-02	3.082E-03	1.986

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	6.258E-02	3.992E-01	6.600E-01	4.398E-02	0.095

---- 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	*		-1.919E-03	5.432E-02	8.759E-02	6.011E-03	-0.022
NA-24	1368.53	*		-1.323E-03	5.432E-02	Half-Life too short		
AL-26	1129.67			2.109E-01	2.027E+00	3.343E+00	2.106E-01	0.063
	1808.65	*		7.573E-03	3.193E-02	5.537E-02	3.313E-03	0.137
TI-44	67.85			2.872E-02	8.161E-02	1.324E-01	1.510E-02	0.217
	78.38	*		2.078E-01	6.746E-02	1.037E-01	1.153E-02	2.004
SC-46	889.25	*		-1.219E-02	4.622E-02	7.446E-02	6.245E-03	-0.164
	+ 1120.51			2.024E-01	1.106E-01	1.490E-01	9.563E-03	1.359
V-48	944.10			1.675E-02	9.897E-01	1.635E+00	1.344E-01	0.010
	983.50	*		-2.109E-02	7.610E-02	1.213E-01	9.581E-03	-0.174
	1312.09			-9.917E-02	8.492E-02	1.114E-01	8.131E-03	-0.890
CR-51	320.08	*		6.747E-02	4.877E-01	8.176E-01	5.896E-02	0.083
MN-52	744.21			6.844E-02	2.473E-01	4.231E-01	2.595E-02	0.162
	848.13			-1.830E+00	7.370E+00	1.195E+01	9.210E-01	-0.153
	935.52			3.006E-01	2.696E-01	4.892E-01	4.053E-02	0.614
	1246.25			-3.122E+00	8.921E+00	1.166E+01	7.602E-01	-0.268
	1333.61			-2.260E+00	5.663E+00	8.646E+00	6.525E-01	-0.261
	1434.06	*		2.027E-02	2.336E-01	3.952E-01	2.930E-02	0.051
MN-54	834.83	*		-2.335E-02	4.711E-02	7.491E-02	5.614E-03	-0.312
CO-56	846.75	*		-4.657E-02	4.681E-02	6.986E-02	5.369E-03	-0.667
	977.42			-4.963E-01	3.432E+00	5.287E+00	4.205E-01	-0.094
	1037.82			-2.373E-01	3.725E-01	5.676E-01	4.492E-02	-0.418
	1175.09			2.961E+00	2.492E+00	4.522E+00	2.585E-01	0.655
	+ 1238.25			3.549E-01	2.009E-01	2.129E-01	1.439E-02	1.667
	1360.21			-6.721E-01	1.182E+00	1.735E+00	1.305E-01	-0.387
	1771.40			-5.662E-01	3.390E-01	3.778E-01	2.337E-02	-1.499
CO-57	122.06	*		-3.019E-02	3.766E-02	5.428E-02	3.903E-03	-0.556
	136.48			-4.639E-02	2.678E-01	4.315E-01	3.312E-02	-0.107
CO-58	810.76	*		-9.344E-03	4.572E-02	7.460E-02	5.329E-03	-0.125
FE-59	142.65			1.532E+00	3.672E+00	5.957E+00	4.056E-01	0.257
	192.34			-6.636E-01	1.333E+00	1.973E+00	2.432E-01	-0.336
	1099.22	*		-6.176E-02	1.057E-01	1.612E-01	1.220E-02	-0.383
	1291.56			-3.958E-02	1.358E-01	2.109E-01	1.780E-02	-0.188
CO-60	1173.22			-3.708E-02	5.343E-02	7.943E-02	4.524E-03	-0.467
	1332.49	*		8.473E-03	4.666E-02	7.722E-02	5.828E-03	0.110
ZN-65	1115.52	*		3.342E-02	1.242E-01	1.807E-01	1.174E-02	0.185
GE-68	1077.35	*		1.367E+00	1.419E+00	2.557E+00	1.777E-01	0.535
AS-73	53.44	*		5.943E-01	2.205E+00	3.710E+00	5.070E-01	0.160
AS-74	595.88	*		-4.579E-02	1.145E-01	1.739E-01	9.347E-03	-0.263
	634.78			7.856E-02	4.253E-01	6.962E-01	3.611E-02	0.113
SE-75	66.05			-7.070E+00	8.719E+00	1.378E+01	1.788E+00	-0.513
	96.73			-4.889E-02	1.172E+00	1.682E+00	2.412E-01	-0.029
	121.11			-1.298E-01	1.834E-01	2.891E-01	2.948E-02	-0.449
	136.00			-2.162E-02	5.057E-02	8.054E-02	5.608E-03	-0.268
	198.60			-1.162E+00	2.462E+00	3.777E+00	3.014E-01	-0.308
	264.65	*		-7.439E-02	5.800E-02	9.061E-02	6.337E-03	-0.821
	279.53			1.107E-01	1.502E-01	2.305E-01	1.682E-02	0.480
	303.91			-1.041E+00	3.091E+00	4.360E+00	4.426E-01	-0.239
	400.65			-5.248E-02	3.562E-01	5.618E-01	5.073E-02	-0.093

----- 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	2.518E+02	2.440E+02	3.587E+02	4.147E+01	0.702
		200.40	-4.305E+01	1.651E+02	2.611E+02	1.785E+01	-0.165
	+	239.00	2.294E+02	2.382E+01	3.808E+01	2.649E+00	6.025
		249.79	-1.516E+01	6.874E+01	1.078E+02	7.507E+00	-0.141
		281.68	6.149E+01	9.091E+01	1.392E+02	9.585E+00	0.442
		297.23	2.126E+02	6.192E+01	1.145E+02	7.788E+00	1.857
		303.76	-6.624E+01	1.967E+02	2.775E+02	1.876E+01	-0.239
		439.47	4.354E+01	1.402E+02	2.349E+02	1.342E+01	0.185
		484.57	-2.064E+02	2.256E+02	3.428E+02	1.951E+01	-0.602
		520.65	* -7.988E-02	9.136E+00	1.486E+01	8.358E-01	-0.005
		574.64	1.057E+01	2.112E+02	3.112E+02	1.700E+01	0.034
		578.91	2.678E+01	9.729E+01	1.399E+02	7.620E+00	0.191
		585.48	7.531E+02	2.168E+02	3.855E+02	2.090E+01	1.953
		755.35	5.846E+01	1.562E+02	2.686E+02	1.690E+01	0.218
		817.79	-5.284E+01	1.148E+02	1.821E+02	1.316E+01	-0.290
SR-82		698.33	-1.509E+00	4.235E+01	7.084E+01	3.900E+00	-0.021
		776.49	* -2.975E-01	4.611E-01	7.257E-01	4.790E-02	-0.410
		1395.20	2.773E+00	1.270E+01	2.185E+01	1.634E+00	0.127
RB-83		520.41	* -6.392E-03	8.076E-02	1.305E-01	7.345E-03	-0.049
		529.64	-1.600E-02	1.240E-01	1.994E-01	1.118E-02	-0.080
		552.65	-5.949E-02	2.408E-01	3.824E-01	2.118E-02	-0.156
RB-84		881.50	* 4.434E-02	7.973E-02	1.391E-01	1.148E-02	0.319
KR-85		513.99	* 1.353E+01	9.549E+00	1.538E+01	8.676E-01	0.880
SR-85		513.99	* 6.863E-02	4.844E-02	7.802E-02	4.401E-03	0.880
RB-86		1076.63	* 3.750E-01	9.023E-01	1.541E+00	1.072E-01	0.243
Y-88		898.02	-5.649E-03	5.318E-02	8.710E-02	7.473E-03	-0.065
		1836.01	* 2.418E-03	3.791E-02	6.315E-02	3.689E-03	0.038
ZR-88		392.90	* -2.868E-02	4.023E-02	6.327E-02	3.588E-03	-0.453
Y-91		1204.90	* -8.230E+00	2.469E+01	3.884E+01	2.349E+00	-0.212
NB-94		702.63	* 6.784E-03	4.167E-02	7.071E-02	3.933E-03	0.096
		871.10	-7.230E-03	3.547E-02	5.741E-02	4.641E-03	-0.126
NB-95		765.79	* 7.205E-02	5.395E-02	9.829E-02	6.334E-03	0.733
NB-95M		235.69	* 1.739E+00	2.866E-01	4.600E-01	3.887E-02	3.781
ZR-95		724.18	2.711E-01	2.011E-01	2.368E-01	1.635E-02	1.145
		756.15	* 6.801E-02	8.619E-02	1.529E-01	1.140E-02	0.445
NB-97		657.90	* 1.959E-02	8.619E-02	Half-Life	too short	
		1024.50	1.166E+00	8.619E-02	Half-Life	too short	
ZR-97		254.15	5.812E-02	8.619E-02	Half-Life	too short	
		355.39	-9.579E-01	8.619E-02	Half-Life	too short	
		507.63	* 3.910E+00	8.619E-02	Half-Life	too short	
		602.52	2.611E+00	8.619E-02	Half-Life	too short	
		1021.30	2.811E+00	8.619E-02	Half-Life	too short	
		1147.95	-8.841E-01	8.619E-02	Half-Life	too short	
		1362.66	-7.650E-01	8.619E-02	Half-Life	too short	
		1750.46	5.810E-01	8.619E-02	Half-Life	too short	
MO-99		140.51	-1.394E+01	2.745E+01	4.316E+01	1.173E+01	-0.323
		181.06	-1.853E+00	2.088E+01	2.915E+01	5.094E+00	-0.064
		366.43	-5.688E+01	8.303E+01	1.311E+02	7.964E+00	-0.434
		739.58	* -2.903E+00	1.076E+01	1.756E+01	2.440E+00	-0.165

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	778.00			1.741E+00	3.219E+01	5.392E+01	3.572E+00	0.032
TC-99M	140.51	*		-1.566E+09	3.219E+01	Half-Life too short		
RH-101	127.23			2.653E-02	4.945E-02	7.250E-02	5.108E-03	0.366
	198.01	*		7.475E-03	4.447E-02	7.041E-02	4.803E-03	0.106
	325.23			1.173E-01	3.068E-01	5.200E-01	3.419E-02	0.226
RH-102	418.52			-2.575E-01	3.634E-01	5.676E-01	3.238E-02	-0.454
	475.06	*		-1.708E-02	3.618E-02	5.696E-02	3.247E-03	-0.300
	631.29			-3.862E-02	6.870E-02	1.049E-01	5.462E-03	-0.368
	697.49			-2.747E-02	9.972E-02	1.639E-01	9.004E-03	-0.168
	766.84			1.250E-01	1.387E-01	2.461E-01	1.590E-02	0.508
	1046.59			3.322E-02	1.386E-01	2.328E-01	1.697E-02	0.143
	1112.84			-8.209E-02	3.235E-01	4.352E-01	2.837E-02	-0.189
RU-103	497.08	*		1.680E-02	5.032E-02	8.409E-02	1.058E-02	0.200
	610.33			1.398E+01	2.780E+00	3.596E+00	5.481E-01	3.887
RH-106	511.85			1.497E+00	2.906E-01	5.379E-01	3.037E-02	2.784
	621.84	*		-5.207E-03	3.993E-01	6.431E-01	7.381E-02	-0.008
	1050.47			1.424E+00	2.770E+00	4.778E+00	3.463E-01	0.298
RU-106	511.85			1.497E+00	2.906E-01	5.379E-01	3.037E-02	2.784
	621.84	*		-5.207E-03	3.993E-01	6.431E-01	3.379E-02	-0.008
	1050.47			1.424E+00	2.770E+00	4.778E+00	3.463E-01	0.298
AG-108M	433.93	*		-2.397E-02	4.324E-02	6.823E-02	4.243E-03	-0.351
	614.37			4.641E-03	5.759E-02	8.083E-02	4.710E-03	0.057
	722.95			2.340E-02	8.653E-02	8.406E-02	5.318E-03	0.278
AG-110M	657.75	*		1.858E-02	4.288E-02	7.156E-02	3.922E-03	0.260
	677.61			-2.284E-01	3.819E-01	5.774E-01	3.247E-02	-0.396
	706.67			-1.095E-01	2.567E-01	4.157E-01	2.484E-02	-0.263
	763.93			-8.434E-02	2.133E-01	3.452E-01	2.327E-02	-0.244
	884.67			-8.009E-03	5.815E-02	9.493E-02	8.162E-03	-0.084
	937.48			-1.429E-01	1.391E-01	2.050E-01	1.761E-02	-0.697
	1384.27			1.126E-01	1.842E-01	2.999E-01	2.331E-02	0.375
IN-111	171.28			5.695E-02	1.067E+00	1.723E+00	1.150E-01	0.033
	245.39	*		1.454E-01	1.216E+00	1.795E+00	1.250E-01	0.081
IN-113M	391.69	*		-2.297E-02	5.802E-02	9.328E-02	5.658E-03	-0.246
SN-113	391.69	*		-2.297E-02	5.802E-02	9.328E-02	5.658E-03	-0.246
IN-114M	190.27	*		1.778E-01	2.677E-01	3.910E-01	2.651E-02	0.455
CD-115	260.90			-1.340E+02	1.193E+02	1.877E+02	1.305E+01	-0.714
	492.35			-2.307E+01	3.294E+01	5.070E+01	2.879E+00	-0.455
	527.90	*		-7.033E+00	9.936E+00	1.520E+01	8.525E-01	-0.463
SN-117M	156.02			-2.799E-01	2.938E+00	4.730E+00	3.170E-01	-0.059
	158.56	*		8.004E-02	7.298E-02	1.230E-01	8.221E-03	0.651
SB-122	563.90	*		6.589E-01	1.941E+00	3.233E+00	1.779E-01	0.204
	692.80			9.227E+00	4.401E+01	7.494E+01	4.071E+00	0.123
I-123	159.00	*		1.958E+00	4.401E+01	Half-Life too short		
	528.96			-6.669E+01	4.401E+01	Half-Life too short		
TE-123M	159.00	*		3.499E-02	3.941E-02	6.592E-02	4.450E-03	0.531
I-124	602.71	*		3.472E-01	8.206E-01	1.197E+00	6.400E-02	0.290
	722.78			1.298E+00	7.594E+00	7.203E+00	4.203E-01	0.180
	1325.50			-2.668E+01	3.536E+01	5.078E+01	3.790E+00	-0.525
+	1376.25			9.315E+01	4.891E+01	7.038E+01	5.281E+00	1.324



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1509.49		-6.300E+00	1.742E+01	2.614E+01	1.893E+00	-0.241
		1691.02		-1.536E+00	4.082E+00	6.543E+00	4.307E-01	-0.235
		602.71		2.362E-02	5.582E-02	8.144E-02	4.356E-03	0.290
		645.85		3.228E-01	5.898E-01	9.967E-01	5.934E-02	0.324
		709.31		2.295E+00	3.293E+00	5.813E+00	3.285E-01	0.395
		713.82		-7.784E-01	2.157E+00	2.969E+00	3.017E-01	-0.262
		722.78		1.280E-01	7.488E-01	7.102E-01	4.338E-02	0.180
	+	968.20		2.125E+01	5.662E+00	9.034E+00	7.254E-01	2.352
		1045.16		6.720E-01	2.935E+00	4.867E+00	3.555E-01	0.138
		1325.50		-2.809E+00	3.724E+00	5.348E+00	3.991E-01	-0.525
		1368.21		1.766E-01	2.245E+00	3.147E+00	4.027E-01	0.056
		1436.60		-2.303E+00	4.152E+00	6.319E+00	4.682E-01	-0.364
SB-125		1691.02	*	-3.572E-02	9.495E-02	1.522E-01	1.069E-02	-0.235
		427.89	*	4.107E-02	1.195E-01	2.007E-01	1.196E-02	0.205
	+	463.38		1.065E+00	5.513E-01	7.069E-01	4.726E-02	1.507
		600.56		2.399E-01	2.323E-01	3.865E-01	2.446E-02	0.621
TE-125M I-126		635.90		1.577E-01	3.399E-01	5.693E-01	3.570E-02	0.277
		109.28	*	3.562E+00	1.193E+01	1.973E+01	1.961E+00	0.180
		388.63		1.602E-02	2.611E-01	4.324E-01	2.474E-02	0.037
SB-126		666.33	*	-5.322E-02	2.055E-01	3.220E-01	1.639E-02	-0.165
		753.82		3.018E-01	1.756E+00	2.973E+00	1.864E-01	0.102
		223.80		1.899E-01	5.233E+00	8.365E+00	5.795E-01	0.023
	+	278.60		4.004E+00	4.804E+00	5.561E+00	3.837E-01	0.720
		296.50		1.225E+01	2.357E+00	4.386E+00	2.986E-01	2.793
		414.70		5.353E-02	9.020E-02	1.541E-01	8.786E-03	0.347
		415.30		4.185E+00	7.331E+00	1.252E+01	7.138E-01	0.334
		555.20		2.665E+00	4.505E+00	7.668E+00	4.241E-01	0.348
		573.80		-1.902E-01	1.238E+00	1.923E+00	1.051E-01	-0.099
		593.00		2.157E-01	1.082E+00	1.779E+00	9.586E-02	0.121
		656.30		-1.619E+00	3.942E+00	6.096E+00	3.087E-01	-0.266
		666.33		-2.219E-02	8.566E-02	1.342E-01	6.832E-03	-0.165
SB-127		675.00		3.103E-01	2.317E+00	3.764E+00	1.957E-01	0.082
		695.00		-1.057E-02	9.860E-02	1.641E-01	8.964E-03	-0.064
		697.00		-4.226E-02	3.250E-01	5.399E-01	2.963E-02	-0.078
		720.50	*	1.183E-01	2.919E-01	2.924E-01	1.697E-02	0.405
		856.80		-3.616E-01	6.262E-01	9.896E-01	7.767E-02	-0.365
		989.30		1.582E-01	1.370E+00	2.281E+00	1.790E-01	0.069
		1034.80		9.623E+00	9.569E+00	1.733E+01	1.285E+00	0.555
		1213.00		-5.513E+00	6.186E+00	9.128E+00	5.604E-01	-0.604
		61.10		6.853E+01	9.584E+01	1.626E+02	2.242E+01	0.421
		252.40		-1.281E+00	4.878E+00	8.044E+00	3.350E+00	-0.159
		290.80		3.027E+01	2.595E+01	4.066E+01	3.869E+00	0.744
		411.60		4.347E+00	1.365E+01	2.288E+01	3.227E+00	0.190
SB-127		444.90		7.519E+00	1.074E+01	1.840E+01	1.920E+00	0.409
		473.00		2.708E-01	1.672E+00	2.768E+00	2.996E-01	0.098
		543.00		-3.289E-01	1.717E+01	2.784E+01	3.492E+00	-0.012
		603.60		5.314E+00	1.377E+01	2.001E+01	2.042E+00	0.266
		685.20	*	-9.496E-01	1.417E+00	2.248E+00	1.975E-01	-0.422
		698.50		-9.214E-01	1.621E+01	2.707E+01	3.826E+00	-0.034

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		722.20		4.969E-01	5.101E+01	4.638E+01	4.088E+00	0.011
		783.80		1.879E+00	3.797E+00	6.567E+00	7.144E-01	0.286
		57.60		-2.246E+00	1.348E+01	2.225E+01	2.834E+00	-0.101
		145.22		4.306E-01	8.960E-01	1.481E+00	1.004E-01	0.291
		172.10		6.411E-02	1.570E-01	2.575E-01	1.720E-02	0.249
I-131		202.84	*	-4.377E-02	6.660E-02	1.002E-01	6.860E-03	-0.437
		374.96		-6.360E-02	2.608E-01	4.247E-01	2.524E-02	-0.150
		80.18		-1.214E+01	8.837E+00	9.606E+00	1.075E+00	-1.264
		284.30		-1.556E+00	1.857E+00	2.772E+00	2.057E-01	-0.561
		364.48	*	-1.362E-01	1.366E-01	2.110E-01	1.421E-02	-0.646
TE-132		636.97		1.237E+00	1.745E+00	2.983E+00	1.770E-01	0.415
		722.89		3.136E+00	1.332E+01	1.284E+01	7.583E-01	0.244
		49.72		-1.095E+01	5.205E+01	8.597E+01	1.273E+01	-0.127
		111.76		-3.782E+01	3.226E+01	4.929E+01	4.947E+00	-0.767
		116.30		2.224E+01	3.002E+01	5.035E+01	4.911E+00	0.442
BA-133		228.16	*	-1.590E-01	7.521E-01	1.256E+00	1.843E-01	-0.127
		53.15		3.746E+00	9.756E+00	1.648E+01	2.259E+00	0.227
		79.62		-2.539E+00	2.404E+00	2.987E+00	5.013E-01	-0.850
		81.00		-3.376E-01	2.500E-01	2.225E-01	3.872E-02	-1.518
	+	276.40		6.334E-01	7.636E-01	9.189E-01	1.240E-01	0.689
I-133		302.84		6.846E-03	2.117E-01	3.077E-01	3.744E-02	0.022
		356.01	*	-2.744E-02	6.584E-02	9.112E-02	1.073E-02	-0.301
		383.85		1.558E-01	4.174E-01	7.035E-01	7.649E-02	0.221
	+	510.53		4.879E-01	4.174E-01	Half-Life	too short	
		529.87	*	-1.427E-03	4.174E-01	Half-Life	too short	
CS-134		706.58		-9.935E-02	4.174E-01	Half-Life	too short	
		856.28		-2.678E-01	4.174E-01	Half-Life	too short	
		875.33		-5.519E-02	4.174E-01	Half-Life	too short	
	+	1236.41		1.148E+00	4.174E-01	Half-Life	too short	
		1298.22		3.289E-02	4.174E-01	Half-Life	too short	
CS-135		475.35		-1.641E+00	2.407E+00	3.726E+00	2.124E-01	-0.440
		563.23		9.537E-02	4.406E-01	7.268E-01	4.093E-02	0.131
		569.32		3.891E-02	2.454E-01	4.026E-01	2.281E-02	0.097
		604.70		1.830E-03	5.158E-02	7.208E-02	3.872E-03	0.025
		795.84	*	8.338E-02	5.753E-02	1.062E-01	7.400E-03	0.785
I-135		801.93		-2.567E-01	4.554E-01	7.180E-01	5.056E-02	-0.357
		1038.57		-2.304E+00	4.538E+00	7.013E+00	5.172E-01	-0.328
		1167.94		-1.449E+00	3.075E+00	4.757E+00	2.745E-01	-0.305
		1365.15		3.630E-01	1.371E+00	2.302E+00	1.833E-01	0.158
	*	268.24		3.348E-01	2.220E-01	3.930E-01	3.360E-02	0.852
I-135		288.45		4.446E+09	2.220E-01	Half-Life	too short	
		417.63		-2.780E+09	2.220E-01	Half-Life	too short	
		546.56		7.881E+08	2.220E-01	Half-Life	too short	
		836.80		1.133E+09	2.220E-01	Half-Life	too short	
		1038.76		-8.502E+08	2.220E-01	Half-Life	too short	
CS-135		1124.00		1.080E+09	2.220E-01	Half-Life	too short	
		1131.51		6.901E+08	2.220E-01	Half-Life	too short	
		1260.41	*	1.124E+08	2.220E-01	Half-Life	too short	
		1457.56		5.730E+10	2.220E-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	2.089E+08	2.220E-01	Half-Life	too short	
		1706.46	2.228E+08	2.220E-01	Half-Life	too short	
		1791.20	-4.142E+08	2.220E-01	Half-Life	too short	
		66.91	-7.640E-01	1.323E+00	2.112E+00	3.632E-01	-0.362
	+	86.29	1.907E+00	1.857E+00	2.619E+00	3.901E-01	0.728
		153.22	-5.426E-01	8.407E-01	1.320E+00	1.053E-01	-0.411
		163.89	5.499E-01	1.369E+00	2.246E+00	1.787E-01	0.245
		176.55	-8.069E-02	4.647E-01	7.419E-01	5.439E-02	-0.109
		273.65	-1.424E+00	7.437E-01	9.396E-01	7.154E-02	-1.515
		340.57	2.814E-01	1.796E-01	2.872E-01	1.937E-02	0.980
		818.51	-7.143E-02	8.301E-02	1.260E-01	9.133E-03	-0.567
		1048.07	* -1.766E-02	1.269E-01	2.050E-01	1.579E-02	-0.086
BA-137M		1235.34	7.351E-01	8.753E-01	1.332E+00	1.378E-01	0.552
		661.65	* 2.925E-02	4.441E-02	7.538E-02	3.792E-03	0.388
		661.65	* 3.092E-02	4.695E-02	7.968E-02	4.031E-03	0.388
CE-137		165.85	* -2.161E-02	4.059E-02	6.390E-02	4.250E-03	-0.338
CE-139		162.64	-9.115E-01	1.004E+00	1.554E+00	1.135E-01	-0.587
BA-140		304.84	-8.493E-01	1.848E+00	2.561E+00	7.046E-01	-0.332
		423.70	-7.418E-01	2.296E+00	3.669E+00	1.165E+00	-0.202
LA-140		537.32	* -2.541E-01	3.223E-01	4.720E-01	1.533E-01	-0.538
		328.77	2.789E-01	3.908E-01	6.716E-01	4.813E-02	0.415
		432.53	9.207E-02	2.556E+00	4.207E+00	2.662E-01	0.022
		487.03	1.760E-01	1.611E-01	2.839E-01	1.836E-02	0.620
		751.79	8.987E-02	2.024E+00	3.393E+00	2.532E-01	0.026
		815.85	-8.055E-02	3.477E-01	5.649E-01	4.723E-02	-0.143
		867.82	-2.019E-01	1.489E+00	2.434E+00	2.073E-01	-0.083
		919.63	-8.959E-01	3.413E+00	5.050E+00	5.285E-01	-0.177
		925.24	-3.083E-01	1.280E+00	2.062E+00	1.838E-01	-0.150
		1596.49	* 2.076E-02	9.257E-02	1.394E-01	9.719E-03	0.149
		145.44	* -9.957E-03	8.140E-02	1.312E-01	9.159E-03	-0.076
CE-141		57.37	1.807E-04	8.140E-02	Half-Life	too short	
CE-143		231.56	7.933E-04	8.140E-02	Half-Life	too short	
		293.26	* 9.037E-04	8.140E-02	Half-Life	too short	
	+	350.59	2.055E-02	8.140E-02	Half-Life	too short	
		490.36	-1.630E-03	8.140E-02	Half-Life	too short	
		664.57	-8.099E-04	8.140E-02	Half-Life	too short	
CE-144		721.93	8.074E-05	8.140E-02	Half-Life	too short	
		80.11	-6.062E+00	4.435E+00	4.825E+00	5.382E-01	-1.256
		133.54	* -1.407E-01	3.051E-01	4.204E-01	6.179E-02	-0.335
PM-144		476.78	-2.136E-02	8.393E-02	1.345E-01	9.223E-03	-0.159
		618.01	-1.442E-02	4.066E-02	6.356E-02	3.594E-03	-0.227
PR-144		696.49	* 1.069E-03	4.442E-02	7.463E-02	4.093E-03	0.014
		778.57	1.616E-01	2.798E+00	4.688E+00	3.111E-01	0.034
		696.49	* 7.241E-02	3.009E+00	5.055E+00	2.770E-01	0.014
		1489.15	-1.288E+01	1.395E+01	1.956E+01	1.427E+00	-0.659
PM-146		453.90	* 2.702E-02	5.595E-02	9.468E-02	8.109E-03	0.285
		633.02	-4.403E-01	1.744E+00	2.732E+00	1.004E+00	-0.161
		735.90	8.662E-02	1.904E-01	3.071E-01	8.576E-02	0.282
		747.13	-3.261E-02	1.079E-01	1.754E-01	2.225E-02	-0.186

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	91.11		5.602E-01	4.700E-01	6.944E-01	7.898E-02	0.807
		319.41		7.907E-01	4.172E+00	7.014E+00	4.652E-01	0.113
		439.89		-1.089E-01	7.282E+00	1.194E+01	6.824E-01	-0.009
		531.02	*	7.905E-02	6.525E-01	1.071E+00	1.439E-01	0.074
PM-149		285.90	*	-1.149E+02	8.946E+01	1.367E+02	2.002E+01	-0.841
EU-152		121.78		-5.730E-02	1.041E-01	1.594E-01	1.390E-02	-0.360
		244.69		9.970E-02	4.781E-01	7.101E-01	4.944E-02	0.140
		344.27	*	-1.463E-01	1.986E-01	2.032E-01	1.432E-02	-0.720
		443.98		2.371E-01	1.269E+00	2.107E+00	1.204E-01	0.113
		778.89		5.563E-02	3.221E-01	5.449E-01	3.616E-02	0.102
		867.32		-1.494E-01	9.552E-01	1.558E+00	1.250E-01	-0.096
	+	964.01		4.886E-01	3.860E-01	7.106E-01	5.730E-02	0.688
		1085.78		-4.499E-02	4.531E-01	7.326E-01	5.019E-02	-0.061
		1112.02		-2.403E-02	4.661E-01	6.473E-01	4.226E-02	-0.037
		1407.95		-2.889E-02	2.265E-01	3.725E-01	2.779E-02	-0.078
GD-153		69.67		6.905E-01	3.058E+00	4.495E+00	5.073E-01	0.154
		83.37		-1.147E+00	2.483E+01	3.553E+01	4.008E+00	-0.032
		97.43	*	8.782E-02	1.177E-01	1.760E-01	1.689E-02	0.499
		103.18		-1.632E-02	1.375E-01	2.241E-01	1.972E-02	-0.073
EU-154		123.07		4.344E-02	7.782E-02	1.145E-01	1.178E-02	0.380
		247.94		-4.827E-04	5.440E-01	7.964E-01	8.194E-02	-0.001
		591.81		3.157E-01	7.639E-01	1.247E+00	1.189E-01	0.253
		723.30		2.072E-01	3.673E-01	3.801E-01	2.705E-02	0.545
		756.87		8.082E-01	9.490E-01	1.687E+00	1.762E-01	0.479
		873.19		-2.724E-01	3.230E-01	4.812E-01	5.724E-02	-0.566
		996.32		-4.293E-01	4.515E-01	6.566E-01	1.141E-01	-0.654
		1004.76		-6.246E-02	2.482E-01	3.967E-01	4.356E-02	-0.157
		1274.45	*	-3.880E-03	1.520E-01	2.453E-01	2.460E-02	-0.016
EU-155		48.70		-2.886E+00	8.633E+00	1.419E+01	1.825E+00	-0.203
		60.01		-3.005E+00	1.038E+01	1.702E+01	2.081E+00	-0.177
	+	86.54		1.857E-01	1.800E-01	2.532E-01	2.920E-02	0.733
		105.31	*	-5.836E-03	1.420E-01	2.320E-01	2.008E-02	-0.025
TB-160	+	86.79		4.914E-01	4.762E-01	6.775E-01	7.780E-02	0.725
		197.04		2.023E-01	7.485E-01	1.191E+00	8.117E-02	0.170
		215.65		9.703E-02	1.065E+00	1.709E+00	1.180E-01	0.057
	+	298.57		2.632E-01	1.935E-01	2.790E-01	1.896E-02	0.943
		879.36	*	1.089E-01	1.594E-01	2.813E-01	2.312E-02	0.387
	+	962.29		8.934E-01	7.059E-01	1.150E+00	9.288E-02	0.777
		966.15		1.428E+00	5.310E-01	7.009E-01	5.640E-02	2.038
		1177.93		-2.489E-01	4.253E-01	6.475E-01	3.721E-02	-0.384
		1271.85		-2.156E-01	8.452E-01	1.326E+00	9.042E-02	-0.163
HO-166M		80.57		-8.976E-01	6.748E-01	6.130E-01	6.847E-02	-1.464
	+	184.41		1.551E-01	7.930E-02	9.543E-02	6.439E-03	1.626
		280.46		1.225E-01	1.181E-01	1.848E-01	1.274E-02	0.663
		410.95		1.730E-01	3.290E-01	5.585E-01	3.182E-02	0.310
		711.68	*	7.005E-03	8.412E-02	1.228E-01	6.980E-03	0.057
		752.31		1.647E-01	3.413E-01	5.920E-01	3.700E-02	0.278
		810.29		-3.826E-02	7.026E-02	1.108E-01	7.880E-03	-0.345
TM-171		51.35		-4.290E+00	9.276E+01	1.542E+02	2.131E+01	-0.028

## ----- 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		8.982E+00	4.518E+01	7.582E+01	1.046E+01	0.118
		59.40		-2.573E+01	5.737E+01	9.346E+01	1.150E+01	-0.275
		66.72	*	-3.158E+01	5.073E+01	8.104E+01	9.319E+00	-0.390
		88.36		3.785E-01	3.739E-01	5.062E-01	5.808E-02	0.748
		201.83		-3.496E-02	3.976E-02	6.092E-02	4.167E-03	-0.574
		306.84	*	-1.759E-02	3.418E-02	5.380E-02	3.625E-03	-0.327
		401.10		-5.566E+00	9.380E+00	1.436E+01	8.161E-01	-0.388
		112.95		-3.812E-01	1.968E+00	3.162E+00	2.475E-01	-0.121
		208.36	*	3.309E+00	1.328E+00	2.338E+00	1.606E-01	1.416
		52.97		1.613E+00	4.432E+00	7.482E+00	1.028E+00	0.216
LU-177	+	54.07		2.241E-01	2.225E+00	3.718E+00	5.040E-01	0.060
		61.30		6.070E-01	3.022E+00	5.005E+00	6.043E-01	0.121
		121.62		-2.663E-01	5.323E-01	8.176E-01	5.891E-02	-0.326
		147.16		-1.335E+00	8.733E-01	1.313E+00	8.880E-02	-1.017
		171.86		6.311E-02	6.529E-01	1.057E+00	7.055E-02	0.060
		218.09		6.282E-01	1.213E+00	1.983E+00	1.370E-01	0.317
		268.79		2.477E+00	1.110E+00	2.014E+00	1.396E-01	1.230
		319.02		-1.599E-02	3.428E-01	5.690E-01	3.775E-02	-0.028
		367.43		-6.564E-01	1.145E+00	1.822E+00	1.104E-01	-0.360
		413.65	*	4.510E-02	2.312E-01	3.852E-01	2.196E-02	0.117
HF-181		56.28		-7.042E-01	2.210E+00	3.623E+00	4.732E-01	-0.194
		57.53		1.946E-01	1.126E+00	1.884E+00	2.403E-01	0.103
		65.20		-1.215E+00	1.694E+00	2.692E+00	3.133E-01	-0.452
		133.02		-7.751E-04	9.117E-02	1.296E-01	8.985E-03	-0.006
		136.25		-2.433E-01	5.837E-01	9.302E-01	6.405E-02	-0.262
		345.85		-1.963E-01	2.840E-01	3.840E-01	2.438E-02	-0.511
		482.03	*	1.810E-03	5.352E-02	8.765E-02	4.990E-03	0.021
		56.28		-2.776E-01	8.745E-01	1.434E+00	1.872E-01	-0.194
		57.53		7.715E-02	4.460E-01	7.463E-01	9.518E-02	0.103
		65.20	*	-4.775E-01	6.654E-01	1.057E+00	1.231E-01	-0.452
W-181		67.75		6.183E-02	1.938E-01	3.140E-01	3.584E-02	0.197
		100.10		-6.744E-02	2.349E-01	3.803E-01	3.498E-02	-0.177
		152.43		1.794E-02	4.503E-01	7.299E-01	4.908E-02	0.025
		222.10		-3.816E-01	4.922E-01	7.542E-01	5.221E-02	-0.506
		1001.68		7.727E-01	2.412E+00	4.129E+00	3.194E-01	0.187
		1121.28		5.733E-01	2.339E-01	4.063E-01	2.605E-02	1.411
		1189.05		1.618E-02	3.603E-01	5.887E-01	3.456E-02	0.027
		1221.42	*	1.006E-01	2.527E-01	4.251E-01	2.651E-02	0.237
		1230.97		1.582E-01	6.969E-01	9.941E-01	6.307E-02	0.159
		57.98		-2.375E-01	4.396E-01	7.126E-01	9.010E-02	-0.333
RE-183		59.32		-1.089E-01	2.344E-01	3.816E-01	4.703E-02	-0.285
		67.20		1.781E-02	3.398E-01	5.639E-01	6.461E-02	0.032
		162.32	*	-9.547E-02	1.527E-01	2.397E-01	1.597E-02	-0.398
		208.81	+	3.272E+00	1.313E+00	2.296E+00	1.578E-01	1.425
		291.72		1.531E+00	1.474E+00	2.283E+00	1.561E-01	0.670
		57.98		-8.804E-01	1.629E+00	2.641E+00	3.340E-01	-0.333
		59.32		-4.035E-01	8.681E-01	1.413E+00	1.742E-01	-0.285
		67.20		6.599E-02	1.259E+00	2.089E+00	2.394E-01	0.032
		161.27		-2.891E-01	4.993E-01	7.858E-01	5.242E-02	-0.368

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		216.55		2.201E-01	3.783E-01	6.204E-01	4.283E-02	0.355
		252.85	*	-1.914E-02	3.131E-01	5.245E-01	3.651E-02	-0.036
		318.01		-1.818E-01	5.953E-01	9.740E-01	6.471E-02	-0.187
		792.07		1.367E+00	1.234E+00	2.228E+00	1.523E-01	0.613
		903.28		-7.171E-02	1.446E+00	2.042E+00	1.737E-01	-0.035
		920.93		-1.455E-01	5.343E-01	8.576E-01	7.192E-02	-0.170
		59.72		-2.548E-01	6.204E-01	1.012E+00	1.241E-01	-0.252
		61.14		2.347E-01	3.244E-01	5.511E-01	6.664E-02	0.426
		69.30		3.056E-01	5.473E-01	8.169E-01	9.239E-02	0.374
		592.07		4.004E-01	3.030E+00	4.955E+00	2.672E-01	0.081
		646.12	*	2.869E-02	5.005E-02	8.480E-02	4.345E-03	0.338
	+	717.42		1.689E+00	1.158E+00	1.792E+00	1.032E-01	0.942
RE-188		874.81		-3.790E-01	6.147E-01	9.451E-01	7.698E-02	-0.401
		880.27		5.045E-01	8.981E-01	1.567E+00	1.291E-01	0.322
	*	155.03		-1.373E-01	2.340E-01	3.686E-01	2.473E-02	-0.372
W-188		477.96		1.919E+00	3.828E+00	6.485E+00	3.695E-01	0.296
		633.10		-8.812E-01	3.475E+00	5.468E+00	2.841E-01	-0.161
		63.58		-1.557E+01	9.906E+01	1.619E+02	1.911E+01	-0.096
IR-192		227.08		7.634E+00	1.692E+01	2.905E+01	2.015E+00	0.263
	*	290.67		1.148E+01	1.060E+01	1.658E+01	1.135E+00	0.692
	+	295.96		1.198E+00	2.326E-01	3.692E-01	2.544E-02	3.246
		308.46		7.742E-02	1.272E-01	2.185E-01	1.482E-02	0.354
AU-195		316.51	*	-6.491E-04	4.498E-02	7.483E-02	5.001E-03	-0.009
		468.07		-1.267E-02	8.622E-02	1.199E-01	7.918E-03	-0.106
		604.41		-1.886E-01	6.787E-01	9.149E-01	1.017E-01	-0.206
		612.46		1.010E+00	1.057E+00	1.615E+00	1.163E-01	0.625
		65.12		-2.362E-01	3.091E-01	4.901E-01	5.708E-02	-0.482
		66.83		-9.965E-02	1.669E-01	2.669E-01	3.067E-02	-0.373
TL-200	+	75.70		1.878E+00	4.062E-01	7.020E-01	7.794E-02	2.676
	*	98.88		1.977E-01	3.090E-01	5.026E-01	4.711E-02	0.393
	+	129.76		3.103E+00	5.339E+00	6.595E+00	4.612E-01	0.471
	*	367.94		4.076E-06	5.339E+00	Half-Life	too short	
TL-201		579.30		4.582E-03	5.339E+00	Half-Life	too short	
		828.27		-6.902E-04	5.339E+00	Half-Life	too short	
		1205.75		5.704E-04	5.339E+00	Half-Life	too short	
		68.90		8.666E+00	7.066E+00	1.082E+01	1.227E+00	0.801
TL-202		70.82		1.642E+00	3.875E+00	5.745E+00	6.450E-01	0.286
		80.30		-1.154E+01	8.322E+00	9.035E+00	1.008E+00	-1.277
		135.34		-5.791E+00	2.558E+01	4.113E+01	2.837E+00	-0.141
	*	167.43		2.857E+00	7.467E+00	1.224E+01	8.147E-01	0.233
HG-203		68.90		9.279E-01	7.565E-01	1.159E+00	1.313E-01	0.801
		70.82		1.753E-01	4.137E-01	6.134E-01	6.887E-02	0.286
		80.30		-1.232E+00	8.889E-01	9.650E-01	1.077E-01	-1.277
	*	439.56		2.521E-02	8.614E-02	1.441E-01	8.236E-03	0.175
BI-207		70.83		7.933E-01	1.872E+00	2.773E+00	4.268E-01	0.286
	+	72.87		5.507E+00	1.777E+00	1.879E+00	2.814E-01	2.931
		82.60		-5.377E-02	1.983E+00	2.654E+00	4.121E-01	-0.020
BI-207	*	279.20		3.860E-02	5.817E-02	8.864E-02	6.384E-03	0.435
	+	72.80		1.639E+00	5.029E-01	5.565E-01	6.206E-02	2.945

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207	+	74.97		9.710E-01	2.979E-01	3.959E-01	4.398E-02	2.453
		84.90		4.693E-01	3.216E-01	4.892E-01	5.560E-02	0.959
		569.67		4.318E-03	3.841E-02	6.279E-02	3.441E-03	0.069
		1063.62	*	-2.654E-02	6.477E-02	1.014E-01	7.207E-03	-0.262
		1770.23		-4.464E-03	5.298E-01	7.422E-01	4.596E-02	-0.006
		81.07		-3.930E-01	5.095E-01	4.927E-01	5.512E-02	-0.798
		83.78		4.169E-02	2.101E-01	3.041E-01	3.437E-02	0.137
		94.90		2.460E-01	3.473E-01	5.175E-01	5.189E-02	0.475
		122.32		-2.155E+00	2.609E+00	3.753E+00	2.972E-01	-0.574
		144.24		9.414E-01	9.228E-01	1.528E+00	1.230E-01	0.616
		154.21		-2.704E-01	5.382E-01	8.510E-01	6.625E-02	-0.318
		269.46		5.668E-01	2.654E-01	4.794E-01	3.429E-02	1.182
		323.87	*	1.042E-01	9.162E-01	1.533E+00	2.576E-01	0.068
	+	338.28		6.613E+00	2.449E+00	3.219E+00	3.508E-01	2.054
PO-209		445.03		2.238E+00	3.016E+00	5.178E+00	5.293E-01	0.432
		260.50		-1.180E+01	1.221E+01	1.942E+01	1.350E+00	-0.608
		262.80		-1.223E+01	3.352E+01	5.515E+01	3.832E+00	-0.222
		896.60	*	-6.591E+00	9.524E+00	1.469E+01	1.251E+00	-0.449
BI-210		46.50	*	7.936E+00	1.471E+01	2.435E+01	2.529E+00	0.326
PB-210		46.50	*	7.936E+00	1.471E+01	2.435E+01	2.529E+00	0.326
PO-210		46.50	*	7.936E+00	1.471E+01	2.435E+01	2.339E+00	0.326
PB-211		404.84	*	-1.131E+00	1.487E+00	2.043E+00	1.273E+00	-0.554
		427.08		-3.776E-01	2.709E+00	4.393E+00	2.715E+00	-0.086
		831.96		4.905E-01	1.436E+00	2.405E+00	1.504E+00	0.204
BI-212	+	727.18	*	1.146E+00	6.964E-01	8.239E-01	6.414E-02	1.391
		785.46		1.407E+00	2.130E+00	3.739E+00	2.518E-01	0.376
PO-215		1620.62		9.670E-01	1.627E+00	2.928E+00	2.014E-01	0.330
		81.07		-3.930E-01	5.095E-01	4.927E-01	5.512E-02	-0.798
		83.78		4.169E-02	2.101E-01	3.041E-01	3.437E-02	0.137
		94.90		2.460E-01	3.473E-01	5.175E-01	5.189E-02	0.475
		122.32		-2.155E+00	2.609E+00	3.753E+00	2.972E-01	-0.574
		144.24		9.414E-01	9.228E-01	1.528E+00	1.230E-01	0.616
		154.21		-2.704E-01	5.382E-01	8.510E-01	6.625E-02	-0.318
		269.46		5.668E-01	2.654E-01	4.794E-01	3.429E-02	1.182
		323.87	*	1.042E-01	9.162E-01	1.533E+00	2.576E-01	0.068
	+	338.28		6.613E+00	2.449E+00	3.219E+00	3.508E-01	2.054
RN-219		445.03		2.238E+00	3.016E+00	5.178E+00	5.293E-01	0.432
		271.23		2.676E-01	3.728E-01	5.904E-01	5.281E-02	0.453
		401.81	*	-1.591E-01	5.474E-01	8.847E-01	1.199E-01	-0.180
RN-220		549.76	*	-1.139E+01	3.183E+01	5.007E+01	2.778E+00	-0.227
RA-223		81.07		-3.930E-01	5.095E-01	4.927E-01	5.512E-02	-0.798
		83.78		4.169E-02	2.101E-01	3.041E-01	3.437E-02	0.137
		94.90		2.460E-01	3.473E-01	5.175E-01	5.189E-02	0.475
		122.32		-2.155E+00	2.609E+00	3.753E+00	2.972E-01	-0.574
		144.24		9.414E-01	9.228E-01	1.528E+00	1.230E-01	0.616
		154.21		-2.704E-01	5.382E-01	8.510E-01	6.625E-02	-0.318
		269.46		5.668E-01	2.654E-01	4.794E-01	3.429E-02	1.182
		323.87	*	1.042E-01	9.162E-01	1.533E+00	2.576E-01	0.068
	+	338.28		6.613E+00	2.449E+00	3.219E+00	3.508E-01	2.054

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		445.03		2.238E+00	3.016E+00	5.178E+00	5.293E-01	0.432
		79.80		-3.276E+00	3.083E+00	3.773E+00	8.539E-01	-0.868
		236.00		4.909E+00	7.414E-01	9.841E-01	1.096E-01	4.989
		256.20	*	5.190E-01	5.167E-01	8.978E-01	1.300E-01	0.578
		286.10		-2.339E+00	2.026E+00	3.145E+00	3.816E-01	-0.743
	+	299.80		3.385E+00	2.541E+00	3.463E+00	5.771E-01	0.977
TH-227		304.40		-2.893E-01	2.737E+00	3.934E+00	6.939E-01	-0.074
		334.20		-1.626E+00	3.684E+00	5.118E+00	9.499E-01	-0.318
		79.80		-3.276E+00	3.085E+00	3.773E+00	8.638E-01	-0.868
		94.00		7.916E+00	3.459E+00	4.823E+00	1.083E+00	1.641
		236.00		4.909E+00	6.958E-01	9.841E-01	9.680E-02	4.989
		256.20	*	5.190E-01	5.190E-01	8.978E-01	1.556E-01	0.578
TH-229		286.10		-2.339E+00	3.085E+00	3.145E+00	3.153E+00	-0.743
	+	299.80		3.385E+00	2.541E+00	3.463E+00	5.771E-01	0.977
		304.40		-2.893E-01	2.737E+00	3.934E+00	6.939E-01	-0.074
		334.20		-1.626E+00	3.684E+00	5.118E+00	9.499E-01	-0.318
	+	85.43		3.459E-01	3.352E-01	4.838E-01	5.514E-02	0.715
	+	88.47		2.179E-01	2.152E-01	2.886E-01	3.303E-02	0.755
PA-231		100.00		-4.677E-03	2.434E-01	3.987E-01	3.673E-02	-0.012
		193.63	*	-2.557E-01	6.941E-01	1.074E+00	7.299E-02	-0.238
		210.97		1.164E+00	1.174E+00	1.738E+00	1.196E-01	0.670
		283.67	*	1.869E-01	2.068E+00	3.167E+00	4.518E-01	0.059
		301.29		1.563E+00	8.550E-01	1.373E+00	1.514E-01	1.138
		81.07		-3.930E-01	5.095E-01	4.927E-01	5.512E-02	-0.798
TH-231		83.78		4.169E-02	2.101E-01	3.041E-01	3.437E-02	0.137
		94.90		2.460E-01	3.473E-01	5.175E-01	5.189E-02	0.475
		122.32		-2.155E+00	2.609E+00	3.753E+00	2.972E-01	-0.574
		144.24		9.414E-01	9.228E-01	1.528E+00	1.230E-01	0.616
		154.21		-2.704E-01	5.382E-01	8.510E-01	6.625E-02	-0.318
		269.46		5.668E-01	2.654E-01	4.794E-01	3.429E-02	1.182
U-231		323.87	*	1.042E-01	9.162E-01	1.533E+00	2.576E-01	0.068
	+	338.28		6.613E+00	2.449E+00	3.219E+00	3.508E-01	2.054
		445.03		2.238E+00	3.016E+00	5.178E+00	5.293E-01	0.432
		84.21		2.822E+00	7.708E+00	1.124E+01	1.273E+00	0.251
	+	92.29		3.830E+00	3.211E+00	4.568E+00	4.814E-01	0.839
		95.87	*	-2.869E-01	1.381E+00	1.964E+00	1.935E-01	-0.146
PA-233		108.00		6.870E-02	2.284E+00	3.740E+00	3.094E-01	0.018
	+	75.28		2.834E+01	9.410E+00	1.163E+01	1.963E+00	2.435
	+	86.59		3.019E+00	3.025E+00	4.127E+00	1.150E+00	0.732
	+	300.12		9.437E-01	7.031E-01	9.650E-01	1.340E-01	0.978
		311.98	*	4.909E-02	8.524E-02	1.462E-01	1.025E-02	0.336
		340.50		1.564E+00	9.886E-01	1.490E+00	3.446E-01	1.050
PA-234		398.62		-1.275E+00	2.922E+00	4.489E+00	1.159E+00	-0.284
		415.76		-2.686E-01	2.082E+00	3.393E+00	6.976E-01	-0.079
		63.00		4.584E-01	2.976E+00	4.917E+00	8.615E-01	0.093
		94.67		2.721E-01	2.536E-01	3.817E-01	5.134E-02	0.713
		98.44		7.538E-02	1.378E-01	2.049E-01	1.146E-01	0.368
		99.86		3.353E-02	6.218E-01	1.022E+00	9.430E-02	0.033
		111.00		-2.329E-01	2.488E-01	3.883E-01	4.524E-02	-0.600



## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		131.20		-2.342E-02	1.572E-01	2.217E-01	1.544E-02	-0.106
		152.70		-5.796E-02	4.350E-01	6.995E-01	1.131E-01	-0.083
	+	186.00		5.584E+00	3.310E+00	3.497E+00	1.075E+00	1.597
		226.40		3.291E-02	5.333E-01	9.016E-01	1.097E-01	0.037
		227.20		2.574E-01	5.771E-01	9.907E-01	6.873E-02	0.260
		248.90		-2.919E-01	1.172E+00	1.765E+00	3.853E-01	-0.165
	+	293.70		7.616E+00	1.867E+00	2.313E+00	3.812E-01	3.293
		369.80		7.818E-01	1.075E+00	1.839E+00	3.840E-01	0.425
		568.70		6.145E-01	1.212E+00	2.045E+00	1.121E-01	0.301
		569.50		1.020E-01	3.370E-01	5.592E-01	3.066E-02	0.182
		574.00		-2.356E-01	1.887E+00	2.938E+00	1.605E-01	-0.080
		699.00		-1.491E-01	9.255E-01	1.533E+00	2.743E-01	-0.097
		706.10		-4.075E-01	1.301E+00	2.107E+00	9.293E-01	-0.193
		733.00		-1.445E-01	4.997E-01	6.922E-01	1.475E-01	-0.209
		742.81		-3.816E-01	1.647E+00	2.664E+00	1.783E+00	-0.143
		796.30		1.220E+00	1.149E+00	1.999E+00	5.307E-01	0.610
		805.60		2.747E-01	1.127E+00	1.913E+00	5.786E-01	0.144
		819.60		-5.062E-01	1.488E+00	2.374E+00	8.958E-01	-0.213
		826.30		-6.881E-01	1.019E+00	1.504E+00	6.694E-01	-0.458
		831.60		1.015E-01	7.563E-01	1.270E+00	3.751E-01	0.080
		876.40		-4.074E-01	1.021E+00	1.470E+00	1.510E+00	-0.277
		880.51		1.883E-01	3.277E-01	5.725E-01	4.717E-02	0.329
		883.24		9.739E-02	3.517E-01	5.876E-01	3.947E-01	0.166
		899.00		-2.477E-01	1.082E+00	1.743E+00	7.616E-01	-0.142
		925.00		-2.345E-01	1.416E+00	2.300E+00	1.922E-01	-0.102
		926.50		1.353E-02	2.156E-01	3.582E-01	9.021E-02	0.038
		946.00	*	-2.213E-01	3.599E-01	5.512E-01	1.024E-01	-0.401
		949.00		2.963E-01	5.095E-01	8.892E-01	7.276E-02	0.333
		980.50		2.820E-03	8.060E-01	1.327E+00	1.052E-01	0.002
		1394.10		2.593E-01	1.332E+00	2.271E+00	1.475E+00	0.114
PA-234M		766.42		2.012E+01	1.773E+01	2.664E+01	1.343E+01	0.755
		1001.03	*	2.842E+00	5.506E+00	9.591E+00	8.839E-01	0.296
TH-234		63.29	*	-4.245E-01	2.542E+00	4.150E+00	8.191E-01	-0.102
	+	92.38		1.188E+00	1.013E+00	1.413E+00	2.694E-01	0.840
U-235	+	89.95		2.187E+00	2.255E+00	2.788E+00	8.817E-01	0.785
	+	93.35		1.428E+00	1.256E+00	1.626E+00	4.651E-01	0.878
		105.00		-6.771E-02	1.394E+00	2.276E+00	6.791E-01	-0.030
		143.76	*	1.625E-01	2.868E-01	4.659E-01	7.774E-02	0.349
		163.35		2.254E-01	6.383E-01	1.044E+00	1.908E-01	0.216
	+	185.71		2.068E-01	1.057E-01	1.296E-01	8.755E-03	1.596
		205.31		3.168E-01	8.300E-01	1.162E+00	2.132E-01	0.273
NP-236		94.67		2.080E-01	1.916E-01	2.897E-01	2.918E-02	0.718
		98.44		5.699E-02	9.933E-02	1.549E-01	1.462E-02	0.368
		111.00		-1.762E-01	1.876E-01	2.937E-01	2.348E-02	-0.600
		160.31	*	2.654E-04	1.132E-01	1.829E-01	1.221E-02	0.001
U-238		63.29	*	-4.245E-01	2.542E+00	4.150E+00	8.191E-01	-0.102
	+	92.38		1.188E+00	9.955E-01	1.413E+00	1.487E-01	0.840
NP-239		99.55		7.457E-02	2.105E-01	3.498E-01	3.245E-02	0.213
		117.00	*	1.354E-01	2.593E-01	4.318E-01	3.246E-02	0.314

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	209.75		2.607E+00	1.047E+00	1.869E+00	1.285E-01	1.395
		228.18		-6.715E-02	3.054E-01	5.100E-01	3.539E-02	-0.132
	+	277.60		3.092E-01	3.710E-01	4.460E-01	3.079E-02	0.693
		334.30		-8.193E-01	2.086E+00	2.918E+00	1.892E-01	-0.281
AM-241		59.54	*	-1.524E-01	3.317E-01	5.400E-01	6.872E-02	-0.282
CM-243		99.55		7.673E-02	2.165E-01	3.599E-01	3.339E-02	0.213
		103.76	*	6.000E-02	1.277E-01	2.130E-01	1.860E-02	0.282
		117.00		1.393E-01	2.667E-01	4.442E-01	3.339E-02	0.314
	+	209.75		2.570E+00	1.032E+00	1.842E+00	1.267E-01	1.395
		228.18		-6.785E-02	3.085E-01	5.153E-01	3.576E-02	-0.132
	+	277.60		3.117E-01	3.740E-01	4.496E-01	3.104E-02	0.693
AM-246		798.80		-2.972E-01	1.733E-01	2.410E-01	1.671E-02	-1.233
		1036.00		1.441E-02	3.515E-01	5.792E-01	4.287E-02	0.025
		1062.04		-8.887E-02	2.766E-01	4.373E-01	3.115E-02	-0.203
		1078.86	*	7.083E-02	1.588E-01	2.728E-01	1.891E-02	0.260
CM-247	+	278.00		1.282E+00	1.538E+00	1.844E+00	1.273E-01	0.695
		287.40		8.047E-01	1.683E+00	2.733E+00	1.875E-01	0.294
		402.60	*	2.292E-02	4.852E-02	8.227E-02	4.678E-03	0.279
CF-249		252.85		-7.210E-02	1.180E+00	1.976E+00	1.376E-01	-0.036
		333.44		-1.530E-02	2.606E-01	3.742E-01	2.429E-02	-0.041
		387.95	*	3.505E-02	5.367E-02	9.196E-02	5.272E-03	0.381
CF-251		176.60	*	-3.261E-02	1.689E-01	2.695E-01	1.806E-02	-0.121
		227.00		2.334E-01	5.129E-01	8.808E-01	6.110E-02	0.265
		285.00		-1.937E+00	2.222E+00	3.532E+00	2.427E-01	-0.549

# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132019      *
* Acquisition date   : 19-JAN-2010 14:20:12 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 02:00:01.16 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G244132019 Analyst initials: MXR1                  *
* Batch Number      : 940270 Sample Quantity : 1.1468E+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	2.258E+00	4.476E-01	0.000E+00
CD-109	1.621E+00	1.569E+00	1.812E+00	0.000E+00
SN-126	1.542E-01	1.465E-01	1.797E-01	0.000E+00
TL-208	6.196E-01	1.083E-01	6.936E-02	0.000E+00
BI-211	4.334E+00	6.246E-01	4.399E-01	0.000E+00
PB-212	1.923E+00	2.132E-01	1.241E-01	0.000E+00
PO-212	1.923E+00	2.132E-01	1.241E-01	0.000E+00
BI-214	1.297E+00	2.131E-01	1.436E-01	0.000E+00
PB-214	1.508E+00	2.305E-01	1.465E-01	0.000E+00
PO-214	1.508E+00	2.305E-01	1.465E-01	0.000E+00
PO-216	1.923E+00	2.132E-01	1.241E-01	0.000E+00
PO-218	1.508E+00	2.305E-01	1.465E-01	0.000E+00
RA-224	5.093E+00	1.652E+00	1.412E+00	0.000E+00
RA-226	1.297E+00	2.131E-01	1.436E-01	0.000E+00
AC-228	1.599E+00	3.902E-01	2.536E-01	0.000E+00
RA-228	1.599E+00	3.902E-01	2.536E-01	0.000E+00
TH-228	1.950E+00	2.162E-01	1.259E-01	0.000E+00
TH-230	1.297E+00	2.131E-01	1.436E-01	0.000E+00
TH-232	1.599E+00	3.902E-01	2.536E-01	0.000E+00
U-234	1.297E+00	2.131E-01	1.436E-01	0.000E+00
NP-237	4.529E-01	4.398E-01	5.380E-01	0.000E+00
AM-243	5.410E-01	1.627E-01	1.400E-01	0.000E+00
ANH-511	1.084E-01	8.160E-02	5.491E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	6.258E-02	3.912E-01	6.643E-01	0.000E+00 NOT IDENT.
NA-22	-1.919E-03	5.323E-02	8.735E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.996E+05	0.000E+00	0.000E+00 SHORT HLIF
AL-26	7.573E-03	3.129E-02	5.503E-02	0.000E+00 NOT IDENT.

TI-44	0.000E+00	6.611E-02	1.062E-01	0.000E+00	NOT IDENT.
SC-46	-1.219E-02	4.530E-02	7.450E-02	0.000E+00	FAIL ABUN
V-48	-2.109E-02	7.458E-02	1.212E-01	0.000E+00	NOT IDENT.
CR-51	6.747E-02	4.780E-01	8.260E-01	0.000E+00	NOT IDENT.
MN-52	2.027E-02	2.290E-01	3.936E-01	0.000E+00	NOT IDENT.
MN-54	-2.335E-02	4.617E-02	7.500E-02	0.000E+00	NOT IDENT.
CO-56	-4.657E-02	4.587E-02	6.994E-02	0.000E+00	FAIL ABUN
CO-57	-3.019E-02	3.690E-02	5.533E-02	0.000E+00	NOT IDENT.
CO-58	-9.344E-03	4.480E-02	7.471E-02	0.000E+00	NOT IDENT.
FE-59	-6.176E-02	1.035E-01	1.609E-01	0.000E+00	NOT IDENT.
CO-60	8.473E-03	4.573E-02	7.697E-02	0.000E+00	NOT IDENT.
ZN-65	3.342E-02	1.217E-01	1.804E-01	0.000E+00	NOT IDENT.
GE-68	1.367E+00	1.390E+00	2.554E+00	0.000E+00	NOT IDENT.
AS-73	5.943E-01	2.161E+00	3.810E+00	0.000E+00	NOT IDENT.
AS-74	-4.579E-02	1.122E-01	1.746E-01	0.000E+00	NOT IDENT.
SE-75	-7.439E-02	5.684E-02	9.170E-02	0.000E+00	NOT IDENT.
BR-77	-7.988E-02	8.954E+00	1.494E+01	0.000E+00	FAIL ABUN
SR-82	-2.975E-01	4.519E-01	7.271E-01	0.000E+00	NOT IDENT.
RB-83	-6.392E-03	7.914E-02	1.313E-01	0.000E+00	NOT IDENT.
RB-84	4.434E-02	7.813E-02	1.392E-01	0.000E+00	NOT IDENT.
KR-85	1.353E+01	9.358E+00	1.547E+01	0.000E+00	NOT IDENT.
SR-85	6.863E-02	4.747E-02	7.848E-02	0.000E+00	NOT IDENT.
RB-86	3.750E-01	8.843E-01	1.539E+00	0.000E+00	NOT IDENT.
Y-88	2.418E-03	3.715E-02	6.276E-02	0.000E+00	NOT IDENT.
ZR-88	-2.868E-02	3.943E-02	6.380E-02	0.000E+00	NOT IDENT.
Y-91	-8.230E+00	2.419E+01	3.876E+01	0.000E+00	NOT IDENT.
NB-94	6.784E-03	4.084E-02	7.091E-02	0.000E+00	NOT IDENT.
NB-95	7.205E-02	5.287E-02	9.849E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.809E-01	4.661E-01	0.000E+00	NOT IDENT.
ZR-95	6.801E-02	8.447E-02	1.532E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	4.312E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.055E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-2.903E+00	1.054E+01	1.760E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.020E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	7.475E-03	4.359E-02	7.145E-02	0.000E+00	NOT IDENT.
RH-102	-1.708E-02	3.545E-02	5.733E-02	0.000E+00	NOT IDENT.
RU-103	1.680E-02	4.931E-02	8.460E-02	0.000E+00	NOT IDENT.
RH-106	-5.207E-03	3.913E-01	6.457E-01	0.000E+00	NOT IDENT.
RU-106	-5.207E-03	3.913E-01	6.457E-01	0.000E+00	NOT IDENT.
AG-108M	-2.397E-02	4.237E-02	6.874E-02	0.000E+00	NOT IDENT.
AG-110M	1.858E-02	4.203E-02	7.181E-02	0.000E+00	NOT IDENT.
IN-111	1.454E-01	1.192E+00	1.818E+00	0.000E+00	NOT IDENT.
IN-113M	-2.297E-02	5.686E-02	9.406E-02	0.000E+00	NOT IDENT.
SN-113	-2.297E-02	5.686E-02	9.406E-02	0.000E+00	NOT IDENT.
IN-114M	1.778E-01	2.624E-01	3.969E-01	0.000E+00	NOT IDENT.
CD-115	-7.033E+00	9.737E+00	1.528E+01	0.000E+00	NOT IDENT.
SN-117M	8.004E-02	7.152E-02	1.250E-01	0.000E+00	NOT IDENT.
SB-122	6.589E-01	1.902E+00	3.249E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.161E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	3.499E-02	3.862E-02	6.703E-02	0.000E+00	NOT IDENT.
I-124	3.472E-01	8.042E-01	1.202E+00	0.000E+00	FAIL ABUN
SB-124	-3.572E-02	9.305E-02	1.514E-01	0.000E+00	FAIL ABUN
SB-125	4.107E-02	1.171E-01	2.023E-01	0.000E+00	FAIL ABUN
TE-125M	3.562E+00	1.169E+01	2.014E+01	0.000E+00	NOT IDENT.
I-126	-5.322E-02	2.014E-01	3.231E-01	0.000E+00	NOT IDENT.
SB-126	1.183E-01	2.861E-01	2.932E-01	0.000E+00	FAIL ABUN
SB-127	-9.496E-01	1.389E+00	2.255E+00	0.000E+00	NOT IDENT.
XE-127	-4.377E-02	6.527E-02	1.017E-01	0.000E+00	NOT IDENT.
I-131	-1.362E-01	1.338E-01	2.129E-01	0.000E+00	NOT IDENT.
TE-132	-1.590E-01	7.371E-01	1.273E+00	0.000E+00	NOT IDENT.
BA-133	-2.744E-02	6.452E-02	9.196E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.202E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.338E-02	5.638E-02	1.064E-01	0.000E+00	NOT IDENT.
CS-135	3.348E-01	2.175E-01	3.977E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.368E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.766E-02	1.243E-01	2.048E-01	0.000E+00	FAIL ABUN
BA-137M	2.925E-02	4.352E-02	7.564E-02	0.000E+00	NOT IDENT.
CS-137	3.092E-02	4.601E-02	7.996E-02	0.000E+00	NOT IDENT.
CE-139	-2.161E-02	3.978E-02	6.495E-02	0.000E+00	NOT IDENT.
BA-140	-2.541E-01	3.158E-01	4.745E-01	0.000E+00	NOT IDENT.
LA-140	2.076E-02	9.072E-02	1.387E-01	0.000E+00	NOT IDENT.
CE-141	-9.957E-03	7.977E-02	1.335E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.525E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.407E-01	2.990E-01	4.282E-01	0.000E+00	NOT IDENT.
PM-144	1.069E-03	4.353E-02	7.485E-02	0.000E+00	NOT IDENT.
PR-144	7.241E-02	2.948E+00	5.070E+00	0.000E+00	NOT IDENT.
PM-146	2.702E-02	5.484E-02	9.535E-02	0.000E+00	NOT IDENT.
ND-147	7.905E-02	6.394E-01	1.077E+00	0.000E+00	FAIL ABUN

PM-149	-1.149E+02	8.767E+01	1.383E+02	0.000E+00	NOT IDENT.
EU-152	-1.463E-01	1.947E-01	2.052E-01	0.000E+00	FAIL ABUN
GD-153	8.782E-02	1.153E-01	1.798E-01	0.000E+00	NOT IDENT.
EU-154	-3.880E-03	1.489E-01	2.446E-01	0.000E+00	NOT IDENT.
EU-155	-5.836E-03	1.391E-01	2.368E-01	0.000E+00	FAIL ABUN
TB-160	1.089E-01	1.562E-01	2.815E-01	0.000E+00	FAIL ABUN
HO-166M	7.005E-03	8.244E-02	1.231E-01	0.000E+00	FAIL ABUN
TM-171	-3.158E+01	4.972E+01	8.306E+01	0.000E+00	NOT IDENT.
LU-176	-1.759E-02	3.349E-02	5.438E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.302E+00	2.371E+00	0.000E+00	FAIL ABUN
LU-177M	4.510E-02	2.266E-01	3.882E-01	0.000E+00	NOT IDENT.
HF-181	1.810E-03	5.245E-02	8.822E-02	0.000E+00	NOT IDENT.
W-181	-4.775E-01	6.520E-01	1.084E+00	0.000E+00	NOT IDENT.
TA-182	1.006E-01	2.476E-01	4.241E-01	0.000E+00	NOT IDENT.
RE-183	-9.547E-02	1.496E-01	2.437E-01	0.000E+00	FAIL ABUN
RE-184	-1.914E-02	3.069E-01	5.310E-01	0.000E+00	NOT IDENT.
OS-185	2.869E-02	4.905E-02	8.511E-02	0.000E+00	FAIL ABUN
RE-188	-1.373E-01	2.293E-01	3.749E-01	0.000E+00	NOT IDENT.
W-188	1.148E+01	1.039E+01	1.677E+01	0.000E+00	NOT IDENT.
IR-192	-6.491E-04	4.408E-02	7.561E-02	0.000E+00	FAIL ABUN
AU-195	1.977E-01	3.028E-01	5.133E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.917E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	2.857E+00	7.317E+00	1.244E+01	0.000E+00	NOT IDENT.
TL-202	2.521E-02	8.442E-02	1.452E-01	0.000E+00	NOT IDENT.
HG-203	3.860E-02	5.701E-02	8.967E-02	0.000E+00	FAIL ABUN
BI-207	-2.654E-02	6.348E-02	1.013E-01	0.000E+00	FAIL ABUN
TL-207	1.042E-01	8.979E-01	1.548E+00	0.000E+00	FAIL ABUN
PO-209	-6.591E+00	9.334E+00	1.470E+01	0.000E+00	NOT IDENT.
BI-210	7.936E+00	1.442E+01	2.504E+01	0.000E+00	NOT IDENT.
PB-210	7.936E+00	1.442E+01	2.504E+01	0.000E+00	NOT IDENT.
PO-210	7.936E+00	1.441E+01	2.504E+01	0.000E+00	NOT IDENT.
PB-211	-1.131E+00	1.457E+00	2.059E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.825E-01	8.260E-01	0.000E+00	FAIL ABUN
PO-215	1.042E-01	8.979E-01	1.548E+00	0.000E+00	FAIL ABUN
RN-219	-1.591E-01	5.365E-01	8.919E-01	0.000E+00	NOT IDENT.
RN-220	-1.139E+01	3.120E+01	5.033E+01	0.000E+00	NOT IDENT.
RA-223	1.042E-01	8.979E-01	1.548E+00	0.000E+00	FAIL ABUN
AC-227	5.190E-01	5.064E-01	9.090E-01	0.000E+00	FAIL ABUN
TH-227	5.190E-01	5.087E-01	9.090E-01	0.000E+00	FAIL ABUN
TH-229	-2.557E-01	6.803E-01	1.090E+00	0.000E+00	FAIL ABUN
PA-231	1.869E-01	2.026E+00	3.203E+00	0.000E+00	NOT IDENT.
TH-231	1.042E-01	8.979E-01	1.548E+00	0.000E+00	FAIL ABUN
U-231	-2.869E-01	1.354E+00	2.006E+00	0.000E+00	FAIL ABUN
PA-233	4.909E-02	8.354E-02	1.478E-01	0.000E+00	FAIL ABUN
PA-234	-2.213E-01	3.527E-01	5.513E-01	0.000E+00	FAIL ABUN
PA-234M	2.842E+00	5.396E+00	9.586E+00	0.000E+00	NOT IDENT.
TH-234	-4.245E-01	2.491E+00	4.256E+00	0.000E+00	FAIL ABUN
U-235	1.625E-01	2.810E-01	4.742E-01	0.000E+00	FAIL ABUN
NP-236	2.654E-04	1.110E-01	1.860E-01	0.000E+00	NOT IDENT.
U-238	-4.245E-01	2.491E+00	4.256E+00	0.000E+00	FAIL ABUN
NP-239	1.354E-01	2.541E-01	4.403E-01	0.000E+00	FAIL ABUN
AM-241	-1.524E-01	3.251E-01	5.541E-01	0.000E+00	NOT IDENT.
CM-243	6.000E-02	1.251E-01	2.175E-01	0.000E+00	FAIL ABUN
AM-246	7.083E-02	1.557E-01	2.725E-01	0.000E+00	NOT IDENT.
CM-247	2.292E-02	4.755E-02	8.294E-02	0.000E+00	FAIL ABUN
CF-249	3.505E-02	5.259E-02	9.274E-02	0.000E+00	NOT IDENT.
CF-251	-3.261E-02	1.656E-01	2.738E-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]G244132019.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 14:20:12
Sample ID          : G244132019           Sample quantity  : 1.14680E+02 GRAM
Detector name      : GAM15                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time: 0 02:00:01.16  0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials  : MXR1
Abundance limit    : 75.00000              Sensitivity       : 5.00000
Batch ID           : 940270                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	667	10.67*	9.991E-01	2.048E+01	2.048E+01	11.25
CD-109	88.03	83	3.72*	4.604E+00	1.587E+00	1.621E+00	98.78
SN-126	64.28	-----	9.60	1.930E+00	-----	Line Not Found	-----
	86.94	77	8.90	4.420E+00	6.412E-01	6.412E-01	105.01
	87.57	77	37.00*	4.420E+00	1.542E-01	1.542E-01	96.91
TL-208	277.35	50	6.80	3.788E+00	6.411E-01	6.411E-01	120.32
	510.84	82	21.60	2.462E+00	5.018E-01	5.018E-01	77.27
	583.14	355	84.20*	2.230E+00	6.196E-01	6.196E-01	17.83
	860.37	-----	12.46	1.613E+00	-----	Line Not Found	-----
BI-211	72.87	344	1.27	3.157E+00	2.811E+01	2.811E+01	30.69
	351.07	550	12.94*	3.207E+00	4.334E+00	4.334E+00	14.70
PB-212	74.81	344	10.70	3.157E+00	3.337E+00	3.337E+00	32.08
	77.11	401	18.00	3.415E+00	2.136E+00	2.136E+00	21.63
	87.30	77	8.00	4.420E+00	7.133E-01	7.133E-01	97.42
	238.63	1106	44.60*	4.221E+00	1.923E+00	1.923E+00	11.31
	300.09	68	3.41	3.586E+00	1.826E+00	1.826E+00	73.75
PO-212	74.81	344	10.70	3.157E+00	3.337E+00	3.337E+00	32.08
	77.11	401	18.00	3.415E+00	2.136E+00	2.136E+00	21.63
	87.30	77	8.00	4.420E+00	7.133E-01	7.133E-01	97.42
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	1106	44.60*	4.221E+00	1.923E+00	1.923E+00	11.31
	300.09	68	3.41	3.586E+00	1.826E+00	1.826E+00	73.75
BI-214	609.31	396	46.30*	2.157E+00	1.297E+00	1.297E+00	16.77
	1120.29	70	15.10	1.264E+00	1.192E+00	1.192E+00	55.06
	1764.49	74	15.80	8.817E-01	1.741E+00	1.741E+00	30.33
PB-214	74.81	344	6.21	3.157E+00	5.749E+00	5.749E+00	31.57
	77.11	401	10.50	3.415E+00	3.662E+00	3.662E+00	22.93
	87.30	77	4.67	4.420E+00	1.222E+00	1.222E+00	97.21
	241.98	257	7.49	4.184E+00	2.686E+00	2.686E+00	33.57
	295.21	338	19.20	3.629E+00	1.587E+00	1.587E+00	20.37
	351.92	550	37.20*	3.207E+00	1.508E+00	1.508E+00	15.60
PO-214	74.81	344	6.21	3.157E+00	5.749E+00	5.749E+00	31.57

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-216	77.11	401	10.50	3.415E+00	3.662E+00	3.662E+00	22.93
	87.30	77	4.67	4.420E+00	1.222E+00	1.222E+00	97.21
	241.98	257	7.49	4.184E+00	2.686E+00	2.686E+00	33.57
	295.21	338	19.20	3.629E+00	1.587E+00	1.587E+00	20.37
	351.92	550	37.20*	3.207E+00	1.508E+00	1.508E+00	15.60
	74.81	344	10.70	3.157E+00	3.337E+00	3.337E+00	32.08
	77.11	401	18.00	3.415E+00	2.136E+00	2.136E+00	21.63
	87.30	77	8.00	4.420E+00	7.133E-01	7.133E-01	97.42
	238.63	1106	44.60*	4.221E+00	1.923E+00	1.923E+00	11.31
	300.09	68	3.41	3.586E+00	1.826E+00	1.826E+00	73.75
PO-218	74.81	344	6.21	3.157E+00	5.749E+00	5.749E+00	31.57
	77.11	401	10.50	3.415E+00	3.662E+00	3.662E+00	22.93
	87.30	77	4.67	4.420E+00	1.222E+00	1.222E+00	97.21
	241.98	257	7.49	4.184E+00	2.686E+00	2.686E+00	33.57
	295.21	338	19.20	3.629E+00	1.587E+00	1.587E+00	20.37
RA-224	351.92	550	37.20*	3.207E+00	1.508E+00	1.508E+00	15.60
	240.98	257	3.95*	4.184E+00	5.093E+00	5.093E+00	33.09
RA-226	609.31	396	46.30*	2.157E+00	1.297E+00	1.297E+00	16.77
	1120.29	70	15.10	1.264E+00	1.192E+00	1.192E+00	55.06
AC-228	1764.49	74	15.80	8.817E-01	1.741E+00	1.741E+00	30.33
	338.32	182	11.40	3.298E+00	1.584E+00	1.584E+00	54.06
	911.07	207	27.70*	1.532E+00	1.599E+00	1.599E+00	24.91
	969.11	153	16.60	1.447E+00	2.089E+00	2.089E+00	34.35
RA-228	338.32	182	11.40	3.298E+00	1.584E+00	1.584E+00	54.06
	911.07	207	27.70*	1.532E+00	1.599E+00	1.599E+00	24.91
TH-228	969.11	153	16.60	1.447E+00	2.089E+00	2.089E+00	34.35
	74.81	344	10.70	3.157E+00	3.337E+00	3.384E+00	30.71
	77.11	401	18.00	3.415E+00	2.136E+00	2.167E+00	21.63
	87.30	77	8.00	4.420E+00	7.133E-01	7.234E-01	96.91
TH-230	238.63	1106	44.60*	4.221E+00	1.923E+00	1.950E+00	11.31
	300.09	68	3.41	3.586E+00	1.826E+00	1.852E+00	94.04
	609.31	396	46.30*	2.157E+00	1.297E+00	1.297E+00	16.77
	1120.29	70	15.10	1.264E+00	1.192E+00	1.192E+00	55.06
TH-232	1764.49	74	15.80	8.817E-01	1.741E+00	1.741E+00	30.33
	338.32	182	11.40	3.298E+00	1.584E+00	1.584E+00	35.98
	911.07	207	27.70*	1.532E+00	1.599E+00	1.599E+00	24.91
U-234	969.11	153	16.60	1.447E+00	2.089E+00	2.089E+00	34.35
	609.31	396	46.30*	2.157E+00	1.297E+00	1.297E+00	16.77
	1120.29	70	15.10	1.264E+00	1.192E+00	1.192E+00	55.06
	1764.49	74	15.80	8.817E-01	1.741E+00	1.741E+00	30.33
NP-237	86.50	77	12.60*	4.420E+00	4.529E-01	4.529E-01	99.08
	95.87	-----	2.60	5.041E+00	-----	Line Not Found	-----
AM-243	74.67	344	66.00*	3.157E+00	5.409E-01	5.410E-01	30.69
	86.72	77	0.34	4.420E+00	1.698E+01	1.698E+01	96.91
	117.66	-----	0.55	5.694E+00	-----	Line Not Found	-----
ANH-511	142.18	-----	0.13	5.637E+00	-----	Line Not Found	-----
	511.00	82	100.00*	2.462E+00	1.084E-01	1.084E-01	76.82

Flag: "\*" = Keyline

Total number of lines in spectrum 31  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 29 93.55%

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	0.230E+01	11.25	
CD-109	464.00D	1.02	1.587E+00	1.621E+00	1.601E+00	98.78	
SN-126	1.00E+05Y	1.00	1.542E-01	1.542E-01	1.495E-01	96.91	
TL-208	1.41E+10Y	1.00	6.196E-01	6.196E-01	1.105E-01	17.83	
BI-211	7.04E+08Y	1.00	4.334E+00	4.334E+00	0.637E+00	14.70	
PB-212	1.41E+10Y	1.00	1.923E+00	1.923E+00	0.218E+00	11.31	
PO-212	1.41E+10Y	1.00	1.923E+00	1.923E+00	0.218E+00	11.31	
BI-214	1600.00Y	1.00	1.297E+00	1.297E+00	0.217E+00	16.77	
PB-214	1600.00Y	1.00	1.508E+00	1.508E+00	0.235E+00	15.60	
PO-214	1600.00Y	1.00	1.508E+00	1.508E+00	0.235E+00	15.60	
PO-216	1.41E+10Y	1.00	1.923E+00	1.923E+00	0.218E+00	11.31	
PO-218	1600.00Y	1.00	1.508E+00	1.508E+00	0.235E+00	15.60	
RA-224	1.41E+10Y	1.00	5.093E+00	5.093E+00	1.686E+00	33.09	
RA-226	1600.00Y	1.00	1.297E+00	1.297E+00	0.217E+00	16.77	
AC-228	1.41E+10Y	1.00	1.599E+00	1.599E+00	0.398E+00	24.91	
RA-228	1.41E+10Y	1.00	1.599E+00	1.599E+00	0.398E+00	24.91	
TH-228	1.91Y	1.01	1.923E+00	1.950E+00	0.221E+00	11.31	
TH-230	4.47E+09Y	1.00	1.297E+00	1.297E+00	0.217E+00	16.77	
TH-232	1.41E+10Y	1.00	1.599E+00	1.599E+00	0.398E+00	24.91	
U-234	4.47E+09Y	1.00	1.297E+00	1.297E+00	0.217E+00	16.77	
NP-237	2.14E+06Y	1.00	4.529E-01	4.529E-01	4.487E-01	99.08	
AM-243	7380.00Y	1.00	5.409E-01	5.410E-01	1.660E-01	30.69	
ANH-511	1.00E+09Y	1.00	1.084E-01	1.084E-01	0.833E-01	76.82	
Total Activity :			5.557E+01	5.563E+01			

Grand Total Activity : 5.557E+01 5.563E+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
1	92.20	95	355	1.33	184.88	168	23	1.31E-02	83.2	4.82E+00	T
0	129.57	42	355	1.36	259.57	252	10	5.79E-03	****	5.73E+00	T
0	185.48	170	384	1.34	371.34	366	12	2.36E-02	50.7	4.98E+00	T
0	208.76	119	158	1.25	417.90	415	7	1.66E-02	39.5	4.62E+00	T
0	462.78	88	96	1.62	925.72	920	13	1.22E-02	51.3	2.64E+00	T
0	718.43	36	30	1.65	1436.86	1431	11	4.97E-03	68.3	1.89E+00	T
0	727.46	77	82	2.10	1454.91	1447	16	1.07E-02	60.3	1.87E+00	T
0	963.75	31	38	0.86	1927.39	1921	10	4.33E-03	78.6	1.45E+00	T
0	1237.84	74	51	2.72	2475.47	2466	23	1.03E-02	56.2	1.15E+00	T
0	1376.96	46	18	1.94	2753.66	2744	18	6.44E-03	52.0	1.05E+00	T
0	1589.12	47	11	5.00	3177.96	3166	22	6.54E-03	46.2	9.38E-01	
0	1728.92	28	3	1.94	3457.54	3450	13	3.92E-03	45.7	8.91E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132019.CNF;1
* Acquisition date   : 19-JAN-2010 14:20:12  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 02:00:01.16          Half life ratio    : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244132019            Analyst initials: MXR1
* Batch Number       : 940270                Sample Quantity  : 1.14680E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 16-FEB-2009 10:54:12.9MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.048E+01	2.305E+00	4.494E-01	3.435E-02	45.578
CD-109	1.621E+00	1.601E+00	1.772E+00	2.049E-01	0.915
SN-126	1.542E-01	1.495E-01	1.758E-01	2.028E-02	0.877
TL-208	6.196E-01	1.105E-01	6.904E-02	4.395E-03	8.975
BI-211	4.334E+00	6.373E-01	4.358E-01	2.994E-02	9.947
PB-212	1.923E+00	2.176E-01	1.225E-01	1.014E-02	15.698
PO-212	1.923E+00	2.176E-01	1.225E-01	1.014E-02	15.698
BI-214	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070
PB-214	1.508E+00	2.352E-01	1.451E-01	1.251E-02	10.389
PO-214	1.508E+00	2.352E-01	1.451E-01	1.251E-02	10.389
PO-216	1.923E+00	2.176E-01	1.225E-01	1.014E-02	15.698
PO-218	1.508E+00	2.352E-01	1.451E-01	1.251E-02	10.389
RA-224	5.093E+00	1.686E+00	1.394E+00	9.702E-02	3.654
RA-226	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070
AC-228	1.599E+00	3.981E-01	2.535E-01	2.819E-02	6.305
RA-228	1.599E+00	3.981E-01	2.535E-01	2.819E-02	6.305
TH-228	1.950E+00	2.206E-01	1.242E-01	1.028E-02	15.698
TH-230	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.599E+00	3.981E-01	2.535E-01	2.819E-02	6.305
U-234	1.297E+00	2.175E-01	1.430E-01	1.061E-02	9.070
NP-237	4.529E-01	4.487E-01	5.261E-01	1.242E-01	0.861
AM-243	5.410E-01	1.660E-01	1.367E-01	1.519E-02	3.957
ANH-511	1.084E-01	8.327E-02	5.459E-02	3.082E-03	1.986

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	6.258E-02		3.992E-01	6.600E-01	4.398E-02	0.095
NA-22	-1.919E-03		5.432E-02	8.759E-02	6.011E-03	-0.022
NA-24	-1.323E-03		1.529E-01	Half-Life too short		
AL-26	7.573E-03		3.193E-02	5.537E-02	3.313E-03	0.137
TI-44	2.078E-01		6.746E-02	1.037E-01	1.153E-02	2.004
SC-46	-1.219E-02		4.622E-02	7.446E-02	6.245E-03	-0.164
V-48	-2.109E-02		7.610E-02	1.213E-01	9.581E-03	-0.174
CR-51	6.747E-02		4.877E-01	8.176E-01	5.896E-02	0.083
MN-52	2.027E-02		2.336E-01	3.952E-01	2.930E-02	0.051
MN-54	-2.335E-02		4.711E-02	7.491E-02	5.614E-03	-0.312
CO-56	-4.657E-02		4.681E-02	6.986E-02	5.369E-03	-0.667
CO-57	-3.019E-02		3.766E-02	5.428E-02	3.903E-03	-0.556
CO-58	-9.344E-03		4.572E-02	7.460E-02	5.329E-03	-0.125
FE-59	-6.176E-02		1.057E-01	1.612E-01	1.220E-02	-0.383
CO-60	8.473E-03		4.666E-02	7.722E-02	5.828E-03	0.110
ZN-65	3.342E-02		1.242E-01	1.807E-01	1.174E-02	0.185
GE-68	1.367E+00		1.419E+00	2.557E+00	1.777E-01	0.535
AS-73	5.943E-01		2.205E+00	3.710E+00	5.070E-01	0.160
AS-74	-4.579E-02		1.145E-01	1.739E-01	9.347E-03	-0.263
SE-75	-7.439E-02		5.800E-02	9.061E-02	6.337E-03	-0.821
BR-77	-7.988E-02		9.136E+00	1.486E+01	8.358E-01	-0.005
SR-82	-2.975E-01		4.611E-01	7.257E-01	4.790E-02	-0.410
RB-83	-6.392E-03		8.076E-02	1.305E-01	7.345E-03	-0.049
RB-84	4.434E-02		7.973E-02	1.391E-01	1.148E-02	0.319
KR-85	1.353E+01		9.549E+00	1.538E+01	8.676E-01	0.880
SR-85	6.863E-02		4.844E-02	7.802E-02	4.401E-03	0.880
RB-86	3.750E-01		9.023E-01	1.541E+00	1.072E-01	0.243
Y-88	2.418E-03		3.791E-02	6.315E-02	3.689E-03	0.038
ZR-88	-2.868E-02		4.023E-02	6.327E-02	3.588E-03	-0.453
Y-91	-8.230E+00		2.469E+01	3.884E+01	2.349E+00	-0.212
NB-94	6.784E-03		4.167E-02	7.071E-02	3.933E-03	0.096
NB-95	7.205E-02		5.395E-02	9.829E-02	6.334E-03	0.733
NB-95M	1.739E+00		2.866E-01	4.600E-01	3.887E-02	3.781
ZR-95	6.801E-02		8.619E-02	1.529E-01	1.140E-02	0.445
NB-97	1.959E-02		2.200E-02	Half-Life too short		
ZR-97	3.910E+00		5.384E-01	Half-Life too short		
MO-99	-2.903E+00		1.076E+01	1.756E+01	2.440E+00	-0.165
TC-99M	-1.566E+09		1.541E+09	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-101	7.475E-03		4.447E-02	7.041E-02	4.803E-03	0.106
RH-102	-1.708E-02		3.618E-02	5.696E-02	3.247E-03	-0.300
RU-103	1.680E-02		5.032E-02	8.409E-02	1.058E-02	0.200
RH-106	-5.207E-03		3.993E-01	6.431E-01	7.381E-02	-0.008
RU-106	-5.207E-03		3.993E-01	6.431E-01	3.379E-02	-0.008
AG-108M	-2.397E-02		4.324E-02	6.823E-02	4.243E-03	-0.351
AG-110M	1.858E-02		4.288E-02	7.156E-02	3.922E-03	0.260
IN-111	1.454E-01		1.216E+00	1.795E+00	1.250E-01	0.081
IN-113M	-2.297E-02		5.802E-02	9.328E-02	5.658E-03	-0.246
SN-113	-2.297E-02		5.802E-02	9.328E-02	5.658E-03	-0.246
IN-114M	1.778E-01		2.677E-01	3.910E-01	2.651E-02	0.455
CD-115	-7.033E+00		9.936E+00	1.520E+01	8.525E-01	-0.463
SN-117M	8.004E-02		7.298E-02	1.230E-01	8.221E-03	0.651
SB-122	6.589E-01		1.941E+00	3.233E+00	1.779E-01	0.204
I-123	1.958E+00		1.102E+00	Half-Life	too short	
TE-123M	3.499E-02		3.941E-02	6.592E-02	4.450E-03	0.531
I-124	3.472E-01		8.206E-01	1.197E+00	6.400E-02	0.290
SB-124	-3.572E-02		9.495E-02	1.522E-01	1.069E-02	-0.235
SB-125	4.107E-02		1.195E-01	2.007E-01	1.196E-02	0.205
TE-125M	3.562E+00		1.193E+01	1.973E+01	1.961E+00	0.180
I-126	-5.322E-02		2.055E-01	3.220E-01	1.639E-02	-0.165
SB-126	1.183E-01		2.919E-01	2.924E-01	1.697E-02	0.405
SB-127	-9.496E-01		1.417E+00	2.248E+00	1.975E-01	-0.422
XE-127	-4.377E-02		6.660E-02	1.002E-01	6.860E-03	-0.437
I-131	-1.362E-01		1.366E-01	2.110E-01	1.421E-02	-0.646
TE-132	-1.590E-01		7.521E-01	1.256E+00	1.843E-01	-0.127
BA-133	-2.744E-02		6.584E-02	9.112E-02	1.073E-02	-0.301
I-133	-1.427E-03		1.634E-03	Half-Life	too short	
CS-134	8.338E-02		5.753E-02	1.062E-01	7.400E-03	0.785
CS-135	3.348E-01		2.220E-01	3.930E-01	3.360E-02	0.852
I-135	1.124E+08		2.739E+08	Half-Life	too short	
CS-136	-1.766E-02		1.269E-01	2.050E-01	1.579E-02	-0.086
BA-137M	2.925E-02		4.441E-02	7.538E-02	3.792E-03	0.388
CS-137	3.092E-02		4.695E-02	7.968E-02	4.031E-03	0.388
CE-139	-2.161E-02		4.059E-02	6.390E-02	4.250E-03	-0.338
BA-140	-2.541E-01		3.223E-01	4.720E-01	1.533E-01	-0.538
LA-140	2.076E-02		9.257E-02	1.394E-01	9.719E-03	0.149
CE-141	-9.957E-03		8.140E-02	1.312E-01	9.159E-03	-0.076
CE-143	9.037E-04	+	1.288E-04	Half-Life	too short	
CE-144	-1.407E-01		3.051E-01	4.204E-01	6.179E-02	-0.335
PM-144	1.069E-03		4.442E-02	7.463E-02	4.093E-03	0.014
PR-144	7.241E-02		3.009E+00	5.055E+00	2.770E-01	0.014
PM-146	2.702E-02		5.595E-02	9.468E-02	8.109E-03	0.285
ND-147	7.905E-02		6.525E-01	1.071E+00	1.439E-01	0.074
PM-149	-1.149E+02		8.946E+01	1.367E+02	2.002E+01	-0.841
EU-152	-1.463E-01		1.986E-01	2.032E-01	1.432E-02	-0.720
GD-153	8.782E-02		1.177E-01	1.760E-01	1.689E-02	0.499
EU-154	-3.880E-03		1.520E-01	2.453E-01	2.460E-02	-0.016

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	-5.836E-03		1.420E-01	2.320E-01	2.008E-02	-0.025
TB-160	1.089E-01		1.594E-01	2.813E-01	2.312E-02	0.387
HO-166M	7.005E-03		8.412E-02	1.228E-01	6.980E-03	0.057
TM-171	-3.158E+01		5.073E+01	8.104E+01	9.319E+00	-0.390
LU-176	-1.759E-02		3.418E-02	5.380E-02	3.625E-03	-0.327
LU-177	3.309E+00	+	1.328E+00	2.338E+00	1.606E-01	1.416
LU-177M	4.510E-02		2.312E-01	3.852E-01	2.196E-02	0.117
HF-181	1.810E-03		5.352E-02	8.765E-02	4.990E-03	0.021
W-181	-4.775E-01		6.654E-01	1.057E+00	1.231E-01	-0.452
TA-182	1.006E-01		2.527E-01	4.251E-01	2.651E-02	0.237
RE-183	-9.547E-02		1.527E-01	2.397E-01	1.597E-02	-0.398
RE-184	-1.914E-02		3.131E-01	5.245E-01	3.651E-02	-0.036
OS-185	2.869E-02		5.005E-02	8.480E-02	4.345E-03	0.338
RE-188	-1.373E-01		2.340E-01	3.686E-01	2.473E-02	-0.372
W-188	1.148E+01		1.060E+01	1.658E+01	1.135E+00	0.692
IR-192	-6.491E-04		4.498E-02	7.483E-02	5.001E-03	-0.009
AU-195	1.977E-01		3.090E-01	5.026E-01	4.711E-02	0.393
TL-200	4.076E-06		1.488E-04	Half-Life too short		
TL-201	2.857E+00		7.467E+00	1.224E+01	8.147E-01	0.233
TL-202	2.521E-02		8.614E-02	1.441E-01	8.236E-03	0.175
HG-203	3.860E-02		5.817E-02	8.864E-02	6.384E-03	0.435
BI-207	-2.654E-02		6.477E-02	1.014E-01	7.207E-03	-0.262
TL-207	1.042E-01		9.162E-01	1.533E+00	2.576E-01	0.068
PO-209	-6.591E+00		9.524E+00	1.469E+01	1.251E+00	-0.449
BI-210	7.936E+00		1.471E+01	2.435E+01	2.529E+00	0.326
PB-210	7.936E+00		1.471E+01	2.435E+01	2.529E+00	0.326
PO-210	7.936E+00		1.471E+01	2.435E+01	2.339E+00	0.326
PB-211	-1.131E+00		1.487E+00	2.043E+00	1.273E+00	-0.554
BI-212	1.146E+00	+	6.964E-01	8.239E-01	6.414E-02	1.391
PO-215	1.042E-01		9.162E-01	1.533E+00	2.576E-01	0.068
RN-219	-1.591E-01		5.474E-01	8.847E-01	1.199E-01	-0.180
RN-220	-1.139E+01		3.183E+01	5.007E+01	2.778E+00	-0.227
RA-223	1.042E-01		9.162E-01	1.533E+00	2.576E-01	0.068
AC-227	5.190E-01		5.167E-01	8.978E-01	1.300E-01	0.578
TH-227	5.190E-01		5.190E-01	8.978E-01	1.556E-01	0.578
TH-229	-2.557E-01		6.941E-01	1.074E+00	7.299E-02	-0.238
PA-231	1.869E-01		2.068E+00	3.167E+00	4.518E-01	0.059
TH-231	1.042E-01		9.162E-01	1.533E+00	2.576E-01	0.068
U-231	-2.869E-01		1.381E+00	1.964E+00	1.935E-01	-0.146
PA-233	4.909E-02		8.524E-02	1.462E-01	1.025E-02	0.336
PA-234	-2.213E-01		3.599E-01	5.512E-01	1.024E-01	-0.401
PA-234M	2.842E+00		5.506E+00	9.591E+00	8.839E-01	0.296
TH-234	-4.245E-01		2.542E+00	4.150E+00	8.191E-01	-0.102
U-235	1.625E-01		2.868E-01	4.659E-01	7.774E-02	0.349
NP-236	2.654E-04		1.132E-01	1.829E-01	1.221E-02	0.001
U-238	-4.245E-01		2.542E+00	4.150E+00	8.191E-01	-0.102
NP-239	1.354E-01		2.593E-01	4.318E-01	3.246E-02	0.314
AM-241	-1.524E-01		3.317E-01	5.400E-01	6.872E-02	-0.282

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	6.000E-02		1.277E-01	2.130E-01	1.860E-02	0.282
AM-246	7.083E-02		1.588E-01	2.728E-01	1.891E-02	0.260
CM-247	2.292E-02		4.852E-02	8.227E-02	4.678E-03	0.279
CF-249	3.505E-02		5.367E-02	9.196E-02	5.272E-03	0.381
CF-251	-3.261E-02		1.689E-01	2.695E-01	1.806E-02	-0.121

# 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]G244132019          *
* Acquisition date   : 19-JAN-2010 14:20:12 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 02:00:01.16 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132019 Analyst initials: MXR1                  *
* Batch Number       : 940270 Sample Quantity : 1.1468E+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	2.258E+00	2.239E-01	1.152E+00
CD-109	1.621E+00	1.569E+00	9.063E-01	8.006E-01
SN-126	1.542E-01	1.465E-01	8.992E-02	7.473E-02
TL-208	6.196E-01	1.083E-01	3.470E-02	5.523E-02
BI-211	4.334E+00	6.246E-01	2.201E-01	3.187E-01
PB-212	1.923E+00	2.132E-01	6.209E-02	1.088E-01
PO-212	1.923E+00	2.132E-01	6.209E-02	1.088E-01
BI-214	1.297E+00	2.131E-01	7.183E-02	1.087E-01
PB-214	1.508E+00	2.305E-01	7.329E-02	1.176E-01
PO-214	1.508E+00	2.305E-01	7.329E-02	1.176E-01
PO-216	1.923E+00	2.132E-01	6.209E-02	1.088E-01
PO-218	1.508E+00	2.305E-01	7.329E-02	1.176E-01
RA-224	5.093E+00	1.652E+00	7.064E-01	8.428E-01
RA-226	1.297E+00	2.131E-01	7.183E-02	1.087E-01
AC-228	1.599E+00	3.902E-01	1.269E-01	1.991E-01
RA-228	1.599E+00	3.902E-01	1.269E-01	1.991E-01
TH-228	1.950E+00	2.162E-01	6.297E-02	1.103E-01
TH-230	1.297E+00	2.131E-01	7.183E-02	1.087E-01
TH-232	1.599E+00	3.902E-01	1.269E-01	1.991E-01
U-234	1.297E+00	2.131E-01	7.183E-02	1.087E-01
NP-237	4.529E-01	4.398E-01	2.691E-01	2.244E-01
AM-243	5.410E-01	1.627E-01	7.003E-02	8.300E-02
ANH-511	1.084E-01	8.160E-02	2.747E-02	4.163E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	6.258E-02	3.912E-01	3.324E-01	1.996E-01 NOT IDENT.
NA-22	-1.919E-03	5.323E-02	4.370E-02	2.716E-02 NOT IDENT.
NA-24	-1.323E+03	2.996E+05	0.000E+00	1.529E+05 SHORT HLIF
AL-26	7.573E-03	3.129E-02	2.753E-02	1.597E-02 NOT IDENT.

TI-44	2.078E-01	6.611E-02	5.311E-02	3.373E-02	NOT IDENT.
SC-46	-1.219E-02	4.530E-02	3.727E-02	2.311E-02	FAIL ABUN
V-48	-2.109E-02	7.458E-02	6.066E-02	3.805E-02	NOT IDENT.
CR-51	6.747E-02	4.780E-01	4.133E-01	2.439E-01	NOT IDENT.
MN-52	2.027E-02	2.290E-01	1.969E-01	1.168E-01	NOT IDENT.
MN-54	-2.335E-02	4.617E-02	3.752E-02	2.356E-02	NOT IDENT.
CO-56	-4.657E-02	4.587E-02	3.499E-02	2.340E-02	FAIL ABUN
CO-57	-3.019E-02	3.690E-02	2.768E-02	1.883E-02	NOT IDENT.
CO-58	-9.344E-03	4.480E-02	3.738E-02	2.286E-02	NOT IDENT.
FE-59	-6.176E-02	1.035E-01	8.051E-02	5.283E-02	NOT IDENT.
CO-60	8.473E-03	4.573E-02	3.851E-02	2.333E-02	NOT IDENT.
ZN-65	3.342E-02	1.217E-01	9.025E-02	6.211E-02	NOT IDENT.
GE-68	1.367E+00	1.390E+00	1.278E+00	7.093E-01	NOT IDENT.
AS-73	5.943E-01	2.161E+00	1.906E+00	1.103E+00	NOT IDENT.
AS-74	-4.579E-02	1.122E-01	8.737E-02	5.724E-02	NOT IDENT.
SE-75	-7.439E-02	5.684E-02	4.588E-02	2.900E-02	NOT IDENT.
BR-77	-7.988E-02	8.954E+00	7.475E+00	4.568E+00	FAIL ABUN
SR-82	-2.975E-01	4.519E-01	3.638E-01	2.305E-01	NOT IDENT.
RB-83	-6.392E-03	7.914E-02	6.568E-02	4.038E-02	NOT IDENT.
RB-84	4.434E-02	7.813E-02	6.963E-02	3.986E-02	NOT IDENT.
KR-85	1.353E+01	9.358E+00	7.740E+00	4.775E+00	NOT IDENT.
SR-85	6.863E-02	4.747E-02	3.926E-02	2.422E-02	NOT IDENT.
RB-86	3.750E-01	8.843E-01	7.702E-01	4.512E-01	NOT IDENT.
Y-88	2.418E-03	3.715E-02	3.140E-02	1.896E-02	NOT IDENT.
ZR-88	-2.868E-02	3.943E-02	3.192E-02	2.012E-02	NOT IDENT.
Y-91	-8.230E+00	2.419E+01	1.939E+01	1.234E+01	NOT IDENT.
NB-94	6.784E-03	4.084E-02	3.548E-02	2.084E-02	NOT IDENT.
NB-95	7.205E-02	5.287E-02	4.927E-02	2.697E-02	NOT IDENT.
NB-95M	1.739E+00	2.809E-01	2.332E-01	1.433E-01	NOT IDENT.
ZR-95	6.801E-02	8.447E-02	7.664E-02	4.310E-02	NOT IDENT.
NB-97	1.959E+04	4.312E+04	0.000E+00	2.200E+04	SHORT HLIF
ZR-97	3.910E+06	1.055E+06	0.000E+00	5.384E+05	SHORT HLIF
MO-99	-2.903E+00	1.054E+01	8.805E+00	5.380E+00	NOT IDENT.
TC-99M	-1.566E+15	3.020E+15	0.000E+00	1.541E+15	SHORT HLIF
RH-101	7.475E-03	4.359E-02	3.575E-02	2.224E-02	NOT IDENT.
RH-102	-1.708E-02	3.545E-02	2.868E-02	1.809E-02	NOT IDENT.
RU-103	1.680E-02	4.931E-02	4.233E-02	2.516E-02	NOT IDENT.
RH-106	-5.207E-03	3.913E-01	3.230E-01	1.997E-01	NOT IDENT.
RU-106	-5.207E-03	3.913E-01	3.230E-01	1.997E-01	NOT IDENT.
AG-108M	-2.397E-02	4.237E-02	3.439E-02	2.162E-02	NOT IDENT.
AG-110M	1.858E-02	4.203E-02	3.593E-02	2.144E-02	NOT IDENT.
IN-111	1.454E-01	1.192E+00	9.097E-01	6.080E-01	NOT IDENT.
IN-113M	-2.297E-02	5.686E-02	4.706E-02	2.901E-02	NOT IDENT.
SN-113	-2.297E-02	5.686E-02	4.706E-02	2.901E-02	NOT IDENT.
IN-114M	1.778E-01	2.624E-01	1.986E-01	1.339E-01	NOT IDENT.
CD-115	-7.033E+00	9.737E+00	7.646E+00	4.968E+00	NOT IDENT.
SN-117M	8.004E-02	7.152E-02	6.255E-02	3.649E-02	NOT IDENT.
SB-122	6.589E-01	1.902E+00	1.626E+00	9.705E-01	NOT IDENT.
I-123	1.958E+06	2.161E+06	0.000E+00	1.102E+06	SHORT HLIF
TE-123M	3.499E-02	3.862E-02	3.353E-02	1.970E-02	NOT IDENT.
I-124	3.472E-01	8.042E-01	6.016E-01	4.103E-01	FAIL ABUN
SB-124	-3.572E-02	9.305E-02	7.572E-02	4.747E-02	FAIL ABUN
SB-125	4.107E-02	1.171E-01	1.012E-01	5.973E-02	FAIL ABUN
TE-125M	3.562E+00	1.169E+01	1.007E+01	5.963E+00	NOT IDENT.
I-126	-5.322E-02	2.014E-01	1.616E-01	1.027E-01	NOT IDENT.
SB-126	1.183E-01	2.861E-01	1.467E-01	1.459E-01	FAIL ABUN
SB-127	-9.496E-01	1.389E+00	1.128E+00	7.085E-01	NOT IDENT.
XE-127	-4.377E-02	6.527E-02	5.086E-02	3.330E-02	NOT IDENT.
I-131	-1.362E-01	1.338E-01	1.065E-01	6.829E-02	NOT IDENT.
TE-132	-1.590E-01	7.371E-01	6.370E-01	3.760E-01	NOT IDENT.
BA-133	-2.744E-02	6.452E-02	4.601E-02	3.292E-02	FAIL ABUN
I-133	-1.427E+03	3.202E+03	0.000E+00	1.634E+03	SHORT HLIF
CS-134	8.338E-02	5.638E-02	5.322E-02	2.877E-02	NOT IDENT.
CS-135	3.348E-01	2.175E-01	1.989E-01	1.110E-01	NOT IDENT.
I-135	1.124E+14	5.368E+14	0.000E+00	2.739E+14	SHORT HLIF
CS-136	-1.766E-02	1.243E-01	1.025E-01	6.344E-02	FAIL ABUN
BA-137M	2.925E-02	4.352E-02	3.784E-02	2.220E-02	NOT IDENT.
CS-137	3.092E-02	4.601E-02	4.000E-02	2.347E-02	NOT IDENT.
CE-139	-2.161E-02	3.978E-02	3.250E-02	2.030E-02	NOT IDENT.
BA-140	-2.541E-01	3.158E-01	2.374E-01	1.611E-01	NOT IDENT.
LA-140	2.076E-02	9.072E-02	6.941E-02	4.628E-02	NOT IDENT.
CE-141	-9.957E-03	7.977E-02	6.681E-02	4.070E-02	NOT IDENT.
CE-143	9.037E+02	2.525E+02	0.000E+00	1.288E+02	SHORT HLIF
CE-144	-1.407E-01	2.990E-01	2.142E-01	1.525E-01	NOT IDENT.
PM-144	1.069E-03	4.353E-02	3.745E-02	2.221E-02	NOT IDENT.
PR-144	7.241E-02	2.948E+00	2.536E+00	1.504E+00	NOT IDENT.
PM-146	2.702E-02	5.484E-02	4.770E-02	2.798E-02	NOT IDENT.
ND-147	7.905E-02	6.394E-01	5.388E-01	3.262E-01	FAIL ABUN



PM-149	-1.149E+02	8.767E+01	6.919E+01	4.473E+01	NOT IDENT.
EU-152	-1.463E-01	1.947E-01	1.026E-01	9.932E-02	FAIL ABUN
GD-153	8.782E-02	1.153E-01	8.996E-02	5.885E-02	NOT IDENT.
EU-154	-3.880E-03	1.489E-01	1.224E-01	7.598E-02	NOT IDENT.
EU-155	-5.836E-03	1.391E-01	1.184E-01	7.098E-02	FAIL ABUN
TB-160	1.089E-01	1.562E-01	1.408E-01	7.970E-02	FAIL ABUN
HO-166M	7.005E-03	8.244E-02	6.160E-02	4.206E-02	FAIL ABUN
TM-171	-3.158E+01	4.972E+01	4.156E+01	2.537E+01	NOT IDENT.
LU-176	-1.759E-02	3.349E-02	2.721E-02	1.709E-02	FAIL ABUN
LU-177	3.309E+00	1.302E+00	1.186E+00	6.641E-01	FAIL ABUN
LU-177M	4.510E-02	2.266E-01	1.942E-01	1.156E-01	NOT IDENT.
HF-181	1.810E-03	5.245E-02	4.414E-02	2.676E-02	NOT IDENT.
W-181	-4.775E-01	6.520E-01	5.424E-01	3.327E-01	NOT IDENT.
TA-182	1.006E-01	2.476E-01	2.122E-01	1.263E-01	NOT IDENT.
RE-183	-9.547E-02	1.496E-01	1.219E-01	7.633E-02	FAIL ABUN
RE-184	-1.914E-02	3.069E-01	2.657E-01	1.566E-01	NOT IDENT.
OS-185	2.869E-02	4.905E-02	4.258E-02	2.503E-02	FAIL ABUN
RE-188	-1.373E-01	2.293E-01	1.876E-01	1.170E-01	NOT IDENT.
W-188	1.148E+01	1.039E+01	8.389E+00	5.302E+00	NOT IDENT.
IR-192	-6.491E-04	4.408E-02	3.783E-02	2.249E-02	FAIL ABUN
AU-195	1.977E-01	3.028E-01	2.568E-01	1.545E-01	FAIL ABUN
TL-200	4.076E+00	2.917E+02	0.000E+00	1.488E+02	SHORT HLIF
TL-201	2.857E+00	7.317E+00	6.225E+00	3.733E+00	NOT IDENT.
TL-202	2.521E-02	8.442E-02	7.263E-02	4.307E-02	NOT IDENT.
HG-203	3.860E-02	5.701E-02	4.486E-02	2.909E-02	FAIL ABUN
BI-207	-2.654E-02	6.348E-02	5.070E-02	3.239E-02	FAIL ABUN
TL-207	1.042E-01	8.979E-01	7.746E-01	4.581E-01	FAIL ABUN
PO-209	-6.591E+00	9.334E+00	7.354E+00	4.762E+00	NOT IDENT.
BI-210	7.936E+00	1.442E+01	1.253E+01	7.355E+00	NOT IDENT.
PB-210	7.936E+00	1.442E+01	1.253E+01	7.355E+00	NOT IDENT.
PO-210	7.936E+00	1.441E+01	1.253E+01	7.354E+00	NOT IDENT.
PB-211	-1.131E+00	1.457E+00	1.030E+00	7.433E-01	NOT IDENT.
BI-212	1.146E+00	6.825E-01	4.132E-01	3.482E-01	FAIL ABUN
PO-215	1.042E-01	8.979E-01	7.746E-01	4.581E-01	FAIL ABUN
RN-219	-1.591E-01	5.365E-01	4.462E-01	2.737E-01	NOT IDENT.
RN-220	-1.139E+01	3.120E+01	2.518E+01	1.592E+01	NOT IDENT.
RA-223	1.042E-01	8.979E-01	7.746E-01	4.581E-01	FAIL ABUN
AC-227	5.190E-01	5.064E-01	4.548E-01	2.583E-01	FAIL ABUN
TH-227	5.190E-01	5.087E-01	4.548E-01	2.595E-01	FAIL ABUN
TH-229	-2.557E-01	6.803E-01	5.452E-01	3.471E-01	FAIL ABUN
PA-231	1.869E-01	2.026E+00	1.602E+00	1.034E+00	NOT IDENT.
TH-231	1.042E-01	8.979E-01	7.746E-01	4.581E-01	FAIL ABUN
U-231	-2.869E-01	1.354E+00	1.004E+00	6.906E-01	FAIL ABUN
PA-233	4.909E-02	8.354E-02	7.394E-02	4.262E-02	FAIL ABUN
PA-234	-2.213E-01	3.527E-01	2.758E-01	1.800E-01	FAIL ABUN
PA-234M	2.842E+00	5.396E+00	4.796E+00	2.753E+00	NOT IDENT.
TH-234	-4.245E-01	2.491E+00	2.129E+00	1.271E+00	FAIL ABUN
U-235	1.625E-01	2.810E-01	2.372E-01	1.434E-01	FAIL ABUN
NP-236	2.654E-04	1.110E-01	9.304E-02	5.661E-02	NOT IDENT.
U-238	-4.245E-01	2.491E+00	2.129E+00	1.271E+00	FAIL ABUN
NP-239	1.354E-01	2.541E-01	2.203E-01	1.296E-01	FAIL ABUN
AM-241	-1.524E-01	3.251E-01	2.772E-01	1.659E-01	NOT IDENT.
CM-243	6.000E-02	1.251E-01	1.088E-01	6.385E-02	FAIL ABUN
AM-246	7.083E-02	1.557E-01	1.363E-01	7.942E-02	NOT IDENT.
CM-247	2.292E-02	4.755E-02	4.149E-02	2.426E-02	FAIL ABUN
CF-249	3.505E-02	5.259E-02	4.640E-02	2.683E-02	NOT IDENT.
CF-251	-3.261E-02	1.656E-01	1.370E-01	8.447E-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	247.1439
46.50	247.1439
46.50	247.1439
48.70	279.2225
49.72	275.9293
51.35	269.1063
52.39	263.8748
52.97	252.7251
53.15	252.7997
53.44	255.7713
54.07	264.5992
56.28	282.7263
56.28	282.7274
57.37	0.0000
57.53	273.7120
57.53	273.7131
57.60	289.0563
57.98	298.8038
57.98	298.8038
59.32	323.4136
59.32	323.4136
59.40	323.4535
59.54	323.5223
59.72	322.6513
60.01	319.9115
61.10	301.1937
61.14	301.2116
61.30	301.2839
63.00	312.6628
63.29	332.1044
63.29	332.1044
63.58	331.2806
64.28	343.2224
65.12	356.2259
65.20	356.2670
65.20	356.2670
66.05	370.2738
66.72	368.6874
66.83	368.7469
66.91	368.7889
67.20	346.6105
67.20	346.6105
67.75	340.9114
67.85	340.9596
68.90	308.3188
68.90	308.3188
69.30	333.4202
69.67	346.0634
70.82	345.0522
70.82	345.0522
70.83	345.0576
72.80	366.3391
72.87	366.3734
72.87	366.3734
74.67	360.9838
74.81	361.0511
74.81	361.0511
74.81	361.0511
74.81	361.0511
74.81	361.0511
74.81	361.0511
74.81	361.0511
74.97	361.1284
75.28	361.2772
75.70	361.4779
77.11	340.1051
77.11	340.1051

77.11	340.1051
77.11	340.1051
77.11	340.1051
77.11	340.1051
77.11	340.1051
78.38	345.3995
79.62	424.5427
79.80	424.6411
79.80	424.6411
80.11	455.7652
80.18	455.8057
80.30	455.8761
80.30	455.8761
80.57	470.5308
81.00	482.6573
81.07	423.3517
81.07	423.3517
81.07	423.3517
81.07	423.3517
82.60	398.4024
83.37	399.9762
83.78	392.2422
83.78	392.2422
83.78	392.2422
83.78	392.2422
84.21	401.9849
84.90	397.5586
85.43	402.5918
86.29	366.3786
86.50	366.4727
86.54	366.4909
86.59	366.5134
86.72	366.5709
86.79	366.6018
86.94	366.6692
87.30	366.8306
87.30	366.8306
87.30	366.8306
87.30	366.8306
87.30	366.8306
87.30	366.8306
87.57	366.9500
87.88	367.0875
88.03	367.1549
88.36	367.3009
88.47	367.3500
89.95	368.0014
91.11	368.5096
92.29	369.0220
92.38	369.0613
92.38	369.0613
93.35	293.9772
94.00	311.8848
94.67	318.5608
94.67	318.5620
94.90	318.6466
94.90	318.6466
94.90	318.6466
94.90	318.6466
95.87	323.8365
95.87	323.8365
96.73	314.4798
97.43	275.9932
98.44	282.7728
98.44	282.7728
98.88	281.7580
99.55	294.2492
99.55	294.2492
99.86	294.3513
100.00	291.3618
100.10	302.5256
103.18	290.3596
103.76	278.3534
105.00	293.9886
105.31	294.0867
108.00	295.9594
109.28	282.0550

111.00	330.6849
111.00	330.6849
111.76	325.8255
112.95	302.6331
115.19	298.1919
116.30	287.2068
117.00	294.6227
117.00	294.6227
117.66	311.3131
121.11	314.4602
121.62	316.9858
121.78	317.0360
122.06	327.1817
122.32	327.2649
122.32	327.2649
122.32	327.2649
122.32	327.2649
123.07	271.9553
127.23	308.0243
129.76	290.4129
131.20	297.4938
133.02	259.4982
133.54	296.4750
135.34	276.8383
136.00	290.6480
136.25	290.7156
136.48	280.2795
140.51	324.5124
140.51	0.0000
142.18	297.5660
142.65	291.3580
143.76	277.9105
144.24	262.1718
144.24	262.1718
144.24	262.1718
144.24	262.1718
145.22	287.7943
145.44	304.7827
147.16	342.3423
152.43	300.2597
152.70	302.4607
153.22	317.5117
154.21	317.7800
154.21	317.7800
154.21	317.7800
154.21	317.7800
155.03	327.6069
156.02	307.5908
158.56	282.5645
159.00	0.0000
159.00	284.8087
160.31	319.4215
161.27	328.2580
162.32	326.3955
162.64	336.1493
163.35	279.3921
163.89	277.3669
165.85	303.6548
167.43	269.5436
171.28	275.7876
171.86	272.6700
172.10	256.4884
176.55	267.1669
176.60	267.1763
181.06	294.6979
184.41	305.9445
185.71	296.4042
186.00	296.4683
190.27	235.3048
192.34	268.8323
193.63	259.6582
197.04	230.5279
198.01	234.0035
198.60	258.3958
200.40	266.4750
201.83	289.9926
202.84	283.5566
205.31	250.3266

208.36	305.7999
208.81	298.1099
209.75	289.4035
209.75	289.4035
210.97	238.8494
215.65	266.0050
216.55	249.3931
218.09	247.4178
222.10	270.5458
223.80	231.5205
226.40	238.6795
227.00	233.3687
227.08	233.3814
227.20	233.3988
228.16	252.4854
228.18	252.4888
228.18	252.4888
231.56	0.0000
235.69	274.8829
236.00	264.3639
236.00	264.3639
238.63	228.7995
238.63	228.7995
238.63	228.7995
238.63	228.7995
239.00	228.8533
240.98	229.1456
241.98	229.2917
241.98	229.2917
241.98	229.2917
244.69	199.0026
245.39	200.6104
247.94	199.4117
248.90	199.7493
249.79	203.4536
252.40	208.8223
252.85	207.9646
252.85	207.9646
254.15	0.0000
256.20	181.7723
256.20	181.7723
260.50	195.1386
260.90	193.3451
262.80	177.8983
264.65	214.0846
268.24	193.2765
268.79	174.8388
269.46	183.2394
269.46	183.2394
269.46	183.2394
269.46	183.2394
271.23	217.0460
273.65	301.5176
276.40	202.8858
277.35	178.5141
277.60	178.5399
277.60	178.5399
278.00	162.7701
278.60	151.9726
279.20	161.3342
279.53	145.8480
280.46	138.1644
281.68	135.1552
283.67	150.6417
284.30	178.5358
285.00	176.5069
285.90	199.0219
286.10	192.5039
286.10	192.5039
287.40	157.8117
288.45	0.0000
290.67	146.7832
290.80	146.7947
291.72	181.2453
293.26	0.0000
293.70	209.6040
295.21	175.6526
295.21	175.6526

295.21	175.6526
295.96	175.7257
296.50	175.7805
297.23	175.8512
298.57	175.9836
299.80	155.3844
299.80	155.3844
300.09	155.4106
300.09	155.4106
300.09	155.4106
300.09	155.4106
300.12	155.4126
301.29	141.3757
302.84	161.9350
303.76	166.7356
303.91	166.7507
304.40	157.3527
304.40	157.3527
304.84	174.7044
306.84	174.3712
308.46	150.4483
311.98	146.9435
316.51	152.0547
318.01	160.7357
319.02	156.0643
319.41	154.1927
320.08	156.1523
323.87	171.7317
323.87	171.7317
323.87	171.7317
323.87	171.7317
325.23	168.9905
328.77	172.1733
333.44	163.0024
334.20	183.8498
334.20	183.8498
334.30	183.8591
338.28	148.9907
338.28	148.9907
338.28	148.9907
338.28	148.9907
338.32	148.9945
338.32	148.9945
338.32	148.9945
340.50	137.9321
340.57	137.9373
344.27	170.3350
345.85	151.1722
350.59	0.0000
351.07	141.2504
351.92	129.0495
351.92	129.0495
351.92	129.0495
355.39	0.0000
356.01	145.4755
364.48	139.2644
366.43	129.6490
367.43	127.7618
367.94	0.0000
369.80	103.4975
374.96	137.0332
383.85	133.6808
387.95	121.1337
388.63	132.0093
391.69	130.2243
391.69	130.2243
392.90	136.2194
398.62	126.6813
400.65	124.8172
401.10	132.7699
401.81	130.8302
402.60	116.0060
404.84	156.8158
410.95	122.4159
411.60	124.4415
413.65	118.5773
414.70	101.6850
415.30	96.7265

415.76	109.7126
417.63	0.0000
418.52	117.8358
423.70	111.0989
427.08	114.2714
427.89	104.2844
432.53	108.5142
433.93	118.6323
439.47	104.8074
439.56	104.8112
439.89	111.8821
443.98	106.0190
444.90	96.9691
445.03	96.9750
445.03	96.9750
445.03	96.9750
445.03	96.9750
453.90	94.2965
463.38	83.4714
468.07	79.8929
473.00	81.7578
475.06	96.1457
475.35	102.2949
476.78	94.1664
477.59	90.1012
477.96	84.9950
482.03	93.3394
484.57	112.9434
487.03	71.9440
490.36	0.0000
492.35	95.7848
497.08	83.5817
507.63	0.0000
510.53	0.0000
510.84	77.8061
511.00	77.8111
511.85	77.8368
511.85	77.8368
513.99	70.9759
513.99	70.9759
520.41	74.9689
520.65	73.9346
527.90	91.8887
528.96	0.0000
529.64	75.2309
529.87	0.0000
531.02	78.4058
537.32	94.3088
543.00	79.8074
546.56	0.0000
549.76	80.0060
552.65	79.0375
555.20	65.3982
563.23	76.1678
563.90	74.0691
568.70	71.0174
569.32	79.5154
569.50	76.3383
569.67	80.5849
573.80	79.0518
574.00	79.0572
574.64	77.3894
578.91	88.6515
579.30	0.0000
583.14	72.4476
585.48	74.6399
591.81	65.3065
592.07	69.4672
593.00	71.6292
595.88	80.2606
600.56	66.9922
602.52	0.0000
602.71	80.4510
602.71	80.4510
603.60	78.6865
604.41	96.5973
604.70	96.6072
609.31	87.7996

609.31	87.7996
609.31	87.7996
609.31	87.7996
610.33	91.4165
612.46	82.5121
614.37	84.3613
618.01	81.9486
621.84	73.4171
621.84	73.4171
631.29	77.9818
633.02	73.6927
633.10	73.6943
634.78	67.2297
635.90	65.0845
636.97	59.6823
645.85	56.5919
646.12	55.5086
656.30	75.3491
657.75	64.4592
657.90	0.0000
661.65	64.5399
661.65	64.5399
664.57	0.0000
666.33	70.1141
666.33	70.1141
675.00	64.8150
677.61	73.6656
685.20	81.7391
692.80	82.8552
695.00	92.1244
696.49	83.8721
696.49	83.8721
697.00	84.8069
697.49	89.4298
698.33	83.9184
698.50	84.8462
699.00	87.6264
702.63	75.7205
706.10	79.4982
706.58	0.0000
706.67	80.4368
709.31	61.0707
711.68	66.6709
713.82	65.1250
717.42	60.4260
720.50	61.2788
721.93	0.0000
722.20	61.3097
722.78	61.3204
722.78	61.3204
722.89	61.3231
722.95	61.3245
723.30	61.3312
724.18	61.3473
727.18	66.9844
733.00	62.3086
735.90	55.9656
739.58	65.3658
742.81	64.4938
744.21	57.0398
747.13	63.6393
751.79	67.4751
752.31	61.8616
753.82	67.5161
755.35	65.6692
756.15	56.3013
756.87	55.3749
763.93	85.5847
765.79	63.9880
766.42	64.9402
766.84	71.5376
776.49	73.6249
778.00	62.3248
778.57	62.3342
778.89	60.4518
783.80	64.3200
785.46	56.7798
792.07	55.9379



795.84	50.3021
796.30	53.1563
798.80	84.5402
801.93	51.3391
805.60	48.5367
810.29	60.9883
810.76	56.2320
815.85	51.5391
817.79	55.3863
818.51	61.1276
819.60	57.3242
826.30	60.3019
828.27	0.0000
831.60	57.5134
831.96	50.8089
834.83	73.8747
836.80	0.0000
846.75	64.4878
848.13	59.6980
856.28	0.0000
856.80	84.9295
860.37	59.8935
867.32	49.3575
867.82	47.4289
871.10	39.7196
873.19	48.4650
874.81	44.6065
875.33	0.0000
876.40	47.5355
879.36	39.8055
880.27	41.7577
880.51	41.7604
881.50	41.7709
883.24	47.6213
884.67	49.5837
889.25	51.5896
896.60	64.3658
898.02	59.5107
899.00	60.5027
903.28	56.9398
911.07	49.9219
911.07	49.9219
911.07	49.9219
919.63	51.0119
920.93	50.0475
925.00	50.0994
925.24	50.1025
926.50	50.1180
935.52	39.3978
937.48	65.0372
944.10	44.4168
946.00	53.3254
949.00	38.5414
962.29	54.3906
964.01	65.4656
966.15	65.5005
968.20	65.5327
969.11	37.4557
969.11	37.4557
969.11	37.4557
977.42	41.7966
980.50	38.8397
983.50	42.8548
989.30	40.9183
996.32	57.9823
1001.03	37.0301
1001.68	39.0381
1004.76	47.0803
1021.30	0.0000
1024.50	0.0000
1034.80	31.2725
1036.00	42.3811
1037.82	51.4856
1038.57	47.4552
1038.76	0.0000
1045.16	40.4492
1046.59	43.4969
1048.07	49.5822

1050.47	40.4980
1050.47	40.4980
1062.04	48.7266
1063.62	51.7906
1076.63	39.7220
1077.35	31.5790
1078.86	34.6461
1085.78	40.8236
1099.22	49.1367
1112.02	52.7951
1112.84	52.8055
1115.52	47.5513
1120.29	47.6022
1120.29	47.6022
1120.29	47.6022
1120.29	47.6022
1120.51	47.6041
1121.28	42.3214
1124.00	0.0000
1129.67	45.3446
1131.51	0.0000
1147.95	0.0000
1167.94	55.0703
1173.22	49.9316
1175.09	27.0569
1177.93	53.1042
1189.05	46.9666
1204.90	65.9711
1205.75	0.0000
1213.00	76.5704
1221.42	56.7400
1230.97	55.9475
1235.34	65.0290
1236.41	0.0000
1238.25	50.6094
1246.25	48.8810
1260.41	0.0000
1271.85	40.3379
1274.45	41.4200
1274.54	41.4200
1291.56	33.0359
1298.22	0.0000
1312.09	35.3082
1325.50	35.3995
1325.50	35.3995
1332.49	26.8545
1333.61	35.4559
1360.21	29.1566
1362.66	0.0000
1365.15	19.4561
1368.21	20.3940
1368.53	0.0000
1376.25	20.5795
1384.27	14.6442
1394.10	20.4930
1395.20	23.2928
1407.95	28.9511
1434.06	19.7058
1436.60	23.4706
1457.56	0.0000
1460.81	9.9005
1489.15	24.6398
1509.49	23.7776
1596.49	11.8257
1620.62	16.4771
1678.03	0.0000
1691.02	13.7261
1691.02	13.7261
1706.46	0.0000
1750.46	0.0000
1764.49	5.2073
1764.49	5.2073
1764.49	5.2073
1764.49	5.2073
1770.23	8.6865
1771.40	29.7876
1791.20	0.0000
1808.65	7.9888

1836.01

10.0276

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132019

Total Uranium Activity	-1.1876E+00	ug/g
Total Uranium Counting Unc.	7.4114E+00	ug/g
Total Uranium Tpu	3.7813E-06	ug/g
Total Uranium Mda	6.3353E+00	ug/g

```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270                SAMPLE ID   : G244132019
*  ANALYST       : MXR1                  DETECTOR    : GAM15
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00 COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 14:20:12.15 SAMPLE ALQT : 114.680 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.013E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.689E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.154E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.009E+00

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## VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 19:06:03.97

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132020.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 17:05:31
Sample ID          : G244132020      Sample quantity   : 1.29580E+02 GRAM
Detector name      : GAM05           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.71  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000         Sensitivity      : 5.00000
Batch ID           : 940270           Detector SN#     :
Matrix Spike ID    :                  LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.34*	84	510	1.20	93.66	88	11	1.16E-02	57.7	
2	0	63.21*	103	683	1.02	127.41	124	9	1.43E-02	47.7	
3	1	74.64*	749	616	1.45	150.26	144	17	1.04E-01	7.3	4.37E+00
4	1	77.03*	1058	451	1.19	155.03	144	17	1.47E-01	4.9	
5	1	87.14	378	463	1.35	175.27	164	30	5.25E-02	10.9	3.32E+00
6	1	89.88	246	459	1.48	180.73	164	30	3.42E-02	17.9	
7	1	92.88*	330	395	1.49	186.73	164	30	4.58E-02	13.8	
8	0	129.10*	68	436	1.48	259.16	253	11	9.39E-03	61.9	
9	0	185.64*	247	384	1.45	372.23	366	12	3.44E-02	17.5	
10	0	209.04	115	296	1.05	419.01	416	10	1.60E-02	29.6	
11	3	238.55*	1132	211	1.17	478.03	473	26	1.57E-01	3.7	1.81E+00
12	3	241.44	297	285	1.93	483.81	473	26	4.12E-02	16.6	
13	0	270.03	116	276	1.49	540.97	535	13	1.61E-02	31.0	
14	0	295.08*	338	240	1.06	591.07	585	12	4.70E-02	10.8	
15	0	299.78	49	141	0.90	600.45	598	8	6.76E-03	44.3	
16	0	327.47	126	196	1.56	655.81	647	16	1.75E-02	26.4	
17	0	338.13	218	154	1.29	677.13	671	10	3.03E-02	12.6	
18	0	351.69*	614	188	1.42	704.24	697	15	8.53E-02	6.4	
19	0	463.26	101	77	1.16	927.31	922	12	1.40E-02	20.4	
20	0	510.49*	102	141	1.72	1021.73	1014	17	1.42E-02	32.0	
21	0	582.99	355	147	1.35	1166.66	1160	15	4.93E-02	9.1	
22	0	608.93	458	121	1.36	1218.51	1212	15	6.36E-02	7.0	
23	0	661.58	20	59	1.07	1323.75	1319	8	2.84E-03	69.0	
24	0	727.13*	92	34	1.26	1454.78	1450	12	1.27E-02	17.1	
25	0	770.70	55	116	4.88	1541.85	1531	19	7.65E-03	49.2	
26	0	794.49	50	56	1.63	1589.41	1584	13	6.98E-03	33.6	
27	0	910.71	258	54	1.91	1821.67	1813	17	3.58E-02	9.1	
28	3	963.44	71	33	2.57	1927.06	1919	28	9.90E-03	20.8	2.63E+00
29	3	968.58	124	24	2.65	1937.32	1919	28	1.73E-02	14.1	
30	0	1119.90	119	53	1.35	2239.70	2232	16	1.65E-02	16.8	
31	0	1376.84	43	24	1.94	2753.03	2745	19	5.91E-03	31.5	
32	0	1459.73	762	18	2.10	2918.62	2910	18	1.06E-01	3.9	
33	0	1588.82	39	22	6.52	3176.46	3167	22	5.42E-03	34.6	
34	0	1763.54	83	13	1.58	3525.41	3520	13	1.15E-02	14.7	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 19:06:07

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132020.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 17:05:31
Sample ID         : G244132020           Sample quantity  : 129.58 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA5               Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:01.71   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	*	2.061E+01	2.040E+00	6.111E-01	3.801E-02	33.719
CD-109	+	88.03	*	3.828E+00	8.840E-01	9.781E-01	7.448E-02	3.914
SN-126	+	64.28		3.852E-01	3.719E-01	4.351E-01	6.485E-02	0.885
	+	86.94		1.566E+00	7.296E-01	3.990E-01	1.642E-01	3.926
	+	87.57	*	3.768E-01	8.701E-02	9.614E-02	7.322E-03	3.919
BA-137M	+	661.65	*	3.268E-02	4.516E-02	6.835E-02	4.494E-03	0.478
CS-137	+	661.65	*	3.455E-02	4.774E-02	7.225E-02	4.767E-03	0.478
TL-208		277.35		2.060E-01	4.340E-01	7.012E-01	8.996E-02	0.294
	+	510.84		5.379E-01	3.492E-01	2.374E-01	2.494E-02	2.266
	+	583.14	*	5.409E-01	1.064E-01	6.870E-02	5.055E-03	7.874
		860.37		6.059E-01	3.356E-01	6.270E-01	6.363E-02	0.966
BI-210	+	46.50	*	7.876E-01	9.109E-01	8.472E-01	6.609E-02	0.930
PB-210	+	46.50	*	7.876E-01	9.109E-01	8.472E-01	6.609E-02	0.930
PO-210	+	46.50	*	7.876E-01	9.103E-01	8.472E-01	5.698E-02	0.930
BI-211		72.87		1.168E+01	2.638E+00	4.146E+00	3.264E-01	2.816
	+	351.07	*	3.909E+00	5.879E-01	3.424E-01	2.713E-02	11.417
PB-212	+	74.81		2.522E+00	4.806E-01	3.708E-01	4.521E-02	6.802
	+	77.11		2.126E+00	2.662E-01	2.214E-01	1.723E-02	9.601
	+	87.30		1.743E+00	4.385E-01	4.443E-01	5.586E-02	3.922
	+	238.63	*	1.540E+00	2.018E-01	9.848E-02	1.062E-02	15.638
	+	300.09		1.032E+00	9.216E-01	1.182E+00	1.257E-01	0.873
PO-212	+	74.81		2.522E+00	4.806E-01	3.708E-01	4.521E-02	6.802
	+	77.11		2.126E+00	2.662E-01	2.214E-01	1.723E-02	9.601
	+	87.30		1.743E+00	4.385E-01	4.443E-01	5.586E-02	3.922
		115.19		6.171E-01	3.678E+00	6.028E+00	7.670E-01	0.102
	+	238.63	*	1.540E+00	2.018E-01	9.848E-02	1.062E-02	15.638
	+	300.09		1.032E+00	9.216E-01	1.182E+00	1.257E-01	0.873
BI-214	+	609.31	*	1.319E+00	2.153E-01	1.245E-01	1.044E-02	10.597
	+	1120.29		1.809E+00	6.310E-01	4.882E-01	4.663E-02	3.706
	+	1764.49		1.756E+00	5.273E-01	4.298E-01	2.485E-02	4.085
PB-214	+	74.81		4.346E+00	7.903E-01	6.389E-01	6.886E-02	6.802
	+	77.11		3.644E+00	5.342E-01	3.796E-01	4.134E-02	9.601
	+	87.30		2.985E+00	7.268E-01	7.611E-01	8.250E-02	3.922
	+	241.98		2.427E+00	8.493E-01	5.930E-01	6.683E-02	4.092

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		1.257E+00	3.040E-01	2.276E-01	2.488E-02	5.525
	+	351.92	*	1.360E+00	2.165E-01	1.194E-01	1.130E-02	11.392
	+	74.81		4.346E+00	7.903E-01	6.389E-01	6.886E-02	6.802
	+	77.11		3.644E+00	5.342E-01	3.796E-01	4.134E-02	9.601
	+	87.30		2.985E+00	7.268E-01	7.611E-01	8.250E-02	3.922
PO-216	+	241.98		2.427E+00	8.493E-01	5.930E-01	6.683E-02	4.092
	+	295.21		1.257E+00	3.040E-01	2.276E-01	2.488E-02	5.525
	+	351.92	*	1.360E+00	2.165E-01	1.194E-01	1.130E-02	11.392
	+	74.81		2.522E+00	4.806E-01	3.708E-01	4.521E-02	6.802
	+	77.11		2.126E+00	2.662E-01	2.214E-01	1.723E-02	9.601
PO-218	+	87.30		1.743E+00	4.385E-01	4.443E-01	5.586E-02	3.922
	+	238.63	*	1.540E+00	2.018E-01	9.848E-02	1.062E-02	15.638
	+	300.09		1.032E+00	9.216E-01	1.182E+00	1.257E-01	0.873
	+	74.81		4.346E+00	7.903E-01	6.389E-01	6.886E-02	6.802
	+	77.11		3.644E+00	5.342E-01	3.796E-01	4.134E-02	9.601
RA-224	+	87.30		2.985E+00	7.268E-01	7.611E-01	8.250E-02	3.922
	+	241.98		2.427E+00	8.493E-01	5.930E-01	6.683E-02	4.092
	+	295.21		1.257E+00	3.040E-01	2.276E-01	2.488E-02	5.525
	+	351.92	*	1.360E+00	2.165E-01	1.194E-01	1.130E-02	11.392
	+	240.98	*	4.601E+00	1.590E+00	1.121E+00	1.097E-01	4.105
RA-226	+	609.31	*	1.319E+00	2.153E-01	1.245E-01	1.044E-02	10.597
	+	1120.29		1.809E+00	6.310E-01	4.882E-01	4.663E-02	3.706
	+	1764.49		1.756E+00	5.273E-01	4.298E-01	2.485E-02	4.085
	+	338.32		1.524E+00	7.356E-01	4.250E-01	1.747E-01	3.587
	+	911.07	*	1.786E+00	3.920E-01	2.491E-01	3.083E-02	7.168
AC-228	+	969.11		1.518E+00	5.591E-01	4.084E-01	9.647E-02	3.715
	+	338.32		1.524E+00	7.356E-01	4.250E-01	1.747E-01	3.587
	+	911.07	*	1.786E+00	3.920E-01	2.491E-01	3.083E-02	7.168
	+	969.11		1.518E+00	5.591E-01	4.084E-01	9.647E-02	3.715
	+	74.81		2.558E+00	4.258E-01	3.761E-01	2.975E-02	6.802
TH-228	+	77.11		2.156E+00	2.700E-01	2.246E-01	1.748E-02	9.601
	+	87.30		1.767E+00	4.082E-01	4.506E-01	3.433E-02	3.922
	+	238.63	*	1.562E+00	2.047E-01	9.988E-02	1.077E-02	15.638
	+	300.09		1.047E+00	1.117E+00	1.199E+00	7.113E-01	0.873
	+	609.31	*	1.319E+00	2.153E-01	1.245E-01	1.043E-02	10.597
TH-230	+	1120.29		1.809E+00	6.310E-01	4.882E-01	4.663E-02	3.706
	+	1764.49		1.756E+00	5.273E-01	4.298E-01	2.485E-02	4.085
	+	338.32		1.524E+00	4.035E-01	4.250E-01	3.332E-02	3.587
	+	911.07	*	1.786E+00	3.920E-01	2.491E-01	3.083E-02	7.168
	+	969.11		1.518E+00	5.591E-01	4.084E-01	9.647E-02	3.715
TH-232	+	63.29	*	9.732E-01	9.443E-01	1.063E+00	1.889E-01	0.916
	+	92.38		2.279E+00	7.513E-01	6.673E-01	1.199E-01	3.416
	+	609.31	*	1.319E+00	2.153E-01	1.245E-01	1.043E-02	10.597
	+	1120.29		1.809E+00	6.310E-01	4.882E-01	4.663E-02	3.706
	+	1764.49		1.756E+00	5.273E-01	4.298E-01	2.485E-02	4.085
NP-237	+	86.50	*	1.106E+00	3.426E-01	2.814E-01	6.192E-02	3.931
	+	95.87		2.848E-01	9.410E-01	1.367E+00	3.385E-01	0.208
	+	63.29	*	9.732E-01	9.443E-01	1.063E+00	1.889E-01	0.916
	+	92.38		2.279E+00	6.582E-01	6.673E-01	5.583E-02	3.416
	+	92.38		2.279E+00	6.582E-01	6.673E-01	5.583E-02	3.416



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	+	74.67	*	4.089E-01	6.791E-02	6.010E-02	4.707E-03	6.804
	+	86.72		4.149E+01	9.581E+00	1.056E+01	8.055E-01	3.929
		117.66		7.742E-01	3.865E+00	6.339E+00	8.393E-01	0.122
		142.18		-1.637E+00	1.848E+01	2.980E+01	3.703E+00	-0.055
ANH-511	+	511.00	*	1.162E-01	7.481E-02	5.129E-02	3.282E-03	2.266

---- 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	*	-2.917E-01	3.596E-01	5.512E-01	3.949E-02	-0.529
NA-22		1274.54	*	-9.571E-03	4.517E-02	7.119E-02	4.147E-03	-0.134
NA-24		1368.53	*	-3.576E-01	4.517E-02	Half-Life too short		
AL-26		1129.67		1.230E+00	1.981E+00	3.357E+00	2.249E-01	0.366
		1808.65	*	4.797E-06	3.762E-02	6.188E-02	3.550E-03	0.000
TI-44		67.85		3.642E-03	3.611E-02	4.440E-02	3.553E-03	0.082
	+	78.38	*	3.923E-01	4.913E-02	6.548E-02	5.080E-03	5.991
SC-46		889.25	*	1.724E-02	4.283E-02	7.348E-02	7.380E-03	0.235
	+	1120.51		3.074E-01	1.053E-01	1.526E-01	1.050E-02	2.015
V-48		944.10		-9.300E-01	9.254E-01	1.353E+00	1.309E-01	-0.687
		983.50	*	5.313E-02	7.555E-02	1.325E-01	1.214E-02	0.401
		1312.09		2.941E-02	7.726E-02	1.312E-01	7.609E-03	0.224
CR-51		320.08	*	-2.502E-01	4.829E-01	6.692E-01	5.918E-02	-0.374
MN-52		744.21		9.675E-02	2.229E-01	3.859E-01	2.996E-02	0.251
		848.13		1.181E-01	6.373E+00	1.059E+01	9.925E-01	0.011
		935.52		8.940E-02	2.786E-01	4.718E-01	4.612E-02	0.189
		1246.25		-3.265E+00	6.852E+00	1.051E+01	6.113E-01	-0.311
		1333.61		-2.331E+00	5.145E+00	7.929E+00	4.589E-01	-0.294
		1434.06	*	7.368E-02	2.175E-01	3.803E-01	2.227E-02	0.194
MN-54		834.83	*	2.191E-02	4.569E-02	7.853E-02	7.194E-03	0.279
CO-56		846.75	*	1.423E-02	4.189E-02	7.162E-02	6.698E-03	0.199
		977.42		-1.613E+00	3.696E+00	5.111E+00	4.725E-01	-0.316
		1037.82		-7.561E-02	3.251E-01	5.192E-01	4.580E-02	-0.146
		1175.09		7.258E-01	2.307E+00	3.878E+00	2.250E-01	0.187
		1238.25		1.348E-01	1.120E-01	1.979E-01	1.223E-02	0.681
		1360.21		3.031E-01	1.198E+00	1.993E+00	1.158E-01	0.152
		1771.40		-3.201E-02	2.805E-01	4.527E-01	2.614E-02	-0.071
CO-57		122.06	*	-1.834E-02	2.696E-02	4.083E-02	5.794E-03	-0.449
		136.48		-2.628E-02	2.187E-01	3.526E-01	4.723E-02	-0.075
CO-58		810.76	*	-6.926E-03	4.342E-02	7.115E-02	6.263E-03	-0.097
FE-59		142.65		-8.305E-01	2.832E+00	4.527E+00	5.605E-01	-0.183
		192.34		-2.213E-01	1.098E+00	1.678E+00	2.406E-01	-0.132
		1099.22	*	7.850E-03	1.047E-01	1.723E-01	1.396E-02	0.046
		1291.56		2.380E-02	1.272E-01	2.105E-01	1.563E-02	0.113
CO-60		1173.22		-1.789E-02	4.690E-02	7.312E-02	4.241E-03	-0.245
		1332.49	*	-1.060E-03	4.457E-02	7.171E-02	4.150E-03	-0.015
ZN-65		1115.52	*	1.017E-01	1.130E-01	1.774E-01	1.240E-02	0.573
GE-68		1077.35	*	-7.816E-01	1.329E+00	2.029E+00	1.558E-01	-0.385
AS-73		53.44	*	1.698E-02	2.332E-01	3.811E-01	2.869E-02	0.045

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-74		595.88	*	6.881E-02	1.037E-01	1.758E-01	1.156E-02	0.391
		634.78		1.668E-01	4.085E-01	6.791E-01	4.477E-02	0.246
SE-75		66.05		7.501E-01	3.034E+00	4.448E+00	4.437E-01	0.169
		96.73		1.315E-01	7.652E-01	1.107E+00	1.546E-01	0.119
		121.11		-1.014E-01	1.376E-01	2.155E-01	3.387E-02	-0.471
		136.00		1.021E-03	4.060E-02	6.588E-02	8.591E-03	0.015
		198.60		1.056E+00	2.046E+00	3.313E+00	3.581E-01	0.319
		264.65	*	1.186E-02	5.383E-02	7.957E-02	7.596E-03	0.149
		279.53		9.848E-02	1.177E-01	2.036E-01	1.950E-02	0.484
		303.91		-2.417E+00	2.589E+00	3.456E+00	4.007E-01	-0.699
		400.65		4.099E-02	2.885E-01	4.788E-01	4.382E-02	0.086
BR-77	+	87.88		6.361E+02	1.469E+02	2.392E+02	1.821E+01	2.660
		200.40		-5.225E+01	1.426E+02	2.242E+02	2.239E+01	-0.233
	+	239.00		1.899E+02	2.339E+01	3.062E+01	3.001E+00	6.204
		249.79		-2.173E+01	6.165E+01	8.784E+01	8.517E+00	-0.247
		281.68		-7.214E+01	7.604E+01	1.207E+02	1.114E+01	-0.598
		297.23		3.134E+02	7.115E+01	1.010E+02	9.018E+00	3.103
		303.76		-1.613E+02	1.698E+02	2.269E+02	1.992E+01	-0.711
		439.47		5.276E+01	1.247E+02	2.099E+02	1.279E+01	0.251
		484.57		1.082E+02	2.093E+02	3.532E+02	2.226E+01	0.306
		520.65	*	2.002E+00	8.952E+00	1.480E+01	9.517E-01	0.135
		574.64		-3.483E+01	1.955E+02	3.030E+02	1.986E+01	-0.115
		578.91		4.611E+01	9.270E+01	1.358E+02	8.909E+00	0.340
		585.48		9.780E+02	2.264E+02	4.058E+02	2.665E+01	2.410
		755.35		1.469E+02	1.386E+02	2.504E+02	1.986E+01	0.587
		817.79		-4.496E+01	1.158E+02	1.856E+02	1.650E+01	-0.242
SR-82		698.33		5.042E-01	3.971E+01	6.660E+01	4.724E+00	0.008
		776.49	*	-5.564E-01	5.125E-01	6.332E-01	5.224E-02	-0.879
		1395.20		1.858E+00	1.155E+01	1.972E+01	1.151E+00	0.094
RB-83		520.41	*	-1.144E-02	7.705E-02	1.238E-01	7.961E-03	-0.092
		529.64		-5.834E-03	1.144E-01	1.851E-01	1.195E-02	-0.032
		552.65		-1.733E-01	2.269E-01	3.447E-01	2.245E-02	-0.503
RB-84		881.50	*	1.027E-01	7.935E-02	1.450E-01	1.438E-02	0.708
KR-85		513.99	*	1.037E+01	8.982E+00	1.400E+01	8.974E-01	0.741
SR-85		513.99	*	5.266E-02	4.561E-02	7.111E-02	4.558E-03	0.741
RB-86		1076.63	*	-3.431E-01	8.302E-01	1.297E+00	9.975E-02	-0.265
Y-88		898.02		-4.009E-04	4.828E-02	7.976E-02	8.155E-03	-0.005
		1836.01	*	-1.548E-02	3.914E-02	5.908E-02	3.380E-03	-0.262
ZR-88		392.90	*	-3.521E-02	3.347E-02	5.131E-02	2.988E-03	-0.686
Y-91		1204.90	*	5.634E+00	2.137E+01	3.557E+01	2.067E+00	0.158
NB-94		702.63	*	1.691E-02	4.000E-02	6.895E-02	4.933E-03	0.245
		871.10		-7.594E-03	3.528E-02	5.712E-02	5.566E-03	-0.133
NB-95		765.79	*	9.726E-02	5.745E-02	9.582E-02	7.750E-03	1.015
NB-95M		235.69	*	6.493E-01	1.728E-01	2.775E-01	3.035E-02	2.340
ZR-95		724.18		1.463E-01	1.281E-01	2.048E-01	1.704E-02	0.714
		756.15	*	5.857E-02	7.723E-02	1.365E-01	1.213E-02	0.429
NB-97		657.90	*	4.614E-02	7.723E-02	Half-Life too short		
		1024.50		-9.810E-01	7.723E-02	Half-Life too short		
ZR-97		254.15		1.358E+00	7.723E-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		1.056E+00	7.723E-02	Half-Life	too short	
		507.63	*	2.349E+00	7.723E-02	Half-Life	too short	
		602.52		6.626E-01	7.723E-02	Half-Life	too short	
		1021.30		-1.251E+00	7.723E-02	Half-Life	too short	
		1147.95		-3.901E-01	7.723E-02	Half-Life	too short	
		1362.66		2.684E+00	7.723E-02	Half-Life	too short	
		1750.46		9.945E-01	7.723E-02	Half-Life	too short	
MO-99		140.51		-1.734E+01	2.306E+01	3.445E+01	1.005E+01	-0.503
		181.06		1.962E+00	1.612E+01	2.274E+01	4.313E+00	0.086
		366.43		1.675E+01	7.086E+01	1.188E+02	8.151E+00	0.141
		739.58	*	-1.289E+00	1.033E+01	1.709E+01	2.508E+00	-0.075
		778.00		-3.580E+01	3.676E+01	4.608E+01	3.813E+00	-0.777
TC-99M		140.51	*	-2.598E+09	3.676E+01	Half-Life	too short	
RH-101		127.23		3.635E-02	3.859E-02	5.709E-02	7.859E-03	0.637
		198.01	*	1.991E-02	3.806E-02	6.167E-02	6.159E-03	0.323
		325.23		1.015E-02	2.393E-01	3.982E-01	3.277E-02	0.025
RH-102		418.52		8.116E-02	3.186E-01	5.318E-01	3.180E-02	0.153
		475.06	*	6.211E-03	3.151E-02	5.220E-02	3.270E-03	0.119
		631.29		8.077E-03	6.453E-02	1.049E-01	6.917E-03	0.077
		697.49		-4.142E-02	9.870E-02	1.515E-01	1.073E-02	-0.273
		766.84		2.123E-01	1.489E-01	2.429E-01	1.969E-02	0.874
		1046.59		6.756E-02	1.428E-01	2.437E-01	2.000E-02	0.277
		1112.84		-9.582E-02	2.960E-01	3.941E-01	2.769E-02	-0.243
RU-103		497.08	*	-7.869E-03	4.292E-02	6.891E-02	8.895E-03	-0.114
	+	610.33		1.402E+01	2.953E+00	3.301E+00	5.193E-01	4.247
RH-106	+	511.85		5.794E-01	3.730E-01	4.772E-01	3.056E-02	1.214
		621.84	*	-1.674E-02	3.743E-01	6.007E-01	7.297E-02	-0.028
		1050.47		-2.240E-01	2.866E+00	4.661E+00	3.794E-01	-0.048
RU-106	+	511.85		5.794E-01	3.730E-01	4.772E-01	3.056E-02	1.214
		621.84	*	-1.674E-02	3.743E-01	6.007E-01	3.960E-02	-0.028
		1050.47		-2.240E-01	2.866E+00	4.661E+00	3.794E-01	-0.048
AG-108M		433.93	*	2.827E-03	3.714E-02	6.121E-02	4.005E-03	0.046
		614.37		-1.781E-02	4.990E-02	6.630E-02	4.659E-03	-0.269
		722.95		-4.588E-02	5.755E-02	7.555E-02	5.922E-03	-0.607
AG-110M		657.75	*	3.927E-02	4.235E-02	6.542E-02	4.522E-03	0.600
		677.61		1.484E-01	3.224E-01	5.607E-01	3.983E-02	0.265
		706.67		4.535E-02	2.463E-01	4.178E-01	3.132E-02	0.109
		763.93		1.606E-01	2.042E-01	3.196E-01	2.659E-02	0.502
		884.67		-4.231E-02	5.711E-02	8.758E-02	8.941E-03	-0.483
		937.48		-6.965E-02	1.365E-01	2.147E-01	2.153E-02	-0.324
		1384.27		-1.493E-02	1.879E-01	2.650E-01	1.638E-02	-0.056
IN-111		171.28		-4.159E-01	8.965E-01	1.411E+00	1.403E-01	-0.295
		245.39	*	-7.699E-01	9.011E-01	1.449E+00	1.412E-01	-0.531
IN-113M		391.69	*	-1.291E-02	4.792E-02	7.760E-02	4.814E-03	-0.166
SN-113		391.69	*	-1.291E-02	4.792E-02	7.760E-02	4.814E-03	-0.166
IN-114M		190.27	*	4.038E-02	2.275E-01	3.214E-01	3.209E-02	0.126
CD-115		260.90		-5.240E+01	1.032E+02	1.685E+02	1.611E+01	-0.311
		492.35		3.309E+00	3.084E+01	5.067E+01	3.210E+00	0.065
		527.90	*	-8.014E+00	9.575E+00	1.453E+01	9.374E-01	-0.552

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M		156.02		-7.048E-01	2.416E+00	3.850E+00	4.245E-01	-0.183
		158.56	*	2.876E-02	5.744E-02	9.442E-02	1.015E-02	0.305
SB-122		563.90	*	-2.737E+00	1.917E+00	2.731E+00	1.785E-01	-1.002
		692.80		1.282E+00	4.031E+01	6.773E+01	4.751E+00	0.019
I-123		159.00	*	1.208E+00	4.031E+01	Half-Life	too short	
		528.96		-3.274E+00	4.031E+01	Half-Life	too short	
TE-123M		159.00	*	1.868E-02	3.056E-02	5.044E-02	5.419E-03	0.370
I-124		602.71	*	3.834E-01	7.632E-01	1.119E+00	7.367E-02	0.343
		722.78		-5.778E+00	5.305E+00	6.713E+00	4.999E-01	-0.861
		1325.50		3.676E+01	3.208E+01	5.918E+01	3.427E+00	0.621
	+	1376.25		7.668E+01	4.857E+01	6.408E+01	3.731E+00	1.197
		1509.49		5.867E+00	1.504E+01	2.633E+01	1.548E+00	0.223
		1691.02		1.658E+00	2.782E+00	5.213E+00	3.043E-01	0.318
SB-124		602.71		2.562E-02	5.100E-02	7.478E-02	4.925E-03	0.343
		645.85		3.047E-01	6.013E-01	1.006E+00	7.293E-02	0.303
		709.31		-2.177E+00	3.254E+00	5.170E+00	3.749E-01	-0.421
		713.82		-1.323E+00	1.935E+00	3.063E+00	3.412E-01	-0.432
		722.78		-5.597E-01	5.140E-01	6.503E-01	4.983E-02	-0.861
	+	968.20		1.546E+01	4.605E+00	7.262E+00	6.802E-01	2.129
		1045.16		-5.090E-01	3.042E+00	4.908E+00	4.039E-01	-0.104
		1325.50		3.803E+00	3.319E+00	6.123E+00	3.546E-01	0.621
		1368.21		-1.771E+00	2.364E+00	2.896E+00	3.440E-01	-0.612
		1436.60		-1.829E+00	3.861E+00	5.990E+00	3.509E-01	-0.305
		1691.02	*	3.790E-02	6.358E-02	1.191E-01	7.540E-03	0.318
SB-125		427.89	*	2.573E-02	9.576E-02	1.601E-01	1.004E-02	0.161
	+	463.38		1.026E+00	4.244E-01	6.140E-01	4.372E-02	1.671
		600.56		-1.034E-01	2.383E-01	3.436E-01	2.541E-02	-0.301
		635.90		6.236E-03	3.192E-01	5.144E-01	3.847E-02	0.012
TE-125M		109.28	*	-9.752E+00	9.698E+00	1.483E+01	1.906E+00	-0.658
I-126		388.63		2.584E-01	2.105E-01	3.715E-01	2.211E-02	0.696
		666.33	*	1.217E-01	2.283E-01	3.355E-01	2.228E-02	0.363
		753.82		4.834E-01	1.539E+00	2.633E+00	2.082E-01	0.184
SB-126		223.80		1.538E+00	3.992E+00	6.828E+00	6.766E-01	0.225
		278.60		2.772E+00	2.578E+00	4.494E+00	4.175E-01	0.617
	+	296.50		1.190E+01	2.779E+00	3.664E+00	3.276E-01	3.248
		414.70		3.574E-02	8.060E-02	1.360E-01	8.105E-03	0.263
		415.30		5.271E+00	6.607E+00	1.138E+01	6.786E-01	0.463
		555.20		-5.216E-02	4.223E+00	6.836E+00	4.456E-01	-0.008
		573.80		-2.057E-01	1.203E+00	1.920E+00	1.258E-01	-0.107
		593.00		-4.132E-01	1.060E+00	1.659E+00	1.091E-01	-0.249
		656.30		2.194E+00	3.939E+00	5.837E+00	3.841E-01	0.376
		666.33		5.074E-02	9.522E-02	1.399E-01	9.290E-03	0.363
		675.00		3.944E-01	2.012E+00	3.429E+00	2.319E-01	0.115
		695.00		-2.291E-02	9.455E-02	1.470E-01	1.036E-02	-0.156
		697.00		-1.191E-01	3.287E-01	5.069E-01	3.586E-02	-0.235
		720.50	*	3.458E-02	1.779E-01	2.722E-01	2.018E-02	0.127
		856.80		1.684E-01	5.204E-01	8.857E-01	8.426E-02	0.190
		989.30		-5.541E-01	1.291E+00	2.024E+00	1.838E-01	-0.274
		1034.80		-6.534E+00	8.848E+00	1.326E+01	1.113E+00	-0.493

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1213.00			-2.372E+00	5.129E+00	7.956E+00	4.624E-01	-0.298
	61.10			4.012E+01	2.482E+01	3.794E+01	4.019E+00	1.058
	252.40			-7.272E-01	4.369E+00	6.591E+00	2.781E+00	-0.110
	290.80			-4.321E+00	2.183E+01	3.120E+01	3.509E+00	-0.138
	411.60			-4.084E+00	1.232E+01	1.984E+01	2.823E+00	-0.206
	444.90			-6.139E+00	9.340E+00	1.456E+01	1.558E+00	-0.422
	473.00			9.318E-01	1.511E+00	2.574E+00	2.873E-01	0.362
	543.00			-4.532E+00	1.679E+01	2.667E+01	3.469E+00	-0.170
	603.60			6.399E+00	1.287E+01	1.885E+01	2.062E+00	0.339
	685.20	*		-5.489E-01	1.275E+00	2.063E+00	2.033E-01	-0.266
	698.50			-7.890E-01	1.534E+01	2.560E+01	3.801E+00	-0.031
	722.20			-2.431E+01	3.340E+01	4.400E+01	4.395E+00	-0.553
	783.80			4.956E+00	3.591E+00	6.522E+00	7.826E-01	0.760
	57.60			-1.370E-01	2.243E+00	3.586E+00	2.887E-01	-0.038
XE-127	145.22			7.950E-01	7.420E-01	1.222E+00	1.482E-01	0.651
	172.10			-1.453E-01	1.337E-01	2.036E-01	2.025E-02	-0.714
	202.84	*		-3.267E-02	5.077E-02	7.855E-02	7.840E-03	-0.416
	374.96			-3.772E-02	2.064E-01	3.368E-01	2.198E-02	-0.112
	80.18			1.865E+00	4.652E+00	4.996E+00	3.888E-01	0.373
I-131	284.30			-8.674E-02	1.459E+00	2.429E+00	2.333E-01	-0.036
	364.48	*		2.227E-02	1.108E-01	1.855E-01	1.391E-02	0.120
	636.97			-9.510E-01	1.738E+00	2.666E+00	1.920E-01	-0.357
	722.89			-7.325E+00	8.953E+00	1.172E+01	8.797E-01	-0.625
TE-132	49.72			-3.176E+00	3.727E+00	5.202E+00	4.900E-01	-0.611
	111.76			-2.590E+00	2.521E+01	4.094E+01	5.539E+00	-0.063
	116.30			1.100E+01	2.339E+01	3.869E+01	5.557E+00	0.284
BA-133	228.16	*		-8.420E-02	5.874E-01	9.824E-01	1.600E-01	-0.086
	53.15			5.028E-01	9.867E-01	1.635E+00	1.225E-01	0.307
	79.62			2.479E+00	1.484E+00	1.689E+00	2.491E-01	1.468
	81.00			2.701E-02	1.083E-01	1.149E-01	1.770E-02	0.235
	276.40			2.094E-01	4.637E-01	6.924E-01	1.030E-01	0.302
	302.84			-4.166E-02	1.736E-01	2.466E-01	3.306E-02	-0.169
I-133	356.01	*		1.914E-02	5.244E-02	7.751E-02	9.573E-03	0.247
	383.85			-1.088E-01	3.300E-01	5.327E-01	5.896E-02	-0.204
	510.53	+		5.733E-01	3.300E-01	Half-Life	too short	
	529.87	*		7.863E-04	3.300E-01	Half-Life	too short	
	706.58			4.358E-02	3.300E-01	Half-Life	too short	
	856.28			-9.449E-02	3.300E-01	Half-Life	too short	
	875.33			-1.051E-01	3.300E-01	Half-Life	too short	
	1236.41			4.391E-01	3.300E-01	Half-Life	too short	
	1298.22			5.680E-02	3.300E-01	Half-Life	too short	
	475.35			1.138E-01	2.027E+00	3.324E+00	2.083E-01	0.034
CS-134	563.23			-3.443E-01	4.022E-01	6.043E-01	4.013E-02	-0.570
	569.32			3.701E-01	2.232E-01	4.035E-01	2.703E-02	0.917
	604.70			1.111E-02	4.428E-02	6.327E-02	4.184E-03	0.176
	795.84	+	*	1.124E-01	7.618E-02	1.040E-01	8.955E-03	1.081
	801.93			-1.885E-01	4.982E-01	7.099E-01	6.170E-02	-0.265
	1038.57			-1.044E-01	4.121E+00	6.737E+00	5.616E-01	-0.016
	1167.94			-1.215E-01	2.758E+00	4.469E+00	2.643E-01	-0.027

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135	1365.15			-2.308E-01	1.492E+00	2.355E+00	1.503E-01	-0.098
	268.24	*		2.999E-01	2.123E-01	3.311E-01	3.542E-02	0.906
	288.45			-1.439E+09	2.123E-01	Half-Life	too short	
	417.63			-5.867E+08	2.123E-01	Half-Life	too short	
	546.56			9.042E+08	2.123E-01	Half-Life	too short	
	836.80			2.128E+09	2.123E-01	Half-Life	too short	
	1038.76			-1.285E+08	2.123E-01	Half-Life	too short	
	1124.00			-3.784E+09	2.123E-01	Half-Life	too short	
	1131.51			-3.681E+08	2.123E-01	Half-Life	too short	
	1260.41	*		3.938E+08	2.123E-01	Half-Life	too short	
	1457.56			8.636E+10	2.123E-01	Half-Life	too short	
	1678.03			2.596E+08	2.123E-01	Half-Life	too short	
	1706.46			-8.087E+08	2.123E-01	Half-Life	too short	
	1791.20			-2.002E+08	2.123E-01	Half-Life	too short	
CS-136	66.91			-1.074E-01	4.852E-01	6.979E-01	1.055E-01	-0.154
	86.29	+		4.688E+00	1.171E+00	1.709E+00	2.087E-01	2.742
	153.22			2.956E-01	6.938E-01	1.138E+00	1.378E-01	0.260
	163.89			-4.430E-01	1.147E+00	1.756E+00	1.940E-01	-0.252
	176.55			9.663E-02	3.843E-01	6.240E-01	6.486E-02	0.155
	273.65			-5.591E-01	5.554E-01	7.504E-01	7.427E-02	-0.745
	340.57			5.710E-01	1.620E-01	2.768E-01	2.227E-02	2.063
	818.51			-3.237E-02	8.010E-02	1.282E-01	1.142E-02	-0.253
	1048.07	*		8.979E-02	1.278E-01	2.221E-01	1.902E-02	0.404
	1235.34			1.190E+00	7.215E-01	1.299E+00	1.299E-01	0.916
CE-139 BA-140	165.85	*		1.724E-03	3.284E-02	5.299E-02	5.261E-03	0.033
	162.64			-9.439E-01	8.178E-01	1.201E+00	1.287E-01	-0.786
	304.84			-1.153E+00	1.523E+00	2.024E+00	5.680E-01	-0.570
	423.70			-4.335E-01	1.904E+00	3.068E+00	9.762E-01	-0.141
LA-140	537.32	*		-2.515E-01	2.940E-01	4.257E-01	1.390E-01	-0.591
	328.77	+		1.033E+00	5.527E-01	5.605E-01	4.843E-02	1.843
	432.53			-4.125E-01	2.242E+00	3.633E+00	2.413E-01	-0.114
	487.03			-1.043E-01	1.575E-01	2.448E-01	1.719E-02	-0.426
	751.79			-2.121E+00	1.821E+00	2.716E+00	2.411E-01	-0.781
	815.85			-1.724E-02	3.377E-01	5.586E-01	5.491E-02	-0.031
	867.82			2.870E-01	1.355E+00	2.292E+00	2.315E-01	0.125
	919.63			6.531E-01	3.154E+00	5.154E+00	6.059E-01	0.127
	925.24			-7.359E-01	1.219E+00	1.887E+00	1.957E-01	-0.390
	1596.49	*		-3.619E-02	1.077E-01	1.409E-01	8.281E-03	-0.257
CE-141 CE-143	145.44	*		6.052E-02	6.754E-02	1.107E-01	1.354E-02	0.547
	57.37			-8.054E-05	6.754E-02	Half-Life	too short	
	231.56			-1.018E-03	6.754E-02	Half-Life	too short	
	293.26	*		6.444E-04	6.754E-02	Half-Life	too short	
	350.59	+		1.964E-02	6.754E-02	Half-Life	too short	
	490.36			5.214E-04	6.754E-02	Half-Life	too short	
	664.57			3.657E-04	6.754E-02	Half-Life	too short	
	721.93			-5.873E-04	6.754E-02	Half-Life	too short	
	80.11			1.188E+00	2.314E+00	2.505E+00	1.936E-01	0.474
	133.54	*		5.873E-02	2.378E-01	3.416E-01	6.325E-02	0.172
PM-144	476.78			-7.410E-02	7.335E-02	1.101E-01	8.086E-03	-0.673

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		3.288E-03	3.692E-02	5.831E-02	4.023E-03	0.056
		696.49	*	-2.284E-02	4.428E-02	6.744E-02	4.768E-03	-0.339
		778.57		-1.386E+00	2.836E+00	3.992E+00	3.308E-01	-0.347
PR-144		696.49	*	-1.547E+00	2.999E+00	4.568E+00	3.228E-01	-0.339
		1489.15		-8.835E+00	1.210E+01	1.764E+01	1.036E+00	-0.501
PM-146		453.90	*	2.049E-02	5.325E-02	8.682E-02	7.704E-03	0.236
		633.02		1.373E+00	1.718E+00	2.820E+00	1.042E+00	0.487
		735.90		1.894E-01	1.815E-01	3.088E-01	8.746E-02	0.614
		747.13		2.782E-02	9.451E-02	1.618E-01	2.193E-02	0.172
ND-147	+	91.11		8.021E-01	2.956E-01	4.544E-01	4.042E-02	1.765
		319.41		6.906E-01	3.844E+00	5.878E+00	4.933E-01	0.117
		439.89		3.132E+00	6.140E+00	1.040E+01	6.343E-01	0.301
		531.02	*	-2.662E-02	5.894E-01	9.538E-01	1.318E-01	-0.028
PM-149		285.90	*	1.422E+01	7.285E+01	1.227E+02	1.945E+01	0.116
EU-152		121.78		-7.017E-02	7.832E-02	1.169E-01	1.748E-02	-0.600
		244.69		-1.448E-01	3.506E-01	5.776E-01	5.631E-02	-0.251
		344.27	*	-1.127E-01	1.244E-01	1.649E-01	1.356E-02	-0.684
		443.98		-5.659E-01	1.077E+00	1.700E+00	1.040E-01	-0.333
		778.89		-6.643E-02	3.109E-01	4.693E-01	3.890E-02	-0.142
		867.32		-1.827E-01	8.718E-01	1.414E+00	1.369E-01	-0.129
	+	964.01		1.000E+00	4.272E-01	6.725E-01	6.336E-02	1.487
		1085.78		1.451E-01	4.040E-01	6.868E-01	5.171E-02	0.211
		1112.02		-1.132E-01	4.073E-01	5.455E-01	3.842E-02	-0.208
		1407.95		2.111E-01	2.179E-01	4.026E-01	2.353E-02	0.524
GD-153		69.67		-2.767E-01	1.223E+00	1.634E+00	1.299E-01	-0.169
		83.37		2.734E+01	1.154E+01	1.948E+01	1.495E+00	1.404
		97.43	*	2.487E-02	7.900E-02	1.151E-01	1.067E-02	0.216
		103.18		-7.521E-02	1.021E-01	1.618E-01	1.673E-02	-0.465
EU-154		123.07		1.423E-02	5.921E-02	8.531E-02	1.360E-02	0.167
		247.94		-2.412E-01	4.376E-01	6.140E-01	7.564E-02	-0.393
		591.81		-5.450E-01	7.538E-01	1.105E+00	1.133E-01	-0.493
		723.30		-5.763E-02	2.337E-01	3.279E-01	2.784E-02	-0.176
		756.87		8.217E-01	8.795E-01	1.566E+00	1.802E-01	0.525
		873.19		-2.463E-01	3.263E-01	4.967E-01	6.500E-02	-0.496
		996.32		-2.793E-01	4.005E-01	6.044E-01	1.085E-01	-0.462
		1004.76		9.820E-02	2.495E-01	4.244E-01	5.015E-02	0.231
		1274.45	*	-2.937E-02	1.260E-01	1.979E-01	1.850E-02	-0.148
EU-155		48.70		4.253E-01	5.122E-01	7.780E-01	5.422E-02	0.547
		60.01		2.000E+00	2.293E+00	3.455E+00	2.860E-01	0.579
	+	86.54		4.536E-01	1.049E-01	1.639E-01	1.267E-02	2.767
		105.31	*	4.333E-02	1.061E-01	1.757E-01	1.903E-02	0.247
TB-160	+	86.79		1.202E+00	2.775E-01	4.305E-01	3.283E-02	2.791
		197.04		2.939E-01	6.472E-01	1.046E+00	1.045E-01	0.281
		215.65		1.474E-01	8.733E-01	1.354E+00	1.347E-01	0.109
	+	298.57		1.489E-01	1.327E-01	2.168E-01	1.929E-02	0.687
		879.36	*	1.498E-01	1.577E-01	2.819E-01	2.786E-02	0.531
	+	962.29		1.831E+00	7.820E-01	1.241E+00	1.172E-01	1.475
		966.15		1.244E+00	3.149E-01	6.001E-01	5.637E-02	2.073
		1177.93		-1.590E-01	3.797E-01	5.896E-01	3.421E-02	-0.270

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		1271.85		2.511E-01	7.130E-01	1.204E+00	6.997E-02	0.209
		80.57		7.651E-02	2.974E-01	3.159E-01	2.439E-02	0.242
	+	184.41		1.757E-01	6.387E-02	7.709E-02	7.692E-03	2.279
		280.46		-2.491E-02	9.319E-02	1.537E-01	1.422E-02	-0.162
		410.95		7.558E-02	2.885E-01	4.813E-01	2.857E-02	0.157
		711.68	*	-2.847E-02	7.147E-02	1.160E-01	8.453E-03	-0.245
TM-171		752.31		-2.081E-01	3.008E-01	4.714E-01	3.717E-02	-0.442
		810.29		1.962E-03	6.444E-02	1.074E-01	9.426E-03	0.018
		51.35		6.776E+00	7.972E+00	1.211E+01	8.811E-01	0.560
		52.39		2.538E+00	4.212E+00	6.797E+00	5.029E-01	0.373
		59.40		1.371E+01	1.184E+01	1.803E+01	1.494E+00	0.761
		66.72	*	7.270E-01	1.820E+01	2.647E+01	2.127E+00	0.027
LU-176	+	88.36		8.936E-01	2.064E-01	3.400E-01	2.608E-02	2.628
		201.83		-1.782E-02	3.129E-02	4.861E-02	4.852E-03	-0.367
		306.84	*	-3.913E-03	2.707E-02	4.353E-02	3.791E-03	-0.090
		401.10		-4.726E-01	7.596E+00	1.245E+01	7.317E-01	-0.038
LU-177		112.95		-1.265E-02	1.513E+00	2.466E+00	3.025E-01	-0.005
	+	208.36	*	2.518E+00	1.510E+00	2.008E+00	2.002E-01	1.254
LU-177M		52.97		2.185E-01	4.392E-01	7.278E-01	5.436E-02	0.300
		54.07		-3.326E-02	2.519E-01	4.089E-01	3.109E-02	-0.081
		61.30		1.629E+00	7.671E-01	1.193E+00	9.812E-02	1.366
		121.62		-3.943E-01	3.860E-01	5.949E-01	8.381E-02	-0.663
		147.16		-2.565E-01	7.078E-01	1.127E+00	1.345E-01	-0.228
		171.86		-3.948E-01	5.350E-01	8.301E-01	8.255E-02	-0.476
		218.09		-7.941E-02	8.981E-01	1.509E+00	1.499E-01	-0.053
	+	268.79		2.417E+00	1.514E+00	1.701E+00	1.608E-01	1.421
		319.02		8.280E-02	3.135E-01	4.822E-01	4.051E-02	0.172
		367.43		5.289E-02	9.585E-01	1.589E+00	1.084E-01	0.033
		413.65	*	-1.222E-01	2.078E-01	3.292E-01	1.959E-02	-0.371
		56.28		-3.932E-01	3.154E-01	4.988E-01	3.931E-02	-0.788
		57.53		-2.602E-02	1.881E-01	2.999E-01	2.412E-02	-0.087
		65.20		4.072E-01	5.880E-01	8.753E-01	7.076E-02	0.465
HF-181		133.02		-5.853E-03	7.562E-02	1.068E-01	1.416E-02	-0.055
		136.25		-2.240E-02	4.696E-01	7.596E-01	9.858E-02	-0.029
		345.85		-2.684E-01	2.422E-01	3.095E-01	2.351E-02	-0.867
		482.03	*	4.567E-02	4.924E-02	8.521E-02	5.363E-03	0.536
		56.28		-1.552E-01	1.247E-01	1.972E-01	1.554E-02	-0.787
		57.53		-1.046E-02	7.437E-02	1.186E-01	9.536E-03	-0.088
W-181		65.20	*	1.598E-01	2.307E-01	3.435E-01	2.777E-02	0.465
		67.75		-1.156E-03	7.793E-02	1.052E-01	8.422E-03	-0.011
TA-182		100.10		1.298E-01	1.693E-01	2.749E-01	2.684E-02	0.472
		152.43		4.473E-01	3.673E-01	6.162E-01	7.028E-02	0.726
		222.10		-2.600E-02	3.593E-01	6.035E-01	5.985E-02	-0.043
		1001.68		1.622E+00	2.301E+00	4.019E+00	3.577E-01	0.404
	+	1121.28		8.507E-01	2.913E-01	4.098E-01	2.813E-02	2.076
		1189.05		-1.023E-01	3.421E-01	5.394E-01	3.132E-02	-0.190
RE-183		1221.42	*	-3.640E-03	2.172E-01	3.520E-01	2.046E-02	-0.010
		1230.97		-6.262E-02	6.186E-01	9.953E-01	5.787E-02	-0.063
		57.98		3.238E-02	7.837E-02	1.223E-01	9.910E-03	0.265



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		6.231E-02	4.780E-02	7.319E-02	6.059E-03	0.851
		67.20		-3.741E-02	1.301E-01	1.867E-01	1.497E-02	-0.200
		162.32	*	-1.310E-01	1.238E-01	1.830E-01	1.891E-02	-0.716
	+	208.81		2.464E+00	1.477E+00	1.972E+00	1.966E-01	1.249
		291.72		6.820E-01	1.141E+00	1.720E+00	1.555E-01	0.397
		57.98		1.199E-01	2.903E-01	4.531E-01	3.671E-02	0.265
		59.32		2.306E-01	1.769E-01	2.709E-01	2.242E-02	0.851
		67.20		-1.385E-01	4.817E-01	6.912E-01	5.545E-02	-0.200
		161.27		-1.145E-01	3.813E-01	6.064E-01	6.337E-02	-0.189
		216.55		-3.051E-02	2.918E-01	4.774E-01	4.747E-02	-0.064
		252.85	*	2.692E-02	2.624E-01	4.181E-01	4.040E-02	0.064
		318.01		2.641E-01	5.040E-01	8.393E-01	7.073E-02	0.315
		792.07		1.193E+00	1.337E+00	2.101E+00	1.784E-01	0.567
		903.28		1.611E-01	1.338E+00	1.931E+00	1.957E-01	0.083
OS-185		920.93		2.201E-01	5.015E-01	8.617E-01	8.568E-02	0.255
		59.72		1.125E-01	1.338E-01	2.014E-01	1.670E-02	0.558
		61.14		1.425E-01	8.251E-02	1.272E-01	1.047E-02	1.121
		69.30		-1.447E-02	2.171E-01	2.921E-01	2.326E-02	-0.050
		592.07		-2.040E+00	3.064E+00	4.526E+00	2.976E-01	-0.451
		646.12	*	2.707E-02	5.143E-02	8.615E-02	5.675E-03	0.314
		717.42		5.909E-01	1.077E+00	1.871E+00	1.379E-01	0.316
		874.81		-7.847E-01	6.499E-01	9.374E-01	9.193E-02	-0.837
		880.27		9.867E-01	8.892E-01	1.606E+00	1.589E-01	0.614
		155.03	*	1.942E-02	1.884E-01	3.054E-01	3.400E-02	0.064
RE-188		477.96		-2.277E+00	3.420E+00	5.306E+00	3.330E-01	-0.429
		633.10		2.791E+00	3.297E+00	5.660E+00	3.731E-01	0.493
	+	63.58		3.876E+01	3.711E+01	4.849E+01	3.947E+00	0.799
W-188		227.08		1.932E+00	1.304E+01	2.208E+01	2.184E+00	0.088
	*	290.67		-1.531E+00	8.827E+00	1.264E+01	1.145E+00	-0.121
IR-192	+	295.96		9.507E-01	2.222E-01	3.007E-01	2.711E-02	3.161
		308.46		9.482E-02	1.000E-01	1.742E-01	1.518E-02	0.544
	*	316.51		9.624E-03	3.852E-02	6.486E-02	5.505E-03	0.148
		468.07		-3.433E-02	7.843E-02	1.053E-01	7.444E-03	-0.326
AU-195		604.41		2.596E-01	5.902E-01	8.593E-01	1.011E-01	0.302
		612.46		1.490E+00	9.035E-01	1.463E+00	1.199E-01	1.018
		65.12		9.062E-02	1.073E-01	1.605E-01	1.298E-02	0.565
		66.83		-1.235E-02	6.079E-02	8.755E-02	7.032E-03	-0.141
	+	75.70		1.319E+00	2.190E-01	3.808E-01	2.974E-02	3.463
	*	98.88		2.145E-01	2.299E-01	3.440E-01	3.280E-02	0.624
	+	129.76		3.695E+00	4.606E+00	5.218E+00	7.071E-01	0.708
TL-200		367.94	*	-9.137E-05	4.606E+00	Half-Life	too short	
		579.30		2.441E-03	4.606E+00	Half-Life	too short	
		828.27		-2.549E-04	4.606E+00	Half-Life	too short	
		1205.75		5.755E-04	4.606E+00	Half-Life	too short	
TL-201		68.90		5.990E-01	3.099E+00	3.828E+00	3.052E-01	0.156
		70.82		-8.698E-01	1.568E+00	2.219E+00	1.757E-01	-0.392
		80.30		1.220E+00	4.456E+00	4.740E+00	3.662E-01	0.257
		135.34		7.280E+00	2.210E+01	3.506E+01	4.579E+00	0.208
	*	167.43		6.423E+00	6.289E+00	1.050E+01	1.043E+00	0.611

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90		6.289E-02	3.254E-01	4.019E-01	3.204E-02	0.156
		70.82		-9.107E-02	1.642E-01	2.323E-01	1.840E-02	-0.392
		80.30		1.278E-01	4.667E-01	4.964E-01	3.835E-02	0.257
		439.56	*	2.983E-02	7.452E-02	1.253E-01	7.638E-03	0.238
HG-203		70.83		-4.028E-01	7.405E-01	1.046E+00	1.378E-01	-0.385
		72.87		2.291E+00	5.661E-01	8.136E-01	1.035E-01	2.816
		82.60		1.326E+00	1.279E+00	1.424E+00	1.876E-01	0.931
		279.20	*	3.940E-02	4.409E-02	7.641E-02	7.265E-03	0.516
BI-207		72.80		6.260E-01	1.511E-01	2.376E-01	1.871E-02	2.634
	+	74.97		7.339E-01	1.219E-01	1.886E-01	1.476E-02	3.892
		84.90		6.566E-01	1.646E-01	2.810E-01	2.150E-02	2.337
		569.67		5.955E-02	3.517E-02	6.367E-02	4.167E-03	0.935
		1063.62	*	2.279E-03	6.600E-02	1.084E-01	8.583E-03	0.021
		1770.23		2.238E-01	5.253E-01	8.344E-01	4.819E-02	0.268
TL-207		81.07		6.002E-02	2.922E-01	2.539E-01	1.958E-02	0.236
		83.78		2.208E-01	9.824E-02	1.655E-01	1.269E-02	1.335
		94.90		6.548E-01	2.408E-01	3.768E-01	3.321E-02	1.738
		122.32		-1.186E+00	1.974E+00	2.867E+00	4.177E-01	-0.414
		144.24		4.747E-01	7.375E-01	1.200E+00	1.557E-01	0.395
		154.21		1.377E-01	4.347E-01	7.102E-01	8.446E-02	0.194
	+	269.46		5.680E-01	3.559E-01	4.040E-01	3.879E-02	1.406
		323.87	*	-3.493E-01	8.138E-01	1.130E+00	1.982E-01	-0.309
	+	338.28		6.366E+00	1.775E+00	2.627E+00	3.094E-01	2.424
		445.03		-1.795E+00	2.554E+00	3.967E+00	4.147E-01	-0.453
PO-209		260.50		-6.351E+00	1.018E+01	1.651E+01	1.579E+00	-0.385
		262.80		-1.025E+01	3.022E+01	4.687E+01	4.470E+00	-0.219
		896.60	*	-2.488E-01	8.645E+00	1.426E+01	1.449E+00	-0.017
PB-211		404.84	*	-1.052E+00	1.297E+00	1.740E+00	1.085E+00	-0.604
		427.08		1.316E-01	2.137E+00	3.520E+00	2.177E+00	0.037
		831.96		-2.129E-01	1.457E+00	2.381E+00	1.493E+00	-0.089
BI-212	+	727.18	*	1.217E+00	4.312E-01	6.971E-01	6.323E-02	1.746
		785.46		4.626E-01	2.033E+00	3.446E+00	2.891E-01	0.134
		1620.62		1.901E+00	1.442E+00	2.826E+00	1.658E-01	0.673
PO-215		81.07		6.002E-02	2.392E-01	2.539E-01	1.958E-02	0.236
		83.78		2.208E-01	9.824E-02	1.655E-01	1.269E-02	1.335
		94.90		6.548E-01	2.408E-01	3.768E-01	3.321E-02	1.738
		122.32		-1.186E+00	1.974E+00	2.867E+00	4.177E-01	-0.414
		144.24		4.747E-01	7.375E-01	1.200E+00	1.557E-01	0.395
		154.21		1.377E-01	4.347E-01	7.102E-01	8.446E-02	0.194
	+	269.46		5.680E-01	3.559E-01	4.040E-01	3.879E-02	1.406
		323.87	*	-3.493E-01	8.138E-01	1.130E+00	1.982E-01	-0.309
	+	338.28		6.366E+00	1.775E+00	2.627E+00	3.094E-01	2.424
		445.03		-1.795E+00	2.554E+00	3.967E+00	4.147E-01	-0.453
RN-219	+	271.23		7.288E-01	4.583E-01	5.136E-01	5.640E-02	1.419
		401.81	*	-2.523E-01	4.764E-01	7.569E-01	1.032E-01	-0.333
RN-220		549.76	*	7.646E+00	3.027E+01	5.001E+01	3.254E+00	0.153
RA-223		81.07		6.002E-02	2.392E-01	2.539E-01	1.958E-02	0.236
		83.78		2.208E-01	9.824E-02	1.655E-01	1.269E-02	1.335
		94.90		6.548E-01	2.408E-01	3.768E-01	3.321E-02	1.738

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32	-1.186E+00	1.974E+00	2.867E+00	4.177E-01	-0.414
		144.24	4.747E-01	7.375E-01	1.200E+00	1.557E-01	0.395
		154.21	1.377E-01	4.347E-01	7.102E-01	8.446E-02	0.194
	+	269.46	5.680E-01	3.559E-01	4.040E-01	3.879E-02	1.406
		323.87	* -3.493E-01	8.138E-01	1.130E+00	1.982E-01	-0.309
	+	338.28	6.366E+00	1.775E+00	2.627E+00	3.094E-01	2.424
		445.03	-1.795E+00	2.554E+00	3.967E+00	4.147E-01	-0.453
		79.80	1.816E+00	1.844E+00	2.023E+00	4.282E-01	0.898
		236.00	2.079E+00	4.229E-01	6.050E-01	7.938E-02	3.436
		256.20	* -1.662E-01	4.032E-01	6.613E-01	1.054E-01	-0.251
		286.10	3.713E-01	1.616E+00	2.727E+00	3.697E-01	0.136
	+	299.80	1.913E+00	1.729E+00	2.695E+00	4.746E-01	0.710
TH-227		304.40	-1.913E+00	2.329E+00	3.117E+00	5.769E-01	-0.614
		334.20	3.054E+00	3.654E+00	3.979E+00	7.612E-01	0.768
		79.80	1.816E+00	1.845E+00	2.023E+00	4.339E-01	0.898
	+	94.00	8.808E+00	3.094E+00	3.457E+00	7.534E-01	2.548
		236.00	2.079E+00	4.088E-01	6.050E-01	7.284E-02	3.436
		256.20	* -1.662E-01	4.035E-01	6.613E-01	1.227E-01	-0.251
		286.10	3.713E-01	1.657E+00	2.727E+00	2.738E+00	0.136
	+	299.80	1.913E+00	1.729E+00	2.695E+00	4.746E-01	0.710
		304.40	-1.913E+00	2.329E+00	3.117E+00	5.769E-01	-0.614
		334.20	3.054E+00	3.654E+00	3.979E+00	7.612E-01	0.768
		85.43	9.029E-01	1.762E-01	2.989E-01	2.285E-02	3.021
	+	88.47	5.144E-01	1.188E-01	1.950E-01	1.500E-02	2.638
PA-231		100.00	1.373E-01	1.767E-01	2.869E-01	2.796E-02	0.478
		193.63	* -3.599E-01	5.745E-01	8.923E-01	8.912E-02	-0.403
		210.97	1.610E+00	1.016E+00	1.526E+00	1.521E-01	1.055
		283.67	* -3.000E-01	1.639E+00	2.711E+00	4.207E-01	-0.111
		301.29	1.126E+00	6.870E-01	1.088E+00	1.349E-01	1.035
		81.07	6.002E-02	2.392E-01	2.539E-01	1.958E-02	0.236
		83.78	2.208E-01	9.824E-02	1.655E-01	1.269E-02	1.335
		94.90	6.548E-01	2.408E-01	3.768E-01	3.321E-02	1.738
		122.32	-1.186E+00	1.974E+00	2.867E+00	4.177E-01	-0.414
		144.24	4.747E-01	7.375E-01	1.200E+00	1.557E-01	0.395
		154.21	1.377E-01	4.347E-01	7.102E-01	8.446E-02	0.194
	+	269.46	5.680E-01	3.559E-01	4.040E-01	3.879E-02	1.406
U-231		323.87	* -3.493E-01	8.138E-01	1.130E+00	1.982E-01	-0.309
	+	338.28	6.366E+00	1.775E+00	2.627E+00	3.094E-01	2.424
		445.03	-1.795E+00	2.554E+00	3.967E+00	4.147E-01	-0.453
		84.21	9.950E+00	3.726E+00	6.311E+00	4.836E-01	1.577
	+	92.29	7.492E+00	2.163E+00	3.088E+00	2.579E-01	2.426
		95.87	* 2.779E-01	9.162E-01	1.334E+00	1.199E-01	0.208
		108.00	-1.397E-01	1.759E+00	2.863E+00	3.227E-01	-0.049
	+	75.28	2.142E+01	4.478E+00	5.882E+00	8.771E-01	3.642
	+	86.59	7.376E+00	2.532E+00	2.660E+00	7.055E-01	2.772
	+	300.12	5.333E-01	4.795E-01	7.423E-01	1.115E-01	0.718
		311.98	* -8.912E-02	7.108E-02	1.095E-01	9.670E-03	-0.814
		340.50	3.096E+00	1.081E+00	1.434E+00	3.376E-01	2.159
PA-233		398.62	8.113E-01	2.332E+00	3.905E+00	1.010E+00	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		4.169E-01	1.900E+00	3.161E+00	6.521E-01	0.132
		63.00		1.134E+00	1.096E+00	1.412E+00	2.154E-01	0.803
		94.67		6.061E-01	1.861E-01	2.810E-01	3.515E-02	2.157
		98.44		4.103E-02	9.709E-02	1.383E-01	7.732E-02	0.297
		99.86		3.538E-01	4.471E-01	7.266E-01	7.059E-02	0.487
		111.00		3.530E-02	1.907E-01	3.071E-01	4.479E-02	0.115
		131.20		1.522E-02	1.261E-01	1.801E-01	2.418E-02	0.085
		152.70		3.895E-01	3.613E-01	5.967E-01	1.109E-01	0.653
		186.00		6.326E+00	2.981E+00	2.836E+00	8.967E-01	2.230
		226.40		1.551E-02	4.192E-01	7.070E-01	9.946E-02	0.022
		227.20		4.862E-02	4.435E-01	7.502E-01	7.418E-02	0.065
		248.90		-7.127E-01	1.025E+00	1.409E+00	3.219E-01	-0.506
		293.70		6.035E+00	1.675E+00	1.864E+00	3.261E-01	3.237
	+	369.80		7.507E-02	9.015E-01	1.496E+00	3.158E-01	0.050
		568.70		8.262E-01	1.136E+00	1.939E+00	1.269E-01	0.426
		569.50		5.330E-01	3.106E-01	5.633E-01	3.687E-02	0.946
		574.00		-2.097E-01	1.824E+00	2.925E+00	1.916E-01	-0.072
		699.00		-1.875E-01	8.489E-01	1.399E+00	2.580E-01	-0.134
		706.10		1.983E-01	1.240E+00	2.095E+00	9.291E-01	0.095
		733.00		-8.604E-02	5.013E-01	7.076E-01	1.544E-01	-0.122
		742.81		-1.235E+00	1.712E+00	2.323E+00	1.559E+00	-0.532
		796.30		1.928E+00	1.298E+00	2.007E+00	5.425E-01	0.961
		805.60		6.724E-01	1.090E+00	1.877E+00	5.758E-01	0.358
		819.60		3.730E-01	1.356E+00	2.297E+00	8.750E-01	0.162
		826.30		-7.384E-01	9.958E-01	1.449E+00	6.492E-01	-0.510
		831.60		-3.971E-01	7.565E-01	1.186E+00	3.555E-01	-0.335
		876.40		-5.268E-01	1.074E+00	1.451E+00	1.493E+00	-0.363
		880.51		3.592E-01	3.237E-01	5.846E-01	5.788E-02	0.614
		883.24		-1.299E-01	3.417E-01	5.264E-01	3.548E-01	-0.247
		899.00		-1.529E-01	9.849E-01	1.601E+00	7.054E-01	-0.095
		925.00		-1.057E+00	1.344E+00	2.038E+00	2.017E-01	-0.518
		926.50		-9.880E-02	2.047E-01	3.195E-01	8.223E-02	-0.309
		946.00	*	-3.090E-01	3.186E-01	4.596E-01	8.851E-02	-0.672
		949.00		4.578E-02	4.839E-01	8.049E-01	7.737E-02	0.057
		980.50		-1.494E-01	8.194E-01	1.323E+00	1.217E-01	-0.113
	PA-234M	1394.10		-2.666E-01	1.246E+00	2.003E+00	1.298E+00	-0.133
		766.42		2.242E+01	1.927E+01	2.557E+01	1.295E+01	0.877
	U-235	1001.03	*	2.985E+00	5.181E+00	8.956E+00	9.152E-01	0.333
		89.95		3.382E+00	1.595E+00	1.714E+00	5.258E-01	1.973
	+	93.35		2.740E+00	1.077E+00	1.105E+00	3.095E-01	2.479
		105.00		3.608E-01	1.043E+00	1.715E+00	5.231E-01	0.210
	+	143.76	*	-5.642E-02	2.294E-01	3.612E-01	7.068E-02	-0.156
		163.35		-4.617E-01	5.412E-01	8.000E-01	1.588E-01	-0.577
	+	185.71		2.343E-01	8.515E-02	1.056E-01	1.054E-02	2.218
		205.31		-1.191E-01	6.351E-01	8.684E-01	1.713E-01	-0.137
	NP-236	94.67		4.619E-01	1.352E-01	2.133E-01	1.871E-02	2.165
		98.44		3.099E-02	7.138E-02	1.045E-01	9.881E-03	0.297
		111.00		2.670E-02	1.442E-01	2.323E-01	2.757E-02	0.115
		160.31	*	2.683E-02	8.594E-02	1.403E-01	1.481E-02	0.191

----- 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		1.465E-01	1.542E-01	2.423E-01	2.341E-02	0.605
		117.00	*	1.528E-01	1.953E-01	3.259E-01	4.269E-02	0.469
	+	209.75		1.961E+00	1.176E+00	1.561E+00	1.556E-01	1.256
		228.18		-3.185E-02	2.329E-01	3.898E-01	3.852E-02	-0.082
		277.60		1.053E-01	2.079E-01	3.367E-01	3.134E-02	0.313
AM-241		334.30		9.023E-01	1.873E+00	2.252E+00	1.793E-01	0.401
		59.54	*	8.276E-02	6.939E-02	1.057E-01	9.461E-03	0.783
CM-243		99.55		1.508E-01	1.587E-01	2.494E-01	2.408E-02	0.605
		103.76	*	-7.159E-03	9.374E-02	1.527E-01	1.596E-02	-0.047
		117.00		1.572E-01	2.009E-01	3.352E-01	4.392E-02	0.469
	+	209.75		1.933E+00	1.159E+00	1.539E+00	1.534E-01	1.256
		228.18		-3.218E-02	2.354E-01	3.938E-01	3.892E-02	-0.082
AM-246		277.60		1.062E-01	2.096E-01	3.395E-01	3.160E-02	0.313
		798.80		-4.425E-02	1.746E-01	2.418E-01	2.078E-02	-0.183
		1036.00		-2.252E-01	3.152E-01	4.739E-01	3.970E-02	-0.475
		1062.04		1.402E-01	2.765E-01	4.735E-01	3.763E-02	0.296
		1078.86	*	1.952E-02	1.460E-01	2.423E-01	1.854E-02	0.081
CM-247		278.00		7.178E-01	8.397E-01	1.420E+00	1.320E-01	0.506
		287.40		-2.636E-01	1.327E+00	2.133E+00	1.947E-01	-0.124
		402.60	*	7.789E-03	4.233E-02	7.041E-02	4.144E-03	0.111
CF-249		252.85		1.014E-01	9.882E-01	1.575E+00	1.521E-01	0.064
		333.44		2.244E-01	2.676E-01	2.943E-01	2.352E-02	0.762
		387.95	*	3.871E-02	4.287E-02	7.444E-02	4.452E-03	0.520
CF-251		176.60	*	1.804E-02	1.398E-01	2.259E-01	2.250E-02	0.080
		227.00		6.469E-02	3.950E-01	6.696E-01	6.623E-02	0.097
		285.00		-9.414E-01	1.855E+00	3.014E+00	2.765E-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]G244132020             *
* Acquisition date   : 19-JAN-2010 17:05:31 Detector SN#      :                   *
* Detector ID        : GAM05                               Sensitivity      : 5.000   *
* Geometry           : CAN                               Energy tolerance: 1.500   *
* Elapsed live time   : 0 02:00:00.00                     Abundance limit : 75.000   *
* Elapsed real time   : 0 02:00:01.71                     Half life ratio  : 8.000   *
*****
*                                     SAMPLE DATA                               *
*                                     *                                             *
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID                *
* Sample ID          : G244132020                     Analyst initials: MXR1        *
* Batch Number       : 940270                         Sample Quantity : 1.2958E+02 GRAM  *
* Recovery           : 1.00000                       Carrier Weight  : 0.00000   *
*****
*                                     QC DATA                               *
*                                     *                                             *
* Standard Weight    : 0.00000                                                                *
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope      :                   *
* MSD DPM             : 0.000                          MSD Isotope      :                   *
* LCS DPM              : 0.000                          LCS Isotope      :                   *
* LCSD DPM             : 0.000                          LCSD Isotope     :                   *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.061E+01	1.999E+00	6.115E-01	0.000E+00
CD-109	3.828E+00	8.664E-01	1.023E+00	0.000E+00
SN-126	3.768E-01	8.527E-02	1.006E-01	0.000E+00
BA-137M	3.268E-02	4.425E-02	6.927E-02	0.000E+00
CS-137	3.455E-02	4.678E-02	7.323E-02	0.000E+00
TL-208	5.409E-01	1.043E-01	6.977E-02	0.000E+00
BI-210	7.876E-01	8.926E-01	8.947E-01	0.000E+00
PB-210	7.876E-01	8.926E-01	8.947E-01	0.000E+00
PO-210	7.876E-01	8.921E-01	8.947E-01	0.000E+00
BI-211	3.909E+00	5.762E-01	3.505E-01	0.000E+00
PB-212	1.540E+00	1.978E-01	1.014E-01	0.000E+00
PO-212	1.540E+00	1.978E-01	1.014E-01	0.000E+00
BI-214	1.319E+00	2.110E-01	1.263E-01	0.000E+00
PB-214	1.360E+00	2.121E-01	1.222E-01	0.000E+00
PO-214	1.360E+00	2.121E-01	1.222E-01	0.000E+00
PO-216	1.540E+00	1.978E-01	1.014E-01	0.000E+00
PO-218	1.360E+00	2.121E-01	1.222E-01	0.000E+00
RA-224	4.601E+00	1.558E+00	1.154E+00	0.000E+00
RA-226	1.319E+00	2.110E-01	1.263E-01	0.000E+00
AC-228	1.786E+00	3.842E-01	2.512E-01	0.000E+00
RA-228	1.786E+00	3.842E-01	2.512E-01	0.000E+00
TH-228	1.562E+00	2.006E-01	1.029E-01	0.000E+00
TH-230	1.319E+00	2.110E-01	1.263E-01	0.000E+00
TH-232	1.786E+00	3.842E-01	2.512E-01	0.000E+00
TH-234	9.732E-01	9.254E-01	1.117E+00	0.000E+00
U-234	1.319E+00	2.110E-01	1.263E-01	0.000E+00
NP-237	1.106E+00	3.358E-01	2.945E-01	0.000E+00
U-238	9.732E-01	9.254E-01	1.117E+00	0.000E+00
AM-243	4.089E-01	6.655E-02	6.302E-02	0.000E+00
ANH-511	1.162E-01	7.331E-02	5.220E-02	0.000E+00

---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	-2.917E-01	3.524E-01	5.616E-01	0.000E+00	NOT IDENT.
NA-22	-9.571E-03	4.427E-02	7.139E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	4.024E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	4.797E-06	3.687E-02	6.169E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.814E-02	6.861E-02	0.000E+00	FAIL ABUN
SC-46	1.724E-02	4.197E-02	7.412E-02	0.000E+00	FAIL ABUN
V-48	5.313E-02	7.403E-02	1.335E-01	0.000E+00	NOT IDENT.
CR-51	-2.502E-01	4.733E-01	6.861E-01	0.000E+00	NOT IDENT.
MN-52	7.368E-02	2.131E-01	3.807E-01	0.000E+00	NOT IDENT.
MN-54	2.191E-02	4.478E-02	7.930E-02	0.000E+00	NOT IDENT.
CO-56	1.423E-02	4.105E-02	7.230E-02	0.000E+00	NOT IDENT.
CO-57	-1.834E-02	2.642E-02	4.250E-02	0.000E+00	NOT IDENT.
CO-58	-6.926E-03	4.255E-02	7.188E-02	0.000E+00	NOT IDENT.
FE-59	7.850E-03	1.026E-01	1.732E-01	0.000E+00	NOT IDENT.
CO-60	-1.060E-03	4.368E-02	7.186E-02	0.000E+00	NOT IDENT.
ZN-65	1.017E-01	1.108E-01	1.783E-01	0.000E+00	NOT IDENT.
GE-68	-7.816E-01	1.302E+00	2.040E+00	0.000E+00	NOT IDENT.
AS-73	1.698E-02	2.285E-01	4.017E-01	0.000E+00	NOT IDENT.
AS-74	6.881E-02	1.016E-01	1.785E-01	0.000E+00	NOT IDENT.
SE-75	1.186E-02	5.275E-02	8.183E-02	0.000E+00	NOT IDENT.
BR-77	2.002E+00	8.773E+00	1.506E+01	0.000E+00	FAIL ABUN
SR-82	-5.564E-01	5.022E-01	6.401E-01	0.000E+00	NOT IDENT.
RB-83	-1.144E-02	7.551E-02	1.260E-01	0.000E+00	NOT IDENT.
RB-84	1.027E-01	7.777E-02	1.463E-01	0.000E+00	NOT IDENT.
KR-85	1.037E+01	8.802E+00	1.425E+01	0.000E+00	NOT IDENT.
SR-85	5.266E-02	4.470E-02	7.236E-02	0.000E+00	NOT IDENT.
RB-86	-3.431E-01	8.136E-01	1.304E+00	0.000E+00	NOT IDENT.
Y-88	-1.548E-02	3.836E-02	5.889E-02	0.000E+00	NOT IDENT.
ZR-88	-3.521E-02	3.281E-02	5.244E-02	0.000E+00	NOT IDENT.
Y-91	5.634E+00	2.095E+01	3.571E+01	0.000E+00	NOT IDENT.
NB-94	1.691E-02	3.920E-02	6.981E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.630E-02	9.689E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.693E-01	2.859E-01	0.000E+00	NOT IDENT.
ZR-95	5.857E-02	7.568E-02	1.381E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	4.769E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.039E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.289E+00	1.013E+01	1.729E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.385E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.991E-02	3.730E-02	6.371E-02	0.000E+00	NOT IDENT.
RH-102	6.211E-03	3.088E-02	5.319E-02	0.000E+00	NOT IDENT.
RU-103	-7.869E-03	4.206E-02	7.017E-02	0.000E+00	FAIL ABUN
RH-106	-1.674E-02	3.668E-01	6.094E-01	0.000E+00	FAIL ABUN
RU-106	-1.674E-02	3.668E-01	6.094E-01	0.000E+00	FAIL ABUN
AG-108M	2.827E-03	3.640E-02	6.246E-02	0.000E+00	NOT IDENT.
AG-110M	3.927E-02	4.150E-02	6.631E-02	0.000E+00	NOT IDENT.
IN-111	-7.699E-01	8.831E-01	1.492E+00	0.000E+00	NOT IDENT.
IN-113M	-1.291E-02	4.696E-02	7.931E-02	0.000E+00	NOT IDENT.
SN-113	-1.291E-02	4.696E-02	7.931E-02	0.000E+00	NOT IDENT.
IN-114M	4.038E-02	2.230E-01	3.322E-01	0.000E+00	NOT IDENT.
CD-115	-8.014E+00	9.384E+00	1.478E+01	0.000E+00	NOT IDENT.
SN-117M	2.876E-02	5.629E-02	9.788E-02	0.000E+00	NOT IDENT.
SB-122	-2.737E+00	1.878E+00	2.775E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.937E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.868E-02	2.995E-02	5.228E-02	0.000E+00	NOT IDENT.
I-124	3.834E-01	7.479E-01	1.136E+00	0.000E+00	FAIL ABUN
SB-124	3.790E-02	6.231E-02	1.189E-01	0.000E+00	FAIL ABUN
SB-125	2.573E-02	9.384E-02	1.634E-01	0.000E+00	FAIL ABUN
TE-125M	-9.752E+00	9.504E+00	1.546E+01	0.000E+00	NOT IDENT.
I-126	1.217E-01	2.238E-01	3.400E-01	0.000E+00	NOT IDENT.
SB-126	3.458E-02	1.743E-01	2.756E-01	0.000E+00	FAIL ABUN
SB-127	-5.489E-01	1.249E+00	2.090E+00	0.000E+00	NOT IDENT.
XE-127	-3.267E-02	4.975E-02	8.112E-02	0.000E+00	NOT IDENT.
I-131	2.227E-02	1.086E-01	1.898E-01	0.000E+00	NOT IDENT.
TE-132	-8.420E-02	5.757E-01	1.013E+00	0.000E+00	NOT IDENT.
BA-133	1.914E-02	5.139E-02	7.935E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.052E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.466E-02	1.051E-01	0.000E+00	FAIL ABUN
CS-135	2.999E-01	2.080E-01	3.404E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.839E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.979E-02	1.252E-01	2.234E-01	0.000E+00	FAIL ABUN
CE-139	1.724E-03	3.218E-02	5.490E-02	0.000E+00	NOT IDENT.
BA-140	-2.515E-01	2.882E-01	4.329E-01	0.000E+00	NOT IDENT.
LA-140	-3.619E-02	1.056E-01	1.408E-01	0.000E+00	FAIL ABUN
CE-141	6.052E-02	6.619E-02	1.149E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.877E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	5.873E-02	2.330E-01	3.551E-01	0.000E+00	NOT IDENT.
PM-144	-2.284E-02	4.339E-02	6.829E-02	0.000E+00	NOT IDENT.
PR-144	-1.547E+00	2.939E+00	4.626E+00	0.000E+00	NOT IDENT.
PM-146	2.049E-02	5.219E-02	8.853E-02	0.000E+00	NOT IDENT.
ND-147	-2.662E-02	5.776E-01	9.702E-01	0.000E+00	FAIL ABUN
PM-149	1.422E+01	7.139E+01	1.261E+02	0.000E+00	NOT IDENT.
EU-152	-1.127E-01	1.219E-01	1.689E-01	0.000E+00	FAIL ABUN
GD-153	2.487E-02	7.742E-02	1.202E-01	0.000E+00	NOT IDENT.
EU-154	-2.937E-02	1.234E-01	1.985E-01	0.000E+00	NOT IDENT.
EU-155	4.333E-02	1.040E-01	1.832E-01	0.000E+00	FAIL ABUN
TB-160	1.498E-01	1.546E-01	2.844E-01	0.000E+00	FAIL ABUN
HO-166M	-2.847E-02	7.004E-02	1.175E-01	0.000E+00	FAIL ABUN
TM-171	7.270E-01	1.784E+01	2.781E+01	0.000E+00	NOT IDENT.
LU-176	-3.913E-03	2.653E-02	4.466E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.480E+00	2.073E+00	0.000E+00	FAIL ABUN
LU-177M	-1.222E-01	2.037E-01	3.362E-01	0.000E+00	FAIL ABUN
HF-181	4.567E-02	4.826E-02	8.680E-02	0.000E+00	NOT IDENT.
W-181	1.598E-01	2.261E-01	3.609E-01	0.000E+00	NOT IDENT.
TA-182	-3.640E-03	2.129E-01	3.532E-01	0.000E+00	FAIL ABUN
RE-183	-1.310E-01	1.214E-01	1.896E-01	0.000E+00	FAIL ABUN
RE-184	2.692E-02	2.571E-01	4.303E-01	0.000E+00	NOT IDENT.
OS-185	2.707E-02	5.040E-02	8.736E-02	0.000E+00	NOT IDENT.
RE-188	1.942E-02	1.847E-01	3.167E-01	0.000E+00	NOT IDENT.
W-188	-1.531E+00	8.651E+00	1.298E+01	0.000E+00	FAIL ABUN
IR-192	9.624E-03	3.775E-02	6.651E-02	0.000E+00	FAIL ABUN
AU-195	2.145E-01	2.253E-01	3.592E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.688E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	6.423E+00	6.163E+00	1.088E+01	0.000E+00	NOT IDENT.
TL-202	2.983E-02	7.303E-02	1.278E-01	0.000E+00	NOT IDENT.
HG-203	3.940E-02	4.321E-02	7.852E-02	0.000E+00	NOT IDENT.
BI-207	2.279E-03	6.468E-02	1.090E-01	0.000E+00	FAIL ABUN
TL-207	-3.493E-01	7.975E-01	1.159E+00	0.000E+00	FAIL ABUN
PO-209	-2.488E-01	8.472E+00	1.438E+01	0.000E+00	NOT IDENT.
PB-211	-1.052E+00	1.271E+00	1.778E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.226E-01	7.054E-01	0.000E+00	FAIL ABUN
PO-215	-3.493E-01	7.975E-01	1.159E+00	0.000E+00	FAIL ABUN
RN-219	-2.523E-01	4.669E-01	7.733E-01	0.000E+00	FAIL ABUN
RN-220	7.646E+00	2.966E+01	5.084E+01	0.000E+00	NOT IDENT.
RA-223	-3.493E-01	7.975E-01	1.159E+00	0.000E+00	FAIL ABUN
AC-227	-1.662E-01	3.951E-01	6.804E-01	0.000E+00	FAIL ABUN
TH-227	-1.662E-01	3.954E-01	6.804E-01	0.000E+00	FAIL ABUN
TH-229	-3.599E-01	5.630E-01	9.221E-01	0.000E+00	FAIL ABUN
PA-231	-3.000E-01	1.606E+00	2.785E+00	0.000E+00	NOT IDENT.
TH-231	-3.493E-01	7.975E-01	1.159E+00	0.000E+00	FAIL ABUN
U-231	2.779E-01	8.979E-01	1.394E+00	0.000E+00	FAIL ABUN
PA-233	-8.912E-02	6.966E-02	1.123E-01	0.000E+00	FAIL ABUN
PA-234	-3.090E-01	3.122E-01	4.631E-01	0.000E+00	FAIL ABUN
PA-234M	2.985E+00	5.077E+00	9.017E+00	0.000E+00	NOT IDENT.
U-235	-5.642E-02	2.248E-01	3.750E-01	0.000E+00	FAIL ABUN
NP-236	2.683E-02	8.422E-02	1.454E-01	0.000E+00	NOT IDENT.
NP-239	1.528E-01	1.914E-01	3.394E-01	0.000E+00	FAIL ABUN
AM-241	8.276E-02	6.801E-02	1.113E-01	0.000E+00	NOT IDENT.
CM-243	-7.159E-03	9.187E-02	1.594E-01	0.000E+00	FAIL ABUN
AM-246	1.952E-02	1.430E-01	2.436E-01	0.000E+00	NOT IDENT.
CM-247	7.789E-03	4.148E-02	7.194E-02	0.000E+00	NOT IDENT.
CF-249	3.871E-02	4.201E-02	7.610E-02	0.000E+00	NOT IDENT.
CF-251	1.804E-02	1.370E-01	2.338E-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]G244132020.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 17:05:31
Sample ID          : G244132020          Sample quantity  : 1.29580E+02 GRAM
Detector name      : GAM05                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:01.71  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 940270               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	762	10.67*	1.004E+00	2.061E+01	2.061E+01	9.90
CD-109	88.03	378	3.72*	7.861E+00	3.747E+00	3.828E+00	23.09
SN-126	64.28	103	9.60	8.065E+00	3.852E-01	3.852E-01	96.54
	86.94	378	8.90	7.861E+00	1.566E+00	1.566E+00	46.58
	87.57	378	37.00*	7.861E+00	3.768E-01	3.768E-01	23.09
BA-137M	661.65	20	89.98*	2.016E+00	3.265E-02	3.268E-02	138.17
CS-137	661.65	20	85.12*	2.016E+00	3.452E-02	3.455E-02	138.17
TL-208	277.35	-----	6.80	4.261E+00	-----	Line Not Found	-----
	510.84	102	21.60	2.546E+00	5.379E-01	5.379E-01	64.92
	583.14	355	84.20*	2.260E+00	5.409E-01	5.409E-01	19.67
	860.37	-----	12.46	1.590E+00	-----	Line Not Found	-----
BI-210	46.50	84	4.05*	7.622E+00	7.867E-01	7.876E-01	115.65
PB-210	46.50	84	4.05*	7.622E+00	7.867E-01	7.876E-01	115.65
PO-210	46.50	84	4.05*	7.622E+00	7.867E-01	7.876E-01	115.58
BI-211	72.87	-----	1.27	8.052E+00	-----	Line Not Found	-----
	351.07	614	12.94*	3.517E+00	3.909E+00	3.909E+00	15.04
PB-212	74.81	749	10.70	8.037E+00	2.522E+00	2.522E+00	19.06
	77.11	1058	18.00	8.013E+00	2.126E+00	2.126E+00	12.52
	87.30	378	8.00	7.861E+00	1.743E+00	1.743E+00	25.17
	238.63	1132	44.60*	4.774E+00	1.540E+00	1.540E+00	13.11
	300.09	49	3.41	4.008E+00	1.032E+00	1.032E+00	89.29
PO-212	74.81	749	10.70	8.037E+00	2.522E+00	2.522E+00	19.06
	77.11	1058	18.00	8.013E+00	2.126E+00	2.126E+00	12.52
	87.30	378	8.00	7.861E+00	1.743E+00	1.743E+00	25.17
	115.19	-----	0.60	7.241E+00	-----	Line Not Found	-----
	238.63	1132	44.60*	4.774E+00	1.540E+00	1.540E+00	13.11
	300.09	49	3.41	4.008E+00	1.032E+00	1.032E+00	89.29
BI-214	609.31	458	46.30*	2.173E+00	1.319E+00	1.319E+00	16.32
	1120.29	119	15.10	1.258E+00	1.809E+00	1.809E+00	34.88
	1764.49	83	15.80	8.615E-01	1.756E+00	1.756E+00	30.04
PB-214	74.81	749	6.21	8.037E+00	4.346E+00	4.346E+00	18.18
	77.11	1058	10.50	8.013E+00	3.644E+00	3.644E+00	14.66

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	87.30	378	4.67	7.861E+00	2.985E+00	2.985E+00	24.35
	241.98	297	7.49	4.732E+00	2.427E+00	2.427E+00	35.00
	295.21	338	19.20	4.059E+00	1.257E+00	1.257E+00	24.17
	351.92	614	37.20*	3.517E+00	1.360E+00	1.360E+00	15.92
	74.81	749	6.21	8.037E+00	4.346E+00	4.346E+00	18.18
PO-216	77.11	1058	10.50	8.013E+00	3.644E+00	3.644E+00	14.66
	87.30	378	4.67	7.861E+00	2.985E+00	2.985E+00	24.35
	241.98	297	7.49	4.732E+00	2.427E+00	2.427E+00	35.00
	295.21	338	19.20	4.059E+00	1.257E+00	1.257E+00	24.17
	351.92	614	37.20*	3.517E+00	1.360E+00	1.360E+00	15.92
PO-218	74.81	749	10.70	8.037E+00	2.522E+00	2.522E+00	19.06
	77.11	1058	18.00	8.013E+00	2.126E+00	2.126E+00	12.52
	87.30	378	8.00	7.861E+00	1.743E+00	1.743E+00	25.17
	238.63	1132	44.60*	4.774E+00	1.540E+00	1.540E+00	13.11
	300.09	49	3.41	4.008E+00	1.032E+00	1.032E+00	89.29
RA-224	74.81	749	6.21	8.037E+00	4.346E+00	4.346E+00	18.18
	77.11	1058	10.50	8.013E+00	3.644E+00	3.644E+00	14.66
	87.30	378	4.67	7.861E+00	2.985E+00	2.985E+00	24.35
	241.98	297	7.49	4.732E+00	2.427E+00	2.427E+00	35.00
	295.21	338	19.20	4.059E+00	1.257E+00	1.257E+00	24.17
RA-226	351.92	614	37.20*	3.517E+00	1.360E+00	1.360E+00	15.92
	240.98	297	3.95*	4.732E+00	4.601E+00	4.601E+00	34.55
	609.31	458	46.30*	2.173E+00	1.319E+00	1.319E+00	16.32
	1120.29	119	15.10	1.258E+00	1.809E+00	1.809E+00	34.88
	1764.49	83	15.80	8.615E-01	1.756E+00	1.756E+00	30.04
AC-228	338.32	218	11.40	3.634E+00	1.524E+00	1.524E+00	48.26
	911.07	258	27.70*	1.511E+00	1.786E+00	1.786E+00	21.95
	969.11	124	16.60	1.430E+00	1.518E+00	1.518E+00	36.84
	338.32	218	11.40	3.634E+00	1.524E+00	1.524E+00	48.26
	911.07	258	27.70*	1.511E+00	1.786E+00	1.786E+00	21.95
TH-228	969.11	124	16.60	1.430E+00	1.518E+00	1.518E+00	36.84
	74.81	749	10.70	8.037E+00	2.522E+00	2.558E+00	16.64
	77.11	1058	18.00	8.013E+00	2.126E+00	2.156E+00	12.52
	87.30	378	8.00	7.861E+00	1.743E+00	1.767E+00	23.09
	238.63	1132	44.60*	4.774E+00	1.540E+00	1.562E+00	13.11
TH-230	300.09	49	3.41	4.008E+00	1.032E+00	1.047E+00	106.67
	609.31	458	46.30*	2.173E+00	1.319E+00	1.319E+00	16.32
	1120.29	119	15.10	1.258E+00	1.809E+00	1.809E+00	34.88
	1764.49	83	15.80	8.615E-01	1.756E+00	1.756E+00	30.04
	338.32	218	11.40	3.634E+00	1.524E+00	1.524E+00	26.47
TH-232	911.07	258	27.70*	1.511E+00	1.786E+00	1.786E+00	21.95
	969.11	124	16.60	1.430E+00	1.518E+00	1.518E+00	36.84
	63.29	103	3.80*	8.065E+00	9.732E-01	9.732E-01	97.02
	92.38	330	5.41	7.750E+00	2.279E+00	2.279E+00	32.96
	609.31	458	46.30*	2.173E+00	1.319E+00	1.319E+00	16.32
U-234	1120.29	119	15.10	1.258E+00	1.809E+00	1.809E+00	34.88
	1764.49	83	15.80	8.615E-01	1.756E+00	1.756E+00	30.04
	86.50	378	12.60*	7.861E+00	1.106E+00	1.106E+00	30.97
	95.87	-----	2.60	7.687E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-238	63.29	103	3.80*	8.065E+00	9.732E-01	9.732E-01	97.02
	92.38	330	5.41	7.750E+00	2.279E+00	2.279E+00	28.87
AM-243	74.67	749	66.00*	8.037E+00	4.089E-01	4.089E-01	16.61
	86.72	378	0.34	7.861E+00	4.149E+01	4.149E+01	23.09
	117.66	-----	0.55	7.181E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.593E+00	-----	Line Not Found	-----
ANH-511	511.00	102	100.00*	2.546E+00	1.162E-01	1.162E-01	64.38

Flag: "\*" = Keyline

Total number of lines in spectrum 34  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 32 94.12%

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	2.061E+01	2.061E+01	0.204E+01	9.90	
CD-109	464.00D	1.02	3.747E+00	3.828E+00	0.884E+00	23.09	
SN-126	1.00E+05Y	1.00	3.768E-01	3.768E-01	0.870E-01	23.09	
BA-137M	30.17Y	1.00	3.265E-02	3.268E-02	4.516E-02	138.17	
CS-137	30.17Y	1.00	3.452E-02	3.455E-02	4.774E-02	138.17	
TL-208	1.41E+10Y	1.00	5.409E-01	5.409E-01	1.064E-01	19.67	
BI-210	22.26Y	1.00	7.867E-01	7.876E-01	9.109E-01	115.65	
PB-210	22.26Y	1.00	7.867E-01	7.876E-01	9.109E-01	115.65	
PO-210	22.26Y	1.00	7.867E-01	7.876E-01	9.103E-01	115.58	
BI-211	7.04E+08Y	1.00	3.909E+00	3.909E+00	0.588E+00	15.04	
PB-212	1.41E+10Y	1.00	1.540E+00	1.540E+00	0.202E+00	13.11	
PO-212	1.41E+10Y	1.00	1.540E+00	1.540E+00	0.202E+00	13.11	
BI-214	1600.00Y	1.00	1.319E+00	1.319E+00	0.215E+00	16.32	
PB-214	1600.00Y	1.00	1.360E+00	1.360E+00	0.216E+00	15.92	
PO-214	1600.00Y	1.00	1.360E+00	1.360E+00	0.216E+00	15.92	
PO-216	1.41E+10Y	1.00	1.540E+00	1.540E+00	0.202E+00	13.11	
PO-218	1600.00Y	1.00	1.360E+00	1.360E+00	0.216E+00	15.92	
RA-224	1.41E+10Y	1.00	4.601E+00	4.601E+00	1.590E+00	34.55	
RA-226	1600.00Y	1.00	1.319E+00	1.319E+00	0.215E+00	16.32	
AC-228	1.41E+10Y	1.00	1.786E+00	1.786E+00	0.392E+00	21.95	
RA-228	1.41E+10Y	1.00	1.786E+00	1.786E+00	0.392E+00	21.95	
TH-228	1.91Y	1.01	1.540E+00	1.562E+00	0.205E+00	13.11	
TH-230	4.47E+09Y	1.00	1.319E+00	1.319E+00	0.215E+00	16.32	
TH-232	1.41E+10Y	1.00	1.786E+00	1.786E+00	0.392E+00	21.95	
TH-234	4.47E+09Y	1.00	9.732E-01	9.732E-01	9.443E-01	97.02	
U-234	4.47E+09Y	1.00	1.319E+00	1.319E+00	0.215E+00	16.32	
NP-237	2.14E+06Y	1.00	1.106E+00	1.106E+00	0.343E+00	30.97	
U-238	4.47E+09Y	1.00	9.732E-01	9.732E-01	9.443E-01	97.02	
AM-243	7380.00Y	1.00	4.089E-01	4.089E-01	0.679E-01	16.61	
ANH-511	1.00E+09Y	1.00	1.162E-01	1.162E-01	0.748E-01	64.38	

Total Activity : 6.066E+01 6.077E+01

Grand Total Activity : 6.066E+01 6.077E+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
1	89.88	246	459	1.48	180.73	164	30	3.42E-02	35.8	7.81E+00	T
0	129.10	68	436	1.48	259.16	253	11	9.39E-03	****	6.90E+00	T
0	185.64	247	384	1.45	372.23	366	12	3.44E-02	34.9	5.66E+00	T
0	209.04	115	296	1.05	419.01	416	10	1.60E-02	59.1	5.24E+00	T
0	270.03	116	276	1.49	540.97	535	13	1.61E-02	61.9	4.35E+00	T
0	327.47	126	196	1.56	655.81	647	16	1.75E-02	52.8	3.73E+00	T
0	463.26	101	77	1.16	927.31	922	12	1.40E-02	40.7	2.77E+00	T
0	727.13	92	34	1.26	1454.78	1450	12	1.27E-02	34.2	1.85E+00	T
0	770.70	55	116	4.88	1541.85	1531	19	7.65E-03	98.4	1.76E+00	
0	794.49	50	56	1.63	1589.41	1584	13	6.98E-03	67.2	1.71E+00	T
3	963.44	71	33	2.57	1927.06	1919	28	9.90E-03	41.7	1.44E+00	T
0	1376.84	43	24	1.94	2753.03	2745	19	5.91E-03	63.1	1.05E+00	T
0	1588.82	39	22	6.52	3176.46	3167	22	5.42E-03	69.2	9.36E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G244132020.CNF;1
* Acquisition date   : 19-JAN-2010 17:05:31  Detector SN#      :
* Detector ID        : GAM05                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:01.71          Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G244132020            Analyst initials: MXR1
* Batch Number       : 940270                Sample Quantity  : 1.29580E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.061E+01	2.040E+00	6.111E-01	3.801E-02	33.719
CD-109	3.828E+00	8.840E-01	9.781E-01	7.448E-02	3.914
SN-126	3.768E-01	8.701E-02	9.614E-02	7.322E-03	3.919
BA-137M	3.268E-02	4.516E-02	6.835E-02	4.494E-03	0.478
CS-137	3.455E-02	4.774E-02	7.225E-02	4.767E-03	0.478
TL-208	5.409E-01	1.064E-01	6.870E-02	5.055E-03	7.874
BI-210	7.876E-01	9.109E-01	8.472E-01	6.609E-02	0.930
PB-210	7.876E-01	9.109E-01	8.472E-01	6.609E-02	0.930
PO-210	7.876E-01	9.103E-01	8.472E-01	5.698E-02	0.930
BI-211	3.909E+00	5.879E-01	3.424E-01	2.713E-02	11.417
PB-212	1.540E+00	2.018E-01	9.848E-02	1.062E-02	15.638
PO-212	1.540E+00	2.018E-01	9.848E-02	1.062E-02	15.638
BI-214	1.319E+00	2.153E-01	1.245E-01	1.044E-02	10.597
PB-214	1.360E+00	2.165E-01	1.194E-01	1.130E-02	11.392
PO-214	1.360E+00	2.165E-01	1.194E-01	1.130E-02	11.392
PO-216	1.540E+00	2.018E-01	9.848E-02	1.062E-02	15.638
PO-218	1.360E+00	2.165E-01	1.194E-01	1.130E-02	11.392
RA-224	4.601E+00	1.590E+00	1.121E+00	1.097E-01	4.105

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.319E+00	2.153E-01	1.245E-01	1.044E-02	10.597
AC-228	1.786E+00	3.920E-01	2.491E-01	3.083E-02	7.168
RA-228	1.786E+00	3.920E-01	2.491E-01	3.083E-02	7.168
TH-228	1.562E+00	2.047E-01	9.988E-02	1.077E-02	15.638
TH-230	1.319E+00	2.153E-01	1.245E-01	1.043E-02	10.597
TH-232	1.786E+00	3.920E-01	2.491E-01	3.083E-02	7.168
TH-234	9.732E-01	9.443E-01	1.063E+00	1.889E-01	0.916
U-234	1.319E+00	2.153E-01	1.245E-01	1.043E-02	10.597
NP-237	1.106E+00	3.426E-01	2.814E-01	6.192E-02	3.931
U-238	9.732E-01	9.443E-01	1.063E+00	1.889E-01	0.916
AM-243	4.089E-01	6.791E-02	6.010E-02	4.707E-03	6.804
ANH-511	1.162E-01	7.481E-02	5.129E-02	3.282E-03	2.266

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.917E-01		3.596E-01	5.512E-01	3.949E-02	-0.529
NA-22	-9.571E-03		4.517E-02	7.119E-02	4.147E-03	-0.134
NA-24	-3.576E-01		2.053E-01	Half-Life too short		
AL-26	4.797E-06		3.762E-02	6.188E-02	3.550E-03	0.000
TI-44	3.923E-01	+	4.913E-02	6.548E-02	5.080E-03	5.991
SC-46	1.724E-02		4.283E-02	7.348E-02	7.380E-03	0.235
V-48	5.313E-02		7.555E-02	1.325E-01	1.214E-02	0.401
CR-51	-2.502E-01		4.829E-01	6.692E-01	5.918E-02	-0.374
MN-52	7.368E-02		2.175E-01	3.803E-01	2.227E-02	0.194
MN-54	2.191E-02		4.569E-02	7.853E-02	7.194E-03	0.279
CO-56	1.423E-02		4.189E-02	7.162E-02	6.698E-03	0.199
CO-57	-1.834E-02		2.696E-02	4.083E-02	5.794E-03	-0.449
CO-58	-6.926E-03		4.342E-02	7.115E-02	6.263E-03	-0.097
FE-59	7.850E-03		1.047E-01	1.723E-01	1.396E-02	0.046
CO-60	-1.060E-03		4.457E-02	7.171E-02	4.150E-03	-0.015
ZN-65	1.017E-01		1.130E-01	1.774E-01	1.240E-02	0.573
GE-68	-7.816E-01		1.329E+00	2.029E+00	1.558E-01	-0.385
AS-73	1.698E-02		2.332E-01	3.811E-01	2.869E-02	0.045
AS-74	6.881E-02		1.037E-01	1.758E-01	1.156E-02	0.391
SE-75	1.186E-02		5.383E-02	7.957E-02	7.596E-03	0.149
BR-77	2.002E+00		8.952E+00	1.480E+01	9.517E-01	0.135
SR-82	-5.564E-01		5.125E-01	6.332E-01	5.224E-02	-0.879
RB-83	-1.144E-02		7.705E-02	1.238E-01	7.961E-03	-0.092
RB-84	1.027E-01		7.935E-02	1.450E-01	1.438E-02	0.708
KR-85	1.037E+01		8.982E+00	1.400E+01	8.974E-01	0.741
SR-85	5.266E-02		4.561E-02	7.111E-02	4.558E-03	0.741
RB-86	-3.431E-01		8.302E-01	1.297E+00	9.975E-02	-0.265
Y-88	-1.548E-02		3.914E-02	5.908E-02	3.380E-03	-0.262
ZR-88	-3.521E-02		3.347E-02	5.131E-02	2.988E-03	-0.686
Y-91	5.634E+00		2.137E+01	3.557E+01	2.067E+00	0.158
NB-94	1.691E-02		4.000E-02	6.895E-02	4.933E-03	0.245

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	9.726E-02		5.745E-02	9.582E-02	7.750E-03	1.015
NB-95M	6.493E-01		1.728E-01	2.775E-01	3.035E-02	2.340
ZR-95	5.857E-02		7.723E-02	1.365E-01	1.213E-02	0.429
NB-97	4.614E-02		2.433E-02	Half-Life	too short	
ZR-97	2.349E+00		5.299E-01	Half-Life	too short	
MO-99	-1.289E+00		1.033E+01	1.709E+01	2.508E+00	-0.075
TC-99M	-2.598E+09		1.727E+09	Half-Life	too short	
RH-101	1.991E-02		3.806E-02	6.167E-02	6.159E-03	0.323
RH-102	6.211E-03		3.151E-02	5.220E-02	3.270E-03	0.119
RU-103	-7.869E-03		4.292E-02	6.891E-02	8.895E-03	-0.114
RH-106	-1.674E-02		3.743E-01	6.007E-01	7.297E-02	-0.028
RU-106	-1.674E-02		3.743E-01	6.007E-01	3.960E-02	-0.028
AG-108M	2.827E-03		3.714E-02	6.121E-02	4.005E-03	0.046
AG-110M	3.927E-02		4.235E-02	6.542E-02	4.522E-03	0.600
IN-111	-7.699E-01		9.011E-01	1.449E+00	1.412E-01	-0.531
IN-113M	-1.291E-02		4.792E-02	7.760E-02	4.814E-03	-0.166
SN-113	-1.291E-02		4.792E-02	7.760E-02	4.814E-03	-0.166
IN-114M	4.038E-02		2.275E-01	3.214E-01	3.209E-02	0.126
CD-115	-8.014E+00		9.575E+00	1.453E+01	9.374E-01	-0.552
SN-117M	2.876E-02		5.744E-02	9.442E-02	1.015E-02	0.305
SB-122	-2.737E+00		1.917E+00	2.731E+00	1.785E-01	-1.002
I-123	1.208E+00		9.880E-01	Half-Life	too short	
TE-123M	1.868E-02		3.056E-02	5.044E-02	5.419E-03	0.370
I-124	3.834E-01		7.632E-01	1.119E+00	7.367E-02	0.343
SB-124	3.790E-02		6.358E-02	1.191E-01	7.540E-03	0.318
SB-125	2.573E-02		9.576E-02	1.601E-01	1.004E-02	0.161
TE-125M	-9.752E+00		9.698E+00	1.483E+01	1.906E+00	-0.658
I-126	1.217E-01		2.283E-01	3.355E-01	2.228E-02	0.363
SB-126	3.458E-02		1.779E-01	2.722E-01	2.018E-02	0.127
SB-127	-5.489E-01		1.275E+00	2.063E+00	2.033E-01	-0.266
XE-127	-3.267E-02		5.077E-02	7.855E-02	7.840E-03	-0.416
I-131	2.227E-02		1.108E-01	1.855E-01	1.391E-02	0.120
TE-132	-8.420E-02		5.874E-01	9.824E-01	1.600E-01	-0.086
BA-133	1.914E-02		5.244E-02	7.751E-02	9.573E-03	0.247
I-133	7.863E-04		1.557E-03	Half-Life	too short	
CS-134	1.124E-01	+	7.618E-02	1.040E-01	8.955E-03	1.081
CS-135	2.999E-01		2.123E-01	3.311E-01	3.542E-02	0.906
I-135	3.938E+08		2.979E+08	Half-Life	too short	
CS-136	8.979E-02		1.278E-01	2.221E-01	1.902E-02	0.404
CE-139	1.724E-03		3.284E-02	5.299E-02	5.261E-03	0.033
BA-140	-2.515E-01		2.940E-01	4.257E-01	1.390E-01	-0.591
LA-140	-3.619E-02		1.077E-01	1.409E-01	8.281E-03	-0.257
CE-141	6.052E-02		6.754E-02	1.107E-01	1.354E-02	0.547
CE-143	6.444E-04		9.578E-05	Half-Life	too short	
CE-144	5.873E-02		2.378E-01	3.416E-01	6.325E-02	0.172
PM-144	-2.284E-02		4.428E-02	6.744E-02	4.768E-03	-0.339
PR-144	-1.547E+00		2.999E+00	4.568E+00	3.228E-01	-0.339
PM-146	2.049E-02		5.325E-02	8.682E-02	7.704E-03	0.236



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-2.662E-02		5.894E-01	9.538E-01	1.318E-01	-0.028
PM-149	1.422E+01		7.285E+01	1.227E+02	1.945E+01	0.116
EU-152	-1.127E-01		1.244E-01	1.649E-01	1.356E-02	-0.684
GD-153	2.487E-02		7.900E-02	1.151E-01	1.067E-02	0.216
EU-154	-2.937E-02		1.260E-01	1.979E-01	1.850E-02	-0.148
EU-155	4.333E-02		1.061E-01	1.757E-01	1.903E-02	0.247
TB-160	1.498E-01		1.577E-01	2.819E-01	2.786E-02	0.531
HO-166M	-2.847E-02		7.147E-02	1.160E-01	8.453E-03	-0.245
TM-171	7.270E-01		1.820E+01	2.647E+01	2.127E+00	0.027
LU-176	-3.913E-03		2.707E-02	4.353E-02	3.791E-03	-0.090
LU-177	2.518E+00	+	1.510E+00	2.008E+00	2.002E-01	1.254
LU-177M	-1.222E-01		2.078E-01	3.292E-01	1.959E-02	-0.371
HF-181	4.567E-02		4.924E-02	8.521E-02	5.363E-03	0.536
W-181	1.598E-01		2.307E-01	3.435E-01	2.777E-02	0.465
TA-182	-3.640E-03		2.172E-01	3.520E-01	2.046E-02	-0.010
RE-183	-1.310E-01		1.238E-01	1.830E-01	1.891E-02	-0.716
RE-184	2.692E-02		2.624E-01	4.181E-01	4.040E-02	0.064
OS-185	2.707E-02		5.143E-02	8.615E-02	5.675E-03	0.314
RE-188	1.942E-02		1.884E-01	3.054E-01	3.400E-02	0.064
W-188	-1.531E+00		8.827E+00	1.264E+01	1.145E+00	-0.121
IR-192	9.624E-03		3.852E-02	6.486E-02	5.505E-03	0.148
AU-195	2.145E-01		2.299E-01	3.440E-01	3.280E-02	0.624
TL-200	-9.137E-05		1.372E-04	Half-Life too short		
TL-201	6.423E+00		6.289E+00	1.050E+01	1.043E+00	0.611
TL-202	2.983E-02		7.452E-02	1.253E-01	7.638E-03	0.238
HG-203	3.940E-02		4.409E-02	7.641E-02	7.265E-03	0.516
BI-207	2.279E-03		6.600E-02	1.084E-01	8.583E-03	0.021
TL-207	-3.493E-01		8.138E-01	1.130E+00	1.982E-01	-0.309
PO-209	-2.488E-01		8.645E+00	1.426E+01	1.449E+00	-0.017
PB-211	-1.052E+00		1.297E+00	1.740E+00	1.085E+00	-0.604
BI-212	1.217E+00	+	4.312E-01	6.971E-01	6.323E-02	1.746
PO-215	-3.493E-01		8.138E-01	1.130E+00	1.982E-01	-0.309
RN-219	-2.523E-01		4.764E-01	7.569E-01	1.032E-01	-0.333
RN-220	7.646E+00		3.027E+01	5.001E+01	3.254E+00	0.153
RA-223	-3.493E-01		8.138E-01	1.130E+00	1.982E-01	-0.309
AC-227	-1.662E-01		4.032E-01	6.613E-01	1.054E-01	-0.251
TH-227	-1.662E-01		4.035E-01	6.613E-01	1.227E-01	-0.251
TH-229	-3.599E-01		5.745E-01	8.923E-01	8.912E-02	-0.403
PA-231	-3.000E-01		1.639E+00	2.711E+00	4.207E-01	-0.111
TH-231	-3.493E-01		8.138E-01	1.130E+00	1.982E-01	-0.309
U-231	2.779E-01		9.162E-01	1.334E+00	1.199E-01	0.208
PA-233	-8.912E-02		7.108E-02	1.095E-01	9.670E-03	-0.814
PA-234	-3.090E-01		3.186E-01	4.596E-01	8.851E-02	-0.672
PA-234M	2.985E+00		5.181E+00	8.956E+00	9.152E-01	0.333
U-235	-5.642E-02		2.294E-01	3.612E-01	7.068E-02	-0.156
NP-236	2.683E-02		8.594E-02	1.403E-01	1.481E-02	0.191
NP-239	1.528E-01		1.953E-01	3.259E-01	4.269E-02	0.469
AM-241	8.276E-02		6.939E-02	1.057E-01	9.461E-03	0.783

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-7.159E-03		9.374E-02	1.527E-01	1.596E-02	-0.047
AM-246	1.952E-02		1.460E-01	2.423E-01	1.854E-02	0.081
CM-247	7.789E-03		4.233E-02	7.041E-02	4.144E-03	0.111
CF-249	3.871E-02		4.287E-02	7.444E-02	4.452E-03	0.520
CF-251	1.804E-02		1.398E-01	2.259E-01	2.250E-02	0.080

# 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]G244132020          *
* Acquisition date   : 19-JAN-2010 17:05:31 Detector SN#      :             *
* Detector ID        : GAM05                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.71           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G244132020           Analyst initials: MXR1          *
* Batch Number       : 940270              Sample Quantity : 1.2958E+02 GRAM  *
* Recovery           : 1.00000             Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope      :             *
* MSD DPM             : 0.000              MSD Isotope      :             *
* LCS DPM             : 0.000              LCS Isotope      :             *
* LCSD DPM            : 0.000              LCSD Isotope     :             *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.061E+01	1.999E+00	3.059E-01	1.020E+00
CD-109	3.828E+00	8.664E-01	5.119E-01	4.420E-01
SN-126	3.768E-01	8.527E-02	5.031E-02	4.350E-02
BA-137M	3.268E-02	4.425E-02	3.466E-02	2.258E-02
CS-137	3.455E-02	4.678E-02	3.664E-02	2.387E-02
TL-208	5.409E-01	1.043E-01	3.491E-02	5.321E-02
BI-210	7.876E-01	8.926E-01	4.476E-01	4.554E-01
PB-210	7.876E-01	8.926E-01	4.476E-01	4.554E-01
PO-210	7.876E-01	8.921E-01	4.476E-01	4.552E-01
BI-211	3.909E+00	5.762E-01	1.754E-01	2.940E-01
PB-212	1.540E+00	1.978E-01	5.075E-02	1.009E-01
PO-212	1.540E+00	1.978E-01	5.075E-02	1.009E-01
BI-214	1.319E+00	2.110E-01	6.321E-02	1.077E-01
PB-214	1.360E+00	2.121E-01	6.114E-02	1.082E-01
PO-214	1.360E+00	2.121E-01	6.114E-02	1.082E-01
PO-216	1.540E+00	1.978E-01	5.075E-02	1.009E-01
PO-218	1.360E+00	2.121E-01	6.114E-02	1.082E-01
RA-224	4.601E+00	1.558E+00	5.775E-01	7.948E-01
RA-226	1.319E+00	2.110E-01	6.321E-02	1.077E-01
AC-228	1.786E+00	3.842E-01	1.257E-01	1.960E-01
RA-228	1.786E+00	3.842E-01	1.257E-01	1.960E-01
TH-228	1.562E+00	2.006E-01	5.147E-02	1.023E-01
TH-230	1.319E+00	2.110E-01	6.321E-02	1.077E-01
TH-232	1.786E+00	3.842E-01	1.257E-01	1.960E-01
TH-234	9.732E-01	9.254E-01	5.590E-01	4.721E-01
U-234	1.319E+00	2.110E-01	6.321E-02	1.077E-01
NP-237	1.106E+00	3.358E-01	1.473E-01	1.713E-01
U-238	9.732E-01	9.254E-01	5.590E-01	4.721E-01
AM-243	4.089E-01	6.655E-02	3.153E-02	3.395E-02
ANH-511	1.162E-01	7.331E-02	2.611E-02	3.740E-02

---- Non-Identified Nuclides ----

Key-Line

Nuclide	Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-2.917E-01	3.524E-01	2.810E-01	1.798E-01 NOT IDENT.
NA-22	-9.571E-03	4.427E-02	3.572E-02	2.259E-02 NOT IDENT.
NA-24	-3.576E+05	4.024E+05	0.000E+00	2.053E+05 SHORT HLIF
AL-26	4.797E-06	3.687E-02	3.086E-02	1.881E-02 NOT IDENT.
TI-44	3.923E-01	4.814E-02	3.432E-02	2.456E-02 FAIL ABUN
SC-46	1.724E-02	4.197E-02	3.708E-02	2.141E-02 FAIL ABUN
V-48	5.313E-02	7.403E-02	6.676E-02	3.777E-02 NOT IDENT.
CR-51	-2.502E-01	4.733E-01	3.433E-01	2.415E-01 NOT IDENT.
MN-52	7.368E-02	2.131E-01	1.904E-01	1.087E-01 NOT IDENT.
MN-54	2.191E-02	4.478E-02	3.967E-02	2.285E-02 NOT IDENT.
CO-56	1.423E-02	4.105E-02	3.617E-02	2.094E-02 NOT IDENT.
CO-57	-1.834E-02	2.642E-02	2.126E-02	1.348E-02 NOT IDENT.
CO-58	-6.926E-03	4.255E-02	3.596E-02	2.171E-02 NOT IDENT.
FE-59	7.850E-03	1.026E-01	8.667E-02	5.236E-02 NOT IDENT.
CO-60	-1.060E-03	4.368E-02	3.595E-02	2.229E-02 NOT IDENT.
ZN-65	1.017E-01	1.108E-01	8.922E-02	5.651E-02 NOT IDENT.
GE-68	-7.816E-01	1.302E+00	1.021E+00	6.643E-01 NOT IDENT.
AS-73	1.698E-02	2.285E-01	2.010E-01	1.166E-01 NOT IDENT.
AS-74	6.881E-02	1.016E-01	8.928E-02	5.184E-02 NOT IDENT.
SE-75	1.186E-02	5.275E-02	4.094E-02	2.691E-02 NOT IDENT.
BR-77	2.002E+00	8.773E+00	7.534E+00	4.476E+00 FAIL ABUN
SR-82	-5.564E-01	5.022E-01	3.203E-01	2.562E-01 NOT IDENT.
RB-83	-1.144E-02	7.551E-02	6.303E-02	3.852E-02 NOT IDENT.
RB-84	1.027E-01	7.777E-02	7.320E-02	3.968E-02 NOT IDENT.
KR-85	1.037E+01	8.802E+00	7.128E+00	4.491E+00 NOT IDENT.
SR-85	5.266E-02	4.470E-02	3.620E-02	2.281E-02 NOT IDENT.
RB-86	-3.431E-01	8.136E-01	6.523E-01	4.151E-01 NOT IDENT.
Y-88	-1.548E-02	3.836E-02	2.946E-02	1.957E-02 NOT IDENT.
ZR-88	-3.521E-02	3.281E-02	2.624E-02	1.674E-02 NOT IDENT.
Y-91	5.634E+00	2.095E+01	1.786E+01	1.069E+01 NOT IDENT.
NB-94	1.691E-02	3.920E-02	3.493E-02	2.000E-02 NOT IDENT.
NB-95	9.726E-02	5.630E-02	4.847E-02	2.873E-02 NOT IDENT.
NB-95M	6.493E-01	1.693E-01	1.430E-01	8.639E-02 NOT IDENT.
ZR-95	5.857E-02	7.568E-02	6.907E-02	3.861E-02 NOT IDENT.
NB-97	4.614E+04	4.769E+04	0.000E+00	2.433E+04 SHORT HLIF
ZR-97	2.349E+06	1.039E+06	0.000E+00	5.299E+05 SHORT HLIF
MO-99	-1.289E+00	1.013E+01	8.648E+00	5.167E+00 NOT IDENT.
TC-99M	-2.598E+15	3.385E+15	0.000E+00	1.727E+15 SHORT HLIF
RH-101	1.991E-02	3.730E-02	3.187E-02	1.903E-02 NOT IDENT.
RH-102	6.211E-03	3.088E-02	2.661E-02	1.576E-02 NOT IDENT.
RU-103	-7.869E-03	4.206E-02	3.511E-02	2.146E-02 FAIL ABUN
RH-106	-1.674E-02	3.668E-01	3.049E-01	1.872E-01 FAIL ABUN
RU-106	-1.674E-02	3.668E-01	3.049E-01	1.872E-01 FAIL ABUN
AG-108M	2.827E-03	3.640E-02	3.125E-02	1.857E-02 NOT IDENT.
AG-110M	3.927E-02	4.150E-02	3.318E-02	2.117E-02 NOT IDENT.
IN-111	-7.699E-01	8.831E-01	7.466E-01	4.506E-01 NOT IDENT.
IN-113M	-1.291E-02	4.696E-02	3.968E-02	2.396E-02 NOT IDENT.
SN-113	-1.291E-02	4.696E-02	3.968E-02	2.396E-02 NOT IDENT.
IN-114M	4.038E-02	2.230E-01	1.662E-01	1.138E-01 NOT IDENT.
CD-115	-8.014E+00	9.384E+00	7.394E+00	4.788E+00 NOT IDENT.
SN-117M	2.876E-02	5.629E-02	4.897E-02	2.872E-02 NOT IDENT.
SB-122	-2.737E+00	1.878E+00	1.388E+00	9.583E-01 NOT IDENT.
I-123	1.208E+06	1.937E+06	0.000E+00	9.880E+05 SHORT HLIF
TE-123M	1.868E-02	2.995E-02	2.616E-02	1.528E-02 NOT IDENT.
I-124	3.834E-01	7.479E-01	5.683E-01	3.816E-01 FAIL ABUN
SB-124	3.790E-02	6.231E-02	5.949E-02	3.179E-02 FAIL ABUN
SB-125	2.573E-02	9.384E-02	8.173E-02	4.788E-02 FAIL ABUN
TE-125M	-9.752E+00	9.504E+00	7.735E+00	4.849E+00 NOT IDENT.
I-126	1.217E-01	2.238E-01	1.701E-01	1.142E-01 NOT IDENT.
SB-126	3.458E-02	1.743E-01	1.379E-01	8.893E-02 FAIL ABUN
SB-127	-5.489E-01	1.249E+00	1.045E+00	6.373E-01 NOT IDENT.
XE-127	-3.267E-02	4.975E-02	4.058E-02	2.538E-02 NOT IDENT.
I-131	2.227E-02	1.086E-01	9.494E-02	5.541E-02 NOT IDENT.
TE-132	-8.420E-02	5.757E-01	5.067E-01	2.937E-01 NOT IDENT.
BA-133	1.914E-02	5.139E-02	3.970E-02	2.622E-02 NOT IDENT.
I-133	7.863E+02	3.052E+03	0.000E+00	1.557E+03 SHORT HLIF
CS-134	1.124E-01	7.466E-02	5.257E-02	3.809E-02 FAIL ABUN
CS-135	2.999E-01	2.080E-01	1.703E-01	1.061E-01 NOT IDENT.
I-135	3.938E+14	5.839E+14	0.000E+00	2.979E+14 SHORT HLIF
CS-136	8.979E-02	1.252E-01	1.118E-01	6.389E-02 FAIL ABUN
CE-139	1.724E-03	3.218E-02	2.746E-02	1.642E-02 NOT IDENT.
BA-140	-2.515E-01	2.882E-01	2.166E-01	1.470E-01 NOT IDENT.
LA-140	-3.619E-02	1.056E-01	7.043E-02	5.387E-02 FAIL ABUN
CE-141	6.052E-02	6.619E-02	5.750E-02	3.377E-02 NOT IDENT.
CE-143	6.444E+02	1.877E+02	0.000E+00	9.578E+01 SHORT HLIF

CE-144	5.873E-02	2.330E-01	1.776E-01	1.189E-01	NOT IDENT.
PM-144	-2.284E-02	4.339E-02	3.417E-02	2.214E-02	NOT IDENT.
PR-144	-1.547E+00	2.939E+00	2.314E+00	1.500E+00	NOT IDENT.
PM-146	2.049E-02	5.219E-02	4.429E-02	2.663E-02	NOT IDENT.
ND-147	-2.662E-02	5.776E-01	4.854E-01	2.947E-01	FAIL ABUN
PM-149	1.422E+01	7.139E+01	6.308E+01	3.642E+01	NOT IDENT.
EU-152	-1.127E-01	1.219E-01	8.450E-02	6.220E-02	FAIL ABUN
GD-153	2.487E-02	7.742E-02	6.014E-02	3.950E-02	NOT IDENT.
EU-154	-2.937E-02	1.234E-01	9.929E-02	6.298E-02	NOT IDENT.
EU-155	4.333E-02	1.040E-01	9.167E-02	5.304E-02	FAIL ABUN
TB-160	1.498E-01	1.546E-01	1.423E-01	7.885E-02	FAIL ABUN
HO-166M	-2.847E-02	7.004E-02	5.876E-02	3.573E-02	FAIL ABUN
TM-171	7.270E-01	1.784E+01	1.391E+01	9.100E+00	NOT IDENT.
LU-176	-3.913E-03	2.653E-02	2.234E-02	1.354E-02	FAIL ABUN
LU-177	2.518E+00	1.480E+00	1.037E+00	7.551E-01	FAIL ABUN
LU-177M	-1.222E-01	2.037E-01	1.682E-01	1.039E-01	FAIL ABUN
HF-181	4.567E-02	4.826E-02	4.343E-02	2.462E-02	NOT IDENT.
W-181	1.598E-01	2.261E-01	1.806E-01	1.154E-01	NOT IDENT.
TA-182	-3.640E-03	2.129E-01	1.767E-01	1.086E-01	FAIL ABUN
RE-183	-1.310E-01	1.214E-01	9.486E-02	6.192E-02	FAIL ABUN
RE-184	2.692E-02	2.571E-01	2.153E-01	1.312E-01	NOT IDENT.
OS-185	2.707E-02	5.040E-02	4.370E-02	2.572E-02	NOT IDENT.
RE-188	1.942E-02	1.847E-01	1.584E-01	9.422E-02	NOT IDENT.
W-188	-1.531E+00	8.651E+00	6.492E+00	4.414E+00	FAIL ABUN
IR-192	9.624E-03	3.775E-02	3.328E-02	1.926E-02	FAIL ABUN
AU-195	2.145E-01	2.253E-01	1.797E-01	1.149E-01	FAIL ABUN
TL-200	-9.137E+01	2.688E+02	0.000E+00	1.372E+02	SHORT HLIF
TL-201	6.423E+00	6.163E+00	5.443E+00	3.144E+00	NOT IDENT.
TL-202	2.983E-02	7.303E-02	6.396E-02	3.726E-02	NOT IDENT.
HG-203	3.940E-02	4.321E-02	3.928E-02	2.205E-02	NOT IDENT.
BI-207	2.279E-03	6.468E-02	5.454E-02	3.300E-02	FAIL ABUN
TL-207	-3.493E-01	7.975E-01	5.797E-01	4.069E-01	FAIL ABUN
PO-209	-2.488E-01	8.472E+00	7.193E+00	4.322E+00	NOT IDENT.
PB-211	-1.052E+00	1.271E+00	8.893E-01	6.487E-01	NOT IDENT.
BI-212	1.217E+00	4.226E-01	3.529E-01	2.156E-01	FAIL ABUN
PO-215	-3.493E-01	7.975E-01	5.797E-01	4.069E-01	FAIL ABUN
RN-219	-2.523E-01	4.669E-01	3.869E-01	2.382E-01	FAIL ABUN
RN-220	7.646E+00	2.966E+01	2.543E+01	1.513E+01	NOT IDENT.
RA-223	-3.493E-01	7.975E-01	5.797E-01	4.069E-01	FAIL ABUN
AC-227	-1.662E-01	3.951E-01	3.404E-01	2.016E-01	FAIL ABUN
TH-227	-1.662E-01	3.954E-01	3.404E-01	2.018E-01	FAIL ABUN
TH-229	-3.599E-01	5.630E-01	4.613E-01	2.872E-01	FAIL ABUN
PA-231	-3.000E-01	1.606E+00	1.393E+00	8.195E-01	NOT IDENT.
TH-231	-3.493E-01	7.975E-01	5.797E-01	4.069E-01	FAIL ABUN
U-231	2.779E-01	8.979E-01	6.972E-01	4.581E-01	FAIL ABUN
PA-233	-8.912E-02	6.966E-02	5.620E-02	3.554E-02	FAIL ABUN
PA-234	-3.090E-01	3.122E-01	2.317E-01	1.593E-01	FAIL ABUN
PA-234M	2.985E+00	5.077E+00	4.511E+00	2.590E+00	NOT IDENT.
U-235	-5.642E-02	2.248E-01	1.876E-01	1.147E-01	FAIL ABUN
NP-236	2.683E-02	8.422E-02	7.275E-02	4.297E-02	NOT IDENT.
NP-239	1.528E-01	1.914E-01	1.698E-01	9.766E-02	FAIL ABUN
AM-241	8.276E-02	6.801E-02	5.566E-02	3.470E-02	NOT IDENT.
CM-243	-7.159E-03	9.187E-02	7.973E-02	4.687E-02	FAIL ABUN
AM-246	1.952E-02	1.430E-01	1.219E-01	7.298E-02	NOT IDENT.
CM-247	7.789E-03	4.148E-02	3.599E-02	2.117E-02	NOT IDENT.
CF-249	3.871E-02	4.201E-02	3.807E-02	2.143E-02	NOT IDENT.
CF-251	1.804E-02	1.370E-01	1.170E-01	6.991E-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	376.9027
46.50	376.9027
46.50	376.9027
48.70	365.9297
49.72	413.9002
51.35	353.7547
52.39	369.2527
52.97	379.0561
53.15	379.1650
53.44	400.4684
54.07	411.4437
56.28	478.4603
56.28	478.4622
57.37	0.0000
57.53	456.1850
57.53	456.1859
57.60	456.2336
57.98	439.7333
57.98	439.7333
59.32	418.6557
59.32	418.6557
59.40	429.5613
59.54	429.6509
59.72	456.1423
60.01	456.3388
61.10	489.7237
61.14	489.7525
61.30	486.7576
63.00	528.4983
63.29	584.8663
63.29	584.8663
63.58	585.1113
64.28	626.3061
65.12	608.2903
65.20	608.3592
65.20	608.3592
66.05	587.1689
66.72	587.7182
66.83	606.6197
66.91	606.6882
67.20	606.9327
67.20	606.9327
67.75	600.3317
67.85	588.6429
68.90	581.6344
68.90	581.6344
69.30	601.6134
69.67	601.9193
70.82	622.5566
70.82	622.5566
70.83	622.5662
72.80	578.3801
72.87	578.4337
72.87	578.4337
74.67	560.1164
74.81	560.2178
74.81	560.2178
74.81	560.2178
74.81	560.2178
74.81	560.2178
74.81	560.2178
74.81	560.2178
74.97	560.3344
75.28	560.5609
75.70	560.8674
77.11	561.8859
77.11	561.8859

77.11	561.8859
77.11	561.8859
77.11	561.8859
77.11	561.8859
77.11	561.8859
78.38	473.5450
79.62	474.2877
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79.80	474.3948
80.11	474.5800
80.18	474.6218
80.30	474.6926
80.30	474.6926
80.57	474.8524
81.00	475.1066
81.07	475.1484
81.07	475.1484
81.07	475.1484
81.07	475.1484
82.60	476.0490
83.37	427.8737
83.78	428.0905
83.78	428.0905
83.78	428.0905
83.78	428.0905
84.21	428.3139
84.90	428.6726
85.43	428.9466
86.29	429.3901
86.50	429.4977
86.54	429.5189
86.59	429.5450
86.72	429.6118
86.79	429.6461
86.94	429.7243
87.30	429.9086
87.30	429.9086
87.30	429.9086
87.30	429.9086
87.30	429.9086
87.30	429.9086
87.57	430.0455
87.88	430.2037
88.03	430.2803
88.36	430.4483
88.47	430.5037
89.95	431.2521
91.11	431.8358
92.29	432.4244
92.38	432.4685
92.38	432.4685
93.35	432.9495
94.00	433.2707
94.67	384.6722
94.67	384.6751
94.90	388.0220
94.90	388.0220
94.90	388.0220
94.90	388.0220
95.87	391.6971
95.87	391.6971
96.73	380.6884
97.43	366.3309
98.44	368.3715
98.44	368.3715
98.88	345.7202
99.55	348.1511
99.55	348.1511
99.86	357.9869
100.00	358.0417
100.10	358.0819
103.18	412.6729
103.76	387.3136
105.00	380.6450
105.31	379.7432
108.00	390.0833
109.28	426.6754

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111.00	370.6488
111.76	399.8688
112.95	384.8369
115.19	371.1937
116.30	349.8080
117.00	331.3551
117.00	331.3551
117.66	339.8870
121.11	343.1267
121.62	354.7754
121.78	351.8481
122.06	349.5585
122.32	355.0154
122.32	355.0154
122.32	355.0154
122.32	355.0154
123.07	310.9688
127.23	335.7050
129.76	331.4564
131.20	342.0074
133.02	322.3311
133.54	308.9778
135.34	311.6615
136.00	321.5179
136.25	323.7056
136.48	330.1218
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140.51	0.0000
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142.65	348.9655
143.76	339.7212
144.24	307.9004
144.24	307.9004
144.24	307.9004
144.24	307.9004
145.22	293.2365
145.44	302.8919
147.16	355.6798
152.43	301.4910
152.70	307.9986
153.22	332.8257
154.21	328.8043
154.21	328.8043
154.21	328.8043
154.21	328.8043
155.03	339.7834
156.02	350.8246
158.56	306.2698
159.00	0.0000
159.00	293.4347
160.31	300.2299
161.27	313.4351
162.32	341.8279
162.64	346.2427
163.35	335.6165
163.89	318.4335
165.85	315.6792
167.43	283.4934
171.28	317.0402
171.86	321.5444
172.10	341.2285
176.55	287.7084
176.60	294.2844
181.06	268.7212
184.41	271.1599
185.71	283.0996
186.00	283.1624
190.27	290.0249
192.34	306.1505
193.63	312.4522
197.04	275.4561
198.01	268.9783
198.60	262.4193
200.40	307.2909
201.83	287.5415
202.84	293.3227
205.31	260.9839



208.36	261.5382
208.81	247.2848
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209.75	282.4099
210.97	276.3653
215.65	270.0458
216.55	274.2137
218.09	262.3760
222.10	249.5186
223.80	235.3187
226.40	242.0682
227.00	233.0929
227.08	233.1055
227.20	233.1243
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228.18	238.7194
228.18	238.7194
231.56	0.0000
235.69	220.4205
236.00	220.4648
236.00	220.4648
238.63	242.1554
238.63	242.1554
238.63	242.1554
238.63	242.1554
239.00	242.2120
240.98	242.5145
241.98	242.6665
241.98	242.6665
241.98	242.6665
244.69	243.0789
245.39	243.1841
247.94	219.0589
248.90	229.9179
249.79	213.1746
252.40	215.9292
252.85	208.5811
252.85	208.5811
254.15	0.0000
256.20	212.4692
256.20	212.4692
260.50	212.0934
260.90	205.6589
262.80	207.5150
264.65	196.5255
268.24	223.3037
268.79	214.0668
269.46	209.4955
269.46	209.4955
269.46	209.4955
269.46	209.4955
271.23	200.3920
273.65	255.1189
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277.35	206.9492
277.60	203.4708
277.60	203.4708
278.00	196.4982
278.60	190.9512
279.20	190.0796
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280.46	210.8304
281.68	220.3527
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284.30	180.3000
285.00	189.7671
285.90	174.8246
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286.10	172.9649
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290.80	185.3569
291.72	180.7380
293.26	0.0000
293.70	179.3612
295.21	173.2133
295.21	173.2133

295.21	173.2133
295.96	103.9709
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297.23	104.0435
298.57	104.1200
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299.80	165.7565
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300.09	143.6779
300.09	143.6779
300.09	143.6779
300.12	143.6797
301.29	148.5121
302.84	177.0986
303.76	193.0078
303.91	193.0227
304.40	188.3271
304.40	188.3271
304.84	185.2048
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308.46	139.8887
311.98	194.4948
316.51	170.1125
318.01	156.2194
319.02	164.0479
319.41	168.1834
320.08	191.4941
323.87	167.8885
323.87	167.8885
323.87	167.8885
323.87	167.8885
325.23	167.0481
328.77	165.1076
333.44	110.8700
334.20	110.9121
334.20	110.9121
334.30	131.8153
338.28	170.7382
338.28	170.7382
338.28	170.7382
338.28	170.7382
338.32	170.7426
338.32	170.7426
338.32	170.7426
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340.57	125.7820
344.27	171.2515
345.85	156.8336
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351.92	134.2754
351.92	134.2754
351.92	134.2754
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356.01	129.9935
364.48	118.4521
366.43	120.5226
367.43	125.4813
367.94	0.0000
369.80	123.6606
374.96	127.8973
383.85	136.3306
387.95	110.8543
388.63	106.9282
391.69	129.8806
391.69	129.8806
392.90	144.8326
398.62	124.3225
400.65	133.3948
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401.81	149.4012
402.60	135.5036
404.84	169.5497
410.95	143.0087
411.60	154.0526
413.65	153.1905
414.70	120.2051
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427.08	100.7104
427.89	97.7223
432.53	122.1432
433.93	116.1560
439.47	109.3421
439.56	109.3460
439.89	104.2976
443.98	119.6925
444.90	120.7533
445.03	120.7591
445.03	120.7591
445.03	120.7591
445.03	120.7591
453.90	115.0939
463.38	103.2710
468.07	95.6131
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475.06	92.4576
475.35	91.4412
476.78	109.9976
477.59	115.1746
477.96	111.0770
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484.57	104.1501
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497.08	90.1531
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510.53	0.0000
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511.00	93.7606
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511.85	93.7903
513.99	90.3901
513.99	90.3901
520.41	93.0480
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527.90	107.9865
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529.64	84.9768
529.87	0.0000
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537.32	103.1010
543.00	101.2078
546.56	0.0000
549.76	87.7174
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563.90	113.6535
568.70	79.7992
569.32	65.9825
569.50	65.9855
569.67	67.0544
573.80	102.3258
574.00	102.3328
574.64	97.1437
578.91	96.1018
579.30	0.0000
583.14	94.1037
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591.81	97.7220
592.07	97.7309
593.00	96.5698
595.88	80.5554
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602.71	86.1250
602.71	86.1250
603.60	84.3556
604.41	86.1738
604.70	89.7725
609.31	86.3164

609.31	86.3164
609.31	86.3164
609.31	86.3164
610.33	68.3570
612.46	68.4065
614.37	86.4629
618.01	76.9497
621.84	83.4273
621.84	83.4273
631.29	79.3394
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633.10	70.6875
634.78	76.1660
635.90	79.4588
636.97	91.4648
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661.65	84.5082
664.57	0.0000
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666.33	71.4445
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695.00	85.0203
696.49	90.6069
696.49	90.6069
697.00	88.7715
697.49	89.7100
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698.50	91.5879
699.00	93.4525
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706.58	0.0000
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722.78	105.4407
722.78	105.4407
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727.18	71.9840
733.00	76.9152
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747.13	54.4399
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755.35	51.7460
756.15	56.4636
756.87	58.3584
763.93	59.8230
765.79	64.7084
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766.84	71.2008
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778.57	69.6106
778.89	64.4085
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792.07	65.1897

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831.60	77.8425
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836.80	0.0000
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860.37	43.5773
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875.33	0.0000
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880.51	44.7796
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883.24	61.3722
884.67	65.2920
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896.60	58.6499
898.02	59.6485
899.00	61.6196
903.28	58.7488
911.07	59.8458
911.07	59.8458
911.07	59.8458
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920.93	47.2080
925.00	62.0233
925.24	59.0735
926.50	61.0628
935.52	62.1861
937.48	71.1035
944.10	57.3711
946.00	54.4293
949.00	48.5275
962.29	51.6646
964.01	51.6858
966.15	51.7133
968.20	51.7387
969.11	51.7493
969.11	51.7493
969.11	51.7493
977.42	55.3430
980.50	51.8910
983.50	41.9419
989.30	50.0000
996.32	55.0906
1001.03	48.1328
1001.68	48.1396
1004.76	52.1894
1021.30	0.0000
1024.50	0.0000
1034.80	49.5224
1036.00	49.5363
1037.82	45.5109
1038.57	44.5067
1038.76	0.0000
1045.16	62.8098
1046.59	55.7363
1048.07	52.7131

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1050.47	61.8712
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1063.62	62.0549
1076.63	49.9909
1077.35	50.0009
1078.86	39.8093
1085.78	36.8027
1099.22	53.3182
1112.02	52.8788
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1120.29	47.3832
1120.29	47.3832
1120.29	47.3832
1120.51	47.3851
1121.28	47.6869
1124.00	0.0000
1129.67	47.2910
1131.51	0.0000
1147.95	0.0000
1167.94	52.0284
1173.22	50.0020
1175.09	42.7267
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1205.75	0.0000
1213.00	66.1685
1221.42	57.8646
1230.97	84.3294
1235.34	63.3032
1236.41	0.0000
1238.25	68.6182
1246.25	50.7520
1260.41	0.0000
1271.85	31.8823
1274.45	38.2778
1274.54	38.2778
1291.56	33.0712
1298.22	0.0000
1312.09	25.7061
1325.50	21.4762
1325.50	21.4762
1332.49	33.3323
1333.61	34.4154
1360.21	31.3459
1362.66	0.0000
1365.15	33.5379
1368.21	37.3455
1368.53	0.0000
1376.25	29.7355
1384.27	24.4290
1394.10	26.1045
1395.20	25.1769
1407.95	25.2362
1434.06	19.7205
1436.60	25.3671
1457.56	0.0000
1460.81	23.5892
1489.15	22.7586
1509.49	21.8874
1596.49	23.6609
1620.62	11.6350
1678.03	0.0000
1691.02	5.8839
1691.02	5.8839
1706.46	0.0000
1750.46	0.0000
1764.49	18.8463
1764.49	18.8463
1764.49	18.8463
1764.49	18.8463
1770.23	8.6868
1771.40	16.8802
1791.20	0.0000
1808.65	14.9791

1836.01

15.0403

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G244132020

Total Uranium Activity	2.8693E+00	ug/g
Total Uranium Counting Unc.	2.7550E+00	ug/g
Total Uranium Tpu	1.4056E-06	ug/g
Total Uranium Mda	1.6653E+00	ug/g



```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G244132020
*  ANALYST       : MXR1                             DETECTOR    : GAM05
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 17:05:31.43          SAMPLE ALQT  : 129.580 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.808E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.448E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.327E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.109E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 19:39:09.67

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012162.CNF;1
Sample date        : 12-JAN-2010 00:00:00 Acquisition date : 19-JAN-2010 17:38:40
Sample ID          : G1202012162 Sample quantity : 1.34790E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:00.82 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 940270 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.73*	6	94	0.79	127.64	124	9	8.07E-04	345.6	
2	0	185.66*	11	67	1.10	371.52	368	8	1.57E-03	157.0	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 19:39:12

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012162.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 : 19-JAN-2010 17:38:40
Sample ID        : G1202012162 Sample quantity : 134.79 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.82 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)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	477.59	*	7.783E-02	1.417E-01	2.506E-01	2.535E-02	0.311	
NA-22	1274.54	*	6.312E-03	1.872E-02	3.265E-02	2.717E-03	0.193	
NA-24	1368.53	*	-1.211E-05	1.872E-02	Half-Life too short			
AL-26	1129.67		1.754E-01	6.743E-01	1.167E+00	9.780E-02	0.150	
	1808.65	*	4.959E-03	1.679E-02	3.012E-02	2.463E-03	0.165	
K-40	1460.81	*	-3.641E-02	2.570E-01	4.409E-01	3.876E-02	-0.083	
TI-44	67.85		-6.156E-03	1.823E-02	2.478E-02	1.919E-03	-0.248	
	78.38	*	-1.450E-03	1.117E-02	1.888E-02	1.626E-03	-0.077	
SC-46	889.25	*	5.472E-03	1.481E-02	2.651E-02	2.506E-03	0.206	
	1120.51		-2.011E-02	2.371E-02	3.241E-02	2.738E-03	-0.620	
V-48	944.10		-2.379E-01	3.263E-01	4.707E-01	4.397E-02	-0.505	
	983.50	*	9.058E-03	2.106E-02	3.791E-02	3.489E-03	0.239	
	1312.09		3.638E-03	2.473E-02	4.151E-02	3.485E-03	0.088	
CR-51	320.08	*	-5.060E-02	1.556E-01	2.363E-01	2.762E-02	-0.214	
MN-52	744.21		3.487E-02	4.271E-02	7.830E-02	7.189E-03	0.445	
	848.13		-2.050E+00	1.420E+00	1.778E+00	1.673E-01	-1.153	
	935.52		-1.325E-02	4.324E-02	6.758E-02	6.331E-03	-0.196	
	1246.25		-7.844E-01	1.282E+00	1.800E+00	1.483E-01	-0.436	
	1333.61		-1.124E+00	1.267E+00	1.675E+00	1.413E-01	-0.671	
	1434.06	*	5.910E-03	4.220E-02	7.058E-02	6.023E-03	0.084	
MN-54	834.83	*	1.763E-02	1.836E-02	3.471E-02	3.260E-03	0.508	
CO-56	846.75	*	-1.048E-02	1.834E-02	2.786E-02	2.622E-03	-0.376	
	977.42		2.451E-01	1.123E+00	1.946E+00	1.796E-01	0.126	
	1037.82		-3.889E-02	1.186E-01	1.811E-01	1.702E-02	-0.215	
	1175.09		-1.825E-01	8.227E-01	1.274E+00	1.025E-01	-0.143	
	1238.25		1.954E-02	3.094E-02	5.671E-02	4.811E-03	0.345	
	1360.21		-2.178E-01	4.667E-01	6.577E-01	5.571E-02	-0.331	
	1771.40		3.496E-02	1.251E-01	2.222E-01	1.836E-02	0.157	
CO-57	122.06	*	-4.831E-03	9.688E-03	1.548E-02	1.286E-03	-0.312	
	136.48		6.594E-02	8.629E-02	1.523E-01	1.385E-02	0.433	
CO-58	810.76	*	1.282E-02	1.626E-02	3.069E-02	2.875E-03	0.418	
FE-59	142.65		-1.970E-01	1.142E+00	1.744E+00	1.489E-01	-0.113	
	192.34		-1.646E-01	3.658E-01	5.711E-01	8.085E-02	-0.288	
	1099.22	*	-1.481E-02	3.233E-02	4.727E-02	4.394E-03	-0.313	

## ---- 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			1.222E-02	4.557E-02	7.863E-02	7.508E-03	0.155
	1173.22			5.343E-03	1.599E-02	2.818E-02	2.266E-03	0.190
	1332.49	*		-2.071E-02	2.554E-02	3.477E-02	2.933E-03	-0.596
ZN-65	1115.52	*		4.932E-03	4.020E-02	6.741E-02	5.725E-03	0.073
GE-68	1077.35	*		3.784E-01	6.300E-01	1.138E+00	9.940E-02	0.332
AS-73	53.44	*		1.747E-01	3.300E-01	5.451E-01	4.158E-02	0.321
AS-74	595.88	*		-4.198E-03	4.088E-02	5.925E-02	5.500E-03	-0.071
SE-75	634.78			1.344E-01	1.432E-01	2.613E-01	2.369E-02	0.514
	66.05			-6.931E-01	1.878E+00	2.548E+00	2.452E-01	-0.272
	96.73			-1.372E-01	2.540E-01	4.079E-01	5.639E-02	-0.336
BR-77	121.11			-1.016E-02	5.339E-02	8.800E-02	9.662E-03	-0.115
	136.00			1.087E-02	1.500E-02	2.650E-02	2.249E-03	0.410
	198.60			9.694E-02	8.874E-01	1.441E+00	1.545E-01	0.067
	264.65	*		6.344E-03	1.952E-02	3.240E-02	3.781E-03	0.196
	279.53			5.539E-02	5.183E-02	9.113E-02	1.115E-02	0.608
	303.91			4.728E-02	8.809E-01	1.409E+00	1.958E-01	0.034
	400.65			3.973E-02	1.207E-01	2.094E-01	2.438E-02	0.190
	87.88			3.704E+00	6.812E+00	1.205E+01	1.159E+00	0.308
	200.40			-9.355E+00	9.303E+00	1.375E+01	1.366E+00	-0.680
	239.00			-6.115E-01	6.308E-01	9.691E-01	1.063E-01	-0.631
	249.79			-1.896E+00	3.820E+00	5.819E+00	6.548E-01	-0.326
	281.68			-3.260E+00	5.396E+00	8.025E+00	9.615E-01	-0.406
	297.23			2.749E-01	3.087E+00	4.958E+00	5.831E-01	0.055
	303.76			-1.446E+00	9.310E+00	1.449E+01	1.689E+00	-0.100
	439.47			-4.444E-01	7.766E+00	1.285E+01	1.212E+00	-0.035
	484.57			-5.227E-01	1.223E+01	2.013E+01	1.914E+00	-0.026
	520.65	*		-2.029E-01	5.615E-01	8.742E-01	8.306E-02	-0.232
	574.64			4.520E-01	1.162E+01	1.910E+01	1.790E+00	0.024
	578.91			-5.849E+00	5.344E+00	7.333E+00	6.859E-01	-0.798
	585.48			-1.169E+01	1.047E+01	1.437E+01	1.340E+00	-0.813
SR-82	755.35			-2.335E+00	7.847E+00	1.173E+01	1.081E+00	-0.199
	817.79			-1.982E+00	5.956E+00	9.329E+00	8.735E-01	-0.212
	698.33			-7.798E+00	1.433E+01	2.105E+01	1.900E+00	-0.370
RB-83	776.49	*		1.173E-01	1.413E-01	2.588E-01	2.399E-02	0.454
	1395.20			2.117E+00	4.819E+00	8.537E+00	7.261E-01	0.248
	520.41	*		-1.088E-02	3.012E-02	4.689E-02	4.455E-03	-0.232
RB-84	529.64			2.735E-02	4.807E-02	8.507E-02	8.072E-03	0.322
	552.65			-6.874E-03	8.774E-02	1.422E-01	1.342E-02	-0.048
	881.50	*		1.004E-03	2.521E-02	4.246E-02	4.011E-03	0.024
KR-85	513.99	*		-1.839E+01	6.273E+00	7.451E+00	7.085E-01	-2.468
SR-85	513.99	*		-8.724E-02	2.976E-02	3.535E-02	3.361E-03	-2.468
RB-86	1076.63	*		-2.139E-01	3.409E-01	5.013E-01	4.380E-02	-0.427
Y-88	898.02			1.969E-02	1.919E-02	3.696E-02	3.510E-03	0.533
ZR-88	1836.01	*		-8.124E-04	1.957E-02	3.177E-02	2.579E-03	-0.026
	392.90	*		5.200E-03	1.312E-02	2.303E-02	2.130E-03	0.226
Y-91	1204.90	*		2.935E+00	6.885E+00	1.220E+01	9.921E-01	0.241
NB-94	702.63	*		1.012E-02	1.710E-02	2.990E-02	2.703E-03	0.339
NB-95	871.10			-1.025E-02	1.480E-02	2.131E-02	2.011E-03	-0.481
	765.79	*		4.853E-03	1.610E-02	2.722E-02	2.516E-03	0.178

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	235.69	*		-3.969E-02	5.885E-02	8.920E-02	1.061E-02	-0.445
ZR-95	724.18			1.310E-02	4.096E-02	6.915E-02	6.793E-03	0.189
	756.15	*		-2.399E-04	2.588E-02	4.131E-02	4.147E-03	-0.006
NB-97	657.90	*		-8.732E-06	2.588E-02	Half-Life	too short	
	1024.50			4.900E-04	2.588E-02	Half-Life	too short	
ZR-97	254.15			-7.176E-04	2.588E-02	Half-Life	too short	
	355.39			-4.257E-04	2.588E-02	Half-Life	too short	
	507.63	*		-3.438E-03	2.588E-02	Half-Life	too short	
	602.52			-4.215E-04	2.588E-02	Half-Life	too short	
	1021.30			-8.789E-04	2.588E-02	Half-Life	too short	
	1147.95			1.044E-03	2.588E-02	Half-Life	too short	
	1362.66			-5.624E-04	2.588E-02	Half-Life	too short	
	1750.46			-3.544E-03	2.588E-02	Half-Life	too short	
MO-99	140.51			-7.568E-01	1.904E+00	2.874E+00	7.947E-01	-0.263
	181.06			4.754E-01	1.270E+00	2.052E+00	3.835E-01	0.232
	366.43			-5.243E-01	6.709E+00	1.123E+01	1.135E+00	-0.047
	739.58	*		-6.903E-01	9.130E-01	1.249E+00	1.936E-01	-0.553
	778.00			5.958E-02	2.342E+00	3.757E+00	3.485E-01	0.016
TC-99M	140.51	*		-9.777E+00	2.342E+00	Half-Life	too short	
RH-101	127.23			6.497E-03	1.271E-02	2.212E-02	1.842E-03	0.294
	198.01	*		-6.728E-03	1.707E-02	2.658E-02	2.625E-03	-0.253
	325.23			-6.767E-02	1.159E-01	1.701E-01	1.910E-02	-0.398
RH-102	418.52			-1.236E-02	1.392E-01	2.304E-01	2.158E-02	-0.054
	475.06	*		-1.109E-02	1.465E-02	2.182E-02	2.074E-03	-0.508
	631.29			-1.652E-02	2.950E-02	4.383E-02	3.983E-03	-0.377
	697.49			4.865E-03	4.054E-02	6.642E-02	5.992E-03	0.073
	766.84			-2.599E-03	4.576E-02	7.234E-02	6.688E-03	-0.036
	1046.59			-6.629E-03	5.031E-02	8.072E-02	7.193E-03	-0.082
	1112.84			-2.910E-02	9.728E-02	1.497E-01	1.273E-02	-0.194
RU-103	497.08	*		-6.897E-03	1.719E-02	2.676E-02	3.940E-03	-0.258
	610.33			-2.526E-01	4.210E-01	6.434E-01	1.094E-01	-0.393
RH-106	511.85			-2.124E-01	1.555E-01	2.790E-01	2.654E-02	-0.761
	621.84	*		2.954E-02	1.424E-01	2.392E-01	3.277E-02	0.123
	1050.47			-3.708E-01	9.950E-01	1.511E+00	1.343E-01	-0.245
RU-106	511.85			-2.124E-01	1.555E-01	2.790E-01	2.654E-02	-0.761
	621.84	*		2.954E-02	1.423E-01	2.392E-01	2.187E-02	0.123
	1050.47			-3.708E-01	9.950E-01	1.511E+00	1.343E-01	-0.245
AG-108M	433.93	*		-3.410E-03	1.459E-02	2.358E-02	2.295E-03	-0.145
	614.37			3.239E-03	2.130E-02	3.532E-02	3.358E-03	0.092
	722.95			1.166E-02	2.132E-02	3.700E-02	3.490E-03	0.315
CD-109	88.03	*		1.652E-01	2.664E-01	4.737E-01	4.564E-02	0.349
AG-110M	657.75	*		-2.703E-03	1.736E-02	2.740E-02	2.508E-03	-0.099
	677.61			-3.491E-02	1.376E-01	2.119E-01	1.944E-02	-0.165
	706.67			-6.063E-02	1.048E-01	1.525E-01	1.415E-02	-0.398
	763.93			-1.770E-02	7.080E-02	1.077E-01	1.019E-02	-0.164
	884.67			1.207E-02	2.124E-02	3.899E-02	3.784E-03	0.310
	937.48			6.129E-03	4.550E-02	7.766E-02	7.494E-03	0.079
	1384.27			-1.269E-02	9.027E-02	1.406E-01	1.229E-02	-0.090
IN-111	171.28			3.118E-02	7.871E-02	1.336E-01	1.228E-02	0.233

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	245.39	*		-4.819E-02	8.058E-02	1.211E-01	1.349E-02	-0.398
IN-113M	391.69	*		-5.201E-03	1.984E-02	3.230E-02	3.066E-03	-0.161
SN-113	391.69	*		-5.201E-03	1.984E-02	3.230E-02	3.066E-03	-0.161
IN-114M	190.27	*		-1.547E-02	6.963E-02	1.115E-01	1.078E-02	-0.139
CD-115	260.90			-5.168E+00	6.397E+00	9.292E+00	1.072E+00	-0.556
	492.35			-7.970E-02	1.734E+00	2.848E+00	2.710E-01	-0.028
	527.90	*		-3.169E-01	5.838E-01	8.902E-01	8.449E-02	-0.356
SN-117M	156.02			5.940E-01	6.576E-01	1.167E+00	1.029E-01	0.509
	158.56	*		-1.298E-03	1.671E-02	2.744E-02	2.437E-03	-0.047
SB-122	563.90	*		6.056E-03	1.433E-01	2.360E-01	2.220E-02	0.026
	692.80			-2.799E+00	3.636E+00	4.806E+00	4.327E-01	-0.582
I-123	159.00	*		-7.827E-05	3.636E+00	Half-Life	too short	
	528.96			1.103E-03	3.636E+00	Half-Life	too short	
TE-123M	159.00	*		-4.271E-03	1.208E-02	1.935E-02	1.731E-03	-0.221
I-124	602.71	*		-4.230E-03	1.194E-01	1.730E-01	1.600E-02	-0.024
	722.78			2.702E-01	6.572E-01	1.120E+00	1.021E-01	0.241
	1325.50			-2.718E+00	5.879E+00	8.563E+00	7.211E-01	-0.317
	1376.25			1.526E+00	4.993E+00	8.548E+00	7.255E-01	0.179
	1509.49			-2.026E+00	2.411E+00	3.150E+00	2.694E-01	-0.643
	1691.02			-8.088E-02	6.535E-01	1.045E+00	8.783E-02	-0.077
SB-124	602.71			-7.680E-04	2.167E-02	3.142E-02	2.906E-03	-0.024
	645.85			1.604E-03	2.316E-01	3.757E-01	3.564E-02	0.004
	709.31			-5.344E-01	1.419E+00	2.008E+00	1.820E-01	-0.266
	713.82			-3.140E-01	9.455E-01	1.394E+00	1.725E-01	-0.225
	722.78			7.112E-02	1.730E-01	2.948E-01	2.738E-02	0.241
	968.20			8.636E-01	1.103E+00	2.042E+00	1.892E-01	0.423
	1045.16			2.726E-01	9.592E-01	1.673E+00	1.492E-01	0.163
	1325.50			-7.642E-01	1.653E+00	2.407E+00	2.027E-01	-0.317
	1368.21			8.798E-02	7.239E-01	1.206E+00	1.614E-01	0.073
	1436.60			-5.299E-01	1.598E+00	2.450E+00	2.091E-01	-0.216
	1691.02	*		-5.021E-03	4.057E-02	6.485E-02	5.679E-03	-0.077
SB-125	427.89	*		8.173E-03	4.328E-02	7.389E-02	7.060E-03	0.111
	463.38			2.867E-02	1.246E-01	2.130E-01	2.153E-02	0.135
	600.56			-7.180E-02	9.849E-02	1.444E-01	1.423E-02	-0.497
	635.90			7.897E-02	1.427E-01	2.492E-01	2.423E-02	0.317
TE-125M	109.28	*		9.593E-01	3.452E+00	5.937E+00	6.034E-01	0.162
I-126	388.63			2.014E-02	6.472E-02	1.124E-01	1.052E-02	0.179
	666.33	*		-6.010E-04	5.539E-02	8.935E-02	7.947E-03	-0.007
	753.82			-1.063E-01	4.052E-01	6.112E-01	5.629E-02	-0.174
SB-126	223.80			-1.401E-01	1.262E+00	2.023E+00	2.137E-01	-0.069
	278.60			4.587E-02	8.121E-01	1.305E+00	1.566E-01	0.035
	296.50			2.018E-01	4.839E-01	7.468E-01	8.792E-02	0.270
	414.70			-8.217E-03	2.450E-02	3.940E-02	3.684E-03	-0.209
	415.30			-7.213E-01	2.040E+00	3.271E+00	3.060E-01	-0.220
	555.20			-1.485E+00	1.291E+00	1.716E+00	1.619E-01	-0.865
	573.80			5.866E-02	3.496E-01	5.847E-01	5.481E-02	0.100
	593.00			-7.696E-02	2.983E-01	4.670E-01	4.341E-02	-0.165
	656.30			3.216E-01	1.043E+00	1.771E+00	1.579E-01	0.182
	666.33			-2.469E-04	2.276E-02	3.671E-02	3.265E-03	-0.007

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		675.00		-2.407E-01	6.191E-01	9.303E-01	8.309E-02	-0.259
		695.00		3.368E-02	2.531E-02	4.844E-02	4.365E-03	0.695
		697.00		1.948E-02	9.357E-02	1.553E-01	1.400E-02	0.125
		720.50	*	-1.059E-02	5.445E-02	8.188E-02	7.454E-03	-0.129
		856.80		3.747E-02	1.540E-01	2.673E-01	2.519E-02	0.140
		989.30		3.378E-03	3.726E-01	6.184E-01	5.678E-02	0.005
		1034.80		8.216E-01	2.166E+00	3.885E+00	3.486E-01	0.211
		1213.00		-8.958E-01	1.213E+00	1.622E+00	1.323E-01	-0.552
SN-126	+	64.28		4.688E-02	3.240E-01	3.598E-01	5.242E-02	0.130
		86.94		-1.237E-02	1.169E-01	1.971E-01	8.188E-02	-0.063
		87.57	*	9.598E-03	2.682E-02	4.682E-02	4.480E-03	0.205
SB-127		61.10		-3.929E+00	6.898E+00	9.181E+00	7.436E-01	-0.428
		252.40		4.240E-01	5.713E-01	9.430E-01	3.983E-01	0.450
		290.80		2.620E-01	2.575E+00	4.152E+00	5.150E-01	0.063
		411.60		1.503E-01	1.550E+00	2.623E+00	3.918E-01	0.057
		444.90		-6.086E-01	1.329E+00	2.088E+00	2.426E-01	-0.291
		473.00		9.702E-02	2.042E-01	3.593E-01	4.319E-02	0.270
		543.00		-1.789E+00	2.374E+00	3.478E+00	4.737E-01	-0.514
		603.60		5.422E-01	1.801E+00	2.718E+00	3.106E-01	0.199
		685.20	*	1.142E-02	1.739E-01	2.835E-01	2.817E-02	0.040
		698.50		-1.775E+00	2.178E+00	3.037E+00	4.508E-01	-0.585
		722.20		1.068E+00	3.977E+00	6.652E+00	6.525E-01	0.161
		783.80		2.106E-01	4.481E-01	7.735E-01	8.790E-02	0.272
XE-127		57.60		-7.206E-01	2.278E+00	3.444E+00	2.489E-01	-0.209
		145.22		-3.288E-01	2.848E-01	3.919E-01	3.365E-02	-0.839
		172.10		3.853E-03	4.809E-02	7.965E-02	7.339E-03	0.048
		202.84	*	-4.425E-03	1.926E-02	3.074E-02	3.075E-03	-0.144
		374.96		7.739E-03	7.559E-02	1.288E-01	1.267E-02	0.060
I-131		80.18		-1.597E-01	7.955E-01	1.336E+00	1.175E-01	-0.120
		284.30		5.316E-02	3.867E-01	6.265E-01	7.673E-02	0.085
		364.48	*	1.143E-02	3.093E-02	5.407E-02	5.700E-03	0.211
		636.97		-1.554E-01	4.326E-01	6.632E-01	6.283E-02	-0.234
		722.89		8.438E-01	1.916E+00	3.277E+00	2.991E-01	0.257
TE-132		49.72		-1.655E+00	1.742E+00	2.440E+00	2.139E-01	-0.678
		111.76		-4.635E-01	2.356E+00	3.895E+00	3.524E-01	-0.119
		116.30		-6.762E-01	2.263E+00	3.701E+00	3.328E-01	-0.183
		228.16	*	-1.050E-02	7.078E-02	1.129E-01	1.802E-02	-0.093
BA-133		53.15		8.834E-01	1.496E+00	2.488E+00	1.906E-01	0.355
		79.62		-7.675E-03	4.063E-01	6.925E-01	1.059E-01	-0.011
		81.00		-1.138E-02	3.262E-02	5.404E-02	8.653E-03	-0.211
		276.40		-1.718E-01	1.897E-01	2.702E-01	4.498E-02	-0.636
		302.84		-4.065E-02	6.549E-02	9.518E-02	1.470E-02	-0.427
		356.01	*	-3.774E-03	1.937E-02	3.200E-02	4.625E-03	-0.118
		383.85		-1.354E-01	1.515E-01	2.278E-01	3.016E-02	-0.594
I-133		510.53		-1.007E-03	1.515E-01	Half-Life too short		
		529.87	*	5.507E-06	1.515E-01	Half-Life too short		
		706.58		-3.338E-04	1.515E-01	Half-Life too short		
		856.28		-4.535E-04	1.515E-01	Half-Life too short		
		875.33		3.538E-05	1.515E-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-134	1236.41		1.997E-04	1.515E-01	Half-Life	too short	
	1298.22		1.098E-04	1.515E-01	Half-Life	too short	
	475.35		-4.253E-01	9.476E-01	1.478E+00	1.405E-01	-0.288
	563.23		-1.818E-01	1.781E-01	2.450E-01	2.324E-02	-0.742
	569.32		-3.902E-02	1.141E-01	1.727E-01	1.640E-02	-0.226
	604.70		3.175E-03	1.779E-02	2.962E-02	2.743E-03	0.107
	795.84	*	1.248E-03	1.769E-02	3.018E-02	2.829E-03	0.041
	801.93		1.205E-01	2.136E-01	3.873E-01	3.631E-02	0.311
	1038.57		-8.226E-01	1.498E+00	2.137E+00	1.913E-01	-0.385
	1167.94		-1.879E-02	9.176E-01	1.492E+00	1.206E-01	-0.013
CS-135 I-135	1365.15		-1.915E-01	5.667E-01	8.233E-01	7.306E-02	-0.233
	268.24	*	3.372E-02	7.509E-02	1.257E-01	1.603E-02	0.268
	288.45		-4.821E+01	7.509E-02	Half-Life	too short	
	417.63		3.081E+01	7.509E-02	Half-Life	too short	
	546.56		6.966E+00	7.509E-02	Half-Life	too short	
	836.80		6.839E+01	7.509E-02	Half-Life	too short	
	1038.76		-6.025E+01	7.509E-02	Half-Life	too short	
	1124.00		-6.047E+01	7.509E-02	Half-Life	too short	
	1131.51		4.944E+00	7.509E-02	Half-Life	too short	
	1260.41	*	6.846E+00	7.509E-02	Half-Life	too short	
CS-136	1457.56		-2.024E+01	7.509E-02	Half-Life	too short	
	1678.03		-7.168E+00	7.509E-02	Half-Life	too short	
	1706.46		7.521E+01	7.509E-02	Half-Life	too short	
	1791.20		-2.552E+01	7.509E-02	Half-Life	too short	
	66.91		-1.829E-01	2.162E-01	2.705E-01	4.038E-02	-0.676
	86.29		-9.478E-02	2.430E-01	4.002E-01	5.367E-02	-0.237
	153.22		-1.491E-01	1.749E-01	2.647E-01	2.582E-02	-0.563
	163.89		-2.114E-02	3.198E-01	5.246E-01	5.250E-02	-0.040
	176.55		-6.463E-02	1.147E-01	1.789E-01	1.750E-02	-0.361
	273.65		7.408E-02	1.480E-01	2.484E-01	3.052E-02	0.298
BA-137M CS-137 CE-139 BA-140	340.57		-1.767E-02	4.028E-02	6.529E-02	7.217E-03	-0.271
	818.51		6.039E-03	1.892E-02	3.379E-02	3.165E-03	0.179
	1048.07	*	-2.436E-02	3.217E-02	4.407E-02	4.077E-03	-0.553
	1235.34		-2.808E-02	1.560E-01	2.440E-01	2.820E-02	-0.115
	661.65	*	-7.811E-03	1.805E-02	2.718E-02	2.412E-03	-0.287
	661.65	*	-8.257E-03	1.908E-02	2.873E-02	2.554E-03	-0.287
	165.85	*	-8.141E-03	1.262E-02	1.958E-02	1.776E-03	-0.416
	162.64		4.709E-02	2.188E-01	3.677E-01	3.481E-02	0.128
	304.84		2.231E-01	3.576E-01	6.061E-01	1.763E-01	0.368
	423.70		6.910E-02	5.995E-01	1.015E+00	3.311E-01	0.068
LA-140	537.32	*	3.614E-02	8.701E-02	1.496E-01	4.992E-02	0.242
	328.77		3.748E-02	9.535E-02	1.575E-01	1.816E-02	0.238
	432.53		-2.171E-01	6.496E-01	9.682E-01	9.490E-02	-0.224
	487.03		-3.135E-02	4.588E-02	6.872E-02	6.872E-03	-0.456
	751.79		1.337E-01	4.794E-01	8.101E-01	8.160E-02	0.165
	815.85		-5.557E-02	8.711E-02	1.274E-01	1.310E-02	-0.436
	867.82		2.410E-02	4.285E-01	7.241E-01	7.135E-02	0.033
	919.63		-4.254E-02	9.822E-01	1.625E+00	1.836E-01	-0.026
	925.24		1.088E-02	3.639E-01	6.092E-01	6.028E-02	0.018



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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1596.49	*	-1.459E-02	3.223E-02	4.762E-02	4.056E-03	-0.306
CE-141		145.44	*	-1.902E-02	2.225E-02	3.405E-02	2.978E-03	-0.559
CE-143		57.37		-1.538E+00	1.079E+01	1.662E+01	1.440E+00	-0.093
		231.56		2.628E+01	3.146E+01	5.279E+01	1.701E+01	0.498
		293.26	*	4.398E-01	1.505E+00	2.468E+00	5.655E-01	0.178
		350.59		-1.431E+01	2.073E+01	3.092E+01	9.776E+00	-0.463
		490.36		9.338E+00	3.451E+01	5.883E+01	1.873E+01	0.159
		664.57		-1.497E+00	1.476E+01	2.345E+01	7.593E+00	-0.064
		721.93		1.673E+00	1.695E+01	2.763E+01	8.100E+00	0.061
CE-144		80.11		-1.145E-01	6.817E-01	1.148E+00	1.008E-01	-0.100
		133.54	*	-3.007E-02	7.769E-02	1.247E-01	1.926E-02	-0.241
PM-144		476.78		6.647E-03	3.341E-02	5.671E-02	5.809E-03	0.117
		618.01		-6.888E-03	1.653E-02	2.520E-02	2.366E-03	-0.273
		696.49	*	5.952E-03	1.784E-02	3.012E-02	2.716E-03	0.198
		778.57		-3.968E-01	1.038E+00	1.528E+00	1.417E-01	-0.260
PR-144		696.49	*	4.018E-01	1.204E+00	2.033E+00	1.833E-01	0.198
		1489.15		-4.554E-01	5.073E+00	8.268E+00	7.070E-01	-0.055
PM-146		453.90	*	2.758E-03	2.088E-02	3.529E-02	4.030E-03	0.078
		633.02		2.591E-01	7.445E-01	1.257E+00	4.712E-01	0.206
		735.90		3.890E-02	6.650E-02	1.166E-01	3.354E-02	0.334
		747.13		-3.766E-02	4.319E-02	5.641E-02	8.121E-03	-0.668
ND-147		91.11		3.764E-03	6.836E-02	1.165E-01	1.164E-02	0.032
		319.41		-5.787E-01	1.038E+00	1.524E+00	1.731E-01	-0.380
		439.89		-2.157E-01	1.776E+00	2.915E+00	2.752E-01	-0.074
		531.02	*	6.047E-02	1.693E-01	2.918E-01	4.513E-02	0.207
PM-149		285.90	*	-1.162E+00	4.533E+00	7.015E+00	1.233E+00	-0.166
EU-152		121.78		-1.375E-02	2.890E-02	4.630E-02	4.470E-03	-0.297
		244.69		-5.776E-02	1.516E-01	2.343E-01	2.605E-02	-0.247
		344.27	*	6.724E-03	4.729E-02	8.118E-02	9.073E-03	0.083
		443.98		9.434E-02	4.741E-01	8.081E-01	7.635E-02	0.117
		778.89		-5.977E-02	1.191E-01	1.700E-01	1.577E-02	-0.352
		867.32		2.368E-01	3.624E-01	6.733E-01	6.352E-02	0.352
		964.01		-2.615E-02	1.292E-01	2.071E-01	1.921E-02	-0.126
		1085.78		-1.789E-02	1.715E-01	2.758E-01	2.394E-02	-0.065
		1112.02		-8.517E-02	1.408E-01	2.012E-01	1.712E-02	-0.423
		1407.95		-7.451E-02	1.063E-01	1.510E-01	1.286E-02	-0.494
GD-153		69.67		2.804E-01	5.095E-01	9.120E-01	7.186E-02	0.307
		83.37		5.353E-01	5.535E+00	8.824E+00	8.042E-01	0.061
		97.43	*	-2.212E-02	3.053E-02	4.372E-02	3.884E-03	-0.506
		103.18		-5.600E-02	4.146E-02	6.150E-02	5.300E-03	-0.911
EU-154		123.07		-1.053E-02	1.993E-02	3.169E-02	3.525E-03	-0.332
		247.94		9.688E-02	1.685E-01	2.868E-01	3.878E-02	0.338
		591.81		-5.697E-03	2.898E-01	4.713E-01	5.742E-02	-0.012
		723.30		5.098E-02	8.937E-02	1.555E-01	1.552E-02	0.328
		756.87		3.936E-02	2.990E-01	4.921E-01	6.110E-02	0.080
		873.19		7.682E-02	1.258E-01	2.330E-01	2.990E-02	0.330
		996.32		1.083E-01	1.765E-01	3.207E-01	5.783E-02	0.338
		1004.76		-1.982E-02	9.647E-02	1.532E-01	1.841E-02	-0.129
		1274.45	*	1.194E-02	5.398E-02	9.179E-02	1.017E-02	0.130

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		48.70		9.785E-02	1.100E+00	1.747E+00	1.435E-01	0.056
		60.01		1.543E+00	2.167E+00	3.370E+00	2.407E-01	0.458
		86.54		-3.631E-03	3.263E-02	5.502E-02	5.253E-03	-0.066
		105.31	*	3.792E-02	4.370E-02	7.840E-02	6.782E-03	0.484
TB-160		86.79		3.518E-03	8.233E-02	1.405E-01	1.334E-02	0.025
		197.04		-1.673E-01	2.708E-01	4.129E-01	4.066E-02	-0.405
		215.65		-9.161E-02	3.146E-01	4.962E-01	5.132E-02	-0.185
		298.57		4.518E-02	5.444E-02	8.859E-02	1.040E-02	0.510
		879.36	*	-2.889E-02	5.240E-02	7.727E-02	7.299E-03	-0.374
		962.29		-3.817E-02	2.104E-01	3.380E-01	3.137E-02	-0.113
		966.15		-2.289E-02	8.651E-02	1.374E-01	1.273E-02	-0.167
		1177.93		-5.869E-02	1.380E-01	2.036E-01	1.639E-02	-0.288
		1271.85		1.504E-02	2.502E-01	4.122E-01	3.423E-02	0.036
HO-166M		80.57		-7.329E-03	8.709E-02	1.476E-01	1.302E-02	-0.050
	+	184.41		7.132E-03	2.240E-02	2.906E-02	2.767E-03	0.245
		280.46		4.131E-02	4.123E-02	7.234E-02	8.678E-03	0.571
		410.95		6.807E-02	1.131E-01	2.019E-01	1.885E-02	0.337
		711.68	*	6.843E-03	3.175E-02	5.272E-02	4.784E-03	0.130
		752.31		1.483E-02	1.112E-01	1.829E-01	1.684E-02	0.081
		810.29		5.608E-03	2.655E-02	4.620E-02	4.319E-03	0.121
TM-171		51.35		-6.808E+00	1.235E+01	1.814E+01	1.429E+00	-0.375
		52.39		3.026E+00	6.422E+00	1.058E+01	8.200E-01	0.286
		59.40		6.874E+00	1.118E+01	1.846E+01	1.311E+00	0.372
		66.72	*	-9.418E+00	1.148E+01	1.452E+01	1.113E+00	-0.649
LU-176		88.36		3.706E-02	5.990E-02	1.067E-01	1.024E-02	0.347
		201.83		-4.730E-03	1.329E-02	2.095E-02	2.090E-03	-0.226
		306.84	*	-3.315E-04	1.198E-02	1.895E-02	2.198E-03	-0.017
		401.10		1.456E+00	3.377E+00	5.912E+00	5.493E-01	0.246
LU-177		112.95		-5.574E-02	2.909E-01	4.809E-01	4.027E-02	-0.116
		208.36	*	4.048E-02	2.320E-01	3.833E-01	3.890E-02	0.106
LU-177M		52.97		3.565E-01	6.544E-01	1.084E+00	8.327E-02	0.329
		54.07		1.668E-01	3.435E-01	5.652E-01	4.273E-02	0.295
		61.30		-4.366E-01	6.466E-01	8.471E-01	6.145E-02	-0.515
		121.62		-6.932E-02	1.481E-01	2.378E-01	1.974E-02	-0.291
		147.16		-5.680E-02	2.585E-01	4.206E-01	3.627E-02	-0.135
		171.86		5.681E-02	2.194E-01	3.686E-01	3.394E-02	0.154
		218.09		9.138E-02	3.918E-01	6.493E-01	6.758E-02	0.141
		268.79		3.499E-02	3.689E-01	5.968E-01	7.009E-02	0.059
		319.02		-9.304E-02	1.279E-01	1.832E-01	2.082E-02	-0.508
		367.43		-5.319E-02	4.257E-01	7.083E-01	7.141E-02	-0.075
		413.65	*	8.175E-03	8.198E-02	1.387E-01	1.297E-02	0.059
HF-181		56.28		-1.724E-01	3.567E-01	5.290E-01	3.883E-02	-0.326
		57.53		-6.735E-02	1.951E-01	2.941E-01	2.128E-02	-0.229
	+	65.20		8.111E-02	5.606E-01	4.831E-01	3.648E-02	0.168
		133.02		1.324E-03	2.292E-02	3.843E-02	3.222E-03	0.034
		136.25		9.937E-02	1.678E-01	2.929E-01	2.469E-02	0.339
		345.85		4.133E-02	8.773E-02	1.477E-01	1.583E-02	0.280
		482.03	*	-7.899E-03	1.728E-02	2.671E-02	2.540E-03	-0.296
W-181		56.28		-7.296E-02	1.510E-01	2.240E-01	1.644E-02	-0.326

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TA-182	+	57.53		-2.861E-02	8.267E-02	1.246E-01	9.013E-03	-0.230
		65.20	*	3.409E-02	2.357E-01	2.031E-01	1.533E-02	0.168
		67.75		-3.761E-02	4.458E-02	5.640E-02	4.364E-03	-0.667
		100.10		1.928E-02	6.368E-02	1.103E-01	9.649E-03	0.175
		152.43		-1.417E-01	1.286E-01	1.894E-01	1.655E-02	-0.748
		222.10		1.066E-01	1.549E-01	2.664E-01	2.802E-02	0.400
		1001.68		-7.616E-01	1.087E+00	1.570E+00	1.433E-01	-0.485
		1121.28		-2.734E-02	5.994E-02	8.948E-02	7.555E-03	-0.306
		1189.05		-2.452E-02	1.024E-01	1.566E-01	1.266E-02	-0.157
		1221.42	*	-7.856E-02	7.500E-02	9.027E-02	7.382E-03	-0.870
RE-183		1230.97		-7.399E-02	1.689E-01	2.460E-01	2.018E-02	-0.301
		57.98		-5.564E-03	7.966E-02	1.235E-01	8.895E-03	-0.045
		59.32		2.917E-02	4.293E-02	7.126E-02	5.064E-03	0.409
		67.20		-4.476E-02	7.388E-02	9.653E-02	7.430E-03	-0.464
		162.32	*	2.749E-02	4.363E-02	7.580E-02	6.803E-03	0.363
RE-184		208.81		-2.007E-02	4.084E-01	6.615E-01	6.721E-02	-0.030
		291.72		4.375E-02	4.311E-01	6.942E-01	8.224E-02	0.063
		57.98		-2.140E-02	3.064E-01	4.752E-01	3.421E-02	-0.045
		59.32		1.121E-01	1.650E-01	2.739E-01	1.946E-02	0.409
		67.20		-1.721E-01	2.840E-01	3.712E-01	2.857E-02	-0.464
		161.27		7.230E-03	1.541E-01	2.555E-01	2.286E-02	0.028
		216.55		2.811E-02	1.204E-01	1.997E-01	2.071E-02	0.141
		252.85	*	5.673E-02	1.099E-01	1.857E-01	2.105E-02	0.305
		318.01		-3.905E-02	2.038E-01	3.145E-01	3.579E-02	-0.124
		792.07		-2.848E-01	4.176E-01	6.208E-01	5.780E-02	-0.459
OS-185		903.28		-5.044E-01	4.623E-01	6.102E-01	5.765E-02	-0.827
		920.93		-3.735E-03	2.323E-01	3.860E-01	3.631E-02	-0.010
		59.72		7.062E-02	1.261E-01	1.926E-01	1.371E-02	0.367
		61.14		-4.137E-02	7.004E-02	9.295E-02	6.730E-03	-0.445
		69.30		8.730E-03	9.091E-02	1.572E-01	1.234E-02	0.056
		592.07		1.102E-01	1.142E+00	1.890E+00	1.757E-01	0.058
		646.12	*	6.293E-04	1.990E-02	3.241E-02	2.913E-03	0.019
		717.42		-1.238E-01	4.499E-01	6.908E-01	6.281E-02	-0.179
		874.81		1.374E-01	2.239E-01	4.171E-01	3.938E-02	0.330
		880.27		-5.959E-02	3.065E-01	4.928E-01	4.655E-02	-0.121
RE-188	*	155.03		9.383E-04	6.659E-02	1.103E-01	9.705E-03	0.009
		477.96		7.472E-01	1.410E+00	2.486E+00	2.363E-01	0.301
		633.10		1.087E+00	1.332E+00	2.408E+00	2.185E-01	0.451
W-188	+	63.58		4.421E+00	3.056E+01	3.579E+01	2.660E+00	0.124
		227.08		4.606E-01	5.549E+00	9.054E+00	9.642E-01	0.051
IR-192	*	290.67		2.309E-01	3.119E+00	5.013E+00	5.946E-01	0.046
		295.96		9.694E-03	5.350E-02	8.083E-02	9.560E-03	0.120
		308.46		1.069E-02	4.368E-02	7.133E-02	8.276E-03	0.150
		316.51	*	2.654E-03	1.423E-02	2.310E-02	2.640E-03	0.115
		468.07		-2.125E-02	2.928E-02	4.366E-02	4.393E-03	-0.487
AU-195	+	604.41		1.067E-01	2.197E-01	3.795E-01	5.100E-02	0.281
		612.46		-9.384E-02	3.723E-01	5.865E-01	6.104E-02	-0.160
		65.12		1.598E-02	1.105E-01	9.668E-02	7.295E-03	0.165
		66.83		-3.112E-02	3.710E-02	4.679E-02	3.589E-03	-0.665

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-200	75.70		5.649E-03	6.140E-02	9.966E-02	8.339E-03	0.057
	98.88	*	-8.022E-02	9.139E-02	1.302E-01	1.146E-02	-0.616
	129.76		-9.681E-01	1.102E+00	1.694E+00	1.414E-01	-0.572
	367.94	*	-6.920E-03	2.018E+00	3.401E+00	3.423E-01	-0.002
	579.30		-1.656E+01	1.655E+01	2.303E+01	2.154E+00	-0.719
TL-201	828.27		-1.243E+01	1.908E+01	2.804E+01	2.630E+00	-0.443
	1205.75		8.970E-01	9.151E+00	1.522E+01	1.238E+00	0.059
	68.90		6.703E-02	2.994E-01	5.021E-01	3.928E-02	0.133
	70.82		1.109E-01	1.592E-01	2.875E-01	2.291E-02	0.386
TL-202	80.30		-7.814E-02	3.034E-01	5.070E-01	4.461E-02	-0.154
	135.34		8.859E-01	1.862E+00	3.229E+00	2.718E-01	0.274
	167.43	*	1.058E-01	5.829E-01	9.752E-01	8.878E-02	0.108
	68.90		2.131E-02	9.517E-02	1.596E-01	1.248E-02	0.133
	70.82		3.515E-02	5.046E-02	9.114E-02	7.261E-03	0.386
HG-203	80.30		-2.477E-02	9.621E-02	1.608E-01	1.414E-02	-0.154
	439.56	*	-4.483E-03	2.191E-02	3.557E-02	3.357E-03	-0.126
	70.83		2.085E-01	2.986E-01	5.380E-01	7.103E-02	0.388
	72.87		-1.996E-01	1.760E-01	2.704E-01	3.485E-02	-0.738
BI-207	82.60		-1.313E-01	3.770E-01	5.783E-01	8.100E-02	-0.227
	279.20	*	1.072E-02	1.816E-02	3.071E-02	3.743E-03	0.349
	72.80		-6.539E-02	5.727E-02	8.858E-02	7.196E-03	-0.738
	74.97		3.277E-02	3.298E-02	6.036E-02	5.012E-03	0.543
	84.90		-8.081E-02	7.302E-02	1.048E-01	9.724E-03	-0.771
TL-207	569.67		-8.390E-03	1.764E-02	2.613E-02	2.453E-03	-0.321
	1063.62	*	1.611E-03	2.120E-02	3.549E-02	3.129E-03	0.045
	1770.23		-2.383E-03	2.859E-01	4.704E-01	3.888E-02	-0.005
	81.07		-2.469E-02	7.203E-02	1.195E-01	1.061E-02	-0.207
	83.78		-1.465E-03	4.818E-02	7.611E-02	6.971E-03	-0.019
TL-208	94.90		-2.853E-01	1.026E-01	1.326E-01	1.199E-02	-2.152
	122.32		-2.644E-01	6.953E-01	1.125E+00	1.007E-01	-0.235
	144.24		9.799E-02	3.173E-01	5.030E-01	4.825E-02	0.195
	154.21		-1.030E-01	1.636E-01	2.548E-01	2.452E-02	-0.404
	269.46		-3.501E-02	9.196E-02	1.412E-01	1.680E-02	-0.248
PO-209	323.87	*	5.838E-02	3.364E-01	5.424E-01	1.038E-01	0.108
	338.28		1.989E-01	4.843E-01	8.499E-01	1.191E-01	0.234
	445.03		-6.105E-01	1.161E+00	1.805E+00	2.292E-01	-0.338
	277.35		-1.540E-01	1.901E-01	2.750E-01	4.088E-02	-0.560
	510.84		-1.215E-01	1.455E-01	2.688E-01	3.399E-02	-0.452
BI-210	583.14	*	4.540E-04	2.265E-02	3.755E-02	3.722E-03	0.012
	860.37		-5.390E-03	1.417E-01	2.360E-01	2.363E-02	-0.023
	260.50		-5.770E+00	4.916E+00	6.803E+00	7.845E-01	-0.848
	262.80		-4.721E+00	1.292E+01	1.987E+01	2.303E+00	-0.238
	896.60	*	2.353E+00	3.468E+00	6.425E+00	6.077E-01	0.366
PB-210	46.50	*	-1.142E+00	1.875E+00	2.779E+00	2.591E-01	-0.411
PB-210	46.50	*	-1.142E+00	1.875E+00	2.779E+00	2.591E-01	-0.411
PO-210	46.50	*	-1.142E+00	1.875E+00	2.779E+00	2.347E-01	-0.411
BI-211	72.87		-1.120E+00	9.810E-01	1.517E+00	1.233E-01	-0.738
PB-211	351.07	*	-3.149E-02	1.044E-01	1.664E-01	1.819E-02	-0.189
	404.84	*	-3.612E-02	4.476E-01	7.423E-01	4.659E-01	-0.049

## ---- 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			8.630E-01	1.094E+00	1.762E+00	1.097E+00	0.490
	831.96			-5.597E-01	6.922E-01	8.496E-01	5.333E-01	-0.659
	727.18	*		-5.590E-02	1.397E-01	2.085E-01	2.178E-02	-0.268
	785.46			2.126E-01	8.502E-01	1.484E+00	1.379E-01	0.143
PB-212	1620.62			-8.121E-02	5.832E-01	9.281E-01	7.884E-02	-0.088
	74.81			7.767E-02	1.156E-01	2.068E-01	2.584E-02	0.376
	77.11			-4.731E-02	7.050E-02	1.074E-01	9.123E-03	-0.440
	87.30			3.657E-02	1.253E-01	2.176E-01	3.010E-02	0.168
PO-212	238.63	*		-3.993E-02	3.453E-02	5.202E-02	6.159E-03	-0.767
	300.09			-2.073E-01	4.061E-01	5.687E-01	7.451E-02	-0.365
	74.81			7.767E-02	1.156E-01	2.068E-01	2.584E-02	0.376
	77.11			-4.731E-02	7.050E-02	1.074E-01	9.123E-03	-0.440
BI-214	87.30			3.657E-02	1.253E-01	2.176E-01	3.010E-02	0.168
	115.19			-3.044E-01	1.350E+00	2.223E+00	1.854E-01	-0.137
	238.63	*		-3.993E-02	3.453E-02	5.202E-02	6.159E-03	-0.767
	300.09			-2.073E-01	4.061E-01	5.687E-01	7.451E-02	-0.365
PB-214	609.31	*		-1.092E-02	4.313E-02	6.905E-02	7.300E-03	-0.158
	1120.29			-1.183E-01	1.484E-01	2.054E-01	2.205E-02	-0.576
	1764.49			-1.281E-01	1.435E-01	2.006E-01	1.660E-02	-0.639
	74.81			1.338E-01	1.990E-01	3.564E-01	3.962E-02	0.376
PO-214	77.11			-8.111E-02	1.210E-01	1.841E-01	2.101E-02	-0.440
	87.30			6.265E-02	2.146E-01	3.728E-01	4.577E-02	0.168
	241.98			-2.679E-02	1.630E-01	2.587E-01	3.205E-02	-0.104
	295.21			-7.175E-02	7.765E-02	1.023E-01	1.366E-02	-0.701
PO-215	351.92	*		-1.158E-02	3.700E-02	5.898E-02	7.133E-03	-0.196
	74.81			1.338E-01	1.990E-01	3.564E-01	3.962E-02	0.376
	77.11			-8.111E-02	1.210E-01	1.841E-01	2.101E-02	-0.440
	87.30			6.265E-02	2.146E-01	3.728E-01	4.577E-02	0.168
PO-216	241.98			-2.679E-02	1.630E-01	2.587E-01	3.205E-02	-0.104
	295.21			-7.175E-02	7.765E-02	1.023E-01	1.366E-02	-0.701
	351.92	*		-1.158E-02	3.700E-02	5.898E-02	7.133E-03	-0.196
	81.07			-2.469E-02	7.203E-02	1.195E-01	1.061E-02	-0.207
PO-218	83.78			-1.465E-03	4.818E-02	7.611E-02	6.971E-03	-0.019
	94.90			-2.853E-01	1.026E-01	1.326E-01	1.199E-02	-2.152
	122.32			-2.644E-01	6.953E-01	1.125E+00	1.007E-01	-0.235
	144.24			9.799E-02	3.173E-01	5.030E-01	4.825E-02	0.195
PO-216	154.21			-1.030E-01	1.636E-01	2.548E-01	2.452E-02	-0.404
	269.46			-3.501E-02	9.196E-02	1.412E-01	1.680E-02	-0.248
	323.87	*		5.838E-02	3.364E-01	5.424E-01	1.038E-01	0.108
	338.28			1.989E-01	4.843E-01	8.499E-01	1.191E-01	0.234
PO-216	445.03			-6.105E-01	1.161E+00	1.805E+00	2.292E-01	-0.338
	74.81			7.767E-02	1.156E-01	2.068E-01	2.584E-02	0.376
	77.11			-4.731E-02	7.050E-02	1.074E-01	9.123E-03	-0.440
	87.30			3.657E-02	1.253E-01	2.176E-01	3.010E-02	0.168
PO-218	238.63	*		-3.993E-02	3.453E-02	5.202E-02	6.159E-03	-0.767
	300.09			-2.073E-01	4.061E-01	5.687E-01	7.451E-02	-0.365
	74.81			1.338E-01	1.990E-01	3.564E-01	3.962E-02	0.376
	77.11			-8.111E-02	1.210E-01	1.841E-01	2.101E-02	-0.440
PO-218	87.30			6.265E-02	2.146E-01	3.728E-01	4.577E-02	0.168

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	241.98			-2.679E-02	1.630E-01	2.587E-01	3.205E-02	-0.104
	295.21			-7.175E-02	7.765E-02	1.023E-01	1.366E-02	-0.701
	351.92	*		-1.158E-02	3.700E-02	5.898E-02	7.133E-03	-0.196
RN-219	271.23			8.798E-03	1.188E-01	1.916E-01	2.509E-02	0.046
	401.81	*		8.215E-02	2.075E-01	3.617E-01	5.578E-02	0.227
RN-220	549.76	*		-4.203E+00	1.358E+01	2.131E+01	2.013E+00	-0.197
RA-223	81.07			-2.469E-02	7.203E-02	1.195E-01	1.061E-02	-0.207
	83.78			-1.465E-03	4.818E-02	7.611E-02	6.971E-03	-0.019
	94.90			-2.853E-01	1.026E-01	1.326E-01	1.199E-02	-2.152
	122.32			-2.644E-01	6.953E-01	1.125E+00	1.007E-01	-0.235
	144.24			9.799E-02	3.173E-01	5.030E-01	4.825E-02	0.195
	154.21			-1.030E-01	1.636E-01	2.548E-01	2.452E-02	-0.404
	269.46			-3.501E-02	9.196E-02	1.412E-01	1.680E-02	-0.248
	323.87	*		5.838E-02	3.364E-01	5.424E-01	1.038E-01	0.108
	338.28			1.989E-01	4.843E-01	8.499E-01	1.191E-01	0.234
	445.03			-6.105E-01	1.161E+00	1.805E+00	2.292E-01	-0.338
RA-224	240.98	*		-4.875E-01	3.468E-01	4.808E-01	5.298E-02	-1.014
RA-226	609.31	*		-1.092E-02	4.313E-02	6.905E-02	7.300E-03	-0.158
	1120.29			-1.183E-01	1.484E-01	2.054E-01	2.205E-02	-0.576
	1764.49			-1.281E-01	1.435E-01	2.006E-01	1.660E-02	-0.639
AC-227	79.80			8.821E-02	5.255E-01	9.084E-01	1.958E-01	0.097
	236.00			-7.695E-02	1.156E-01	1.750E-01	2.438E-02	-0.440
	256.20	*		2.195E-02	1.981E-01	3.216E-01	5.493E-02	0.068
	286.10			-3.030E-01	7.583E-01	1.151E+00	1.792E-01	-0.263
	299.80			-3.123E-01	7.666E-01	1.091E+00	2.096E-01	-0.286
	304.40			2.206E-01	8.196E-01	1.345E+00	2.694E-01	0.164
	334.20			-5.791E-02	1.131E+00	1.910E+00	3.932E-01	-0.030
TH-227	79.80			8.821E-02	5.255E-01	9.084E-01	1.983E-01	0.097
	94.00			-3.397E+00	1.194E+00	1.396E+00	3.068E-01	-2.433
	236.00			-7.695E-02	1.156E-01	1.750E-01	2.261E-02	-0.440
	256.20	*		2.195E-02	1.981E-01	3.216E-01	6.289E-02	0.068
	286.10			-3.030E-01	8.160E-01	1.151E+00	1.159E+00	-0.263
	299.80			-3.123E-01	7.666E-01	1.091E+00	2.096E-01	-0.286
	304.40			2.206E-01	8.196E-01	1.345E+00	2.694E-01	0.164
	334.20			-5.791E-02	1.131E+00	1.910E+00	3.932E-01	-0.030
AC-228	338.32			4.667E-02	1.173E-01	2.032E-01	8.496E-02	0.230
	911.07	*		-5.614E-02	7.820E-02	1.158E-01	1.376E-02	-0.485
	969.11			9.200E-03	1.316E-01	2.101E-01	4.955E-02	0.044
RA-228	338.32			4.667E-02	1.173E-01	2.032E-01	8.496E-02	0.230
	911.07	*		-5.614E-02	7.820E-02	1.158E-01	1.376E-02	-0.485
	969.11			9.200E-03	1.316E-01	2.101E-01	4.955E-02	0.044
TH-228	74.81			7.828E-02	1.163E-01	2.084E-01	1.744E-02	0.376
	77.11			-4.768E-02	7.105E-02	1.082E-01	9.194E-03	-0.440
	87.30			3.686E-02	1.262E-01	2.193E-01	2.096E-02	0.168
	238.63	*		-4.024E-02	3.480E-02	5.243E-02	6.207E-03	-0.767
	300.09			-2.090E-01	4.271E-01	5.731E-01	3.428E-01	-0.365
TH-229	85.43			-7.762E-02	6.828E-02	9.618E-02	8.985E-03	-0.807
	88.47			-4.432E-03	3.615E-02	6.085E-02	5.835E-03	-0.073
	100.00			-1.908E-03	7.702E-02	1.193E-01	1.044E-02	-0.016

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	193.63	*		1.733E-01	2.172E-01	3.800E-01	3.708E-02	0.456
	210.97			-3.361E-01	3.318E-01	4.820E-01	4.925E-02	-0.697
	609.31	*		-1.092E-02	4.313E-02	6.905E-02	7.300E-03	-0.158
	1120.29			-1.183E-01	1.484E-01	2.054E-01	2.205E-02	-0.576
PA-231	1764.49			-1.281E-01	1.435E-01	2.006E-01	1.660E-02	-0.639
	283.67	*		-3.387E-01	7.932E-01	1.203E+00	2.081E-01	-0.281
	301.29			-5.519E-02	2.794E-01	4.025E-01	5.867E-02	-0.137
TH-231	81.07			-2.469E-02	7.203E-02	1.195E-01	1.061E-02	-0.207
	83.78			-1.465E-03	4.818E-02	7.611E-02	6.971E-03	-0.019
	94.90			-2.853E-01	1.026E-01	1.326E-01	1.199E-02	-2.152
	122.32			-2.644E-01	6.953E-01	1.125E+00	1.007E-01	-0.235
U-231	144.24			9.799E-02	3.173E-01	5.030E-01	4.825E-02	0.195
	154.21			-1.030E-01	1.636E-01	2.548E-01	2.452E-02	-0.404
	269.46			-3.501E-02	9.196E-02	1.412E-01	1.680E-02	-0.248
	323.87	*		5.838E-02	3.364E-01	5.424E-01	1.038E-01	0.108
	338.28			1.989E-01	4.843E-01	8.499E-01	1.191E-01	0.234
	445.03			-6.105E-01	1.161E+00	1.805E+00	2.292E-01	-0.338
	84.21			-2.868E-01	6.109E-01	9.302E-01	8.563E-02	-0.308
	92.29			-1.231E-01	2.894E-01	5.215E-01	4.816E-02	-0.236
	95.87	*		-2.057E-01	1.264E-01	1.837E-01	1.649E-02	-1.120
	108.00			-8.091E-02	2.551E-01	4.191E-01	3.550E-02	-0.193
TH-232	338.32			4.667E-02	1.158E-01	2.032E-01	2.218E-02	0.230
	911.07	*		-5.614E-02	7.820E-02	1.158E-01	1.376E-02	-0.485
PA-233	969.11			9.200E-03	1.316E-01	2.101E-01	4.955E-02	0.044
	75.28			5.769E-01	1.052E+00	1.764E+00	2.680E-01	0.327
	86.59			-4.259E-02	5.331E-01	9.012E-01	2.443E-01	-0.047
	300.12			-1.100E-01	2.099E-01	2.928E-01	4.936E-02	-0.376
PA-234	311.98	*		-1.617E-02	3.036E-02	4.467E-02	5.221E-03	-0.362
	340.50			-1.242E-01	2.897E-01	4.679E-01	1.157E-01	-0.266
	398.62			-3.865E-01	1.013E+00	1.617E+00	4.341E-01	-0.239
	415.76			-1.510E-01	8.114E-01	1.327E+00	2.901E-01	-0.114
	63.00			1.380E-01	9.542E-01	1.118E+00	1.661E-01	0.123
	94.67			-1.960E-01	7.572E-02	9.706E-02	1.234E-02	-2.019
	98.44			-3.089E-02	4.134E-02	5.380E-02	3.003E-02	-0.574
	99.86			3.076E-02	1.933E-01	3.040E-01	2.662E-02	0.101
	111.00			-3.615E-03	7.157E-02	1.199E-01	1.431E-02	-0.030
	131.20			2.771E-02	4.021E-02	7.104E-02	5.942E-03	0.390
+	152.70			-7.821E-02	1.236E-01	1.908E-01	3.264E-02	-0.410
	186.00			2.567E-01	8.102E-01	1.166E+00	3.672E-01	0.220
	226.40			-7.467E-02	1.901E-01	2.955E-01	4.312E-02	-0.253
	227.20			3.195E-02	2.032E-01	3.338E-01	3.556E-02	0.096
	248.90			9.586E-02	3.924E-01	6.466E-01	1.522E-01	0.148
	293.70			1.803E-01	3.127E-01	5.262E-01	1.005E-01	0.343
	369.80			-8.521E-02	4.056E-01	6.671E-01	1.492E-01	-0.128
	568.70			-1.409E-01	5.635E-01	8.613E-01	8.089E-02	-0.164
	569.50			-6.440E-02	1.577E-01	2.363E-01	2.218E-02	-0.273
	574.00			1.066E-01	7.557E-01	1.259E+00	1.181E-01	0.085
+	699.00			-3.492E-01	3.939E-01	5.378E-01	1.036E-01	-0.649
	706.10			-2.767E-01	5.522E-01	7.941E-01	3.548E-01	-0.348

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		733.00		-1.020E-01	1.926E-01	2.704E-01	6.059E-02	-0.377
		742.81		4.031E-01	6.897E-01	1.129E+00	7.600E-01	0.357
		796.30		-6.640E-02	3.754E-01	6.126E-01	1.671E-01	-0.108
		805.60		-4.915E-01	5.404E-01	7.476E-01	2.307E-01	-0.657
		819.60		3.114E-01	4.559E-01	8.443E-01	3.225E-01	0.369
		826.30		-5.237E-02	3.024E-01	4.880E-01	2.191E-01	-0.107
		831.60		-2.704E-01	3.153E-01	4.375E-01	1.316E-01	-0.618
		876.40		-1.195E-01	3.712E-01	5.461E-01	5.618E-01	-0.219
		880.51		3.413E-03	1.179E-01	1.983E-01	1.873E-02	0.017
		883.24		2.717E-02	1.268E-01	2.179E-01	1.467E-01	0.125
		899.00		3.094E-01	4.412E-01	7.793E-01	3.420E-01	0.397
		925.00		2.834E-02	5.662E-01	9.511E-01	8.937E-02	0.030
		926.50		-5.490E-03	8.247E-02	1.357E-01	3.467E-02	-0.040
		946.00	*	2.746E-02	1.489E-01	2.550E-01	4.871E-02	0.108
		949.00		3.770E-02	2.316E-01	3.949E-01	3.683E-02	0.095
		980.50		2.090E-02	2.891E-01	4.867E-01	4.486E-02	0.043
		1394.10		-5.979E-03	6.819E-01	1.095E+00	7.124E-01	-0.005
PA-234M		766.42		4.784E-02	4.889E+00	7.827E+00	3.980E+00	0.006
		1001.03	*	-1.732E+00	2.532E+00	3.657E+00	3.807E-01	-0.474
TH-234	+	63.29	*	1.184E-01	8.187E-01	9.614E-01	1.677E-01	0.123
		92.38		-1.280E-01	2.584E-01	4.621E-01	8.493E-02	-0.277
U-234		609.31	*	-1.092E-02	4.313E-02	6.905E-02	7.300E-03	-0.158
		1120.29		-1.183E-01	1.484E-01	2.054E-01	2.205E-02	-0.576
		1764.49		-1.281E-01	1.435E-01	2.006E-01	1.660E-02	-0.639
U-235		89.95		-1.420E+00	6.352E-01	6.096E-01	1.896E-01	-2.330
		93.35		-1.627E-01	2.986E-01	5.313E-01	1.498E-01	-0.306
		105.00		1.742E-01	4.395E-01	7.587E-01	2.263E-01	0.230
		143.76	*	4.725E-02	9.828E-02	1.576E-01	2.754E-02	0.300
		163.35		5.618E-02	2.080E-01	3.506E-01	6.752E-02	0.160
	+	185.71		9.509E-03	2.987E-02	4.366E-02	4.171E-03	0.218
		205.31		-4.703E-02	2.511E-01	4.021E-01	7.952E-02	-0.117
NP-236		94.67		-1.485E-01	5.589E-02	7.366E-02	6.671E-03	-2.016
		98.44		-2.335E-02	2.848E-02	4.067E-02	3.591E-03	-0.574
		111.00		-2.735E-03	5.414E-02	9.071E-02	7.624E-03	-0.030
		160.31	*	-5.679E-03	3.544E-02	5.774E-02	5.153E-03	-0.098
NP-237		86.50	*	-1.087E-02	7.966E-02	1.340E-01	3.043E-02	-0.081
		95.87		-6.139E-01	4.029E-01	5.482E-01	1.358E-01	-1.120
U-238	+	63.29	*	1.184E-01	8.187E-01	9.614E-01	1.677E-01	0.123
		92.38		-1.280E-01	2.576E-01	4.621E-01	4.264E-02	-0.277
NP-239		99.55		-9.738E-03	6.399E-02	9.769E-02	8.569E-03	-0.100
		117.00	*	1.281E-02	7.436E-02	1.266E-01	1.054E-02	0.101
		209.75		-1.117E-01	3.369E-01	5.305E-01	5.403E-02	-0.211
		228.18		-1.786E-02	1.112E-01	1.772E-01	1.893E-02	-0.101
		277.60		-7.329E-02	9.160E-02	1.331E-01	1.593E-02	-0.551
		334.30		-6.634E-02	6.375E-01	1.071E+00	1.180E-01	-0.062
AM-241		59.54	*	4.032E-02	7.035E-02	1.076E-01	8.445E-03	0.375
AM-243		74.67	*	1.170E-02	1.867E-02	3.339E-02	2.764E-03	0.351
		86.72		2.785E-03	3.016E+00	5.131E+00	4.868E-01	0.001
		117.66		3.154E-01	1.586E+00	2.704E+00	2.250E-01	0.117



---- 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		-4.044E+00	7.645E+00	1.214E+01	1.036E+00	-0.333
		99.55		-1.002E-02	6.582E-02	1.005E-01	8.813E-03	-0.100
		103.76	*	-7.211E-02	3.996E-02	5.625E-02	4.836E-03	-1.282
		117.00		1.317E-02	7.646E-02	1.302E-01	1.084E-02	0.101
		209.75		-1.101E-01	3.320E-01	5.227E-01	5.324E-02	-0.211
		228.18		-1.804E-02	1.123E-01	1.790E-01	1.911E-02	-0.101
AM-246		277.60		-7.386E-02	9.230E-02	1.341E-01	1.605E-02	-0.551
		798.80		-1.832E-02	6.609E-02	1.065E-01	9.935E-03	-0.172
		1036.00		4.671E-02	1.117E-01	2.018E-01	1.809E-02	0.231
		1062.04		-2.564E-02	1.028E-01	1.607E-01	1.418E-02	-0.160
		1078.86	*	3.195E-02	6.637E-02	1.187E-01	1.036E-02	0.269
		278.00		-1.207E-01	3.651E-01	5.620E-01	6.732E-02	-0.215
CM-247		287.40		3.243E-01	5.854E-01	9.902E-01	1.179E-01	0.327
		402.60	*	6.538E-03	1.827E-02	3.178E-02	2.955E-03	0.206
CF-249		252.85		2.194E-01	4.251E-01	7.182E-01	8.140E-02	0.305
		333.44		3.990E-02	8.470E-02	1.495E-01	1.650E-02	0.267
		387.95	*	6.781E-03	1.889E-02	3.298E-02	3.094E-03	0.206
CF-251		176.60	*	-3.263E-02	5.838E-02	9.110E-02	8.493E-03	-0.358
		227.00		2.674E-02	1.770E-01	2.908E-01	3.096E-02	0.092
		285.00		6.753E-01	8.436E-01	1.459E+00	1.742E-01	0.463
ANH-511		511.00	*	-2.565E-02	3.139E-02	5.818E-02	5.533E-03	-0.441

# 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]G1202012162      *
* Acquisition date   : 19-JAN-2010 17:38:40 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 02:00:00.82              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID           *
* Sample ID          : G1202012162              Analyst initials: MXR1        *
* Batch Number       : 940270                    Sample Quantity : 1.3479E+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

---- 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	7.783E-02	1.389E-01	2.564E-01	0.000E+00 NOT IDENT.
NA-22	6.312E-03	1.835E-02	3.280E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	8.441E+01	0.000E+00	0.000E+00 SHORT HLIF
AL-26	4.959E-03	1.646E-02	3.006E-02	0.000E+00 NOT IDENT.
K-40	-3.641E-02	2.519E-01	4.419E-01	0.000E+00 NOT IDENT.
TI-44	-1.450E-03	1.095E-02	1.994E-02	0.000E+00 NOT IDENT.
SC-46	5.472E-03	1.451E-02	2.681E-02	0.000E+00 NOT IDENT.
V-48	9.058E-03	2.064E-02	3.827E-02	0.000E+00 NOT IDENT.
CR-51	-5.060E-02	1.525E-01	2.435E-01	0.000E+00 NOT IDENT.
MN-52	5.910E-03	4.135E-02	7.076E-02	0.000E+00 NOT IDENT.
MN-54	1.763E-02	1.799E-02	3.515E-02	0.000E+00 NOT IDENT.
CO-56	-1.048E-02	1.797E-02	2.821E-02	0.000E+00 NOT IDENT.
CO-57	-4.831E-03	9.495E-03	1.623E-02	0.000E+00 NOT IDENT.
CO-58	1.282E-02	1.594E-02	3.110E-02	0.000E+00 NOT IDENT.
FE-59	-1.481E-02	3.168E-02	4.763E-02	0.000E+00 NOT IDENT.
CO-60	-2.071E-02	2.503E-02	3.490E-02	0.000E+00 NOT IDENT.
ZN-65	4.932E-03	3.939E-02	6.790E-02	0.000E+00 NOT IDENT.
GE-68	3.784E-01	6.174E-01	1.147E+00	0.000E+00 NOT IDENT.
AS-73	1.747E-01	3.234E-01	5.795E-01	0.000E+00 NOT IDENT.
AS-74	-4.198E-03	4.007E-02	6.038E-02	0.000E+00 NOT IDENT.
SE-75	6.344E-03	1.913E-02	3.350E-02	0.000E+00 NOT IDENT.
BR-77	-2.029E-01	5.503E-01	8.930E-01	0.000E+00 NOT IDENT.
SR-82	1.173E-01	1.385E-01	2.624E-01	0.000E+00 NOT IDENT.
RB-83	-1.088E-02	2.952E-02	4.790E-02	0.000E+00 NOT IDENT.
RB-84	1.004E-03	2.470E-02	4.296E-02	0.000E+00 NOT IDENT.
KR-85	-1.839E+01	6.147E+00	7.614E+00	0.000E+00 NOT IDENT.

SR-85	-8.724E-02	2.917E-02	3.612E-02	0.000E+00	NOT IDENT.
RB-86	-2.139E-01	3.341E-01	5.053E-01	0.000E+00	NOT IDENT.
Y-88	-8.124E-04	1.917E-02	3.170E-02	0.000E+00	NOT IDENT.
ZR-88	5.200E-03	1.286E-02	2.364E-02	0.000E+00	NOT IDENT.
Y-91	2.935E+00	6.747E+00	1.227E+01	0.000E+00	NOT IDENT.
NB-94	1.012E-02	1.676E-02	3.037E-02	0.000E+00	NOT IDENT.
NB-95	4.853E-03	1.578E-02	2.761E-02	0.000E+00	NOT IDENT.
NB-95M	-3.969E-02	5.768E-02	9.243E-02	0.000E+00	NOT IDENT.
ZR-95	-2.399E-04	2.536E-02	4.192E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.413E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.020E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-6.903E-01	8.948E-01	1.268E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.401E+07	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.728E-03	1.673E-02	2.763E-02	0.000E+00	NOT IDENT.
RH-102	-1.109E-02	1.436E-02	2.233E-02	0.000E+00	NOT IDENT.
RU-103	-6.897E-03	1.684E-02	2.736E-02	0.000E+00	NOT IDENT.
RH-106	2.954E-02	1.395E-01	2.435E-01	0.000E+00	NOT IDENT.
RU-106	2.954E-02	1.395E-01	2.435E-01	0.000E+00	NOT IDENT.
AG-108M	-3.410E-03	1.430E-02	2.417E-02	0.000E+00	NOT IDENT.
CD-109	1.652E-01	2.611E-01	4.993E-01	0.000E+00	NOT IDENT.
AG-110M	-2.703E-03	1.701E-02	2.787E-02	0.000E+00	NOT IDENT.
IN-111	-4.819E-02	7.897E-02	1.254E-01	0.000E+00	NOT IDENT.
IN-113M	-5.201E-03	1.945E-02	3.317E-02	0.000E+00	NOT IDENT.
SN-113	-5.201E-03	1.945E-02	3.317E-02	0.000E+00	NOT IDENT.
IN-114M	-1.547E-02	6.824E-02	1.160E-01	0.000E+00	NOT IDENT.
CD-115	-3.169E-01	5.721E-01	9.091E-01	0.000E+00	NOT IDENT.
SN-117M	-1.298E-03	1.638E-02	2.863E-02	0.000E+00	NOT IDENT.
SB-122	6.056E-03	1.404E-01	2.408E-01	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.170E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-4.271E-03	1.184E-02	2.019E-02	0.000E+00	NOT IDENT.
I-124	-4.230E-03	1.170E-01	1.763E-01	0.000E+00	NOT IDENT.
SB-124	-5.021E-03	3.976E-02	6.481E-02	0.000E+00	NOT IDENT.
SB-125	8.173E-03	4.241E-02	7.575E-02	0.000E+00	NOT IDENT.
TE-125M	9.593E-01	3.383E+00	6.235E+00	0.000E+00	NOT IDENT.
I-126	-6.010E-04	5.428E-02	9.087E-02	0.000E+00	NOT IDENT.
SB-126	-1.059E-02	5.337E-02	8.315E-02	0.000E+00	NOT IDENT.
SN-126	9.598E-03	2.628E-02	4.936E-02	0.000E+00	FAIL ABUN
SB-127	1.142E-02	1.704E-01	2.881E-01	0.000E+00	NOT IDENT.
XE-127	-4.425E-03	1.887E-02	3.194E-02	0.000E+00	NOT IDENT.
I-131	1.143E-02	3.031E-02	5.560E-02	0.000E+00	NOT IDENT.
TE-132	-1.050E-02	6.936E-02	1.171E-01	0.000E+00	NOT IDENT.
BA-133	-3.774E-03	1.898E-02	3.292E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.803E+00	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.248E-03	1.733E-02	3.059E-02	0.000E+00	NOT IDENT.
CS-135	3.372E-02	7.359E-02	1.300E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.765E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.436E-02	3.152E-02	4.444E-02	0.000E+00	NOT IDENT.
BA-137M	-7.811E-03	1.769E-02	2.764E-02	0.000E+00	NOT IDENT.
CS-137	-8.257E-03	1.870E-02	2.922E-02	0.000E+00	NOT IDENT.
CE-139	-8.141E-03	1.237E-02	2.042E-02	0.000E+00	NOT IDENT.
BA-140	3.614E-02	8.527E-02	1.527E-01	0.000E+00	NOT IDENT.
LA-140	-1.459E-02	3.159E-02	4.764E-02	0.000E+00	NOT IDENT.
CE-141	-1.902E-02	2.180E-02	3.558E-02	0.000E+00	NOT IDENT.
CE-143	4.398E-01	1.475E+00	2.547E+00	0.000E+00	NOT IDENT.
CE-144	-3.007E-02	7.614E-02	1.305E-01	0.000E+00	NOT IDENT.
PM-144	5.952E-03	1.748E-02	3.060E-02	0.000E+00	NOT IDENT.
PR-144	4.018E-01	1.180E+00	2.066E+00	0.000E+00	NOT IDENT.
PM-146	2.758E-03	2.046E-02	3.614E-02	0.000E+00	NOT IDENT.
ND-147	6.047E-02	1.659E-01	2.980E-01	0.000E+00	NOT IDENT.
PM-149	-1.162E+00	4.443E+00	7.244E+00	0.000E+00	NOT IDENT.
EU-152	6.724E-03	4.635E-02	8.356E-02	0.000E+00	NOT IDENT.
GD-153	-2.212E-02	2.992E-02	4.600E-02	0.000E+00	NOT IDENT.
EU-154	1.194E-02	5.290E-02	9.223E-02	0.000E+00	NOT IDENT.
EU-155	3.792E-02	4.282E-02	8.238E-02	0.000E+00	NOT IDENT.
TB-160	-2.889E-02	5.136E-02	7.818E-02	0.000E+00	NOT IDENT.
HO-166M	6.843E-03	3.111E-02	5.355E-02	0.000E+00	FAIL ABUN
TM-171	-9.418E+00	1.125E+01	1.538E+01	0.000E+00	NOT IDENT.
LU-176	-3.315E-04	1.174E-02	1.954E-02	0.000E+00	NOT IDENT.
LU-177	4.048E-02	2.274E-01	3.981E-01	0.000E+00	NOT IDENT.
LU-177M	8.175E-03	8.035E-02	1.423E-01	0.000E+00	NOT IDENT.
HF-181	-7.899E-03	1.693E-02	2.732E-02	0.000E+00	FAIL ABUN
W-181	3.409E-02	2.309E-01	2.151E-01	0.000E+00	FAIL ABUN
TA-182	-7.856E-02	7.350E-02	9.077E-02	0.000E+00	NOT IDENT.
RE-183	2.749E-02	4.276E-02	7.906E-02	0.000E+00	NOT IDENT.
RE-184	5.673E-02	1.077E-01	1.922E-01	0.000E+00	NOT IDENT.
OS-185	6.293E-04	1.950E-02	3.298E-02	0.000E+00	NOT IDENT.
RE-188	9.383E-04	6.526E-02	1.152E-01	0.000E+00	NOT IDENT.
W-188	2.309E-01	3.057E+00	5.175E+00	0.000E+00	FAIL ABUN

IR-192	2.654E-03	1.394E-02	2.381E-02	0.000E+00	NOT IDENT.
AU-195	-8.022E-02	8.956E-02	1.369E-01	0.000E+00	FAIL ABUN
TL-200	-6.920E-03	1.977E+00	3.496E+00	0.000E+00	NOT IDENT.
TL-201	1.058E-01	5.713E-01	1.017E+00	0.000E+00	NOT IDENT.
TL-202	-4.483E-03	2.147E-02	3.645E-02	0.000E+00	NOT IDENT.
HG-203	1.072E-02	1.780E-02	3.173E-02	0.000E+00	NOT IDENT.
BI-207	1.611E-03	2.078E-02	3.578E-02	0.000E+00	NOT IDENT.
TL-207	5.838E-02	3.296E-01	5.589E-01	0.000E+00	NOT IDENT.
TL-208	4.540E-04	2.220E-02	3.828E-02	0.000E+00	NOT IDENT.
PO-209	2.353E+00	3.399E+00	6.498E+00	0.000E+00	NOT IDENT.
BI-210	-1.142E+00	1.838E+00	2.961E+00	0.000E+00	NOT IDENT.
PB-210	-1.142E+00	1.838E+00	2.961E+00	0.000E+00	NOT IDENT.
PO-210	-1.142E+00	1.837E+00	2.961E+00	0.000E+00	NOT IDENT.
BI-211	-3.149E-02	1.023E-01	1.712E-01	0.000E+00	NOT IDENT.
PB-211	-3.612E-02	4.386E-01	7.617E-01	0.000E+00	NOT IDENT.
BI-212	-5.590E-02	1.369E-01	2.117E-01	0.000E+00	NOT IDENT.
PB-212	-3.993E-02	3.384E-02	5.389E-02	0.000E+00	NOT IDENT.
PO-212	-3.993E-02	3.384E-02	5.389E-02	0.000E+00	NOT IDENT.
BI-214	-1.092E-02	4.227E-02	7.033E-02	0.000E+00	NOT IDENT.
PB-214	-1.158E-02	3.626E-02	6.068E-02	0.000E+00	NOT IDENT.
PO-214	-1.158E-02	3.626E-02	6.068E-02	0.000E+00	NOT IDENT.
PO-215	5.838E-02	3.296E-01	5.589E-01	0.000E+00	NOT IDENT.
PO-216	-3.993E-02	3.384E-02	5.389E-02	0.000E+00	NOT IDENT.
PO-218	-1.158E-02	3.626E-02	6.068E-02	0.000E+00	NOT IDENT.
RN-219	8.215E-02	2.033E-01	3.712E-01	0.000E+00	NOT IDENT.
RN-220	-4.203E+00	1.331E+01	2.175E+01	0.000E+00	NOT IDENT.
RA-223	5.838E-02	3.296E-01	5.589E-01	0.000E+00	NOT IDENT.
RA-224	-4.875E-01	3.399E-01	4.980E-01	0.000E+00	NOT IDENT.
RA-226	-1.092E-02	4.227E-02	7.033E-02	0.000E+00	NOT IDENT.
AC-227	2.195E-02	1.941E-01	3.328E-01	0.000E+00	NOT IDENT.
TH-227	2.195E-02	1.941E-01	3.328E-01	0.000E+00	NOT IDENT.
AC-228	-5.614E-02	7.664E-02	1.171E-01	0.000E+00	NOT IDENT.
RA-228	-5.614E-02	7.664E-02	1.171E-01	0.000E+00	NOT IDENT.
TH-228	-4.024E-02	3.410E-02	5.431E-02	0.000E+00	NOT IDENT.
TH-229	1.733E-01	2.128E-01	3.951E-01	0.000E+00	NOT IDENT.
TH-230	-1.092E-02	4.227E-02	7.033E-02	0.000E+00	NOT IDENT.
PA-231	-3.387E-01	7.773E-01	1.243E+00	0.000E+00	NOT IDENT.
TH-231	5.838E-02	3.296E-01	5.589E-01	0.000E+00	NOT IDENT.
U-231	-2.057E-01	1.239E-01	1.934E-01	0.000E+00	NOT IDENT.
TH-232	-5.614E-02	7.664E-02	1.171E-01	0.000E+00	NOT IDENT.
PA-233	-1.617E-02	2.976E-02	4.606E-02	0.000E+00	NOT IDENT.
PA-234	2.746E-02	1.459E-01	2.576E-01	0.000E+00	FAIL ABUN
PA-234M	-1.732E+00	2.482E+00	3.691E+00	0.000E+00	NOT IDENT.
TH-234	1.184E-01	8.023E-01	1.019E+00	0.000E+00	FAIL ABUN
U-234	-1.092E-02	4.227E-02	7.033E-02	0.000E+00	NOT IDENT.
U-235	4.725E-02	9.632E-02	1.647E-01	0.000E+00	FAIL ABUN
NP-236	-5.679E-03	3.473E-02	6.024E-02	0.000E+00	NOT IDENT.
NP-237	-1.087E-02	7.807E-02	1.413E-01	0.000E+00	NOT IDENT.
U-238	1.184E-01	8.023E-01	1.019E+00	0.000E+00	FAIL ABUN
NP-239	1.281E-02	7.287E-02	1.328E-01	0.000E+00	NOT IDENT.
AM-241	4.032E-02	6.894E-02	1.142E-01	0.000E+00	NOT IDENT.
AM-243	1.170E-02	1.830E-02	3.529E-02	0.000E+00	NOT IDENT.
CM-243	-7.211E-02	3.916E-02	5.913E-02	0.000E+00	NOT IDENT.
AM-246	3.195E-02	6.504E-02	1.197E-01	0.000E+00	NOT IDENT.
CM-247	6.538E-03	1.790E-02	3.261E-02	0.000E+00	NOT IDENT.
CF-249	6.781E-03	1.852E-02	3.387E-02	0.000E+00	NOT IDENT.
CF-251	-3.263E-02	5.722E-02	9.488E-02	0.000E+00	NOT IDENT.
ANH-511	-2.565E-02	3.076E-02	5.945E-02	0.000E+00	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012162.CNF;1
Sample date        : 12-JAN-2010 00:00:00 Acquisition date : 19-JAN-2010 17:38:40
Sample ID          : G1202012162      Sample quantity   : 1.34790E+02 GRAM
Detector name      : GAM16             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.82  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 940270             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 : G1202012162

Page : 2  
Acquisition date : 19-JAN-2010 17:38:40

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	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 : G1202012162

Page : 3  
Acquisition date : 19-JAN-2010 17:38:40

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	63.73	6	94	0.79	127.64	124	9	8.07E-04	****	3.60E+00	T
0	185.66	11	67	1.10	371.52	368	8	1.57E-03	****	6.15E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012162.CNF;1
* Acquisition date   : 19-JAN-2010 17:38:40  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 02:00:00.82          Half life ratio   : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00  Nuclide Library   : SOLID
* Sample ID          : G1202012162          Analyst initials: MXR1
* Batch Number       : 940270               Sample Quantity  : 1.34790E+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

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.783E-02		1.417E-01	2.506E-01	2.535E-02	0.311
NA-22	6.312E-03		1.872E-02	3.265E-02	2.717E-03	0.193
NA-24	-1.211E-05		4.307E-05	Half-Life too short		
AL-26	4.959E-03		1.679E-02	3.012E-02	2.463E-03	0.165
K-40	-3.641E-02		2.570E-01	4.409E-01	3.876E-02	-0.083
TI-44	-1.450E-03		1.117E-02	1.888E-02	1.626E-03	-0.077
SC-46	5.472E-03		1.481E-02	2.651E-02	2.506E-03	0.206
V-48	9.058E-03		2.106E-02	3.791E-02	3.489E-03	0.239
CR-51	-5.060E-02		1.556E-01	2.363E-01	2.762E-02	-0.214
MN-52	5.910E-03		4.220E-02	7.058E-02	6.023E-03	0.084
MN-54	1.763E-02		1.836E-02	3.471E-02	3.260E-03	0.508
CO-56	-1.048E-02		1.834E-02	2.786E-02	2.622E-03	-0.376
CO-57	-4.831E-03		9.688E-03	1.548E-02	1.286E-03	-0.312
CO-58	1.282E-02		1.626E-02	3.069E-02	2.875E-03	0.418
FE-59	-1.481E-02		3.233E-02	4.727E-02	4.394E-03	-0.313
CO-60	-2.071E-02		2.554E-02	3.477E-02	2.933E-03	-0.596
ZN-65	4.932E-03		4.020E-02	6.741E-02	5.725E-03	0.073



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GE-68	3.784E-01		6.300E-01	1.138E+00	9.940E-02	0.332
AS-73	1.747E-01		3.300E-01	5.451E-01	4.158E-02	0.321
AS-74	-4.198E-03		4.088E-02	5.925E-02	5.500E-03	-0.071
SE-75	6.344E-03		1.952E-02	3.240E-02	3.781E-03	0.196
BR-77	-2.029E-01		5.615E-01	8.742E-01	8.306E-02	-0.232
SR-82	1.173E-01		1.413E-01	2.588E-01	2.399E-02	0.454
RB-83	-1.088E-02		3.012E-02	4.689E-02	4.455E-03	-0.232
RB-84	1.004E-03		2.521E-02	4.246E-02	4.011E-03	0.024
KR-85	-1.839E+01		6.273E+00	7.451E+00	7.085E-01	-2.468
SR-85	-8.724E-02		2.976E-02	3.535E-02	3.361E-03	-2.468
RB-86	-2.139E-01		3.409E-01	5.013E-01	4.380E-02	-0.427
Y-88	-8.124E-04		1.957E-02	3.177E-02	2.579E-03	-0.026
ZR-88	5.200E-03		1.312E-02	2.303E-02	2.130E-03	0.226
Y-91	2.935E+00		6.885E+00	1.220E+01	9.921E-01	0.241
NB-94	1.012E-02		1.710E-02	2.990E-02	2.703E-03	0.339
NB-95	4.853E-03		1.610E-02	2.722E-02	2.516E-03	0.178
NB-95M	-3.969E-02		5.885E-02	8.920E-02	1.061E-02	-0.445
ZR-95	-2.399E-04		2.588E-02	4.131E-02	4.147E-03	-0.006
NB-97	-8.732E-06		1.741E-05	Half-Life too short		
ZR-97	-3.438E-03		5.203E-04	Half-Life too short		
MO-99	-6.903E-01		9.130E-01	1.249E+00	1.936E-01	-0.553
TC-99M	-9.777E+00		1.225E+01	Half-Life too short		
RH-101	-6.728E-03		1.707E-02	2.658E-02	2.625E-03	-0.253
RH-102	-1.109E-02		1.465E-02	2.182E-02	2.074E-03	-0.508
RU-103	-6.897E-03		1.719E-02	2.676E-02	3.940E-03	-0.258
RH-106	2.954E-02		1.424E-01	2.392E-01	3.277E-02	0.123
RU-106	2.954E-02		1.423E-01	2.392E-01	2.187E-02	0.123
AG-108M	-3.410E-03		1.459E-02	2.358E-02	2.295E-03	-0.145
CD-109	1.652E-01		2.664E-01	4.737E-01	4.564E-02	0.349
AG-110M	-2.703E-03		1.736E-02	2.740E-02	2.508E-03	-0.099
IN-111	-4.819E-02		8.058E-02	1.211E-01	1.349E-02	-0.398
IN-113M	-5.201E-03		1.984E-02	3.230E-02	3.066E-03	-0.161
SN-113	-5.201E-03		1.984E-02	3.230E-02	3.066E-03	-0.161
IN-114M	-1.547E-02		6.963E-02	1.115E-01	1.078E-02	-0.139
CD-115	-3.169E-01		5.838E-01	8.902E-01	8.449E-02	-0.356
SN-117M	-1.298E-03		1.671E-02	2.744E-02	2.437E-03	-0.047
SB-122	6.056E-03		1.433E-01	2.360E-01	2.220E-02	0.026
I-123	-7.827E-05		1.107E-04	Half-Life too short		
TE-123M	-4.271E-03		1.208E-02	1.935E-02	1.731E-03	-0.221
I-124	-4.230E-03		1.194E-01	1.730E-01	1.600E-02	-0.024
SB-124	-5.021E-03		4.057E-02	6.485E-02	5.679E-03	-0.077
SB-125	8.173E-03		4.328E-02	7.389E-02	7.060E-03	0.111
TE-125M	9.593E-01		3.452E+00	5.937E+00	6.034E-01	0.162
I-126	-6.010E-04		5.539E-02	8.935E-02	7.947E-03	-0.007
SB-126	-1.059E-02		5.445E-02	8.188E-02	7.454E-03	-0.129
SN-126	9.598E-03		2.682E-02	4.682E-02	4.490E-03	0.205
SB-127	1.142E-02		1.739E-01	2.835E-01	2.817E-02	0.040
XE-127	-4.425E-03		1.926E-02	3.074E-02	3.075E-03	-0.144

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	1.143E-02		3.093E-02	5.407E-02	5.700E-03	0.211
TE-132	-1.050E-02		7.078E-02	1.129E-01	1.802E-02	-0.093
BA-133	-3.774E-03		1.937E-02	3.200E-02	4.625E-03	-0.118
I-133	5.507E-06		3.981E-06	Half-Life	too short	
CS-134	1.248E-03		1.769E-02	3.018E-02	2.829E-03	0.041
CS-135	3.372E-02		7.509E-02	1.257E-01	1.603E-02	0.268
I-135	6.846E+00		9.005E+00	Half-Life	too short	
CS-136	-2.436E-02		3.217E-02	4.407E-02	4.077E-03	-0.553
BA-137M	-7.811E-03		1.805E-02	2.718E-02	2.412E-03	-0.287
CS-137	-8.257E-03		1.908E-02	2.873E-02	2.554E-03	-0.287
CE-139	-8.141E-03		1.262E-02	1.958E-02	1.776E-03	-0.416
BA-140	3.614E-02		8.701E-02	1.496E-01	4.992E-02	0.242
LA-140	-1.459E-02		3.223E-02	4.762E-02	4.056E-03	-0.306
CE-141	-1.902E-02		2.225E-02	3.405E-02	2.978E-03	-0.559
CE-143	4.398E-01		1.505E+00	2.468E+00	5.655E-01	0.178
CE-144	-3.007E-02		7.769E-02	1.247E-01	1.926E-02	-0.241
PM-144	5.952E-03		1.784E-02	3.012E-02	2.716E-03	0.198
PR-144	4.018E-01		1.204E+00	2.033E+00	1.833E-01	0.198
PM-146	2.758E-03		2.088E-02	3.529E-02	4.030E-03	0.078
ND-147	6.047E-02		1.693E-01	2.918E-01	4.513E-02	0.207
PM-149	-1.162E+00		4.533E+00	7.015E+00	1.233E+00	-0.166
EU-152	6.724E-03		4.729E-02	8.118E-02	9.073E-03	0.083
GD-153	-2.212E-02		3.053E-02	4.372E-02	3.884E-03	-0.506
EU-154	1.194E-02		5.398E-02	9.179E-02	1.017E-02	0.130
EU-155	3.792E-02		4.370E-02	7.840E-02	6.782E-03	0.484
TB-160	-2.889E-02		5.240E-02	7.727E-02	7.299E-03	-0.374
HO-166M	6.843E-03		3.175E-02	5.272E-02	4.784E-03	0.130
TM-171	-9.418E+00		1.148E+01	1.452E+01	1.113E+00	-0.649
LU-176	-3.315E-04		1.198E-02	1.895E-02	2.198E-03	-0.017
LU-177	4.048E-02		2.320E-01	3.833E-01	3.890E-02	0.106
LU-177M	8.175E-03		8.198E-02	1.387E-01	1.297E-02	0.059
HF-181	-7.899E-03		1.728E-02	2.671E-02	2.540E-03	-0.296
W-181	3.409E-02	+	2.357E-01	2.031E-01	1.533E-02	0.168
TA-182	-7.856E-02		7.500E-02	9.027E-02	7.382E-03	-0.870
RE-183	2.749E-02		4.363E-02	7.580E-02	6.803E-03	0.363
RE-184	5.673E-02		1.099E-01	1.857E-01	2.105E-02	0.305
OS-185	6.293E-04		1.990E-02	3.241E-02	2.913E-03	0.019
RE-188	9.383E-04		6.659E-02	1.103E-01	9.705E-03	0.009
W-188	2.309E-01		3.119E+00	5.013E+00	5.946E-01	0.046
IR-192	2.654E-03		1.423E-02	2.310E-02	2.640E-03	0.115
AU-195	-8.022E-02		9.139E-02	1.302E-01	1.146E-02	-0.616
TL-200	-6.920E-03		2.018E+00	3.401E+00	3.423E-01	-0.002
TL-201	1.058E-01		5.829E-01	9.752E-01	8.878E-02	0.108
TL-202	-4.483E-03		2.191E-02	3.557E-02	3.357E-03	-0.126
HG-203	1.072E-02		1.816E-02	3.071E-02	3.743E-03	0.349
BI-207	1.611E-03		2.120E-02	3.549E-02	3.129E-03	0.045
TL-207	5.838E-02		3.364E-01	5.424E-01	1.038E-01	0.108
TL-208	4.540E-04		2.265E-02	3.755E-02	3.722E-03	0.012

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-209	2.353E+00		3.468E+00	6.425E+00	6.077E-01	0.366
BI-210	-1.142E+00		1.875E+00	2.779E+00	2.591E-01	-0.411
PB-210	-1.142E+00		1.875E+00	2.779E+00	2.591E-01	-0.411
PO-210	-1.142E+00		1.875E+00	2.779E+00	2.347E-01	-0.411
BI-211	-3.149E-02		1.044E-01	1.664E-01	1.819E-02	-0.189
PB-211	-3.612E-02		4.476E-01	7.423E-01	4.659E-01	-0.049
BI-212	-5.590E-02		1.397E-01	2.085E-01	2.178E-02	-0.268
PB-212	-3.993E-02		3.453E-02	5.202E-02	6.159E-03	-0.767
PO-212	-3.993E-02		3.453E-02	5.202E-02	6.159E-03	-0.767
BI-214	-1.092E-02		4.313E-02	6.905E-02	7.300E-03	-0.158
PB-214	-1.158E-02		3.700E-02	5.898E-02	7.133E-03	-0.196
PO-214	-1.158E-02		3.700E-02	5.898E-02	7.133E-03	-0.196
PO-215	5.838E-02		3.364E-01	5.424E-01	1.038E-01	0.108
PO-216	-3.993E-02		3.453E-02	5.202E-02	6.159E-03	-0.767
PO-218	-1.158E-02		3.700E-02	5.898E-02	7.133E-03	-0.196
RN-219	8.215E-02		2.075E-01	3.617E-01	5.578E-02	0.227
RN-220	-4.203E+00		1.358E+01	2.131E+01	2.013E+00	-0.197
RA-223	5.838E-02		3.364E-01	5.424E-01	1.038E-01	0.108
RA-224	-4.875E-01		3.468E-01	4.808E-01	5.298E-02	-1.014
RA-226	-1.092E-02		4.313E-02	6.905E-02	7.300E-03	-0.158
AC-227	2.195E-02		1.981E-01	3.216E-01	5.493E-02	0.068
TH-227	2.195E-02		1.981E-01	3.216E-01	6.289E-02	0.068
AC-228	-5.614E-02		7.820E-02	1.158E-01	1.376E-02	-0.485
RA-228	-5.614E-02		7.820E-02	1.158E-01	1.376E-02	-0.485
TH-228	-4.024E-02		3.480E-02	5.243E-02	6.207E-03	-0.767
TH-229	1.733E-01		2.172E-01	3.800E-01	3.708E-02	0.456
TH-230	-1.092E-02		4.313E-02	6.905E-02	7.300E-03	-0.158
PA-231	-3.387E-01		7.932E-01	1.203E+00	2.081E-01	-0.281
TH-231	5.838E-02		3.364E-01	5.424E-01	1.038E-01	0.108
U-231	-2.057E-01		1.264E-01	1.837E-01	1.649E-02	-1.120
TH-232	-5.614E-02		7.820E-02	1.158E-01	1.376E-02	-0.485
PA-233	-1.617E-02		3.036E-02	4.467E-02	5.221E-03	-0.362
PA-234	2.746E-02		1.489E-01	2.550E-01	4.871E-02	0.108
PA-234M	-1.732E+00		2.532E+00	3.657E+00	3.807E-01	-0.474
TH-234	1.184E-01	+	8.187E-01	9.614E-01	1.677E-01	0.123
U-234	-1.092E-02		4.313E-02	6.905E-02	7.300E-03	-0.158
U-235	4.725E-02		9.828E-02	1.576E-01	2.754E-02	0.300
NP-236	-5.679E-03		3.544E-02	5.774E-02	5.153E-03	-0.098
NP-237	-1.087E-02		7.966E-02	1.340E-01	3.043E-02	-0.081
U-238	1.184E-01	+	8.187E-01	9.614E-01	1.677E-01	0.123
NP-239	1.281E-02		7.436E-02	1.266E-01	1.054E-02	0.101
AM-241	4.032E-02		7.035E-02	1.076E-01	8.445E-03	0.375
AM-243	1.170E-02		1.867E-02	3.339E-02	2.764E-03	0.351
CM-243	-7.211E-02		3.996E-02	5.625E-02	4.836E-03	-1.282
AM-246	3.195E-02		6.637E-02	1.187E-01	1.036E-02	0.269
CM-247	6.538E-03		1.827E-02	3.178E-02	2.955E-03	0.206
CF-249	6.781E-03		1.889E-02	3.298E-02	3.094E-03	0.206
CF-251	-3.263E-02		5.838E-02	9.110E-02	8.493E-03	-0.358

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	-2.565E-02		3.139E-02	5.818E-02	5.533E-03	-0.441

# 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]G1202012162          *
* Acquisition date   : 19-JAN-2010 17:38:40 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 02:00:00.82 Half life ratio : 8.000                *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202012162 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.3479E+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

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act Error	DLC (pCi/GRAM )	TPU
---- Non-Identified Nuclides ----				
BE-7	7.783E-02	1.389E-01	1.283E-01	7.087E-02 NOT IDENT.
NA-22	6.312E-03	1.835E-02	1.641E-02	9.360E-03 NOT IDENT.
NA-24	-1.211E+01	8.441E+01	0.000E+00	4.307E+01 SHORT HLIF
AL-26	4.959E-03	1.646E-02	1.504E-02	8.397E-03 NOT IDENT.
K-40	-3.641E-02	2.519E-01	2.211E-01	1.285E-01 NOT IDENT.
TI-44	-1.450E-03	1.095E-02	9.977E-03	5.585E-03 NOT IDENT.
SC-46	5.472E-03	1.451E-02	1.342E-02	7.405E-03 NOT IDENT.
V-48	9.058E-03	2.064E-02	1.915E-02	1.053E-02 NOT IDENT.
CR-51	-5.060E-02	1.525E-01	1.218E-01	7.782E-02 NOT IDENT.
MN-52	5.910E-03	4.135E-02	3.540E-02	2.110E-02 NOT IDENT.
MN-54	1.763E-02	1.799E-02	1.758E-02	9.179E-03 NOT IDENT.
CO-56	-1.048E-02	1.797E-02	1.411E-02	9.169E-03 NOT IDENT.
CO-57	-4.831E-03	9.495E-03	8.118E-03	4.844E-03 NOT IDENT.
CO-58	1.282E-02	1.594E-02	1.556E-02	8.130E-03 NOT IDENT.
FE-59	-1.481E-02	3.168E-02	2.383E-02	1.616E-02 NOT IDENT.
CO-60	-2.071E-02	2.503E-02	1.746E-02	1.277E-02 NOT IDENT.
ZN-65	4.932E-03	3.939E-02	3.397E-02	2.010E-02 NOT IDENT.
GE-68	3.784E-01	6.174E-01	5.739E-01	3.150E-01 NOT IDENT.
AS-73	1.747E-01	3.234E-01	2.899E-01	1.650E-01 NOT IDENT.
AS-74	-4.198E-03	4.007E-02	3.021E-02	2.044E-02 NOT IDENT.
SE-75	6.344E-03	1.913E-02	1.676E-02	9.758E-03 NOT IDENT.
BR-77	-2.029E-01	5.503E-01	4.468E-01	2.808E-01 NOT IDENT.
SR-82	1.173E-01	1.385E-01	1.313E-01	7.067E-02 NOT IDENT.
RB-83	-1.088E-02	2.952E-02	2.396E-02	1.506E-02 NOT IDENT.
RB-84	1.004E-03	2.470E-02	2.149E-02	1.260E-02 NOT IDENT.
KR-85	-1.839E+01	6.147E+00	3.809E+00	3.136E+00 NOT IDENT.

SR-85	-8.724E-02	2.917E-02	1.807E-02	1.488E-02	NOT IDENT.
RB-86	-2.139E-01	3.341E-01	2.528E-01	1.704E-01	NOT IDENT.
Y-88	-8.124E-04	1.917E-02	1.586E-02	9.783E-03	NOT IDENT.
ZR-88	5.200E-03	1.286E-02	1.183E-02	6.562E-03	NOT IDENT.
Y-91	2.935E+00	6.747E+00	6.139E+00	3.442E+00	NOT IDENT.
NB-94	1.012E-02	1.676E-02	1.520E-02	8.549E-03	NOT IDENT.
NB-95	4.853E-03	1.578E-02	1.381E-02	8.052E-03	NOT IDENT.
NB-95M	-3.969E-02	5.768E-02	4.624E-02	2.943E-02	NOT IDENT.
ZR-95	-2.399E-04	2.536E-02	2.097E-02	1.294E-02	NOT IDENT.
NB-97	-8.732E+00	3.413E+01	0.000E+00	1.741E+01	SHORT HLIF
ZR-97	-3.438E+03	1.020E+03	0.000E+00	5.203E+02	SHORT HLIF
MO-99	-6.903E-01	8.948E-01	6.342E-01	4.565E-01	NOT IDENT.
TC-99M	-9.777E+06	2.401E+07	0.000E+00	1.225E+07	SHORT HLIF
RH-101	-6.728E-03	1.673E-02	1.382E-02	8.536E-03	NOT IDENT.
RH-102	-1.109E-02	1.436E-02	1.117E-02	7.326E-03	NOT IDENT.
RU-103	-6.897E-03	1.684E-02	1.369E-02	8.593E-03	NOT IDENT.
RH-106	2.954E-02	1.395E-01	1.218E-01	7.118E-02	NOT IDENT.
RU-106	2.954E-02	1.395E-01	1.218E-01	7.117E-02	NOT IDENT.
AG-108M	-3.410E-03	1.430E-02	1.209E-02	7.297E-03	NOT IDENT.
CD-109	1.652E-01	2.611E-01	2.498E-01	1.332E-01	NOT IDENT.
AG-110M	-2.703E-03	1.701E-02	1.395E-02	8.679E-03	NOT IDENT.
IN-111	-4.819E-02	7.897E-02	6.275E-02	4.029E-02	NOT IDENT.
IN-113M	-5.201E-03	1.945E-02	1.659E-02	9.922E-03	NOT IDENT.
SN-113	-5.201E-03	1.945E-02	1.659E-02	9.922E-03	NOT IDENT.
IN-114M	-1.547E-02	6.824E-02	5.801E-02	3.482E-02	NOT IDENT.
CD-115	-3.169E-01	5.721E-01	4.548E-01	2.919E-01	NOT IDENT.
SN-117M	-1.298E-03	1.638E-02	1.432E-02	8.356E-03	NOT IDENT.
SB-122	6.056E-03	1.404E-01	1.205E-01	7.163E-02	NOT IDENT.
I-123	-7.827E+01	2.170E+02	0.000E+00	1.107E+02	SHORT HLIF
TE-123M	-4.271E-03	1.184E-02	1.010E-02	6.041E-03	NOT IDENT.
I-124	-4.230E-03	1.170E-01	8.820E-02	5.968E-02	NOT IDENT.
SB-124	-5.021E-03	3.976E-02	3.242E-02	2.028E-02	NOT IDENT.
SB-125	8.173E-03	4.241E-02	3.790E-02	2.164E-02	NOT IDENT.
TE-125M	9.593E-01	3.383E+00	3.119E+00	1.726E+00	NOT IDENT.
I-126	-6.010E-04	5.428E-02	4.546E-02	2.769E-02	NOT IDENT.
SB-126	-1.059E-02	5.337E-02	4.160E-02	2.723E-02	NOT IDENT.
SN-126	9.598E-03	2.628E-02	2.470E-02	1.341E-02	FAIL ABUN
SB-127	1.142E-02	1.704E-01	1.441E-01	8.693E-02	NOT IDENT.
XE-127	-4.425E-03	1.887E-02	1.598E-02	9.629E-03	NOT IDENT.
I-131	1.143E-02	3.031E-02	2.781E-02	1.547E-02	NOT IDENT.
TE-132	-1.050E-02	6.936E-02	5.858E-02	3.539E-02	NOT IDENT.
BA-133	-3.774E-03	1.898E-02	1.647E-02	9.684E-03	NOT IDENT.
I-133	5.507E+00	7.803E+00	0.000E+00	3.981E+00	SHORT HLIF
CS-134	1.248E-03	1.733E-02	1.530E-02	8.843E-03	NOT IDENT.
CS-135	3.372E-02	7.359E-02	6.502E-02	3.754E-02	NOT IDENT.
I-135	6.846E+06	1.765E+07	0.000E+00	9.005E+06	SHORT HLIF
CS-136	-2.436E-02	3.152E-02	2.223E-02	1.608E-02	NOT IDENT.
BA-137M	-7.811E-03	1.769E-02	1.383E-02	9.025E-03	NOT IDENT.
CS-137	-8.257E-03	1.870E-02	1.462E-02	9.540E-03	NOT IDENT.
CE-139	-8.141E-03	1.237E-02	1.022E-02	6.312E-03	NOT IDENT.
BA-140	3.614E-02	8.527E-02	7.640E-02	4.350E-02	NOT IDENT.
LA-140	-1.459E-02	3.159E-02	2.383E-02	1.612E-02	NOT IDENT.
CE-141	-1.902E-02	2.180E-02	1.780E-02	1.112E-02	NOT IDENT.
CE-143	4.398E-01	1.475E+00	1.274E+00	7.524E-01	NOT IDENT.
CE-144	-3.007E-02	7.614E-02	6.530E-02	3.884E-02	NOT IDENT.
PM-144	5.952E-03	1.748E-02	1.531E-02	8.918E-03	NOT IDENT.
PR-144	4.018E-01	1.180E+00	1.033E+00	6.020E-01	NOT IDENT.
PM-146	2.758E-03	2.046E-02	1.808E-02	1.044E-02	NOT IDENT.
ND-147	6.047E-02	1.659E-01	1.491E-01	8.465E-02	NOT IDENT.
PM-149	-1.162E+00	4.443E+00	3.624E+00	2.267E+00	NOT IDENT.
EU-152	6.724E-03	4.635E-02	4.180E-02	2.365E-02	NOT IDENT.
GD-153	-2.212E-02	2.992E-02	2.301E-02	1.527E-02	NOT IDENT.
EU-154	1.194E-02	5.290E-02	4.614E-02	2.699E-02	NOT IDENT.
EU-155	3.792E-02	4.282E-02	4.122E-02	2.185E-02	NOT IDENT.
TB-160	-2.889E-02	5.136E-02	3.911E-02	2.620E-02	NOT IDENT.
HO-166M	6.843E-03	3.111E-02	2.679E-02	1.587E-02	FAIL ABUN
TM-171	-9.418E+00	1.125E+01	7.694E+00	5.738E+00	NOT IDENT.
LU-176	-3.315E-04	1.174E-02	9.776E-03	5.988E-03	NOT IDENT.
LU-177	4.048E-02	2.274E-01	1.992E-01	1.160E-01	NOT IDENT.
LU-177M	8.175E-03	8.035E-02	7.120E-02	4.099E-02	NOT IDENT.
HF-181	-7.899E-03	1.693E-02	1.367E-02	8.639E-03	FAIL ABUN
W-181	3.409E-02	2.309E-01	1.076E-01	1.178E-01	FAIL ABUN
TA-182	-7.856E-02	7.350E-02	4.541E-02	3.750E-02	NOT IDENT.
RE-183	2.749E-02	4.276E-02	3.955E-02	2.182E-02	NOT IDENT.
RE-184	5.673E-02	1.077E-01	9.615E-02	5.495E-02	NOT IDENT.
OS-185	6.293E-04	1.950E-02	1.650E-02	9.951E-03	NOT IDENT.
RE-188	9.383E-04	6.526E-02	5.761E-02	3.329E-02	NOT IDENT.
W-188	2.309E-01	3.057E+00	2.589E+00	1.559E+00	FAIL ABUN

IR-192	2.654E-03	1.394E-02	1.191E-02	7.113E-03	NOT IDENT.
AU-195	-8.022E-02	8.956E-02	6.851E-02	4.570E-02	FAIL ABUN
TL-200	-6.920E-03	1.977E+00	1.749E+00	1.009E+00	NOT IDENT.
TL-201	1.058E-01	5.713E-01	5.086E-01	2.915E-01	NOT IDENT.
TL-202	-4.483E-03	2.147E-02	1.824E-02	1.095E-02	NOT IDENT.
HG-203	1.072E-02	1.780E-02	1.587E-02	9.081E-03	NOT IDENT.
BI-207	1.611E-03	2.078E-02	1.790E-02	1.060E-02	NOT IDENT.
TL-207	5.838E-02	3.296E-01	2.796E-01	1.682E-01	NOT IDENT.
TL-208	4.540E-04	2.220E-02	1.915E-02	1.132E-02	NOT IDENT.
PO-209	2.353E+00	3.399E+00	3.251E+00	1.734E+00	NOT IDENT.
BI-210	-1.142E+00	1.838E+00	1.481E+00	9.376E-01	NOT IDENT.
PB-210	-1.142E+00	1.838E+00	1.481E+00	9.376E-01	NOT IDENT.
PO-210	-1.142E+00	1.837E+00	1.481E+00	9.373E-01	NOT IDENT.
BI-211	-3.149E-02	1.023E-01	8.565E-02	5.220E-02	NOT IDENT.
PB-211	-3.612E-02	4.386E-01	3.811E-01	2.238E-01	NOT IDENT.
BI-212	-5.590E-02	1.369E-01	1.059E-01	6.985E-02	NOT IDENT.
PB-212	-3.993E-02	3.384E-02	2.696E-02	1.727E-02	NOT IDENT.
PO-212	-3.993E-02	3.384E-02	2.696E-02	1.727E-02	NOT IDENT.
BI-214	-1.092E-02	4.227E-02	3.519E-02	2.157E-02	NOT IDENT.
PB-214	-1.158E-02	3.626E-02	3.036E-02	1.850E-02	NOT IDENT.
PO-214	-1.158E-02	3.626E-02	3.036E-02	1.850E-02	NOT IDENT.
PO-215	5.838E-02	3.296E-01	2.796E-01	1.682E-01	NOT IDENT.
PO-216	-3.993E-02	3.384E-02	2.696E-02	1.727E-02	NOT IDENT.
PO-218	-1.158E-02	3.626E-02	3.036E-02	1.850E-02	NOT IDENT.
RN-219	8.215E-02	2.033E-01	1.857E-01	1.037E-01	NOT IDENT.
RN-220	-4.203E+00	1.331E+01	1.088E+01	6.788E+00	NOT IDENT.
RA-223	5.838E-02	3.296E-01	2.796E-01	1.682E-01	NOT IDENT.
RA-224	-4.875E-01	3.399E-01	2.491E-01	1.734E-01	NOT IDENT.
RA-226	-1.092E-02	4.227E-02	3.519E-02	2.157E-02	NOT IDENT.
AC-227	2.195E-02	1.941E-01	1.665E-01	9.903E-02	NOT IDENT.
TH-227	2.195E-02	1.941E-01	1.665E-01	9.904E-02	NOT IDENT.
AC-228	-5.614E-02	7.664E-02	5.860E-02	3.910E-02	NOT IDENT.
RA-228	-5.614E-02	7.664E-02	5.860E-02	3.910E-02	NOT IDENT.
TH-228	-4.024E-02	3.410E-02	2.717E-02	1.740E-02	NOT IDENT.
TH-229	1.733E-01	2.128E-01	1.977E-01	1.086E-01	NOT IDENT.
TH-230	-1.092E-02	4.227E-02	3.519E-02	2.157E-02	NOT IDENT.
PA-231	-3.387E-01	7.773E-01	6.217E-01	3.966E-01	NOT IDENT.
TH-231	5.838E-02	3.296E-01	2.796E-01	1.682E-01	NOT IDENT.
U-231	-2.057E-01	1.239E-01	9.675E-02	6.321E-02	NOT IDENT.
TH-232	-5.614E-02	7.664E-02	5.860E-02	3.910E-02	NOT IDENT.
PA-233	-1.617E-02	2.976E-02	2.304E-02	1.518E-02	NOT IDENT.
PA-234	2.746E-02	1.459E-01	1.289E-01	7.445E-02	FAIL ABUN
PA-234M	-1.732E+00	2.482E+00	1.846E+00	1.266E+00	NOT IDENT.
TH-234	1.184E-01	8.023E-01	5.099E-01	4.094E-01	FAIL ABUN
U-234	-1.092E-02	4.227E-02	3.519E-02	2.157E-02	NOT IDENT.
U-235	4.725E-02	9.632E-02	8.239E-02	4.914E-02	FAIL ABUN
NP-236	-5.679E-03	3.473E-02	3.014E-02	1.772E-02	NOT IDENT.
NP-237	-1.087E-02	7.807E-02	7.070E-02	3.983E-02	NOT IDENT.
U-238	1.184E-01	8.023E-01	5.099E-01	4.094E-01	FAIL ABUN
NP-239	1.281E-02	7.287E-02	6.646E-02	3.718E-02	NOT IDENT.
AM-241	4.032E-02	6.894E-02	5.714E-02	3.518E-02	NOT IDENT.
AM-243	1.170E-02	1.830E-02	1.766E-02	9.336E-03	NOT IDENT.
CM-243	-7.211E-02	3.916E-02	2.958E-02	1.998E-02	NOT IDENT.
AM-246	3.195E-02	6.504E-02	5.988E-02	3.318E-02	NOT IDENT.
CM-247	6.538E-03	1.790E-02	1.632E-02	9.133E-03	NOT IDENT.
CF-249	6.781E-03	1.852E-02	1.695E-02	9.447E-03	NOT IDENT.
CF-251	-3.263E-02	5.722E-02	4.747E-02	2.919E-02	NOT IDENT.
ANH-511	-2.565E-02	3.076E-02	2.974E-02	1.570E-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	63.4757
46.50	63.4757
46.50	63.4757
48.70	62.7286
49.72	67.6731
51.35	57.2670
52.39	49.0655
52.97	50.3474
53.15	50.3738
53.44	52.8168
54.07	51.7101
56.28	67.7653
56.28	67.7657
57.37	64.3297
57.53	70.4296
57.53	70.4300
57.60	70.4432
57.98	68.0851
57.98	68.0851
59.32	61.0121
59.32	61.0121
59.40	62.2457
59.54	61.8623
59.72	61.8922
60.01	57.0504
61.10	78.4678
61.14	78.4760
61.30	78.5090
63.00	62.8408
63.29	62.8881
63.29	62.8881
63.58	62.9351
64.28	63.0482
65.12	51.2074
65.20	51.2176
65.20	51.2176
66.05	52.9834
66.72	58.0478
66.83	58.0638
66.91	58.0756
67.20	53.1357
67.20	53.1357
67.75	63.1845
67.85	63.2004
68.90	57.0271
68.90	57.0271
69.30	59.2526
69.67	50.9531
70.82	51.0943
70.82	51.0943
70.83	51.0955
72.80	77.4238
72.87	77.4364
72.87	77.4364
74.67	60.8577
74.81	60.8771
74.81	60.8771
74.81	60.8771
74.81	60.8771
74.81	60.8771
74.81	60.8771
74.81	60.8771
74.97	54.9790
75.28	55.0183
75.70	58.4602
77.11	70.5480
77.11	70.5480



77.11	70.5480
77.11	70.5480
77.11	70.5480
77.11	70.5480
77.11	70.5480
78.38	63.9309
79.62	58.9793
79.80	59.0028
79.80	59.0028
80.11	65.8887
80.18	65.8989
80.30	65.9161
80.30	65.9161
80.57	62.5290
81.00	70.3044
81.07	70.3153
81.07	70.3153
81.07	70.3153
81.07	70.3153
82.60	61.0857
83.37	56.8779
83.78	59.5159
83.78	59.5159
83.78	59.5159
83.78	59.5159
84.21	65.6140
84.90	76.0856
85.43	67.5153
86.29	72.8408
86.50	68.5351
86.54	68.5408
86.59	68.5480
86.72	68.5665
86.79	68.5761
86.94	73.8082
87.30	64.3047
87.30	64.3047
87.30	64.3047
87.30	64.3047
87.30	64.3047
87.30	64.3047
87.30	64.3047
87.57	62.6019
87.88	60.0321
88.03	58.3101
88.36	53.1246
88.47	67.9453
89.95	155.5255
91.11	98.9652
92.29	65.8413
92.38	68.4872
92.38	68.4872
93.35	58.0629
94.00	105.7056
94.67	135.8333
94.67	135.8348
94.90	135.8959
94.90	135.8959
94.90	135.8959
94.90	135.8959
95.87	93.7167
95.87	93.7167
96.73	59.3359
97.43	59.4160
98.44	64.8623
98.44	64.8627
98.88	67.5851
99.55	55.2057
99.55	55.2057
99.86	52.5655
100.00	56.1440
100.10	56.1552
103.18	82.4784
103.76	90.6446
105.00	65.6650
105.31	57.6022
108.00	76.8769
109.28	64.3625

111.00	61.8311
111.00	61.8311
111.76	61.9138
112.95	62.0428
115.19	59.5361
116.30	64.2379
117.00	56.9645
117.00	56.9645
117.66	64.3867
121.11	64.7602
121.62	66.6669
121.78	62.9798
122.06	62.0826
122.32	63.0361
122.32	63.0361
122.32	63.0361
122.32	63.0361
123.07	61.2577
127.23	57.0004
129.76	73.1797
131.20	48.8976
133.02	58.4668
133.54	60.4010
135.34	52.9979
136.00	51.1573
136.25	56.8628
136.48	56.8829
140.51	68.6763
140.51	0.0000
142.18	79.3652
142.65	64.1109
143.76	52.7145
144.24	54.6696
144.24	54.6696
144.24	54.6696
144.24	54.6696
145.22	74.9190
145.44	74.9428
147.16	65.4980
152.43	69.8752
152.70	59.2222
153.22	65.0950
154.21	69.0766
154.21	69.0766
154.21	69.0766
154.21	69.0766
155.03	63.3119
156.02	53.6455
158.56	69.4948
159.00	0.0000
159.00	72.4741
160.31	70.6421
161.27	68.7695
162.32	56.0775
162.64	62.9909
163.35	64.0366
163.89	68.0265
165.85	73.1471
167.43	65.3756
171.28	69.6874
171.86	68.7438
172.10	68.7649
176.55	75.1717
176.60	75.1770
181.06	65.3181
184.41	80.4688
185.71	69.9518
186.00	69.9771
190.27	60.1457
192.34	63.3610
193.63	48.1054
197.04	71.9347
198.01	69.9590
198.60	61.7706
200.40	85.6284
201.83	70.2696
202.84	71.3858
205.31	75.7372

208.36	65.5878
208.81	65.6212
209.75	64.6477
209.75	64.6477
210.97	69.9566
215.65	60.8733
216.55	58.8324
218.09	59.9838
222.10	51.7889
223.80	61.4126
226.40	63.7061
227.00	55.2468
227.08	57.3766
227.20	57.3838
228.16	65.9519
228.18	65.9532
228.18	65.9532
231.56	54.4438
235.69	86.8395
236.00	83.6502
236.00	83.6502
238.63	78.4989
238.63	78.4989
238.63	78.4989
238.63	78.4989
239.00	72.0735
240.98	93.7765
241.98	63.6598
241.98	63.6598
241.98	63.6598
244.69	56.2593
245.39	57.3816
247.94	43.4163
248.90	48.8896
249.79	59.8066
252.40	41.4268
252.85	46.8983
252.85	46.8983
254.15	0.0000
256.20	57.9927
256.20	57.9927
260.50	67.0228
260.90	58.2545
262.80	52.8545
264.65	41.9158
268.24	46.4844
268.79	50.9377
269.46	58.7257
269.46	58.7257
269.46	58.7257
269.46	58.7257
271.23	54.3823
273.65	47.8300
276.40	65.7928
277.35	63.6171
277.60	63.6321
277.60	63.6321
278.00	54.7213
278.60	52.5164
279.20	45.8364
279.53	40.2590
280.46	38.0542
281.68	59.3845
283.67	56.1239
284.30	44.9243
285.00	37.0854
285.90	50.6122
286.10	50.6204
286.10	50.6204
287.40	38.2908
288.45	0.0000
290.67	40.6604
290.80	40.6648
291.72	48.6112
293.26	45.2808
293.70	41.9005
295.21	65.7680
295.21	65.7680

295.21	65.7680
295.96	49.9261
296.50	44.2733
297.23	52.2526
298.57	36.3913
299.80	52.3677
299.80	52.3677
300.09	51.2421
300.09	51.2421
300.09	51.2421
300.09	51.2421
300.12	51.2439
301.29	39.8962
302.84	44.5145
303.76	38.8380
303.91	35.4155
304.40	33.1442
304.40	33.1442
304.84	26.2966
306.84	41.2295
308.46	38.9922
311.98	42.5577
316.51	31.1721
318.01	38.1462
319.02	49.7467
319.41	46.2907
320.08	45.1580
323.87	42.9747
323.87	42.9747
323.87	42.9747
323.87	42.9747
325.23	53.4870
328.77	38.4799
333.44	44.7682
334.20	49.1863
334.20	49.1863
334.30	49.1906
338.28	44.9386
338.28	44.9386
338.28	44.9386
338.28	44.9386
338.32	44.9402
338.32	44.9402
338.32	44.9402
340.50	51.1952
340.57	51.1978
344.27	41.6069
345.85	33.6808
350.59	37.3614
351.07	32.0356
351.92	33.8374
351.92	33.8374
351.92	33.8374
355.39	0.0000
356.01	36.6217
364.48	37.7523
366.43	42.3076
367.43	38.7352
367.94	37.8484
369.80	37.9004
374.96	29.8906
383.85	47.4011
387.95	31.9975
388.63	32.0125
391.69	35.7478
391.69	35.7478
392.90	28.4391
398.62	38.6835
400.65	34.1257
401.10	35.0591
401.81	35.0759
402.60	34.1715
404.84	36.0733
410.95	27.8641
411.60	34.3804
413.65	33.4973
414.70	38.1766
415.30	38.1916

415.76	36.3399
417.63	0.0000
418.52	34.5396
423.70	29.9746
427.08	22.5308
427.89	29.1178
432.53	23.5531
433.93	28.2889
439.47	29.3364
439.56	32.1769
439.89	32.1837
443.98	30.3696
444.90	37.9840
445.03	37.9877
445.03	37.9877
445.03	37.9877
445.03	37.9877
453.90	28.6496
463.38	25.9362
468.07	33.7172
473.00	22.2233
475.06	36.7626
475.35	33.8662
476.78	29.0529
477.59	24.2226
477.96	25.1970
482.03	28.1725
484.57	25.2962
487.03	34.1022
490.36	26.3589
492.35	26.3898
497.08	29.4031
507.63	0.0000
510.53	0.0000
510.84	33.5876
511.00	33.5907
511.85	42.5023
511.85	42.5023
513.99	138.5474
513.99	138.5474
520.41	25.8231
520.65	25.8270
527.90	34.9071
528.96	0.0000
529.64	20.9648
529.87	0.0000
531.02	21.9799
537.32	23.0583
543.00	36.2021
546.56	0.0000
549.76	30.2792
552.65	23.2499
555.20	32.3916
563.23	33.5458
563.90	22.3713
568.70	27.5249
569.32	30.5933
569.50	30.5960
569.67	30.5988
573.80	25.5539
574.00	25.5562
574.64	23.5194
578.91	38.9440
579.30	36.9020
583.14	19.5143
585.48	41.1316
591.81	21.6639
592.07	21.6665
593.00	24.7734
595.88	25.8430
600.56	38.3380
602.52	0.0000
602.71	29.0433
602.71	29.0433
603.60	23.8676
604.41	25.9537
604.70	30.1107
609.31	28.0975

609.31	28.0975
609.31	28.0975
609.31	28.0975
610.33	33.3174
612.46	37.5216
614.37	30.2541
618.01	29.2629
621.84	17.8000
621.84	17.8000
631.29	30.5036
633.02	23.1602
633.10	17.8970
634.78	18.9651
635.90	21.0834
636.97	27.4227
645.85	22.2420
646.12	21.1859
656.30	18.0936
657.75	24.4965
657.90	0.0000
661.65	26.6747
661.65	26.6747
664.57	21.3684
666.33	19.2469
666.33	19.2469
675.00	21.4703
677.61	19.3464
685.20	19.4128
692.80	25.9717
695.00	12.9987
696.49	22.7624
696.49	22.7624
697.00	23.8517
697.49	24.9415
698.33	28.2050
698.50	32.5470
699.00	33.6395
702.63	19.5639
706.10	27.2133
706.58	0.0000
706.67	27.2202
709.31	23.9813
711.68	21.8237
713.82	19.6595
717.42	25.1598
720.50	20.8120
721.93	21.9208
722.20	20.8271
722.78	20.8323
722.78	20.8323
722.89	20.8334
722.95	19.7375
723.30	19.7402
724.18	18.6508
727.18	23.0687
733.00	19.8226
735.90	12.1286
739.58	24.2948
742.81	13.2700
744.21	11.0648
747.13	22.1564
751.79	12.2098
752.31	12.2125
753.82	14.4421
755.35	14.4512
756.15	12.2320
756.87	11.1234
763.93	17.8491
765.79	13.3971
766.42	16.7509
766.84	16.7537
776.49	11.2131
778.00	14.5861
778.57	17.9561
778.89	17.9585
783.80	14.6202
785.46	18.9067
792.07	20.7618

795.84	12.6567
796.30	16.2760
798.80	20.8174
801.93	14.4996
805.60	28.1339
810.29	14.5477
810.76	10.9128
815.85	15.4905
817.79	12.7665
818.51	9.1213
819.60	6.3877
826.30	10.9787
828.27	17.3964
831.60	24.7529
831.96	25.6730
834.83	14.6863
836.80	0.0000
846.75	22.1297
848.13	29.5219
856.28	0.0000
856.80	17.5857
860.37	19.4629
867.32	10.2212
867.82	14.8699
871.10	16.7489
873.19	9.3120
874.81	8.3859
875.33	0.0000
876.40	13.9845
879.36	13.9999
880.27	13.0710
880.51	12.1383
881.50	12.1427
883.24	12.1504
884.67	10.2865
889.25	9.3669
896.60	11.2702
898.02	10.3364
899.00	13.1602
903.28	22.5949
911.07	21.7135
911.07	21.7135
911.07	21.7135
919.63	18.9390
920.93	18.9478
925.00	15.1797
925.24	15.1809
926.50	15.1879
935.52	14.2833
937.48	11.4346
944.10	21.0117
946.00	15.2910
949.00	17.2204
962.29	16.3376
964.01	18.2703
966.15	20.2084
968.20	13.4815
969.11	13.4859
969.11	13.4859
969.11	13.4859
977.42	9.6597
980.50	9.6697
983.50	8.7115
989.30	12.6077
996.32	11.6648
1001.03	16.5509
1001.68	17.5285
1004.76	14.6217
1021.30	0.0000
1024.50	0.0000
1034.80	6.8903
1036.00	6.8930
1037.82	11.8230
1038.57	11.8260
1038.76	0.0000
1045.16	9.8760
1046.59	12.8445
1048.07	15.8156

1050.47	13.8496
1050.47	13.8496
1062.04	13.9002
1063.62	9.9336
1076.63	23.9367
1077.35	12.9689
1078.86	10.9785
1085.78	12.0023
1099.22	12.0516
1112.02	16.1313
1112.84	14.1189
1115.52	14.1299
1120.29	17.1826
1120.29	17.1826
1120.29	17.1826
1120.29	17.1826
1120.51	17.1834
1121.28	17.1876
1124.00	0.0000
1129.67	9.1222
1131.51	0.0000
1147.95	0.0000
1167.94	9.2250
1173.22	7.1859
1175.09	11.2986
1177.93	13.3637
1189.05	9.2813
1204.90	9.3230
1205.75	11.3975
1213.00	14.5359
1221.42	16.6516
1230.97	12.5215
1235.34	13.5814
1236.41	0.0000
1238.25	8.3645
1246.25	15.7185
1260.41	0.0000
1271.85	7.3862
1274.45	9.5036
1274.54	8.4477
1291.56	7.4255
1298.22	0.0000
1312.09	7.4659
1325.50	16.0547
1325.50	16.0547
1332.49	11.7944
1333.61	10.7256
1360.21	10.7988
1362.66	0.0000
1365.15	8.6500
1368.21	6.4925
1368.53	0.0000
1376.25	10.8428
1384.27	11.9512
1394.10	10.8916
1395.20	7.6262
1407.95	10.9292
1434.06	5.4998
1436.60	8.2548
1457.56	0.0000
1460.81	8.3031
1489.15	5.5728
1509.49	12.1320
1596.49	10.4709
1620.62	5.7419
1678.03	0.0000
1691.02	6.8012
1691.02	6.8012
1706.46	0.0000
1750.46	0.0000
1764.49	7.8923
1764.49	7.8923
1764.49	7.8923
1764.49	7.8923
1770.23	6.9137
1771.40	4.9396
1791.20	0.0000
1808.65	3.9814



1836.01

6.0046

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202012162

Total Uranium Activity	3.7417E-01	ug/g
Total Uranium Counting Unc.	2.3874E+00	ug/g
Total Uranium Tpu	1.2180E-06	ug/g
Total Uranium Mda	1.5173E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 940270          SAMPLE ID   : G1202012162
*  ANALYST       : MXR1            DETECTOR    : GAM16
*  SAMPLE DATE   : 12-JAN-2010 00:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-JAN-2010 17:38:40.30 SAMPLE ALQT: 134.790 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.635E-03
GROSS GAMMA ERROR (pCi/GRAM )   : 2.296E-02
GROSS GAMMA MDA (pCi/GRAM )     : 4.879E-02
GROSS GAMMA DLC (pCi/GRAM )     : 2.274E-02

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 19:40:28.51

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012163.CNF;1
Sample date       : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 17:39:23
Sample ID        : G1202012163      Sample quantity   : 1.25220E+02 GRAM
Detector name    : GAM20             Detector geometry: CAN
Elapsed live time: 0 02:00:00.00     Elapsed real time: 0 02:00:33.32  0.5%
Energy tolerance : 1.50000 keV       Analyst Initials : MXR1
Abundance limit  : 75.00000          Sensitivity      : 5.00000
Batch ID        : 940270             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	63.30*	119	577	0.82	126.58	122	10	1.66E-02	39.5	
2	2	74.91*	487	515	1.00	149.77	146	15	6.77E-02	8.5	1.28E+00
3	2	77.21*	909	426	0.98	154.35	146	15	1.26E-01	5.1	
4	3	84.10*	122	326	1.39	168.11	165	27	1.70E-02	25.1	1.94E+00
5	3	87.31	411	413	1.39	174.53	165	27	5.71E-02	9.8	
6	3	89.97	228	339	1.11	179.84	165	27	3.17E-02	15.2	
7	3	92.90*	257	369	1.40	185.70	165	27	3.57E-02	16.0	
8	0	104.97	80	321	1.09	209.80	207	8	1.12E-02	40.1	
9	0	128.96	106	370	0.91	257.71	255	9	1.47E-02	34.1	
10	0	185.73*	255	459	1.48	371.09	365	14	3.54E-02	19.3	
11	0	209.78	162	328	1.54	419.13	414	12	2.25E-02	23.9	
12	3	238.56*	1479	178	1.10	476.61	469	19	2.05E-01	3.1	9.79E-01
13	3	241.56	320	218	1.63	482.61	469	19	4.45E-02	11.7	
14	0	270.27	133	260	1.89	539.96	534	14	1.84E-02	27.4	
15	0	277.31	54	127	0.82	554.03	551	7	7.48E-03	37.5	
16	0	295.18*	468	192	1.20	589.71	584	13	6.50E-02	7.8	
17	0	300.01	89	133	1.33	599.37	596	8	1.24E-02	24.6	
18	0	328.27	145	167	1.31	655.82	650	12	2.01E-02	20.0	
19	0	338.21*	309	152	1.12	675.69	670	10	4.29E-02	9.6	
20	0	351.73	781	214	1.26	702.69	696	14	1.08E-01	5.3	
21	0	409.60	42	71	0.74	818.32	815	7	5.83E-03	37.0	
22	0	462.99	125	107	1.38	925.01	918	13	1.73E-02	19.3	
23	0	510.85*	207	93	2.16	1020.66	1014	18	2.88E-02	14.9	
24	0	583.10*	465	119	1.51	1165.05	1158	14	6.46E-02	6.9	
25	0	609.30*	551	77	1.61	1217.43	1212	11	7.65E-02	5.4	
26	0	727.43*	154	68	1.84	1453.59	1446	18	2.13E-02	15.1	
27	0	768.32	55	72	1.14	1535.34	1529	11	7.57E-03	33.0	
28	0	795.26*	35	51	1.12	1589.22	1584	9	4.84E-03	41.9	
29	0	860.74	76	44	1.93	1720.16	1716	14	1.05E-02	21.6	
30	0	911.04	370	42	1.52	1820.76	1814	14	5.13E-02	6.4	
31	0	934.62	16	44	0.94	1867.92	1865	9	2.25E-03	79.8	
32	2	964.68	49	59	2.02	1928.03	1919	23	6.78E-03	33.8	2.49E+00
33	2	968.95	177	48	1.64	1936.57	1919	23	2.46E-02	10.4	
34	0	1112.34	19	68	3.89	2223.44	2210	16	2.58E-03	104.2	
35	0	1120.90	88	108	1.47	2240.57	2233	16	1.23E-02	28.3	
36	0	1237.77	83	54	1.53	2474.42	2466	17	1.15E-02	23.3	
37	0	1377.57	32	15	1.57	2754.25	2749	10	4.42E-03	28.9	
38	0	1408.07	47	7	2.93	2815.31	2808	15	6.55E-03	19.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1460.56	943	16	1.80	2920.38	2914	15	1.31E-01	3.4	
40	0	1589.90	16	33	1.76	3179.37	3169	12	2.20E-03	76.8	
41	0	1729.46	29	6	0.93	3458.88	3452	12	4.00E-03	25.3	
42	0	1764.04	92	15	1.83	3528.17	3522	12	1.28E-02	13.4	
43	0	1846.80	28	7	2.53	3693.96	3686	15	3.88E-03	28.4	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 19-JAN-2010 19:40:31

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012163.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-JAN-2010 12:00:00   Acquisition date : 19-JAN-2010 17:39:23
Sample ID        : G1202012163           Sample quantity  : 125.22 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA20              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:33.32   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	*	2.114E+01	2.332E+00	4.038E-01	3.521E-02	52.352
CD-109	+	88.03	*	4.880E+00	1.061E+00	1.038E+00	9.816E-02	4.700
SN-126	+	64.28		8.040E-01	6.461E-01	6.326E-01	9.160E-02	1.271
	+	86.94		1.996E+00	9.169E-01	4.277E-01	1.775E-01	4.668
	+	87.57	*	4.802E-01	1.045E-01	1.025E-01	9.637E-03	4.687
EU-155		48.70		-1.010E+00	1.468E+00	2.357E+00	1.886E-01	-0.428
		60.01		1.936E+00	3.833E+00	5.778E+00	4.100E-01	0.335
	+	86.54		5.782E-01	1.260E-01	1.242E-01	1.163E-02	4.656
	+	105.31	*	1.579E-01	1.275E-01	1.578E-01	1.372E-02	1.000
TL-208	+	277.35		5.030E-01	3.829E-01	5.193E-01	6.905E-02	0.969
	+	510.84		9.602E-01	3.112E-01	1.969E-01	2.462E-02	4.876
	+	583.14	*	6.144E-01	1.056E-01	5.874E-02	6.039E-03	10.459
	+	860.37		9.333E-01	4.145E-01	4.056E-01	4.299E-02	2.301
BI-211		72.87		5.993E+00	2.948E+00	4.608E+00	3.639E-01	1.301
	+	351.07	*	4.557E+00	6.537E-01	3.044E-01	2.916E-02	14.970
PB-212	+	74.81		2.256E+00	4.758E-01	4.784E-01	5.904E-02	4.716
	+	77.11		2.419E+00	3.178E-01	2.753E-01	2.277E-02	8.787
	+	87.30		2.221E+00	5.318E-01	4.747E-01	6.506E-02	4.679
	+	238.63	*	1.893E+00	2.322E-01	8.256E-02	8.779E-03	22.936
	+	300.09		1.763E+00	8.918E-01	1.087E+00	1.243E-01	1.622
PO-212	+	74.81		2.256E+00	4.758E-01	4.784E-01	5.904E-02	4.716
	+	77.11		2.419E+00	3.178E-01	2.753E-01	2.277E-02	8.787
	+	87.30		2.221E+00	5.318E-01	4.747E-01	6.506E-02	4.679
		115.19		2.263E+00	3.305E+00	5.472E+00	4.596E-01	0.414
	+	238.63	*	1.893E+00	2.322E-01	8.256E-02	8.779E-03	22.936
	+	300.09		1.763E+00	8.918E-01	1.087E+00	1.243E-01	1.622
BI-214	+	609.31	*	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
	+	1120.29		1.128E+00	6.507E-01	4.365E-01	4.723E-02	2.584
	+	1764.49		1.586E+00	4.447E-01	2.562E-01	2.104E-02	6.192
PB-214	+	74.81		3.887E+00	7.893E-01	8.243E-01	9.024E-02	4.716
	+	77.11		4.147E+00	6.298E-01	4.719E-01	5.307E-02	8.787
	+	87.30		3.805E+00	8.781E-01	8.132E-01	9.869E-02	4.679
	+	241.98		2.463E+00	6.409E-01	4.970E-01	5.558E-02	4.957
	+	295.21		1.620E+00	3.149E-01	1.873E-01	2.186E-02	8.646

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.585E+00	2.420E-01	1.061E-01	1.156E-02	14.940
	+	74.81		3.887E+00	7.893E-01	8.243E-01	9.024E-02	4.716
	+	77.11		4.147E+00	6.298E-01	4.719E-01	5.307E-02	8.787
	+	87.30		3.805E+00	8.781E-01	8.132E-01	9.869E-02	4.679
	+	241.98		2.463E+00	6.409E-01	4.970E-01	5.558E-02	4.957
PO-216	+	295.21		1.620E+00	3.149E-01	1.873E-01	2.186E-02	8.646
	+	351.92	*	1.585E+00	2.420E-01	1.061E-01	1.156E-02	14.940
	+	74.81		2.256E+00	4.758E-01	4.784E-01	5.904E-02	4.716
	+	77.11		2.419E+00	3.178E-01	2.753E-01	2.277E-02	8.787
	+	87.30		2.221E+00	5.318E-01	4.747E-01	6.506E-02	4.679
PO-218	+	238.63	*	1.893E+00	2.322E-01	8.256E-02	8.779E-03	22.936
	+	300.09		1.763E+00	8.918E-01	1.087E+00	1.243E-01	1.622
	+	74.81		3.887E+00	7.893E-01	8.243E-01	9.024E-02	4.716
	+	77.11		4.147E+00	6.298E-01	4.719E-01	5.307E-02	8.787
	+	87.30		3.805E+00	8.781E-01	8.132E-01	9.869E-02	4.679
RA-224	+	241.98		2.463E+00	6.409E-01	4.970E-01	5.558E-02	4.957
	+	295.21		1.620E+00	3.149E-01	1.873E-01	2.186E-02	8.646
	+	351.92	*	1.585E+00	2.420E-01	1.061E-01	1.156E-02	14.940
	+	240.98	*	4.671E+00	1.187E+00	9.393E-01	9.079E-02	4.973
	+	609.31	*	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
AC-228	+	1120.29		1.128E+00	6.507E-01	4.365E-01	4.723E-02	2.584
	+	1764.49		1.586E+00	4.447E-01	2.562E-01	2.104E-02	6.192
	+	338.32		1.986E+00	9.061E-01	3.763E-01	1.559E-01	5.278
	+	911.07	*	2.150E+00	3.808E-01	1.822E-01	2.232E-02	11.803
	+	969.11		1.813E+00	5.714E-01	2.610E-01	6.195E-02	6.945
TH-228	+	338.32		1.986E+00	9.061E-01	3.763E-01	1.559E-01	5.278
	+	911.07	*	2.150E+00	3.808E-01	1.822E-01	2.232E-02	11.803
	+	969.11		1.813E+00	5.714E-01	2.610E-01	6.195E-02	6.945
	+	74.81		2.288E+00	4.334E-01	4.852E-01	3.949E-02	4.716
	+	77.11		2.454E+00	3.223E-01	2.792E-01	2.309E-02	8.787
TH-230	+	87.30		2.253E+00	4.900E-01	4.815E-01	4.513E-02	4.679
	+	238.63	*	1.921E+00	2.355E-01	8.373E-02	8.905E-03	22.936
	+	300.09		1.788E+00	1.381E+00	1.102E+00	6.556E-01	1.622
	+	609.31	*	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
	+	1120.29		1.128E+00	6.507E-01	4.365E-01	4.723E-02	2.584
TH-232	+	1764.49		1.586E+00	4.447E-01	2.561E-01	2.104E-02	6.192
	+	338.32		1.986E+00	4.228E-01	3.763E-01	3.526E-02	5.278
	+	911.07	*	2.150E+00	3.808E-01	1.822E-01	2.232E-02	11.803
	+	969.11		1.813E+00	5.714E-01	2.610E-01	6.195E-02	6.945
	+	63.29	*	2.031E+00	1.644E+00	1.561E+00	2.712E-01	1.301
U-234	+	92.38		1.989E+00	7.325E-01	6.835E-01	1.253E-01	2.910
	+	609.31	*	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
	+	1120.29		1.128E+00	6.507E-01	4.365E-01	4.723E-02	2.584
	+	1764.49		1.586E+00	4.447E-01	2.561E-01	2.104E-02	6.192
	+	89.95		3.587E+00	1.561E+00	1.385E+00	4.302E-01	2.589
U-235	+	93.35		2.391E+00	1.019E+00	8.185E-01	2.306E-01	2.921
	+	105.00		1.547E+00	1.325E+00	1.548E+00	4.617E-01	1.000
	+	143.76	*	2.019E-01	2.028E-01	3.294E-01	5.741E-02	0.613
	+	163.35		3.779E-02	4.758E-01	7.421E-01	1.418E-01	0.051

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	185.71		2.288E-01	9.074E-02	6.660E-02	5.993E-03	3.435
		205.31		1.133E-01	5.291E-01	7.972E-01	1.545E-01	0.142
NP-237	+	86.50	*	1.410E+00	4.228E-01	3.030E-01	6.855E-02	4.654
		95.87		-1.402E-02	9.164E-01	1.324E+00	3.276E-01	-0.011
U-238	+	63.29	*	2.031E+00	1.644E+00	1.561E+00	2.712E-01	1.301
	+	92.38		1.989E+00	6.608E-01	6.835E-01	6.247E-02	2.910
AM-243	+	74.67	*	3.658E-01	6.915E-02	7.772E-02	6.256E-03	4.706
	+	86.72		5.288E+01	1.150E+01	1.135E+01	1.055E+00	4.661
		117.66		-4.758E-01	3.493E+00	5.585E+00	4.675E-01	-0.085
		142.18		-8.734E+00	1.707E+01	2.661E+01	2.246E+00	-0.328
ANH-511	+	511.00	*	2.074E-01	6.495E-02	4.255E-02	3.965E-03	4.874

---- 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	*	-1.777E-01	2.957E-01	4.558E-01	4.430E-02	-0.390
NA-22		1274.54	*	1.212E-02	3.768E-02	6.309E-02	5.226E-03	0.192
NA-24		1368.53	*	-1.080E-01	3.768E-02	Half-Life too short		
AL-26		1129.67		-6.855E-01	1.603E+00	2.408E+00	2.039E-01	-0.285
		1808.65	*	8.413E-03	2.773E-02	4.827E-02	3.921E-03	0.174
TI-44		67.85		2.569E-02	4.059E-02	6.122E-02	4.606E-03	0.420
	+	78.38	*	4.464E-01	5.864E-02	7.618E-02	6.394E-03	5.859
SC-46		889.25	*	-5.328E-03	3.445E-02	5.601E-02	5.584E-03	-0.095
	+	1120.51		1.917E-01	1.099E-01	1.299E-01	1.111E-02	1.476
V-48		944.10		-3.416E-01	6.984E-01	1.082E+00	1.056E-01	-0.316
		983.50	*	2.503E-02	5.525E-02	9.527E-02	9.106E-03	0.263
		1312.09		-6.864E-02	7.043E-02	9.748E-02	8.132E-03	-0.704
CR-51		320.08	*	-2.995E-01	3.448E-01	5.399E-01	5.413E-02	-0.555
MN-52		744.21		-1.531E-02	2.146E-01	3.565E-01	3.622E-02	-0.043
		848.13		-4.033E+00	5.406E+00	8.265E+00	8.328E-01	-0.488
	+	935.52		1.654E-01	2.644E-01	3.837E-01	3.758E-02	0.431
		1246.25		-2.405E+00	6.204E+00	8.941E+00	7.345E-01	-0.269
		1333.61		2.997E+00	4.147E+00	7.276E+00	6.096E-01	0.412
		1434.06	*	7.607E-02	1.491E-01	2.702E-01	2.287E-02	0.281
MN-54		834.83	*	6.699E-03	3.353E-02	5.660E-02	5.717E-03	0.118
CO-56		846.75	*	2.126E-02	3.439E-02	6.021E-02	6.068E-03	0.353
		977.42		1.627E+00	2.363E+00	4.171E+00	4.000E-01	0.390
		1037.82		-1.739E-01	2.693E-01	4.068E-01	3.925E-02	-0.427
		1175.09		-1.166E+00	2.272E+00	3.500E+00	2.816E-01	-0.333
	+	1238.25		2.936E-01	1.389E-01	1.705E-01	1.442E-02	1.723
		1360.21		-4.354E-01	8.386E-01	1.307E+00	1.099E-01	-0.333
		1771.40		-1.001E-01	2.146E-01	2.870E-01	2.353E-02	-0.349
CO-57		122.06	*	1.887E-02	2.237E-02	3.729E-02	3.112E-03	0.506
		136.48		-1.945E-01	1.982E-01	3.011E-01	2.725E-02	-0.646
CO-58		810.76	*	-1.807E-02	3.043E-02	4.719E-02	4.792E-03	-0.383
FE-59		142.65		-4.607E-01	2.645E+00	4.143E+00	3.499E-01	-0.111
		192.34		3.050E-01	9.271E-01	1.484E+00	2.038E-01	0.206
		1099.22	*	8.681E-03	8.515E-02	1.401E-01	1.322E-02	0.062



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60		1291.56		1.103E-02	1.159E-01	1.887E-01	1.795E-02	0.058
		1173.22		-3.366E-03	4.566E-02	7.351E-02	5.910E-03	-0.046
		1332.49	*	-1.012E-02	3.954E-02	6.145E-02	5.147E-03	-0.165
ZN-65		1115.52	*	-1.026E-02	1.337E-01	1.218E-01	1.048E-02	-0.084
GE-68		1077.35	*	3.790E-01	1.087E+00	1.840E+00	1.642E-01	0.206
AS-73		53.44	*	-5.151E-01	5.174E-01	8.151E-01	6.051E-02	-0.632
AS-74		595.88	*	2.075E-02	9.220E-02	1.502E-01	1.470E-02	0.138
SE-75		634.78		-4.442E-02	3.058E-01	5.097E-01	5.069E-02	-0.087
		66.05		-2.184E+00	4.194E+00	6.003E+00	5.679E-01	-0.364
		96.73		1.615E-01	7.411E-01	1.083E+00	1.496E-01	0.149
BR-77		121.11		-9.254E-03	1.212E-01	1.940E-01	2.136E-02	-0.048
		136.00		-1.449E-02	3.623E-02	5.683E-02	4.802E-03	-0.255
		198.60		1.211E+00	1.664E+00	2.860E+00	2.878E-01	0.423
		264.65	*	4.504E-03	4.515E-02	6.697E-02	6.630E-03	0.067
		279.53		-3.842E-02	1.068E-01	1.522E-01	1.557E-02	-0.253
		303.91		-9.851E-01	2.095E+00	2.936E+00	3.632E-01	-0.336
		400.65		2.005E-01	2.505E-01	4.295E-01	4.713E-02	0.467
	+	87.88		8.164E+02	1.776E+02	2.491E+02	2.353E+01	3.277
		200.40		-5.747E+00	1.151E+02	1.945E+02	1.789E+01	-0.030
	+	239.00		2.352E+02	2.684E+01	3.096E+01	2.986E+00	7.596
		249.79		1.223E+01	4.505E+01	7.657E+01	7.464E+00	-0.160
		281.68		-7.455E+00	7.021E+01	1.022E+02	1.016E+01	-0.073
		297.23		2.207E+02	5.430E+01	8.175E+01	8.043E+00	2.700
		303.76		-6.523E+01	1.387E+02	1.944E+02	1.902E+01	-0.336
		439.47		5.210E+01	1.045E+02	1.763E+02	1.549E+01	0.296
		484.57		-2.548E+01	1.760E+02	2.822E+02	2.578E+01	-0.090
		520.65	*	-4.173E+00	7.014E+00	1.069E+01	1.002E+00	-0.391
		574.64		-1.103E+02	1.714E+02	2.607E+02	2.526E+01	-0.423
		578.91		3.893E+01	7.143E+01	1.061E+02	1.030E+01	0.367
		585.48		8.955E+02	2.028E+02	3.492E+02	3.401E+01	2.564
		755.35		-2.601E+01	1.164E+02	1.905E+02	1.936E+01	-0.137
		817.79		-6.145E+01	7.979E+01	1.204E+02	1.220E+01	-0.510
	SR-82	698.33		-4.433E+01	3.389E+01	5.046E+01	5.102E+00	-0.879
		776.49	*	-5.119E-01	3.578E-01	5.146E-01	5.228E-02	-0.995
		1395.20		-6.824E-02	8.596E+00	1.439E+01	1.214E+00	-0.005
	RB-83	520.41	*	-5.461E-02	6.469E-02	9.209E-02	8.637E-03	-0.593
		529.64		2.501E-02	9.204E-02	1.520E-01	1.434E-02	0.165
		552.65		6.141E-02	1.728E-01	2.867E-01	2.743E-02	0.214
RB-84		881.50	*	6.756E-02	6.255E-02	1.133E-01	1.132E-02	0.597
KR-85		513.99	*	3.775E+00	6.406E+00	1.080E+01	1.008E+00	0.350
SR-85		513.99	*	1.918E-02	3.254E-02	5.485E-02	5.122E-03	0.350
RB-86		1076.63	*	-4.820E-01	6.820E-01	1.021E+00	9.114E-02	-0.472
Y-88		898.02		-2.077E-02	3.518E-02	5.429E-02	5.417E-03	-0.383
ZR-88		1836.01	*	5.657E-04	2.774E-02	4.577E-02	3.693E-03	0.012
		392.90	*	-8.914E-03	2.801E-02	4.491E-02	3.756E-03	-0.198
Y-91		1204.90	*	-1.158E+01	1.512E+01	2.258E+01	1.834E+00	-0.513
NB-94		702.63	*	6.473E-03	3.249E-02	5.525E-02	5.590E-03	0.117
NB-95		871.10		-9.889E-03	3.094E-02	4.955E-02	4.965E-03	-0.200
		765.79	*	3.599E-02	4.518E-02	7.096E-02	7.211E-03	0.507

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	235.69	*		1.147E-01	1.255E-01	1.953E-01	2.098E-02	0.587
ZR-95	724.18			9.473E-02	9.159E-02	1.482E-01	1.599E-02	0.639
	756.15	*		-2.629E-02	6.424E-02	1.033E-01	1.128E-02	-0.254
NB-97	657.90	*		1.701E-02	6.424E-02	Half-Life	too short	
	1024.50			1.085E+00	6.424E-02	Half-Life	too short	
ZR-97	254.15			1.417E-01	6.424E-02	Half-Life	too short	
	355.39			-2.128E-01	6.424E-02	Half-Life	too short	
	507.63	*		9.470E-01	6.424E-02	Half-Life	too short	
	602.52			-1.457E+00	6.424E-02	Half-Life	too short	
	1021.30			-1.409E+00	6.424E-02	Half-Life	too short	
	1147.95			-1.479E+00	6.424E-02	Half-Life	too short	
	1362.66			-4.825E-01	6.424E-02	Half-Life	too short	
	1750.46			1.332E-01	6.424E-02	Half-Life	too short	
MO-99	140.51			-9.346E+00	2.083E+01	3.185E+01	8.801E+00	-0.293
	181.06			-9.037E+00	1.453E+01	1.938E+01	3.573E+00	-0.466
	366.43			-1.571E+01	6.191E+01	1.001E+02	8.903E+00	-0.157
	739.58	*		-3.569E+00	9.098E+00	1.470E+01	2.367E+00	-0.243
	778.00			-1.167E+01	2.415E+01	3.842E+01	3.904E+00	-0.304
TC-99M	140.51	*		-1.486E+09	2.415E+01	Half-Life	too short	
RH-101	127.23			4.885E-02	3.174E-02	4.920E-02	4.104E-03	0.993
	198.01	*		6.824E-03	3.100E-02	5.235E-02	4.798E-03	0.130
	325.23			1.786E-01	2.448E-01	3.749E-01	3.580E-02	0.476
RH-102	418.52			5.106E-02	2.666E-01	4.416E-01	3.799E-02	0.116
	475.06	*		-1.448E-02	2.702E-02	4.192E-02	3.801E-03	-0.346
	631.29			2.613E-02	5.373E-02	8.927E-02	8.867E-03	0.293
	697.49			-1.226E-01	7.677E-02	1.104E-01	1.116E-02	-1.111
	+ 766.84			2.255E-01	1.504E-01	2.055E-01	2.088E-02	1.097
	+ 1046.59			-1.184E-01	1.096E-01	1.574E-01	1.441E-02	-0.752
	+ 1112.84			1.889E-01	3.940E-01	3.294E-01	2.840E-02	0.574
RU-103	497.08	*		-1.716E-02	3.654E-02	5.667E-02	8.238E-03	-0.303
	+ 610.33			1.456E+01	2.968E+00	3.039E+00	5.274E-01	4.792
RH-106	+ 511.85			1.034E+00	3.239E-01	4.396E-01	4.099E-02	2.353
	621.84	*		-3.694E-02	2.922E-01	4.610E-01	6.554E-02	-0.080
	1050.47			1.879E+00	2.196E+00	3.876E+00	3.537E-01	0.485
RU-106	+ 511.85			1.034E+00	3.239E-01	4.396E-01	4.099E-02	2.353
	621.84	*		-3.694E-02	2.922E-01	4.610E-01	4.563E-02	-0.080
	1050.47			1.879E+00	2.196E+00	3.876E+00	3.537E-01	0.485
AG-108M	433.93	*		1.336E-03	2.919E-02	4.779E-02	4.337E-03	0.028
	614.37			5.425E-03	4.362E-02	6.162E-02	6.263E-03	0.088
	722.95			-5.074E-03	4.118E-02	5.905E-02	6.160E-03	-0.086
AG-110M	657.75	*		1.165E-02	3.181E-02	5.500E-02	5.635E-03	0.212
	677.61			-1.631E-01	2.643E-01	4.193E-01	4.310E-02	-0.389
	706.67			4.422E-02	2.041E-01	3.474E-01	3.587E-02	0.127
	763.93			4.424E-02	1.681E-01	2.514E-01	2.607E-02	0.176
	884.67			3.005E-03	4.417E-02	7.350E-02	7.514E-03	0.041
	937.48			5.212E-04	1.155E-01	1.648E-01	1.659E-02	0.003
	1384.27			4.910E-02	1.297E-01	2.156E-01	1.871E-02	0.228
IN-111	171.28			-3.213E-01	7.733E-01	1.199E+00	1.055E-01	-0.268
	245.39	*		2.146E-02	8.378E-01	1.241E+00	1.205E-01	0.017

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IN-113M		391.69	*	-3.301E-02	4.001E-02	6.159E-02	5.313E-03	-0.536
SN-113		391.69	*	-3.301E-02	4.001E-02	6.159E-02	5.313E-03	-0.536
IN-114M		190.27	*	-4.898E-02	1.895E-01	2.797E-01	2.535E-02	-0.175
CD-115		260.90		-4.258E+01	8.894E+01	1.449E+02	1.425E+01	-0.294
		492.35		4.248E+00	2.542E+01	4.173E+01	3.835E+00	0.102
		527.90	*	-8.077E-01	7.287E+00	1.164E+01	1.097E+00	-0.069
SN-117M		156.02		-9.898E-01	2.171E+00	3.379E+00	2.905E-01	-0.293
		158.56	*	8.898E-03	5.244E-02	8.402E-02	7.251E-03	0.106
SB-122		563.90	*	2.087E+00	1.575E+00	2.777E+00	2.674E-01	0.751
		692.80		5.492E+01	3.335E+01	6.176E+01	6.238E+00	0.889
I-123		159.00	*	9.618E-01	3.335E+01	Half-Life	too short	
		528.96		6.758E+01	3.335E+01	Half-Life	too short	
TE-123M		159.00	*	1.444E-02	2.776E-02	4.515E-02	3.923E-03	0.320
I-124		602.71	*	-4.046E-02	5.951E-01	8.720E-01	8.562E-02	-0.046
		722.78		-1.052E+00	3.671E+00	5.152E+00	5.225E-01	-0.204
		1325.50		9.127E+00	2.625E+01	4.418E+01	3.696E+00	0.207
	+	1376.25		4.795E+01	2.797E+01	5.042E+01	4.247E+00	0.951
		1509.49		1.819E+01	1.205E+01	2.385E+01	2.022E+00	0.763
		1691.02		2.425E+00	2.763E+00	5.293E+00	4.413E-01	0.458
SB-124		602.71		-2.694E-03	3.962E-02	5.806E-02	5.702E-03	-0.046
		645.85		-1.239E-03	4.113E-01	6.928E-01	7.229E-02	-0.002
		709.31		5.104E-01	2.562E+00	4.358E+00	4.414E-01	0.117
		713.82		3.967E-01	1.487E+00	2.542E+00	3.347E-01	0.156
		722.78		-1.016E-01	3.543E-01	4.973E-01	5.122E-02	-0.204
	+	968.20		1.848E+01	4.225E+00	7.389E+00	7.123E-01	2.500
		1045.16		-1.796E+00	2.260E+00	3.364E+00	3.084E-01	-0.534
		1325.50		9.409E-01	2.706E+00	4.555E+00	3.810E-01	0.207
		1368.21		-8.322E-01	1.494E+00	2.309E+00	3.081E-01	-0.360
		1436.60		-1.325E+00	2.934E+00	4.546E+00	3.848E-01	-0.292
		1691.02	*	5.520E-02	6.292E-02	1.205E-01	1.047E-02	0.458
SB-125		427.89	*	7.196E-03	8.541E-02	1.392E-01	1.232E-02	0.052
	+	463.38		1.130E+00	4.498E-01	5.793E-01	5.577E-02	1.951
		600.56		-3.706E-02	1.730E-01	2.719E-01	2.820E-02	-0.136
		635.90		-2.724E-01	2.521E-01	3.857E-01	4.072E-02	-0.706
TE-125M		109.28	*	6.588E+00	9.243E+00	1.380E+01	1.411E+00	0.477
I-126		388.63		1.166E-01	1.708E-01	2.930E-01	2.468E-02	0.398
		666.33	*	2.153E-02	1.581E-01	2.687E-01	2.699E-02	0.080
		753.82		-7.548E-02	1.290E+00	2.142E+00	2.177E-01	-0.035
SB-126		223.80		1.819E+00	3.536E+00	6.085E+00	5.772E-01	0.299
	+	278.60		3.166E+00	2.393E+00	3.691E+00	3.674E-01	0.858
	+	296.50		1.535E+01	2.826E+00	3.467E+00	3.413E-01	4.427
		414.70		2.030E-02	7.203E-02	1.116E-01	9.558E-03	0.182
		415.30		2.076E+00	5.522E+00	9.260E+00	7.939E-01	0.224
		555.20		4.167E-01	3.680E+00	5.741E+00	5.502E-01	0.073
		573.80		-9.760E-02	1.018E+00	1.621E+00	1.570E-01	-0.060
		593.00		1.019E+00	9.063E-01	1.571E+00	1.536E-01	0.649
		656.30		1.581E+00	2.857E+00	5.008E+00	5.017E-01	0.316
		666.33		8.980E-03	6.594E-02	1.120E-01	1.126E-02	0.080
		675.00		5.020E-01	1.661E+00	2.859E+00	2.879E-01	0.176

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		695.00		2.238E-02	7.112E-02	1.220E-01	1.233E-02	0.183
		697.00		-4.408E-01	2.596E-01	3.695E-01	3.735E-02	-1.193
		720.50	*	-1.092E-01	1.534E-01	2.046E-01	2.074E-02	-0.534
		856.80		2.473E-01	4.211E-01	6.547E-01	6.584E-02	0.378
		989.30		-9.225E-01	1.033E+00	1.511E+00	1.439E-01	-0.611
		1034.80		-3.994E-01	7.210E+00	1.172E+01	1.083E+00	-0.034
		1213.00		-7.735E-01	3.839E+00	6.105E+00	4.969E-01	-0.127
		61.10		3.357E+01	3.832E+01	5.856E+01	5.726E+00	0.573
		252.40		-3.696E+00	3.582E+00	5.064E+00	2.138E+00	-0.730
		290.80		-2.193E+01	1.936E+01	2.558E+01	3.051E+00	-0.857
		411.60		-9.367E-01	1.084E+01	1.540E+01	2.387E+00	-0.061
		444.90		-3.320E+00	8.072E+00	1.274E+01	1.586E+00	-0.261
		473.00		8.301E-01	1.315E+00	2.232E+00	2.888E-01	0.372
		543.00		6.307E-01	1.360E+01	2.198E+01	3.243E+00	0.029
		603.60		1.023E+00	1.090E+01	1.536E+01	2.020E+00	0.067
		685.20	*	5.919E-01	1.048E+00	1.835E+00	2.258E-01	0.323
XE-127		698.50		-1.753E+01	1.369E+01	1.983E+01	3.274E+00	-0.884
		722.20		-1.975E-01	2.451E+01	3.566E+01	4.330E+00	-0.006
		783.80		-1.014E+00	2.904E+00	4.690E+00	6.246E-01	-0.216
		57.60		8.039E-01	4.078E+00	6.765E+00	4.833E-01	0.119
		145.22		-4.829E-01	6.735E-01	1.025E+00	8.686E-02	-0.471
		172.10		-8.744E-02	1.137E-01	1.726E-01	1.521E-02	-0.506
I-131		202.84	*	-4.674E-02	4.165E-02	6.664E-02	6.151E-03	-0.701
		374.96		-2.445E-02	1.822E-01	2.911E-01	2.538E-02	-0.084
		80.18		3.616E+00	4.676E+00	5.679E+00	4.897E-01	0.637
		284.30		-9.577E-01	1.312E+00	2.094E+00	2.161E-01	-0.457
TE-132		364.48	*	-3.118E-03	1.031E-01	1.694E-01	1.588E-02	-0.018
		636.97		-1.418E+00	1.320E+00	2.020E+00	2.094E-01	-0.702
		722.89		-1.155E+00	6.400E+00	9.111E+00	9.278E-01	-0.127
		49.72		-5.004E+00	9.742E+00	1.574E+01	1.576E+00	-0.318
BA-133		111.76		-6.021E+00	2.300E+01	3.664E+01	3.843E+00	-0.164
		116.30		4.491E+00	2.142E+01	3.478E+01	3.630E+00	0.129
		228.16	*	-2.820E-01	5.219E-01	8.531E-01	1.372E-01	-0.331
		53.15		-2.108E+00	2.267E+00	3.586E+00	2.672E-01	-0.588
I-133		79.62		2.540E-01	1.284E+00	1.724E+00	2.615E-01	0.147
		81.00		6.128E-02	1.074E-01	1.283E-01	2.040E-02	0.478
	+	276.40		4.970E-01	3.801E-01	6.155E-01	9.400E-02	0.807
		302.84		4.979E-02	1.356E-01	2.040E-01	2.871E-02	0.244
CS-134		356.01	*	-1.627E-02	4.604E-02	6.444E-02	8.706E-03	-0.252
		383.85		-1.834E-01	2.648E-01	4.113E-01	5.158E-02	-0.446
	+	510.53		1.043E+00	2.648E-01	Half-Life	too short	
		529.87	*	4.630E-04	2.648E-01	Half-Life	too short	
		706.58		4.330E-02	2.648E-01	Half-Life	too short	
		856.28		7.488E-02	2.648E-01	Half-Life	too short	
CS-134		875.33		-1.199E-02	2.648E-01	Half-Life	too short	
	+	1236.41		1.060E+00	2.648E-01	Half-Life	too short	
		1298.22		-6.772E-02	2.648E-01	Half-Life	too short	
CS-134		475.35		-7.476E-01	1.716E+00	2.683E+00	2.433E-01	-0.279
		563.23		4.344E-01	3.419E-01	6.011E-01	5.832E-02	0.723

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	569.32			6.119E-02	1.878E-01	3.096E-01	3.023E-02	0.198
	604.70			3.050E-04	3.625E-02	5.061E-02	4.983E-03	0.006
	795.84	*		6.596E-02	5.573E-02	8.326E-02	8.496E-03	0.792
	801.93			1.354E-01	3.647E-01	6.256E-01	6.373E-02	0.216
	1038.57			-2.021E+00	3.395E+00	5.166E+00	4.759E-01	-0.391
	1167.94			-1.371E+00	2.372E+00	3.614E+00	2.925E-01	-0.379
	1365.15			7.796E-01	1.024E+00	1.884E+00	1.660E-01	0.414
CS-135	268.24	*		2.013E-01	1.702E-01	2.679E-01	2.969E-02	0.751
I-135	288.45			1.287E+09	1.702E-01	Half-Life	too short	
	417.63			6.393E+08	1.702E-01	Half-Life	too short	
	546.56			1.099E+09	1.702E-01	Half-Life	too short	
	836.80			3.524E+08	1.702E-01	Half-Life	too short	
	1038.76			-8.063E+08	1.702E-01	Half-Life	too short	
	1124.00			3.562E+09	1.702E-01	Half-Life	too short	
	1131.51			-3.674E+08	1.702E-01	Half-Life	too short	
	1260.41	*		-2.283E+08	1.702E-01	Half-Life	too short	
	1457.56			4.170E+10	1.702E-01	Half-Life	too short	
	1678.03			6.245E+08	1.702E-01	Half-Life	too short	
	1706.46			2.534E+09	1.702E-01	Half-Life	too short	
	1791.20			-2.747E+08	1.702E-01	Half-Life	too short	
CS-136	66.91			-5.948E-02	6.447E-01	9.425E-01	1.397E-01	-0.063
	86.29	+		5.983E+00	1.421E+00	1.785E+00	2.371E-01	3.352
	153.22			3.734E-01	6.217E-01	1.015E+00	9.725E-02	0.368
	163.89			1.526E-01	1.026E+00	1.605E+00	1.561E-01	0.095
	176.55			1.884E-02	3.377E-01	5.360E-01	5.015E-02	0.035
	273.65			2.435E-01	5.371E-01	6.091E-01	6.348E-02	0.400
	340.57			2.391E-01	1.336E-01	2.159E-01	2.066E-02	1.107
	818.51			-1.883E-02	5.481E-02	8.749E-02	8.865E-03	-0.215
	1048.07	*		-1.712E-03	9.647E-02	1.574E-01	1.493E-02	-0.011
	1235.34			8.154E-01	5.871E-01	9.518E-01	1.098E-01	0.857
BA-137M	661.65	*		-1.524E-02	3.342E-02	5.423E-02	5.443E-03	-0.281
CS-137	661.65	*		-1.611E-02	3.533E-02	5.733E-02	5.761E-03	-0.281
CE-139	165.85	*		-1.080E-02	2.928E-02	4.562E-02	3.983E-03	-0.237
BA-140	162.64			-2.175E-01	7.280E-01	1.115E+00	1.024E-01	-0.195
	304.84			-7.371E-01	1.244E+00	1.701E+00	4.830E-01	-0.433
	423.70			6.787E-01	1.689E+00	2.814E+00	9.123E-01	0.241
	537.32	*		-6.347E-02	2.212E-01	3.455E-01	1.153E-01	-0.184
LA-140	328.77	+		1.098E+00	4.516E-01	5.370E-01	5.340E-02	2.044
	432.53			-1.022E+00	1.751E+00	2.722E+00	2.488E-01	-0.376
	487.03			-6.536E-03	1.276E-01	2.059E-01	1.989E-02	-0.032
	751.79			1.371E-01	1.545E+00	2.598E+00	2.846E-01	0.053
	815.85			-8.142E-02	2.250E-01	3.575E-01	3.928E-02	-0.228
	867.82			3.846E-01	1.357E+00	2.025E+00	2.111E-01	0.190
	919.63			1.445E+00	2.332E+00	4.075E+00	4.757E-01	0.355
	925.24			-9.440E-01	9.724E-01	1.366E+00	1.409E-01	-0.691
	1596.49	*		-2.599E-02	7.060E-02	1.101E-01	9.294E-03	-0.236
CE-141	145.44	*		-3.283E-02	5.891E-02	9.146E-02	7.897E-03	-0.359
CE-143	57.37			4.969E-05	5.891E-02	Half-Life	too short	
	231.56			-7.629E-04	5.891E-02	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
		293.26	*	5.113E-04	5.891E-02	Half-Life	too short	
	+	350.59		2.317E-02	5.891E-02	Half-Life	too short	
		490.36		-4.146E-04	5.891E-02	Half-Life	too short	
		664.57		7.246E-05	5.891E-02	Half-Life	too short	
		721.93		-2.424E-05	5.891E-02	Half-Life	too short	
CE-144		80.11		1.687E+00	2.313E+00	2.802E+00	2.400E-01	0.602
		133.54	*	1.967E-01	2.102E-01	3.136E-01	4.840E-02	0.627
PM-144		476.78		-5.549E-02	6.430E-02	9.684E-02	9.537E-03	-0.573
		618.01		-2.026E-02	3.220E-02	4.852E-02	4.896E-03	-0.418
		696.49	*	-3.414E-02	3.423E-02	5.243E-02	5.301E-03	-0.651
		778.57		-4.802E-01	2.006E+00	3.268E+00	3.321E-01	-0.147
PR-144		696.49	*	-2.312E+00	2.318E+00	3.551E+00	3.589E-01	-0.651
		1489.15		-1.209E+00	9.130E+00	1.488E+01	1.261E+00	-0.081
PM-146		453.90	*	-9.520E-04	4.373E-02	7.105E-02	7.782E-03	-0.013
		633.02		4.393E-01	1.366E+00	2.225E+00	8.388E-01	0.197
		735.90		6.396E-03	1.506E-01	2.303E-01	6.702E-02	0.028
		747.13		2.229E-02	8.981E-02	1.528E-01	2.298E-02	0.146
ND-147	+	91.11		8.518E-01	2.731E-01	4.360E-01	4.314E-02	1.953
		319.41		5.467E-01	2.857E+00	4.789E+00	4.608E-01	0.114
		439.89		6.086E+00	5.121E+00	9.010E+00	7.919E-01	0.675
		531.02	*	-1.878E-01	4.792E-01	7.443E-01	1.149E-01	-0.252
PM-149		285.90	*	2.042E+01	6.397E+01	1.083E+02	1.765E+01	0.189
EU-152		121.78		1.827E-02	6.644E-02	1.081E-01	1.047E-02	0.169
		244.69		-1.095E-01	3.344E-01	4.832E-01	4.687E-02	-0.227
		344.27	*	-5.951E-02	9.758E-02	1.492E-01	1.455E-02	-0.399
		443.98		-5.091E-01	9.211E-01	1.428E+00	1.260E-01	-0.356
		778.89		3.586E-02	2.289E-01	3.867E-01	3.929E-02	0.093
		867.32		2.444E-01	8.487E-01	1.267E+00	1.271E-01	0.193
	+	964.01		5.749E-01	3.924E-01	5.561E-01	5.373E-02	1.034
		1085.78		-6.770E-02	3.584E-01	5.720E-01	5.065E-02	-0.118
	+	1112.02		2.679E-01	5.587E-01	4.796E-01	4.139E-02	0.559
	+	1407.95		5.309E-01	2.089E-01	3.706E-01	3.131E-02	1.433
GD-153		69.67		-1.749E+00	1.362E+00	2.121E+00	1.623E-01	-0.825
	+	83.37		2.569E+01	1.312E+01	2.119E+01	1.889E+00	1.213
		97.43	*	2.289E-02	7.771E-02	1.137E-01	1.008E-02	0.201
		103.18		7.002E-02	1.002E-01	1.502E-01	1.299E-02	0.466
EU-154		123.07		-2.379E-02	4.745E-02	7.429E-02	8.284E-03	-0.320
		247.94		1.705E-01	3.241E-01	5.568E-01	6.866E-02	0.306
		591.81		-9.998E-02	6.468E-01	1.023E+00	1.283E-01	-0.098
		723.30		6.068E-02	1.703E-01	2.584E-01	2.824E-02	0.235
		756.87		-3.806E-01	6.985E-01	1.107E+00	1.453E-01	-0.344
		873.19		-3.493E-02	2.730E-01	4.460E-01	5.915E-02	-0.078
		996.32		-4.493E-01	3.640E-01	5.056E-01	9.203E-02	-0.889
		1004.76		-3.460E-02	2.028E-01	3.267E-01	4.003E-02	-0.106
		1274.45	*	3.504E-02	1.055E-01	1.767E-01	1.953E-02	0.198
TB-160	+	86.79		1.532E+00	3.332E-01	4.630E-01	4.311E-02	3.309
		197.04		-1.585E-01	5.280E-01	8.730E-01	7.990E-02	-0.182
		215.65		3.212E-01	7.779E-01	1.186E+00	1.114E-01	0.271
	+	298.57		2.544E-01	1.278E-01	1.942E-01	1.909E-02	1.310

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	879.36	*	-5.756E-02	1.301E-01	2.057E-01	2.057E-02	-0.280	
	962.29		4.768E-01	5.616E-01	8.728E-01	8.441E-02	0.546	
	966.15	+	3.915E-01	2.672E-01	4.806E-01	4.638E-02	0.815	
	1177.93		-2.291E-02	3.447E-01	5.550E-01	4.469E-02	-0.041	
	1271.85		6.913E-02	6.031E-01	9.857E-01	8.151E-02	0.070	
HO-166M	80.57		1.526E-01	3.016E-01	3.594E-01	3.096E-02	0.425	
	184.41	+	1.716E-01	6.806E-02	6.468E-02	5.809E-03	2.653	
	280.46		-1.958E-02	8.342E-02	1.201E-01	1.195E-02	-0.163	
	410.95	+	3.172E-01	2.363E-01	3.879E-01	3.310E-02	0.818	
	711.68	*	-6.982E-02	5.879E-02	8.836E-02	8.951E-03	-0.790	
	752.31		-2.701E-02	2.603E-01	4.310E-01	4.379E-02	-0.063	
	810.29		-5.080E-02	4.803E-02	7.017E-02	7.113E-03	-0.724	
TM-171	51.35		2.474E+01	1.847E+01	3.200E+01	2.445E+00	0.773	
	52.39		1.069E+00	9.801E+00	1.625E+01	1.223E+00	0.066	
	59.40		1.166E+01	2.048E+01	3.098E+01	2.192E+00	0.376	
	66.72	*	-1.324E+01	2.497E+01	3.574E+01	2.663E+00	-0.370	
LU-176	88.36	+	1.139E+00	2.478E-01	3.515E-01	3.314E-02	3.240	
	201.83		-2.551E-02	2.603E-02	4.201E-02	3.871E-03	-0.607	
	306.84	*	-6.959E-03	2.166E-02	3.525E-02	3.439E-03	-0.197	
	401.10		3.763E+00	6.602E+00	1.119E+01	9.447E-01	0.336	
LU-177	112.95		-6.992E-01	1.422E+00	2.199E+00	1.853E-01	-0.318	
	208.36	+	3.365E+00	1.641E+00	1.764E+00	1.641E-01	1.907	
LU-177M	52.97		-8.181E-01	1.025E+00	1.632E+00	1.218E-01	-0.501	
	54.07		-4.327E-01	5.353E-01	8.509E-01	6.270E-02	-0.508	
	61.30		8.191E-01	1.172E+00	1.780E+00	1.273E-01	0.460	
	121.62		8.450E-02	3.368E-01	5.475E-01	4.566E-02	0.154	
	147.16		-1.312E-01	6.111E-01	9.646E-01	8.192E-02	-0.136	
	171.86		-3.183E-01	4.656E-01	7.107E-01	6.261E-02	-0.448	
	218.09		-6.686E-02	8.085E-01	1.359E+00	1.280E-01	-0.049	
	268.79	+	2.589E+00	1.442E+00	1.420E+00	1.405E-01	1.823	
	319.02		-2.168E-02	2.398E-01	3.953E-01	3.805E-02	-0.055	
	367.43		-1.605E-01	8.435E-01	1.371E+00	1.216E-01	-0.117	
	413.65	*	2.075E-02	1.832E-01	2.654E-01	2.272E-02	0.078	
HF-181	56.28		2.180E-01	6.175E-01	1.031E+00	7.439E-02	0.211	
	57.53		5.858E-02	3.434E-01	5.690E-01	4.068E-02	0.103	
	65.20		-7.486E-02	8.084E-01	1.183E+00	8.703E-02	-0.063	
	133.02		4.652E-02	6.681E-02	9.910E-02	8.293E-03	0.469	
	136.25		-4.007E-01	4.293E-01	6.545E-01	5.491E-02	-0.612	
	345.85		-1.209E-02	2.060E-01	2.971E-01	2.749E-02	-0.041	
	482.03	*	2.504E-02	4.109E-02	6.951E-02	6.338E-03	0.360	
W-181	56.28		8.635E-02	2.440E-01	4.075E-01	2.940E-02	0.212	
	57.53		2.306E-02	1.358E-01	2.250E-01	1.608E-02	0.102	
	65.20	*	-2.937E-02	3.171E-01	4.640E-01	3.414E-02	-0.063	
TA-182	67.75		7.037E-02	9.596E-02	1.453E-01	1.093E-02	0.484	
	100.10		-2.996E-02	1.566E-01	2.512E-01	2.200E-02	-0.119	
	152.43		1.327E-01	3.271E-01	5.302E-01	4.535E-02	0.250	
	222.10		-1.329E-01	3.277E-01	5.421E-01	5.131E-02	-0.245	
	1001.68		2.240E-01	2.021E+00	3.338E+00	3.155E-01	0.067	
	1121.28	+	5.305E-01	3.040E-01	3.590E-01	3.068E-02	1.478	

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183	1189.05		7.717E-02	2.704E-01	4.510E-01	3.644E-02	0.171
	1221.42	*	4.524E-02	1.811E-01	2.999E-01	2.447E-02	0.151
	1230.97		-2.794E-01	4.923E-01	6.268E-01	5.129E-02	-0.446
	57.98		2.812E-02	1.433E-01	2.269E-01	1.617E-02	0.124
	59.32		4.639E-02	8.348E-02	1.262E-01	8.935E-03	0.368
	67.20		-6.080E-04	1.722E-01	2.528E-01	1.891E-02	-0.002
	162.32	*	-4.459E-02	1.111E-01	1.692E-01	1.469E-02	-0.263
	208.81	+	3.285E+00	1.602E+00	1.722E+00	1.603E-01	1.907
	291.72		-4.322E-01	9.391E-01	1.324E+00	1.308E-01	-0.326
	57.98		1.041E-01	5.309E-01	8.403E-01	5.990E-02	0.124
RE-184	59.32		1.717E-01	3.089E-01	4.671E-01	3.307E-02	0.368
	67.20		-2.251E-03	6.377E-01	9.359E-01	7.002E-02	-0.002
	161.27		-2.006E-01	3.558E-01	5.497E-01	4.764E-02	-0.365
	216.55		9.675E-02	2.554E-01	4.241E-01	3.987E-02	0.228
	252.85	*	-1.912E-01	2.030E-01	3.213E-01	3.140E-02	-0.595
	318.01		6.765E-02	4.109E-01	6.877E-01	6.627E-02	0.098
	792.07		-2.874E-01	1.166E+00	1.639E+00	1.665E-01	-0.175
	903.28		1.096E+00	9.130E-01	1.604E+00	1.591E-01	0.683
	920.93		1.438E-01	3.977E-01	6.793E-01	6.696E-02	0.212
	59.72		1.404E-01	2.254E-01	3.417E-01	2.420E-02	0.411
OS-185	61.14		1.133E-01	1.268E-01	1.942E-01	1.388E-02	0.583
	69.30		-3.412E-01	2.420E-01	3.749E-01	2.858E-02	-0.910
	592.07		2.549E-02	2.590E+00	4.152E+00	4.057E-01	0.006
	646.12	*	-6.835E-03	3.585E-02	5.942E-02	5.934E-03	-0.115
	717.42		5.611E-01	8.474E-01	1.488E+00	1.508E-01	0.377
	874.81		-1.353E-01	5.213E-01	8.395E-01	8.404E-02	-0.161
	880.27		3.030E-01	7.214E-01	1.239E+00	1.238E-01	0.245
	155.03	*	1.705E-01	1.671E-01	2.771E-01	2.379E-02	0.615
	477.96		-5.439E-01	2.804E+00	4.478E+00	4.070E-01	-0.121
	633.10		1.262E+00	2.689E+00	4.463E+00	4.437E-01	0.283
W-188	63.58	+	8.092E+01	6.423E+01	7.072E+01	5.140E+00	1.144
	227.08		3.570E-01	1.139E+01	1.920E+01	1.828E+00	0.019
IR-192	290.67	*	-9.366E+00	7.744E+00	1.018E+01	1.007E+00	-0.920
	295.96	+	1.225E+00	2.259E-01	2.911E-01	2.883E-02	4.207
AU-195	308.46		4.215E-02	8.226E-02	1.407E-01	1.375E-02	0.300
	316.51	*	1.877E-02	3.117E-02	5.343E-02	5.167E-03	0.351
	468.07		-4.434E-02	6.653E-02	8.696E-02	8.355E-03	-0.510
	604.41		1.111E-01	4.835E-01	6.919E-01	9.580E-02	0.161
	612.46		6.717E-01	8.104E-01	1.222E+00	1.344E-01	0.549
	65.12		4.600E-02	1.460E-01	2.172E-01	1.598E-02	0.212
	66.83		-9.438E-03	8.078E-02	1.180E-01	8.797E-03	-0.080
	75.70	+	1.180E+00	2.230E-01	4.267E-01	3.473E-02	2.765
	98.88	*	1.553E-01	2.106E-01	3.333E-01	2.935E-02	0.466
	129.76	+	5.658E+00	3.886E+00	4.795E+00	4.005E-01	1.180
TL-200	367.94	*	1.232E-05	3.886E+00	Half-Life	too short	
	579.30		5.312E-04	3.886E+00	Half-Life	too short	
	828.27		1.232E-03	3.886E+00	Half-Life	too short	
TL-201	1205.75		-1.041E-03	3.886E+00	Half-Life	too short	
	68.90		-1.473E+00	3.127E+00	5.036E+00	3.825E-01	-0.293



## ---- 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		-8.916E-01	2.031E+00	2.909E+00	2.251E-01	-0.306
		80.30		2.721E+00	4.571E+00	5.481E+00	4.705E-01	0.497
		135.34		-8.261E+00	1.941E+01	3.042E+01	2.551E+00	-0.272
		167.43	*	-1.273E+00	5.586E+00	8.761E+00	7.665E-01	-0.145
		68.90		-1.540E-01	3.270E-01	5.266E-01	4.000E-02	-0.293
		70.82		-9.298E-02	2.118E-01	3.034E-01	2.347E-02	-0.306
HG-203		80.30		2.838E-01	4.768E-01	5.717E-01	4.908E-02	0.497
		439.56	*	3.180E-02	6.229E-02	1.051E-01	9.237E-03	0.302
		70.83		-4.094E-01	9.534E-01	1.365E+00	1.783E-01	-0.300
BI-207		72.87		1.177E+00	5.905E-01	9.046E-01	1.153E-01	1.301
	+	82.60		1.890E+00	9.859E-01	1.544E+00	2.143E-01	1.224
		279.20	*	4.680E-04	4.031E-02	5.923E-02	6.024E-03	0.008
		72.80		3.171E-01	1.690E-01	2.634E-01	2.079E-02	1.204
	+	74.97		6.565E-01	1.241E-01	2.051E-01	1.656E-02	3.201
	+	84.90		3.332E-01	1.701E-01	2.774E-01	2.521E-02	1.201
TL-207		569.67		1.655E-02	2.968E-02	4.973E-02	4.805E-03	0.333
		1063.62	*	1.860E-02	5.157E-02	8.707E-02	7.862E-03	0.214
		1770.23		-3.273E-01	4.919E-01	5.519E-01	4.527E-02	-0.593
		81.07		1.297E-01	2.363E-01	2.826E-01	2.449E-02	0.459
	+	83.78		2.197E-01	1.121E-01	1.826E-01	1.637E-02	1.203
		94.90		3.644E-01	2.236E-01	3.467E-01	3.118E-02	1.051
PO-209		122.32		7.808E-01	1.560E+00	2.563E+00	2.303E-01	0.305
		144.24		3.502E-01	6.607E-01	1.066E+00	1.013E-01	0.329
		154.21		4.877E-01	3.917E-01	6.538E-01	6.170E-02	0.746
	+	269.46		6.083E-01	3.391E-01	3.443E-01	3.461E-02	1.767
		323.87	*	1.901E-01	7.173E-01	1.064E+00	1.936E-01	0.179
	+	338.28		8.294E+00	1.910E+00	2.597E+00	3.337E-01	3.193
BI-210		445.03		-8.664E-01	2.206E+00	3.487E+00	4.267E-01	-0.248
		260.50		-6.867E+00	8.597E+00	1.372E+01	1.350E+00	-0.500
		262.80		1.155E+01	2.368E+01	4.058E+01	3.998E+00	0.285
		896.60	*	-3.637E+00	6.375E+00	9.864E+00	9.810E-01	-0.369
PB-210		46.50	*	1.797E+00	2.022E+00	3.420E+00	3.172E-01	0.525
PB-211		46.50	*	1.797E+00	2.022E+00	3.420E+00	3.172E-01	0.525
BI-212		46.50	*	1.797E+00	2.021E+00	3.420E+00	2.869E-01	0.525
		404.84	*	-8.038E-01	1.202E+00	1.463E+00	9.168E-01	-0.549
		427.08		-1.074E+00	2.102E+00	3.108E+00	1.931E+00	-0.345
		831.96		-1.432E-01	1.085E+00	1.773E+00	1.115E+00	-0.081
PO-215		727.18	*	1.732E+00	5.580E-01	6.770E-01	7.684E-02	2.559
		785.46		5.173E-01	1.709E+00	2.912E+00	2.958E-01	0.178
		1620.62		8.899E-01	1.159E+00	2.136E+00	1.799E-01	0.417
		81.07		1.297E-01	2.363E-01	2.826E-01	2.449E-02	0.459
PO-215	+	83.78		2.197E-01	1.121E-01	1.826E-01	1.637E-02	1.203
		94.90		3.644E-01	2.236E-01	3.467E-01	3.118E-02	1.051
		122.32		7.808E-01	1.560E+00	2.563E+00	2.303E-01	0.305
		144.24		3.502E-01	6.607E-01	1.066E+00	1.013E-01	0.329
		154.21		4.877E-01	3.917E-01	6.538E-01	6.170E-02	0.746
	+	269.46		6.083E-01	3.391E-01	3.443E-01	3.461E-02	1.767
PO-215		323.87	*	1.901E-01	7.173E-01	1.064E+00	1.936E-01	0.179
	+	338.28		8.294E+00	1.910E+00	2.597E+00	3.337E-01	3.193

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	445.03		-8.664E-01	2.206E+00	3.487E+00	4.267E-01	-0.248
		271.23		7.805E-01	4.371E-01	4.268E-01	4.871E-02	1.829
		401.81	*	1.049E-01	4.168E-01	6.929E-01	1.034E-01	0.151
RN-220		549.76	*	-1.387E+01	2.359E+01	3.586E+01	3.426E+00	-0.387
RA-223	+	81.07		1.297E-01	2.363E-01	2.826E-01	2.449E-02	0.459
		83.78		2.197E-01	1.121E-01	1.826E-01	1.637E-02	1.203
		94.90		3.644E-01	2.236E-01	3.467E-01	3.118E-02	1.051
		122.32		7.808E-01	1.560E+00	2.563E+00	2.303E-01	0.305
		144.24		3.502E-01	6.607E-01	1.066E+00	1.013E-01	0.329
		154.21		4.877E-01	3.917E-01	6.538E-01	6.170E-02	0.746
	+	269.46		6.083E-01	3.391E-01	3.443E-01	3.461E-02	1.767
		323.87	*	1.901E-01	7.173E-01	1.064E+00	1.936E-01	0.179
		338.28		8.294E+00	1.910E+00	2.597E+00	3.337E-01	3.193
AC-227		445.03		-8.664E-01	2.206E+00	3.487E+00	4.267E-01	-0.248
		79.80		1.054E+00	1.797E+00	2.143E+00	4.600E-01	0.492
		236.00		5.850E-01	2.627E-01	4.195E-01	5.438E-02	1.395
	+	256.20	*	3.886E-01	3.396E-01	5.926E-01	9.505E-02	0.656
		286.10		8.406E-01	1.417E+00	2.428E+00	3.420E-01	0.346
		299.80		3.267E+00	1.715E+00	2.526E+00	4.574E-01	1.294
	+	304.40		-9.430E-02	1.779E+00	2.587E+00	4.916E-01	-0.036
		334.20		2.569E+00	2.511E+00	3.407E+00	6.741E-01	0.754
TH-227	+	79.80		1.054E+00	1.798E+00	2.143E+00	4.659E-01	0.492
		94.00		7.684E+00	2.980E+00	3.473E+00	7.623E-01	2.213
		236.00		5.850E-01	2.609E-01	4.195E-01	4.979E-02	1.395
	+	256.20	*	3.886E-01	3.416E-01	5.926E-01	1.105E-01	0.656
		286.10		8.406E-01	1.645E+00	2.428E+00	2.440E+00	0.346
		299.80		3.267E+00	1.715E+00	2.526E+00	4.574E-01	1.294
	+	304.40		-9.430E-02	1.779E+00	2.587E+00	4.916E-01	-0.036
		334.20		2.569E+00	2.511E+00	3.407E+00	6.741E-01	0.754
TH-229	+	85.43		3.288E-01	1.679E-01	2.900E-01	2.654E-02	1.134
		88.47		6.557E-01	1.426E-01	2.010E-01	1.893E-02	3.262
		100.00		-6.192E-02	1.664E-01	2.626E-01	2.300E-02	-0.236
	+	193.63	*	-2.784E-01	4.746E-01	7.838E-01	7.138E-02	-0.355
		210.97		2.595E+00	1.265E+00	1.266E+00	1.182E-01	2.050
PA-231		283.67	*	-3.748E-01	1.389E+00	2.279E+00	3.638E-01	-0.164
TH-231	+	301.29		1.307E+00	6.664E-01	9.927E-01	1.301E-01	1.316
		81.07		1.297E-01	2.363E-01	2.826E-01	2.449E-02	0.459
		83.78		2.197E-01	1.121E-01	1.826E-01	1.637E-02	1.203
	+	94.90		3.644E-01	2.236E-01	3.467E-01	3.118E-02	1.051
		122.32		7.808E-01	1.560E+00	2.563E+00	2.303E-01	0.305
		144.24		3.502E-01	6.607E-01	1.066E+00	1.013E-01	0.329
	+	154.21		4.877E-01	3.917E-01	6.538E-01	6.170E-02	0.746
		269.46		6.083E-01	3.391E-01	3.443E-01	3.461E-02	1.767
		323.87	*	1.901E-01	7.173E-01	1.064E+00	1.936E-01	0.179
	+	338.28		8.294E+00	1.910E+00	2.597E+00	3.337E-01	3.193
		445.03		-8.664E-01	2.206E+00	3.487E+00	4.267E-01	-0.248
U-231	+	84.21		8.179E+00	4.176E+00	6.799E+00	6.125E-01	1.203
		92.29		6.562E+00	2.180E+00	3.157E+00	2.887E-01	2.078
		95.87	*	-1.374E-02	8.979E-01	1.297E+00	1.160E-01	-0.011

## ---- 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		-1.060E-01	1.795E+00	2.573E+00	2.193E-01	-0.041
	+	75.28		1.916E+01	4.363E+00	6.194E+00	9.330E-01	3.093
	+	86.59		9.401E+00	3.144E+00	2.827E+00	7.645E-01	3.326
	+	300.12		9.109E-01	4.708E-01	6.995E-01	1.091E-01	1.302
		311.98	*	-3.051E-02	5.709E-02	9.148E-02	9.076E-03	-0.334
PA-234		340.50		1.526E+00	7.763E-01	1.146E+00	2.763E-01	1.331
		398.62		-1.317E+00	2.121E+00	3.290E+00	8.739E-01	-0.400
		415.76		4.397E-01	1.573E+00	2.617E+00	5.635E-01	0.168
	+	63.00		2.368E+00	1.904E+00	2.107E+00	3.113E-01	1.124
		94.67		4.252E-01	1.703E-01	2.636E-01	3.341E-02	1.613
		98.44		9.239E-02	9.945E-02	1.370E-01	7.647E-02	0.674
		99.86		-9.494E-02	4.200E-01	6.670E-01	5.847E-02	-0.142
		111.00		-8.869E-02	1.720E-01	2.705E-01	3.240E-02	-0.328
		131.20		4.869E-02	1.137E-01	1.660E-01	1.388E-02	0.293
		152.70		2.108E-01	3.200E-01	5.215E-01	8.872E-02	0.404
	+	186.00		6.177E+00	3.072E+00	2.600E+00	8.142E-01	2.376
		226.40		-1.911E-01	3.679E-01	6.031E-01	8.325E-02	-0.317
		227.20		-1.874E-02	3.882E-01	6.522E-01	6.211E-02	-0.029
		248.90		7.744E-01	7.489E-01	1.285E+00	2.939E-01	0.603
	+	293.70		7.774E+00	1.846E+00	1.729E+00	3.104E-01	4.497
		369.80		3.059E-01	7.719E-01	1.299E+00	2.839E-01	0.236
		568.70		-7.767E-01	9.799E-01	1.464E+00	1.413E-01	-0.531
		569.50		1.133E-01	2.624E-01	4.358E-01	4.210E-02	0.260
		574.00		-2.568E-01	1.528E+00	2.419E+00	2.342E-01	-0.106
		699.00		-6.467E-01	7.268E-01	1.093E+00	2.164E-01	-0.592
		706.10		1.889E-01	1.005E+00	1.702E+00	7.644E-01	0.111
		733.00		-1.703E-02	3.776E-01	5.461E-01	1.247E-01	-0.031
		742.81		-4.977E-01	1.393E+00	2.193E+00	1.479E+00	-0.227
	+	796.30		1.283E+00	1.133E+00	1.614E+00	4.450E-01	0.795
		805.60		-6.786E-02	9.298E-01	1.516E+00	4.715E-01	-0.045
		819.60		3.707E-01	1.009E+00	1.722E+00	6.611E-01	0.215
		826.30		2.489E-01	7.938E-01	1.341E+00	6.040E-01	0.186
		831.60		-3.527E-02	5.492E-01	9.056E-01	2.745E-01	-0.039
		876.40		-3.134E-02	7.367E-01	1.212E+00	1.247E+00	-0.026
		880.51		1.786E-01	2.575E-01	4.525E-01	4.523E-02	0.395
		883.24		5.368E-02	2.700E-01	4.508E-01	3.039E-01	0.119
		899.00		-6.003E-01	7.716E-01	1.090E+00	4.797E-01	-0.551
		925.00		-1.029E+00	1.059E+00	1.488E+00	1.465E-01	-0.691
		926.50		-5.780E-02	1.473E-01	2.210E-01	5.685E-02	-0.261
		946.00	*	-1.424E-01	2.390E-01	3.623E-01	6.996E-02	-0.393
		949.00		-3.765E-02	3.561E-01	5.788E-01	5.634E-02	-0.065
		980.50		-1.577E-01	6.148E-01	9.794E-01	9.377E-02	-0.161
PA-234M		1394.10		1.051E-01	9.081E-01	1.544E+00	1.005E+00	0.068
		766.42		1.862E+01	1.575E+01	2.093E+01	1.068E+01	0.890
NP-236		1001.03	*	3.218E+00	4.358E+00	7.616E+00	8.146E-01	0.422
		94.67		3.252E-01	1.261E-01	2.002E-01	1.803E-02	1.624
		98.44		6.986E-02	6.457E-02	1.036E-01	9.139E-03	0.675
		111.00		-6.709E-02	1.300E-01	2.046E-01	1.732E-02	-0.328
		160.31	*	-3.286E-03	7.978E-02	1.266E-01	1.095E-02	-0.026

----- 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		-1.938E-02	1.420E-01	2.265E-01	1.988E-02	-0.086
		117.00	*	9.339E-02	1.740E-01	2.865E-01	2.400E-02	0.326
	+	209.75		2.614E+00	1.275E+00	1.393E+00	1.298E-01	1.877
		228.18		-1.023E-01	2.049E-01	3.365E-01	3.208E-02	-0.304
	+	277.60		2.426E-01	1.834E-01	2.905E-01	2.890E-02	0.835
AM-241		334.30		1.434E+00	1.399E+00	1.927E+00	1.816E-01	0.744
		59.54	*	7.070E-02	1.193E-01	1.806E-01	1.413E-02	0.391
CM-243		99.55		-1.994E-02	1.461E-01	2.330E-01	2.046E-02	-0.086
	+	103.76	*	1.414E-01	1.142E-01	1.446E-01	1.249E-02	0.978
		117.00		9.608E-02	1.790E-01	2.948E-01	2.469E-02	0.326
	+	209.75		2.577E+00	1.257E+00	1.373E+00	1.279E-01	1.877
		228.18		-1.033E-01	2.070E-01	3.400E-01	3.242E-02	-0.304
AM-246	+	277.60		2.445E-01	1.849E-01	2.929E-01	2.914E-02	0.835
		798.80		-8.950E-02	1.432E-01	1.914E-01	1.943E-02	-0.467
		1036.00		-1.945E-01	2.686E-01	4.025E-01	3.716E-02	-0.483
		1062.04		1.475E-01	2.212E-01	3.839E-01	3.471E-02	0.384
		1078.86	*	4.838E-02	1.295E-01	2.194E-01	1.955E-02	0.220
CM-247	+	278.00		1.006E+00	7.606E-01	1.201E+00	1.195E-01	0.838
		287.40		9.624E-01	1.148E+00	1.990E+00	1.972E-01	0.484
		402.60	*	1.230E-02	3.740E-02	6.249E-02	5.284E-03	0.197
CF-249		252.85		-7.202E-01	7.644E-01	1.210E+00	1.183E-01	-0.595
		333.44		1.795E-01	2.096E-01	2.502E-01	2.362E-02	0.717
		387.95	*	3.887E-02	3.507E-02	6.167E-02	5.204E-03	0.630
CF-251		176.60	*	6.275E-03	1.220E-01	1.935E-01	1.717E-02	0.032
		227.00		1.652E-02	3.450E-01	5.821E-01	5.543E-02	0.028
		285.00		-1.184E+00	1.651E+00	2.637E+00	2.617E-01	-0.449

# 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]G1202012163      *
* Acquisition date   : 19-JAN-2010 17:39:23 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 02:00:33.32             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G1202012163             Analyst initials: MXR1         *
* Batch Number       : 940270                  Sample Quantity : 1.2522E+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	2.114E+01	2.285E+00	4.034E-01	0.000E+00
CD-109	4.880E+00	1.040E+00	1.079E+00	0.000E+00
SN-126	4.802E-01	1.024E-01	1.065E-01	0.000E+00
EU-155	1.579E-01	1.249E-01	1.636E-01	0.000E+00
TL-208	6.144E-01	1.035E-01	5.947E-02	0.000E+00
BI-211	4.557E+00	6.406E-01	3.104E-01	0.000E+00
PB-212	1.893E+00	2.276E-01	8.463E-02	0.000E+00
PO-212	1.893E+00	2.276E-01	8.463E-02	0.000E+00
BI-214	1.370E+00	2.072E-01	1.063E-01	0.000E+00
PB-214	1.585E+00	2.371E-01	1.082E-01	0.000E+00
PO-214	1.585E+00	2.371E-01	1.082E-01	0.000E+00
PO-216	1.893E+00	2.276E-01	8.463E-02	0.000E+00
PO-218	1.585E+00	2.371E-01	1.082E-01	0.000E+00
RA-224	4.671E+00	1.163E+00	9.628E-01	0.000E+00
RA-226	1.370E+00	2.072E-01	1.063E-01	0.000E+00
AC-228	2.150E+00	3.732E-01	1.833E-01	0.000E+00
RA-228	2.150E+00	3.732E-01	1.833E-01	0.000E+00
TH-228	1.921E+00	2.308E-01	8.584E-02	0.000E+00
TH-230	1.370E+00	2.072E-01	1.063E-01	0.000E+00
TH-232	2.150E+00	3.732E-01	1.833E-01	0.000E+00
TH-234	2.031E+00	1.611E+00	1.629E+00	0.000E+00
U-234	1.370E+00	2.072E-01	1.063E-01	0.000E+00
U-235	2.019E-01	1.987E-01	3.400E-01	0.000E+00
NP-237	1.410E+00	4.144E-01	3.149E-01	0.000E+00
U-238	2.031E+00	1.611E+00	1.629E+00	0.000E+00
AM-243	3.658E-01	6.777E-02	8.094E-02	0.000E+00
ANH-511	2.074E-01	6.365E-02	4.316E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	-1.777E-01	2.898E-01	4.627E-01	0.000E+00	NOT IDENT.
NA-22	1.212E-02	3.693E-02	6.316E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.337E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	8.413E-03	2.717E-02	4.808E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.747E-02	7.929E-02	0.000E+00	FAIL ABUN
SC-46	-5.328E-03	3.376E-02	5.637E-02	0.000E+00	FAIL ABUN
V-48	2.503E-02	5.415E-02	9.574E-02	0.000E+00	NOT IDENT.
CR-51	-2.995E-01	3.379E-01	5.513E-01	0.000E+00	NOT IDENT.
MN-52	7.607E-02	1.461E-01	2.701E-01	0.000E+00	FAIL ABUN
MN-54	6.699E-03	3.286E-02	5.701E-02	0.000E+00	NOT IDENT.
CO-56	2.126E-02	3.370E-02	6.063E-02	0.000E+00	FAIL ABUN
CO-57	1.887E-02	2.192E-02	3.858E-02	0.000E+00	NOT IDENT.
CO-58	-1.807E-02	2.982E-02	4.755E-02	0.000E+00	NOT IDENT.
FE-59	8.681E-03	8.345E-02	1.406E-01	0.000E+00	NOT IDENT.
CO-60	-1.012E-02	3.875E-02	6.148E-02	0.000E+00	NOT IDENT.
ZN-65	-1.026E-02	1.310E-01	1.221E-01	0.000E+00	NOT IDENT.
GE-68	3.790E-01	1.066E+00	1.847E+00	0.000E+00	NOT IDENT.
AS-73	-5.151E-01	5.071E-01	8.526E-01	0.000E+00	NOT IDENT.
AS-74	2.075E-02	9.036E-02	1.520E-01	0.000E+00	NOT IDENT.
SE-75	4.504E-03	4.424E-02	6.855E-02	0.000E+00	NOT IDENT.
BR-77	-4.173E+00	6.874E+00	1.084E+01	0.000E+00	FAIL ABUN
SR-82	-5.119E-01	3.506E-01	5.188E-01	0.000E+00	NOT IDENT.
RB-83	-5.461E-02	6.340E-02	9.338E-02	0.000E+00	NOT IDENT.
RB-84	6.756E-02	6.130E-02	1.140E-01	0.000E+00	NOT IDENT.
KR-85	3.775E+00	6.278E+00	1.095E+01	0.000E+00	NOT IDENT.
SR-85	1.918E-02	3.189E-02	5.563E-02	0.000E+00	NOT IDENT.
RB-86	-4.820E-01	6.684E-01	1.024E+00	0.000E+00	NOT IDENT.
Y-88	5.657E-04	2.719E-02	4.558E-02	0.000E+00	NOT IDENT.
ZR-88	-8.914E-03	2.745E-02	4.572E-02	0.000E+00	NOT IDENT.
Y-91	-1.158E+01	1.482E+01	2.263E+01	0.000E+00	NOT IDENT.
NB-94	6.473E-03	3.184E-02	5.579E-02	0.000E+00	NOT IDENT.
NB-95	3.599E-02	4.427E-02	7.156E-02	0.000E+00	NOT IDENT.
NB-95M	1.147E-01	1.230E-01	2.002E-01	0.000E+00	NOT IDENT.
ZR-95	-2.629E-02	6.295E-02	1.042E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.690E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.685E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.569E+00	8.916E+00	1.483E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.246E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	6.824E-03	3.038E-02	5.380E-02	0.000E+00	NOT IDENT.
RH-102	-1.448E-02	2.648E-02	4.256E-02	0.000E+00	FAIL ABUN
RU-103	-1.716E-02	3.581E-02	5.750E-02	0.000E+00	FAIL ABUN
RH-106	-3.694E-02	2.864E-01	4.663E-01	0.000E+00	FAIL ABUN
RU-106	-3.694E-02	2.864E-01	4.663E-01	0.000E+00	FAIL ABUN
AG-108M	1.336E-03	2.861E-02	4.859E-02	0.000E+00	NOT IDENT.
AG-110M	1.165E-02	3.118E-02	5.559E-02	0.000E+00	NOT IDENT.
IN-111	2.146E-02	8.210E-01	1.272E+00	0.000E+00	NOT IDENT.
IN-113M	-3.301E-02	3.921E-02	6.270E-02	0.000E+00	NOT IDENT.
SN-113	-3.301E-02	3.921E-02	6.270E-02	0.000E+00	NOT IDENT.
IN-114M	-4.898E-02	1.857E-01	2.877E-01	0.000E+00	NOT IDENT.
CD-115	-8.077E-01	7.142E+00	1.180E+01	0.000E+00	NOT IDENT.
SN-117M	8.898E-03	5.139E-02	8.662E-02	0.000E+00	NOT IDENT.
SB-122	2.087E+00	1.543E+00	2.813E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.812E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.444E-02	2.720E-02	4.655E-02	0.000E+00	NOT IDENT.
I-124	-4.046E-02	5.832E-01	8.825E-01	0.000E+00	FAIL ABUN
SB-124	5.520E-02	6.166E-02	1.201E-01	0.000E+00	FAIL ABUN
SB-125	7.196E-03	8.370E-02	1.416E-01	0.000E+00	FAIL ABUN
TE-125M	6.588E+00	9.059E+00	1.430E+01	0.000E+00	NOT IDENT.
I-126	2.153E-02	1.550E-01	2.715E-01	0.000E+00	NOT IDENT.
SB-126	-1.092E-01	1.504E-01	2.065E-01	0.000E+00	FAIL ABUN
SB-127	5.919E-01	1.027E+00	1.854E+00	0.000E+00	NOT IDENT.
XE-127	-4.674E-02	4.082E-02	6.847E-02	0.000E+00	NOT IDENT.
I-131	-3.118E-03	1.010E-01	1.727E-01	0.000E+00	NOT IDENT.
TE-132	-2.820E-01	5.115E-01	8.751E-01	0.000E+00	NOT IDENT.
BA-133	-1.627E-02	4.512E-02	6.570E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.550E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.596E-02	5.461E-02	8.392E-02	0.000E+00	FAIL ABUN
CS-135	2.013E-01	1.668E-01	2.742E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.932E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.712E-03	9.454E-02	1.580E-01	0.000E+00	FAIL ABUN
BA-137M	-1.524E-02	3.275E-02	5.481E-02	0.000E+00	NOT IDENT.
CS-137	-1.611E-02	3.462E-02	5.794E-02	0.000E+00	NOT IDENT.
CE-139	-1.080E-02	2.870E-02	4.700E-02	0.000E+00	NOT IDENT.
BA-140	-6.347E-02	2.167E-01	3.502E-01	0.000E+00	NOT IDENT.
LA-140	-2.599E-02	6.919E-02	1.099E-01	0.000E+00	FAIL ABUN
CE-141	-3.283E-02	5.773E-02	9.440E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.519E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.967E-01	2.060E-01	3.241E-01	0.000E+00	NOT IDENT.

PM-144	-3.414E-02	3.354E-02	5.295E-02	0.000E+00	NOT IDENT.
PR-144	-2.312E+00	2.272E+00	3.586E+00	0.000E+00	NOT IDENT.
PM-146	-9.520E-04	4.286E-02	7.219E-02	0.000E+00	NOT IDENT.
ND-147	-1.878E-01	4.696E-01	7.545E-01	0.000E+00	FAIL ABUN
PM-149	2.042E+01	6.269E+01	1.107E+02	0.000E+00	NOT IDENT.
EU-152	-5.951E-02	9.563E-02	1.521E-01	0.000E+00	FAIL ABUN
GD-153	2.289E-02	7.616E-02	1.180E-01	0.000E+00	FAIL ABUN
EU-154	3.504E-02	1.034E-01	1.769E-01	0.000E+00	NOT IDENT.
TB-160	-5.756E-02	1.275E-01	2.070E-01	0.000E+00	FAIL ABUN
HO-166M	-6.982E-02	5.762E-02	8.921E-02	0.000E+00	FAIL ABUN
TM-171	-1.324E+01	2.447E+01	3.728E+01	0.000E+00	NOT IDENT.
LU-176	-6.959E-03	2.123E-02	3.601E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.608E+00	1.812E+00	0.000E+00	FAIL ABUN
LU-177M	2.075E-02	1.796E-01	2.700E-01	0.000E+00	FAIL ABUN
HF-181	2.504E-02	4.027E-02	7.056E-02	0.000E+00	NOT IDENT.
W-181	-2.937E-02	3.108E-01	4.841E-01	0.000E+00	NOT IDENT.
TA-182	4.524E-02	1.775E-01	3.004E-01	0.000E+00	FAIL ABUN
RE-183	-4.459E-02	1.088E-01	1.744E-01	0.000E+00	FAIL ABUN
RE-184	-1.912E-01	1.989E-01	3.291E-01	0.000E+00	NOT IDENT.
OS-185	-6.835E-03	3.514E-02	6.007E-02	0.000E+00	NOT IDENT.
RE-188	1.705E-01	1.637E-01	2.858E-01	0.000E+00	NOT IDENT.
W-188	-9.366E+00	7.589E+00	1.041E+01	0.000E+00	FAIL ABUN
IR-192	1.877E-02	3.055E-02	5.456E-02	0.000E+00	FAIL ABUN
AU-195	1.553E-01	2.064E-01	3.458E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.329E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.273E+00	5.475E+00	9.025E+00	0.000E+00	NOT IDENT.
TL-202	3.180E-02	6.104E-02	1.069E-01	0.000E+00	NOT IDENT.
HG-203	4.680E-04	3.950E-02	6.059E-02	0.000E+00	FAIL ABUN
BI-207	1.860E-02	5.054E-02	8.740E-02	0.000E+00	FAIL ABUN
TL-207	1.901E-01	7.030E-01	1.087E+00	0.000E+00	FAIL ABUN
PO-209	-3.637E+00	6.247E+00	9.925E+00	0.000E+00	NOT IDENT.
BI-210	1.797E+00	1.982E+00	3.584E+00	0.000E+00	NOT IDENT.
PB-210	1.797E+00	1.982E+00	3.584E+00	0.000E+00	NOT IDENT.
PO-210	1.797E+00	1.981E+00	3.584E+00	0.000E+00	NOT IDENT.
PB-211	-8.038E-01	1.178E+00	1.489E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.468E-01	6.833E-01	0.000E+00	FAIL ABUN
PO-215	1.901E-01	7.030E-01	1.087E+00	0.000E+00	FAIL ABUN
RN-219	1.049E-01	4.084E-01	7.052E-01	0.000E+00	FAIL ABUN
RN-220	-1.387E+01	2.312E+01	3.633E+01	0.000E+00	NOT IDENT.
RA-223	1.901E-01	7.030E-01	1.087E+00	0.000E+00	FAIL ABUN
AC-227	3.886E-01	3.328E-01	6.069E-01	0.000E+00	FAIL ABUN
TH-227	3.886E-01	3.348E-01	6.069E-01	0.000E+00	FAIL ABUN
TH-229	-2.784E-01	4.651E-01	8.058E-01	0.000E+00	FAIL ABUN
PA-231	-3.748E-01	1.361E+00	2.330E+00	0.000E+00	FAIL ABUN
TH-231	1.901E-01	7.030E-01	1.087E+00	0.000E+00	FAIL ABUN
U-231	-1.374E-02	8.799E-01	1.346E+00	0.000E+00	FAIL ABUN
PA-233	-3.051E-02	5.594E-02	9.343E-02	0.000E+00	FAIL ABUN
PA-234	-1.424E-01	2.342E-01	3.643E-01	0.000E+00	FAIL ABUN
PA-234M	3.218E+00	4.271E+00	7.651E+00	0.000E+00	NOT IDENT.
NP-236	-3.286E-03	7.819E-02	1.304E-01	0.000E+00	NOT IDENT.
NP-239	9.339E-02	1.705E-01	2.966E-01	0.000E+00	FAIL ABUN
AM-241	7.070E-02	1.169E-01	1.887E-01	0.000E+00	NOT IDENT.
CM-243	1.414E-01	1.119E-01	1.500E-01	0.000E+00	FAIL ABUN
AM-246	4.838E-02	1.269E-01	2.202E-01	0.000E+00	NOT IDENT.
CM-247	1.230E-02	3.665E-02	6.359E-02	0.000E+00	FAIL ABUN
CF-249	3.887E-02	3.437E-02	6.279E-02	0.000E+00	NOT IDENT.
CF-251	6.275E-03	1.195E-01	1.992E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012163.CNF;1
Sample date        : 5-JAN-2010 12:00:00. Acquisition date : 19-JAN-2010 17:39:23
Sample ID          : G1202012163          Sample quantity  : 1.25220E+02 GRAM
Detector name      : GAM20                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:33.32  0.5%
Energy tolerance   : 1.50000 keV          Analyst Initials  : MXR1
Abundance limit    : 75.00000             Sensitivity         : 5.00000
Batch ID           : 940270               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	943	10.67*	1.253E+00	2.114E+01	2.114E+01	11.03
CD-109	88.03	411	3.72*	6.940E+00	4.777E+00	4.880E+00	21.75
SN-126	64.28	119	9.60	4.636E+00	8.040E-01	8.040E-01	80.36
	86.94	411	8.90	6.940E+00	1.996E+00	1.996E+00	45.93
	87.57	411	37.00*	6.940E+00	4.802E-01	4.802E-01	21.75
EU-155	48.70	-----	4.60	2.210E+00	-----	Line Not Found	-----
	60.01	-----	1.11	4.133E+00	-----	Line Not Found	-----
	86.54	411	30.90	6.940E+00	5.750E-01	5.782E-01	21.79
	105.31	80	20.70*	7.414E+00	1.570E-01	1.579E-01	80.76
TL-208	277.35	54	6.80	4.722E+00	5.030E-01	5.030E-01	76.12
	510.84	207	21.60	2.993E+00	9.602E-01	9.602E-01	32.41
	583.14	465	84.20*	2.697E+00	6.144E-01	6.144E-01	17.18
	860.37	76	12.46	1.953E+00	9.333E-01	9.333E-01	44.41
BI-211	72.87	-----	1.27	5.845E+00	-----	Line Not Found	-----
	351.07	781	12.94*	3.971E+00	4.557E+00	4.557E+00	14.35
PB-212	74.81	487	10.70	6.051E+00	2.256E+00	2.256E+00	21.09
	77.11	909	18.00	6.260E+00	2.419E+00	2.419E+00	13.14
	87.30	411	8.00	6.940E+00	2.221E+00	2.221E+00	23.94
	238.63	1479	44.60*	5.250E+00	1.893E+00	1.893E+00	12.26
	300.09	89	3.41	4.462E+00	1.763E+00	1.763E+00	50.59
PO-212	74.81	487	10.70	6.051E+00	2.256E+00	2.256E+00	21.09
	77.11	909	18.00	6.260E+00	2.419E+00	2.419E+00	13.14
	87.30	411	8.00	6.940E+00	2.221E+00	2.221E+00	23.94
	115.19	-----	0.60	7.430E+00	-----	Line Not Found	-----
	238.63	1479	44.60*	5.250E+00	1.893E+00	1.893E+00	12.26
	300.09	89	3.41	4.462E+00	1.763E+00	1.763E+00	50.59
BI-214	609.31	551	46.30*	2.603E+00	1.370E+00	1.370E+00	15.44
	1120.29	88	15.10	1.557E+00	1.128E+00	1.128E+00	57.69
	1764.49	92	15.80	1.100E+00	1.586E+00	1.586E+00	28.04
PB-214	74.81	487	6.21	6.051E+00	3.887E+00	3.887E+00	20.31
	77.11	909	10.50	6.260E+00	4.147E+00	4.147E+00	15.19
	87.30	411	4.67	6.940E+00	3.805E+00	3.805E+00	23.08



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	320	7.49	5.205E+00	2.463E+00	2.463E+00	26.02
	295.21	468	19.20	4.515E+00	1.620E+00	1.620E+00	19.45
	351.92	781	37.20*	3.971E+00	1.585E+00	1.585E+00	15.27
	74.81	487	6.21	6.051E+00	3.887E+00	3.887E+00	20.31
	77.11	909	10.50	6.260E+00	4.147E+00	4.147E+00	15.19
	87.30	411	4.67	6.940E+00	3.805E+00	3.805E+00	23.08
PO-216	241.98	320	7.49	5.205E+00	2.463E+00	2.463E+00	26.02
	295.21	468	19.20	4.515E+00	1.620E+00	1.620E+00	19.45
	351.92	781	37.20*	3.971E+00	1.585E+00	1.585E+00	15.27
	74.81	487	10.70	6.051E+00	2.256E+00	2.256E+00	21.09
	77.11	909	18.00	6.260E+00	2.419E+00	2.419E+00	13.14
	87.30	411	8.00	6.940E+00	2.221E+00	2.221E+00	23.94
PO-218	238.63	1479	44.60*	5.250E+00	1.893E+00	1.893E+00	12.26
	300.09	89	3.41	4.462E+00	1.763E+00	1.763E+00	50.59
	74.81	487	6.21	6.051E+00	3.887E+00	3.887E+00	20.31
	77.11	909	10.50	6.260E+00	4.147E+00	4.147E+00	15.19
	87.30	411	4.67	6.940E+00	3.805E+00	3.805E+00	23.08
	241.98	320	7.49	5.205E+00	2.463E+00	2.463E+00	26.02
RA-224	295.21	468	19.20	4.515E+00	1.620E+00	1.620E+00	19.45
	351.92	781	37.20*	3.971E+00	1.585E+00	1.585E+00	15.27
	240.98	320	3.95*	5.205E+00	4.671E+00	4.671E+00	25.40
RA-226	609.31	551	46.30*	2.603E+00	1.370E+00	1.370E+00	15.44
	1120.29	88	15.10	1.557E+00	1.128E+00	1.128E+00	57.69
	1764.49	92	15.80	1.100E+00	1.586E+00	1.586E+00	28.04
AC-228	338.32	309	11.40	4.087E+00	1.986E+00	1.986E+00	45.62
	911.07	370	27.70*	1.861E+00	2.150E+00	2.150E+00	17.71
	969.11	177	16.60	1.764E+00	1.813E+00	1.813E+00	31.52
RA-228	338.32	309	11.40	4.087E+00	1.986E+00	1.986E+00	45.62
	911.07	370	27.70*	1.861E+00	2.150E+00	2.150E+00	17.71
	969.11	177	16.60	1.764E+00	1.813E+00	1.813E+00	31.52
TH-228	74.81	487	10.70	6.051E+00	2.256E+00	2.288E+00	18.94
	77.11	909	18.00	6.260E+00	2.419E+00	2.454E+00	13.14
	87.30	411	8.00	6.940E+00	2.221E+00	2.253E+00	21.75
	238.63	1479	44.60*	5.250E+00	1.893E+00	1.921E+00	12.26
TH-230	300.09	89	3.41	4.462E+00	1.763E+00	1.788E+00	77.23
	609.31	551	46.30*	2.603E+00	1.370E+00	1.370E+00	15.44
	1120.29	88	15.10	1.557E+00	1.128E+00	1.128E+00	57.69
	1764.49	92	15.80	1.100E+00	1.586E+00	1.586E+00	28.04
TH-232	338.32	309	11.40	4.087E+00	1.986E+00	1.986E+00	21.29
	911.07	370	27.70*	1.861E+00	2.150E+00	2.150E+00	17.71
	969.11	177	16.60	1.764E+00	1.813E+00	1.813E+00	31.52
TH-234	63.29	119	3.80*	4.636E+00	2.031E+00	2.031E+00	80.93
	92.38	257	5.41	7.171E+00	1.989E+00	1.989E+00	36.84
U-234	609.31	551	46.30*	2.603E+00	1.370E+00	1.370E+00	15.44
	1120.29	88	15.10	1.557E+00	1.128E+00	1.128E+00	57.69
	1764.49	92	15.80	1.100E+00	1.586E+00	1.586E+00	28.04
U-235	89.95	228	2.70	7.061E+00	3.587E+00	3.587E+00	43.51
	93.35	257	4.50	7.171E+00	2.391E+00	2.391E+00	42.61
	105.00	80	2.10	7.414E+00	1.547E+00	1.547E+00	85.65

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	143.76	-----	10.50*	7.037E+00	-----	Line Not Found	-----
	163.35	-----	4.70	6.638E+00	-----	Line Not Found	-----
	185.71	255	54.00	6.178E+00	2.288E-01	2.288E-01	39.66
	205.31	-----	4.70	5.804E+00	-----	Line Not Found	-----
NP-237	86.50	411	12.60*	6.940E+00	1.410E+00	1.410E+00	29.98
	95.87	-----	2.60	7.260E+00	-----	Line Not Found	-----
U-238	63.29	119	3.80*	4.636E+00	2.031E+00	2.031E+00	80.93
	92.38	257	5.41	7.171E+00	1.989E+00	1.989E+00	33.23
AM-243	74.67	487	66.00*	6.051E+00	3.658E-01	3.658E-01	18.91
	86.72	411	0.34	6.940E+00	5.288E+01	5.288E+01	21.75
	117.66	-----	0.55	7.416E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.067E+00	-----	Line Not Found	-----
ANH-511	511.00	207	100.00*	2.993E+00	2.074E-01	2.074E-01	31.32

Flag: "\*" = Keyline

Total number of lines in spectrum 43  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 40 93.02%

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	2.114E+01	2.114E+01	0.233E+01	11.03	
CD-109	464.00D	1.02	4.777E+00	4.880E+00	1.061E+00	21.75	
SN-126	1.00E+05Y	1.00	4.802E-01	4.802E-01	1.045E-01	21.75	
EU-155	4.96Y	1.01	1.570E-01	1.579E-01	1.275E-01	80.76	
TL-208	1.41E+10Y	1.00	6.144E-01	6.144E-01	1.056E-01	17.18	
BI-211	7.04E+08Y	1.00	4.557E+00	4.557E+00	0.654E+00	14.35	
PB-212	1.41E+10Y	1.00	1.893E+00	1.893E+00	0.232E+00	12.26	
PO-212	1.41E+10Y	1.00	1.893E+00	1.893E+00	0.232E+00	12.26	
BI-214	1600.00Y	1.00	1.370E+00	1.370E+00	0.211E+00	15.44	
PB-214	1600.00Y	1.00	1.585E+00	1.585E+00	0.242E+00	15.27	
PO-214	1600.00Y	1.00	1.585E+00	1.585E+00	0.242E+00	15.27	
PO-216	1.41E+10Y	1.00	1.893E+00	1.893E+00	0.232E+00	12.26	
PO-218	1600.00Y	1.00	1.585E+00	1.585E+00	0.242E+00	15.27	
RA-224	1.41E+10Y	1.00	4.671E+00	4.671E+00	1.187E+00	25.40	
RA-226	1600.00Y	1.00	1.370E+00	1.370E+00	0.211E+00	15.44	
AC-228	1.41E+10Y	1.00	2.150E+00	2.150E+00	0.381E+00	17.71	
RA-228	1.41E+10Y	1.00	2.150E+00	2.150E+00	0.381E+00	17.71	
TH-228	1.91Y	1.01	1.893E+00	1.921E+00	0.236E+00	12.26	
TH-230	4.47E+09Y	1.00	1.370E+00	1.370E+00	0.211E+00	15.44	
TH-232	1.41E+10Y	1.00	2.150E+00	2.150E+00	0.381E+00	17.71	
TH-234	4.47E+09Y	1.00	2.031E+00	2.031E+00	1.644E+00	80.93	
U-234	4.47E+09Y	1.00	1.370E+00	1.370E+00	0.211E+00	15.44	
U-235	7.04E+08Y	1.00	2.288E-01	2.288E-01	0.907E-01	39.66	K
NP-237	2.14E+06Y	1.00	1.410E+00	1.410E+00	0.423E+00	29.98	
U-238	4.47E+09Y	1.00	2.031E+00	2.031E+00	1.644E+00	80.93	
AM-243	7380.00Y	1.00	3.658E-01	3.658E-01	0.692E-01	18.91	
ANH-511	1.00E+09Y	1.00	2.074E-01	2.074E-01	0.650E-01	31.32	

Total Activity : 6.693E+01 6.706E+01

Grand Total Activity : 6.693E+01 6.706E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	84.10	122	326	1.39	168.11	165	27	1.70E-02	50.3	6.76E+00	T
0	128.96	106	370	0.91	257.71	255	9	1.47E-02	68.2	7.29E+00	T
0	209.78	162	328	1.54	419.13	414	12	2.25E-02	47.9	5.72E+00	T
0	270.27	133	260	1.89	539.96	534	14	1.84E-02	54.8	4.81E+00	T
0	328.27	145	167	1.31	655.82	650	12	2.01E-02	39.9	4.18E+00	T
0	409.60	42	71	0.74	818.32	815	7	5.83E-03	74.0	3.54E+00	T
0	462.99	125	107	1.38	925.01	918	13	1.73E-02	38.6	3.23E+00	T
0	727.43	154	68	1.84	1453.59	1446	18	2.13E-02	30.1	2.25E+00	T
0	768.32	55	72	1.14	1535.34	1529	11	7.57E-03	65.9	2.15E+00	T
0	795.26	35	51	1.12	1589.22	1584	9	4.84E-03	83.9	2.09E+00	T
0	934.62	16	44	0.94	1867.92	1865	9	2.25E-03	****	1.82E+00	T
2	964.68	49	59	2.02	1928.03	1919	23	6.78E-03	67.6	1.77E+00	T
0	1112.34	19	68	3.89	2223.44	2210	16	2.58E-03	****	1.57E+00	T
0	1237.77	83	54	1.53	2474.42	2466	17	1.15E-02	46.5	1.43E+00	T
0	1377.57	32	15	1.57	2754.25	2749	10	4.42E-03	57.7	1.31E+00	T
0	1408.07	47	7	2.93	2815.31	2808	15	6.55E-03	38.4	1.29E+00	T
0	1589.90	16	33	1.76	3179.37	3169	12	2.20E-03	****	1.18E+00	
0	1729.46	29	6	0.93	3458.88	3452	12	4.00E-03	50.6	1.11E+00	
0	1846.80	28	7	2.53	3693.96	3686	15	3.88E-03	56.9	1.07E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 19:40:34.79

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012163.CNF;1 *
* Acquisition date   : 19-JAN-2010 17:39:23  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 02:00:33.32             Half life ratio : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-JAN-2010 12:00:00.  Nuclide Library : SOLID          *
* Sample ID          : G1202012163           Analyst initials: MXR1          *
* Batch Number       : 940270                Sample Quantity : 1.25220E+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	2.114E+01	2.332E+00	4.038E-01	3.521E-02	52.352
CD-109	4.880E+00	1.061E+00	1.038E+00	9.816E-02	4.700
SN-126	4.802E-01	1.045E-01	1.025E-01	9.637E-03	4.687
EU-155	1.579E-01	1.275E-01	1.578E-01	1.372E-02	1.000
TL-208	6.144E-01	1.056E-01	5.874E-02	6.039E-03	10.459
BI-211	4.557E+00	6.537E-01	3.044E-01	2.916E-02	14.970
PB-212	1.893E+00	2.322E-01	8.256E-02	8.779E-03	22.936
PO-212	1.893E+00	2.322E-01	8.256E-02	8.779E-03	22.936
BI-214	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
PB-214	1.585E+00	2.420E-01	1.061E-01	1.156E-02	14.940
PO-214	1.585E+00	2.420E-01	1.061E-01	1.156E-02	14.940
PO-216	1.893E+00	2.322E-01	8.256E-02	8.779E-03	22.936
PO-218	1.585E+00	2.420E-01	1.061E-01	1.156E-02	14.940
RA-224	4.671E+00	1.187E+00	9.393E-01	9.079E-02	4.973
RA-226	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
AC-228	2.150E+00	3.808E-01	1.822E-01	2.232E-02	11.803
RA-228	2.150E+00	3.808E-01	1.822E-01	2.232E-02	11.803
TH-228	1.921E+00	2.355E-01	8.373E-02	8.905E-03	22.936

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
TH-232	2.150E+00	3.808E-01	1.822E-01	2.232E-02	11.803
TH-234	2.031E+00	1.644E+00	1.561E+00	2.712E-01	1.301
U-234	1.370E+00	2.115E-01	1.050E-01	1.169E-02	13.042
U-235	2.288E-01	9.074E-02	3.294E-01	5.741E-02	0.695
NP-237	1.410E+00	4.228E-01	3.030E-01	6.855E-02	4.654
U-238	2.031E+00	1.644E+00	1.561E+00	2.712E-01	1.301
AM-243	3.658E-01	6.915E-02	7.772E-02	6.256E-03	4.706
ANH-511	2.074E-01	6.495E-02	4.255E-02	3.965E-03	4.874

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.777E-01		2.957E-01	4.558E-01	4.430E-02	-0.390
NA-22	1.212E-02		3.768E-02	6.309E-02	5.226E-03	0.192
NA-24	-1.080E-01		1.193E-01	Half-Life too short		
AL-26	8.413E-03		2.773E-02	4.827E-02	3.921E-03	0.174
TI-44	4.464E-01	+	5.864E-02	7.618E-02	6.394E-03	5.859
SC-46	-5.328E-03		3.445E-02	5.601E-02	5.584E-03	-0.095
V-48	2.503E-02		5.525E-02	9.527E-02	9.106E-03	0.263
CR-51	-2.995E-01		3.448E-01	5.399E-01	5.413E-02	-0.555
MN-52	7.607E-02		1.491E-01	2.702E-01	2.287E-02	0.281
MN-54	6.699E-03		3.353E-02	5.660E-02	5.717E-03	0.118
CO-56	2.126E-02		3.439E-02	6.021E-02	6.068E-03	0.353
CO-57	1.887E-02		2.237E-02	3.729E-02	3.112E-03	0.506
CO-58	-1.807E-02		3.043E-02	4.719E-02	4.792E-03	-0.383
FE-59	8.681E-03		8.515E-02	1.401E-01	1.322E-02	0.062
CO-60	-1.012E-02		3.954E-02	6.145E-02	5.147E-03	-0.165
ZN-65	-1.026E-02		1.337E-01	1.218E-01	1.048E-02	-0.084
GE-68	3.790E-01		1.087E+00	1.840E+00	1.642E-01	0.206
AS-73	-5.151E-01		5.174E-01	8.151E-01	6.051E-02	-0.632
AS-74	2.075E-02		9.220E-02	1.502E-01	1.470E-02	0.138
SE-75	4.504E-03		4.515E-02	6.697E-02	6.630E-03	0.067
BR-77	-4.173E+00		7.014E+00	1.069E+01	1.002E+00	-0.391
SR-82	-5.119E-01		3.578E-01	5.146E-01	5.228E-02	-0.995
RB-83	-5.461E-02		6.469E-02	9.209E-02	8.637E-03	-0.593
RB-84	6.756E-02		6.255E-02	1.133E-01	1.132E-02	0.597
KR-85	3.775E+00		6.406E+00	1.080E+01	1.008E+00	0.350
SR-85	1.918E-02		3.254E-02	5.485E-02	5.122E-03	0.350
RB-86	-4.820E-01		6.820E-01	1.021E+00	9.114E-02	-0.472
Y-88	5.657E-04		2.774E-02	4.577E-02	3.693E-03	0.012
ZR-88	-8.914E-03		2.801E-02	4.491E-02	3.756E-03	-0.198
Y-91	-1.158E+01		1.512E+01	2.258E+01	1.834E+00	-0.513
NB-94	6.473E-03		3.249E-02	5.525E-02	5.590E-03	0.117
NB-95	3.599E-02		4.518E-02	7.096E-02	7.211E-03	0.507
NB-95M	1.147E-01		1.255E-01	1.953E-01	2.098E-02	0.587
ZR-95	-2.629E-02		6.424E-02	1.033E-01	1.128E-02	-0.254

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	1.701E-02		1.882E-02	Half-Life too short		
ZR-97	9.470E-01		3.921E-01	Half-Life too short		
MO-99	-3.569E+00		9.098E+00	1.470E+01	2.367E+00	-0.243
TC-99M	-1.486E+09		1.656E+09	Half-Life too short		
RH-101	6.824E-03		3.100E-02	5.235E-02	4.798E-03	0.130
RH-102	-1.448E-02		2.702E-02	4.192E-02	3.801E-03	-0.346
RU-103	-1.716E-02		3.654E-02	5.667E-02	8.238E-03	-0.303
RH-106	-3.694E-02		2.922E-01	4.610E-01	6.554E-02	-0.080
RU-106	-3.694E-02		2.922E-01	4.610E-01	4.563E-02	-0.080
AG-108M	1.336E-03		2.919E-02	4.779E-02	4.337E-03	0.028
AG-110M	1.165E-02		3.181E-02	5.500E-02	5.635E-03	0.212
IN-111	2.146E-02		8.378E-01	1.241E+00	1.205E-01	0.017
IN-113M	-3.301E-02		4.001E-02	6.159E-02	5.313E-03	-0.536
SN-113	-3.301E-02		4.001E-02	6.159E-02	5.313E-03	-0.536
IN-114M	-4.898E-02		1.895E-01	2.797E-01	2.535E-02	-0.175
CD-115	-8.077E-01		7.287E+00	1.164E+01	1.097E+00	-0.069
SN-117M	8.898E-03		5.244E-02	8.402E-02	7.251E-03	0.106
SB-122	2.087E+00		1.575E+00	2.777E+00	2.674E-01	0.751
I-123	9.618E-01		9.247E-01	Half-Life too short		
TE-123M	1.444E-02		2.776E-02	4.515E-02	3.923E-03	0.320
I-124	-4.046E-02		5.951E-01	8.720E-01	8.562E-02	-0.046
SB-124	5.520E-02		6.292E-02	1.205E-01	1.047E-02	0.458
SB-125	7.196E-03		8.541E-02	1.392E-01	1.232E-02	0.052
TE-125M	6.588E+00		9.243E+00	1.380E+01	1.411E+00	0.477
I-126	2.153E-02		1.581E-01	2.687E-01	2.699E-02	0.080
SB-126	-1.092E-01		1.534E-01	2.046E-01	2.074E-02	-0.534
SB-127	5.919E-01		1.048E+00	1.835E+00	2.258E-01	0.323
XE-127	-4.674E-02		4.165E-02	6.664E-02	6.151E-03	-0.701
I-131	-3.118E-03		1.031E-01	1.694E-01	1.588E-02	-0.018
TE-132	-2.820E-01		5.219E-01	8.531E-01	1.372E-01	-0.331
BA-133	-1.627E-02		4.604E-02	6.444E-02	8.706E-03	-0.252
I-133	4.630E-04		1.301E-03	Half-Life too short		
CS-134	6.596E-02	+	5.573E-02	8.326E-02	8.496E-03	0.792
CS-135	2.013E-01		1.702E-01	2.679E-01	2.969E-02	0.751
I-135	-2.283E+08		3.026E+08	Half-Life too short		
CS-136	-1.712E-03		9.647E-02	1.574E-01	1.493E-02	-0.011
BA-137M	-1.524E-02		3.342E-02	5.423E-02	5.443E-03	-0.281
CS-137	-1.611E-02		3.533E-02	5.733E-02	5.761E-03	-0.281
CE-139	-1.080E-02		2.928E-02	4.562E-02	3.983E-03	-0.237
BA-140	-6.347E-02		2.212E-01	3.455E-01	1.153E-01	-0.184
LA-140	-2.599E-02		7.060E-02	1.101E-01	9.294E-03	-0.236
CE-141	-3.283E-02		5.891E-02	9.146E-02	7.897E-03	-0.359
CE-143	5.113E-04		7.749E-05	Half-Life too short		
CE-144	1.967E-01		2.102E-01	3.136E-01	4.840E-02	0.627
PM-144	-3.414E-02		3.423E-02	5.243E-02	5.301E-03	-0.651
PR-144	-2.312E+00		2.318E+00	3.551E+00	3.589E-01	-0.651
PM-146	-9.520E-04		4.373E-02	7.105E-02	7.782E-03	-0.013
ND-147	-1.878E-01		4.792E-01	7.443E-01	1.149E-01	-0.252

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149	2.042E+01		6.397E+01	1.083E+02	1.765E+01	0.189
EU-152	-5.951E-02		9.758E-02	1.492E-01	1.455E-02	-0.399
GD-153	2.289E-02		7.771E-02	1.137E-01	1.008E-02	0.201
EU-154	3.504E-02		1.055E-01	1.767E-01	1.953E-02	0.198
TB-160	-5.756E-02		1.301E-01	2.057E-01	2.057E-02	-0.280
HO-166M	-6.982E-02		5.879E-02	8.836E-02	8.951E-03	-0.790
TM-171	-1.324E+01		2.497E+01	3.574E+01	2.663E+00	-0.370
LU-176	-6.959E-03		2.166E-02	3.525E-02	3.439E-03	-0.197
LU-177	3.365E+00	+	1.641E+00	1.764E+00	1.641E-01	1.907
LU-177M	2.075E-02		1.832E-01	2.654E-01	2.272E-02	0.078
HF-181	2.504E-02		4.109E-02	6.951E-02	6.338E-03	0.360
W-181	-2.937E-02		3.171E-01	4.640E-01	3.414E-02	-0.063
TA-182	4.524E-02		1.811E-01	2.999E-01	2.447E-02	0.151
RE-183	-4.459E-02		1.111E-01	1.692E-01	1.469E-02	-0.263
RE-184	-1.912E-01		2.030E-01	3.213E-01	3.140E-02	-0.595
OS-185	-6.835E-03		3.585E-02	5.942E-02	5.934E-03	-0.115
RE-188	1.705E-01		1.671E-01	2.771E-01	2.379E-02	0.615
W-188	-9.366E+00		7.744E+00	1.018E+01	1.007E+00	-0.920
IR-192	1.877E-02		3.117E-02	5.343E-02	5.167E-03	0.351
AU-195	1.553E-01		2.106E-01	3.333E-01	2.935E-02	0.466
TL-200	1.232E-05		1.188E-04	Half-Life too short		
TL-201	-1.273E+00		5.586E+00	8.761E+00	7.665E-01	-0.145
TL-202	3.180E-02		6.229E-02	1.051E-01	9.237E-03	0.302
HG-203	4.680E-04		4.031E-02	5.923E-02	6.024E-03	0.008
BI-207	1.860E-02		5.157E-02	8.707E-02	7.862E-03	0.214
TL-207	1.901E-01		7.173E-01	1.064E+00	1.936E-01	0.179
PO-209	-3.637E+00		6.375E+00	9.864E+00	9.810E-01	-0.369
BI-210	1.797E+00		2.022E+00	3.420E+00	3.172E-01	0.525
PB-210	1.797E+00		2.022E+00	3.420E+00	3.172E-01	0.525
PO-210	1.797E+00		2.021E+00	3.420E+00	2.869E-01	0.525
PB-211	-8.038E-01		1.202E+00	1.463E+00	9.168E-01	-0.549
BI-212	1.732E+00	+	5.580E-01	6.770E-01	7.684E-02	2.559
PO-215	1.901E-01		7.173E-01	1.064E+00	1.936E-01	0.179
RN-219	1.049E-01		4.168E-01	6.929E-01	1.034E-01	0.151
RN-220	-1.387E+01		2.359E+01	3.586E+01	3.426E+00	-0.387
RA-223	1.901E-01		7.173E-01	1.064E+00	1.936E-01	0.179
AC-227	3.886E-01		3.396E-01	5.926E-01	9.505E-02	0.656
TH-227	3.886E-01		3.416E-01	5.926E-01	1.105E-01	0.656
TH-229	-2.784E-01		4.746E-01	7.838E-01	7.138E-02	-0.355
PA-231	-3.748E-01		1.389E+00	2.279E+00	3.638E-01	-0.164
TH-231	1.901E-01		7.173E-01	1.064E+00	1.936E-01	0.179
U-231	-1.374E-02		8.979E-01	1.297E+00	1.160E-01	-0.011
PA-233	-3.051E-02		5.709E-02	9.148E-02	9.076E-03	-0.334
PA-234	-1.424E-01		2.390E-01	3.623E-01	6.996E-02	-0.393
PA-234M	3.218E+00		4.358E+00	7.616E+00	8.146E-01	0.422
NP-236	-3.286E-03		7.978E-02	1.266E-01	1.095E-02	-0.026
NP-239	9.339E-02		1.740E-01	2.865E-01	2.400E-02	0.326
AM-241	7.070E-02		1.193E-01	1.806E-01	1.413E-02	0.391



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.414E-01	+	1.142E-01	1.446E-01	1.249E-02	0.978
AM-246	4.838E-02		1.295E-01	2.194E-01	1.955E-02	0.220
CM-247	1.230E-02		3.740E-02	6.249E-02	5.284E-03	0.197
CF-249	3.887E-02		3.507E-02	6.167E-02	5.204E-03	0.630
CF-251	6.275E-03		1.220E-01	1.935E-01	1.717E-02	0.032

## 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]G1202012163
* Acquisition date   : 19-JAN-2010 17:39:23 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 02:00:33.32                      Half life ratio  : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 5-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202012163          Analyst initials: MXR1
* Batch Number       : 940270              Sample Quantity : 1.2522E+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	2.114E+01	2.285E+00	2.018E-01	1.166E+00
CD-109	4.880E+00	1.040E+00	5.397E-01	5.307E-01
SN-126	4.802E-01	1.024E-01	5.327E-02	5.223E-02
EU-155	1.579E-01	1.249E-01	8.186E-02	6.374E-02
TL-208	6.144E-01	1.035E-01	2.975E-02	5.279E-02
BI-211	4.557E+00	6.406E-01	1.553E-01	3.269E-01
PB-212	1.893E+00	2.276E-01	4.234E-02	1.161E-01
PO-212	1.893E+00	2.276E-01	4.234E-02	1.161E-01
BI-214	1.370E+00	2.072E-01	5.316E-02	1.057E-01
PB-214	1.585E+00	2.371E-01	5.412E-02	1.210E-01
PO-214	1.585E+00	2.371E-01	5.412E-02	1.210E-01
PO-216	1.893E+00	2.276E-01	4.234E-02	1.161E-01
PO-218	1.585E+00	2.371E-01	5.412E-02	1.210E-01
RA-224	4.671E+00	1.163E+00	4.817E-01	5.933E-01
RA-226	1.370E+00	2.072E-01	5.316E-02	1.057E-01
AC-228	2.150E+00	3.732E-01	9.169E-02	1.904E-01
RA-228	2.150E+00	3.732E-01	9.169E-02	1.904E-01
TH-228	1.921E+00	2.308E-01	4.294E-02	1.178E-01
TH-230	1.370E+00	2.072E-01	5.316E-02	1.057E-01
TH-232	2.150E+00	3.732E-01	9.169E-02	1.904E-01
TH-234	2.031E+00	1.611E+00	8.150E-01	8.219E-01
U-234	1.370E+00	2.072E-01	5.316E-02	1.057E-01
U-235	2.019E-01	1.987E-01	1.701E-01	1.014E-01
NP-237	1.410E+00	4.144E-01	1.576E-01	2.114E-01
U-238	2.031E+00	1.611E+00	8.150E-01	8.219E-01
AM-243	3.658E-01	6.777E-02	4.050E-02	3.458E-02
ANH-511	2.074E-01	6.365E-02	2.159E-02	3.248E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-1.777E-01	2.898E-01	2.315E-01	1.478E-01	NOT IDENT.
NA-22	1.212E-02	3.693E-02	3.160E-02	1.884E-02	NOT IDENT.
NA-24	-1.080E+05	2.337E+05	0.000E+00	1.193E+05	SHORT HLIF
AL-26	8.413E-03	2.717E-02	2.405E-02	1.386E-02	NOT IDENT.
TI-44	4.464E-01	5.747E-02	3.967E-02	2.932E-02	FAIL ABUN
SC-46	-5.328E-03	3.376E-02	2.820E-02	1.722E-02	FAIL ABUN
V-48	2.503E-02	5.415E-02	4.790E-02	2.763E-02	NOT IDENT.
CR-51	-2.995E-01	3.379E-01	2.758E-01	1.724E-01	NOT IDENT.
MN-52	7.607E-02	1.461E-01	1.351E-01	7.453E-02	FAIL ABUN
MN-54	6.699E-03	3.286E-02	2.852E-02	1.677E-02	NOT IDENT.
CO-56	2.126E-02	3.370E-02	3.033E-02	1.720E-02	FAIL ABUN
CO-57	1.887E-02	2.192E-02	1.930E-02	1.118E-02	NOT IDENT.
CO-58	-1.807E-02	2.982E-02	2.379E-02	1.522E-02	NOT IDENT.
FE-59	8.681E-03	8.345E-02	7.034E-02	4.258E-02	NOT IDENT.
CO-60	-1.012E-02	3.875E-02	3.076E-02	1.977E-02	NOT IDENT.
ZN-65	-1.026E-02	1.310E-01	6.110E-02	6.684E-02	NOT IDENT.
GE-68	3.790E-01	1.066E+00	9.240E-01	5.437E-01	NOT IDENT.
AS-73	-5.151E-01	5.071E-01	4.266E-01	2.587E-01	NOT IDENT.
AS-74	2.075E-02	9.036E-02	7.606E-02	4.610E-02	NOT IDENT.
SE-75	4.504E-03	4.424E-02	3.430E-02	2.257E-02	NOT IDENT.
BR-77	-4.173E+00	6.874E+00	5.421E+00	3.507E+00	FAIL ABUN
SR-82	-5.119E-01	3.506E-01	2.596E-01	1.789E-01	NOT IDENT.
RB-83	-5.461E-02	6.340E-02	4.672E-02	3.235E-02	NOT IDENT.
RB-84	6.756E-02	6.130E-02	5.703E-02	3.127E-02	NOT IDENT.
KR-85	3.775E+00	6.278E+00	5.479E+00	3.203E+00	NOT IDENT.
SR-85	1.918E-02	3.189E-02	2.783E-02	1.627E-02	NOT IDENT.
RB-86	-4.820E-01	6.684E-01	5.126E-01	3.410E-01	NOT IDENT.
Y-88	5.657E-04	2.719E-02	2.280E-02	1.387E-02	NOT IDENT.
ZR-88	-8.914E-03	2.745E-02	2.287E-02	1.400E-02	NOT IDENT.
Y-91	-1.158E+01	1.482E+01	1.132E+01	7.562E+00	NOT IDENT.
NB-94	6.473E-03	3.184E-02	2.791E-02	1.624E-02	NOT IDENT.
NB-95	3.599E-02	4.427E-02	3.580E-02	2.259E-02	NOT IDENT.
NB-95M	1.147E-01	1.230E-01	1.002E-01	6.274E-02	NOT IDENT.
ZR-95	-2.629E-02	6.295E-02	5.214E-02	3.212E-02	NOT IDENT.
NB-97	1.701E+04	3.690E+04	0.000E+00	1.882E+04	SHORT HLIF
ZR-97	9.470E+05	7.685E+05	0.000E+00	3.921E+05	SHORT HLIF
MO-99	-3.569E+00	8.916E+00	7.418E+00	4.549E+00	NOT IDENT.
TC-99M	-1.486E+15	3.246E+15	0.000E+00	1.656E+15	SHORT HLIF
RH-101	6.824E-03	3.038E-02	2.692E-02	1.550E-02	NOT IDENT.
RH-102	-1.448E-02	2.648E-02	2.129E-02	1.351E-02	FAIL ABUN
RU-103	-1.716E-02	3.581E-02	2.877E-02	1.827E-02	FAIL ABUN
RH-106	-3.694E-02	2.864E-01	2.333E-01	1.461E-01	FAIL ABUN
RU-106	-3.694E-02	2.864E-01	2.333E-01	1.461E-01	FAIL ABUN
AG-108M	1.336E-03	2.861E-02	2.431E-02	1.460E-02	NOT IDENT.
AG-110M	1.165E-02	3.118E-02	2.781E-02	1.591E-02	NOT IDENT.
IN-111	2.146E-02	8.210E-01	6.363E-01	4.189E-01	NOT IDENT.
IN-113M	-3.301E-02	3.921E-02	3.137E-02	2.000E-02	NOT IDENT.
SN-113	-3.301E-02	3.921E-02	3.137E-02	2.000E-02	NOT IDENT.
IN-114M	-4.898E-02	1.857E-01	1.439E-01	9.476E-02	NOT IDENT.
CD-115	-8.077E-01	7.142E+00	5.903E+00	3.644E+00	NOT IDENT.
SN-117M	8.898E-03	5.139E-02	4.333E-02	2.622E-02	NOT IDENT.
SB-122	2.087E+00	1.543E+00	1.407E+00	7.875E-01	NOT IDENT.
I-123	9.618E+05	1.812E+06	0.000E+00	9.247E+05	SHORT HLIF
TE-123M	1.444E-02	2.720E-02	2.329E-02	1.388E-02	NOT IDENT.
I-124	-4.046E-02	5.832E-01	4.415E-01	2.975E-01	FAIL ABUN
SB-124	5.520E-02	6.166E-02	6.011E-02	3.146E-02	FAIL ABUN
SB-125	7.196E-03	8.370E-02	7.083E-02	4.270E-02	FAIL ABUN
TE-125M	6.588E+00	9.059E+00	7.155E+00	4.622E+00	NOT IDENT.
I-126	2.153E-02	1.550E-01	1.358E-01	7.906E-02	NOT IDENT.
SB-126	-1.092E-01	1.504E-01	1.033E-01	7.671E-02	FAIL ABUN
SB-127	5.919E-01	1.027E+00	9.274E-01	5.242E-01	NOT IDENT.
XE-127	-4.674E-02	4.082E-02	3.425E-02	2.083E-02	NOT IDENT.
I-131	-3.118E-03	1.010E-01	8.639E-02	5.155E-02	NOT IDENT.
TE-132	-2.820E-01	5.115E-01	4.378E-01	2.610E-01	NOT IDENT.
BA-133	-1.627E-02	4.512E-02	3.287E-02	2.302E-02	FAIL ABUN
I-133	4.630E+02	2.550E+03	0.000E+00	1.301E+03	SHORT HLIF
CS-134	6.596E-02	5.461E-02	4.199E-02	2.786E-02	FAIL ABUN
CS-135	2.013E-01	1.668E-01	1.372E-01	8.510E-02	NOT IDENT.
I-135	-2.283E+14	5.932E+14	0.000E+00	3.026E+14	SHORT HLIF
CS-136	-1.712E-03	9.454E-02	7.904E-02	4.824E-02	FAIL ABUN
BA-137M	-1.524E-02	3.275E-02	2.742E-02	1.671E-02	NOT IDENT.
CS-137	-1.611E-02	3.462E-02	2.899E-02	1.767E-02	NOT IDENT.
CE-139	-1.080E-02	2.870E-02	2.352E-02	1.464E-02	NOT IDENT.
BA-140	-6.347E-02	2.167E-01	1.752E-01	1.106E-01	NOT IDENT.
LA-140	-2.599E-02	6.919E-02	5.496E-02	3.530E-02	FAIL ABUN
CE-141	-3.283E-02	5.773E-02	4.723E-02	2.946E-02	NOT IDENT.
CE-143	5.113E+02	1.519E+02	0.000E+00	7.749E+01	SHORT HLIF
CE-144	1.967E-01	2.060E-01	1.621E-01	1.051E-01	NOT IDENT.

PM-144	-3.414E-02	3.354E-02	2.649E-02	1.711E-02	NOT IDENT.
PR-144	-2.312E+00	2.272E+00	1.794E+00	1.159E+00	NOT IDENT.
PM-146	-9.520E-04	4.286E-02	3.611E-02	2.187E-02	NOT IDENT.
ND-147	-1.878E-01	4.696E-01	3.775E-01	2.396E-01	FAIL ABUN
PM-149	2.042E+01	6.269E+01	5.540E+01	3.199E+01	NOT IDENT.
EU-152	-5.951E-02	9.563E-02	7.612E-02	4.879E-02	FAIL ABUN
GD-153	2.289E-02	7.616E-02	5.901E-02	3.886E-02	FAIL ABUN
EU-154	3.504E-02	1.034E-01	8.853E-02	5.273E-02	NOT IDENT.
TB-160	-5.756E-02	1.275E-01	1.036E-01	6.504E-02	FAIL ABUN
HO-166M	-6.982E-02	5.762E-02	4.463E-02	2.940E-02	FAIL ABUN
TM-171	-1.324E+01	2.447E+01	1.865E+01	1.249E+01	NOT IDENT.
LU-176	-6.959E-03	2.123E-02	1.802E-02	1.083E-02	FAIL ABUN
LU-177	3.365E+00	1.608E+00	9.066E-01	8.205E-01	FAIL ABUN
LU-177M	2.075E-02	1.796E-01	1.351E-01	9.161E-02	FAIL ABUN
HF-181	2.504E-02	4.027E-02	3.530E-02	2.054E-02	NOT IDENT.
W-181	-2.937E-02	3.108E-01	2.422E-01	1.586E-01	NOT IDENT.
TA-182	4.524E-02	1.775E-01	1.503E-01	9.057E-02	FAIL ABUN
RE-183	-4.459E-02	1.088E-01	8.726E-02	5.553E-02	FAIL ABUN
RE-184	-1.912E-01	1.989E-01	1.646E-01	1.015E-01	NOT IDENT.
OS-185	-6.835E-03	3.514E-02	3.005E-02	1.793E-02	NOT IDENT.
RE-188	1.705E-01	1.637E-01	1.430E-01	8.355E-02	NOT IDENT.
W-188	-9.366E+00	7.589E+00	5.206E+00	3.872E+00	FAIL ABUN
IR-192	1.877E-02	3.055E-02	2.730E-02	1.559E-02	FAIL ABUN
AU-195	1.553E-01	2.064E-01	1.730E-01	1.053E-01	FAIL ABUN
TL-200	1.232E+01	2.329E+02	0.000E+00	1.188E+02	SHORT HLIF
TL-201	-1.273E+00	5.475E+00	4.515E+00	2.793E+00	NOT IDENT.
TL-202	3.180E-02	6.104E-02	5.347E-02	3.114E-02	NOT IDENT.
HG-203	4.680E-04	3.950E-02	3.031E-02	2.015E-02	FAIL ABUN
BI-207	1.860E-02	5.054E-02	4.373E-02	2.578E-02	FAIL ABUN
TL-207	1.901E-01	7.030E-01	5.436E-01	3.587E-01	FAIL ABUN
PO-209	-3.637E+00	6.247E+00	4.966E+00	3.187E+00	NOT IDENT.
BI-210	1.797E+00	1.982E+00	1.793E+00	1.011E+00	NOT IDENT.
PB-210	1.797E+00	1.982E+00	1.793E+00	1.011E+00	NOT IDENT.
PO-210	1.797E+00	1.981E+00	1.793E+00	1.010E+00	NOT IDENT.
PB-211	-8.038E-01	1.178E+00	7.451E-01	6.010E-01	NOT IDENT.
BI-212	1.732E+00	5.468E-01	3.419E-01	2.790E-01	FAIL ABUN
PO-215	1.901E-01	7.030E-01	5.436E-01	3.587E-01	FAIL ABUN
RN-219	1.049E-01	4.084E-01	3.528E-01	2.084E-01	FAIL ABUN
RN-220	-1.387E+01	2.312E+01	1.818E+01	1.180E+01	NOT IDENT.
RA-223	1.901E-01	7.030E-01	5.436E-01	3.587E-01	FAIL ABUN
AC-227	3.886E-01	3.328E-01	3.036E-01	1.698E-01	FAIL ABUN
TH-227	3.886E-01	3.348E-01	3.036E-01	1.708E-01	FAIL ABUN
TH-229	-2.784E-01	4.651E-01	4.031E-01	2.373E-01	FAIL ABUN
PA-231	-3.748E-01	1.361E+00	1.166E+00	6.945E-01	FAIL ABUN
TH-231	1.901E-01	7.030E-01	5.436E-01	3.587E-01	FAIL ABUN
U-231	-1.374E-02	8.799E-01	6.734E-01	4.489E-01	FAIL ABUN
PA-233	-3.051E-02	5.594E-02	4.674E-02	2.854E-02	FAIL ABUN
PA-234	-1.424E-01	2.342E-01	1.823E-01	1.195E-01	FAIL ABUN
PA-234M	3.218E+00	4.271E+00	3.828E+00	2.179E+00	NOT IDENT.
NP-236	-3.286E-03	7.819E-02	6.526E-02	3.989E-02	NOT IDENT.
NP-239	9.339E-02	1.705E-01	1.484E-01	8.701E-02	FAIL ABUN
AM-241	7.070E-02	1.169E-01	9.440E-02	5.965E-02	NOT IDENT.
CM-243	1.414E-01	1.119E-01	7.503E-02	5.710E-02	FAIL ABUN
AM-246	4.838E-02	1.269E-01	1.102E-01	6.476E-02	NOT IDENT.
CM-247	1.230E-02	3.665E-02	3.181E-02	1.870E-02	FAIL ABUN
CF-249	3.887E-02	3.437E-02	3.141E-02	1.754E-02	NOT IDENT.
CF-251	6.275E-03	1.195E-01	9.967E-02	6.099E-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	255.7731
46.50	255.7731
46.50	255.7731
48.70	326.3520
49.72	311.3823
51.35	243.6564
52.39	284.5373
52.97	312.4693
53.15	312.5814
53.44	307.8296
54.07	301.2993
56.28	296.6488
56.28	296.6504
57.37	0.0000
57.53	318.2471
57.53	318.2479
57.60	318.2894
57.98	327.2781
57.98	327.2781
59.32	321.8185
59.32	321.8185
59.40	321.8660
59.54	321.9505
59.72	322.0587
60.01	328.2268
61.10	333.3938
61.14	333.4175
61.30	348.5390
63.00	388.7986
63.29	389.0009
63.29	389.0009
63.58	389.2031
64.28	433.4932
65.12	419.0118
65.20	419.0710
65.20	419.0710
66.05	428.7880
66.72	433.8397
66.83	406.6128
66.91	406.6700
67.20	406.8745
67.20	406.8745
67.75	384.4665
67.85	390.6117
68.90	455.7736
68.90	455.7736
69.30	502.8099
69.67	503.1271
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70.83	476.6122
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74.81	492.0508
74.81	492.0508
74.81	492.0508
74.81	492.0508
74.97	492.1777
75.28	492.4243
75.70	492.7563
77.11	493.8696
77.11	493.8696

77.11	493.8696
77.11	493.8696
77.11	493.8696
77.11	493.8696
77.11	493.8696
78.38	494.8633
79.62	398.7261
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81.07	350.9645
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83.78	410.1148
83.78	410.1148
84.21	355.7664
84.90	356.1352
85.43	356.4187
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86.50	356.9858
86.54	357.0067
86.59	357.0328
86.72	357.1006
86.79	357.1371
86.94	357.2172
87.30	357.4068
87.30	357.4068
87.30	357.4068
87.30	357.4068
87.30	357.4068
87.30	357.4068
87.30	357.4068
87.57	357.5477
87.88	357.7112
88.03	357.7895
88.36	357.9617
88.47	358.0191
89.95	358.7897
91.11	359.3881
92.29	359.9934
92.38	360.0404
92.38	360.0404
93.35	360.5344
94.00	360.8649
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94.67	299.4192
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94.90	307.4380
94.90	307.4380
94.90	307.4380
95.87	322.1358
95.87	322.1358
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98.44	266.2645
98.88	277.8968
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99.55	304.0932
99.86	297.8390
100.00	303.2155
100.10	303.2575
103.18	251.6190
103.76	255.0196
105.00	298.8116
105.31	298.9322
108.00	293.5255
109.28	269.7760

111.00	316.2356
111.00	316.2356
111.76	314.3782
112.95	306.1918
115.19	274.4951
116.30	286.8218
117.00	260.9705
117.00	260.9705
117.66	277.5042
121.11	253.5270
121.62	247.1197
121.78	250.4478
122.06	226.4631
122.32	237.4762
122.32	237.4762
122.32	237.4762
122.32	237.4762
123.07	274.9296
127.23	222.8872
129.76	279.2821
131.20	286.9272
133.02	250.9555
133.54	237.7973
135.34	279.9342
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136.25	298.0077
136.48	298.0840
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140.51	0.0000
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142.65	291.1353
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144.24	259.1042
144.24	259.1042
144.24	259.1042
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145.44	296.4978
147.16	276.7850
152.43	274.9125
152.70	271.5930
153.22	277.3995
154.21	257.2801
154.21	257.2801
154.21	257.2801
154.21	257.2801
155.03	259.7635
156.02	304.3080
158.56	278.9048
159.00	0.0000
159.00	259.6659
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161.27	296.7820
162.32	284.5197
162.64	280.0388
163.35	266.5075
163.89	262.0721
165.85	277.4788
167.43	265.2726
171.28	250.1182
171.86	261.7875
172.10	261.8476
176.55	242.0963
176.60	242.1091
181.06	251.2529
184.41	253.7721
185.71	254.0708
186.00	254.1372
190.27	266.0166
192.34	242.0642
193.63	267.3373
197.04	248.6642
198.01	232.0465
198.60	212.6678
200.40	241.3992
201.83	258.5769
202.84	257.9118
205.31	225.2985

208.36	260.1854
208.81	238.6524
209.75	238.8398
209.75	238.8398
210.97	239.0823
215.65	220.0477
216.55	222.0607
218.09	238.6783
222.10	240.3542
223.80	203.5835
226.40	220.3244
227.00	202.2860
227.08	202.2979
227.20	204.1328
228.16	216.9967
228.18	215.1845
228.18	215.1845
231.56	0.0000
235.69	208.9560
236.00	216.3127
236.00	216.3127
238.63	192.2175
238.63	192.2175
238.63	192.2175
238.63	192.2175
239.00	192.2720
240.98	192.5620
241.98	192.7061
241.98	192.7061
241.98	192.7061
244.69	192.7325
245.39	169.2811
247.94	161.3068
248.90	147.5854
249.79	157.8363
252.40	178.4844
252.85	175.7680
252.85	175.7680
254.15	0.0000
256.20	138.1761
256.20	138.1761
260.50	175.8148
260.90	171.2141
262.80	148.1527
264.65	162.7150
268.24	169.1165
268.79	164.6885
269.46	160.4867
269.46	160.4867
269.46	160.4867
269.46	160.4867
271.23	160.6855
273.65	131.4487
276.40	142.9871
277.35	143.0798
277.60	147.4093
277.60	147.4093
278.00	155.1991
278.60	159.7841
279.20	155.3248
279.53	155.3600
280.46	149.4221
281.68	152.5677
283.67	156.9320
284.30	177.8077
285.00	175.9984
285.90	149.5956
286.10	144.8803
286.10	144.8803
287.40	143.1108
288.45	0.0000
290.67	182.3672
290.80	182.3848
291.72	159.6841
293.26	0.0000
293.70	135.5273
295.21	135.6620
295.21	135.6620



295.21	135.6620
295.96	135.7293
296.50	135.7771
297.23	76.3159
298.57	76.3831
299.80	131.4838
299.80	131.4838
300.09	140.6841
300.09	140.6841
300.09	140.6841
300.09	140.6841
300.12	140.6863
301.29	136.2030
302.84	119.4889
303.76	145.6172
303.91	145.6311
304.40	124.2092
304.40	124.2092
304.84	147.2531
306.84	133.4282
308.46	115.3088
311.98	137.7174
316.51	122.6592
318.01	132.4407
319.02	140.2630
319.41	129.6530
320.08	157.7794
323.87	145.9249
323.87	145.9249
323.87	145.9249
323.87	145.9249
325.23	146.0465
328.77	151.8153
333.44	93.6899
334.20	93.7324
334.20	93.7324
334.30	93.7383
338.28	158.1700
338.28	158.1700
338.28	158.1700
338.28	158.1700
338.32	158.1750
338.32	158.1750
338.32	158.1750
340.50	133.2898
340.57	133.2960
344.27	151.5501
345.85	138.4324
350.59	0.0000
351.07	126.2344
351.92	126.2969
351.92	126.2969
351.92	126.2969
355.39	0.0000
356.01	131.3430
364.48	125.2233
366.43	115.4124
367.43	119.4598
367.94	0.0000
369.80	102.6731
374.96	105.9693
383.85	110.5086
387.95	84.5781
388.63	90.6523
391.69	117.0355
391.69	117.0355
392.90	113.0732
398.62	137.7245
400.65	110.5002
401.10	115.5969
401.81	126.7986
402.60	125.8372
404.84	146.3071
410.95	104.3734
411.60	107.6722
413.65	102.8872
414.70	102.1271
415.30	99.0943

415.76	105.2490
417.63	0.0000
418.52	100.2819
423.70	94.3921
427.08	106.8882
427.89	88.4250
432.53	96.8773
433.93	88.6941
439.47	92.0420
439.56	92.0461
439.89	78.6139
443.98	101.5769
444.90	107.8451
445.03	107.8514
445.03	107.8514
445.03	107.8514
445.03	107.8514
453.90	109.3611
463.38	80.5659
468.07	90.6029
473.00	77.7815
475.06	94.6912
475.35	88.3900
476.78	104.2434
477.59	95.8558
477.96	88.4976
482.03	87.6113
484.57	100.3954
487.03	94.1619
490.36	0.0000
492.35	80.6050
497.08	86.0934
507.63	0.0000
510.53	0.0000
510.84	83.4201
511.00	83.4255
511.85	83.4576
511.85	83.4576
513.99	83.5367
513.99	83.5367
520.41	85.9229
520.65	76.2630
527.90	72.1955
528.96	0.0000
529.64	66.8589
529.87	0.0000
531.02	77.6887
537.32	74.6538
543.00	81.3446
546.56	0.0000
549.76	78.3149
552.65	63.1631
555.20	71.9518
563.23	64.5367
563.90	64.5547
568.70	96.4756
569.32	77.8599
569.50	77.8643
569.67	76.7740
573.80	94.4824
574.00	94.4903
574.64	107.7019
578.91	73.9819
579.30	0.0000
583.14	91.5335
585.48	74.1788
591.81	92.9594
592.07	88.5425
593.00	71.9666
595.88	89.7852
600.56	87.7322
602.52	0.0000
602.71	84.4725
602.71	84.4725
603.60	85.3898
604.41	80.0793
604.70	83.6476
609.31	82.4619

609.31	82.4619
609.31	82.4619
609.31	82.4619
610.33	89.1846
612.46	85.6875
614.37	83.9666
618.01	90.5688
621.84	68.3085
621.84	68.3085
631.29	68.5561
633.02	69.7254
633.10	66.3534
634.78	69.3226
635.90	86.4656
636.97	84.6987
645.85	57.8594
646.12	62.3864
656.30	62.6239
657.75	68.1061
657.90	0.0000
661.65	83.6625
661.65	83.6625
664.57	0.0000
666.33	72.8770
666.33	72.8770
675.00	60.3136
677.61	67.6876
685.20	59.6188
692.80	56.1018
695.00	76.3961
696.49	91.1714
696.49	91.1714
697.00	103.1598
697.49	99.4939
698.33	100.4445
698.50	100.4498
699.00	88.4859
702.63	79.3694
706.10	76.6960
706.58	0.0000
706.67	79.4828
709.31	70.3056
711.68	90.7337
713.82	64.8577
717.42	64.0103
720.50	85.1296
721.93	0.0000
722.20	60.3995
722.78	65.0593
722.78	65.0593
722.89	65.0610
722.95	65.0627
723.30	58.8740
724.18	54.2417
727.18	53.9884
733.00	60.6249
735.90	64.0179
739.58	76.6508
742.81	78.6064
744.21	76.7709
747.13	69.3497
751.79	66.6422
752.31	69.4708
753.82	64.8088
755.35	64.8425
756.15	67.6793
756.87	67.6951
763.93	62.8288
765.79	66.0112
766.42	64.4529
766.84	67.6057
776.49	84.2241
778.00	62.4889
778.57	58.7123
778.89	53.0359
783.80	72.0924
785.46	68.3350
792.07	84.0159

795.84	46.0264
796.30	52.3829
798.80	60.3677
801.93	56.2934
805.60	55.4044
810.29	54.5299
810.76	46.8838
815.85	38.3340
817.79	46.0289
818.51	42.2028
819.60	39.3384
826.30	56.7284
828.27	0.0000
831.60	54.8959
831.96	57.7910
834.83	57.8423
836.80	0.0000
846.75	44.5097
848.13	59.0476
856.28	0.0000
856.80	40.4399
860.37	50.1997
867.32	47.0601
867.82	47.0672
871.10	53.6116
873.19	52.6698
874.81	51.7190
875.33	0.0000
876.40	47.8384
879.36	58.6304
880.27	48.8708
880.51	43.9871
881.50	39.1113
883.24	50.8714
884.67	47.9568
889.25	49.0015
896.60	50.0898
898.02	50.1097
899.00	54.0560
903.28	35.6721
911.07	45.3700
911.07	45.3700
911.07	45.3700
919.63	39.5498
920.93	42.5318
925.00	49.5129
925.24	49.5166
926.50	37.6456
935.52	46.6822
937.48	49.6887
944.10	42.8131
946.00	41.8390
949.00	38.8838
962.29	50.0366
964.01	40.0479
966.15	40.0713
968.20	40.0947
969.11	30.0784
969.11	30.0784
969.11	30.0784
977.42	31.1521
980.50	42.2420
983.50	33.2175
989.30	49.4008
996.32	67.6772
1001.03	46.5233
1001.68	52.6005
1004.76	54.6697
1021.30	0.0000
1024.50	0.0000
1034.80	40.8203
1036.00	51.0413
1037.82	48.0006
1038.57	48.0121
1038.76	0.0000
1045.16	55.2577
1046.59	61.4180
1048.07	49.1555

1050.47	42.0130
1050.47	42.0130
1062.04	45.2203
1063.62	50.3805
1076.63	50.5480
1077.35	39.2079
1078.86	42.3193
1085.78	46.5293
1099.22	49.8000
1112.02	47.8777
1112.84	41.6406
1115.52	46.8787
1120.29	54.2344
1120.29	54.2344
1120.29	54.2344
1120.29	54.2344
1120.51	54.2369
1121.28	54.2471
1124.00	0.0000
1129.67	53.4296
1131.51	0.0000
1147.95	0.0000
1167.94	60.1395
1173.22	63.3867
1175.09	68.6975
1177.93	57.1113
1189.05	45.5972
1204.90	46.8316
1205.75	0.0000
1213.00	46.9197
1221.42	54.4913
1230.97	60.6787
1235.34	46.4479
1236.41	0.0000
1238.25	47.1926
1246.25	51.0393
1260.41	0.0000
1271.85	32.4229
1274.45	33.5233
1274.54	33.5233
1291.56	40.1634
1298.22	0.0000
1312.09	41.4345
1325.50	26.2465
1325.50	26.2465
1332.49	39.4277
1333.61	25.1967
1360.21	29.3802
1362.66	0.0000
1365.15	18.3813
1368.21	29.4297
1368.53	0.0000
1376.25	23.6886
1384.27	17.2250
1394.10	18.4937
1395.20	21.2724
1407.95	23.1832
1434.06	12.1203
1436.60	21.4539
1457.56	0.0000
1460.81	14.9980
1489.15	16.0253
1509.49	12.3039
1596.49	21.1702
1620.62	14.4995
1678.03	0.0000
1691.02	7.8324
1691.02	7.8324
1706.46	0.0000
1750.46	0.0000
1764.49	10.2008
1764.49	10.2008
1764.49	10.2008
1764.49	10.2008
1770.23	17.0180
1771.40	14.5628
1791.20	0.0000
1808.65	10.9919



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202012163

Total Uranium Activity	6.1360E+00	ug/g
Total Uranium Counting Unc.	4.7935E+00	ug/g
Total Uranium Tpu	2.4457E-06	ug/g
Total Uranium Mda	2.4260E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G1202012163
*  ANALYST       : MXR1                             DETECTOR    : GAM20
*  SAMPLE DATE   : 5-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 17:39:23.43          SAMPLE ALQT  : 125.220 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.014E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.537E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.760E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.311E+00

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VAX/VMS Nuclide Identification Report Generated 19-JAN-2010 19:16:24.19

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012164.CNF;1
Sample date        : 12-JAN-2010 00:00:00 Acquisition date : 19-JAN-2010 18:15:50
Sample ID          : G1202012164 Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00 Elapsed real time: 0 01:00:01.26 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity         : 5.00000
Batch ID           : 940270 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	58.95	1428	421	1.30	118.40	114	10	3.97E-01	3.8	
2	0	76.51*	125	273	0.91	153.50	151	6	3.46E-02	23.2	
3	0	87.44*	1134	557	1.40	175.35	168	14	3.15E-01	5.3	
4	0	92.15*	62	268	1.19	184.77	182	9	1.72E-02	51.7	
5	0	121.30	232	254	1.27	243.05	238	10	6.44E-02	14.5	
6	0	184.55*	89	295	1.33	369.50	365	11	2.47E-02	39.5	
7	0	238.13*	411	433	1.39	476.60	471	14	1.14E-01	12.0	
8	0	294.53*	95	190	1.47	589.36	584	10	2.64E-02	29.4	
9	0	337.75	89	213	1.05	675.76	670	12	2.48E-02	34.4	
10	0	351.37*	183	166	1.10	702.99	699	10	5.08E-02	15.4	
11	0	509.96*	15	176	1.11	1020.06	1014	13	4.17E-03	196.6	
12	0	582.59*	163	116	1.33	1165.27	1157	15	4.52E-02	16.7	
13	0	609.34*	94	181	1.63	1218.75	1212	16	2.61E-02	34.2	
14	0	661.06	1976	133	1.77	1322.16	1315	17	5.49E-01	2.6	
15	0	910.86*	100	106	2.10	1821.62	1816	13	2.77E-02	23.5	
16	0	1172.55*	1598	57	1.84	2344.89	2335	19	4.44E-01	2.7	
17	0	1331.79	1501	28	1.88	2663.32	2653	19	4.17E-01	2.7	
18	0	1763.67*	28	0	2.13	3527.03	3519	15	7.65E-03	21.2	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012164.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 : 19-JAN-2010 18:15:50
Sample ID         : G1202012164 Sample quantity : 155.44 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.26 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	+	122.06	*	2.335E-01	6.959E-02	7.101E-02	5.105E-03	3.289
		136.48		-1.345E-01	3.801E-01	6.070E-01	4.659E-02	-0.222
CO-60	+	1173.22		6.392E+00	5.064E-01	1.245E-01	7.090E-03	51.348
	+	1332.49	*	6.739E+00	6.263E-01	1.125E-01	8.489E-03	59.923
CD-109	+	88.03	*	3.331E+01	5.234E+00	2.463E+00	2.848E-01	13.527
SN-126		64.28		-1.108E-01	1.451E+00	2.105E+00	3.609E-01	-0.053
	+	86.94		1.376E+01	5.972E+00	1.037E+00	4.360E-01	13.274
	+	87.57	*	3.311E+00	5.201E-01	2.467E-01	2.846E-02	13.422
BA-137M	+	661.65	*	5.255E+00	3.827E-01	1.143E-01	5.750E-03	45.979
CS-137	+	661.65	*	5.555E+00	4.057E-01	1.208E-01	6.112E-03	45.979
TL-208		277.35		9.050E-01	7.732E-01	1.350E+00	1.513E-01	0.670
	+	510.84		1.363E-01	5.363E-01	4.583E-01	4.613E-02	0.297
	+	583.14	*	4.185E-01	1.424E-01	1.225E-01	7.799E-03	3.417
		860.37		4.672E-01	6.358E-01	1.106E+00	9.510E-02	0.422
BI-211		72.87		7.591E+00	8.113E+00	1.224E+01	1.365E+00	0.620
	+	351.07	*	2.131E+00	6.706E-01	7.139E-01	4.906E-02	2.985
PB-212		74.81		2.553E+00	9.999E-01	1.512E+00	2.196E-01	1.689
	+	77.11		9.787E-01	4.673E-01	7.277E-01	8.081E-02	1.345
	+	87.30		1.531E+01	2.851E+00	1.146E+00	1.748E-01	13.359
	+	238.63	*	1.054E+00	2.666E-01	1.826E-01	1.511E-02	5.771
		300.09		1.464E+00	1.701E+00	2.710E+00	2.431E-01	0.540
PO-212		74.81		2.553E+00	9.999E-01	1.512E+00	2.196E-01	1.689
	+	77.11		9.787E-01	4.673E-01	7.277E-01	8.081E-02	1.345
	+	87.30		1.531E+01	2.851E+00	1.146E+00	1.748E-01	13.359
		115.19		-2.114E+00	6.917E+00	1.026E+01	7.851E-01	-0.206
	+	238.63	*	1.054E+00	2.666E-01	1.826E-01	1.511E-02	5.771
		300.09		1.464E+00	1.701E+00	2.710E+00	2.431E-01	0.540
BI-214	+	609.31	*	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903
		1120.29		7.659E-01	6.498E-01	1.147E+00	1.058E-01	0.668
	+	1764.49		9.548E-01	4.092E-01	4.750E-01	2.956E-02	2.010
PB-214		74.81		4.400E+00	1.705E+00	2.606E+00	3.479E-01	1.689
	+	77.11		1.678E+00	8.112E-01	1.247E+00	1.680E-01	1.345
	+	87.30		2.623E+01	4.590E+00	1.964E+00	2.722E-01	13.359
		241.98		7.878E-01	8.050E-01	1.241E+00	1.109E-01	0.635

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		6.592E-01	3.928E-01	4.761E-01	4.403E-02	1.385
	+	351.92	*	7.412E-01	2.365E-01	2.439E-01	2.103E-02	3.039
		74.81		4.400E+00	1.705E+00	2.606E+00	3.479E-01	1.689
	+	77.11		1.678E+00	8.112E-01	1.247E+00	1.680E-01	1.345
	+	87.30		2.623E+01	4.590E+00	1.964E+00	2.722E-01	13.359
PO-216		241.98		7.878E-01	8.050E-01	1.241E+00	1.109E-01	0.635
	+	295.21		6.592E-01	3.928E-01	4.761E-01	4.403E-02	1.385
	+	351.92	*	7.412E-01	2.365E-01	2.439E-01	2.103E-02	3.039
		74.81		2.553E+00	9.999E-01	1.512E+00	2.196E-01	1.689
	+	77.11		9.787E-01	4.673E-01	7.277E-01	8.081E-02	1.345
PO-218	+	87.30		1.531E+01	2.851E+00	1.146E+00	1.748E-01	13.359
	+	238.63	*	1.054E+00	2.666E-01	1.826E-01	1.511E-02	5.771
		300.09		1.464E+00	1.701E+00	2.710E+00	2.431E-01	0.540
		74.81		4.400E+00	1.705E+00	2.606E+00	3.479E-01	1.689
	+	77.11		1.678E+00	8.112E-01	1.247E+00	1.680E-01	1.345
RA-226	+	87.30		2.623E+01	4.590E+00	1.964E+00	2.722E-01	13.359
		241.98		7.878E-01	8.050E-01	1.241E+00	1.109E-01	0.635
	+	295.21		6.592E-01	3.928E-01	4.761E-01	4.403E-02	1.385
	+	351.92	*	7.412E-01	2.365E-01	2.439E-01	2.103E-02	3.039
	+	609.31	*	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903
TH-228		1120.29		7.659E-01	6.498E-01	1.147E+00	1.058E-01	0.668
	+	1764.49		9.548E-01	4.092E-01	4.750E-01	2.956E-02	2.010
		74.81		2.573E+00	9.790E-01	1.524E+00	1.702E-01	1.689
	+	77.11		9.863E-01	4.709E-01	7.333E-01	8.143E-02	1.345
	+	87.30		1.543E+01	2.424E+00	1.155E+00	1.331E-01	13.359
TH-230	+	238.63	*	1.062E+00	2.687E-01	1.840E-01	1.523E-02	5.771
		300.09		1.475E+00	1.918E+00	2.731E+00	1.613E+00	0.540
	+	609.31	*	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903
		1120.29		7.659E-01	6.498E-01	1.147E+00	1.058E-01	0.668
	+	1764.49		9.548E-01	4.092E-01	4.750E-01	2.956E-02	2.010
U-234	+	609.31	*	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903
		1120.29		7.659E-01	6.498E-01	1.147E+00	1.058E-01	0.668
	+	1764.49		9.548E-01	4.092E-01	4.750E-01	2.956E-02	2.010
NP-237	+	86.50	*	9.722E+00	2.521E+00	7.382E-01	1.743E-01	13.169
		95.87		-1.531E+00	1.997E+00	2.683E+00	6.733E-01	-0.571
AM-241	+	59.54	*	1.484E+01	2.218E+00	9.248E-01	1.177E-01	16.048
ANH-511	+	511.00	*	2.945E-02	1.158E-01	9.901E-02	5.591E-03	0.297

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-5.077E-01	6.811E-01	1.061E+00	7.070E-02	-0.479
NA-22		1274.54	*	-1.231E-02	6.111E-02	9.588E-02	6.581E-03	-0.128
NA-24		1368.53	*	1.598E-05	6.111E-02	Half-Life too short		
AL-26		1129.67		1.449E+00	3.383E+00	5.735E+00	3.613E-01	0.253
		1808.65	*	1.661E-02	4.300E-02	7.742E-02	4.633E-03	0.214
K-40		1460.81	*	4.605E-01	6.109E-01	1.150E+00	8.788E-02	0.401
TI-44		67.85		2.261E-02	1.109E-01	1.850E-01	2.110E-02	0.122

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SC-46	78.38	*		9.752E-02	8.565E-02	1.298E-01	1.443E-02	0.751
	889.25	*		-1.051E-01	9.360E-02	1.418E-01	1.189E-02	-0.741
	1120.51			1.135E-01	1.055E-01	1.854E-01	1.190E-02	0.612
V-48	944.10			1.323E+00	1.872E+00	3.216E+00	2.643E-01	0.412
	983.50	*		-2.159E-02	1.247E-01	2.024E-01	1.599E-02	-0.107
	1312.09			-1.046E-01	9.210E-02	1.207E-01	8.812E-03	-0.866
CR-51	320.08	*		-2.978E-01	6.972E-01	1.136E+00	8.191E-02	-0.262
MN-52	744.21			-7.935E-02	1.889E-01	3.053E-01	1.873E-02	-0.260
	848.13			-2.861E+00	6.665E+00	1.073E+01	8.270E-01	-0.267
	935.52			2.627E-01	2.688E-01	4.699E-01	3.892E-02	0.559
	1246.25			-3.810E-01	3.227E+00	5.125E+00	3.342E-01	-0.074
	1333.61			3.325E+02	3.074E+01	4.100E+01	3.094E+00	8.111
	1434.06	*		-3.082E-03	1.059E-01	1.758E-01	1.303E-02	-0.018
MN-54	834.83	*		2.671E-02	8.487E-02	1.439E-01	1.078E-02	0.186
CO-56	846.75	*		-8.972E-03	9.013E-02	1.486E-01	1.142E-02	-0.060
	977.42			-3.189E+00	6.928E+00	1.101E+01	8.752E-01	-0.290
	1037.82			-1.650E-01	6.880E-01	1.106E+00	8.756E-02	-0.149
	1175.09			2.270E+02	1.896E+01	3.102E+01	1.773E+00	7.318
	1238.25			6.647E-02	1.008E-01	1.794E-01	1.212E-02	0.371
	1360.21			1.315E-03	1.365E+00	2.200E+00	1.655E-01	0.001
CO-58	1771.40			7.348E-02	3.987E-01	6.791E-01	4.201E-02	0.108
	810.76	*		-2.531E-02	7.832E-02	1.271E-01	9.077E-03	-0.199
	142.65			-3.228E-01	4.546E+00	7.345E+00	5.001E-01	-0.044
FE-59	192.34			-3.739E-01	1.684E+00	2.663E+00	3.283E-01	-0.140
	1099.22	*		8.583E-02	1.998E-01	3.371E-01	2.551E-02	0.255
	1291.56			1.481E-01	1.621E-01	2.953E-01	2.491E-02	0.502
ZN-65	1115.52	*		-1.944E-01	2.149E-01	3.261E-01	2.118E-02	-0.596
GE-68	1077.35	*		8.072E-01	2.787E+00	4.669E+00	3.245E-01	0.173
AS-73	53.44	*		1.991E+00	4.153E+00	6.525E+00	8.916E-01	0.305
AS-74	595.88	*		1.338E-02	1.498E-01	2.431E-01	1.307E-02	0.055
	634.78			2.187E-02	5.824E-01	9.405E-01	4.878E-02	0.023
	66.05			-8.538E+00	1.151E+01	1.839E+01	2.385E+00	-0.464
SE-75	96.73			3.365E-01	1.516E+00	2.210E+00	3.170E-01	0.152
	121.11	+		1.226E+00	3.758E-01	5.193E-01	5.297E-02	2.361
	136.00			-5.812E-03	6.967E-02	1.127E-01	7.849E-03	-0.052
	198.60			2.891E+00	3.349E+00	5.566E+00	4.442E-01	0.519
	264.65	*		7.662E-03	8.941E-02	1.505E-01	1.052E-02	0.051
	279.53			-1.459E-01	2.166E-01	3.505E-01	2.558E-02	-0.416
	303.91			-5.028E+00	4.387E+00	6.863E+00	6.967E-01	-0.733
	400.65			-5.311E-01	5.806E-01	9.036E-01	8.160E-02	-0.588
	87.88	+		8.465E+02	1.330E+02	1.292E+02	1.494E+01	6.552
BR-77	200.40			-3.094E+00	3.704E+01	5.910E+01	4.039E+00	-0.052
	239.00	+		1.968E+01	4.902E+00	6.081E+00	4.231E-01	3.237
	249.79			-9.131E+00	1.535E+01	2.506E+01	1.745E+00	-0.364
	281.68			-2.377E+01	2.163E+01	3.416E+01	2.353E+00	-0.696
	297.23			-7.784E-01	1.464E+01	2.117E+01	1.441E+00	-0.037
	303.76			-5.534E+01	4.505E+01	7.040E+01	4.759E+00	-0.786
	439.47			-1.390E+00	3.851E+01	6.306E+01	3.604E+00	-0.022
	484.57			-2.156E+01	6.046E+01	9.650E+01	5.491E+00	-0.223

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	520.65		*	8.528E-01	2.709E+00	4.498E+00	2.531E-01	0.190
	574.64			3.230E+01	6.068E+01	8.920E+01	4.873E+00	0.362
	578.91			1.678E+01	2.498E+01	3.712E+01	2.022E+00	0.452
	585.48			1.093E+02	4.668E+01	7.874E+01	4.268E+00	1.388
	755.35			1.652E+01	3.913E+01	6.735E+01	4.238E+00	0.245
	817.79			-1.518E+01	3.656E+01	5.898E+01	4.262E+00	-0.257
SR-82	698.33			9.964E+00	5.361E+01	9.108E+01	5.014E+00	0.109
	776.49		*	-2.410E-01	6.736E-01	1.094E+00	7.224E-02	-0.220
	1395.20			-5.715E+00	1.298E+01	2.008E+01	1.502E+00	-0.285
RB-83	520.41		*	2.333E-02	1.461E-01	2.403E-01	1.352E-02	0.097
	529.64			-2.792E-02	2.183E-01	3.519E-01	1.972E-02	-0.079
	552.65			-1.365E-01	3.715E-01	5.853E-01	3.242E-02	-0.233
RB-84	881.50		*	2.938E-02	1.531E-01	2.568E-01	2.121E-02	0.114
KR-85	513.99		*	4.999E+00	1.706E+01	2.464E+01	1.390E+00	0.203
SR-85	513.99		*	2.372E-02	8.095E-02	1.169E-01	6.595E-03	0.203
RB-86	1076.63		*	4.824E-01	1.356E+00	2.284E+00	1.589E-01	0.211
Y-88	898.02			-3.660E-02	1.074E-01	1.736E-01	1.490E-02	-0.211
	1836.01		*	2.396E-02	5.028E-02	9.137E-02	5.337E-03	0.262
ZR-88	392.90		*	-4.804E-02	6.850E-02	1.087E-01	6.167E-03	-0.442
Y-91	1204.90		*	-1.946E+00	2.374E+01	3.816E+01	2.308E+00	-0.051
NB-94	702.63		*	-5.296E-05	6.597E-02	1.106E-01	6.152E-03	0.000
	871.10			-3.617E-02	8.358E-02	1.341E-01	1.084E-02	-0.270
NB-95	765.79		*	9.196E-03	7.951E-02	1.338E-01	8.619E-03	0.069
NB-95M	235.69		*	1.018E+00	2.941E-01	4.857E-01	4.104E-02	2.097
ZR-95	724.18			1.841E-01	1.799E-01	3.201E-01	2.211E-02	0.575
	756.15		*	1.180E-01	1.344E-01	2.380E-01	1.774E-02	0.496
NB-97	657.90		*	3.080E-03	1.344E-01	Half-Life	too short	
	1024.50			1.229E-02	1.344E-01	Half-Life	too short	
ZR-97	254.15			2.543E-03	1.344E-01	Half-Life	too short	
	355.39			-8.582E-04	1.344E-01	Half-Life	too short	
	507.63		*	4.390E-03	1.344E-01	Half-Life	too short	
	602.52			-4.317E-03	1.344E-01	Half-Life	too short	
	1021.30			-7.416E-03	1.344E-01	Half-Life	too short	
	1147.95			-2.867E-04	1.344E-01	Half-Life	too short	
	1362.66			-1.664E-03	1.344E-01	Half-Life	too short	
	1750.46			-1.574E-03	1.344E-01	Half-Life	too short	
MO-99	140.51			5.220E+00	7.724E+00	1.269E+01	3.450E+00	0.411
	181.06			-3.430E+00	5.730E+00	7.669E+00	1.340E+00	-0.447
	366.43			-1.594E+01	2.832E+01	4.534E+01	2.753E+00	-0.351
	739.58		*	6.234E-01	3.488E+00	5.911E+00	8.213E-01	0.105
	778.00			2.377E+00	1.112E+01	1.883E+01	1.247E+00	0.126
TC-99M	140.51		*	6.840E+01	1.112E+01	Half-Life	too short	
RH-101	127.23			2.275E-02	6.066E-02	9.701E-02	6.835E-03	0.234
	198.01		*	3.149E-02	6.372E-02	1.043E-01	7.118E-03	0.302
	325.23			2.167E-01	4.714E-01	8.010E-01	5.268E-02	0.271
RH-102	418.52			4.164E-01	6.541E-01	1.112E+00	6.346E-02	0.374
	475.06		*	1.079E-02	6.843E-02	1.129E-01	6.435E-03	0.096
	631.29			5.511E-03	1.246E-01	2.014E-01	1.048E-02	0.027
	697.49			-5.261E-03	1.508E-01	2.522E-01	1.386E-02	-0.021

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		766.84		-2.215E-02	2.168E-01	3.592E-01	2.320E-02	-0.062
		1046.59		-6.765E-02	2.738E-01	4.400E-01	3.208E-02	-0.154
		1112.84		-2.001E-01	5.449E-01	8.645E-01	5.635E-02	-0.231
RU-103		497.08	*	1.990E-02	8.093E-02	1.340E-01	1.686E-02	0.149
	+	610.33		4.316E+00	3.025E+00	3.218E+00	4.904E-01	1.341
RH-106		511.85		1.004E+00	4.162E-01	6.855E-01	3.870E-02	1.465
		621.84	*	-2.046E-01	6.752E-01	1.063E+00	1.220E-01	-0.193
		1050.47		3.284E-01	5.384E+00	8.867E+00	6.427E-01	0.037
RU-106		511.85		1.004E+00	4.162E-01	6.855E-01	3.869E-02	1.465
		621.84	*	-2.046E-01	6.748E-01	1.063E+00	5.583E-02	-0.193
		1050.47		3.284E-01	5.384E+00	8.867E+00	6.427E-01	0.037
AG-108M		433.93	*	4.129E-02	7.665E-02	1.295E-01	8.054E-03	0.319
		614.37		7.063E-02	9.079E-02	1.364E-01	7.948E-03	0.518
		722.95		-6.323E-02	8.965E-02	1.429E-01	9.038E-03	-0.443
AG-110M		657.75	*	1.217E+00	1.578E-01	2.881E-01	1.579E-02	4.224
		677.61		1.800E-01	5.991E-01	9.857E-01	5.544E-02	0.183
		706.67		5.154E-02	4.041E-01	6.834E-01	4.083E-02	0.075
		763.93		9.897E-02	3.248E-01	5.536E-01	3.732E-02	0.179
		884.67		-1.876E-02	1.213E-01	1.987E-01	1.708E-02	-0.094
		937.48		4.729E-02	2.946E-01	4.912E-01	4.221E-02	0.096
		1384.27		-6.136E-02	1.971E-01	3.104E-01	2.412E-02	-0.198
IN-111		171.28		-1.301E-01	3.108E-01	4.904E-01	3.273E-02	-0.265
		245.39	*	1.553E-01	3.782E-01	5.927E-01	4.127E-02	0.262
IN-113M		391.69	*	-8.860E-02	1.000E-01	1.570E-01	9.525E-03	-0.564
SN-113		391.69	*	-8.860E-02	1.000E-01	1.570E-01	9.525E-03	-0.564
IN-114M		190.27	*	2.268E-01	3.685E-01	5.361E-01	3.635E-02	0.423
CD-115		260.90		-3.327E+01	2.770E+01	4.376E+01	3.042E+00	-0.760
		492.35		4.289E+00	8.579E+00	1.441E+01	8.186E-01	0.298
		527.90	*	-5.242E-01	2.351E+00	3.764E+00	2.111E-01	-0.139
SN-117M		156.02		-1.392E+00	2.897E+00	4.577E+00	3.067E-01	-0.304
		158.56	*	-3.576E-02	7.029E-02	1.108E-01	7.407E-03	-0.323
SB-122		563.90	*	3.987E-01	6.426E-01	1.087E+00	5.979E-02	0.367
		692.80		6.825E+00	1.282E+01	2.230E+01	1.211E+00	0.306
I-123		159.00	*	3.302E-05	1.282E+01	Half-Life too short		
		528.96		3.983E-02	1.282E+01	Half-Life too short		
TE-123M		159.00	*	1.790E-03	5.056E-02	8.182E-02	5.524E-03	0.022
I-124		602.71	*	-1.056E-01	4.832E-01	6.577E-01	3.516E-02	-0.161
		722.78		-2.042E+00	2.749E+00	4.369E+00	2.549E-01	-0.467
		1325.50		1.837E+01	2.056E+01	3.315E+01	2.474E+00	0.554
		1376.25		6.976E+00	1.317E+01	2.304E+01	1.729E+00	0.303
		1509.49		-1.469E+00	6.888E+00	1.095E+01	7.934E-01	-0.134
		1691.02		1.156E+00	1.824E+00	3.482E+00	2.292E-01	0.332
SB-124		602.71		-1.917E-02	8.766E-02	1.193E-01	6.382E-03	-0.161
		645.85		5.105E-01	9.854E-01	1.648E+00	9.809E-02	0.310
		709.31		7.487E-01	5.341E+00	9.034E+00	5.106E-01	0.083
		713.82		-5.765E-01	3.224E+00	5.334E+00	5.420E-01	-0.108
		722.78		-5.371E-01	7.230E-01	1.149E+00	7.017E-02	-0.467
		968.20		1.651E+00	6.276E+00	1.054E+01	8.462E-01	0.157
		1045.16		1.444E+00	5.317E+00	8.898E+00	6.500E-01	0.162

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		1325.50		5.161E+00	5.774E+00	9.311E+00	6.948E-01	0.554
		1368.21		-3.870E-01	2.552E+00	4.005E+00	5.125E-01	-0.097
		1436.60		-2.289E+00	4.147E+00	6.075E+00	4.501E-01	-0.377
		1691.02	*	7.173E-02	1.131E-01	2.160E-01	1.517E-02	0.332
		427.89	*	1.679E-01	2.155E-01	3.685E-01	2.196E-02	0.455
		463.38		8.891E-01	6.792E-01	1.183E+00	7.907E-02	0.752
		600.56		-7.399E-02	3.811E-01	5.893E-01	3.729E-02	-0.126
TE-125M		635.90		-1.201E-01	5.790E-01	9.172E-01	5.752E-02	-0.131
		109.28	*	2.383E+00	1.634E+01	2.689E+01	2.668E+00	0.089
		388.63		3.980E-02	3.051E-01	5.070E-01	2.901E-02	0.078
I-126		666.33	*	1.701E-03	2.739E-01	3.791E-01	1.929E-02	0.004
		753.82		-1.409E+00	2.034E+00	3.217E+00	2.017E-01	-0.438
SB-126		223.80		3.399E+00	5.870E+00	9.607E+00	6.656E-01	0.354
		278.60		2.518E+00	3.337E+00	5.767E+00	3.980E-01	0.437
		296.50		3.298E-01	2.283E+00	3.342E+00	2.276E-01	0.099
		414.70		5.288E-02	1.115E-01	1.882E-01	1.073E-02	0.281
		415.30		-4.284E-01	9.317E+00	1.529E+01	8.717E-01	-0.028
		555.20		1.802E+00	5.224E+00	8.694E+00	4.808E-01	0.207
		573.80		1.235E+00	1.554E+00	2.520E+00	1.378E-01	0.490
		593.00		9.756E-01	1.364E+00	2.313E+00	1.246E-01	0.422
		656.30		1.112E+00	6.046E+00	8.524E+00	4.316E-01	0.130
		666.33		6.988E-04	1.125E-01	1.558E-01	7.928E-03	0.004
		675.00		-2.368E-01	2.652E+00	4.225E+00	2.197E-01	-0.056
		695.00		3.664E-02	1.009E-01	1.735E-01	9.478E-03	0.211
		697.00		-3.722E-02	3.459E-01	5.756E-01	3.159E-02	-0.065
		720.50	*	-1.338E-01	2.088E-01	3.342E-01	1.940E-02	-0.400
		856.80		-3.386E-01	7.331E-01	1.176E+00	9.228E-02	-0.288
		989.30		6.845E-01	2.089E+00	3.517E+00	2.761E-01	0.195
		1034.80		1.102E+01	1.336E+01	2.332E+01	1.729E+00	0.472
		1213.00		4.970E+00	4.495E+00	8.239E+00	5.058E-01	0.603
SB-127		61.10		4.442E+02	8.264E+01	1.142E+02	1.443E+01	3.890
		252.40		-7.727E-01	2.357E+00	3.863E+00	1.595E+00	-0.200
		290.80		9.258E+00	1.263E+01	1.927E+01	1.493E+00	0.480
		411.60		2.174E+00	7.074E+00	1.183E+01	1.536E+00	0.184
		444.90		1.634E+00	6.403E+00	1.064E+01	9.422E-01	0.154
		473.00		6.828E-01	1.071E+00	1.811E+00	1.686E-01	0.377
		543.00		2.626E+00	9.030E+00	1.497E+01	1.686E+00	0.175
		603.60		2.216E+00	7.361E+00	1.056E+01	9.064E-01	0.210
		685.20	*	1.061E-01	6.528E-01	1.110E+00	7.583E-02	0.096
		698.50		8.434E-01	7.879E+00	1.331E+01	1.732E+00	0.063
		722.20		-1.328E+01	1.727E+01	2.740E+01	1.882E+00	-0.485
		783.80		8.341E-01	2.015E+00	3.454E+00	3.238E-01	0.242
XE-127	+	57.60		4.716E+02	6.869E+01	6.982E+01	8.893E+00	6.755
		145.22		-3.305E-01	1.089E+00	1.739E+00	1.180E-01	-0.190
		172.10		-6.970E-02	1.981E-01	3.137E-01	2.095E-02	-0.222
		202.84	*	-2.452E-02	7.791E-02	1.220E-01	8.350E-03	-0.201
I-131		374.96		-5.994E-02	3.848E-01	6.306E-01	3.748E-02	-0.095
		80.18		-1.682E-01	6.624E+00	8.063E+00	9.006E-01	-0.021
		284.30		3.493E-02	1.604E+00	2.685E+00	1.982E-01	0.013

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132		364.48	*	4.363E-03	1.280E-01	2.122E-01	1.420E-02	0.021
		636.97		1.199E-01	1.723E+00	2.789E+00	1.641E-01	0.043
		722.89		-5.739E+00	7.987E+00	1.272E+01	7.450E-01	-0.451
		49.72		-9.632E+00	2.237E+01	3.664E+01	5.089E+00	-0.263
		111.76		1.198E+00	1.164E+01	1.909E+01	1.646E+00	0.063
BA-133		116.30		-8.874E+00	1.200E+01	1.629E+01	1.351E+00	-0.545
		228.16	*	-7.289E-02	2.952E-01	4.925E-01	6.766E-02	-0.148
		53.15		6.508E+00	1.935E+01	3.027E+01	4.150E+00	0.215
		79.62		-1.857E+00	3.310E+00	4.288E+00	7.196E-01	-0.433
		81.00		-1.203E-01	2.736E-01	3.216E-01	5.597E-02	-0.374
I-133		276.40		8.892E-01	7.827E-01	1.359E+00	1.834E-01	0.654
		302.84		-1.539E-01	2.994E-01	4.859E-01	5.912E-02	-0.317
		356.01	*	-2.263E-02	1.049E-01	1.481E-01	1.744E-02	-0.153
		383.85		-1.378E-01	6.857E-01	1.120E+00	1.218E-01	-0.123
	+	510.53		8.209E-04	6.857E-01	Half-Life	too short	
CS-134		529.87	*	-2.778E-06	6.857E-01	Half-Life	too short	
		706.58		2.386E-04	6.857E-01	Half-Life	too short	
		856.28		-1.788E-03	6.857E-01	Half-Life	too short	
		875.33		5.021E-04	6.857E-01	Half-Life	too short	
		1236.41		1.756E-03	6.857E-01	Half-Life	too short	
CS-135		1298.22		-6.485E-04	6.857E-01	Half-Life	too short	
		475.35		6.856E-01	4.478E+00	7.386E+00	4.210E-01	0.093
		563.23		6.926E-01	7.442E-01	1.283E+00	7.225E-02	0.540
		569.32		-2.628E-01	4.136E-01	6.384E-01	3.616E-02	-0.412
		604.70		-3.220E-03	8.201E-02	1.137E-01	6.110E-03	-0.028
I-135		795.84	*	-2.219E-02	1.010E-01	1.656E-01	1.154E-02	-0.134
		801.93		3.838E-01	8.795E-01	1.516E+00	1.068E-01	0.253
		1038.57		-2.333E+00	9.074E+00	1.457E+01	1.075E+00	-0.160
		1167.94		1.760E+01	6.025E+00	1.108E+01	6.394E-01	1.588
		1365.15		-8.903E-01	1.950E+00	2.890E+00	2.301E-01	-0.308
CS-136		268.24	*	9.682E-02	3.271E-01	5.551E-01	4.746E-02	0.174
		288.45		-4.181E+02	3.271E-01	Half-Life	too short	
		417.63		4.630E+01	3.271E-01	Half-Life	too short	
		546.56		9.152E+01	3.271E-01	Half-Life	too short	
		836.80		3.420E+02	3.271E-01	Half-Life	too short	
		1038.76		-1.103E+02	3.271E-01	Half-Life	too short	
		1124.00		-8.885E+02	3.271E-01	Half-Life	too short	
		1131.51		-7.433E+01	3.271E-01	Half-Life	too short	
		1260.41	*	-9.087E+01	3.271E-01	Half-Life	too short	
		1457.56		3.183E+02	3.271E-01	Half-Life	too short	
		1678.03		7.742E+01	3.271E-01	Half-Life	too short	
		1706.46		-1.277E+02	3.271E-01	Half-Life	too short	
		1791.20		3.641E+01	3.271E-01	Half-Life	too short	
		66.91		-5.422E-01	1.301E+00	2.112E+00	3.631E-01	-0.257
	+	86.29		2.929E+01	5.382E+00	4.507E+00	6.712E-01	6.500
		153.22		5.374E-01	8.316E-01	1.383E+00	1.103E-01	0.389
		163.89		6.211E-01	1.386E+00	2.281E+00	1.813E-01	0.272
		176.55		4.917E-01	4.789E-01	8.055E-01	5.901E-02	0.610
		273.65		-6.511E-01	6.448E-01	1.028E+00	7.822E-02	-0.633



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		340.57		7.002E-02	1.960E-01	2.898E-01	1.953E-02	0.242
		818.51		-1.835E-02	1.193E-01	1.963E-01	1.421E-02	-0.093
		1048.07	*	-1.498E-02	1.735E-01	2.824E-01	2.174E-02	-0.053
		1235.34		6.139E-01	4.832E-01	9.066E-01	9.373E-02	0.677
CE-139		165.85	*	2.178E-03	5.449E-02	8.808E-02	5.857E-03	0.025
BA-140		162.64		1.597E-01	9.757E-01	1.587E+00	1.159E-01	0.101
		304.84		-1.336E+00	1.877E+00	2.962E+00	8.147E-01	-0.451
		423.70		-2.307E+00	3.010E+00	4.581E+00	1.455E+00	-0.504
		537.32	*	1.462E-02	3.758E-01	6.122E-01	1.989E-01	0.024
LA-140		328.77		-3.200E-02	4.183E-01	6.926E-01	4.963E-02	-0.046
		432.53		-2.241E-02	3.294E+00	5.407E+00	3.421E-01	-0.004
		487.03		-2.631E-01	2.140E-01	3.209E-01	2.075E-02	-0.820
		751.79		-8.075E-01	2.307E+00	3.750E+00	2.798E-01	-0.215
		815.85		1.395E-01	4.987E-01	8.454E-01	7.069E-02	0.165
		867.82		1.426E+00	2.109E+00	3.664E+00	3.120E-01	0.389
		919.63		-3.748E+00	5.279E+00	7.838E+00	8.203E-01	-0.478
		925.24		9.920E-01	2.109E+00	3.583E+00	3.194E-01	0.277
		1596.49	*	-2.041E-02	7.074E-02	1.094E-01	7.626E-03	-0.187
CE-141		145.44	*	-7.037E-02	9.844E-02	1.541E-01	1.075E-02	-0.457
CE-143		57.37		1.898E+03	3.094E+02	3.271E+02	4.464E+01	5.802
		231.56		-5.820E+00	1.325E+02	2.030E+02	6.325E+01	-0.029
	+	293.26	*	1.523E+01	9.508E+00	1.272E+01	2.644E+00	1.198
	+	350.59		4.099E+02	1.773E+02	1.996E+02	6.077E+01	2.054
		490.36		1.539E+02	1.664E+02	2.755E+02	8.514E+01	0.559
		664.57		6.490E+02	2.288E+02	2.028E+02	6.398E+01	3.200
		721.93		-3.158E+01	7.340E+01	1.185E+02	3.372E+01	-0.267
CE-144		80.11		-3.480E-01	5.657E+00	6.866E+00	7.660E-01	-0.051
		133.54	*	-1.281E-01	3.651E-01	5.829E-01	8.567E-02	-0.220
PM-144		476.78		-1.190E-01	1.579E-01	2.460E-01	1.687E-02	-0.484
		618.01		-3.393E-02	7.259E-02	1.055E-01	5.964E-03	-0.321
		696.49	*	2.683E-03	6.693E-02	1.126E-01	6.171E-03	0.024
		778.57		-5.631E-01	5.028E+00	8.318E+00	5.517E-01	-0.068
PR-144		696.49	*	1.811E-01	4.518E+00	7.599E+00	4.165E-01	0.024
		1489.15		-1.344E+01	1.676E+01	2.327E+01	1.697E+00	-0.578
PM-146		453.90	*	-8.113E-03	1.038E-01	1.693E-01	1.450E-02	-0.048
		633.02		-1.864E+00	3.097E+00	4.633E+00	1.702E+00	-0.402
		735.90		-6.459E-02	2.847E-01	4.667E-01	1.304E-01	-0.138
		747.13		6.747E-02	1.761E-01	3.027E-01	3.840E-02	0.223
ND-147	+	91.11		3.630E-01	3.772E-01	5.462E-01	6.211E-02	0.665
		319.41		9.833E-01	4.591E+00	7.719E+00	5.119E-01	0.127
		439.89		1.948E+00	8.509E+00	1.414E+01	8.083E-01	0.138
		531.02	*	-7.660E-02	7.821E-01	1.263E+00	1.697E-01	-0.061
PM-149		285.90	*	-1.598E+00	1.828E+01	3.042E+01	4.448E+00	-0.053
EU-152	+	121.78		6.900E-01	2.084E-01	2.891E-01	2.521E-02	2.387
		244.69		2.860E-01	7.494E-01	1.124E+00	7.823E-02	0.254
		344.27	*	-9.905E-02	2.374E-01	3.307E-01	2.330E-02	-0.300
		443.98		2.339E+00	2.306E+00	3.982E+00	2.276E-01	0.587
		778.89		-4.382E-03	5.750E-01	9.581E-01	6.359E-02	-0.005
		867.32		8.383E-01	1.913E+00	3.269E+00	2.622E-01	0.256

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		964.01	-6.254E-01	8.056E-01	1.264E+00	1.020E-01	-0.495
		1085.78	2.303E-01	9.551E-01	1.592E+00	1.090E-01	0.145
		1112.02	3.853E-01	7.716E-01	1.307E+00	8.530E-02	0.295
		1407.95	-1.741E-01	2.347E-01	3.350E-01	2.499E-02	-0.520
		69.67	-1.534E+00	3.897E+00	6.347E+00	7.165E-01	-0.242
		83.37	1.316E+01	3.319E+01	4.896E+01	5.523E+00	0.269
EU-154		97.43 *	1.148E-01	1.573E-01	2.359E-01	2.263E-02	0.487
		103.18	-8.067E-02	1.868E-01	2.997E-01	2.637E-02	-0.269
		123.07	2.996E-01	1.219E-01	1.917E-01	1.973E-02	1.563
		247.94	-2.975E-01	7.273E-01	1.199E+00	1.233E-01	-0.248
		591.81	5.038E-01	1.359E+00	2.254E+00	2.150E-01	0.224
		723.30	3.965E-02	3.705E-01	6.245E-01	4.444E-02	0.063
EU-155		756.87	1.440E+00	1.554E+00	2.757E+00	2.879E-01	0.522
		873.19	8.538E-03	7.454E-01	1.236E+00	1.470E-01	0.007
		996.32	2.002E-01	9.382E-01	1.565E+00	2.719E-01	0.128
		1004.76	-3.207E-01	5.167E-01	8.066E-01	8.857E-02	-0.398
		1274.45 *	-4.107E-02	1.704E-01	2.656E-01	2.664E-02	-0.155
		48.70	-1.507E+01	1.442E+01	2.289E+01	2.946E+00	-0.658
TB-160	+	60.01	4.814E+02	7.011E+01	5.718E+01	6.990E+00	8.419
	+	86.54	3.976E+00	6.265E-01	6.177E-01	7.124E-02	6.437
		105.31 *	-2.276E-02	2.006E-01	3.267E-01	2.829E-02	-0.070
	+	86.79	9.924E+00	1.559E+00	1.541E+00	1.770E-01	6.439
		197.04	1.360E-01	1.020E+00	1.644E+00	1.121E-01	0.083
		215.65	1.001E+00	1.537E+00	2.525E+00	1.743E-01	0.397
HO-166M		298.57	2.173E-01	2.354E-01	3.626E-01	2.464E-02	0.599
		879.36 *	-1.203E-01	3.345E-01	5.402E-01	4.441E-02	-0.223
		962.29	7.520E-02	1.353E+00	2.236E+00	1.806E-01	0.034
		966.15	5.646E-01	4.923E-01	8.615E-01	6.932E-02	0.655
		1177.93	1.406E-01	6.810E-01	9.790E-01	5.626E-02	0.144
		1271.85	-1.647E-01	8.723E-01	1.369E+00	9.335E-02	-0.120
TM-171		80.57	-9.748E-02	8.782E-01	9.077E-01	1.014E-01	-0.107
	+	184.41	1.196E-01	9.488E-02	1.178E-01	7.950E-03	1.015
		280.46	-2.733E-01	1.780E-01	2.743E-01	1.891E-02	-0.996
		410.95	3.457E-01	5.480E-01	9.319E-01	5.309E-02	0.371
		711.68 *	4.568E-02	1.257E-01	2.158E-01	1.227E-02	0.212
		752.31	-1.661E-01	5.621E-01	9.182E-01	5.738E-02	-0.181
LU-176		810.29	-7.527E-02	1.263E-01	2.002E-01	1.424E-02	-0.376
		51.35	7.889E+01	1.606E+02	2.715E+02	3.750E+01	0.291
		52.39	-2.197E+01	8.158E+01	1.345E+02	1.856E+01	-0.163
	+	59.40	2.521E+03	3.671E+02	3.269E+02	4.023E+01	7.710
		66.72 *	-3.270E+01	6.935E+01	1.124E+02	1.293E+01	-0.291
	+	88.36	7.852E+00	1.234E+00	1.164E+00	1.336E-01	6.744
LU-177		201.83	-3.594E-02	5.635E-02	8.734E-02	5.975E-03	-0.412
		306.84 *	1.774E-02	5.294E-02	8.966E-02	6.040E-03	0.198
		401.10	-1.255E+01	1.577E+01	2.477E+01	1.408E+00	-0.507
		112.95	-1.443E-01	1.393E+00	2.264E+00	1.772E-01	-0.064
		208.36 *	-3.071E-01	9.750E-01	1.536E+00	1.055E-01	-0.200
		52.97	1.170E+00	8.237E+00	1.333E+01	1.830E+00	0.088
LU-177M		54.07	3.770E+00	4.502E+00	6.806E+00	9.225E-01	0.554

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HF-181		61.30	2.705E+01	6.229E+00	9.503E+00	1.147E+00	2.847
	+	121.62	3.431E+00	1.022E+00	1.438E+00	1.036E-01	2.386
		147.16	-3.800E-01	1.134E+00	1.808E+00	1.223E-01	-0.210
		171.86	-3.334E-01	8.928E-01	1.412E+00	9.432E-02	-0.236
		218.09	-3.514E-01	1.838E+00	2.909E+00	2.010E-01	-0.121
		268.79	7.739E-01	1.593E+00	2.725E+00	1.889E-01	0.284
		319.02	1.120E-01	5.560E-01	9.342E-01	6.199E-02	0.120
		367.43	-1.688E+00	1.906E+00	2.991E+00	1.811E-01	-0.565
		413.65	* -5.189E-01	3.968E-01	6.037E-01	3.441E-02	-0.860
		56.28	1.141E+01	4.771E+00	7.305E+00	9.540E-01	1.562
	+	57.53	4.034E+01	5.875E+00	5.929E+00	7.562E-01	6.803
		65.20	-1.186E+00	2.174E+00	3.389E+00	3.944E-01	-0.350
		133.02	-1.077E-01	1.072E-01	1.658E-01	1.150E-02	-0.649
		136.25	-1.159E-01	7.479E-01	1.206E+00	8.304E-02	-0.096
W-181		345.85	2.306E-01	3.983E-01	5.989E-01	3.802E-02	0.385
		482.03	* 8.001E-02	8.658E-02	1.490E-01	8.484E-03	0.537
		56.28	4.868E+00	2.022E+00	3.096E+00	4.043E-01	1.573
	+	57.53	1.709E+01	2.489E+00	2.511E+00	3.202E-01	6.805
TA-182		65.20	* -4.986E-01	9.137E-01	1.424E+00	1.658E-01	-0.350
		67.75	5.379E-02	2.539E-01	4.236E-01	4.836E-02	0.127
		100.10	1.574E-01	3.115E-01	5.214E-01	4.795E-02	0.302
		152.43	1.971E-01	6.036E-01	9.908E-01	6.663E-02	0.199
RE-183		222.10	-8.800E-02	7.350E-01	1.166E+00	8.075E-02	-0.075
		1001.68	-1.455E-01	4.644E+00	7.668E+00	5.933E-01	-0.019
		1121.28	1.697E-01	2.993E-01	5.078E-01	3.255E-02	0.334
		1189.05	-2.193E-01	4.559E-01	6.975E-01	4.094E-02	-0.314
		1221.42	* -2.542E-01	2.522E-01	3.491E-01	2.177E-02	-0.728
		1230.97	-4.282E-01	5.896E-01	8.547E-01	5.422E-02	-0.501
	+	57.98	1.683E+01	2.450E+00	2.477E+00	3.132E-01	6.792
	+	59.32	9.671E+00	1.409E+00	1.266E+00	1.560E-01	7.641
		67.20	4.531E-02	4.474E-01	7.438E-01	8.524E-02	0.061
		162.32	* -1.922E-03	1.966E-01	3.173E-01	2.115E-02	-0.006
		208.81	5.233E-02	1.751E+00	2.806E+00	1.928E-01	0.019
		291.72	1.610E+00	2.001E+00	3.062E+00	2.093E-01	0.526
	+	57.98	6.471E+01	9.424E+00	9.528E+00	1.205E+00	6.792
	+	59.32	3.717E+01	5.413E+00	4.864E+00	5.994E-01	7.641
RE-184		67.20	1.742E-01	1.720E+00	2.860E+00	3.277E-01	0.061
		161.27	1.242E-02	6.553E-01	1.059E+00	7.066E-02	0.012
		216.55	1.457E-01	5.704E-01	9.215E-01	6.362E-02	0.158
		252.85	* -1.665E-01	4.562E-01	7.532E-01	5.243E-02	-0.221
		318.01	7.028E-01	9.561E-01	1.646E+00	1.094E-01	0.427
		792.07	7.299E-01	2.084E+00	3.554E+00	2.429E-01	0.205
		903.28	6.610E-01	2.727E+00	4.258E+00	3.621E-01	0.155
		920.93	-1.626E-01	1.190E+00	1.947E+00	1.633E-01	-0.083
	+	59.72	2.687E+01	3.914E+00	3.346E+00	4.102E-01	8.032
		61.14	4.217E+00	7.928E-01	1.134E+00	1.371E-01	3.718
		69.30	-1.514E-01	6.671E-01	1.094E+00	1.238E-01	-0.138
		592.07	2.371E+00	5.263E+00	8.774E+00	4.732E-01	0.270
		646.12	* 4.598E-02	8.600E-02	1.440E-01	7.378E-03	0.319

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	717.42			1.790E-01	1.789E+00	3.016E+00	1.738E-01	0.059
	874.81			4.901E-01	1.383E+00	2.346E+00	1.911E-01	0.209
	880.27			8.999E-02	1.896E+00	3.150E+00	2.594E-01	0.029
RE-188	155.03	*		7.023E-02	2.922E-01	4.777E-01	3.204E-02	0.147
	477.96			-3.131E+00	6.656E+00	1.056E+01	6.018E-01	-0.296
	633.10			-3.414E+00	5.696E+00	8.745E+00	4.543E-01	-0.390
W-188	63.58			-1.217E+01	1.392E+02	2.034E+02	2.402E+01	-0.060
	227.08			8.007E+00	2.445E+01	4.175E+01	2.896E+00	0.192
	290.67	*		1.081E+01	1.530E+01	2.332E+01	1.596E+00	0.463
IR-192	295.96		+	4.691E-01	2.780E-01	3.759E-01	2.590E-02	1.248
	308.46			1.207E-01	1.948E-01	3.339E-01	2.264E-02	0.362
	316.51	*		2.877E-02	6.904E-02	1.173E-01	7.837E-03	0.245
	468.07			-1.628E-01	1.532E-01	2.349E-01	1.551E-02	-0.693
	604.41			-1.646E-01	1.035E+00	1.418E+00	1.577E-01	-0.116
	612.46			1.008E+00	1.631E+00	2.402E+00	1.729E-01	0.420
AU-195	65.12			-2.295E-01	4.305E-01	6.716E-01	7.822E-02	-0.342
	66.83			-9.862E-02	2.242E-01	3.640E-01	4.182E-02	-0.271
	75.70		+	8.400E-01	4.010E-01	7.533E-01	8.364E-02	1.115
	98.88	*		2.622E-01	4.164E-01	6.784E-01	6.358E-02	0.387
	129.76			6.791E+00	4.979E+00	8.546E+00	5.976E-01	0.795
TL-200	367.94	*		-6.084E+00	8.920E+00	1.417E+01	8.574E-01	-0.429
	579.30			8.559E+01	8.095E+01	1.240E+02	6.750E+00	0.690
	828.27			1.475E+01	1.020E+02	1.713E+02	1.266E+01	0.086
	1205.75			-2.312E+01	3.050E+01	4.418E+01	2.676E+00	-0.523
TL-201	68.90			3.242E-01	2.099E+00	3.494E+00	3.961E-01	0.093
	70.82			-1.518E+00	1.232E+00	1.927E+00	2.164E-01	-0.787
	80.30			9.247E-02	2.543E+00	3.109E+00	3.470E-01	0.030
	135.34			3.165E+00	8.543E+00	1.411E+01	9.732E-01	0.224
	167.43	*		-1.094E+00	2.487E+00	3.926E+00	2.613E-01	-0.279
TL-202	68.90			1.030E-01	6.666E-01	1.110E+00	1.258E-01	0.093
	70.82			-4.807E-01	3.903E-01	6.104E-01	6.854E-02	-0.787
	80.30			2.929E-02	8.055E-01	9.849E-01	1.099E-01	0.030
	439.56	*		1.041E-03	1.058E-01	1.737E-01	9.924E-03	0.006
HG-203	70.83			-2.833E+00	2.321E+00	3.600E+00	5.541E-01	-0.787
	72.87			1.353E+00	1.452E+00	2.182E+00	3.268E-01	0.620
	82.60			-5.900E-02	2.318E+00	3.351E+00	5.203E-01	-0.018
	279.20	*		1.327E-02	7.482E-02	1.262E-01	9.090E-03	0.105
BI-207	72.80			4.250E-01	4.733E-01	7.134E-01	7.957E-02	0.596
	74.97			7.630E-01	2.866E-01	4.455E-01	4.949E-02	1.713
	84.90			1.752E+00	5.186E-01	8.002E-01	9.094E-02	2.190
	569.67			-1.073E-02	6.305E-02	1.008E-01	5.527E-03	-0.106
	1063.62	*		8.126E-02	1.232E-01	2.120E-01	1.506E-02	0.383
	1770.23			1.265E-01	8.809E-01	1.293E+00	8.007E-02	0.098
TL-207	81.07			-2.274E-01	5.994E-01	7.094E-01	7.935E-02	-0.321
	83.78			2.301E-01	2.868E-01	4.303E-01	4.863E-02	0.535
	94.90			-4.357E-01	4.775E-01	6.467E-01	6.484E-02	-0.674
	122.32		+	1.645E+01	4.932E+00	6.876E+00	5.444E-01	2.392
	144.24			-9.192E-02	1.260E+00	2.034E+00	1.638E-01	-0.045
	154.21			6.334E-01	7.327E-01	1.229E+00	9.566E-02	0.516

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-209		269.46		2.609E-01	3.881E-01	6.684E-01	4.781E-02	0.390
		323.87	*	-5.177E-01	1.486E+00	2.426E+00	4.078E-01	-0.213
	+	338.28		4.789E+00	3.334E+00	3.994E+00	4.352E-01	1.199
		445.03		1.437E+00	5.629E+00	9.355E+00	9.562E-01	0.154
		260.50		-2.026E+01	2.017E+01	3.220E+01	2.239E+00	-0.629
		262.80		3.889E+01	5.525E+01	9.547E+01	6.633E+00	0.407
BI-210		896.60	*	1.685E+01	1.942E+01	3.384E+01	2.881E+00	0.498
		46.50	*	-1.763E+01	2.286E+01	3.676E+01	3.818E+00	-0.480
		46.50	*	-1.763E+01	2.286E+01	3.676E+01	3.818E+00	-0.480
PB-210		46.50	*	-1.763E+01	2.285E+01	3.676E+01	3.531E+00	-0.480
PO-210		46.50	*	-1.763E+01	2.285E+01	3.676E+01	3.531E+00	-0.480
PB-211		404.84	*	-1.306E+00	2.287E+00	3.404E+00	2.122E+00	-0.384
BI-212		427.08		3.459E+00	5.192E+00	8.088E+00	4.998E+00	0.428
		831.96		1.979E+00	3.031E+00	4.819E+00	3.013E+00	0.411
		727.18	*	5.224E-01	6.055E-01	1.069E+00	8.322E-02	0.489
		785.46		2.481E+00	3.783E+00	6.583E+00	4.433E-01	0.377
		1620.62		1.639E+00	1.704E+00	3.353E+00	2.307E-01	0.489
PO-215		81.07		-2.274E-01	5.994E-01	7.094E-01	7.935E-02	-0.321
		83.78		2.301E-01	2.868E-01	4.303E-01	4.863E-02	0.535
		94.90		-4.357E-01	4.775E-01	6.467E-01	6.484E-02	-0.674
	+	122.32		1.645E+01	4.932E+00	6.876E+00	5.444E-01	2.392
		144.24		-9.192E-02	1.260E+00	2.034E+00	1.638E-01	-0.045
		154.21		6.334E-01	7.327E-01	1.229E+00	9.566E-02	0.516
RN-219		269.46		2.609E-01	3.881E-01	6.684E-01	4.781E-02	0.390
		323.87	*	-5.177E-01	1.486E+00	2.426E+00	4.078E-01	-0.213
	+	338.28		4.789E+00	3.334E+00	3.994E+00	4.352E-01	1.199
		445.03		1.437E+00	5.629E+00	9.355E+00	9.562E-01	0.154
		271.23		5.700E-02	4.958E-01	8.348E-01	7.467E-02	0.068
		401.81	*	-3.158E-01	9.410E-01	1.521E+00	2.062E-01	-0.208
RN-220		549.76	*	-2.411E+01	5.230E+01	8.182E+01	4.539E+00	-0.295
RA-223		81.07		-2.274E-01	5.994E-01	7.094E-01	7.935E-02	-0.321
		83.78		2.301E-01	2.868E-01	4.303E-01	4.863E-02	0.535
		94.90		-4.357E-01	4.775E-01	6.467E-01	6.484E-02	-0.674
	+	122.32		1.645E+01	4.932E+00	6.876E+00	5.444E-01	2.392
		144.24		-9.192E-02	1.260E+00	2.034E+00	1.638E-01	-0.045
		154.21		6.334E-01	7.327E-01	1.229E+00	9.566E-02	0.516
RA-224		269.46		2.609E-01	3.881E-01	6.684E-01	4.781E-02	0.390
		323.87	*	-5.177E-01	1.486E+00	2.426E+00	4.078E-01	-0.213
	+	338.28		4.789E+00	3.334E+00	3.994E+00	4.352E-01	1.199
		445.03		1.437E+00	5.629E+00	9.355E+00	9.562E-01	0.154
		240.98	*	3.859E+00	1.627E+00	2.646E+00	1.841E-01	1.459
		79.80		-2.423E+00	4.209E+00	5.424E+00	1.228E+00	-0.447
AC-227		236.00		3.150E+00	6.782E-01	1.063E+00	1.184E-01	2.963
		256.20	*	9.850E-01	7.917E-01	1.380E+00	1.998E-01	0.714
		286.10		-2.811E-01	3.075E+00	5.117E+00	6.208E-01	-0.055
		299.80		2.333E+00	3.309E+00	4.998E+00	8.328E-01	0.467
		304.40		-3.710E+00	4.124E+00	6.494E+00	1.146E+00	-0.571
		334.20		2.199E-01	5.515E+00	7.977E+00	1.481E+00	0.028
TH-227		79.80		-2.423E+00	4.210E+00	5.424E+00	1.242E+00	-0.447
		94.00		4.010E+00	3.932E+00	5.841E+00	1.311E+00	0.687

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		236.00		3.150E+00	6.579E-01	1.063E+00	1.046E-01	2.963
		256.20	*	9.850E-01	7.972E-01	1.380E+00	2.391E-01	0.714
		286.10		-2.811E-01	3.088E+00	5.117E+00	5.129E+00	-0.055
		299.80		2.333E+00	3.309E+00	4.998E+00	8.328E-01	0.467
		304.40		-3.710E+00	4.124E+00	6.494E+00	1.146E+00	-0.571
		334.20		2.199E-01	5.515E+00	7.977E+00	1.481E+00	0.028
AC-228	+	338.32		1.147E+00	9.173E-01	9.555E-01	3.904E-01	1.200
	+	911.07	*	1.137E+00	5.485E-01	7.487E-01	8.324E-02	1.519
		969.11		5.415E-01	6.669E-01	1.136E+00	2.627E-01	0.477
RA-228	+	338.32		1.147E+00	9.173E-01	9.555E-01	3.904E-01	1.200
	+	911.07	*	1.137E+00	5.485E-01	7.487E-01	8.324E-02	1.519
		969.11		5.415E-01	6.669E-01	1.136E+00	2.627E-01	0.477
TH-229		85.43		3.963E+00	6.972E-01	9.725E-01	1.108E-01	4.075
	+	88.47		4.520E+00	7.101E-01	6.651E-01	7.611E-02	6.797
		100.00		2.006E-01	3.376E-01	5.671E-01	5.224E-02	0.354
		193.63	*	-7.469E-01	1.016E+00	1.565E+00	1.064E-01	-0.477
		210.97		-2.683E-01	1.536E+00	2.435E+00	1.676E-01	-0.110
PA-231		283.67	*	1.516E+00	3.032E+00	5.183E+00	7.394E-01	0.292
		301.29		1.219E+00	1.195E+00	2.030E+00	2.237E-01	0.600
TH-231		81.07		-2.274E-01	5.994E-01	7.094E-01	7.935E-02	-0.321
		83.78		2.301E-01	2.868E-01	4.303E-01	4.863E-02	0.535
		94.90		-4.357E-01	4.775E-01	6.467E-01	6.484E-02	-0.674
	+	122.32		1.645E+01	4.932E+00	6.876E+00	5.444E-01	2.392
		144.24		-9.192E-02	1.260E+00	2.034E+00	1.638E-01	-0.045
		154.21		6.334E-01	7.327E-01	1.229E+00	9.566E-02	0.516
		269.46		2.609E-01	3.881E-01	6.684E-01	4.781E-02	0.390
		323.87	*	-5.177E-01	1.486E+00	2.426E+00	4.078E-01	-0.213
	+	338.28		4.789E+00	3.334E+00	3.994E+00	4.352E-01	1.199
		445.03		1.437E+00	5.629E+00	9.355E+00	9.562E-01	0.154
U-231		84.21		4.357E+00	3.720E+00	5.646E+00	6.394E-01	0.772
	+	92.29		1.298E+00	1.348E+00	1.880E+00	1.981E-01	0.691
		95.87	*	-5.136E-01	6.593E-01	8.999E-01	8.869E-02	-0.571
		108.00		1.737E-01	1.130E+00	1.861E+00	1.539E-01	0.093
TH-232	+	338.32		1.147E+00	7.920E-01	9.555E-01	6.151E-02	1.200
	+	911.07	*	1.137E+00	5.485E-01	7.487E-01	8.324E-02	1.519
		969.11		5.415E-01	6.669E-01	1.136E+00	2.627E-01	0.477
PA-233	+	75.28		1.398E+01	6.907E+00	1.289E+01	2.175E+00	1.085
	+	86.59		6.481E+01	1.936E+01	1.007E+01	2.806E+00	6.437
		300.12		7.587E-01	8.826E-01	1.401E+00	1.946E-01	0.542
		311.98	*	-2.807E-02	1.379E-01	2.274E-01	1.594E-02	-0.123
		340.50		6.408E-01	1.416E+00	2.097E+00	4.849E-01	0.306
		398.62		-1.699E+00	5.084E+00	8.178E+00	2.112E+00	-0.208
		415.76		-6.796E-02	3.732E+00	6.133E+00	1.261E+00	-0.011
PA-234		63.00		-2.257E+00	4.574E+00	6.507E+00	1.140E+00	-0.347
		94.67		-2.662E-01	3.436E-01	4.690E-01	6.308E-02	-0.568
		98.44		3.883E-02	1.848E-01	2.817E-01	1.575E-01	0.138
		99.86		4.559E-01	8.578E-01	1.437E+00	1.327E-01	0.317
		111.00		7.237E-02	3.428E-01	5.653E-01	6.585E-02	0.128
		131.20		-2.087E-01	1.979E-01	3.057E-01	2.129E-02	-0.683

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		152.70		3.626E-01	6.078E-01	1.005E+00	1.625E-01	0.361
	+	186.00		4.304E+00	3.652E+00	4.342E+00	1.335E+00	0.991
		226.40		-2.455E-01	8.356E-01	1.392E+00	1.694E-01	-0.176
		227.20		3.192E-01	8.903E-01	1.522E+00	1.056E-01	0.210
		248.90		-6.293E-01	1.650E+00	2.716E+00	5.928E-01	-0.232
	+	293.70		3.164E+00	1.934E+00	2.633E+00	4.339E-01	1.202
		369.80		9.443E-01	1.842E+00	3.114E+00	6.504E-01	0.303
		568.70		-1.836E+00	2.056E+00	3.102E+00	1.701E-01	-0.592
		569.50		-2.163E-01	5.660E-01	8.908E-01	4.883E-02	-0.243
		574.00		2.525E+00	3.382E+00	5.464E+00	2.986E-01	0.462
		699.00		-1.046E-01	1.381E+00	2.304E+00	4.122E-01	-0.045
		706.10		-1.964E-01	2.101E+00	3.496E+00	1.542E+00	-0.056
		733.00		-4.462E-01	7.451E-01	1.179E+00	2.513E-01	-0.378
		742.81		-1.033E+00	2.741E+00	4.298E+00	2.877E+00	-0.240
		796.30		-8.584E-01	1.997E+00	3.205E+00	8.510E-01	-0.268
		805.60		-5.738E-01	2.098E+00	3.407E+00	1.030E+00	-0.168
		819.60		-5.134E-01	2.916E+00	4.777E+00	1.803E+00	-0.107
		826.30		-1.386E+00	2.002E+00	2.997E+00	1.334E+00	-0.462
		831.60		5.135E-01	1.431E+00	2.424E+00	7.156E-01	0.212
		876.40		1.158E+00	2.419E+00	3.617E+00	3.717E+00	0.320
		880.51		-4.074E-02	7.255E-01	1.197E+00	9.863E-02	-0.034
		883.24		1.268E-01	7.285E-01	1.212E+00	8.144E-01	0.105
		899.00		-1.985E+00	2.462E+00	3.600E+00	1.573E+00	-0.551
		925.00		1.435E+00	3.260E+00	5.531E+00	4.623E-01	0.259
		926.50		4.029E-01	4.975E-01	8.457E-01	2.130E-01	0.476
		946.00	*	6.013E-01	8.904E-01	1.516E+00	2.816E-01	0.397
		949.00		-4.038E-01	1.302E+00	2.106E+00	1.723E-01	-0.192
		980.50		4.787E-01	1.741E+00	2.924E+00	2.318E-01	0.164
PA-234M		1394.10		-1.415E+00	1.931E+00	2.419E+00	1.571E+00	-0.585
		766.42		-1.292E+00	2.299E+01	3.820E+01	1.926E+01	-0.034
TH-234		1001.03	*	3.060E+00	1.115E+01	1.881E+01	1.734E+00	0.163
		63.29	*	-2.196E+00	3.908E+00	5.523E+00	1.090E+00	-0.398
U-235	+	92.38		1.149E+00	1.208E+00	1.659E+00	3.163E-01	0.693
		89.95		1.012E+01	4.369E+00	4.035E+00	1.276E+00	2.508
	+	93.35		1.382E+00	1.482E+00	1.929E+00	5.516E-01	0.716
		105.00		-7.065E-01	1.995E+00	3.196E+00	9.536E-01	-0.221
		143.76	*	8.893E-02	3.881E-01	6.349E-01	1.059E-01	0.140
		163.35		2.189E-01	9.020E-01	1.471E+00	2.688E-01	0.149
	+	185.71		1.594E-01	1.265E-01	1.606E-01	1.085E-02	0.993
		205.31		-6.245E-01	9.886E-01	1.511E+00	2.773E-01	-0.413
NP-236		94.67		-2.012E-01	2.600E-01	3.559E-01	3.584E-02	-0.565
		98.44		2.934E-02	1.388E-01	2.130E-01	2.010E-02	0.138
		111.00		5.474E-02	2.593E-01	4.276E-01	3.418E-02	0.128
		160.31	*	5.132E-02	1.490E-01	2.445E-01	1.633E-02	0.210
U-238		63.29	*	-2.196E+00	3.908E+00	5.523E+00	1.090E+00	-0.398
	+	92.38		1.149E+00	1.194E+00	1.659E+00	1.746E-01	0.693
NP-239		99.55		1.563E-01	2.868E-01	4.809E-01	4.460E-02	0.325
		117.00	*	-2.335E-01	3.945E-01	5.413E-01	4.069E-02	-0.431
		209.75		9.343E-01	1.528E+00	2.511E+00	1.727E-01	0.372

---- 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		-1.174E-01	4.635E-01	7.733E-01	5.366E-02	-0.152
		277.60		3.836E-01	3.707E-01	6.473E-01	4.470E-02	0.593
		334.30		1.507E-01	3.126E+00	4.525E+00	2.933E-01	0.033
		74.67	*	3.757E-01	1.558E-01	2.423E-01	2.693E-02	1.550
	+	86.72		3.646E+02	5.727E+01	5.663E+01	6.500E+00	6.438
CM-243		117.66		-2.614E+00	7.739E+00	1.080E+01	8.071E-01	-0.242
		142.18		2.233E+01	3.286E+01	5.478E+01	3.732E+00	0.408
		99.55		1.607E-01	2.950E-01	4.946E-01	4.587E-02	0.325
		103.76	*	1.881E-03	1.770E-01	2.900E-01	2.531E-02	0.006
		117.00		-2.401E-01	4.057E-01	5.566E-01	4.184E-02	-0.431
AM-246		209.75		9.206E-01	1.505E+00	2.474E+00	1.702E-01	0.372
		228.18		-1.186E-01	4.681E-01	7.810E-01	5.420E-02	-0.152
		277.60		3.865E-01	3.735E-01	6.523E-01	4.504E-02	0.593
		798.80		-2.742E-02	3.133E-01	5.185E-01	3.596E-02	-0.053
		1036.00		3.400E-01	6.859E-01	1.169E+00	8.654E-02	0.291
CM-247		1062.04		2.768E-01	5.355E-01	9.124E-01	6.498E-02	0.303
		1078.86	*	-2.211E-01	3.451E-01	5.349E-01	3.708E-02	-0.413
		278.00		1.318E+00	1.534E+00	2.662E+00	1.838E-01	0.495
		287.40		-9.904E-01	2.635E+00	4.066E+00	2.790E-01	-0.244
		402.60	*	-1.242E-02	8.296E-02	1.355E-01	7.708E-03	-0.092
CF-249		252.85		-6.441E-01	1.764E+00	2.913E+00	2.028E-01	-0.221
		333.44		-6.559E-02	4.153E-01	5.922E-01	3.844E-02	-0.111
		387.95	*	-2.873E-02	8.947E-02	1.450E-01	8.316E-03	-0.198
CF-251		176.60	*	2.490E-01	2.434E-01	4.095E-01	2.745E-02	0.608
		227.00		2.414E-01	7.889E-01	1.346E+00	9.338E-02	0.179
		285.00		-3.495E-01	3.520E+00	5.855E+00	4.024E-01	-0.060



# 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]G1202012164      *
* Acquisition date   : 19-JAN-2010 18:15:50 Detector SN#                   *
* Detector ID        : GAM15 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 01:00:01.26 Half life ratio : 8.000            *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID         *
* Sample ID          : G1202012164 Analyst initials: MXR1                 *
* Batch Number       : 940270 Sample Quantity : 1.5544E+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 )	
CO-57	2.335E-01	6.820E-02	7.648E-02	0.000E+00
CO-60	6.739E+00	6.138E-01	1.137E-01	0.000E+00
CD-109	3.331E+01	5.129E+00	2.674E+00	0.000E+00
SN-126	3.311E+00	5.097E-01	2.679E-01	0.000E+00
BA-137M	5.255E+00	3.751E-01	1.178E-01	0.000E+00
CS-137	5.555E+00	3.975E-01	1.245E-01	0.000E+00
TL-208	4.185E-01	1.395E-01	1.267E-01	0.000E+00
BI-211	2.131E+00	6.572E-01	7.485E-01	0.000E+00
PB-212	1.054E+00	2.613E-01	1.933E-01	0.000E+00
PO-212	1.054E+00	2.613E-01	1.933E-01	0.000E+00
BI-214	4.552E-01	3.070E-01	2.471E-01	0.000E+00
PB-214	7.412E-01	2.317E-01	2.557E-01	0.000E+00
PO-214	7.412E-01	2.317E-01	2.557E-01	0.000E+00
PO-216	1.054E+00	2.613E-01	1.933E-01	0.000E+00
PO-218	7.412E-01	2.317E-01	2.557E-01	0.000E+00
RA-226	4.552E-01	3.070E-01	2.471E-01	0.000E+00
TH-228	1.062E+00	2.633E-01	1.948E-01	0.000E+00
TH-230	4.552E-01	3.070E-01	2.471E-01	0.000E+00
U-234	4.552E-01	3.070E-01	2.471E-01	0.000E+00
NP-237	9.722E+00	2.471E+00	8.019E-01	0.000E+00
AM-241	1.484E+01	2.173E+00	1.014E+00	0.000E+00
ANH-511	2.945E-02	1.135E-01	1.028E-01	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-5.077E-01	6.674E-01	1.103E+00	0.000E+00 NOT IDENT.
NA-22	-1.231E-02	5.989E-02	9.707E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.313E+02	0.000E+00	0.000E+00 SHORT HLIF
AL-26	1.661E-02	4.214E-02	7.761E-02	0.000E+00 NOT IDENT.
K-40	4.605E-01	5.987E-01	1.159E+00	0.000E+00 NOT IDENT.

TI-44	9.752E-02	8.394E-02	1.413E-01	0.000E+00	NOT IDENT.
SC-46	-1.051E-01	9.173E-02	1.450E-01	0.000E+00	NOT IDENT.
V-48	-2.159E-02	1.222E-01	2.064E-01	0.000E+00	NOT IDENT.
CR-51	-2.978E-01	6.833E-01	1.194E+00	0.000E+00	NOT IDENT.
MN-52	-3.082E-03	1.038E-01	1.773E-01	0.000E+00	NOT IDENT.
MN-54	2.671E-02	8.317E-02	1.474E-01	0.000E+00	NOT IDENT.
CO-56	-8.972E-03	8.833E-02	1.521E-01	0.000E+00	NOT IDENT.
CO-58	-2.531E-02	7.675E-02	1.303E-01	0.000E+00	NOT IDENT.
FE-59	8.583E-02	1.958E-01	3.426E-01	0.000E+00	NOT IDENT.
ZN-65	-1.944E-01	2.106E-01	3.314E-01	0.000E+00	NOT IDENT.
GE-68	8.072E-01	2.732E+00	4.749E+00	0.000E+00	NOT IDENT.
AS-73	1.991E+00	4.070E+00	7.170E+00	0.000E+00	NOT IDENT.
AS-74	1.338E-02	1.468E-01	2.513E-01	0.000E+00	NOT IDENT.
SE-75	7.662E-03	8.762E-02	1.589E-01	0.000E+00	FAIL ABUN
BR-77	8.528E-01	2.654E+00	4.667E+00	0.000E+00	FAIL ABUN
SR-82	-2.410E-01	6.602E-01	1.123E+00	0.000E+00	NOT IDENT.
RB-83	2.333E-02	1.432E-01	2.493E-01	0.000E+00	NOT IDENT.
RB-84	2.938E-02	1.501E-01	2.627E-01	0.000E+00	NOT IDENT.
KR-85	4.999E+00	1.672E+01	2.558E+01	0.000E+00	NOT IDENT.
SR-85	2.372E-02	7.933E-02	1.213E-01	0.000E+00	NOT IDENT.
RB-86	4.824E-01	1.329E+00	2.323E+00	0.000E+00	NOT IDENT.
Y-88	2.396E-02	4.927E-02	9.155E-02	0.000E+00	NOT IDENT.
ZR-88	-4.804E-02	6.713E-02	1.137E-01	0.000E+00	NOT IDENT.
Y-91	-1.946E+00	2.327E+01	3.869E+01	0.000E+00	NOT IDENT.
NB-94	-5.296E-05	6.465E-02	1.138E-01	0.000E+00	NOT IDENT.
NB-95	9.196E-03	7.792E-02	1.373E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.883E-01	5.145E-01	0.000E+00	NOT IDENT.
ZR-95	1.180E-01	1.317E-01	2.444E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.386E+02	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	3.384E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	6.234E-01	3.418E+00	6.075E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.808E+07	0.000E+00	0.000E+00	SHORT HLIF
RH-101	3.149E-02	6.244E-02	1.110E-01	0.000E+00	NOT IDENT.
RH-102	1.079E-02	6.706E-02	1.174E-01	0.000E+00	NOT IDENT.
RU-103	1.990E-02	7.931E-02	1.392E-01	0.000E+00	FAIL ABUN
RH-106	-2.046E-01	6.617E-01	1.097E+00	0.000E+00	NOT IDENT.
RU-106	-2.046E-01	6.613E-01	1.097E+00	0.000E+00	NOT IDENT.
AG-108M	4.129E-02	7.512E-02	1.350E-01	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	1.547E-01	2.971E-01	0.000E+00	NOT IDENT.
IN-111	1.553E-01	3.706E-01	6.272E-01	0.000E+00	NOT IDENT.
IN-113M	-8.860E-02	9.804E-02	1.642E-01	0.000E+00	NOT IDENT.
SN-113	-8.860E-02	9.804E-02	1.642E-01	0.000E+00	NOT IDENT.
IN-114M	2.268E-01	3.611E-01	5.710E-01	0.000E+00	NOT IDENT.
CD-115	-5.242E-01	2.304E+00	3.904E+00	0.000E+00	NOT IDENT.
SN-117M	-3.576E-02	6.888E-02	1.185E-01	0.000E+00	NOT IDENT.
SB-122	3.987E-01	6.298E-01	1.125E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	9.140E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.790E-03	4.955E-02	8.754E-02	0.000E+00	NOT IDENT.
I-124	-1.056E-01	4.735E-01	6.797E-01	0.000E+00	NOT IDENT.
SB-124	7.173E-02	1.109E-01	2.169E-01	0.000E+00	NOT IDENT.
SB-125	1.679E-01	2.112E-01	3.844E-01	0.000E+00	NOT IDENT.
TE-125M	2.383E+00	1.602E+01	2.904E+01	0.000E+00	NOT IDENT.
I-126	1.701E-03	2.684E-01	3.907E-01	0.000E+00	NOT IDENT.
SB-126	-1.338E-01	2.046E-01	3.438E-01	0.000E+00	NOT IDENT.
SB-127	1.061E-01	6.397E-01	1.143E+00	0.000E+00	NOT IDENT.
XE-127	-2.452E-02	7.635E-02	1.297E-01	0.000E+00	FAIL ABUN
I-131	4.363E-03	1.254E-01	2.222E-01	0.000E+00	NOT IDENT.
TE-132	-7.289E-02	2.893E-01	5.221E-01	0.000E+00	NOT IDENT.
BA-133	-2.263E-02	1.028E-01	1.552E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.542E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-2.219E-02	9.895E-02	1.698E-01	0.000E+00	NOT IDENT.
CS-135	9.682E-02	3.205E-01	5.860E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.570E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.498E-02	1.700E-01	2.874E-01	0.000E+00	FAIL ABUN
CE-139	2.178E-03	5.340E-02	9.414E-02	0.000E+00	NOT IDENT.
BA-140	1.462E-02	3.683E-01	6.347E-01	0.000E+00	NOT IDENT.
LA-140	-2.041E-02	6.932E-02	1.101E-01	0.000E+00	NOT IDENT.
CE-141	-7.037E-02	9.647E-02	1.652E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	9.317E+00	1.340E+01	0.000E+00	FAIL ABUN
CE-144	-1.281E-01	3.578E-01	6.264E-01	0.000E+00	NOT IDENT.
PM-144	2.683E-03	6.559E-02	1.159E-01	0.000E+00	NOT IDENT.
PR-144	1.811E-01	4.428E+00	7.823E+00	0.000E+00	NOT IDENT.
PM-146	-8.113E-03	1.017E-01	1.763E-01	0.000E+00	NOT IDENT.
ND-147	-7.660E-02	7.664E-01	1.310E+00	0.000E+00	FAIL ABUN
PM-149	-1.598E+00	1.791E+01	3.206E+01	0.000E+00	NOT IDENT.
EU-152	-9.905E-02	2.327E-01	3.469E-01	0.000E+00	FAIL ABUN
GD-153	1.148E-01	1.541E-01	2.554E-01	0.000E+00	NOT IDENT.
EU-154	-4.107E-02	1.670E-01	2.689E-01	0.000E+00	NOT IDENT.

EU-155	-2.276E-02	1.966E-01	3.531E-01	0.000E+00	FAIL ABUN
TB-160	-1.203E-01	3.278E-01	5.526E-01	0.000E+00	FAIL ABUN
HO-166M	4.568E-02	1.232E-01	2.220E-01	0.000E+00	FAIL ABUN
TM-171	-3.270E+01	6.796E+01	1.229E+02	0.000E+00	FAIL ABUN
LU-176	1.774E-02	5.188E-02	9.434E-02	0.000E+00	FAIL ABUN
LU-177	-3.071E-01	9.555E-01	1.632E+00	0.000E+00	NOT IDENT.
LU-177M	-5.189E-01	3.889E-01	6.302E-01	0.000E+00	FAIL ABUN
HF-181	8.001E-02	8.485E-02	1.549E-01	0.000E+00	FAIL ABUN
W-181	-4.986E-01	8.954E-01	1.558E+00	0.000E+00	FAIL ABUN
TA-182	-2.542E-01	2.472E-01	3.539E-01	0.000E+00	NOT IDENT.
RE-183	-1.922E-03	1.927E-01	3.393E-01	0.000E+00	FAIL ABUN
RE-184	-1.665E-01	4.471E-01	7.965E-01	0.000E+00	FAIL ABUN
OS-185	4.598E-02	8.428E-02	1.485E-01	0.000E+00	FAIL ABUN
RE-188	7.023E-02	2.864E-01	5.115E-01	0.000E+00	NOT IDENT.
W-188	1.081E+01	1.500E+01	2.457E+01	0.000E+00	NOT IDENT.
IR-192	2.877E-02	6.766E-02	1.233E-01	0.000E+00	FAIL ABUN
AU-195	2.622E-01	4.081E-01	7.344E-01	0.000E+00	FAIL ABUN
TL-200	-6.084E+00	8.742E+00	1.484E+01	0.000E+00	NOT IDENT.
TL-201	-1.094E+00	2.437E+00	4.196E+00	0.000E+00	NOT IDENT.
TL-202	1.041E-03	1.037E-01	1.810E-01	0.000E+00	NOT IDENT.
HG-203	1.327E-02	7.333E-02	1.331E-01	0.000E+00	NOT IDENT.
BI-207	8.126E-02	1.207E-01	2.157E-01	0.000E+00	NOT IDENT.
TL-207	-5.177E-01	1.456E+00	2.549E+00	0.000E+00	FAIL ABUN
PO-209	1.685E+01	1.903E+01	3.460E+01	0.000E+00	NOT IDENT.
BI-210	-1.763E+01	2.241E+01	4.052E+01	0.000E+00	NOT IDENT.
PB-210	-1.763E+01	2.241E+01	4.052E+01	0.000E+00	NOT IDENT.
PO-210	-1.763E+01	2.240E+01	4.052E+01	0.000E+00	NOT IDENT.
PB-211	-1.306E+00	2.241E+00	3.555E+00	0.000E+00	NOT IDENT.
BI-212	5.224E-01	5.934E-01	1.099E+00	0.000E+00	NOT IDENT.
PO-215	-5.177E-01	1.456E+00	2.549E+00	0.000E+00	FAIL ABUN
RN-219	-3.158E-01	9.222E-01	1.589E+00	0.000E+00	NOT IDENT.
RN-220	-2.411E+01	5.126E+01	8.477E+01	0.000E+00	NOT IDENT.
RA-223	-5.177E-01	1.456E+00	2.549E+00	0.000E+00	FAIL ABUN
RA-224	0.000E+00	1.594E+00	2.801E+00	0.000E+00	NOT IDENT.
AC-227	9.850E-01	7.758E-01	1.459E+00	0.000E+00	NOT IDENT.
TH-227	9.850E-01	7.812E-01	1.459E+00	0.000E+00	NOT IDENT.
AC-228	0.000E+00	5.376E-01	7.652E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	5.376E-01	7.652E-01	0.000E+00	FAIL ABUN
TH-229	-7.469E-01	9.956E-01	1.666E+00	0.000E+00	FAIL ABUN
PA-231	1.516E+00	2.972E+00	5.464E+00	0.000E+00	NOT IDENT.
TH-231	-5.177E-01	1.456E+00	2.549E+00	0.000E+00	FAIL ABUN
U-231	-5.136E-01	6.461E-01	9.750E-01	0.000E+00	FAIL ABUN
TH-232	0.000E+00	5.376E-01	7.652E-01	0.000E+00	FAIL ABUN
PA-233	-2.807E-02	1.352E-01	2.391E-01	0.000E+00	FAIL ABUN
PA-234	6.013E-01	8.726E-01	1.548E+00	0.000E+00	FAIL ABUN
PA-234M	3.060E+00	1.093E+01	1.917E+01	0.000E+00	NOT IDENT.
TH-234	-2.196E+00	3.830E+00	6.045E+00	0.000E+00	FAIL ABUN
U-235	8.893E-02	3.804E-01	6.810E-01	0.000E+00	FAIL ABUN
NP-236	5.132E-02	1.461E-01	2.616E-01	0.000E+00	NOT IDENT.
U-238	-2.196E+00	3.830E+00	6.045E+00	0.000E+00	FAIL ABUN
NP-239	-2.335E-01	3.866E-01	5.836E-01	0.000E+00	NOT IDENT.
AM-243	0.000E+00	1.527E-01	2.641E-01	0.000E+00	FAIL ABUN
CM-243	1.881E-03	1.735E-01	3.136E-01	0.000E+00	NOT IDENT.
AM-246	-2.211E-01	3.382E-01	5.441E-01	0.000E+00	NOT IDENT.
CM-247	-1.242E-02	8.130E-02	1.416E-01	0.000E+00	NOT IDENT.
CF-249	-2.873E-02	8.768E-02	1.517E-01	0.000E+00	NOT IDENT.
CF-251	2.490E-01	2.385E-01	4.370E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012164.CNF;1
Sample date        : 12-JAN-2010 00:00:00 Acquisition date : 19-JAN-2010 18:15:50
Sample ID          : G1202012164 Sample quantity      : 1.55440E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00 Elapsed real time: 0 01:00:01.26 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity         : 5.00000
Batch ID           : 940270 Detector SN#           :
Matrix Spike ID    : LCS ID                        : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	232	85.51*	5.722E+00	2.289E-01	2.335E-01	29.80
	136.48	-----	10.60	5.690E+00	-----	Line Not Found	-----
CO-60	1173.22	1598	100.00	1.211E+00	6.375E+00	6.392E+00	7.92
	1332.49	1501	100.00*	1.079E+00	6.721E+00	6.739E+00	9.29
CD-109	88.03	1134	3.72*	4.472E+00	3.293E+01	3.331E+01	15.71
SN-126	64.28	-----	9.60	1.930E+00	-----	Line Not Found	-----
	86.94	1134	8.90	4.472E+00	1.376E+01	1.376E+01	43.39
	87.57	1134	37.00*	4.472E+00	3.311E+00	3.311E+00	15.71
BA-137M	661.65	1976	89.98*	2.020E+00	5.252E+00	5.255E+00	7.28
CS-137	661.65	1976	85.12*	2.020E+00	5.552E+00	5.555E+00	7.30
TL-208	277.35	-----	6.80	3.788E+00	-----	Line Not Found	-----
	510.84	15	21.60	2.463E+00	1.363E-01	1.363E-01	393.41
	583.14	163	84.20*	2.230E+00	4.185E-01	4.185E-01	34.02
	860.37	-----	12.46	1.613E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	2.992E+00	-----	Line Not Found	-----
	351.07	183	12.94*	3.206E+00	2.131E+00	2.131E+00	31.47
PB-212	74.81	-----	10.70	3.221E+00	-----	Line Not Found	-----
	77.11	125	18.00	3.415E+00	9.787E-01	9.787E-01	47.74
	87.30	1134	8.00	4.472E+00	1.531E+01	1.531E+01	18.62
	238.63	411	44.60*	4.220E+00	1.054E+00	1.054E+00	25.31
	300.09	-----	3.41	3.583E+00	-----	Line Not Found	-----
PO-212	74.81	-----	10.70	3.221E+00	-----	Line Not Found	-----
	77.11	125	18.00	3.415E+00	9.787E-01	9.787E-01	47.74
	87.30	1134	8.00	4.472E+00	1.531E+01	1.531E+01	18.62
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	411	44.60*	4.220E+00	1.054E+00	1.054E+00	25.31
	300.09	-----	3.41	3.583E+00	-----	Line Not Found	-----
BI-214	609.31	94	46.30*	2.154E+00	4.552E-01	4.552E-01	68.81
	1120.29	-----	15.10	1.263E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.817E-01	9.548E-01	9.548E-01	42.86
PB-214	74.81	-----	6.21	3.221E+00	-----	Line Not Found	-----
	77.11	125	10.50	3.415E+00	1.678E+00	1.678E+00	48.35

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	87.30	1134	4.67	4.472E+00	2.623E+01	2.623E+01	17.50
	241.98	-----	7.49	4.172E+00	-----	Line Not Found	-----
	295.21	95	19.20	3.630E+00	6.592E-01	6.592E-01	59.58
	351.92	183	37.20*	3.206E+00	7.412E-01	7.412E-01	31.90
PO-214	74.81	-----	6.21	3.221E+00	-----	Line Not Found	-----
	77.11	125	10.50	3.415E+00	1.678E+00	1.678E+00	48.35
	87.30	1134	4.67	4.472E+00	2.623E+01	2.623E+01	17.50
	241.98	-----	7.49	4.172E+00	-----	Line Not Found	-----
	295.21	95	19.20	3.630E+00	6.592E-01	6.592E-01	59.58
	351.92	183	37.20*	3.206E+00	7.412E-01	7.412E-01	31.90
PO-216	74.81	-----	10.70	3.221E+00	-----	Line Not Found	-----
	77.11	125	18.00	3.415E+00	9.787E-01	9.787E-01	47.74
	87.30	1134	8.00	4.472E+00	1.531E+01	1.531E+01	18.62
	238.63	411	44.60*	4.220E+00	1.054E+00	1.054E+00	25.31
	300.09	-----	3.41	3.583E+00	-----	Line Not Found	-----
PO-218	74.81	-----	6.21	3.221E+00	-----	Line Not Found	-----
	77.11	125	10.50	3.415E+00	1.678E+00	1.678E+00	48.35
	87.30	1134	4.67	4.472E+00	2.623E+01	2.623E+01	17.50
	241.98	-----	7.49	4.172E+00	-----	Line Not Found	-----
	295.21	95	19.20	3.630E+00	6.592E-01	6.592E-01	59.58
	351.92	183	37.20*	3.206E+00	7.412E-01	7.412E-01	31.90
RA-226	609.31	94	46.30*	2.154E+00	4.552E-01	4.552E-01	68.81
	1120.29	-----	15.10	1.263E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.817E-01	9.548E-01	9.548E-01	42.86
TH-228	74.81	-----	10.70	3.221E+00	-----	Line Not Found	-----
	77.11	125	18.00	3.415E+00	9.787E-01	9.863E-01	47.74
	87.30	1134	8.00	4.472E+00	1.531E+01	1.543E+01	15.71
	238.63	411	44.60*	4.220E+00	1.054E+00	1.062E+00	25.31
	300.09	-----	3.41	3.583E+00	-----	Line Not Found	-----
TH-230	609.31	94	46.30*	2.154E+00	4.552E-01	4.552E-01	68.81
	1120.29	-----	15.10	1.263E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.817E-01	9.548E-01	9.548E-01	42.86
U-234	609.31	94	46.30*	2.154E+00	4.552E-01	4.552E-01	68.81
	1120.29	-----	15.10	1.263E+00	-----	Line Not Found	-----
	1764.49	28	15.80	8.817E-01	9.548E-01	9.548E-01	42.86
NP-237	86.50	1134	12.60*	4.472E+00	9.722E+00	9.722E+00	25.93
	95.87	-----	2.60	5.041E+00	-----	Line Not Found	-----
AM-241	59.54	1428	35.90*	1.295E+00	1.484E+01	1.484E+01	14.94
ANH-511	511.00	15	100.00*	2.463E+00	2.945E-02	2.945E-02	393.32

Flag: "\*" = Keyline

Total number of lines in spectrum 18  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 18 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.02	2.289E-01	2.335E-01	0.696E-01	29.80	
CO-60	5.27Y	1.00	6.721E+00	6.739E+00	0.626E+00	9.29	
CD-109	464.00D	1.01	3.293E+01	3.331E+01	0.523E+01	15.71	
SN-126	1.00E+05Y	1.00	3.311E+00	3.311E+00	0.520E+00	15.71	
BA-137M	30.17Y	1.00	5.252E+00	5.255E+00	0.383E+00	7.28	
CS-137	30.17Y	1.00	5.552E+00	5.555E+00	0.406E+00	7.30	
TL-208	1.41E+10Y	1.00	4.185E-01	4.185E-01	1.424E-01	34.02	
BI-211	7.04E+08Y	1.00	2.131E+00	2.131E+00	0.671E+00	31.47	
PB-212	1.41E+10Y	1.00	1.054E+00	1.054E+00	0.267E+00	25.31	
PO-212	1.41E+10Y	1.00	1.054E+00	1.054E+00	0.267E+00	25.31	
BI-214	1600.00Y	1.00	4.552E-01	4.552E-01	3.132E-01	68.81	
PB-214	1600.00Y	1.00	7.412E-01	7.412E-01	2.365E-01	31.90	
PO-214	1600.00Y	1.00	7.412E-01	7.412E-01	2.365E-01	31.90	
PO-216	1.41E+10Y	1.00	1.054E+00	1.054E+00	0.267E+00	25.31	
PO-218	1600.00Y	1.00	7.412E-01	7.412E-01	2.365E-01	31.90	
RA-226	1600.00Y	1.00	4.552E-01	4.552E-01	3.132E-01	68.81	
TH-228	1.91Y	1.01	1.054E+00	1.062E+00	0.269E+00	25.31	
TH-230	4.47E+09Y	1.00	4.552E-01	4.552E-01	3.132E-01	68.81	
U-234	4.47E+09Y	1.00	4.552E-01	4.552E-01	3.132E-01	68.81	
NP-237	2.14E+06Y	1.00	9.722E+00	9.722E+00	2.521E+00	25.93	
AM-241	432.20Y	1.00	1.484E+01	1.484E+01	0.222E+01	14.94	
ANH-511	1.00E+09Y	1.00	2.945E-02	2.945E-02	11.58E-02	393.32	

Total Activity : 8.939E+01 8.982E+01

Grand Total Activity : 8.939E+01 8.982E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G1202012164

Page : 4  
Acquisition date : 19-JAN-2010 18:15:50

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.15	62	268	1.19	184.77	182	9	1.72E-02	****	4.82E+00	T
0	184.55	89	295	1.33	369.50	365	11	2.47E-02	79.1	5.00E+00	T
0	337.75	89	213	1.05	675.76	670	12	2.48E-02	68.8	3.30E+00	T
0	910.86	100	106	2.10	1821.62	1816	13	2.77E-02	46.9	1.53E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202012164.CNF;1
* Acquisition date   : 19-JAN-2010 18:15:50   Detector SN#      :
* Detector ID        : GAM15                   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 01:00:01.26           Half life ratio   : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00   Nuclide Library  : SOLID
* Sample ID          : G1202012164           Analyst initials  : MXR1
* Batch Number       : 940270                Sample Quantity  : 1.55440E+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
CO-57	2.335E-01	6.959E-02	7.101E-02	5.105E-03	3.289
CO-60	6.739E+00	6.263E-01	1.125E-01	8.489E-03	59.923
CD-109	3.331E+01	5.234E+00	2.463E+00	2.848E-01	13.527
SN-126	3.311E+00	5.201E-01	2.467E-01	2.846E-02	13.422
BA-137M	5.255E+00	3.827E-01	1.143E-01	5.750E-03	45.979
CS-137	5.555E+00	4.057E-01	1.208E-01	6.112E-03	45.979
TL-208	4.185E-01	1.424E-01	1.225E-01	7.799E-03	3.417
BI-211	2.131E+00	6.706E-01	7.139E-01	4.906E-02	2.985
PB-212	1.054E+00	2.666E-01	1.826E-01	1.511E-02	5.771
PO-212	1.054E+00	2.666E-01	1.826E-01	1.511E-02	5.771
BI-214	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903
PB-214	7.412E-01	2.365E-01	2.439E-01	2.103E-02	3.039
PO-214	7.412E-01	2.365E-01	2.439E-01	2.103E-02	3.039
PO-216	1.054E+00	2.666E-01	1.826E-01	1.511E-02	5.771
PO-218	7.412E-01	2.365E-01	2.439E-01	2.103E-02	3.039
RA-226	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903
TH-228	1.062E+00	2.687E-01	1.840E-01	1.523E-02	5.771
TH-230	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-234	4.552E-01	3.132E-01	2.392E-01	1.776E-02	1.903
NP-237	9.722E+00	2.521E+00	7.382E-01	1.743E-01	13.169
AM-241	1.484E+01	2.218E+00	9.248E-01	1.177E-01	16.048
ANH-511	2.945E-02	1.158E-01	9.901E-02	5.591E-03	0.297

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-5.077E-01		6.811E-01	1.061E+00	7.070E-02	-0.479
NA-22	-1.231E-02		6.111E-02	9.588E-02	6.581E-03	-0.128
NA-24	1.598E-05		1.690E-04	Half-Life too short		
AL-26	1.661E-02		4.300E-02	7.742E-02	4.633E-03	0.214
K-40	4.605E-01		6.109E-01	1.150E+00	8.788E-02	0.401
TI-44	9.752E-02		8.565E-02	1.298E-01	1.443E-02	0.751
SC-46	-1.051E-01		9.360E-02	1.418E-01	1.189E-02	-0.741
V-48	-2.159E-02		1.247E-01	2.024E-01	1.599E-02	-0.107
CR-51	-2.978E-01		6.972E-01	1.136E+00	8.191E-02	-0.262
MN-52	-3.082E-03		1.059E-01	1.758E-01	1.303E-02	-0.018
MN-54	2.671E-02		8.487E-02	1.439E-01	1.078E-02	0.186
CO-56	-8.972E-03		9.013E-02	1.486E-01	1.142E-02	-0.060
CO-58	-2.531E-02		7.832E-02	1.271E-01	9.077E-03	-0.199
FE-59	8.583E-02		1.998E-01	3.371E-01	2.551E-02	0.255
ZN-65	-1.944E-01		2.149E-01	3.261E-01	2.118E-02	-0.596
GE-68	8.072E-01		2.787E+00	4.669E+00	3.245E-01	0.173
AS-73	1.991E+00		4.153E+00	6.525E+00	8.916E-01	0.305
AS-74	1.338E-02		1.498E-01	2.431E-01	1.307E-02	0.055
SE-75	7.662E-03		8.941E-02	1.505E-01	1.052E-02	0.051
BR-77	8.528E-01		2.709E+00	4.498E+00	2.531E-01	0.190
SR-82	-2.410E-01		6.736E-01	1.094E+00	7.224E-02	-0.220
RB-83	2.333E-02		1.461E-01	2.403E-01	1.352E-02	0.097
RB-84	2.938E-02		1.531E-01	2.568E-01	2.121E-02	0.114
KR-85	4.999E+00		1.706E+01	2.464E+01	1.390E+00	0.203
SR-85	2.372E-02		8.095E-02	1.169E-01	6.595E-03	0.203
RB-86	4.824E-01		1.356E+00	2.284E+00	1.589E-01	0.211
Y-88	2.396E-02		5.028E-02	9.137E-02	5.337E-03	0.262
ZR-88	-4.804E-02		6.850E-02	1.087E-01	6.167E-03	-0.442
Y-91	-1.946E+00		2.374E+01	3.816E+01	2.308E+00	-0.051
NB-94	-5.296E-05		6.597E-02	1.106E-01	6.152E-03	0.000
NB-95	9.196E-03		7.951E-02	1.338E-01	8.619E-03	0.069
NB-95M	1.018E+00		2.941E-01	4.857E-01	4.104E-02	2.097
ZR-95	1.180E-01		1.344E-01	2.380E-01	1.774E-02	0.496
NB-97	3.080E-03		1.727E-04	Half-Life too short		
ZR-97	4.390E-03		1.727E-03	Half-Life too short		
MO-99	6.234E-01		3.488E+00	5.911E+00	8.213E-01	0.105
TC-99M	6.840E+01		5.004E+01	Half-Life too short		
RH-101	3.149E-02		6.372E-02	1.043E-01	7.118E-03	0.302
RH-102	1.079E-02		6.843E-02	1.129E-01	6.435E-03	0.096

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RU-103	1.990E-02		8.093E-02	1.340E-01	1.686E-02	0.149
RH-106	-2.046E-01		6.752E-01	1.063E+00	1.220E-01	-0.193
RU-106	-2.046E-01		6.748E-01	1.063E+00	5.583E-02	-0.193
AG-108M	4.129E-02		7.665E-02	1.295E-01	8.054E-03	0.319
AG-110M	1.217E+00		1.578E-01	2.881E-01	1.579E-02	4.224
IN-111	1.553E-01		3.782E-01	5.927E-01	4.127E-02	0.262
IN-113M	-8.860E-02		1.000E-01	1.570E-01	9.525E-03	-0.564
SN-113	-8.860E-02		1.000E-01	1.570E-01	9.525E-03	-0.564
IN-114M	2.268E-01		3.685E-01	5.361E-01	3.635E-02	0.423
CD-115	-5.242E-01		2.351E+00	3.764E+00	2.111E-01	-0.139
SN-117M	-3.576E-02		7.029E-02	1.108E-01	7.407E-03	-0.323
SB-122	3.987E-01		6.426E-01	1.087E+00	5.979E-02	0.367
I-123	3.302E-05		4.663E-04	Half-Life too short		
TE-123M	1.790E-03		5.056E-02	8.182E-02	5.524E-03	0.022
I-124	-1.056E-01		4.832E-01	6.577E-01	3.516E-02	-0.161
SB-124	7.173E-02		1.131E-01	2.160E-01	1.517E-02	0.332
SB-125	1.679E-01		2.155E-01	3.685E-01	2.196E-02	0.455
TE-125M	2.383E+00		1.634E+01	2.689E+01	2.668E+00	0.089
I-126	1.701E-03		2.739E-01	3.791E-01	1.929E-02	0.004
SB-126	-1.338E-01		2.088E-01	3.342E-01	1.940E-02	-0.400
SB-127	1.061E-01		6.528E-01	1.110E+00	7.583E-02	0.096
XE-127	-2.452E-02		7.791E-02	1.220E-01	8.350E-03	-0.201
I-131	4.363E-03		1.280E-01	2.122E-01	1.420E-02	0.021
TE-132	-7.289E-02		2.952E-01	4.925E-01	6.766E-02	-0.148
BA-133	-2.263E-02		1.049E-01	1.481E-01	1.744E-02	-0.153
I-133	-2.778E-06		1.807E-05	Half-Life too short		
CS-134	-2.219E-02		1.010E-01	1.656E-01	1.154E-02	-0.134
CS-135	9.682E-02		3.271E-01	5.551E-01	4.746E-02	0.174
I-135	-9.087E+01		3.352E+01	Half-Life too short		
CS-136	-1.498E-02		1.735E-01	2.824E-01	2.174E-02	-0.053
CE-139	2.178E-03		5.449E-02	8.808E-02	5.857E-03	0.025
BA-140	1.462E-02		3.758E-01	6.122E-01	1.989E-01	0.024
LA-140	-2.041E-02		7.074E-02	1.094E-01	7.626E-03	-0.187
CE-141	-7.037E-02		9.844E-02	1.541E-01	1.075E-02	-0.457
CE-143	1.523E+01	+	9.508E+00	1.272E+01	2.644E+00	1.198
CE-144	-1.281E-01		3.651E-01	5.829E-01	8.567E-02	-0.220
PM-144	2.683E-03		6.693E-02	1.126E-01	6.171E-03	0.024
PR-144	1.811E-01		4.518E+00	7.599E+00	4.165E-01	0.024
PM-146	-8.113E-03		1.038E-01	1.693E-01	1.450E-02	-0.048
ND-147	-7.660E-02		7.821E-01	1.263E+00	1.697E-01	-0.061
PM-149	-1.598E+00		1.828E+01	3.042E+01	4.448E+00	-0.053
EU-152	-9.905E-02		2.374E-01	3.307E-01	2.330E-02	-0.300
GD-153	1.148E-01		1.573E-01	2.359E-01	2.263E-02	0.487
EU-154	-4.107E-02		1.704E-01	2.656E-01	2.664E-02	-0.155
EU-155	-2.276E-02		2.006E-01	3.267E-01	2.829E-02	-0.070
TB-160	-1.203E-01		3.345E-01	5.402E-01	4.441E-02	-0.223
HO-166M	4.568E-02		1.257E-01	2.158E-01	1.227E-02	0.212
TM-171	-3.270E+01		6.935E+01	1.124E+02	1.293E+01	-0.291

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	1.774E-02		5.294E-02	8.966E-02	6.040E-03	0.198
LU-177	-3.071E-01		9.750E-01	1.536E+00	1.055E-01	-0.200
LU-177M	-5.189E-01		3.968E-01	6.037E-01	3.441E-02	-0.860
HF-181	8.001E-02		8.658E-02	1.490E-01	8.484E-03	0.537
W-181	-4.986E-01		9.137E-01	1.424E+00	1.658E-01	-0.350
TA-182	-2.542E-01		2.522E-01	3.491E-01	2.177E-02	-0.728
RE-183	-1.922E-03		1.966E-01	3.173E-01	2.115E-02	-0.006
RE-184	-1.665E-01		4.562E-01	7.532E-01	5.243E-02	-0.221
OS-185	4.598E-02		8.600E-02	1.440E-01	7.378E-03	0.319
RE-188	7.023E-02		2.922E-01	4.777E-01	3.204E-02	0.147
W-188	1.081E+01		1.530E+01	2.332E+01	1.596E+00	0.463
IR-192	2.877E-02		6.904E-02	1.173E-01	7.837E-03	0.245
AU-195	2.622E-01		4.164E-01	6.784E-01	6.358E-02	0.387
TL-200	-6.084E+00		8.920E+00	1.417E+01	8.574E-01	-0.429
TL-201	-1.094E+00		2.487E+00	3.926E+00	2.613E-01	-0.279
TL-202	1.041E-03		1.058E-01	1.737E-01	9.924E-03	0.006
HG-203	1.327E-02		7.482E-02	1.262E-01	9.090E-03	0.105
BI-207	8.126E-02		1.232E-01	2.120E-01	1.506E-02	0.383
TL-207	-5.177E-01		1.486E+00	2.426E+00	4.078E-01	-0.213
PO-209	1.685E+01		1.942E+01	3.384E+01	2.881E+00	0.498
BI-210	-1.763E+01		2.286E+01	3.676E+01	3.818E+00	-0.480
PB-210	-1.763E+01		2.286E+01	3.676E+01	3.818E+00	-0.480
PO-210	-1.763E+01		2.285E+01	3.676E+01	3.531E+00	-0.480
PB-211	-1.306E+00		2.287E+00	3.404E+00	2.122E+00	-0.384
BI-212	5.224E-01		6.055E-01	1.069E+00	8.322E-02	0.489
PO-215	-5.177E-01		1.486E+00	2.426E+00	4.078E-01	-0.213
RN-219	-3.158E-01		9.410E-01	1.521E+00	2.062E-01	-0.208
RN-220	-2.411E+01		5.230E+01	8.182E+01	4.539E+00	-0.295
RA-223	-5.177E-01		1.486E+00	2.426E+00	4.078E-01	-0.213
RA-224	3.859E+00		1.627E+00	2.646E+00	1.841E-01	1.459
AC-227	9.850E-01		7.917E-01	1.380E+00	1.998E-01	0.714
TH-227	9.850E-01		7.972E-01	1.380E+00	2.391E-01	0.714
AC-228	1.137E+00	+	5.485E-01	7.487E-01	8.324E-02	1.519
RA-228	1.137E+00	+	5.485E-01	7.487E-01	8.324E-02	1.519
TH-229	-7.469E-01		1.016E+00	1.565E+00	1.064E-01	-0.477
PA-231	1.516E+00		3.032E+00	5.183E+00	7.394E-01	0.292
TH-231	-5.177E-01		1.486E+00	2.426E+00	4.078E-01	-0.213
U-231	-5.136E-01		6.593E-01	8.999E-01	8.869E-02	-0.571
TH-232	1.137E+00	+	5.485E-01	7.487E-01	8.324E-02	1.519
PA-233	-2.807E-02		1.379E-01	2.274E-01	1.594E-02	-0.123
PA-234	6.013E-01		8.904E-01	1.516E+00	2.816E-01	0.397
PA-234M	3.060E+00		1.115E+01	1.881E+01	1.734E+00	0.163
TH-234	-2.196E+00		3.908E+00	5.523E+00	1.090E+00	-0.398
U-235	8.893E-02		3.881E-01	6.349E-01	1.059E-01	0.140
NP-236	5.132E-02		1.490E-01	2.445E-01	1.633E-02	0.210
U-238	-2.196E+00		3.908E+00	5.523E+00	1.090E+00	-0.398
NP-239	-2.335E-01		3.945E-01	5.413E-01	4.069E-02	-0.431
AM-243	3.757E-01		1.558E-01	2.423E-01	2.693E-02	1.550

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.881E-03		1.770E-01	2.900E-01	2.531E-02	0.006
AM-246	-2.211E-01		3.451E-01	5.349E-01	3.708E-02	-0.413
CM-247	-1.242E-02		8.296E-02	1.355E-01	7.708E-03	-0.092
CF-249	-2.873E-02		8.947E-02	1.450E-01	8.316E-03	-0.198
CF-251	2.490E-01		2.434E-01	4.095E-01	2.745E-02	0.608

# 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]G1202012164          *
* Acquisition date   : 19-JAN-2010 18:15:50 Detector SN#                   *
* Detector ID        : GAM15                                           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 01:00:01.26                               Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 12-JAN-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID           : G1202012164                               Analyst initials: MXR1        *
* Batch Number        : 940270                                   Sample Quantity  : 1.5544E+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
CO-57	2.335E-01	6.820E-02	3.826E-02	3.479E-02
CO-60	6.739E+00	6.138E-01	5.689E-02	3.132E-01
CD-109	3.331E+01	5.129E+00	1.338E+00	2.617E+00
SN-126	3.311E+00	5.097E-01	1.340E-01	2.601E-01
BA-137M	5.255E+00	3.751E-01	5.894E-02	1.914E-01
CS-137	5.555E+00	3.975E-01	6.231E-02	2.028E-01
TL-208	4.185E-01	1.395E-01	6.339E-02	7.119E-02
BI-211	2.131E+00	6.572E-01	3.745E-01	3.353E-01
PB-212	1.054E+00	2.613E-01	9.672E-02	1.333E-01
PO-212	1.054E+00	2.613E-01	9.672E-02	1.333E-01
BI-214	4.552E-01	3.070E-01	1.236E-01	1.566E-01
PB-214	7.412E-01	2.317E-01	1.279E-01	1.182E-01
PO-214	7.412E-01	2.317E-01	1.279E-01	1.182E-01
PO-216	1.054E+00	2.613E-01	9.672E-02	1.333E-01
PO-218	7.412E-01	2.317E-01	1.279E-01	1.182E-01
RA-226	4.552E-01	3.070E-01	1.236E-01	1.566E-01
TH-228	1.062E+00	2.633E-01	9.747E-02	1.344E-01
TH-230	4.552E-01	3.070E-01	1.236E-01	1.566E-01
U-234	4.552E-01	3.070E-01	1.236E-01	1.566E-01
NP-237	9.722E+00	2.471E+00	4.012E-01	1.261E+00
AM-241	1.484E+01	2.173E+00	5.071E-01	1.109E+00
ANH-511	2.945E-02	1.135E-01	5.142E-02	5.791E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-5.077E-01	6.674E-01	5.520E-01	3.405E-01 NOT IDENT.
NA-22	-1.231E-02	5.989E-02	4.857E-02	3.055E-02 NOT IDENT.
NA-24	1.598E+01	3.313E+02	0.000E+00	1.690E+02 SHORT HLIF
AL-26	1.661E-02	4.214E-02	3.883E-02	2.150E-02 NOT IDENT.
K-40	4.605E-01	5.987E-01	5.801E-01	3.054E-01 NOT IDENT.

TI-44	9.752E-02	8.394E-02	7.071E-02	4.283E-02	NOT IDENT.
SC-46	-1.051E-01	9.173E-02	7.253E-02	4.680E-02	NOT IDENT.
V-48	-2.159E-02	1.222E-01	1.033E-01	6.234E-02	NOT IDENT.
CR-51	-2.978E-01	6.833E-01	5.972E-01	3.486E-01	NOT IDENT.
MN-52	-3.082E-03	1.038E-01	8.872E-02	5.296E-02	NOT IDENT.
MN-54	2.671E-02	8.317E-02	7.373E-02	4.243E-02	NOT IDENT.
CO-56	-8.972E-03	8.833E-02	7.611E-02	4.506E-02	NOT IDENT.
CO-58	-2.531E-02	7.675E-02	6.517E-02	3.916E-02	NOT IDENT.
FE-59	8.583E-02	1.958E-01	1.714E-01	9.992E-02	NOT IDENT.
ZN-65	-1.944E-01	2.106E-01	1.658E-01	1.074E-01	NOT IDENT.
GE-68	8.072E-01	2.732E+00	2.376E+00	1.394E+00	NOT IDENT.
AS-73	1.991E+00	4.070E+00	3.587E+00	2.076E+00	NOT IDENT.
AS-74	1.338E-02	1.468E-01	1.257E-01	7.489E-02	NOT IDENT.
SE-75	7.662E-03	8.762E-02	7.951E-02	4.470E-02	FAIL ABUN
BR-77	8.528E-01	2.654E+00	2.335E+00	1.354E+00	FAIL ABUN
SR-82	-2.410E-01	6.602E-01	5.620E-01	3.368E-01	NOT IDENT.
RB-83	2.333E-02	1.432E-01	1.247E-01	7.306E-02	NOT IDENT.
RB-84	2.938E-02	1.501E-01	1.314E-01	7.657E-02	NOT IDENT.
KR-85	4.999E+00	1.672E+01	1.280E+01	8.531E+00	NOT IDENT.
SR-85	2.372E-02	7.933E-02	6.071E-02	4.048E-02	NOT IDENT.
RB-86	4.824E-01	1.329E+00	1.162E+00	6.780E-01	NOT IDENT.
Y-88	2.396E-02	4.927E-02	4.580E-02	2.514E-02	NOT IDENT.
ZR-88	-4.804E-02	6.713E-02	5.687E-02	3.425E-02	NOT IDENT.
Y-91	-1.946E+00	2.327E+01	1.936E+01	1.187E+01	NOT IDENT.
NB-94	-5.296E-05	6.465E-02	5.695E-02	3.299E-02	NOT IDENT.
NB-95	9.196E-03	7.792E-02	6.871E-02	3.976E-02	NOT IDENT.
NB-95M	1.018E+00	2.883E-01	2.574E-01	1.471E-01	NOT IDENT.
ZR-95	1.180E-01	1.317E-01	1.223E-01	6.719E-02	NOT IDENT.
NB-97	3.080E+03	3.386E+02	0.000E+00	1.727E+02	SHORT HLIF
ZR-97	4.390E+03	3.384E+03	0.000E+00	1.727E+03	SHORT HLIF
MO-99	6.234E-01	3.418E+00	3.039E+00	1.744E+00	NOT IDENT.
TC-99M	6.840E+07	9.808E+07	0.000E+00	5.004E+07	SHORT HLIF
RH-101	3.149E-02	6.244E-02	5.554E-02	3.186E-02	NOT IDENT.
RH-102	1.079E-02	6.706E-02	5.874E-02	3.421E-02	NOT IDENT.
RU-103	1.990E-02	7.931E-02	6.963E-02	4.046E-02	FAIL ABUN
RH-106	-2.046E-01	6.617E-01	5.490E-01	3.376E-01	NOT IDENT.
RU-106	-2.046E-01	6.613E-01	5.490E-01	3.374E-01	NOT IDENT.
AG-108M	4.129E-02	7.512E-02	6.756E-02	3.833E-02	NOT IDENT.
AG-110M	1.217E+00	1.547E-01	1.486E-01	7.892E-02	NOT IDENT.
IN-111	1.553E-01	3.706E-01	3.138E-01	1.891E-01	NOT IDENT.
IN-113M	-8.860E-02	9.804E-02	8.213E-02	5.002E-02	NOT IDENT.
SN-113	-8.860E-02	9.804E-02	8.213E-02	5.002E-02	NOT IDENT.
IN-114M	2.268E-01	3.611E-01	2.857E-01	1.842E-01	NOT IDENT.
CD-115	-5.242E-01	2.304E+00	1.953E+00	1.176E+00	NOT IDENT.
SN-117M	-3.576E-02	6.888E-02	5.930E-02	3.514E-02	NOT IDENT.
SB-122	3.987E-01	6.298E-01	5.630E-01	3.213E-01	NOT IDENT.
I-123	3.302E+01	9.140E+02	0.000E+00	4.663E+02	SHORT HLIF
TE-123M	1.790E-03	4.955E-02	4.380E-02	2.528E-02	NOT IDENT.
I-124	-1.056E-01	4.735E-01	3.401E-01	2.416E-01	NOT IDENT.
SB-124	7.173E-02	1.109E-01	1.085E-01	5.657E-02	NOT IDENT.
SB-125	1.679E-01	2.112E-01	1.923E-01	1.077E-01	NOT IDENT.
TE-125M	2.383E+00	1.602E+01	1.453E+01	8.172E+00	NOT IDENT.
I-126	1.701E-03	2.684E-01	1.955E-01	1.370E-01	NOT IDENT.
SB-126	-1.338E-01	2.046E-01	1.720E-01	1.044E-01	NOT IDENT.
SB-127	1.061E-01	6.397E-01	5.718E-01	3.264E-01	NOT IDENT.
XE-127	-2.452E-02	7.635E-02	6.488E-02	3.895E-02	FAIL ABUN
I-131	4.363E-03	1.254E-01	1.112E-01	6.398E-02	NOT IDENT.
TE-132	-7.289E-02	2.893E-01	2.612E-01	1.476E-01	NOT IDENT.
BA-133	-2.263E-02	1.028E-01	7.766E-02	5.243E-02	NOT IDENT.
I-133	-2.778E+00	3.542E+01	0.000E+00	1.807E+01	SHORT HLIF
CS-134	-2.219E-02	9.895E-02	8.496E-02	5.048E-02	NOT IDENT.
CS-135	9.682E-02	3.205E-01	2.932E-01	1.635E-01	NOT IDENT.
I-135	-9.087E+07	6.570E+07	0.000E+00	3.352E+07	SHORT HLIF
CS-136	-1.498E-02	1.700E-01	1.438E-01	8.673E-02	FAIL ABUN
CE-139	2.178E-03	5.340E-02	4.710E-02	2.725E-02	NOT IDENT.
BA-140	1.462E-02	3.683E-01	3.175E-01	1.879E-01	NOT IDENT.
LA-140	-2.041E-02	6.932E-02	5.507E-02	3.537E-02	NOT IDENT.
CE-141	-7.037E-02	9.647E-02	8.266E-02	4.922E-02	NOT IDENT.
CE-143	1.523E+01	9.317E+00	6.703E+00	4.754E+00	FAIL ABUN
CE-144	-1.281E-01	3.578E-01	3.134E-01	1.825E-01	NOT IDENT.
PM-144	2.683E-03	6.559E-02	5.798E-02	3.347E-02	NOT IDENT.
PR-144	1.811E-01	4.428E+00	3.914E+00	2.259E+00	NOT IDENT.
PM-146	-8.113E-03	1.017E-01	8.820E-02	5.190E-02	NOT IDENT.
ND-147	-7.660E-02	7.664E-01	6.552E-01	3.910E-01	FAIL ABUN
PM-149	-1.598E+00	1.791E+01	1.604E+01	9.138E+00	NOT IDENT.
EU-152	-9.905E-02	2.327E-01	1.736E-01	1.187E-01	FAIL ABUN
GD-153	1.148E-01	1.541E-01	1.278E-01	7.864E-02	NOT IDENT.
EU-154	-4.107E-02	1.670E-01	1.345E-01	8.522E-02	NOT IDENT.

EU-155	-2.276E-02	1.966E-01	1.767E-01	1.003E-01	FAIL ABUN
TB-160	-1.203E-01	3.278E-01	2.764E-01	1.672E-01	FAIL ABUN
HO-166M	4.568E-02	1.232E-01	1.111E-01	6.286E-02	FAIL ABUN
TM-171	-3.270E+01	6.796E+01	6.148E+01	3.467E+01	FAIL ABUN
LU-176	1.774E-02	5.188E-02	4.720E-02	2.647E-02	FAIL ABUN
LU-177	-3.071E-01	9.555E-01	8.163E-01	4.875E-01	NOT IDENT.
LU-177M	-5.189E-01	3.889E-01	3.153E-01	1.984E-01	FAIL ABUN
HF-181	8.001E-02	8.485E-02	7.752E-02	4.329E-02	FAIL ABUN
W-181	-4.986E-01	8.954E-01	7.794E-01	4.569E-01	FAIL ABUN
TA-182	-2.542E-01	2.472E-01	1.771E-01	1.261E-01	NOT IDENT.
RE-183	-1.922E-03	1.927E-01	1.698E-01	9.831E-02	FAIL ABUN
RE-184	-1.665E-01	4.471E-01	3.985E-01	2.281E-01	FAIL ABUN
OS-185	4.598E-02	8.428E-02	7.431E-02	4.300E-02	FAIL ABUN
RE-188	7.023E-02	2.864E-01	2.559E-01	1.461E-01	NOT IDENT.
W-188	1.081E+01	1.500E+01	1.229E+01	7.652E+00	NOT IDENT.
IR-192	2.877E-02	6.766E-02	6.168E-02	3.452E-02	FAIL ABUN
AU-195	2.622E-01	4.081E-01	3.674E-01	2.082E-01	FAIL ABUN
TL-200	-6.084E+00	8.742E+00	7.424E+00	4.460E+00	NOT IDENT.
TL-201	-1.094E+00	2.437E+00	2.099E+00	1.244E+00	NOT IDENT.
TL-202	1.041E-03	1.037E-01	9.055E-02	5.289E-02	NOT IDENT.
HG-203	1.327E-02	7.333E-02	6.660E-02	3.741E-02	NOT IDENT.
BI-207	8.126E-02	1.207E-01	1.079E-01	6.160E-02	NOT IDENT.
TL-207	-5.177E-01	1.456E+00	1.275E+00	7.429E-01	FAIL ABUN
PO-209	1.685E+01	1.903E+01	1.731E+01	9.708E+00	NOT IDENT.
BI-210	-1.763E+01	2.241E+01	2.027E+01	1.143E+01	NOT IDENT.
PB-210	-1.763E+01	2.241E+01	2.027E+01	1.143E+01	NOT IDENT.
PO-210	-1.763E+01	2.240E+01	2.027E+01	1.143E+01	NOT IDENT.
PB-211	-1.306E+00	2.241E+00	1.779E+00	1.143E+00	NOT IDENT.
BI-212	5.224E-01	5.934E-01	5.499E-01	3.027E-01	NOT IDENT.
PO-215	-5.177E-01	1.456E+00	1.275E+00	7.429E-01	FAIL ABUN
RN-219	-3.158E-01	9.222E-01	7.948E-01	4.705E-01	NOT IDENT.
RN-220	-2.411E+01	5.126E+01	4.241E+01	2.615E+01	NOT IDENT.
RA-223	-5.177E-01	1.456E+00	1.275E+00	7.429E-01	FAIL ABUN
RA-224	3.859E+00	1.594E+00	1.401E+00	8.133E-01	NOT IDENT.
AC-227	9.850E-01	7.758E-01	7.297E-01	3.958E-01	NOT IDENT.
TH-227	9.850E-01	7.812E-01	7.297E-01	3.986E-01	NOT IDENT.
AC-228	1.137E+00	5.376E-01	3.828E-01	2.743E-01	FAIL ABUN
RA-228	1.137E+00	5.376E-01	3.828E-01	2.743E-01	FAIL ABUN
TH-229	-7.469E-01	9.956E-01	8.334E-01	5.080E-01	FAIL ABUN
PA-231	1.516E+00	2.972E+00	2.734E+00	1.516E+00	NOT IDENT.
TH-231	-5.177E-01	1.456E+00	1.275E+00	7.429E-01	FAIL ABUN
U-231	-5.136E-01	6.461E-01	4.878E-01	3.296E-01	FAIL ABUN
TH-232	1.137E+00	5.376E-01	3.828E-01	2.743E-01	FAIL ABUN
PA-233	-2.807E-02	1.352E-01	1.196E-01	6.896E-02	FAIL ABUN
PA-234	6.013E-01	8.726E-01	7.743E-01	4.452E-01	FAIL ABUN
PA-234M	3.060E+00	1.093E+01	9.592E+00	5.576E+00	NOT IDENT.
TH-234	-2.196E+00	3.830E+00	3.024E+00	1.954E+00	FAIL ABUN
U-235	8.893E-02	3.804E-01	3.407E-01	1.941E-01	FAIL ABUN
NP-236	5.132E-02	1.461E-01	1.309E-01	7.452E-02	NOT IDENT.
U-238	-2.196E+00	3.830E+00	3.024E+00	1.954E+00	FAIL ABUN
NP-239	-2.335E-01	3.866E-01	2.920E-01	1.973E-01	NOT IDENT.
AM-243	3.757E-01	1.527E-01	1.321E-01	7.789E-02	FAIL ABUN
CM-243	1.881E-03	1.735E-01	1.569E-01	8.851E-02	NOT IDENT.
AM-246	-2.211E-01	3.382E-01	2.722E-01	1.725E-01	NOT IDENT.
CM-247	-1.242E-02	8.130E-02	7.084E-02	4.148E-02	NOT IDENT.
CF-249	-2.873E-02	8.768E-02	7.588E-02	4.473E-02	NOT IDENT.
CF-251	2.490E-01	2.385E-01	2.186E-01	1.217E-01	NOT IDENT.

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 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON , SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
46.50	330.7781
46.50	330.7781
46.50	330.7781
48.70	371.6678
49.72	354.3613
51.35	358.1767
52.39	414.7961
52.97	406.0974
53.15	399.1573
53.44	395.5423
54.07	383.7640
56.28	435.5513
56.28	435.5530
57.37	425.5831
57.53	425.6892
57.53	425.6909
57.60	425.7358
57.98	468.8922
57.98	468.8922
59.32	404.9868
59.32	404.9868
59.40	405.0367
59.54	405.1228
59.72	294.9955
60.01	295.1256
61.10	257.1213
61.14	257.1366
61.30	257.1982
63.00	293.3627
63.29	302.7556
63.29	302.7556
63.58	279.7052
64.28	301.6490
65.12	316.3994
65.20	316.4359
65.20	316.4359
66.05	327.6245
66.72	326.9676
66.83	327.0203
66.91	327.0575
67.20	311.6581
67.20	311.6581
67.75	312.8723
67.85	312.9165
68.90	322.1386
68.90	322.1386
69.30	343.7422
69.67	362.4312
70.82	414.7262
70.82	414.7262
70.83	414.7326
72.80	369.4702
72.87	369.5048
72.87	369.5048
74.67	356.2753
74.81	356.3418
74.81	356.3418
74.81	356.3418
74.81	356.3418
74.81	356.3418
74.81	356.3418
74.97	370.5491
75.28	370.7018
75.70	359.5134
77.11	412.3380
77.11	412.3380



77.11	412.3380
77.11	412.3380
77.11	412.3380
77.11	412.3380
77.11	412.3380
78.38	340.6680
79.62	369.2534
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79.80	369.3390
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80.18	337.2435
80.30	337.2956
80.30	337.2956
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81.07	364.0034
81.07	364.0034
81.07	364.0034
82.60	358.3640
83.37	341.2495
83.78	330.3092
83.78	330.3092
83.78	330.3092
83.78	330.3092
84.21	336.8412
84.90	359.3930
85.43	359.6275
86.29	331.3337
86.50	331.4187
86.54	331.4352
86.59	331.4556
86.72	331.5076
86.79	331.5355
86.94	331.5965
87.30	331.7425
87.30	331.7425
87.30	331.7425
87.30	331.7425
87.30	331.7425
87.30	331.7425
87.57	331.8504
87.88	331.9748
88.03	332.0357
88.36	332.1678
88.47	332.2122
89.95	248.0009
91.11	248.3434
92.29	308.8553
92.38	308.8882
92.38	308.8882
93.35	260.2422
94.00	265.2629
94.67	308.9074
94.67	308.9086
94.90	308.9906
94.90	308.9906
94.90	308.9906
94.90	308.9906
95.87	286.7805
95.87	286.7805
96.73	254.8092
97.43	234.0293
98.44	261.2282
98.44	261.2282
98.88	245.9609
99.55	245.7132
99.55	245.7132
99.86	245.7985
100.00	242.8015
100.10	245.8653
103.18	261.9328
103.76	256.0038
105.00	280.7642
105.31	272.7171
108.00	268.4046
109.28	287.1647

111.00	266.1860
111.00	266.1860
111.76	274.5951
112.95	264.6758
115.19	257.7475
116.30	271.7656
117.00	262.0700
117.00	262.0700
117.66	247.4011
121.11	232.7419
121.62	253.3521
121.78	253.3922
122.06	230.2697
122.32	230.3282
122.32	230.3282
122.32	230.3282
122.32	230.3282
123.07	247.0814
127.23	262.8316
129.76	230.5361
131.20	302.9256
133.02	286.7037
133.54	262.7656
135.34	243.2821
136.00	265.4655
136.25	264.4777
136.48	271.8816
140.51	259.1885
140.51	0.0000
142.18	253.2477
142.65	276.5790
143.76	257.8333
144.24	265.3432
144.24	265.3432
144.24	265.3432
144.24	265.3432
145.22	265.5749
145.44	281.5007
147.16	259.6714
152.43	260.8639
152.70	252.4056
153.22	250.3867
154.21	239.9345
154.21	239.9345
154.21	239.9345
154.21	239.9345
155.03	249.7069
156.02	271.2780
158.56	264.3691
159.00	0.0000
159.00	249.4753
160.31	246.5334
161.27	261.7482
162.32	269.4910
162.64	268.4898
163.35	258.9750
163.89	253.7155
165.85	256.2760
167.43	266.3091
171.28	251.9942
171.86	257.5216
172.10	255.4062
176.55	226.9833
176.60	226.9912
181.06	258.0786
184.41	251.3116
185.71	292.2480
186.00	287.0601
190.27	245.8408
192.34	261.6090
193.63	272.8611
197.04	241.5580
198.01	230.6922
198.60	221.9554
200.40	247.6780
201.83	263.4284
202.84	234.8203
205.31	241.8936

208.36	256.8719
208.81	250.2789
209.75	249.3323
209.75	249.3323
210.97	271.8249
215.65	273.8287
216.55	282.9438
218.09	293.3188
222.10	284.0170
223.80	259.6177
226.40	277.4087
227.00	257.6967
227.08	257.7107
227.20	257.7299
228.16	267.8148
228.18	267.8185
228.18	267.8185
231.56	238.8508
235.69	240.1449
236.00	216.0230
236.00	216.0230
238.63	233.3392
238.63	233.3392
238.63	233.3392
238.63	233.3392
239.00	233.3941
240.98	247.0286
241.98	247.1862
241.98	247.1862
241.98	247.1862
244.69	221.7892
245.39	213.6370
247.94	224.6807
248.90	221.1603
249.79	220.3700
252.40	220.7289
252.85	219.8745
252.85	219.8745
254.15	0.0000
256.20	189.1167
256.20	189.1167
260.50	243.0028
260.90	248.5865
262.80	198.1769
264.65	221.4668
268.24	222.8691
268.79	218.3173
269.46	216.5557
269.46	216.5557
269.46	216.5557
269.46	216.5557
271.23	225.1191
273.65	259.7690
276.40	202.5761
277.35	191.5307
277.60	194.3481
277.60	194.3481
278.00	197.1843
278.60	196.3238
279.20	205.7010
279.53	228.0815
280.46	244.0387
281.68	225.5693
283.67	170.7717
284.30	188.5712
285.00	187.7137
285.90	187.8094
286.10	185.9625
286.10	185.9625
287.40	194.0500
288.45	0.0000
290.67	167.0830
290.80	167.0961
291.72	178.1204
293.26	197.0416
293.70	204.9114
295.21	217.6089
295.21	217.6089

295.21	217.6089
295.96	256.8539
296.50	238.1340
297.23	216.2876
298.57	172.5330
299.80	183.6361
299.80	183.6361
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300.09	180.3032
300.09	180.3032
300.09	180.3032
300.12	180.3055
301.29	179.0759
302.84	207.5283
303.76	234.0591
303.91	234.0803
304.40	228.4761
304.40	228.4761
304.84	219.0888
306.84	185.2956
308.46	183.5659
311.98	193.3966
316.51	176.7636
318.01	178.8065
319.02	194.1287
319.41	191.3131
320.08	213.2813
323.87	216.5728
323.87	216.5728
323.87	216.5728
323.87	216.5728
325.23	183.3117
328.77	197.0428
333.44	191.7676
334.20	182.2511
334.20	182.2511
334.30	182.2604
338.28	139.3784
338.28	139.3784
338.28	139.3784
338.28	139.3784
338.32	139.3820
338.32	139.3820
338.32	139.3820
340.50	170.0093
340.57	170.0158
344.27	178.3696
345.85	147.9558
350.59	145.0854
351.07	174.1443
351.92	167.4417
351.92	167.4417
351.92	167.4417
355.39	0.0000
356.01	166.4886
364.48	149.0032
366.43	166.6916
367.43	175.5505
367.94	167.7882
369.80	147.4351
374.96	172.2703
383.85	177.9134
387.95	174.3143
388.63	162.5488
391.69	199.2827
391.69	199.2827
392.90	198.4065
398.62	192.9910
400.65	195.1507
401.10	192.2191
401.81	177.4137
402.60	168.5557
404.84	185.5984
410.95	155.2592
411.60	152.3164
413.65	197.2966
414.70	149.5367
415.30	159.5488

415.76	159.5820
417.63	0.0000
418.52	149.7913
423.70	173.1542
427.08	145.3452
427.89	150.4102
432.53	165.7855
433.93	149.7985
439.47	155.1956
439.56	155.2012
439.89	152.2000
443.98	146.4072
444.90	168.6859
445.03	168.6961
445.03	168.6961
445.03	168.6961
445.03	168.6961
453.90	162.2305
463.38	154.7275
468.07	189.7032
473.00	144.0981
475.06	146.2643
475.35	147.3047
476.78	163.7676
477.59	157.6770
477.96	152.5813
482.03	123.0850
484.57	140.6658
487.03	159.3045
490.36	119.3786
492.35	132.8627
497.08	126.9203
507.63	0.0000
510.53	0.0000
510.84	117.5736
511.00	117.5813
511.85	127.9982
511.85	127.9982
513.99	124.6406
513.99	124.6406
520.41	120.7833
520.65	116.6293
527.90	114.8608
528.96	0.0000
529.64	118.0707
529.87	0.0000
531.02	119.1768
537.32	111.0749
543.00	95.5589
546.56	0.0000
549.76	100.0074
552.65	96.9526
555.20	86.4944
563.23	90.9782
563.90	94.1736
568.70	114.4758
569.32	116.6226
569.50	109.2062
569.67	103.9121
573.80	95.5701
574.00	96.9041
574.64	102.6800
578.91	104.6088
579.30	104.6232
583.14	104.7648
585.48	78.1942
591.81	102.5906
592.07	101.5289
593.00	99.4255
595.88	104.8739
600.56	108.3785
602.52	0.0000
602.71	114.4193
602.71	114.4193
603.60	103.7231
604.41	114.4857
604.70	114.4974
609.31	112.8853

609.31	112.8853
609.31	112.8853
609.31	112.8853
610.33	112.9263
612.46	107.6245
614.37	87.9512
618.01	109.1750
621.84	102.5680
621.84	102.5680
631.29	108.3081
633.02	107.2879
633.10	107.2903
634.78	97.5916
635.90	97.6267
636.97	90.0659
645.85	85.9762
646.12	84.8955
656.30	112.8417
657.75	105.6112
657.90	0.0000
661.65	85.3239
661.65	85.3239
664.57	71.1699
666.33	80.3390
666.33	80.3390
675.00	82.3920
677.61	74.7651
685.20	68.8812
692.80	80.0934
695.00	83.8332
696.49	89.4021
696.49	89.4021
697.00	89.4160
697.49	91.2737
698.33	84.8406
698.50	88.5352
699.00	88.5488
702.63	89.5719
706.10	93.3642
706.58	0.0000
706.67	86.9087
709.31	95.3073
711.68	87.9685
713.82	100.9966
717.42	92.7592
720.50	113.2729
721.93	112.3937
722.20	119.8326
722.78	116.1372
722.78	116.1372
722.89	116.1423
722.95	116.1448
723.30	102.2186
724.18	86.4439
727.18	83.7305
733.00	88.5368
735.90	76.4863
739.58	71.9024
742.81	80.3835
744.21	83.2220
747.13	69.2546
751.79	85.2810
752.31	88.1059
753.82	93.7724
755.35	76.9267
756.15	72.2533
756.87	68.5147
763.93	84.6442
765.79	92.2179
766.42	95.9985
766.84	96.0110
776.49	97.2226
778.00	82.1555
778.57	97.2792
778.89	91.6223
783.80	84.1835
785.46	84.2233
792.07	91.0176

795.84	100.6042
796.30	104.4141
798.80	99.7385
801.93	84.6145
805.60	84.7014
810.29	89.5765
810.76	86.7307
815.85	88.7617
817.79	102.1781
818.51	99.3324
819.60	98.4066
826.30	103.3748
828.27	89.0645
831.60	91.0629
831.96	87.2380
834.83	99.7788
836.80	0.0000
846.75	104.9129
848.13	109.7672
856.28	0.0000
856.80	106.1619
860.37	77.2819
867.32	82.2625
867.82	75.4990
871.10	102.6897
873.19	100.8071
874.81	95.0312
875.33	0.0000
876.40	94.1010
879.36	111.6496
880.27	105.8510
880.51	107.8000
881.50	101.9986
883.24	99.1300
884.67	102.0840
889.25	117.7800
896.60	95.5735
898.02	123.8994
899.00	135.6432
903.28	109.4137
911.07	110.6114
911.07	110.6114
911.07	110.6114
919.63	122.4285
920.93	115.7961
925.00	111.0045
925.24	111.0114
926.50	106.1323
935.52	97.5095
937.48	114.3079
944.10	115.4837
946.00	121.4635
949.00	137.3654
962.29	144.7584
964.01	165.6478
966.15	118.0994
968.20	130.0725
969.11	117.1910
969.11	117.1910
969.11	117.1910
977.42	99.5158
980.50	79.6712
983.50	88.6994
989.30	86.8265
996.32	95.9707
1001.03	86.0700
1001.68	88.0859
1004.76	97.1658
1021.30	0.0000
1024.50	0.0000
1034.80	63.5537
1036.00	68.6170
1037.82	82.7808
1038.57	82.7941
1038.76	0.0000
1045.16	74.8311
1046.59	85.9823
1048.07	81.9624

1050.47	79.9836
1050.47	79.9836
1062.04	72.0747
1063.62	71.0852
1076.63	68.2404
1077.35	70.2887
1078.86	91.7102
1085.78	78.5854
1099.22	81.8945
1112.02	83.1522
1112.84	95.4900
1115.52	108.8984
1120.29	62.7350
1120.29	62.7350
1120.29	62.7350
1120.29	62.7350
1120.51	65.8229
1121.28	74.0625
1124.00	0.0000
1129.67	54.6196
1131.51	0.0000
1147.95	0.0000
1167.94	35.6250
1173.22	44.7304
1175.09	51.7351
1177.93	44.6254
1189.05	41.7480
1204.90	31.4148
1205.75	35.6090
1213.00	24.1249
1221.42	37.8267
1230.97	33.6888
1235.34	17.9131
1236.41	0.0000
1238.25	21.0872
1246.25	19.0093
1260.41	0.0000
1271.85	22.2920
1274.45	25.4893
1274.54	25.4893
1291.56	18.1165
1298.22	0.0000
1312.09	33.1683
1325.50	22.0672
1325.50	22.0672
1332.49	29.0028
1333.61	11.0512
1360.21	17.2780
1362.66	0.0000
1365.15	22.6987
1368.21	20.5485
1368.53	0.0000
1376.25	16.2469
1384.27	14.8767
1394.10	21.4245
1395.20	19.5659
1407.95	17.7442
1434.06	9.3837
1436.60	13.1436
1457.56	0.0000
1460.81	14.1436
1489.15	17.0583
1509.49	15.2176
1596.49	10.6190
1620.62	5.8154
1678.03	0.0000
1691.02	6.8630
1691.02	6.8630
1706.46	0.0000
1750.46	0.0000
1764.49	8.6789
1764.49	8.6789
1764.49	8.6789
1764.49	8.6789
1770.23	10.4238
1771.40	12.9080
1791.20	0.0000
1808.65	5.9916





TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202012164

Total Uranium Activity	-6.4921E+00	ug/g
Total Uranium Counting Unc.	1.1395E+01	ug/g
Total Uranium Tpu	5.8138E-06	ug/g
Total Uranium Mda	8.9979E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 940270                          SAMPLE ID   : G1202012164
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 12-JAN-2010 00:00:00.00          COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 19-JAN-2010 18:15:50.76          SAMPLE ALQT  : 155.440 GRAM
*
*****

```

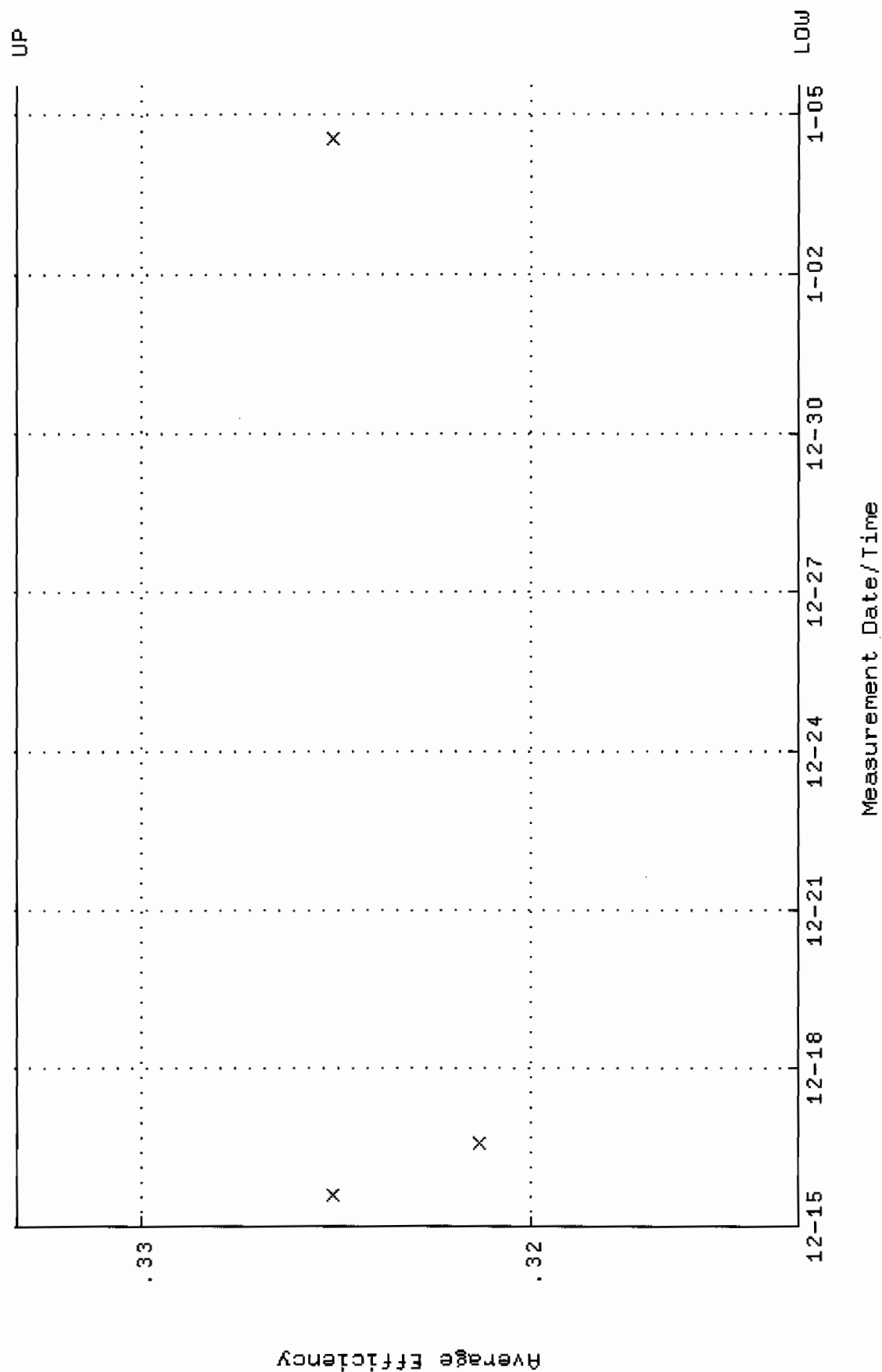
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.696E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 3.535E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.895E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.894E+00

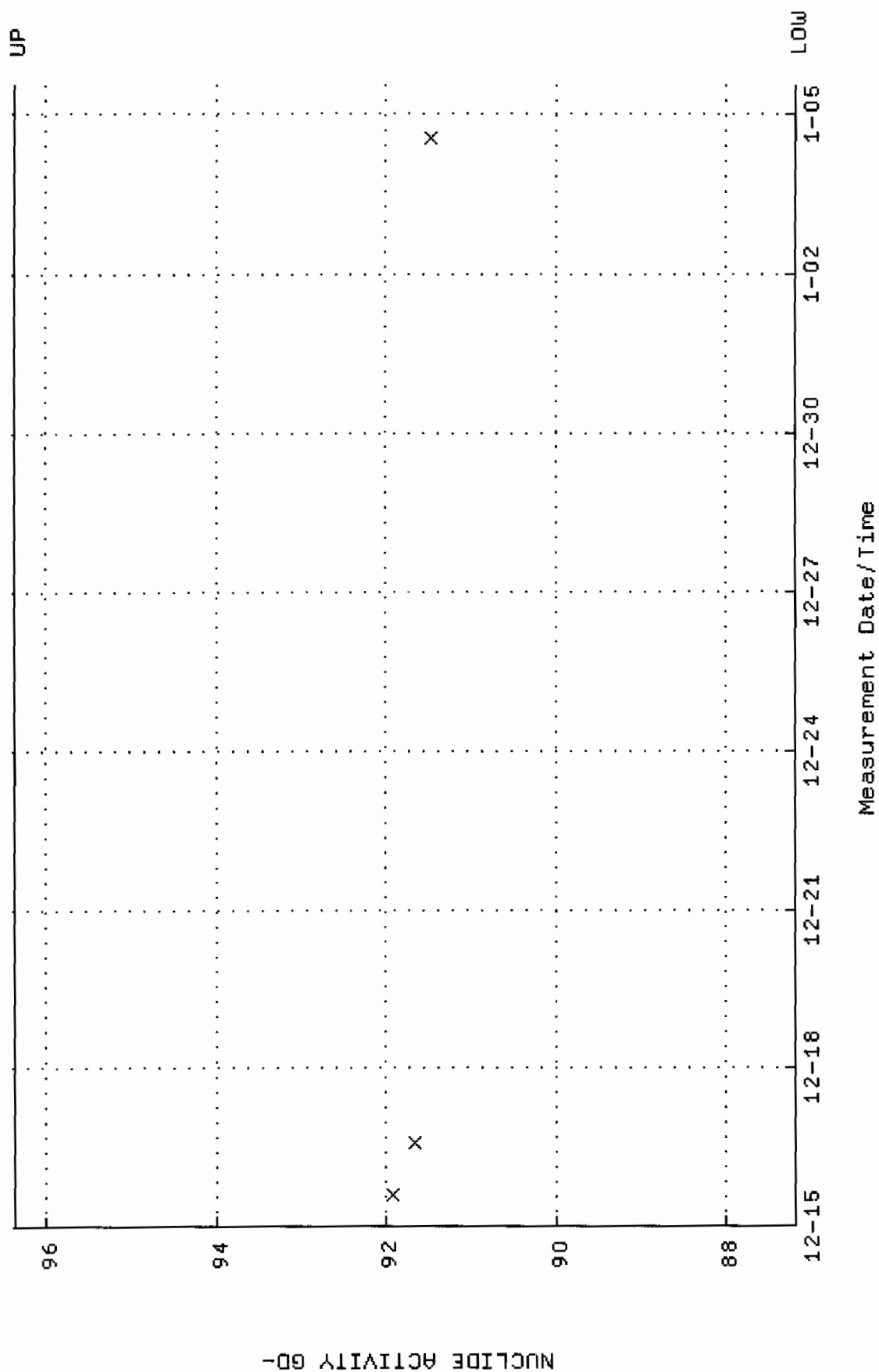
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# BACKGROUND AND EFFICIENCY DATA

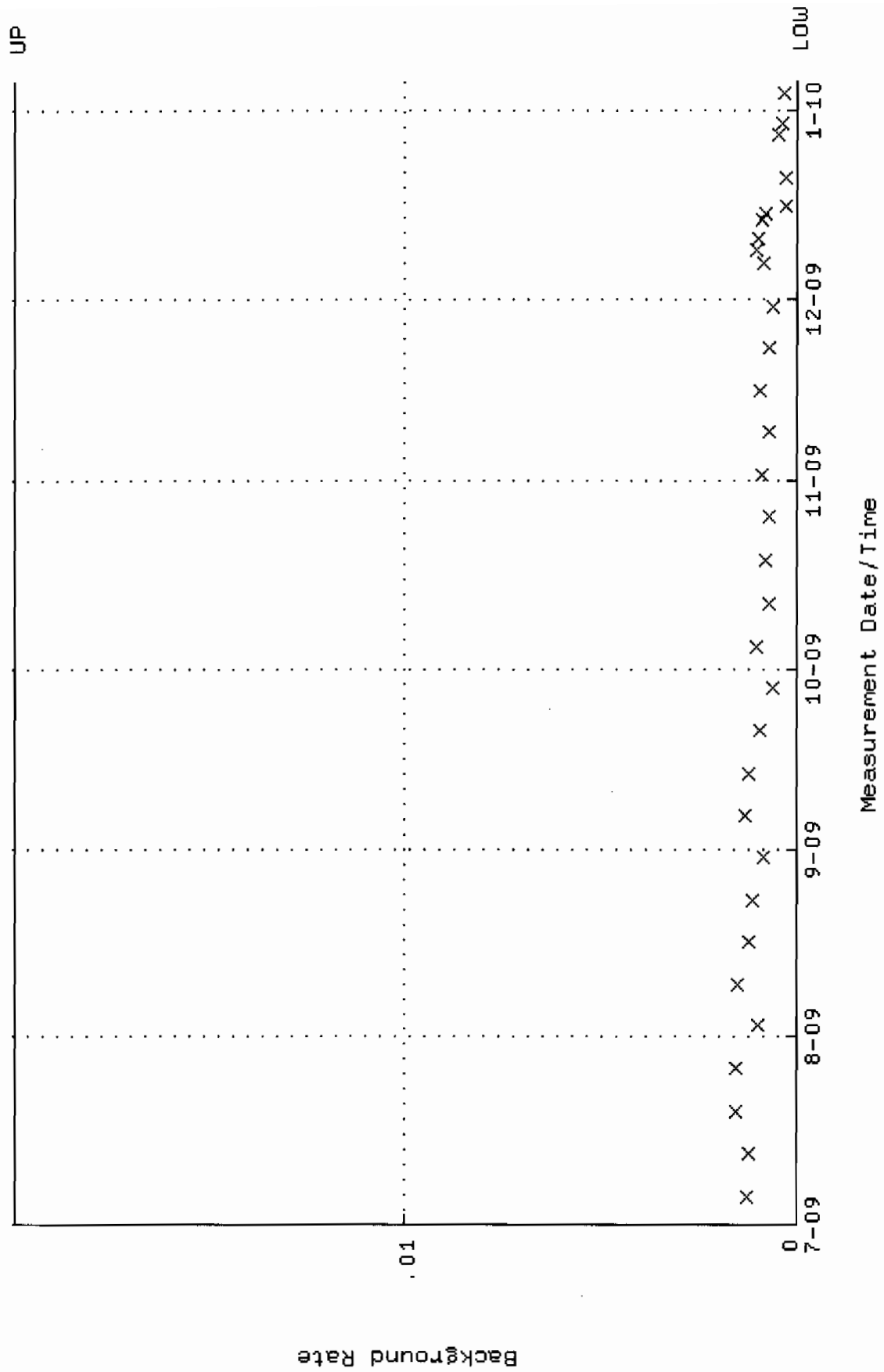
QA filename : DKA100:[ENV\_ALPHA.QA.W]W001.QAF;7  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.313195 through 0.333195



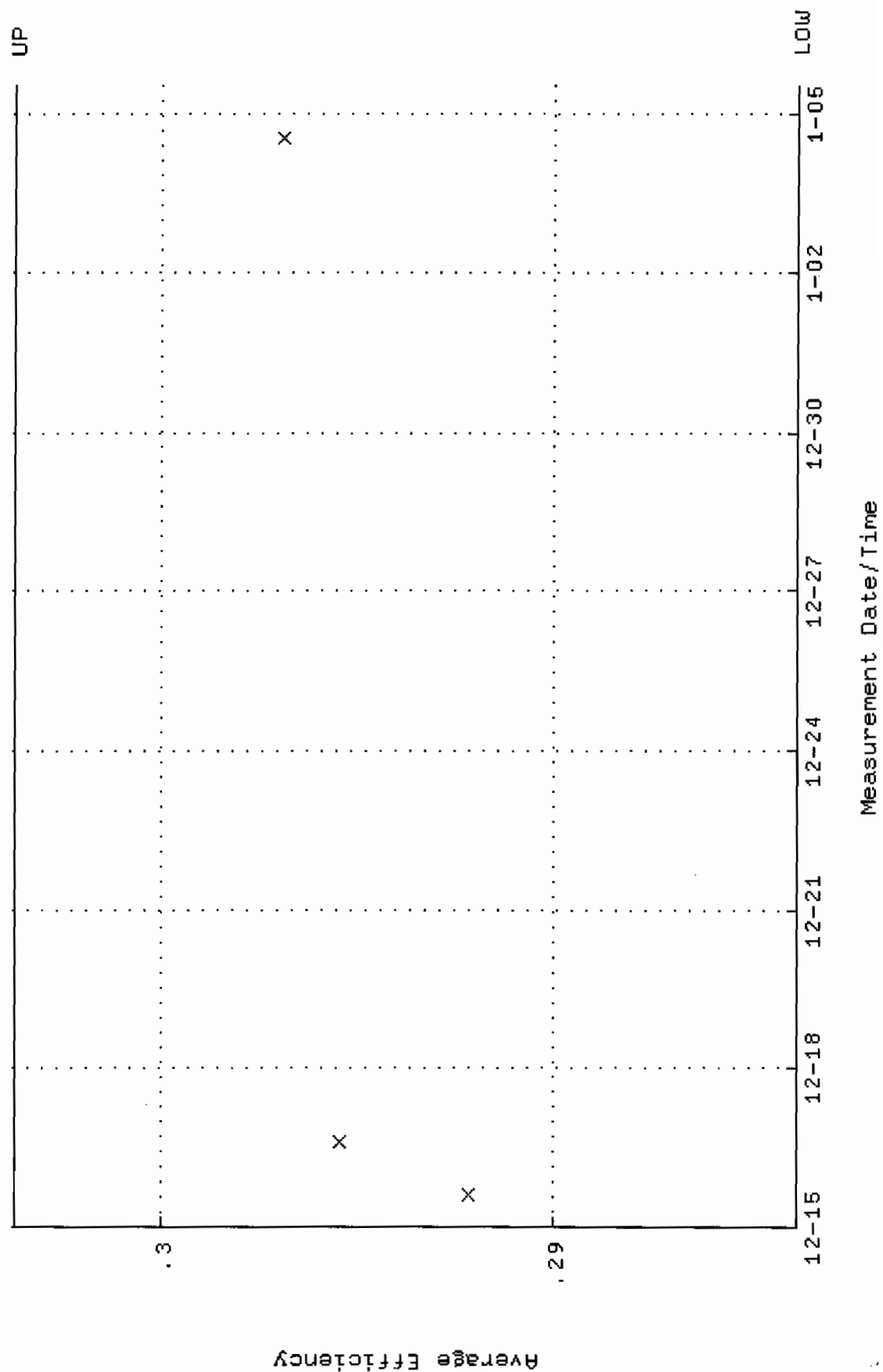
QA filename : DKA100:[ENV-ALPHA,QA.W]W001.QAF;7  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.1884 through 96.3662



QA filename : DKA100:[ENV\_ALPHA.QA.B]B001.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:54 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

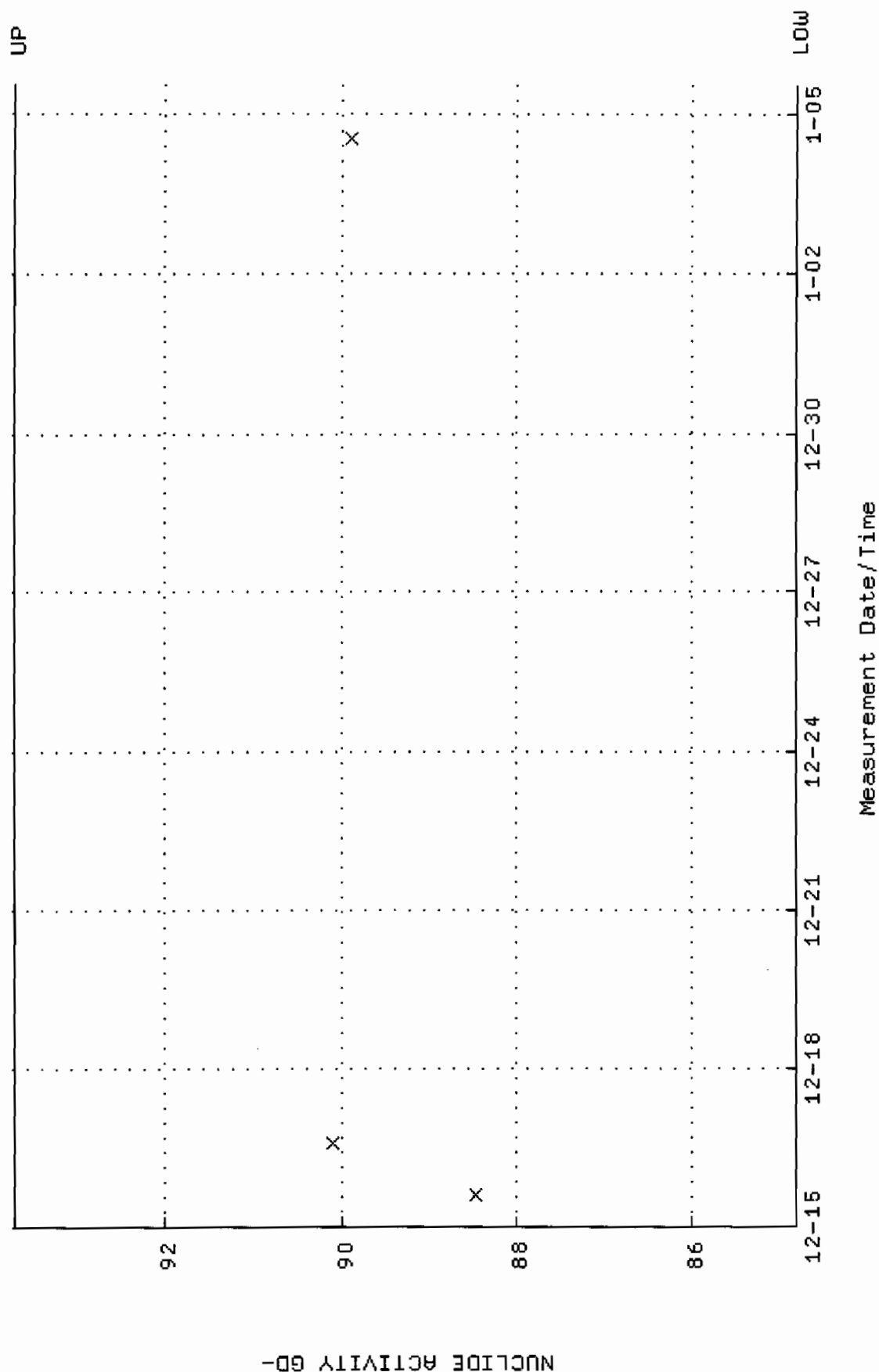


QA filename : DKA100:[ENV\_ALPHA.QA.W]W002.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.283765 through 0.303765

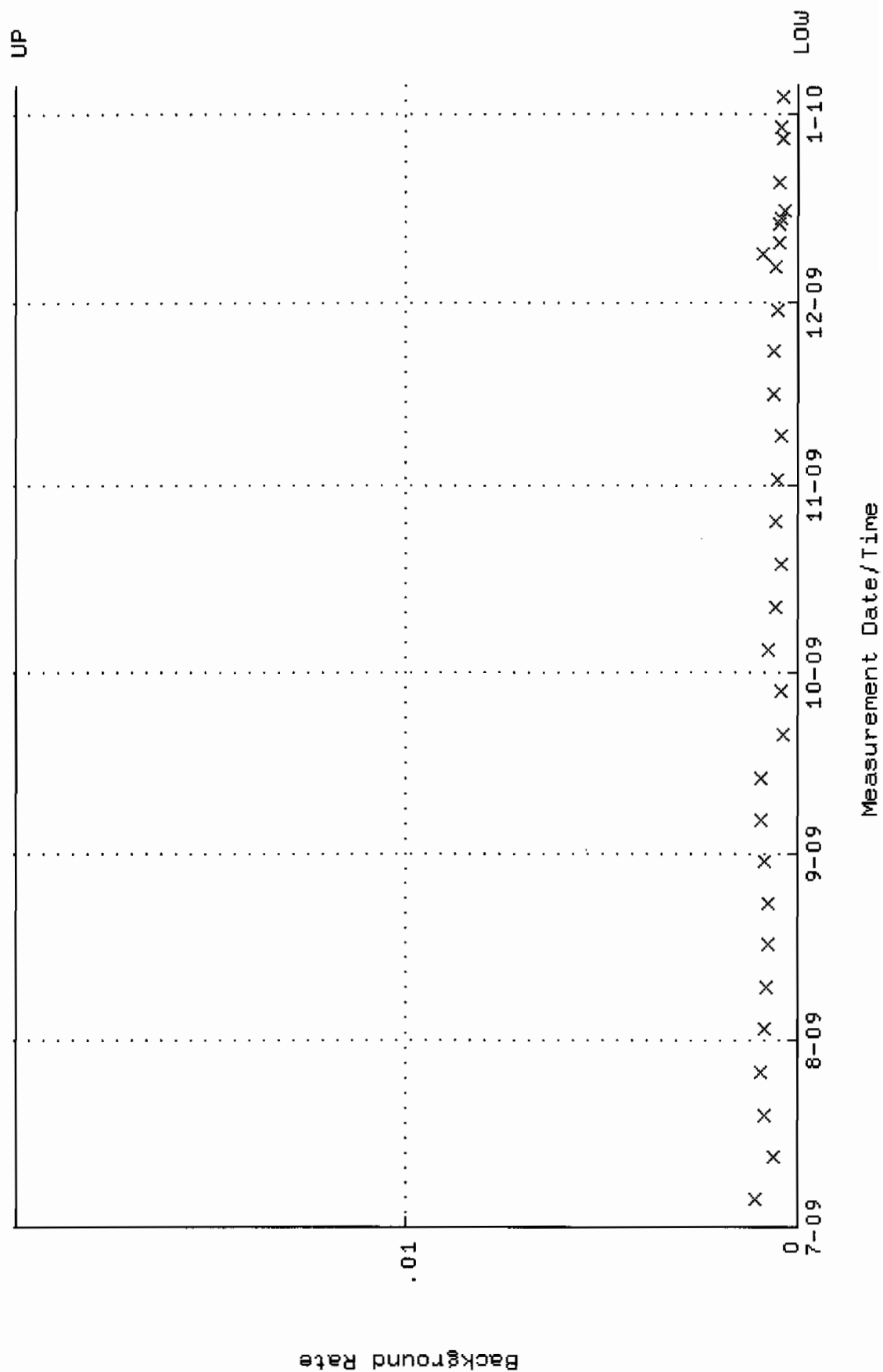




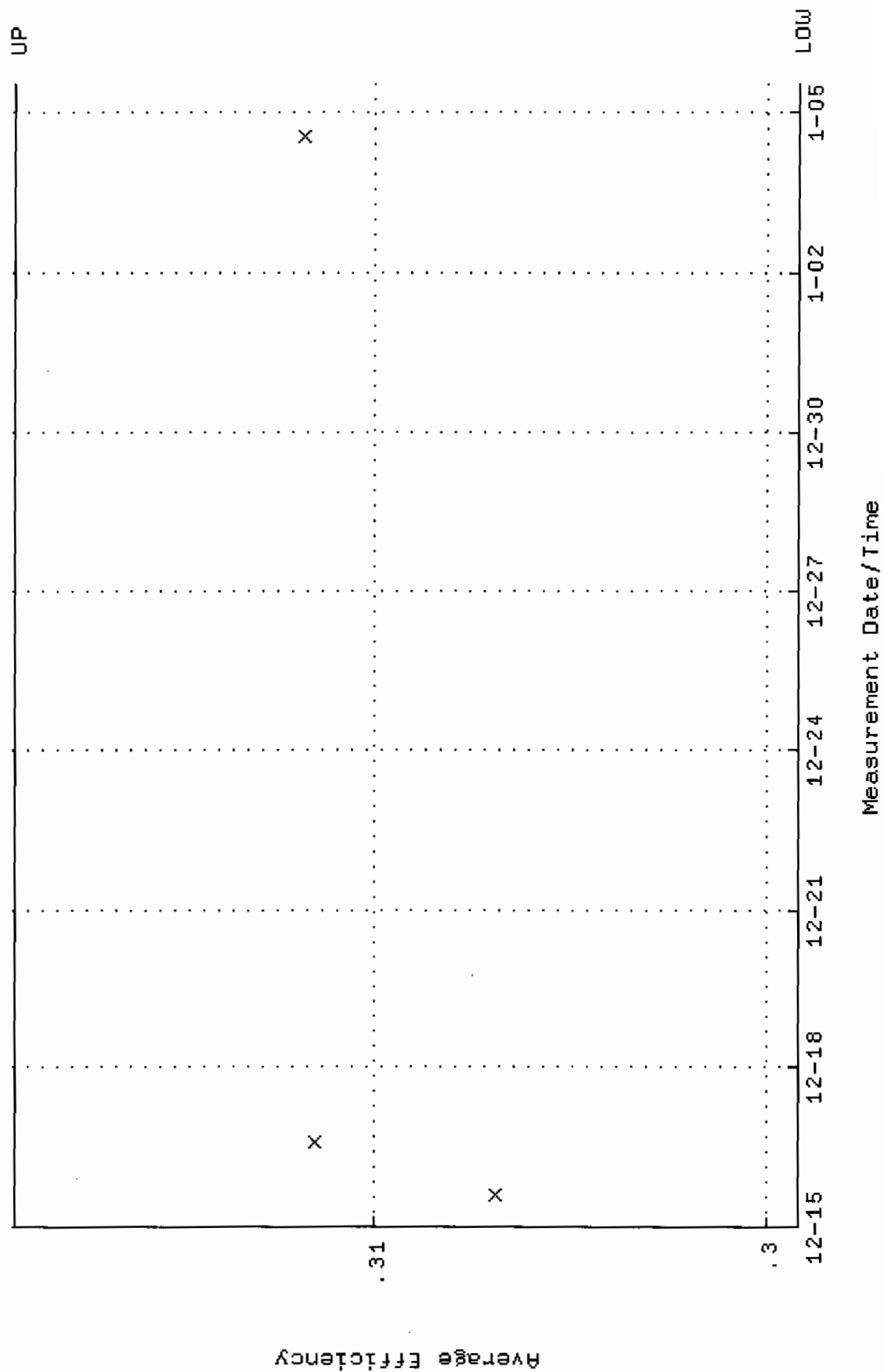
QA filename : DKA100:[ENV-ALPHA.QA.W]W002.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.8037 through 93.7305



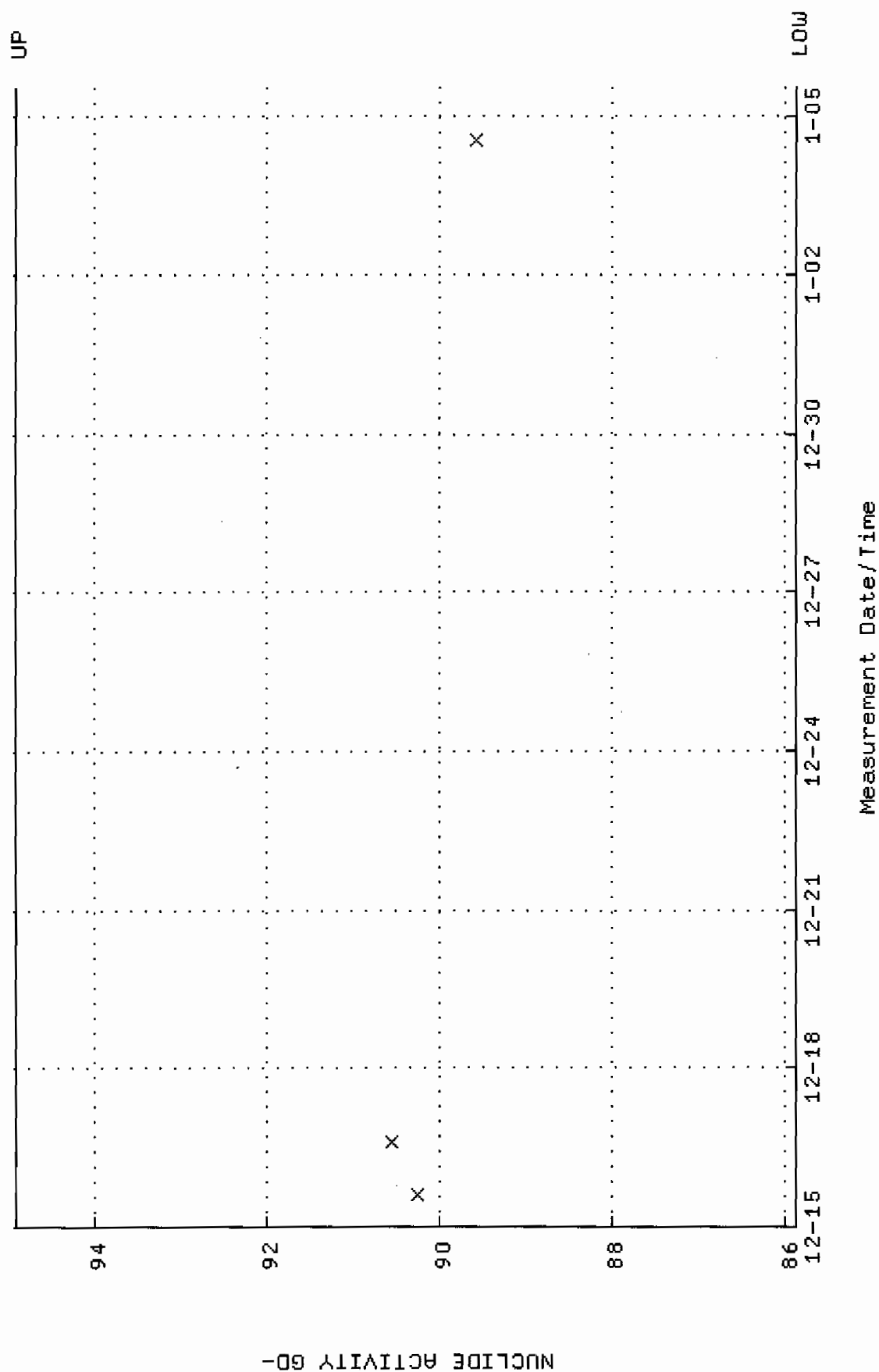
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 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:54 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



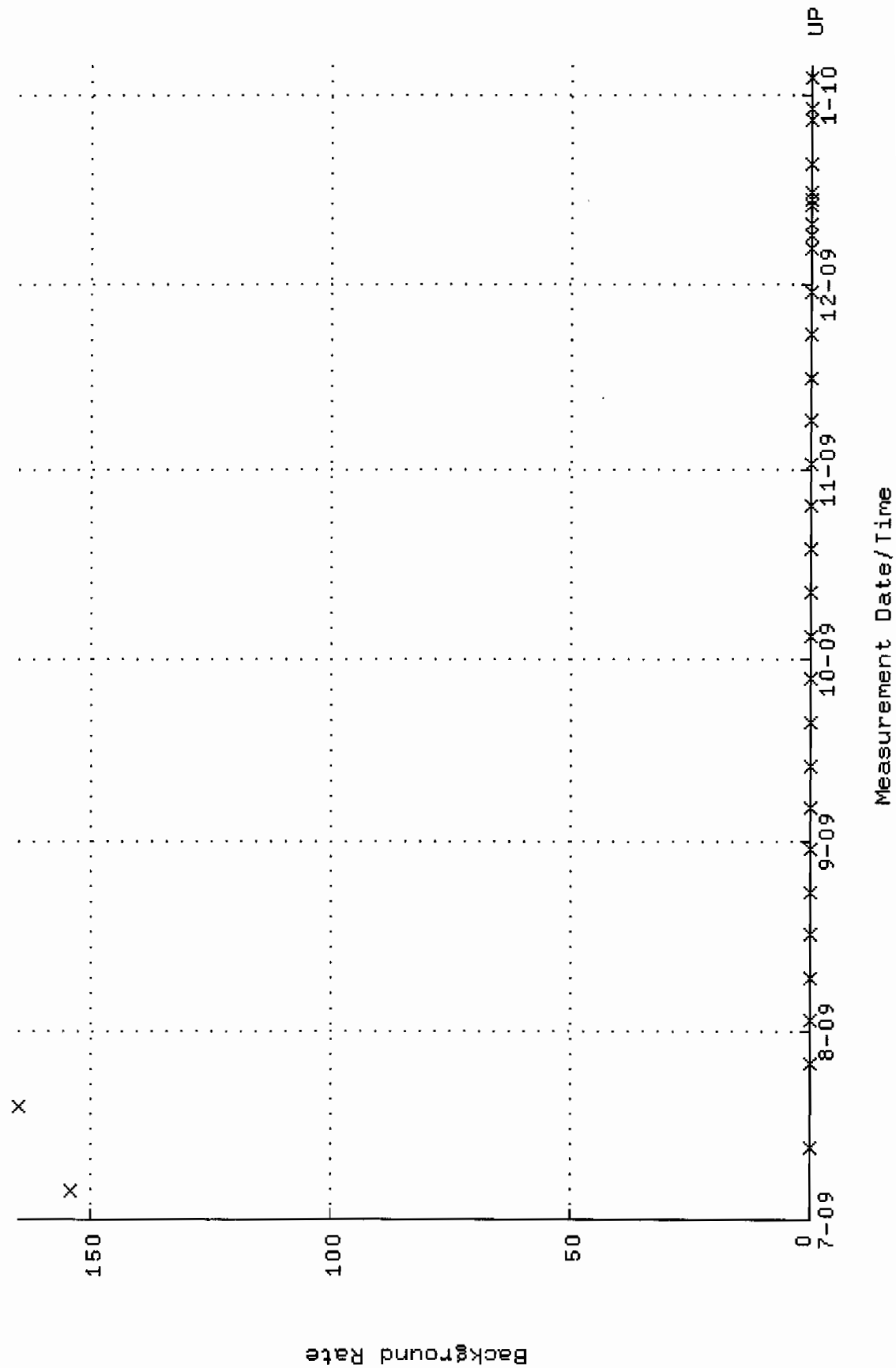
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 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.299193 through 0.319193



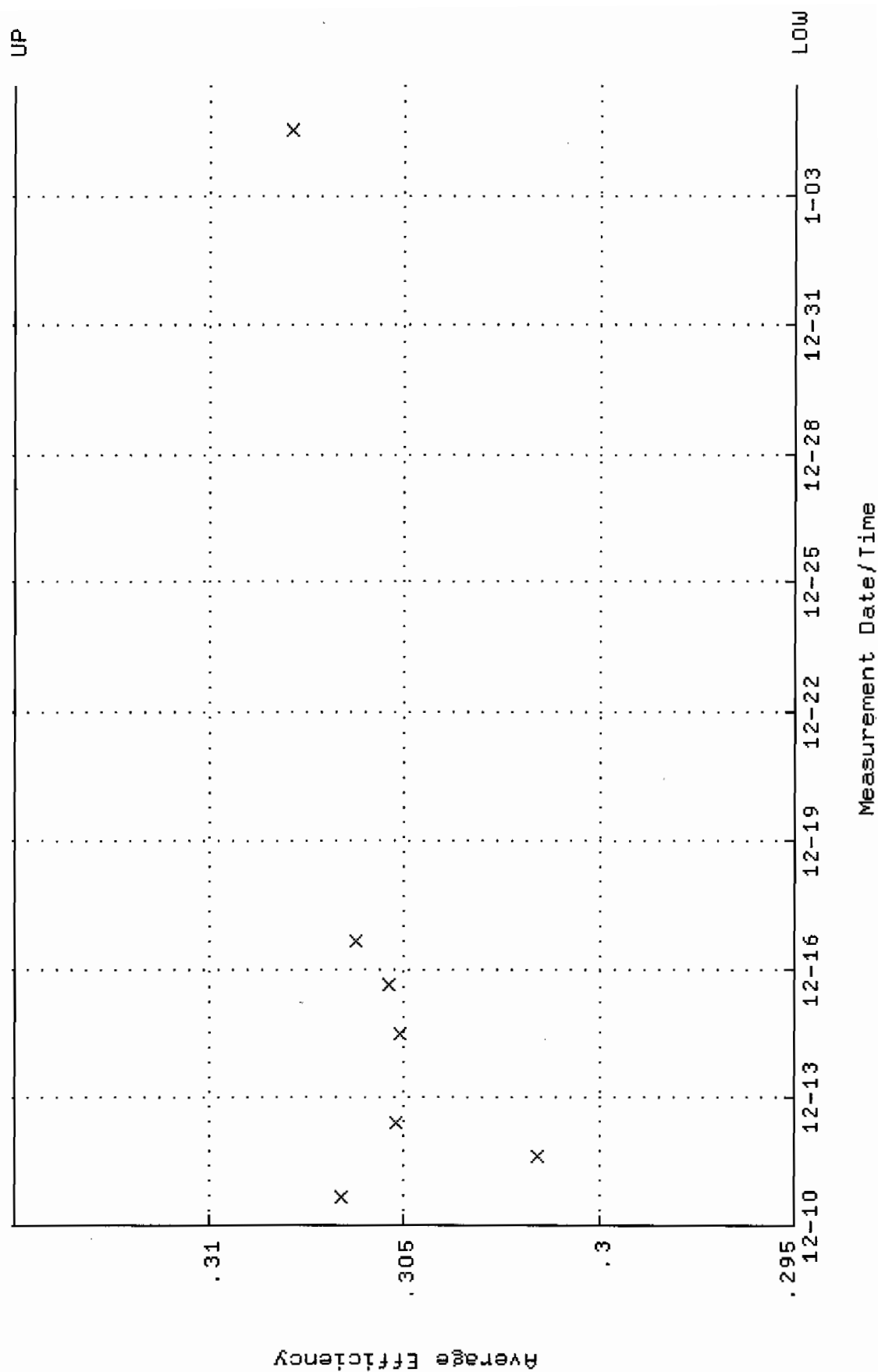
QA filename : DKA100:[ENV\_ALPHA.QA.W]W003.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.8745 through 94.9139



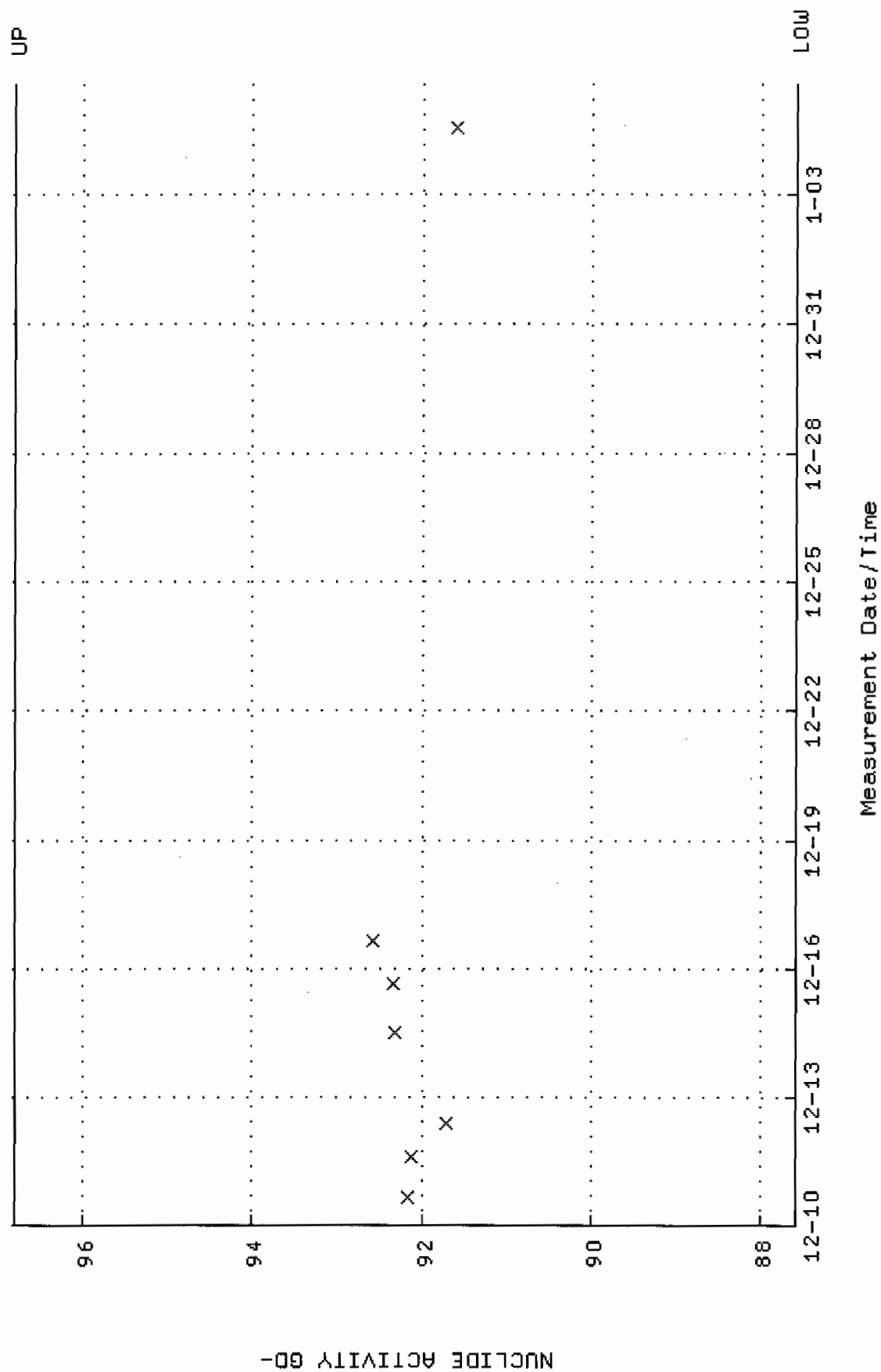
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 Start/End Dates : 5-JUL-2009 15:11:54 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



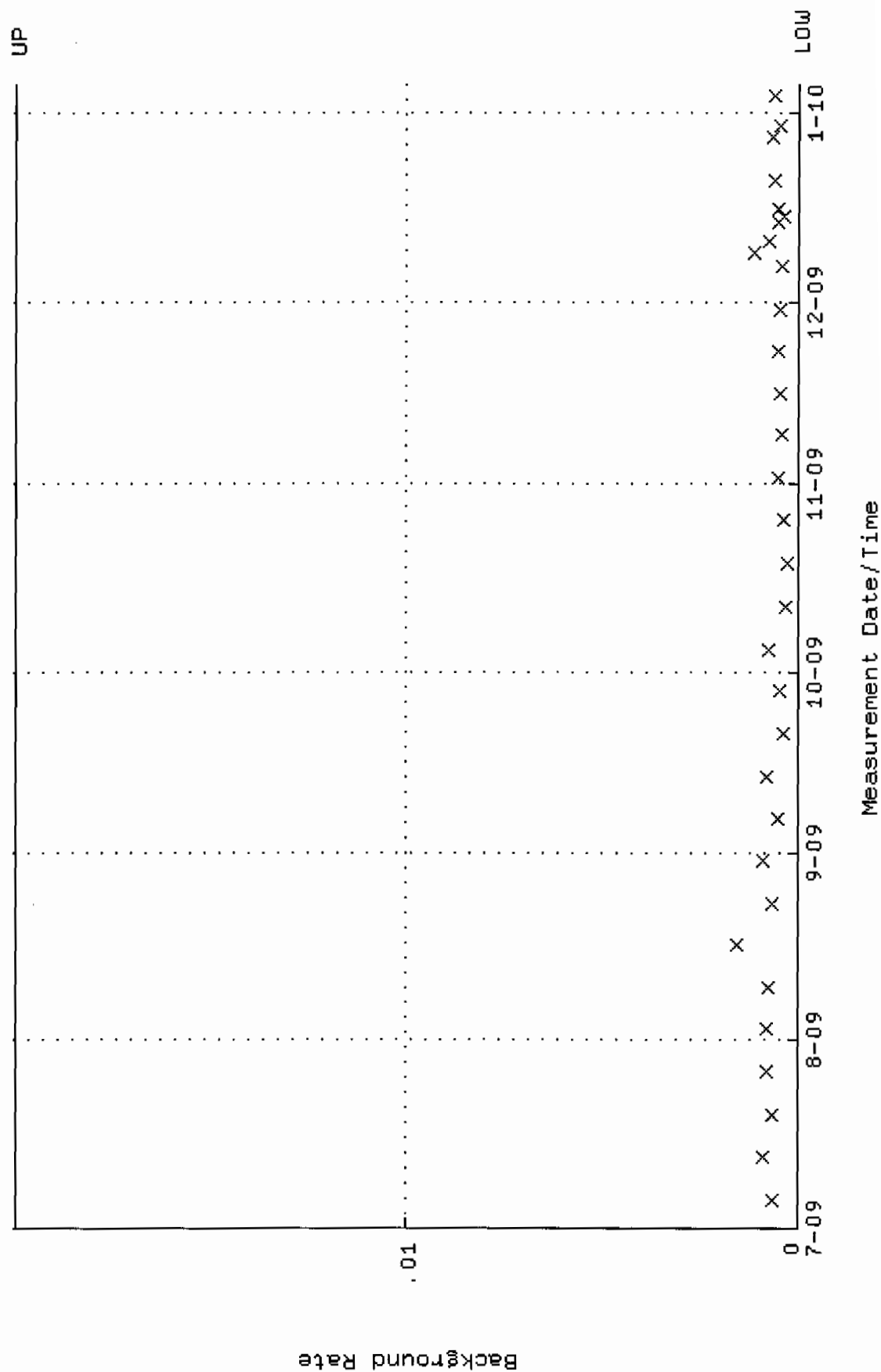
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 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.294995 through 0.314995



QA filename : DKA100:[ENV\_ALPHA.QA.W]W004.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.5863 through 96.8059

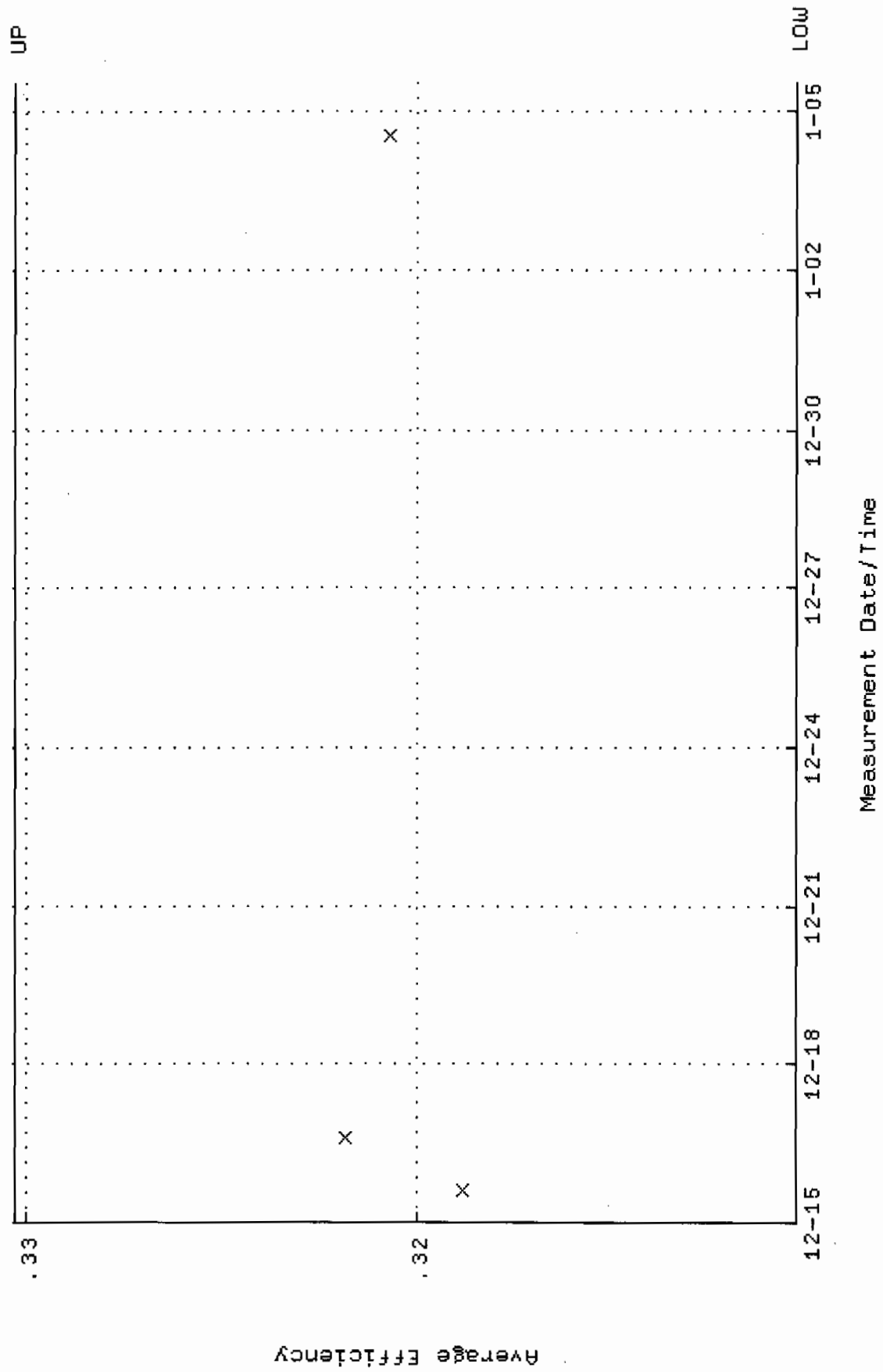


QA filename : DKA100:[ENV\_ALPHA.QA.B]B004.QAF;1  
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

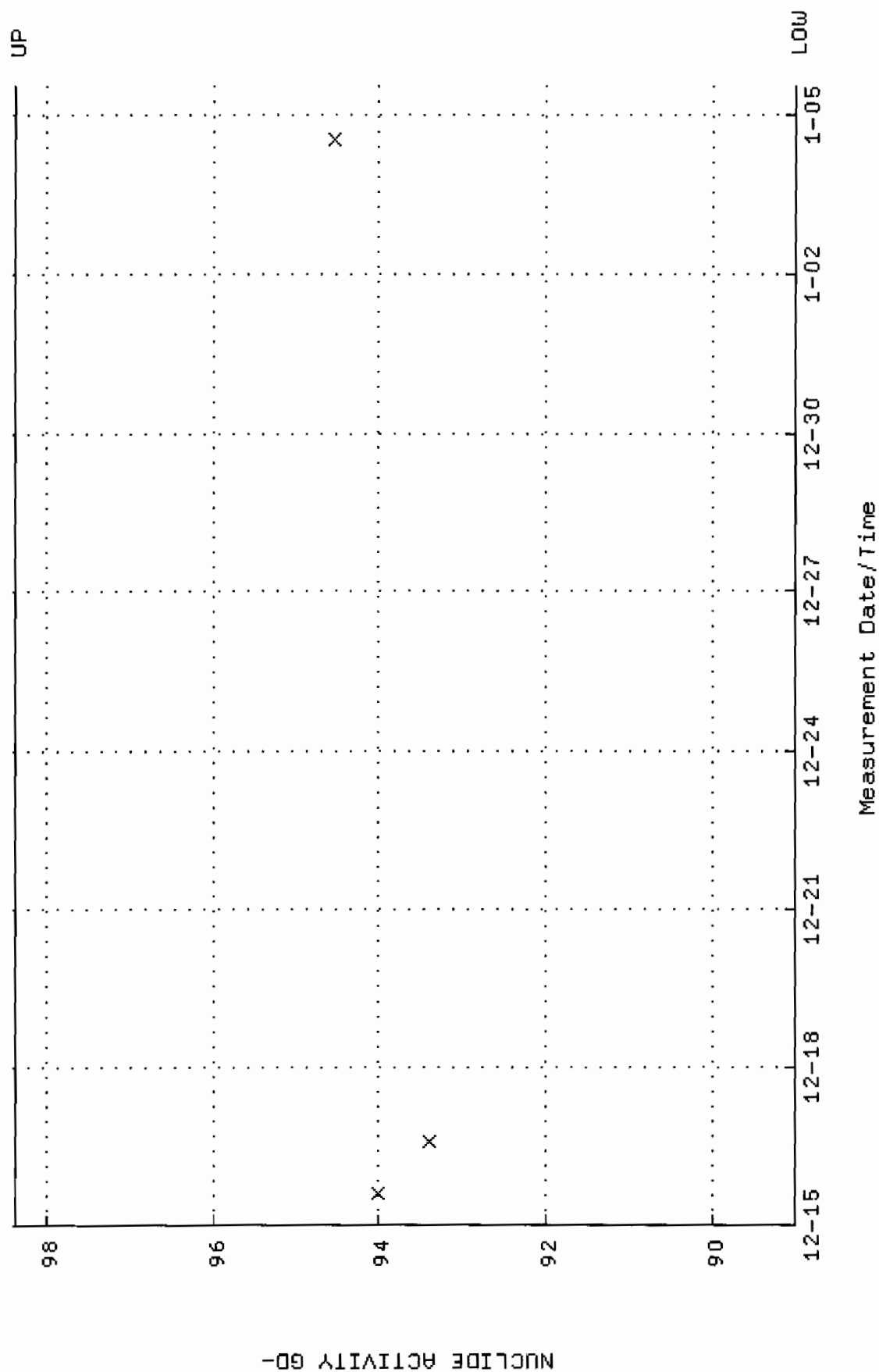




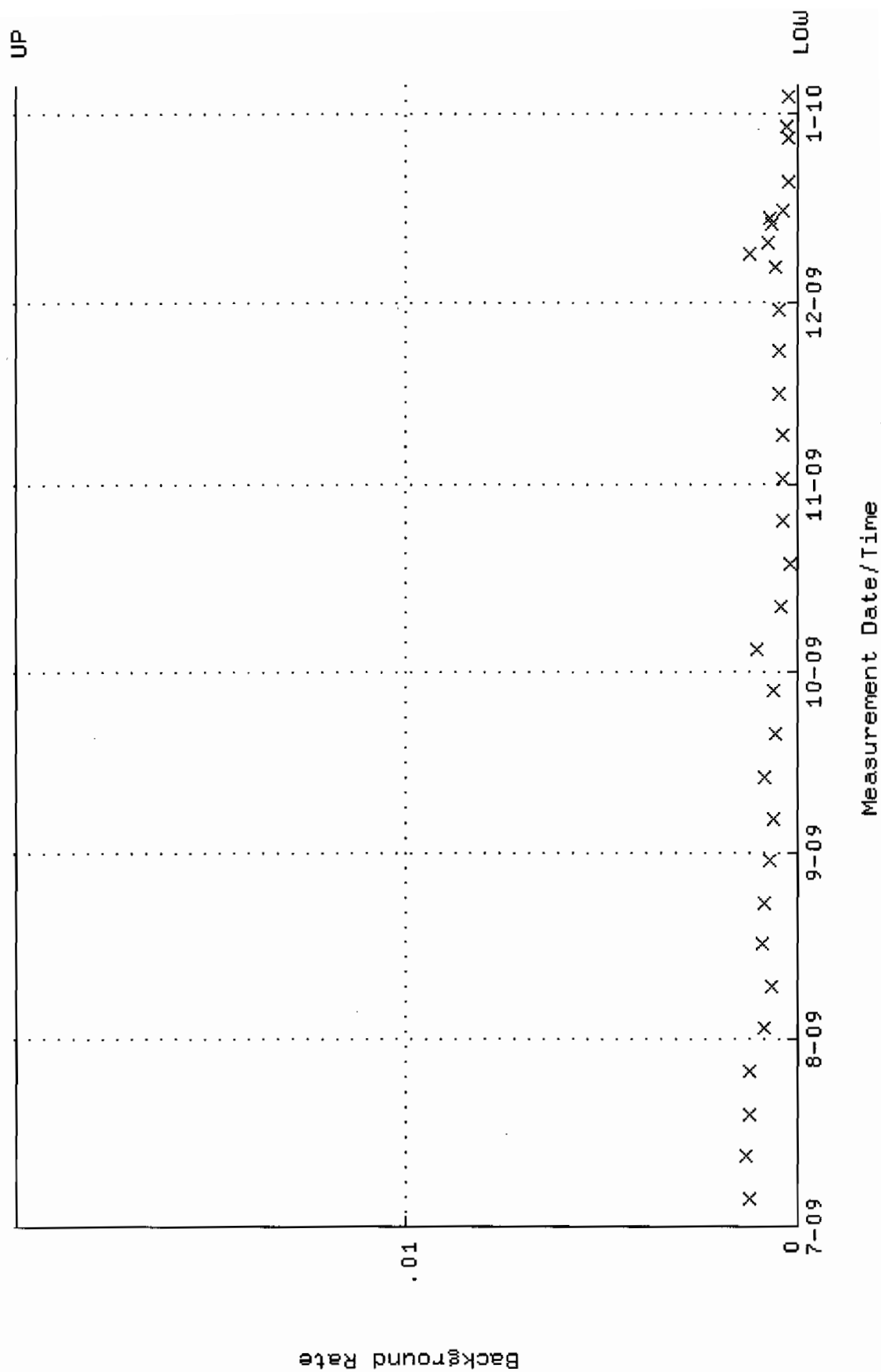
QA filename : DKA100:[ENV\_ALPHA.QA.W]W005.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.310305 through 0.330305



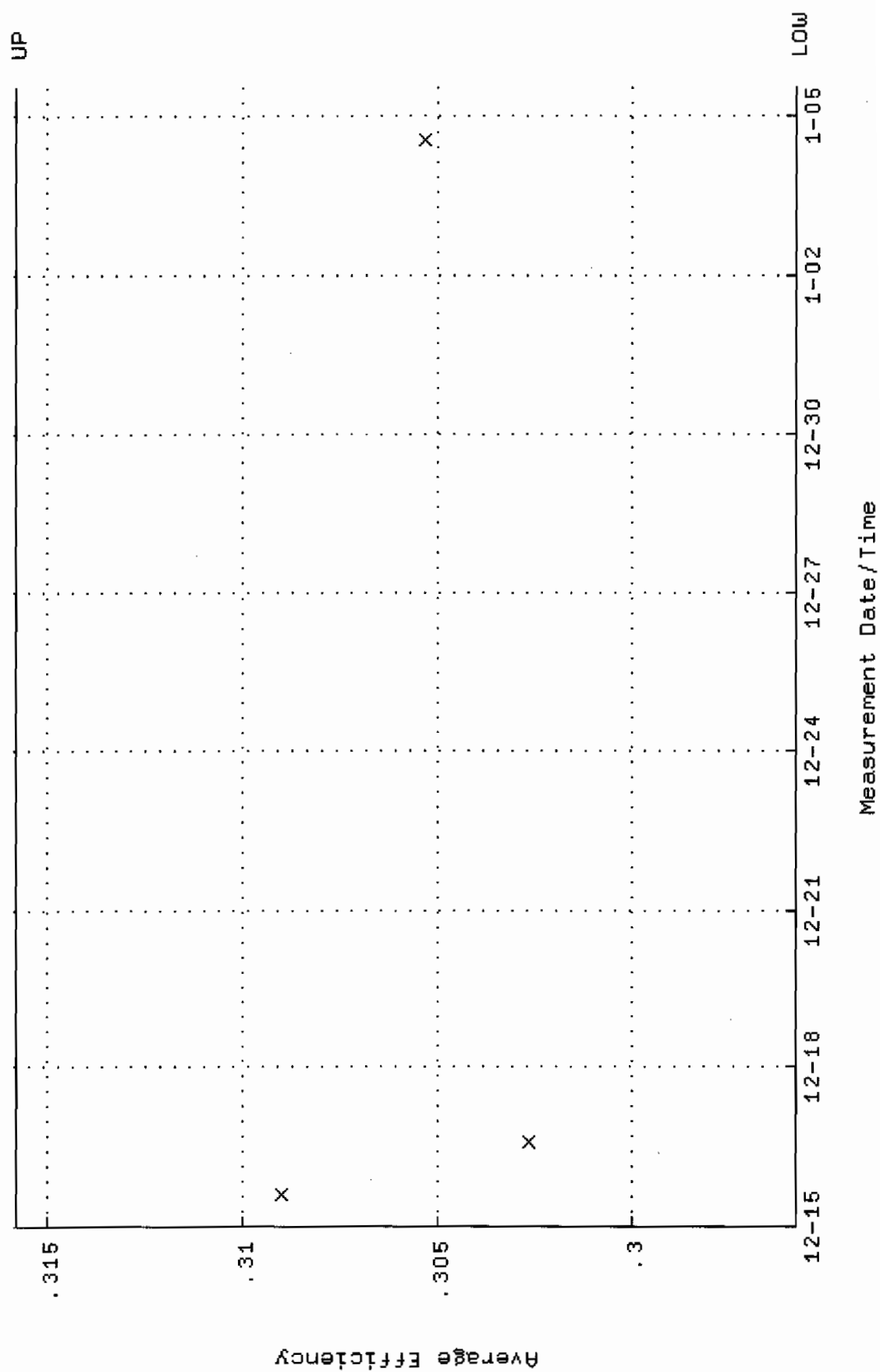
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 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.0042 through 98.3730



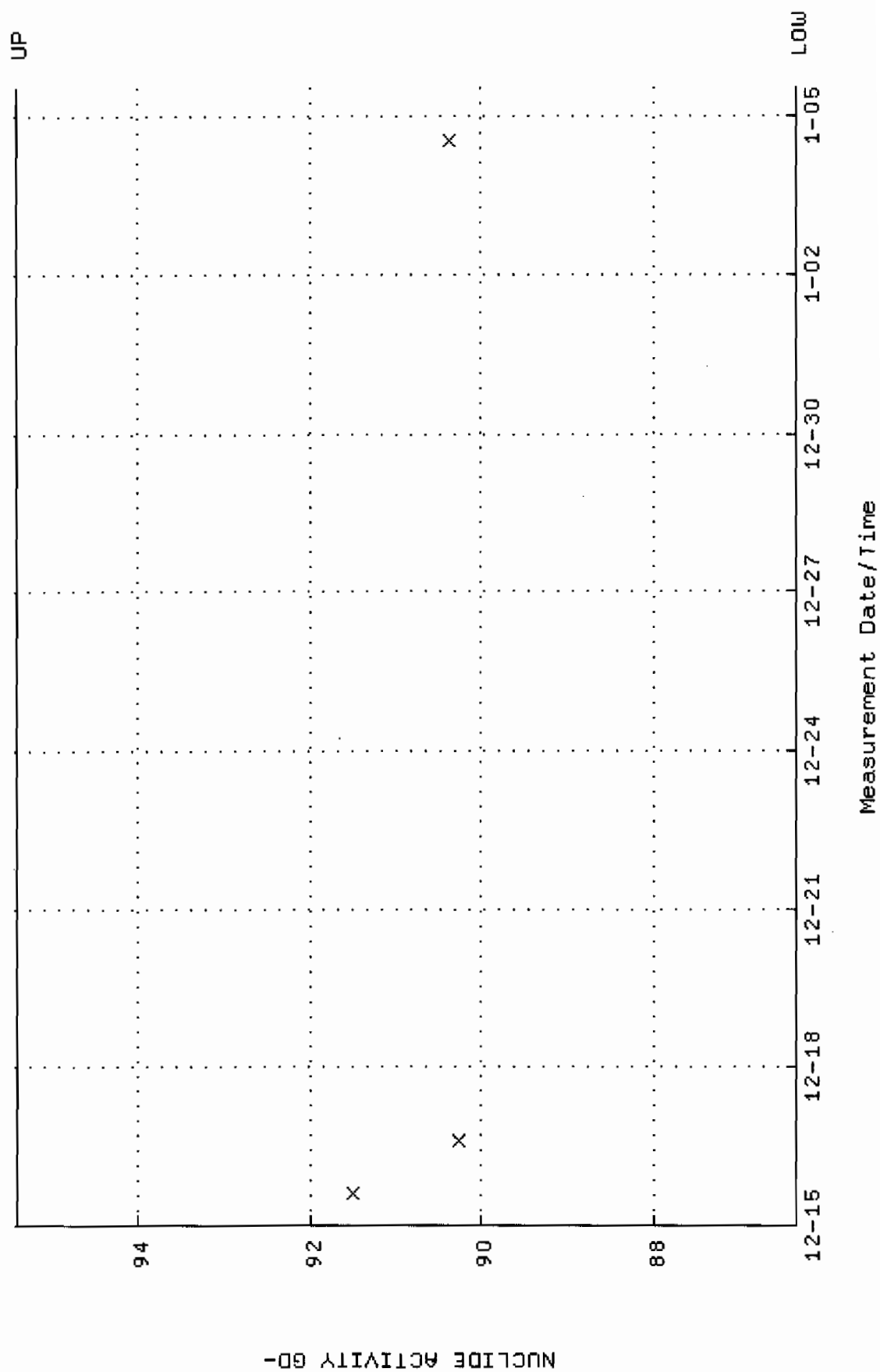
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



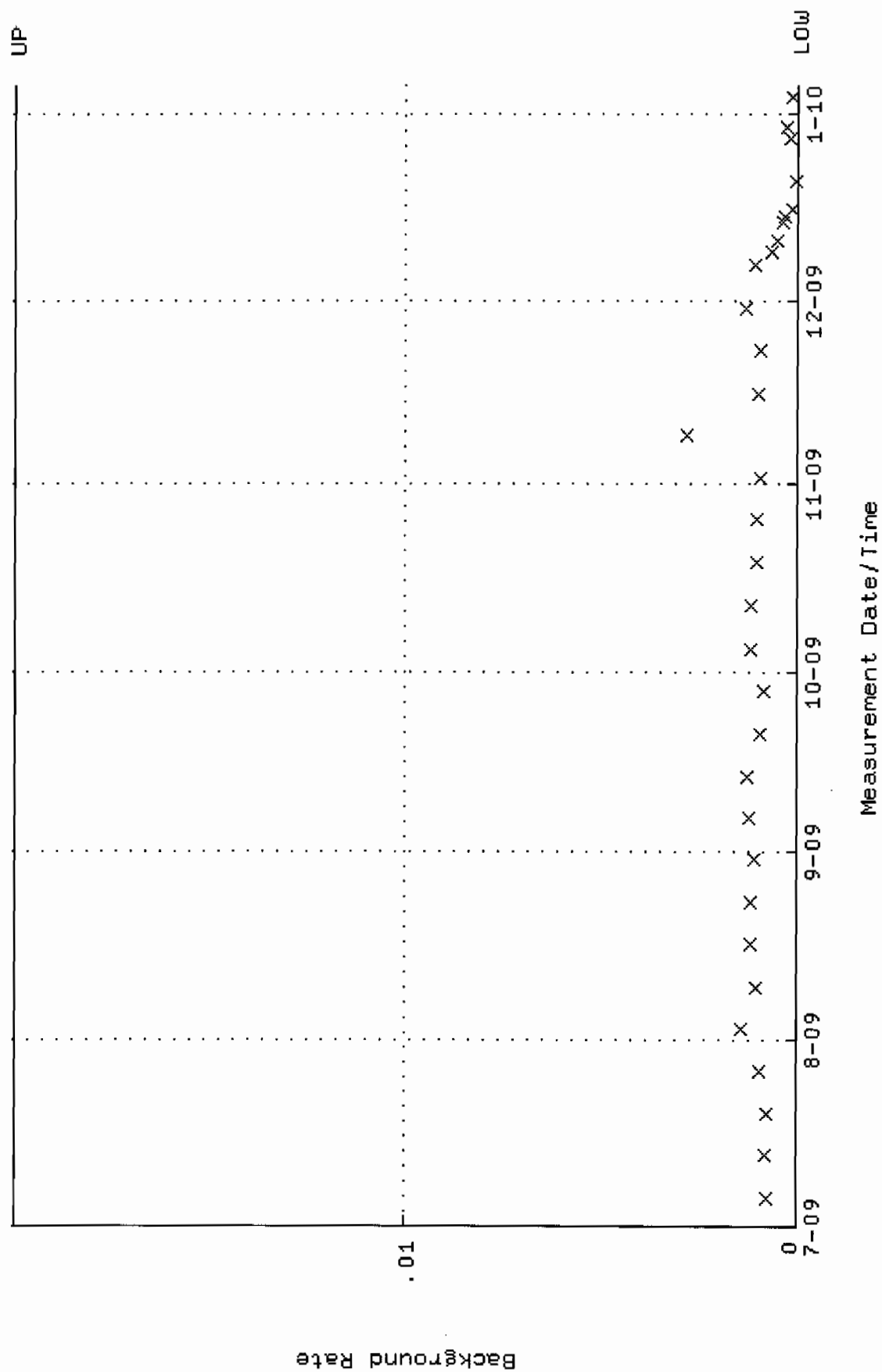
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 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.295821 through 0.315821



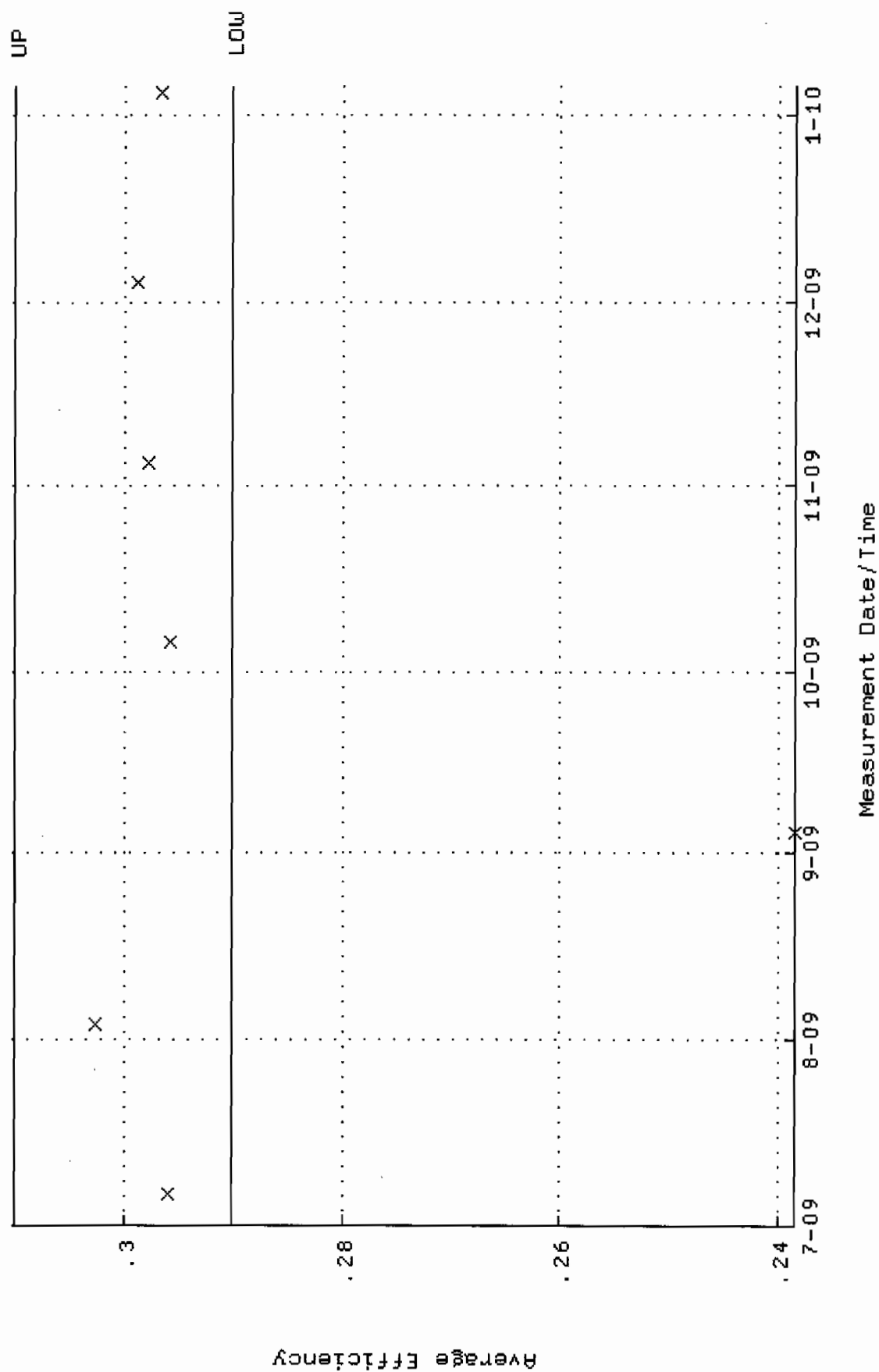
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 Parameter Name : NLAIVITY-GD148 {NUCLIDE ACTIVITY GD-148}  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.3237 through 95.4105



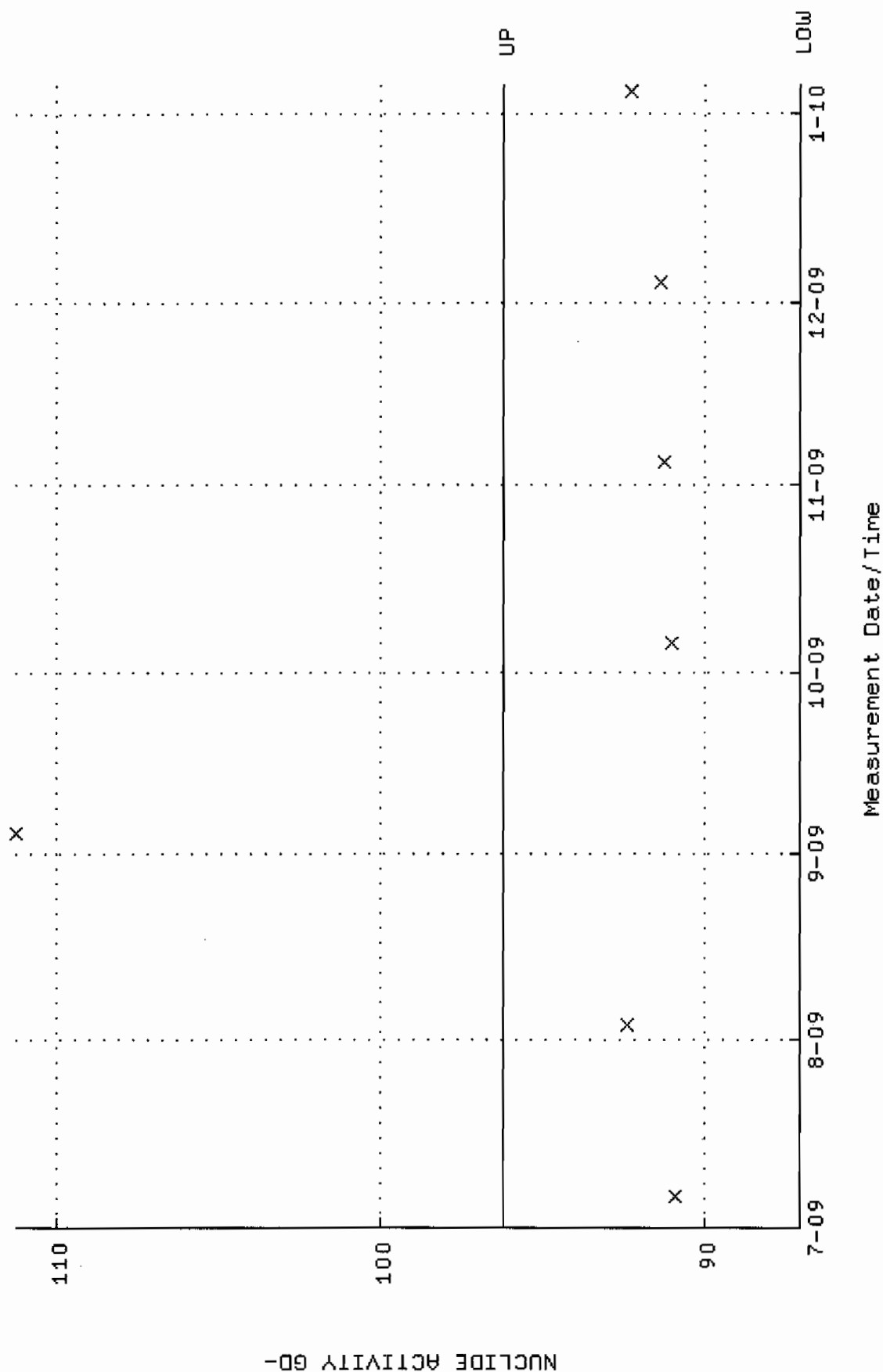
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W007.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.290108 through 0.310108

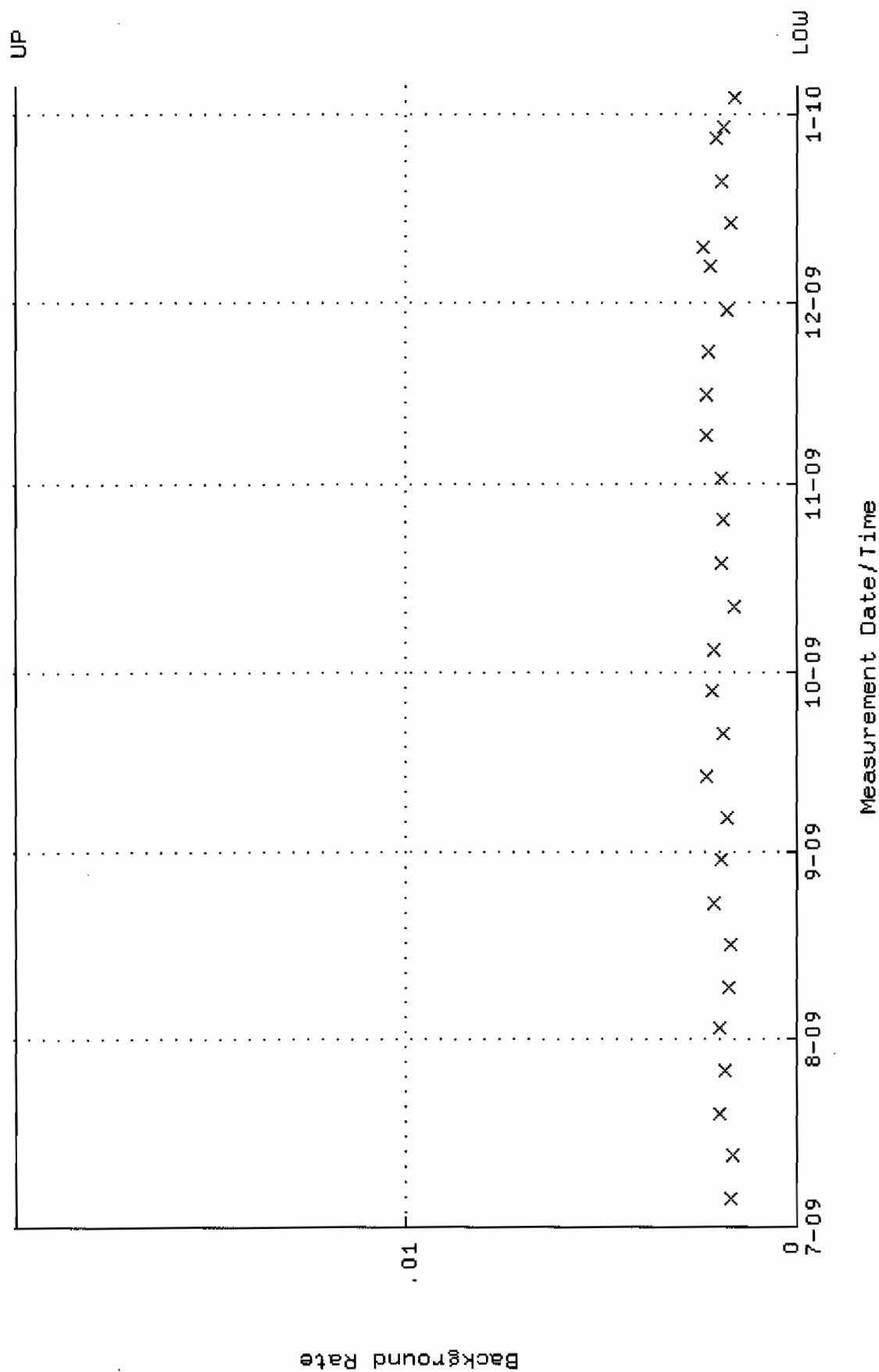


QA filename : DKA100:[ENV\_ALPHA.QA.W]W007.QAF;3  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
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 Lower/Upper Lmts: 87.0687 through 96.2339

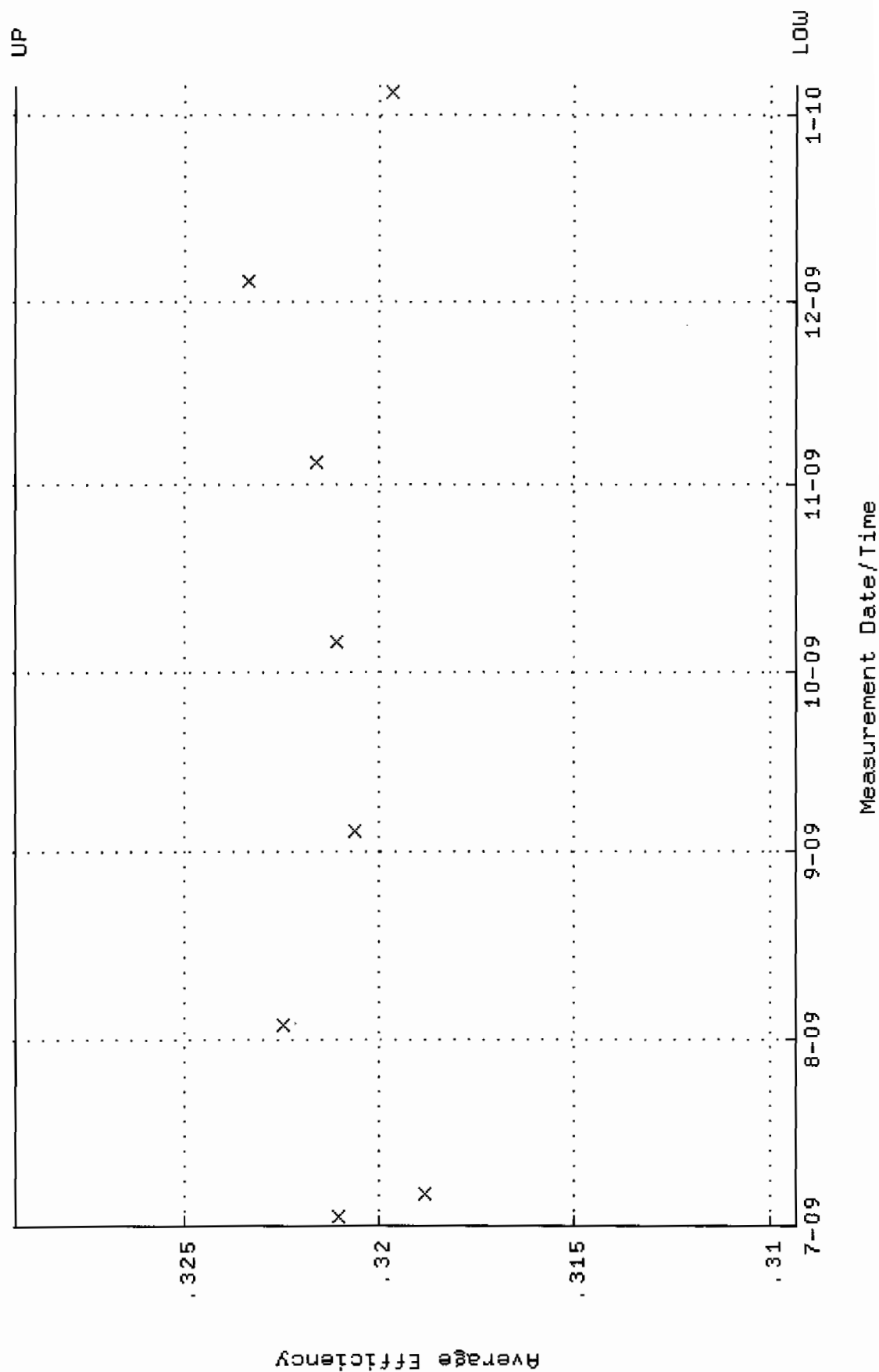




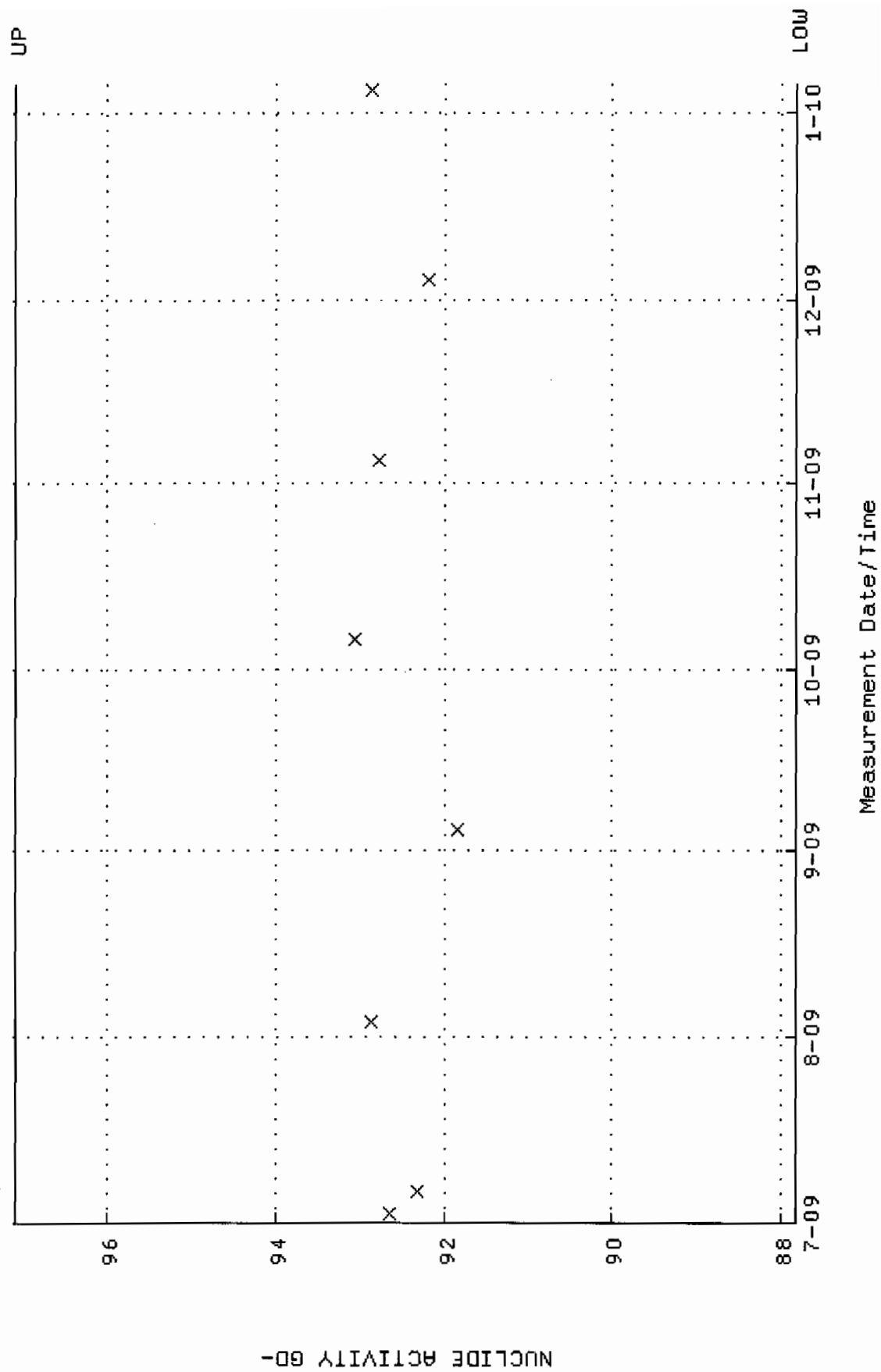
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 Parameter Name : BACKRATE (Background Rate)  
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



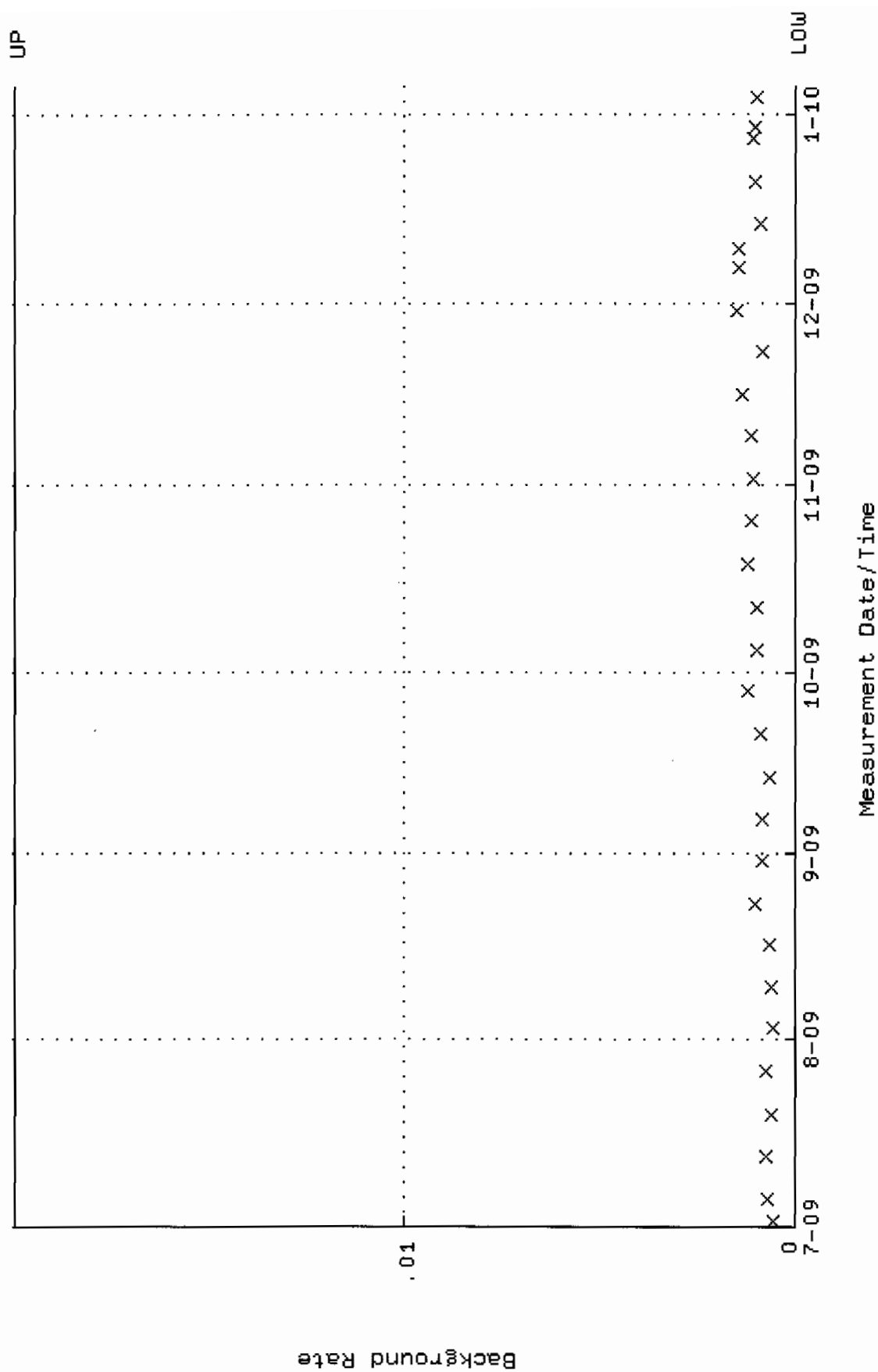
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 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.309318 through 0.329318



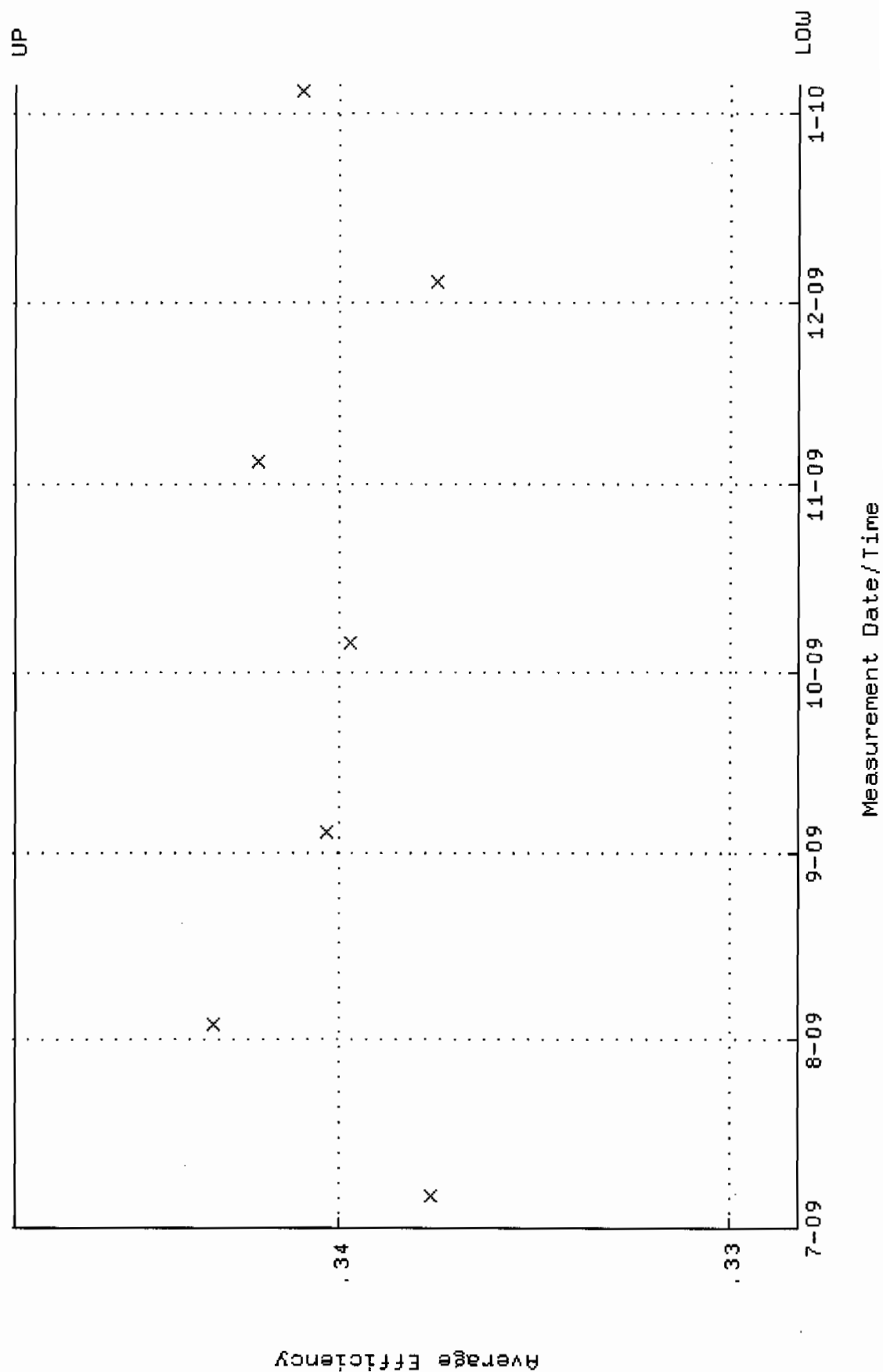
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 Lower/Upper Lmts: 87.8346 through 97.0804



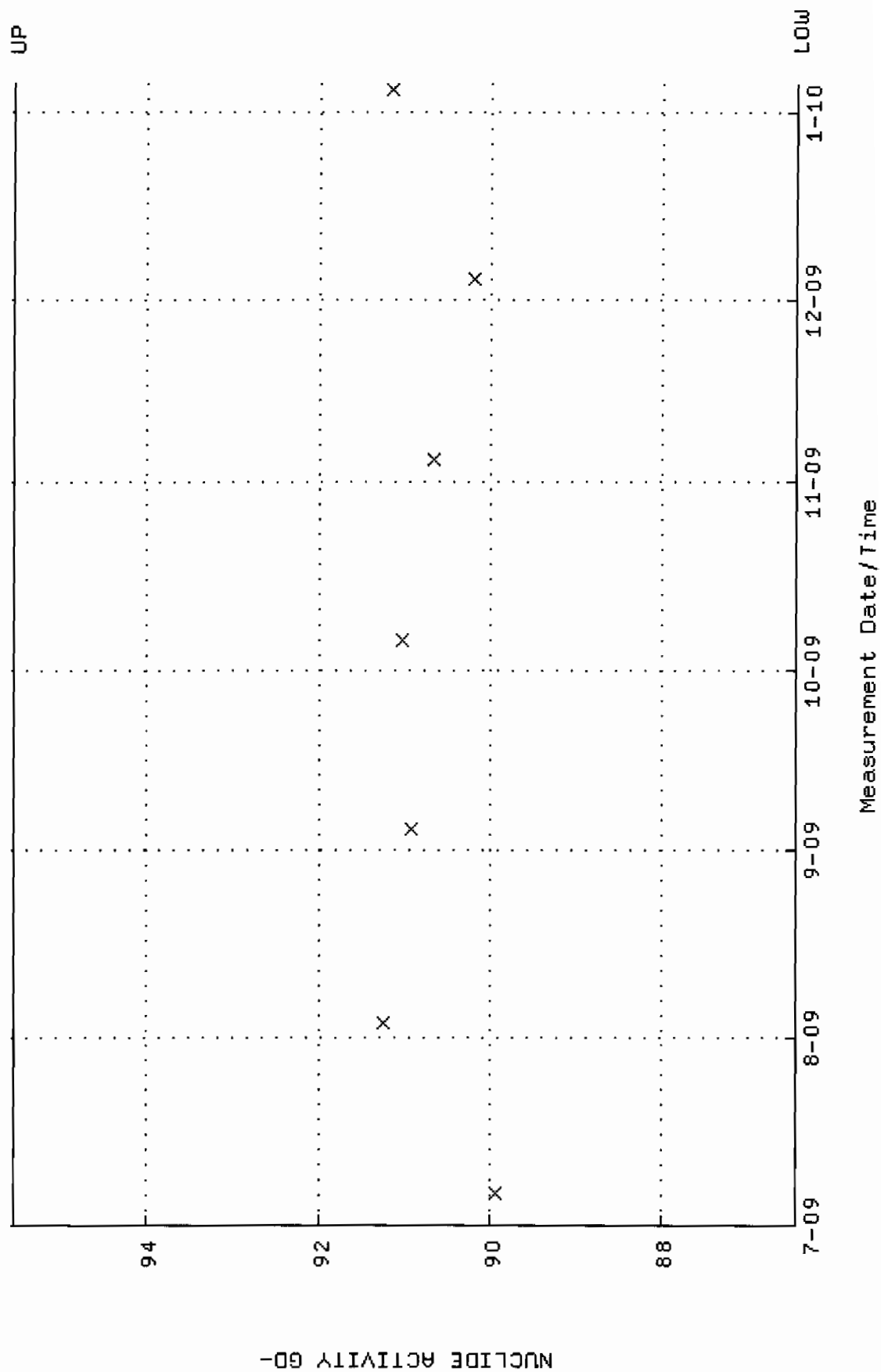
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



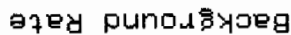
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 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.328261 through 0.348261



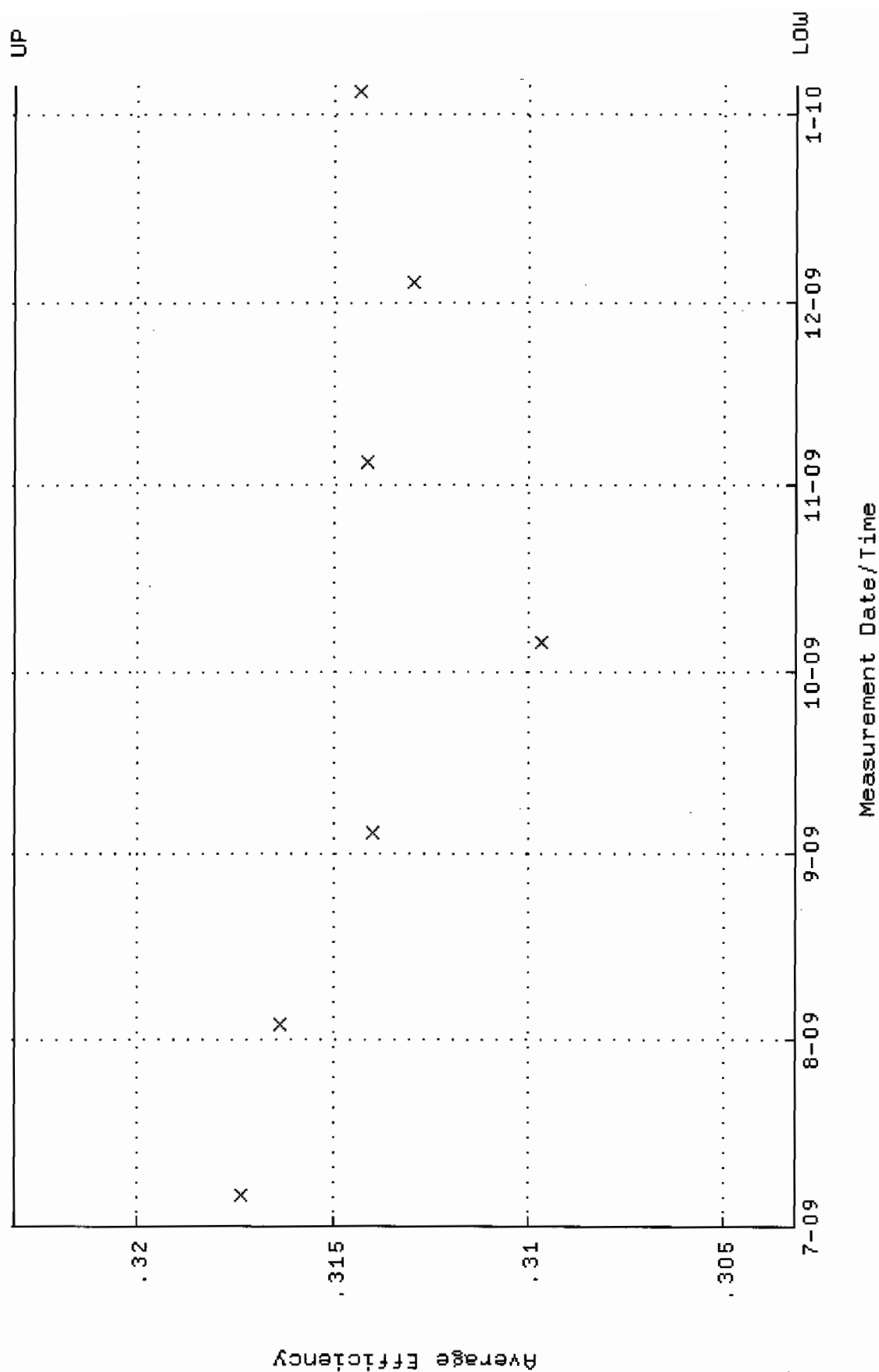
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.4475 through 95.5473



Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

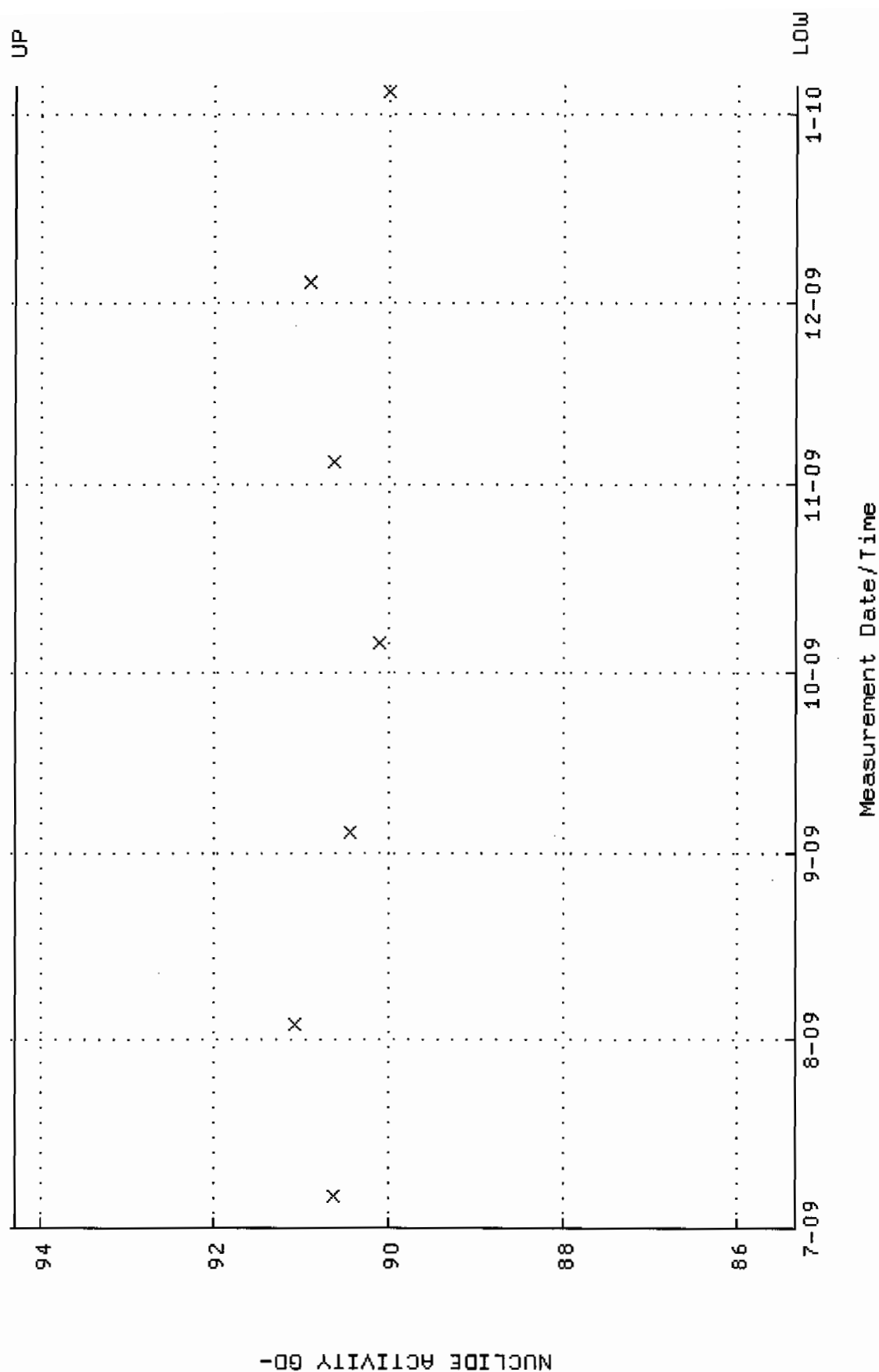


QA filename : DKA100:[ENV\_ALPHA.QA.W]W010.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.303169 through 0.323169

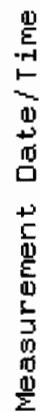




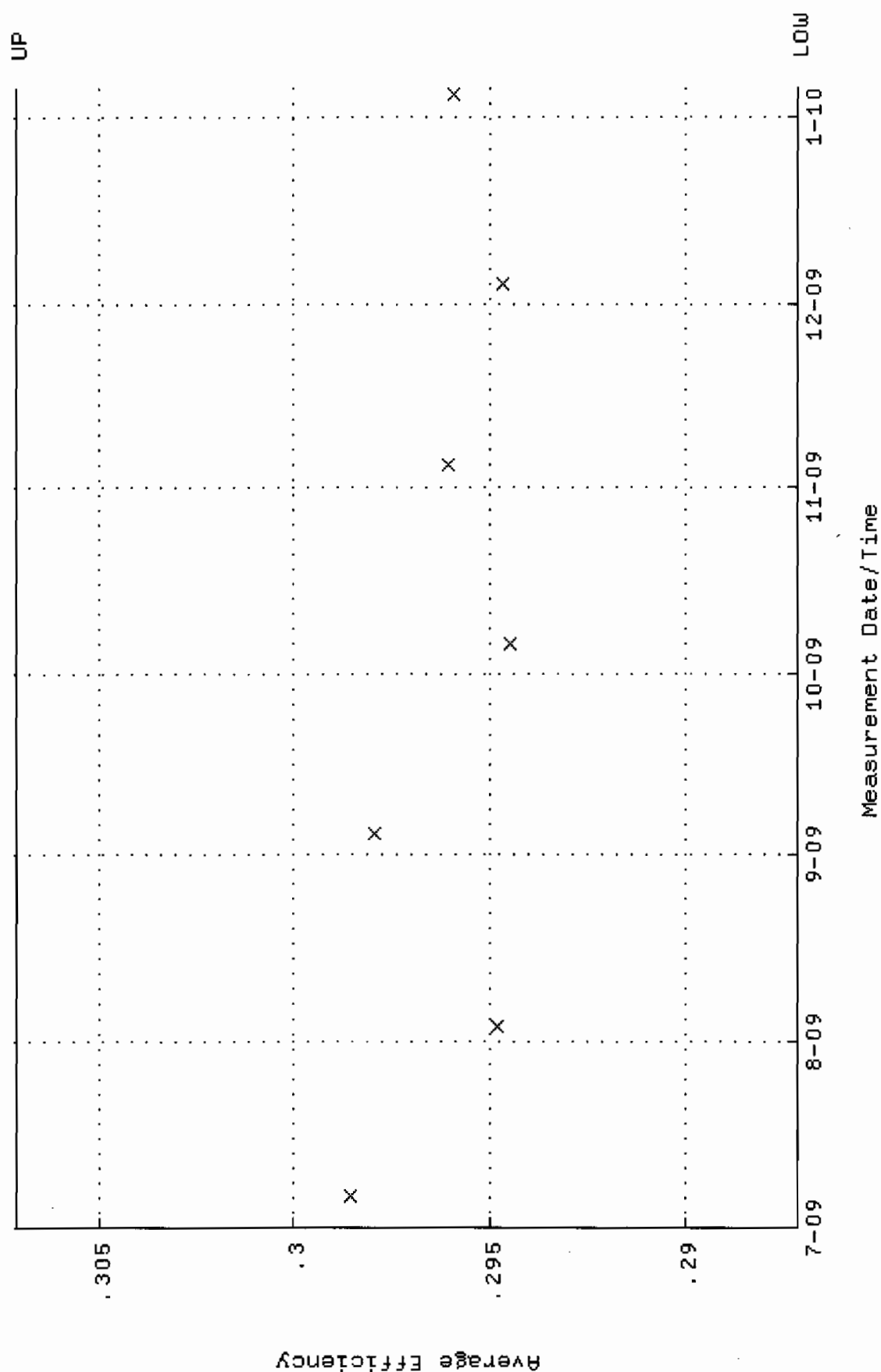
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
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 Lower/Upper Lmts: 85.3273 through 94.3091



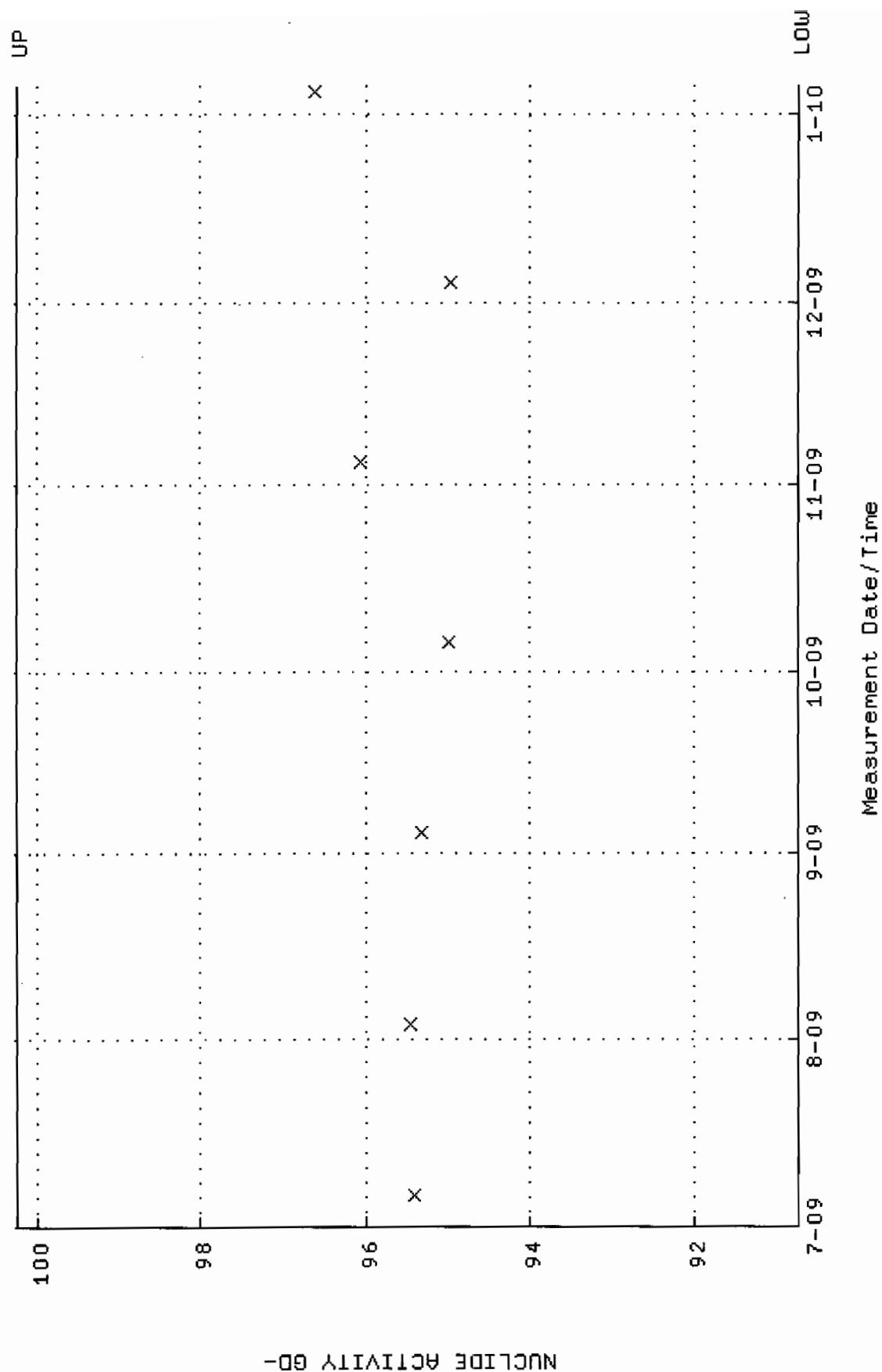
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



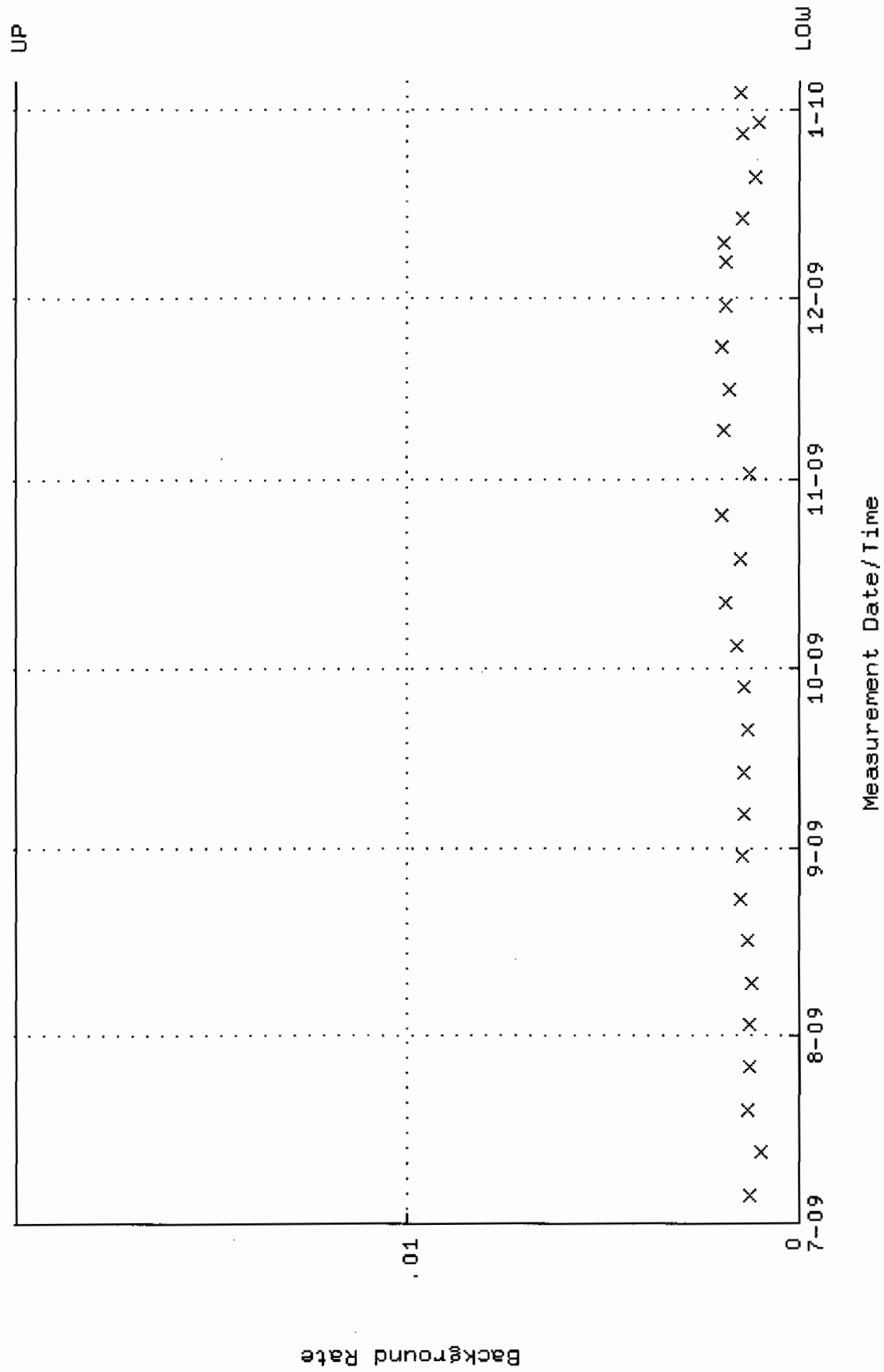
QA filename : DKA100:[ENV\_ALPHA.QA.W]w011.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.287129 through 0.307129



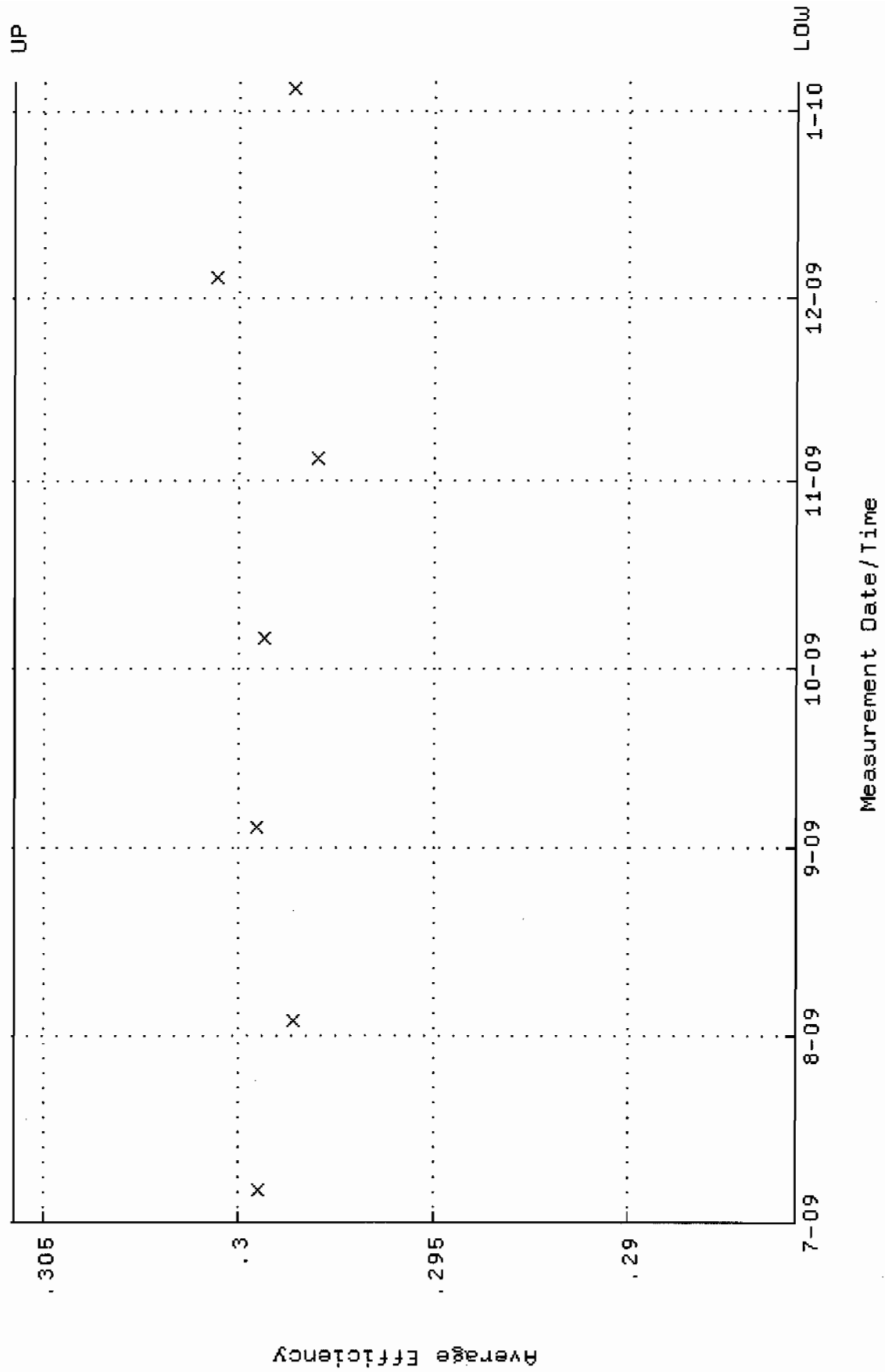
QA filename : DKA100:[ENV\_ALPHA.QA.W]W011.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 90.7092 through 100.258



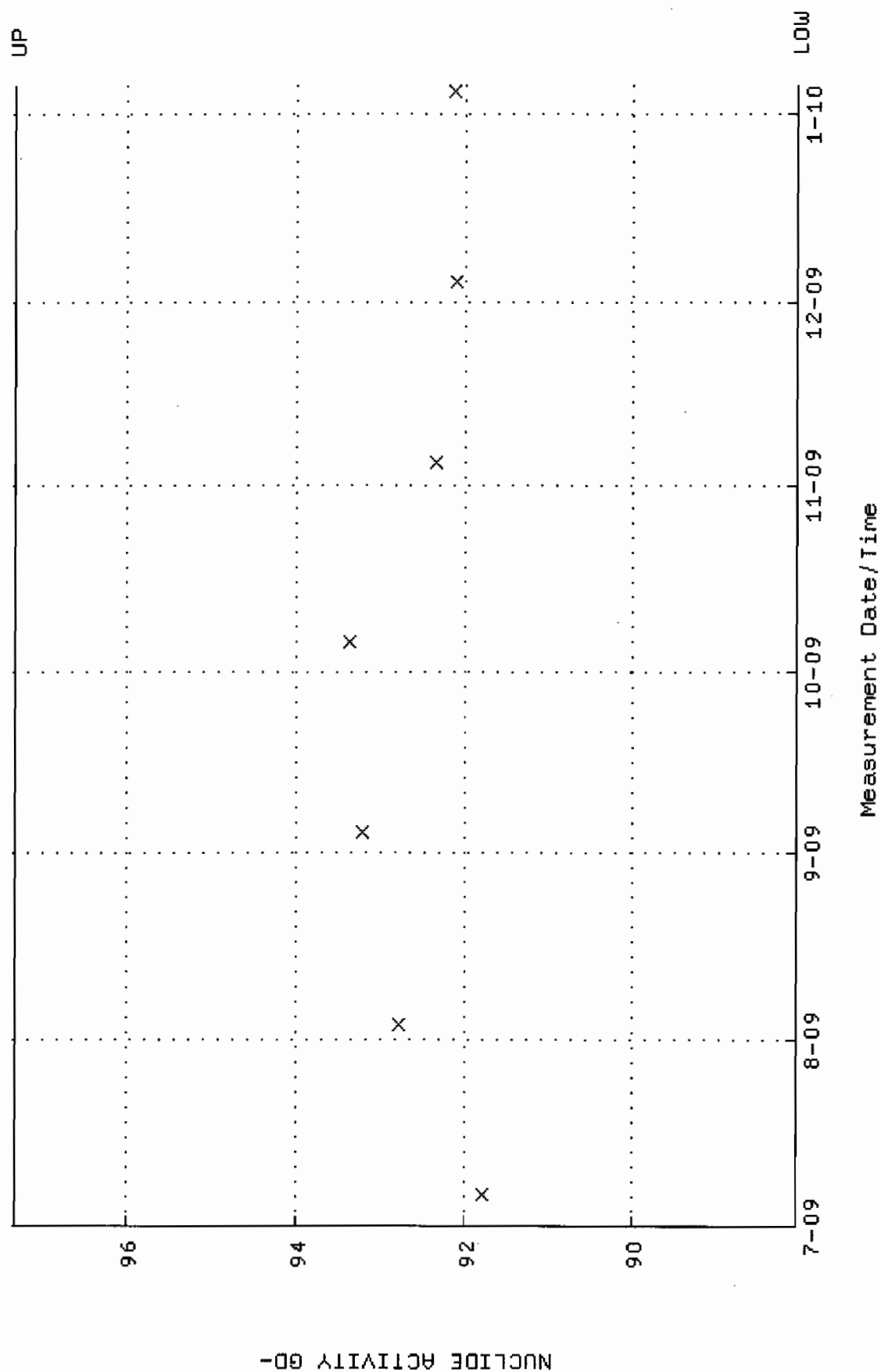
QA filename : DKA100:[ENV\_ALPHA.QA.B]B011.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:55 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



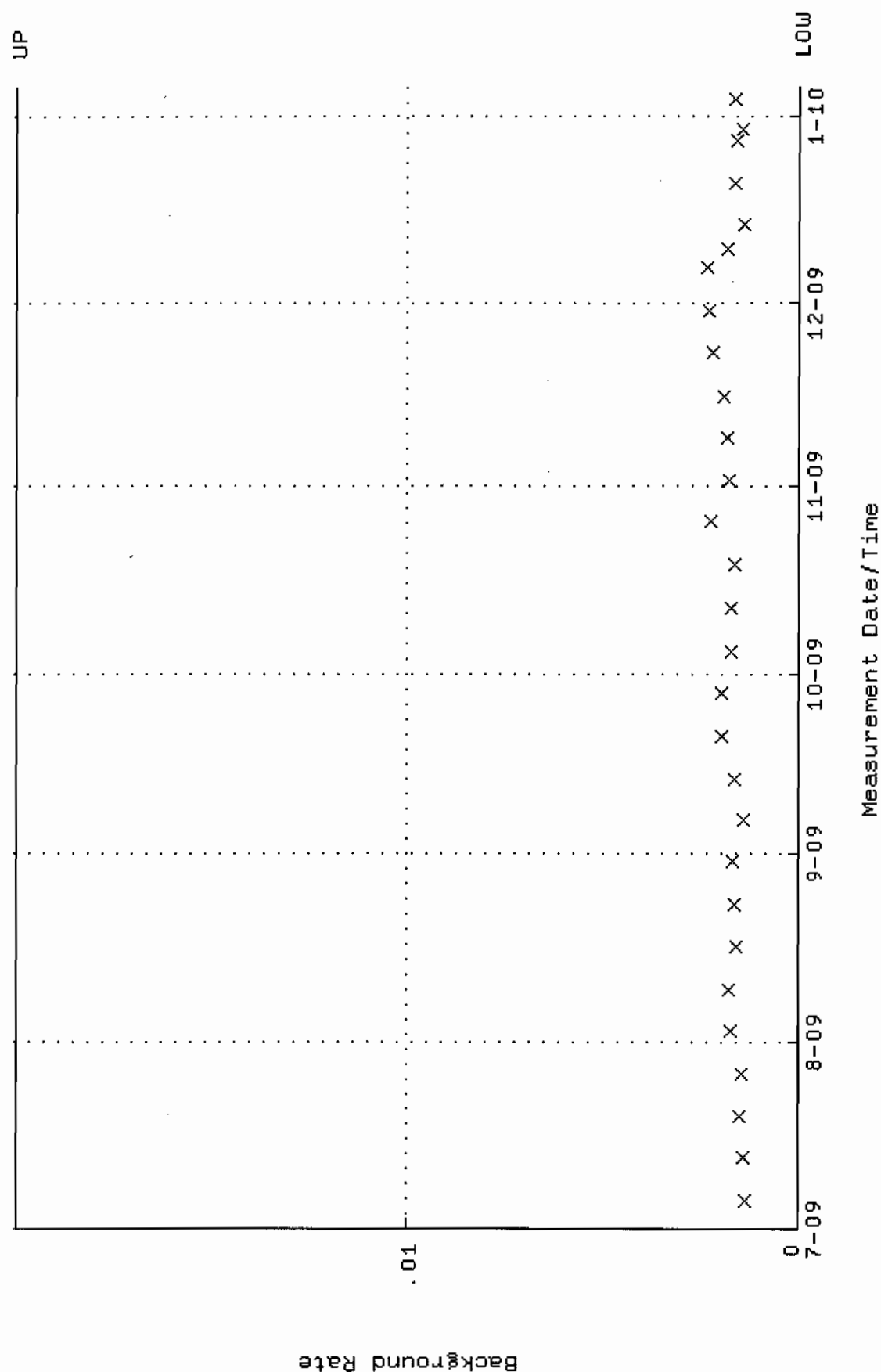
QA filename : DKA100:[ENV\_ALPHA.QA.W]W012.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.285730 through 0.305730



QA filename : DKA100:[ENV\_ALPHA.QA.W]W012.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 88.0678 through 97.3382

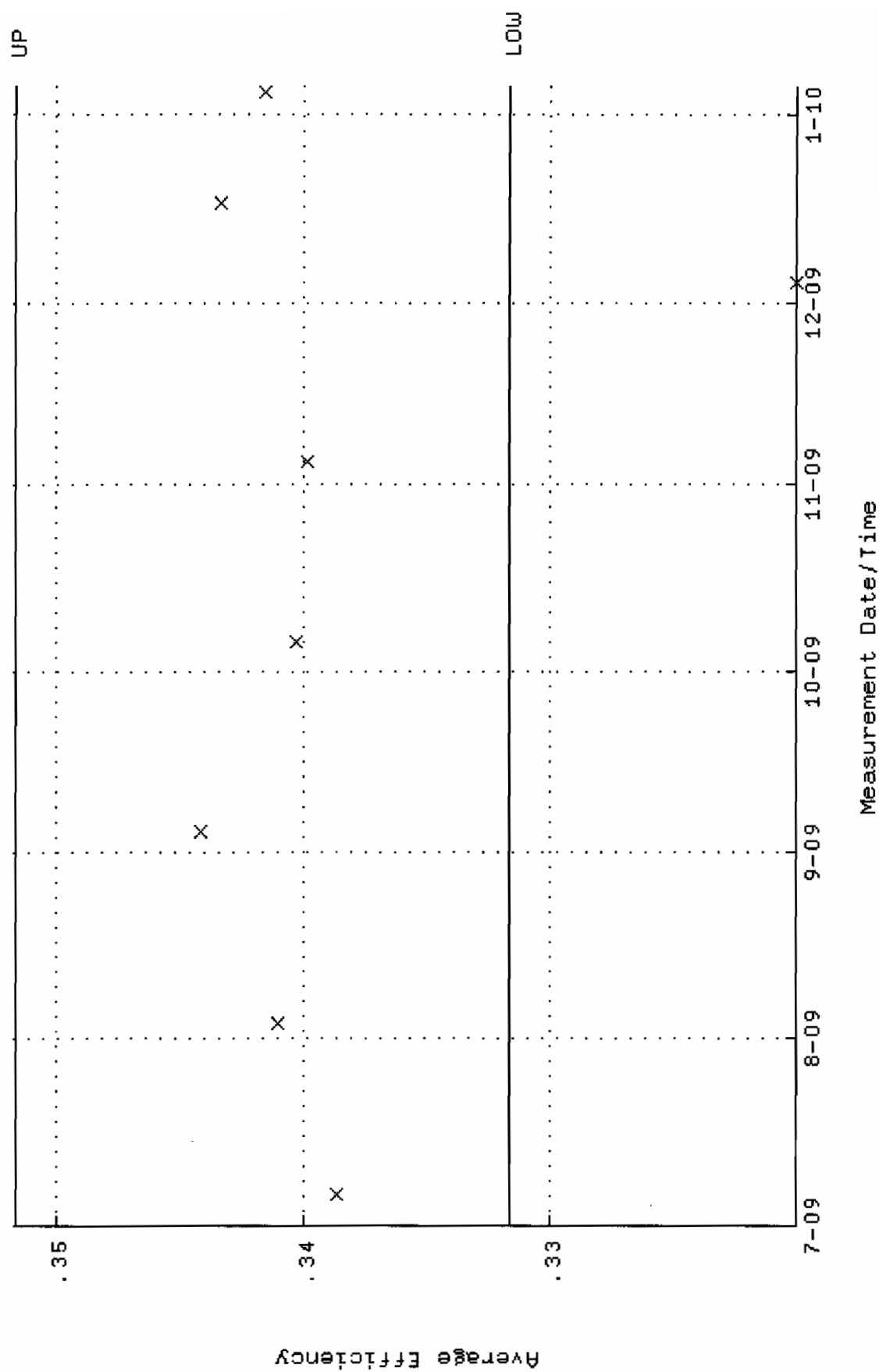


QA filename : DKA100:[ENV\_ALPHA.QA.B]B012.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:55 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

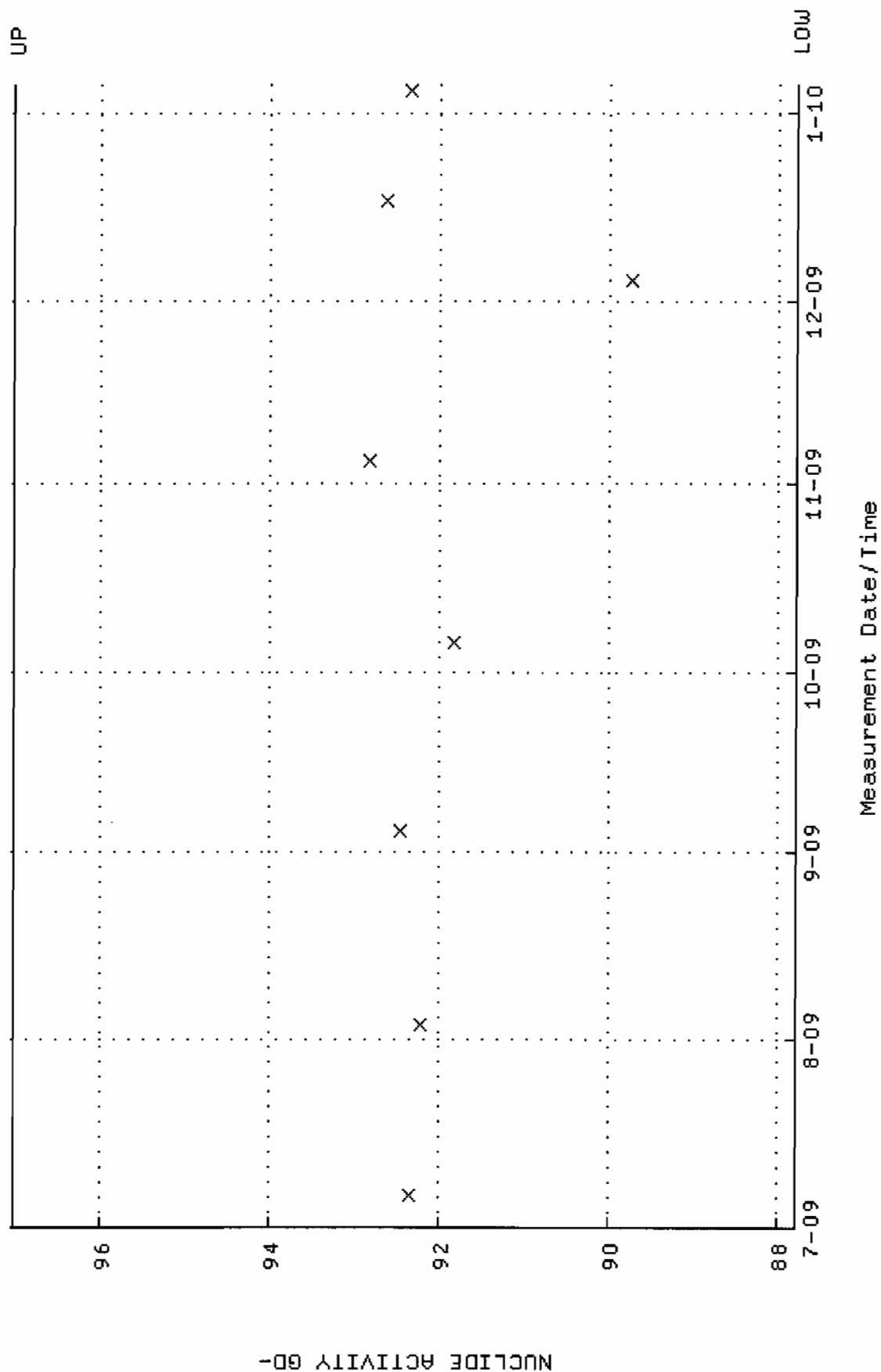




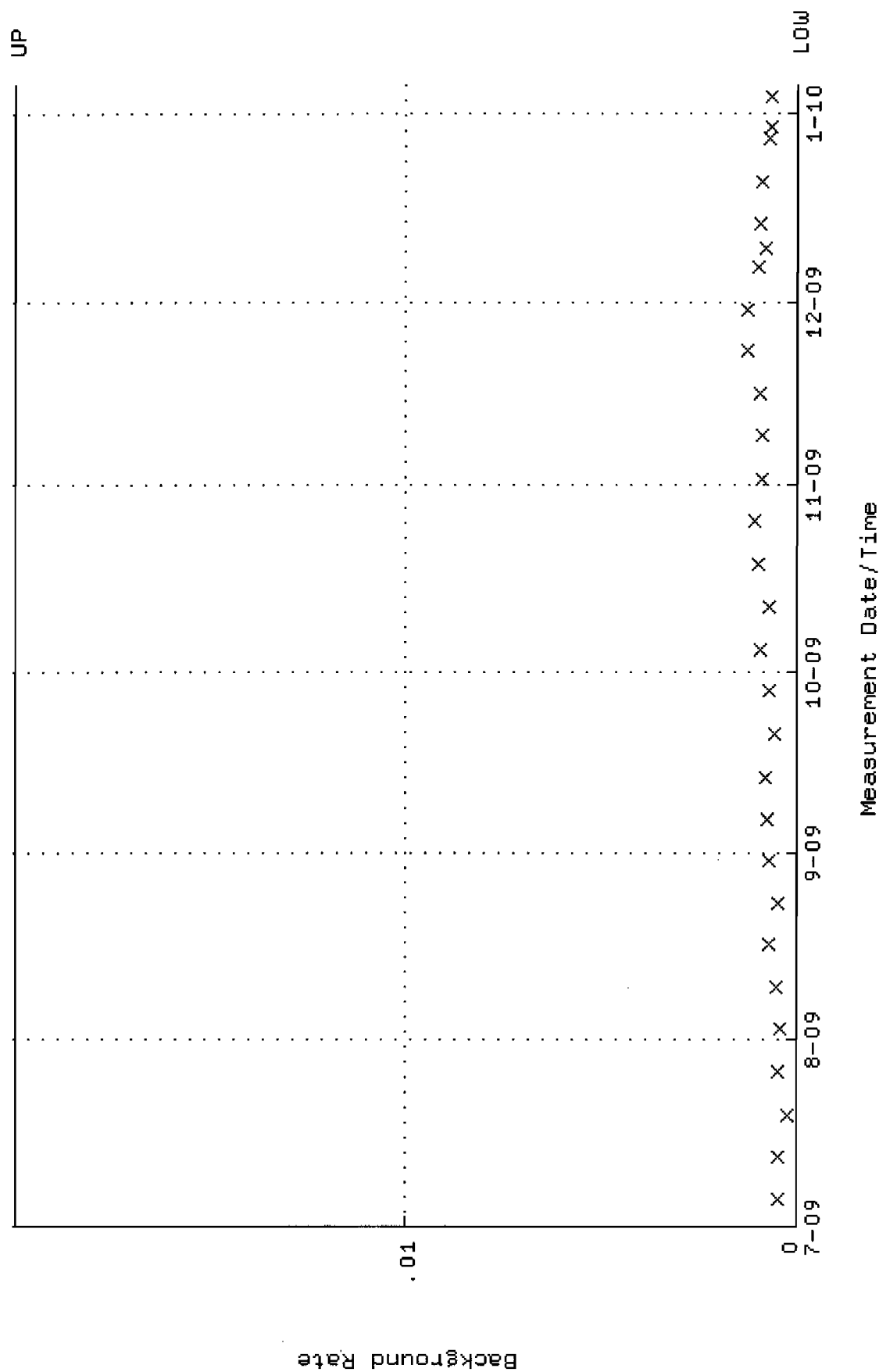
QA filename : DKA100:[ENV\_ALPHA.QA.W]W013.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.331676 through 0.351676



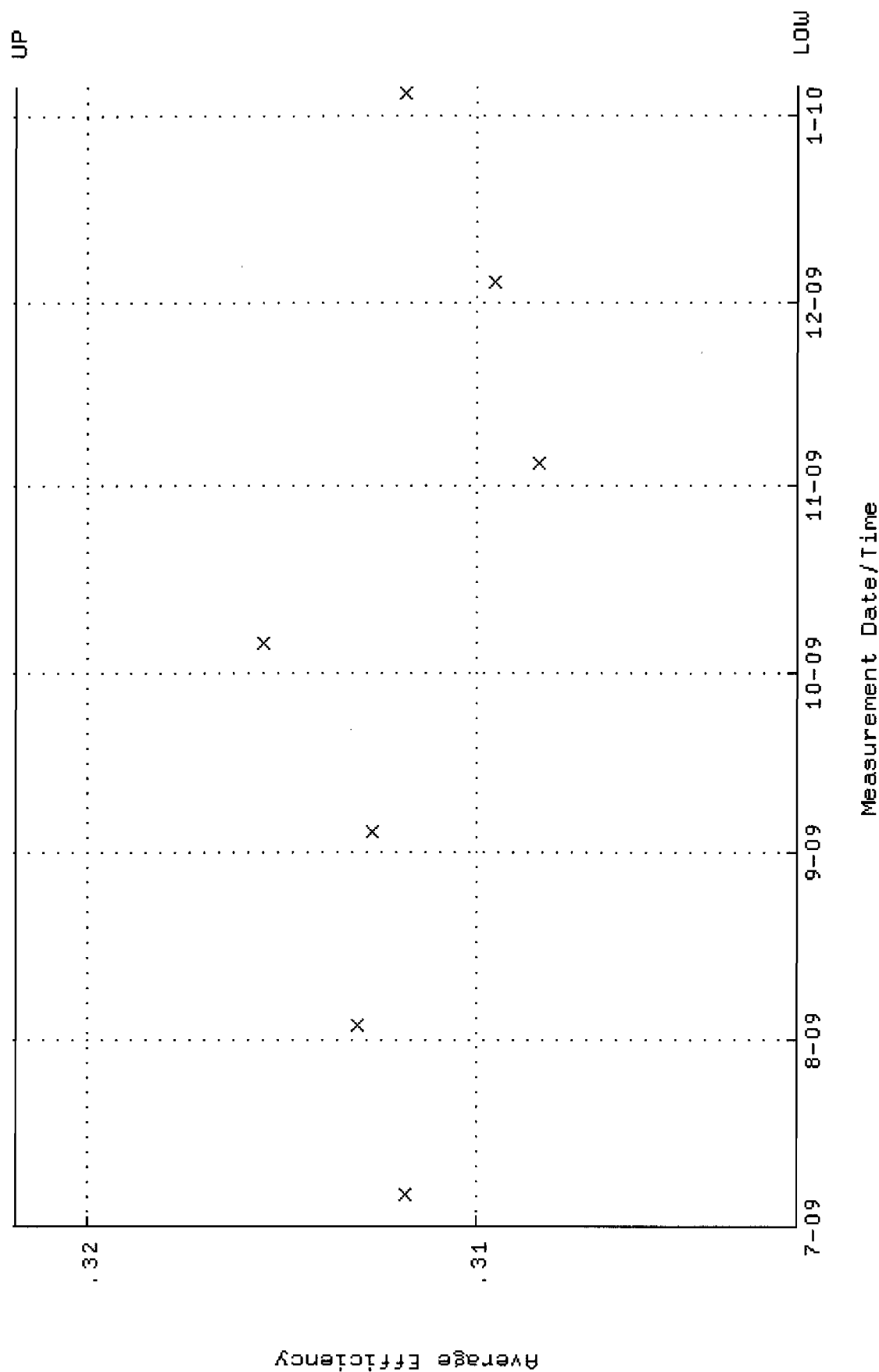
QA filename : DKA100:[ENV\_ALPHA.QA.W]W013.QAF;2  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.7736 through 97.0130



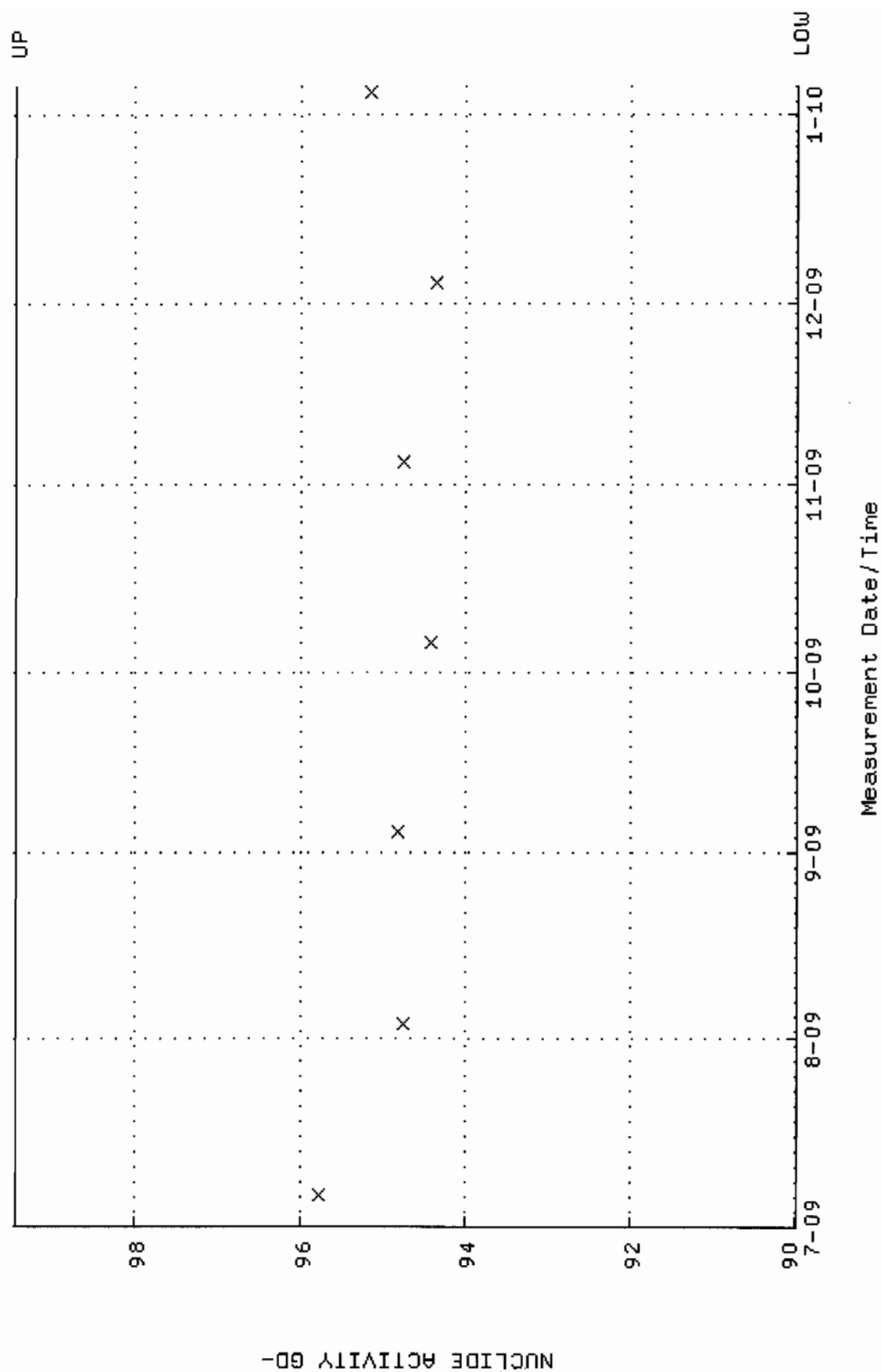
QA filename : DKA100:[ENV-ALPHA.QA.B]B013.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:56 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV-ALPHA.QA.W]W014.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.301834 through 0.321834

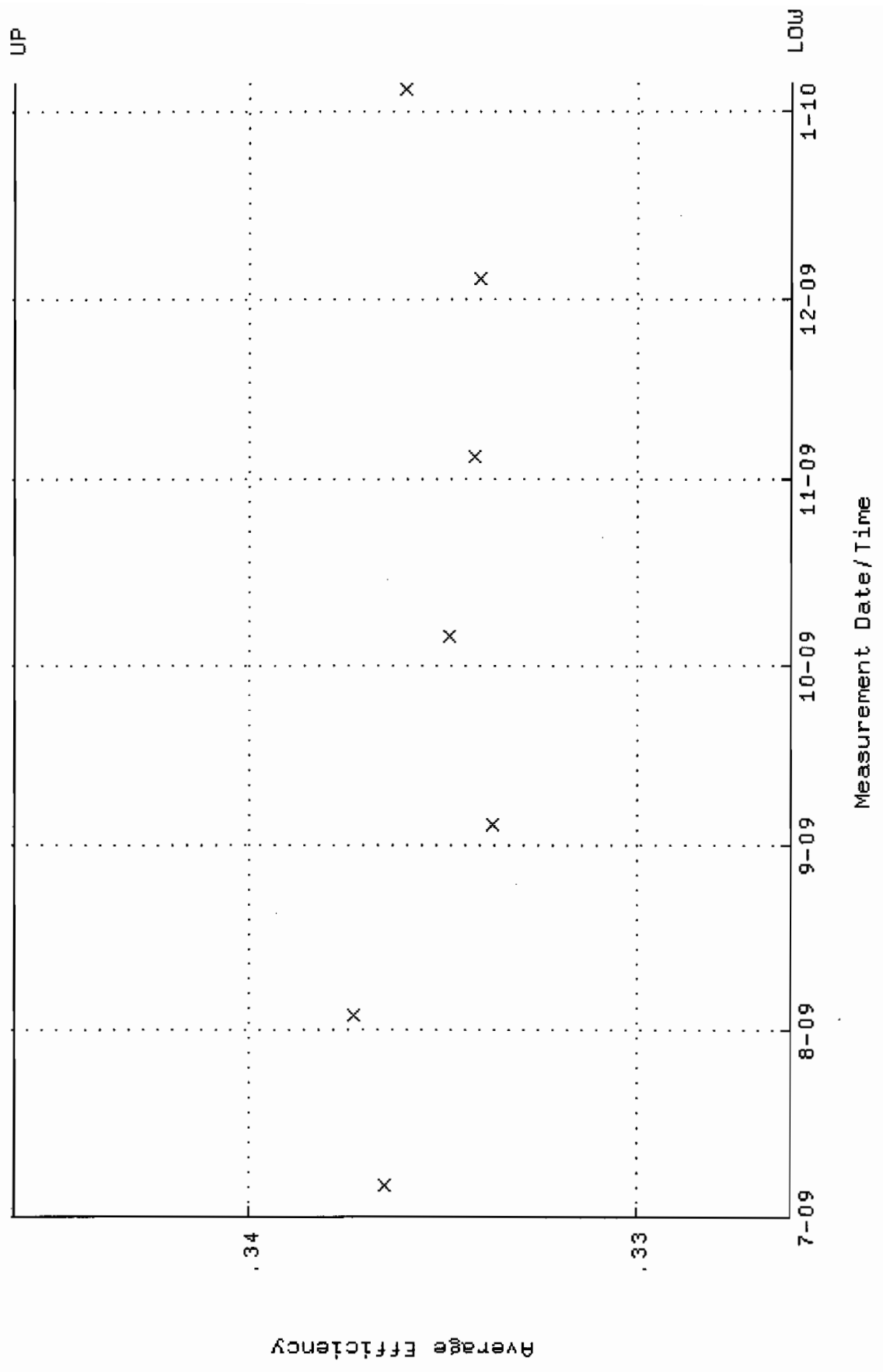


QA filename : DKA100:[ENV\_ALPHA.QA.W]W014.QAF;4  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.9790 through 99.4504

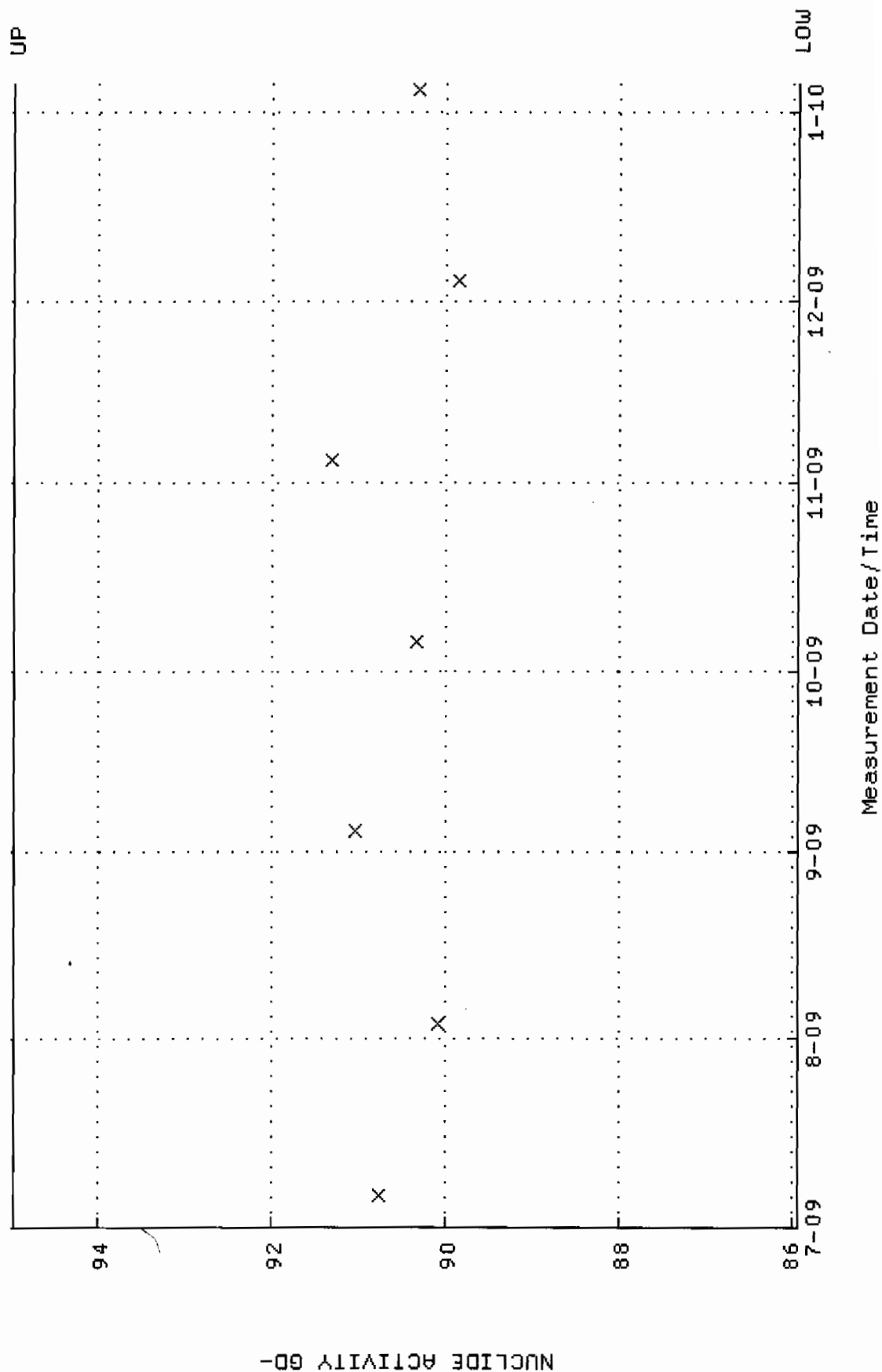




QA filename : DKA100:[ENV-ALPHA.QA.W]W016.QAF;3  
Parameter Name : AVRGEFF (Average Efficiency)  
Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
Lower/Upper Lmts: 0.326058 through 0.346058

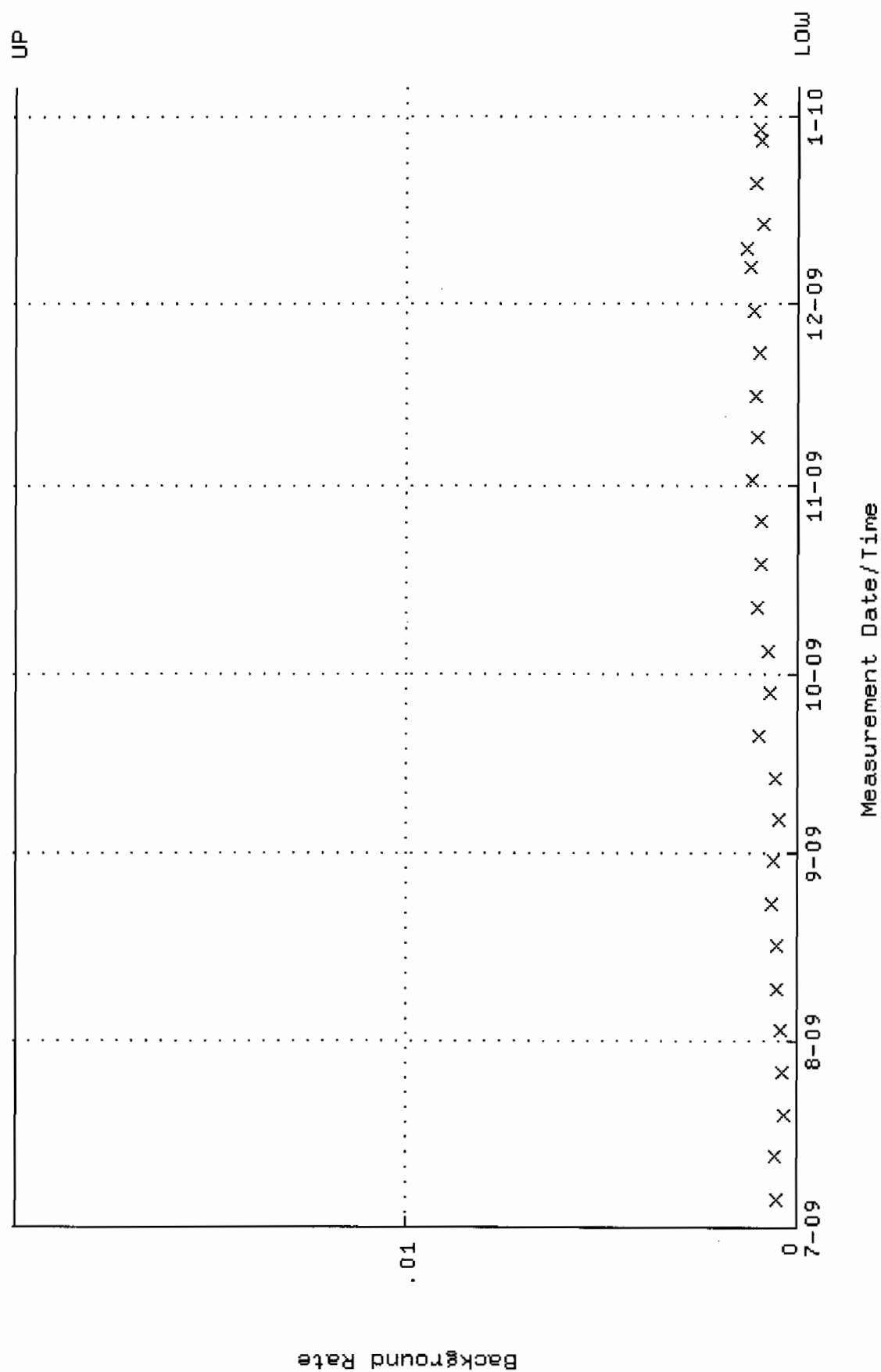


QA filename : DKA100:[ENVY\_ALPHA.QA.W]W016.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.9280 through 94.9730

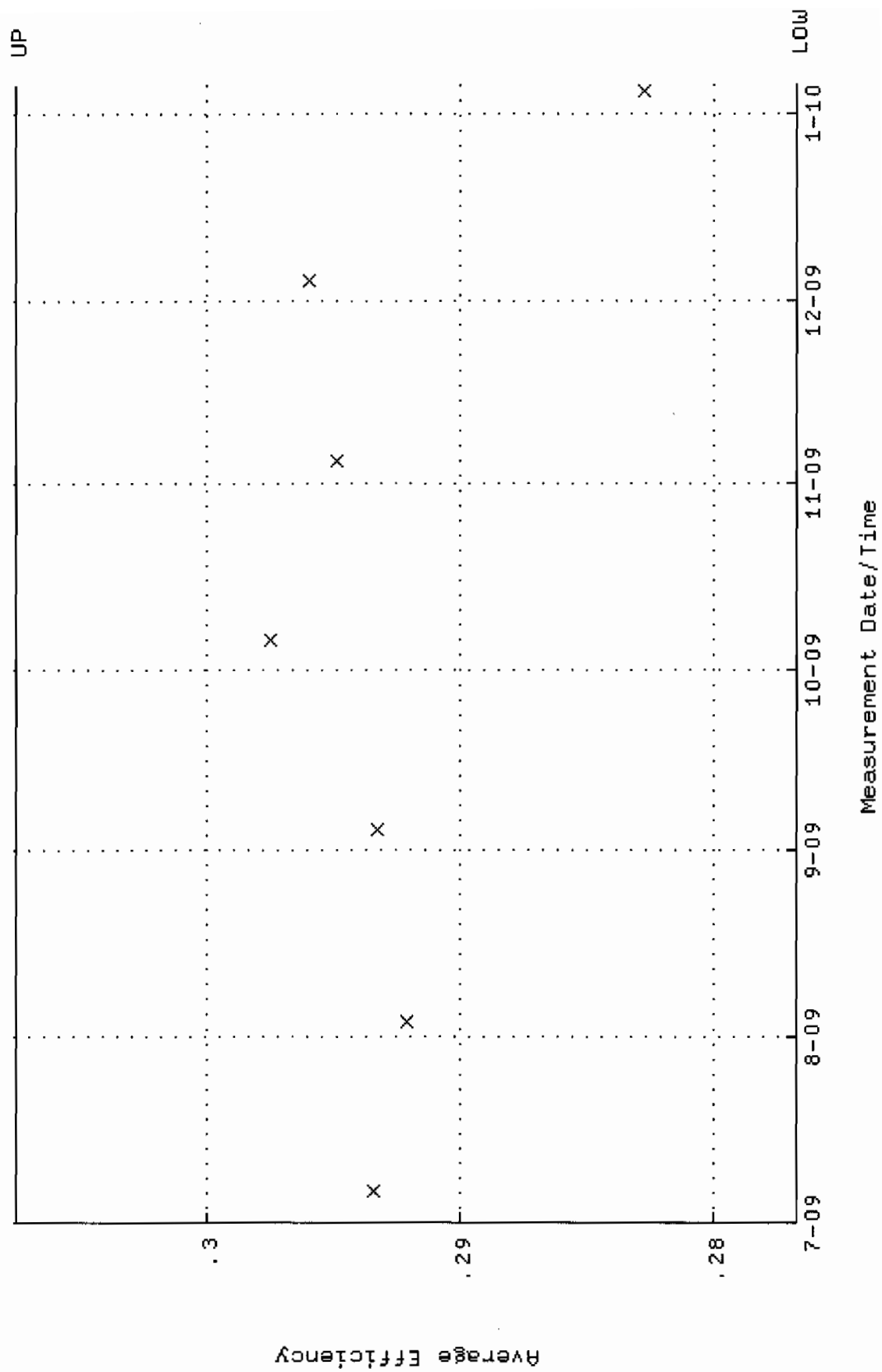




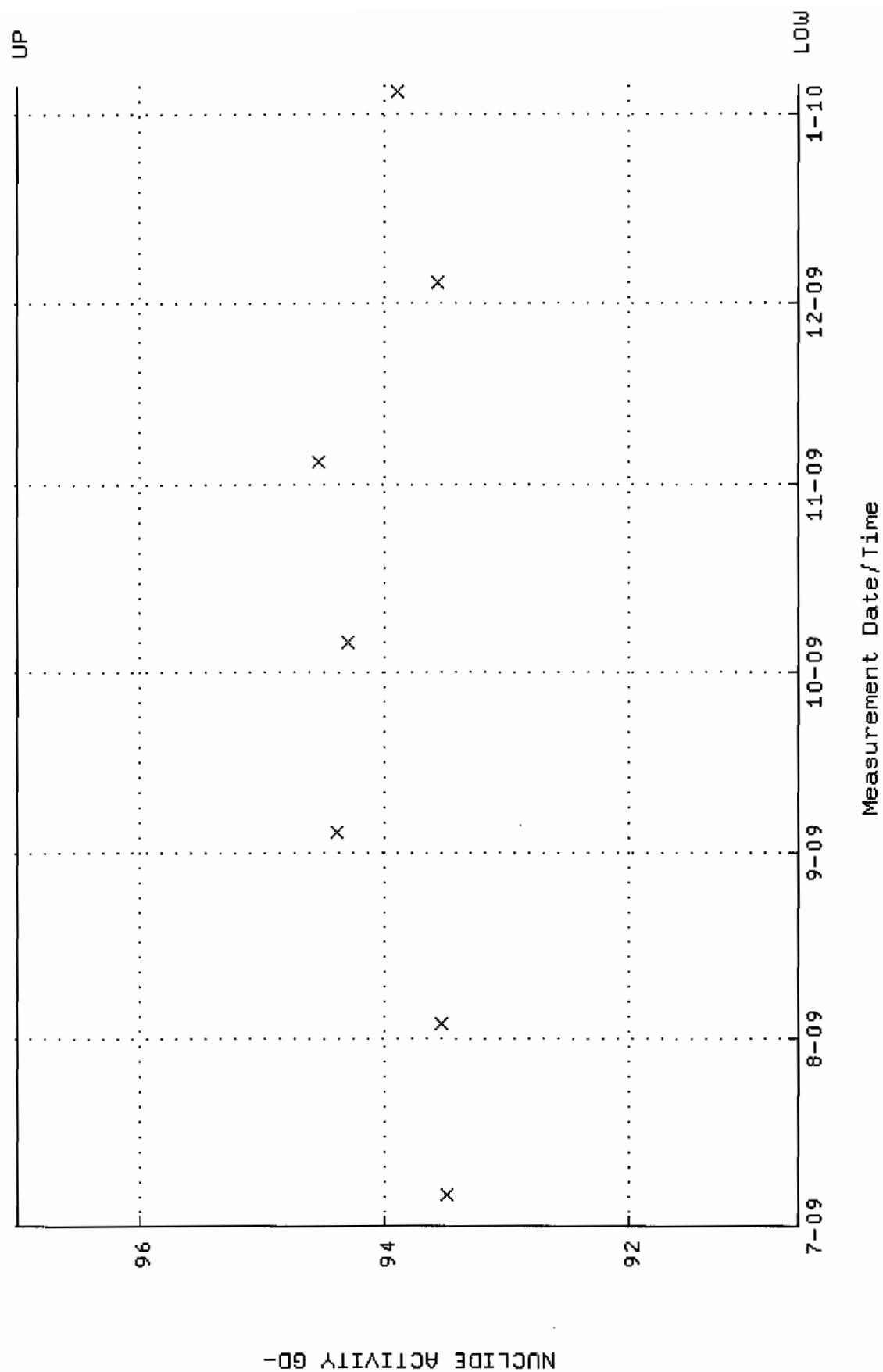
QA filename : DKA100:[ENV\_ALPHA.QA.B]B016.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:56 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



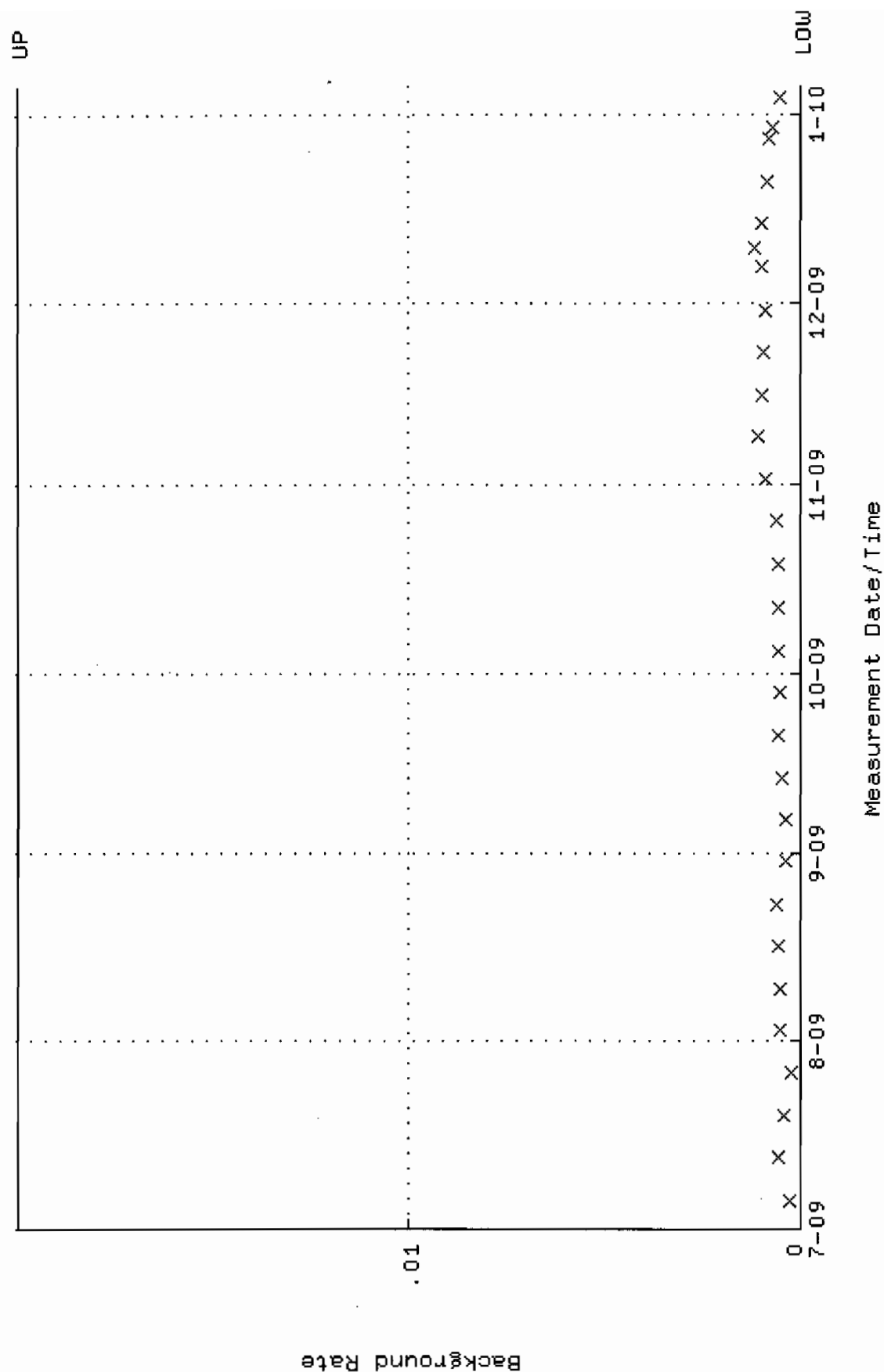
QA filename : DKA100:[ENV\_ALPHA.QA.W]W017.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.276771 through 0.307557



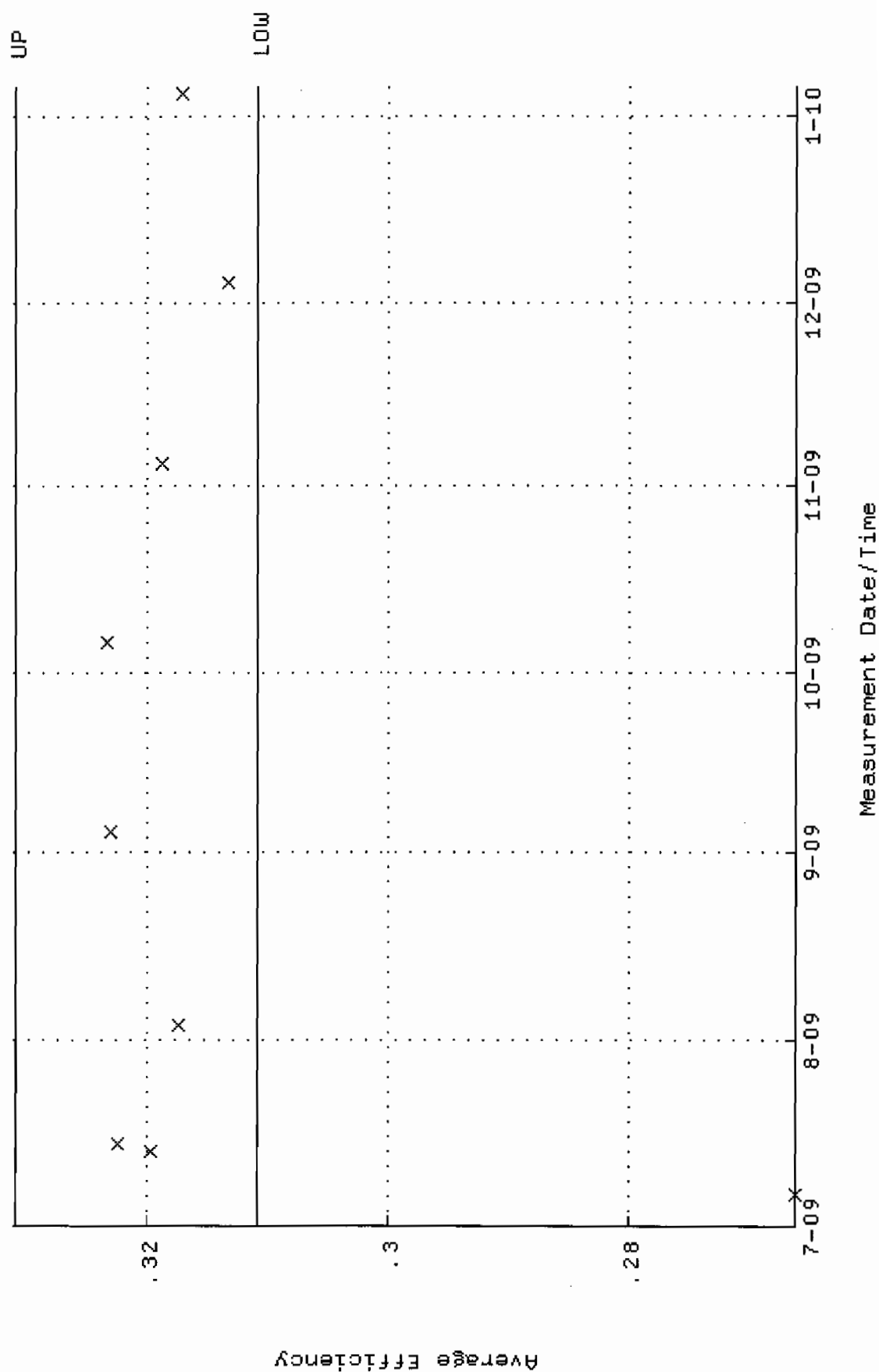
QA filename : DKA100:[ENV\_ALPHA.QA.W]W017.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 90.6063 through 97.0149



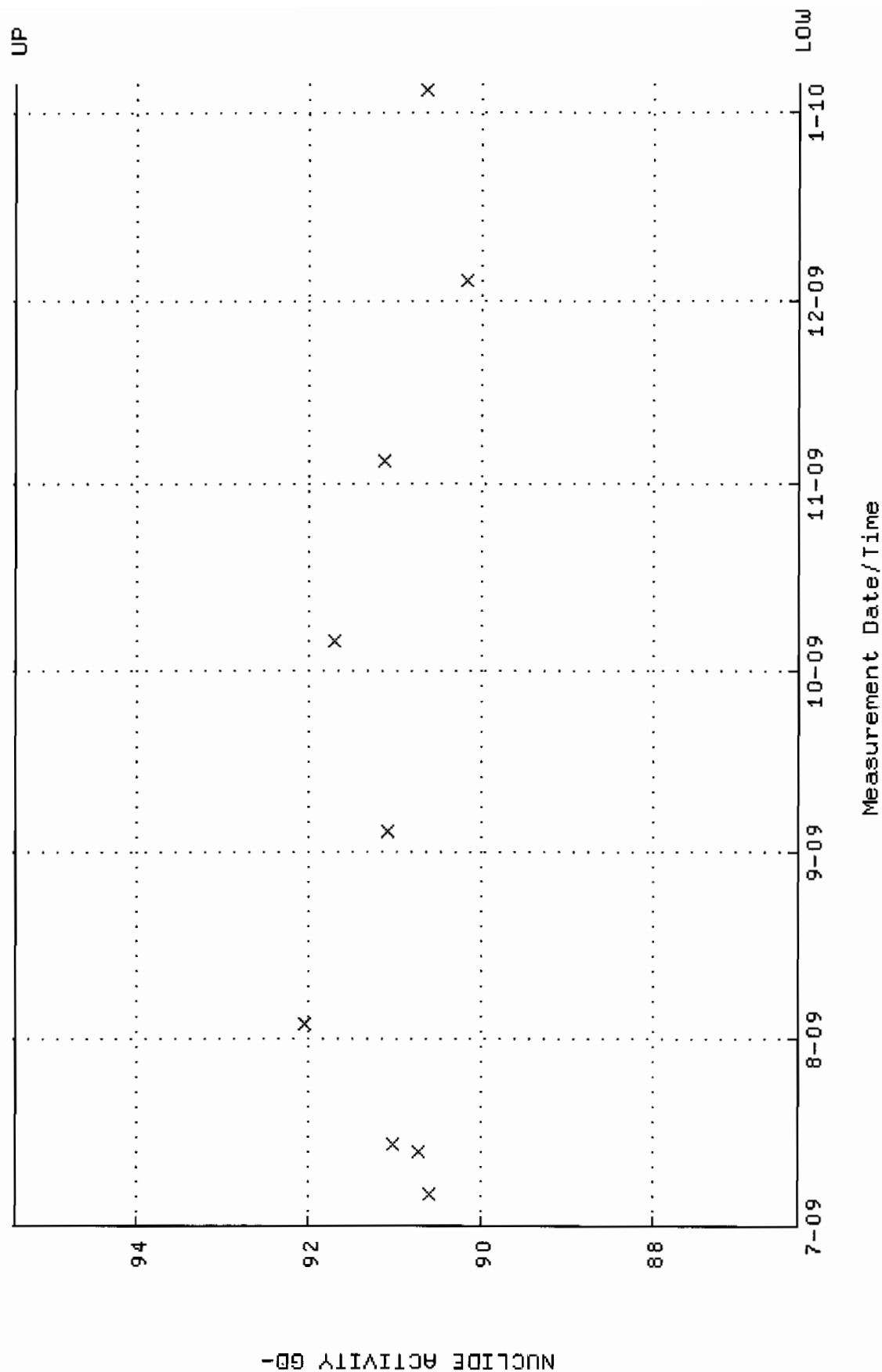
QA filename : OKA100:[ENV\_ALPHA.QA.B]B017.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:56 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



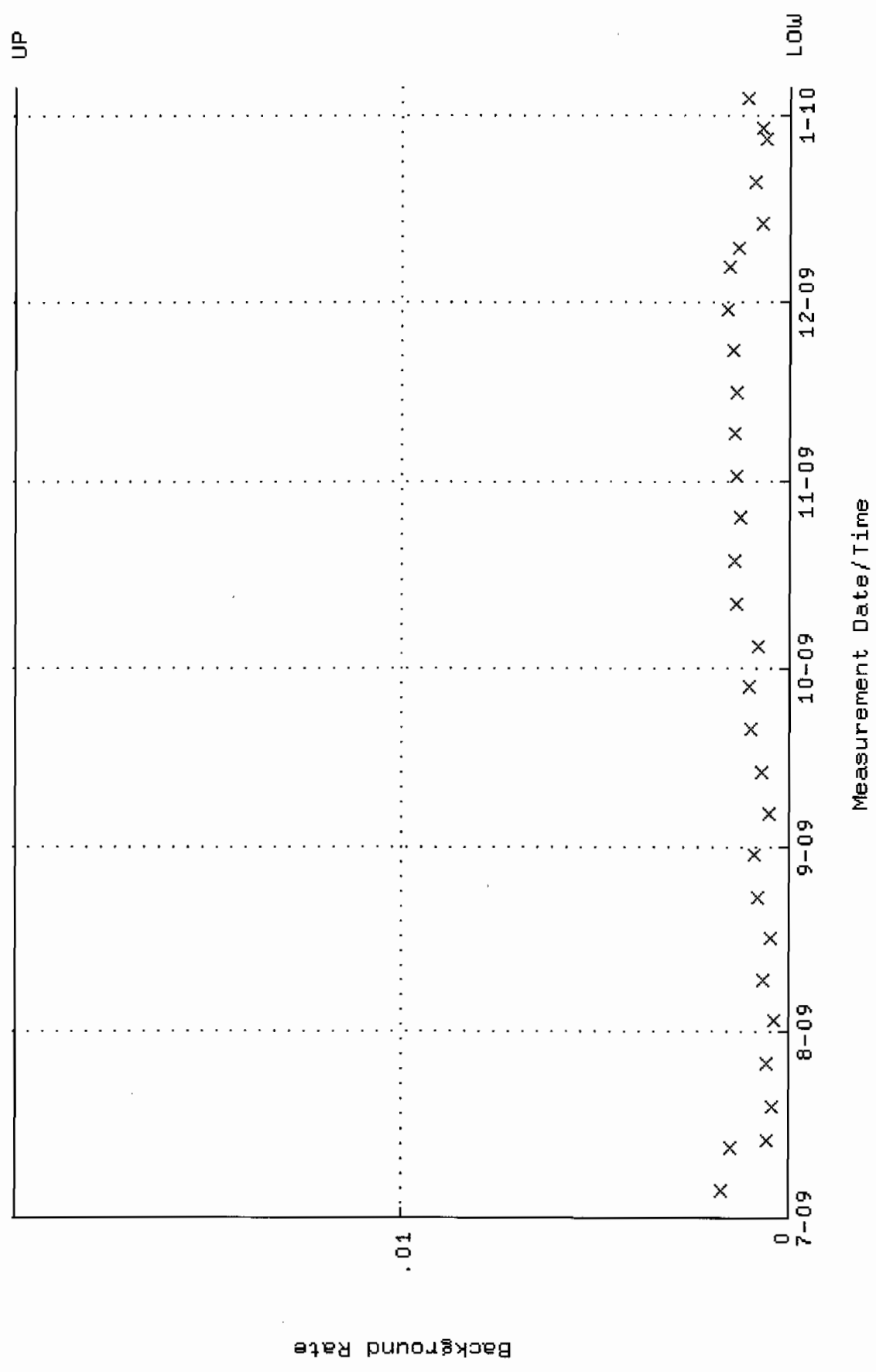
QA filename : DKA100:[ENV\_ALPHA.QA.W]WD18.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.310950 through 0.330950



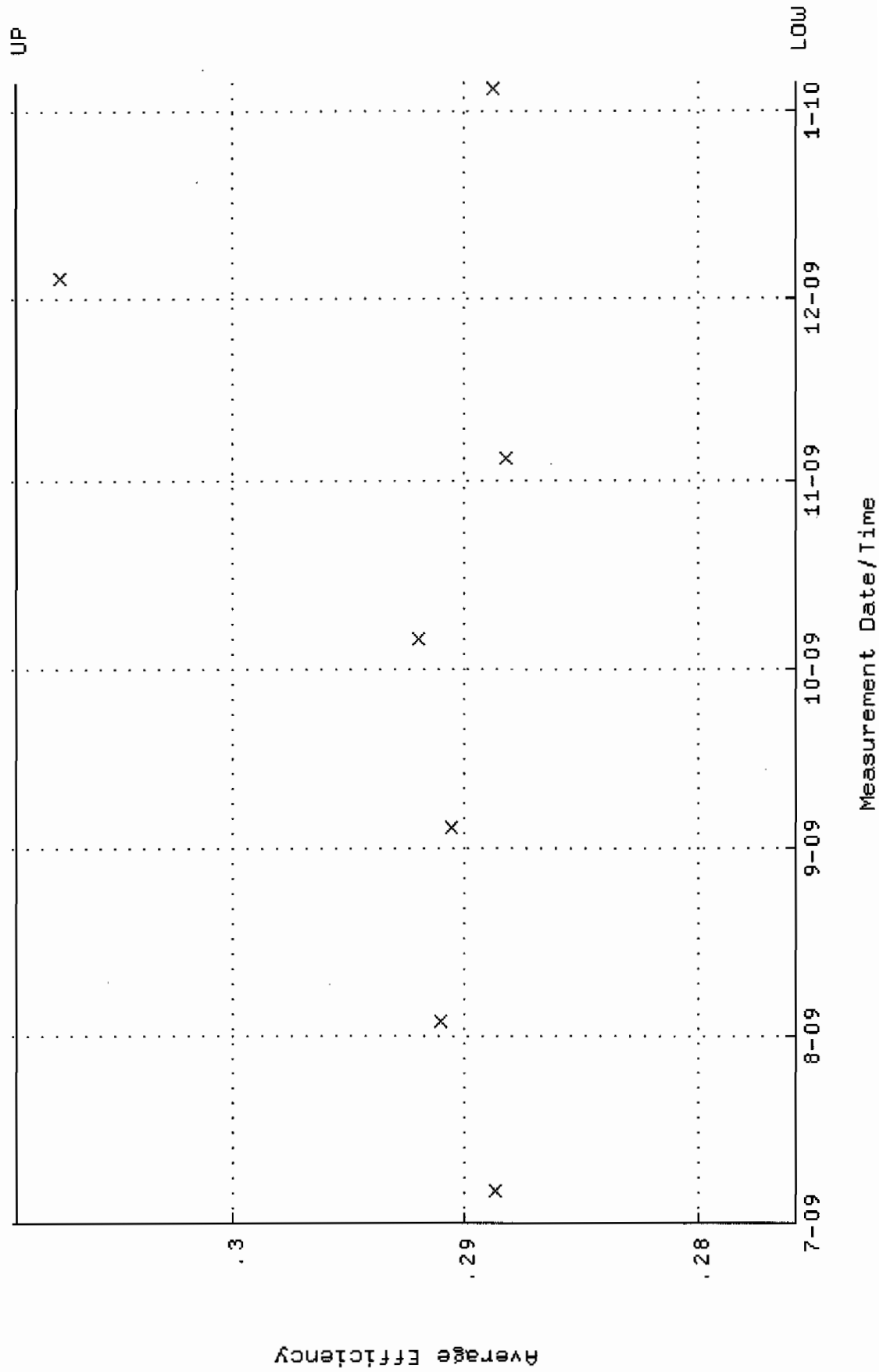
QA filename : DKA100:[ENV\_ALPHA.QA.w]W018.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.3167 through 95.4027



QA filename : DKA100:[ENV\_ALPHA.QA.B]B018.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:56 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

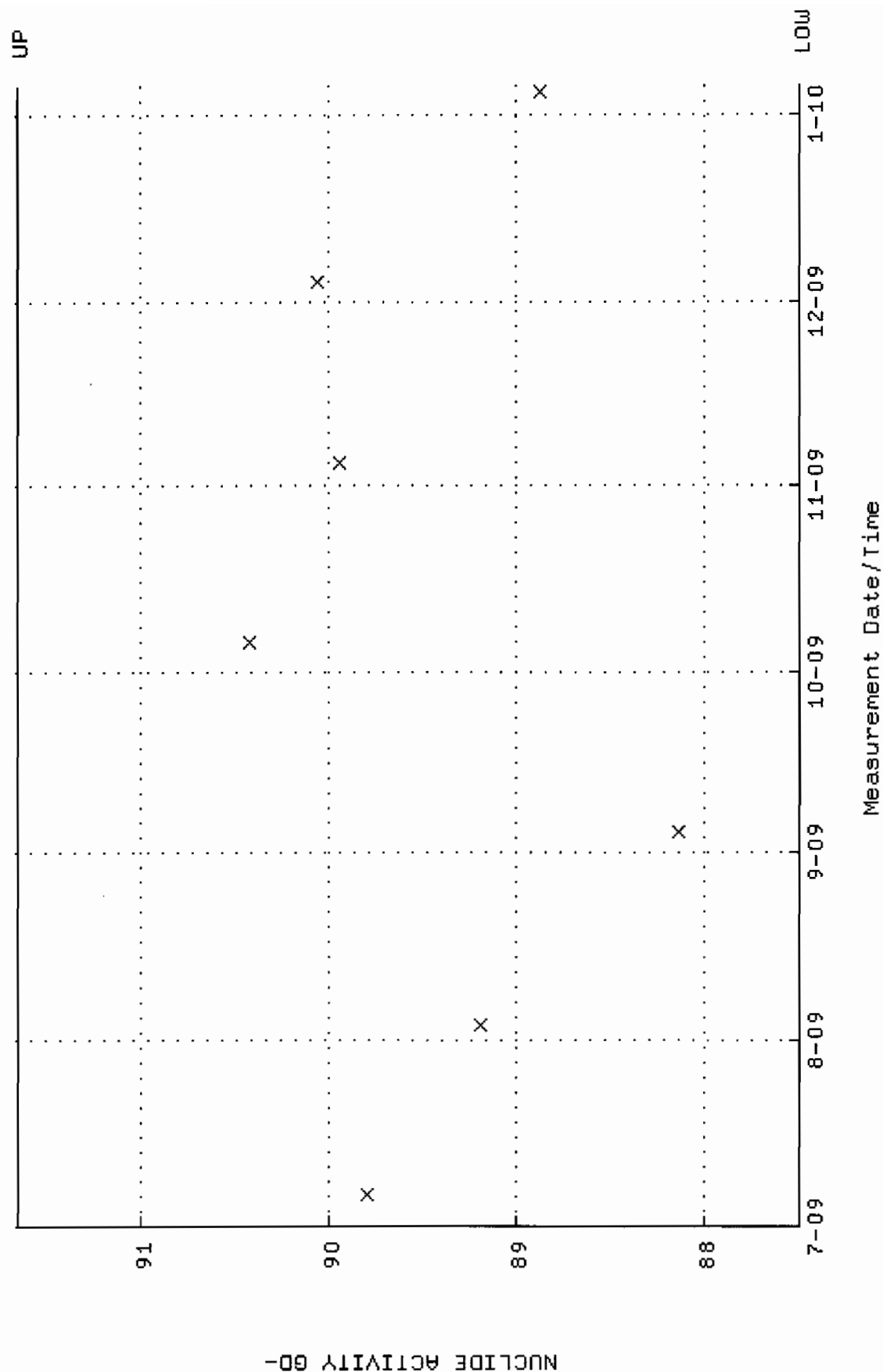


QA filename : DKA100:[ENV\_ALPHA.QA.W]W019.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.275780 through 0.309420

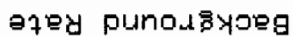




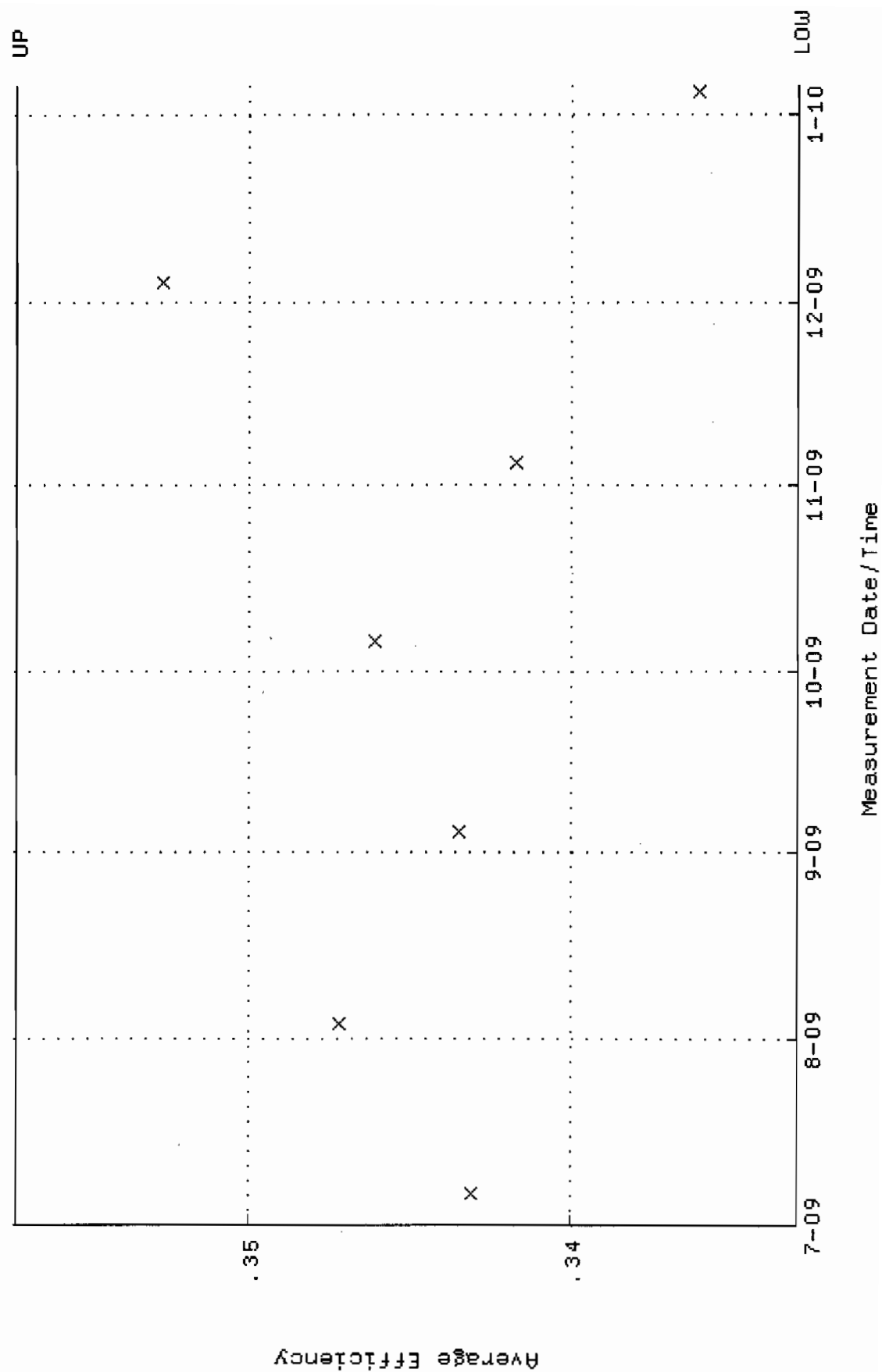
QA filename : DKA100:[ENV\_ALPHA.QA.W]W019.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.4952 through 91.6516



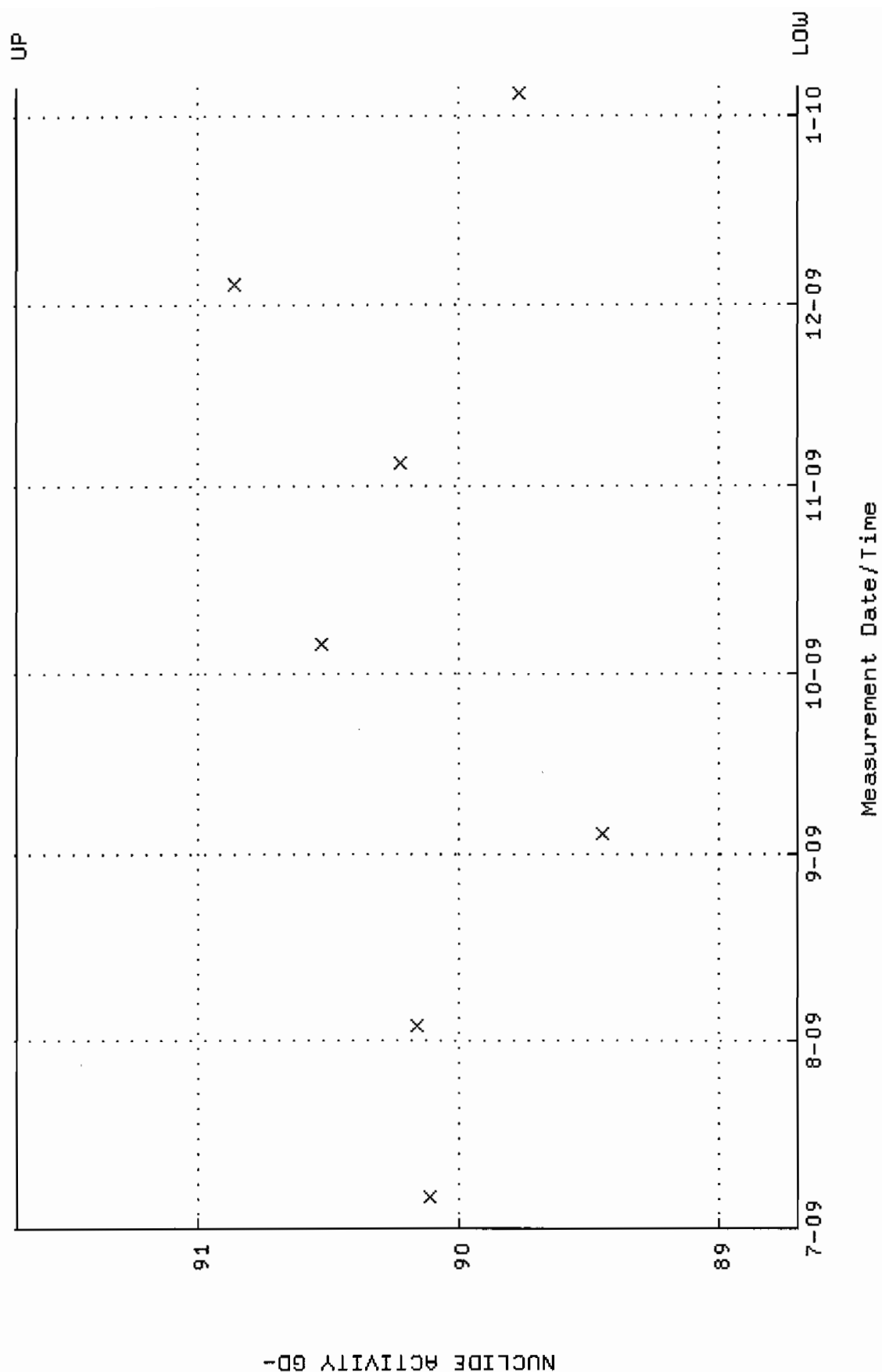
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



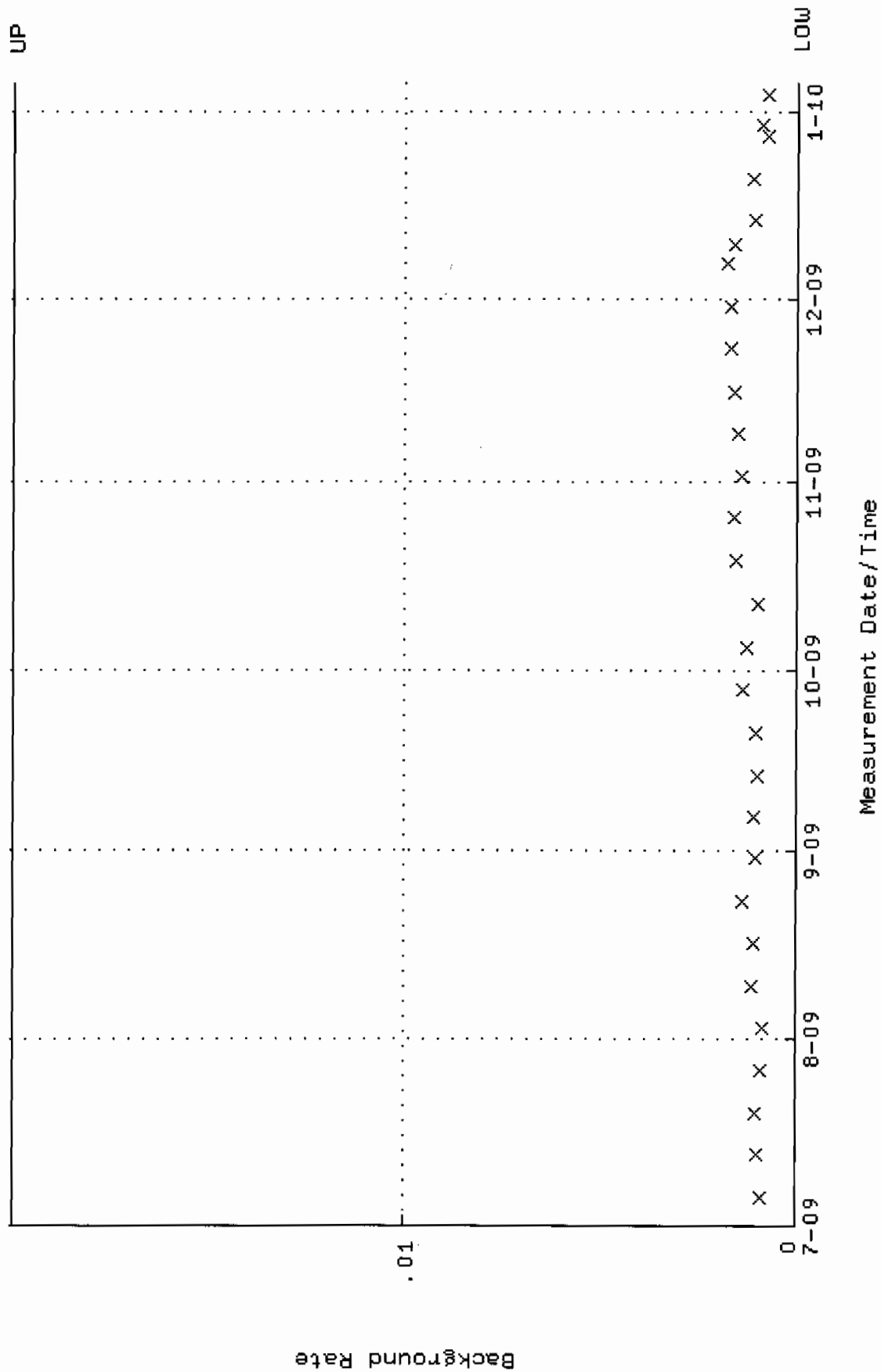
QA filename : DKA100:[ENV\_ALPHA.QA.W]W020.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.332991 through 0.357265



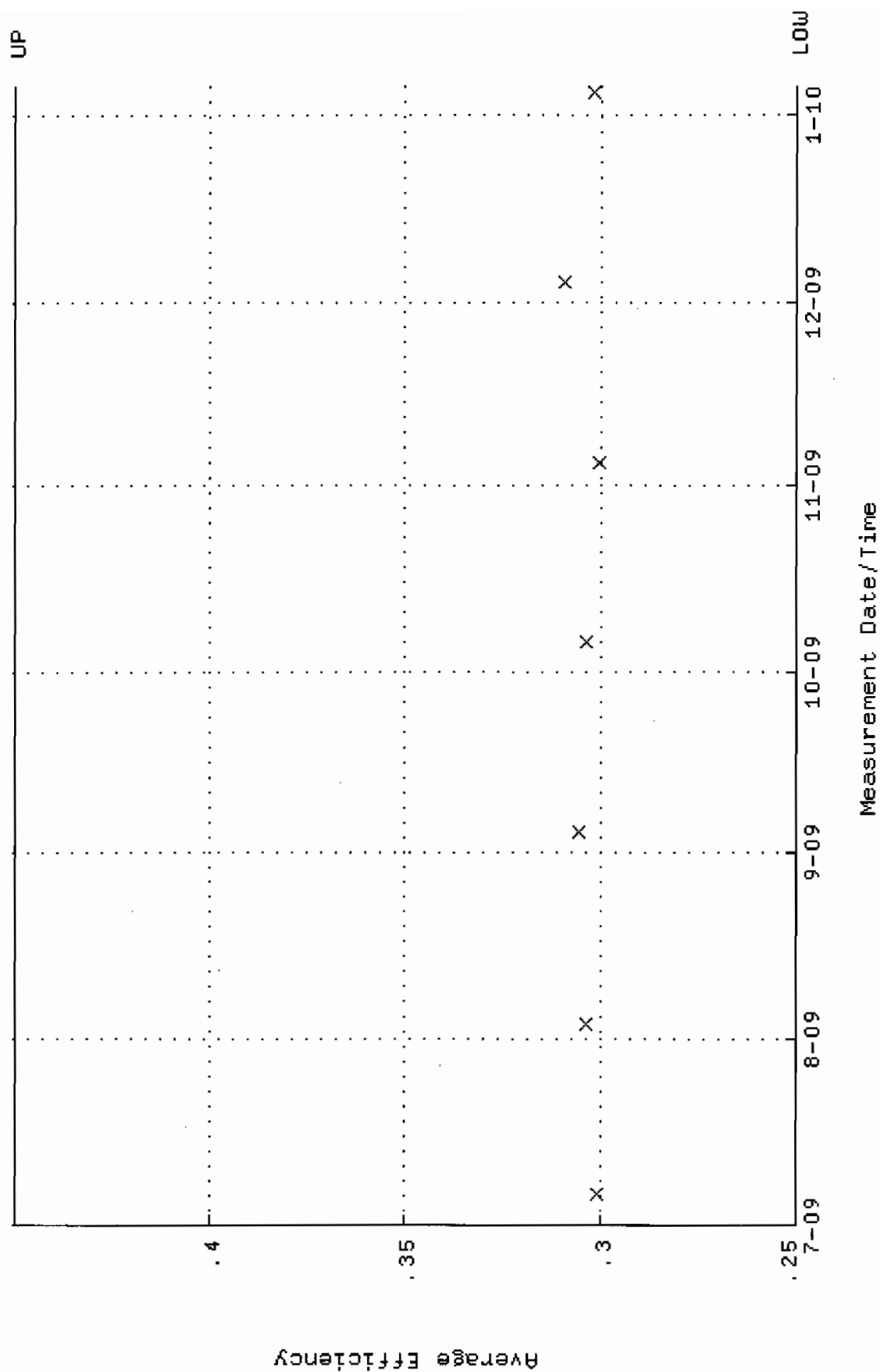
QA filename : DKA100:[ENV\_ALPHA.QA.W]W020.QAF;3  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 88.6996 through 91.6996



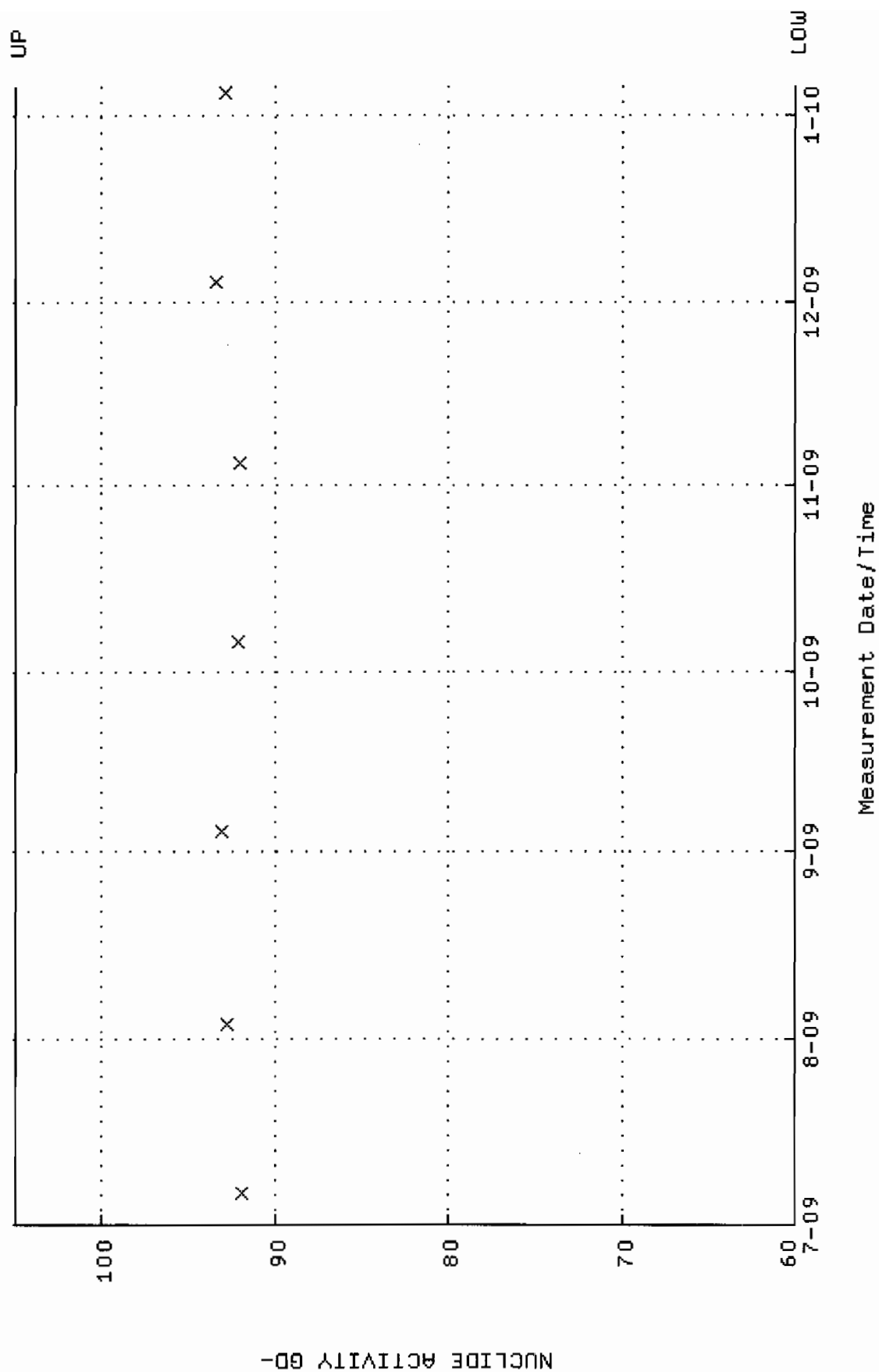
QA filename : DKA100:[ENV\_ALPHA.QA.B]B020.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



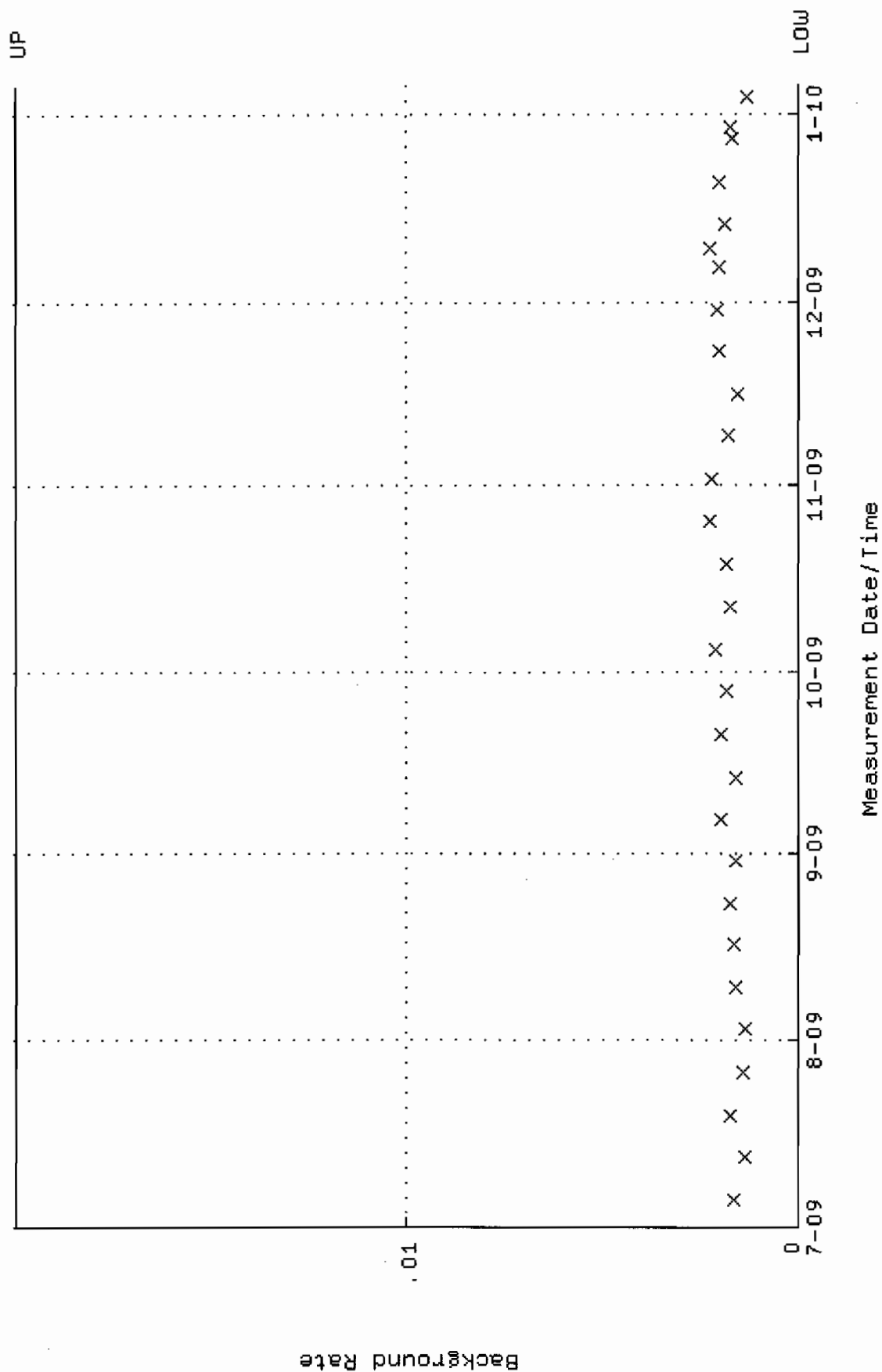
QA filename : DKA100:[ENV\_ALPHA.QA.W]W021.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W021.QAF;4  
 Parameter Name : 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: 60.0000 through 105.0000

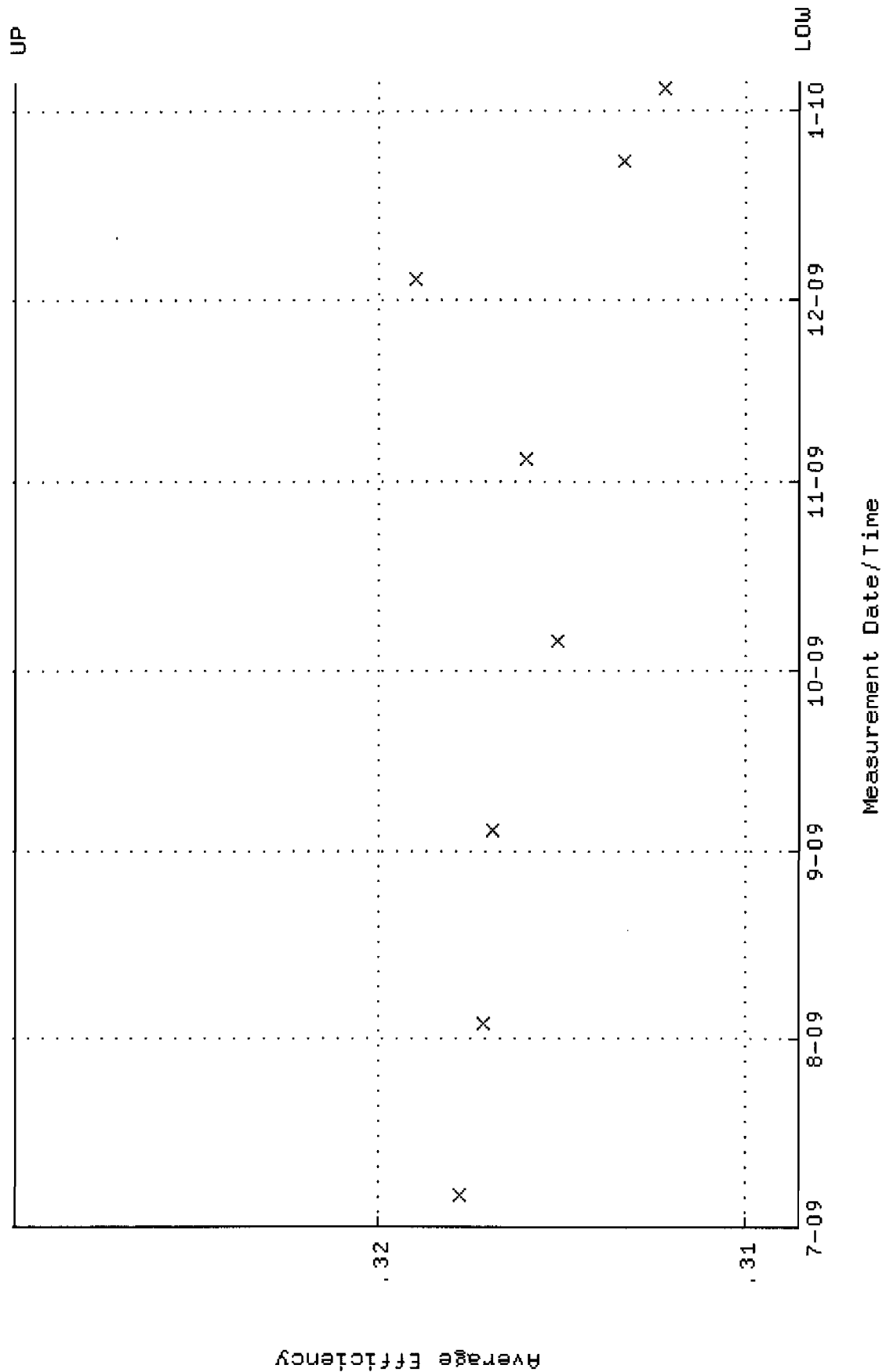


QA filename : DKA100:[ENV\_ALPHA.QA.B]B021.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

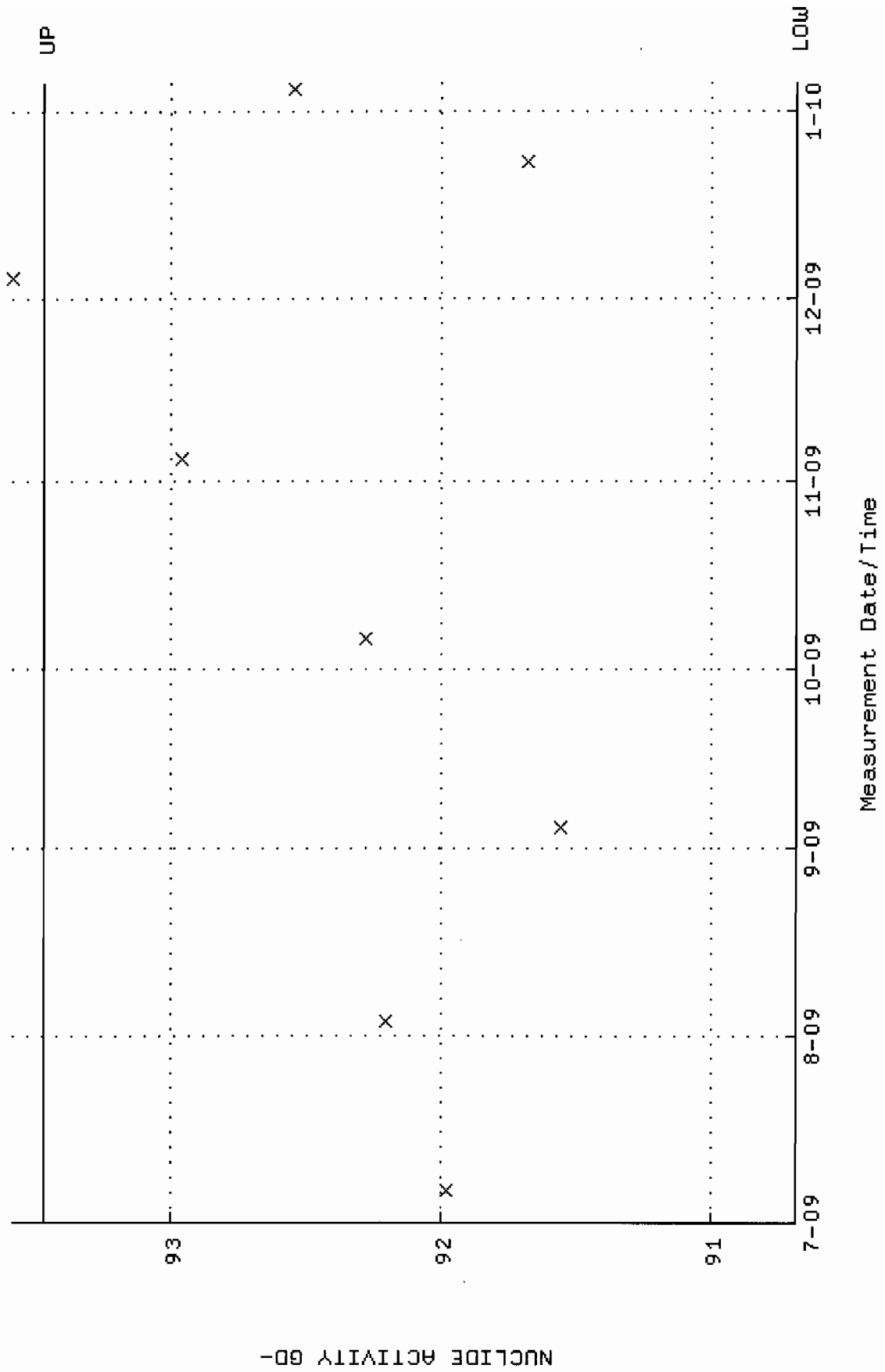




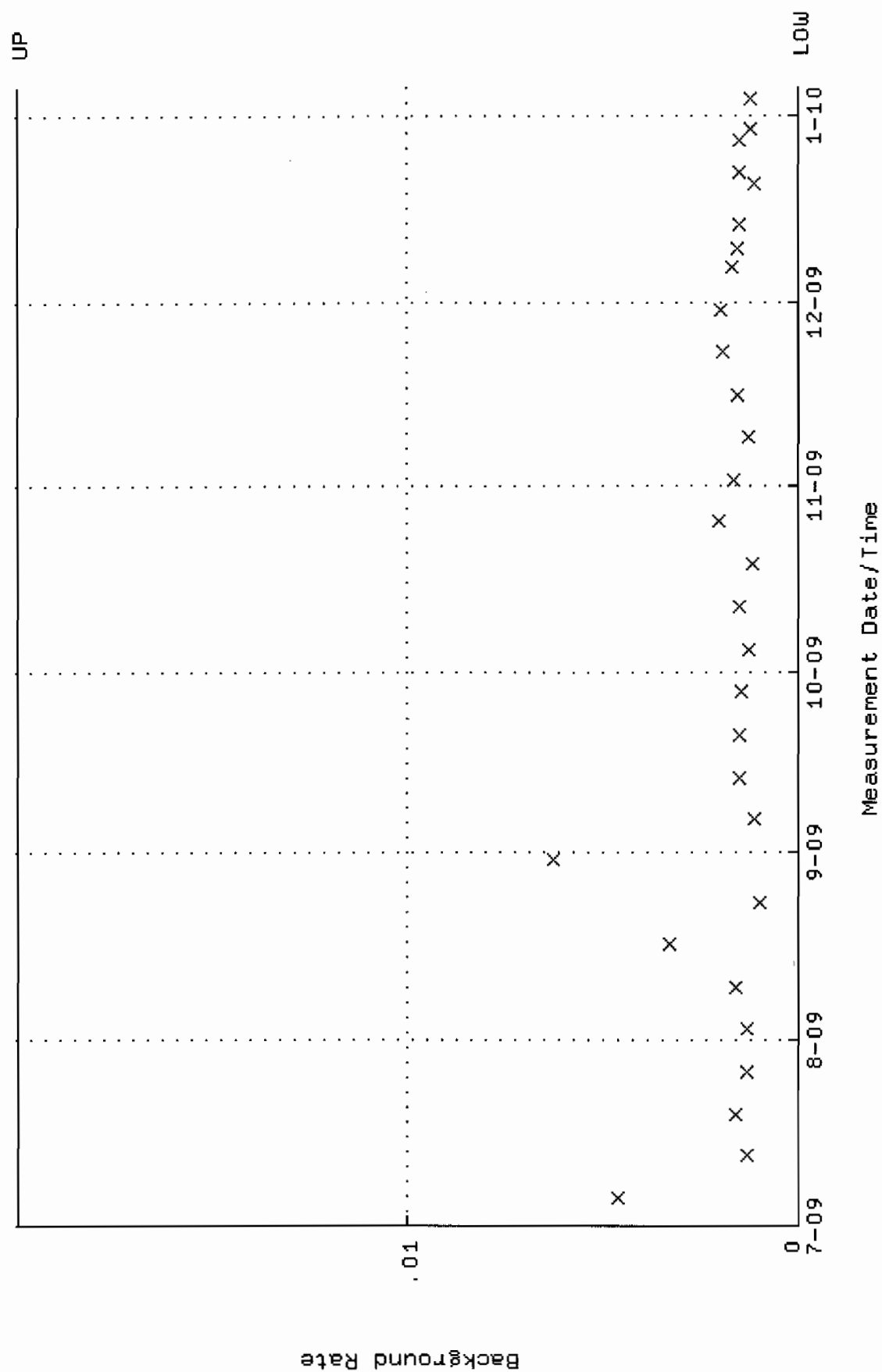
QA filename : DKA100:[ENV\_ALPHA.QA.W]W022.QAF; 5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.308540 through 0.329898



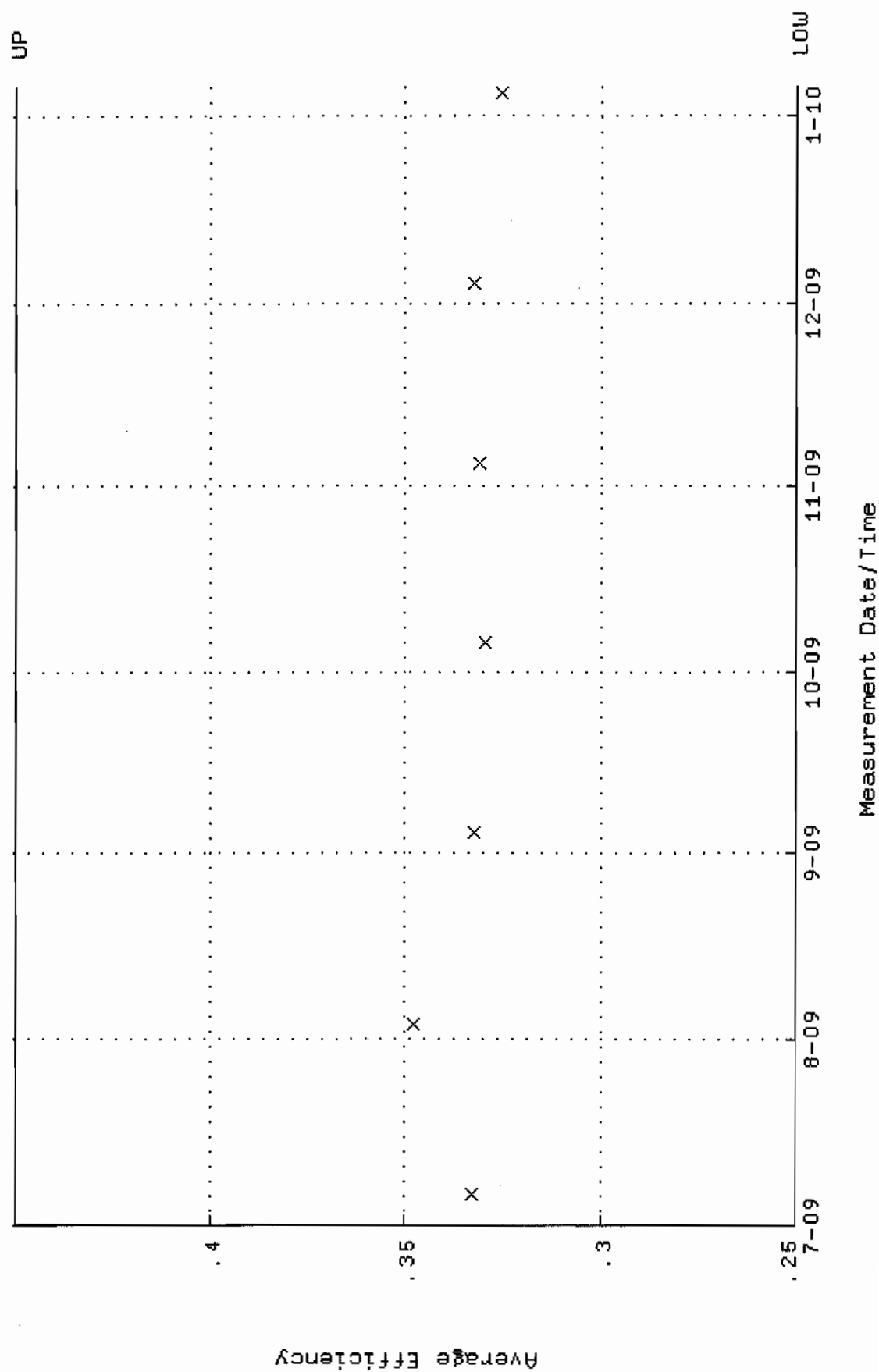
QA filename : DKA100:[ENV\_ALPHA.QA.W]W022.QAF;5  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 90.6887 through 93.4713



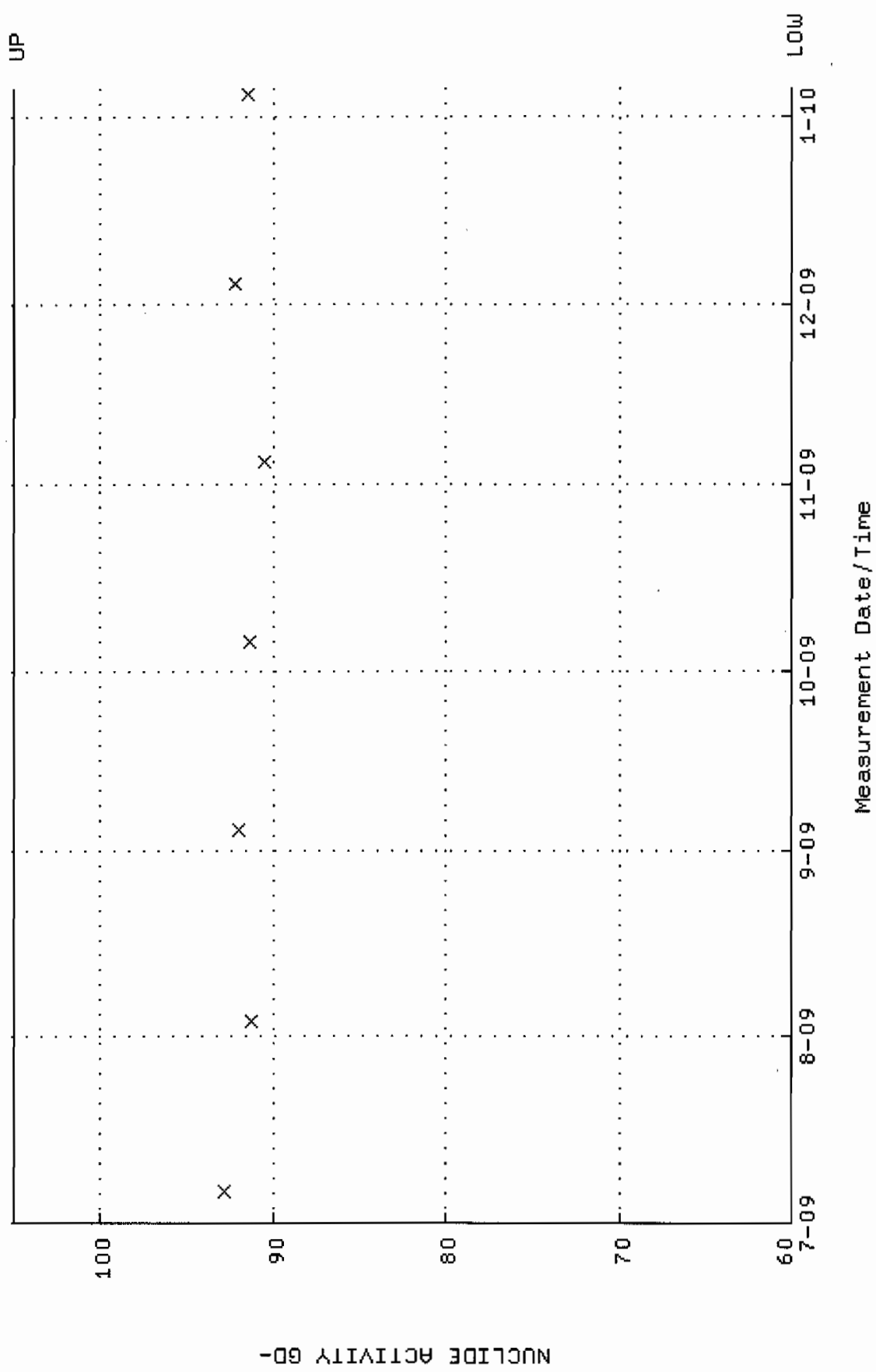
QA filename : DKA100:[ENV\_ALPHA.QA.B]B022.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



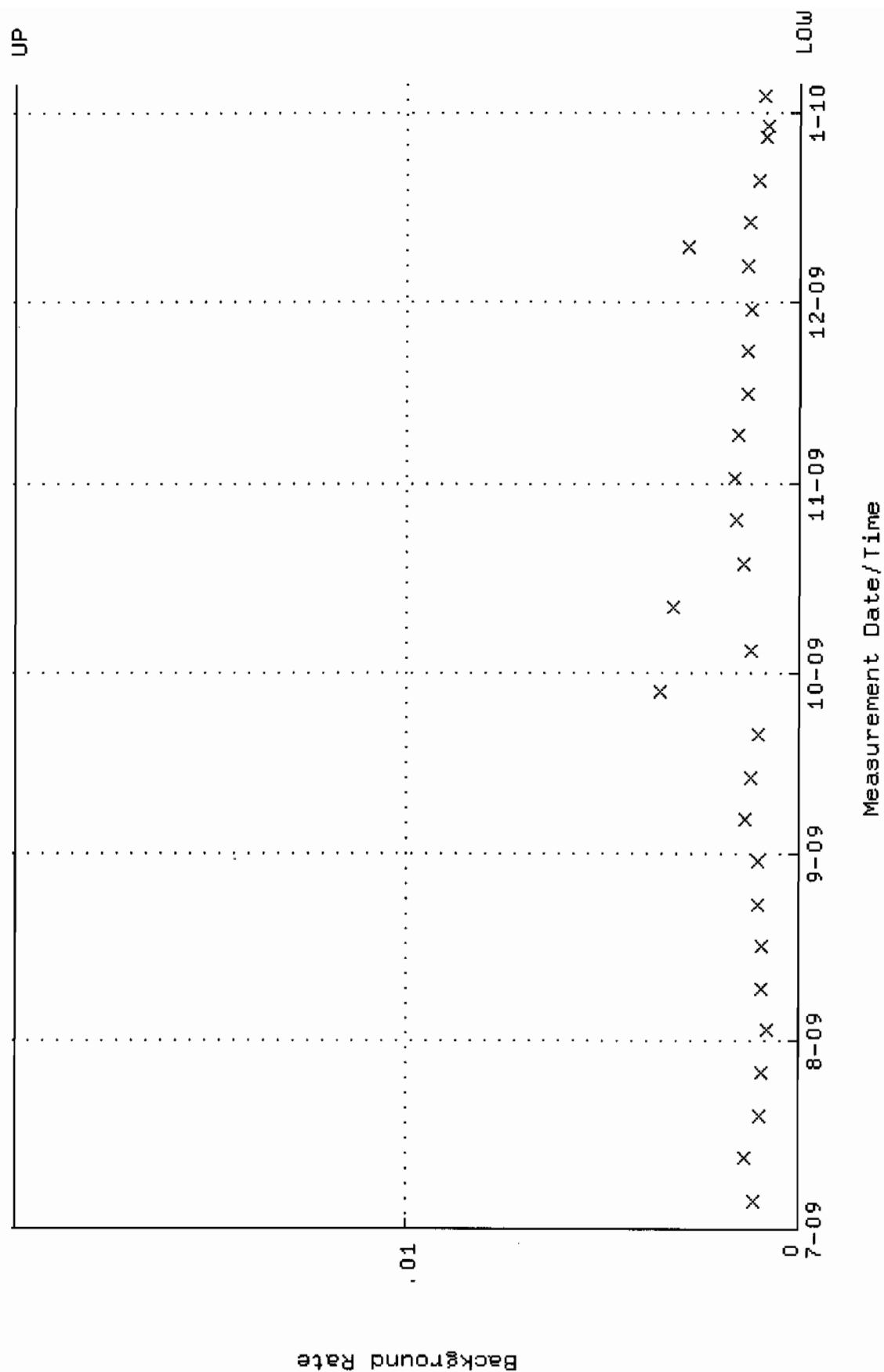
QA filename : DKA100:[ENV\_ALPHA.QA.W]W023.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



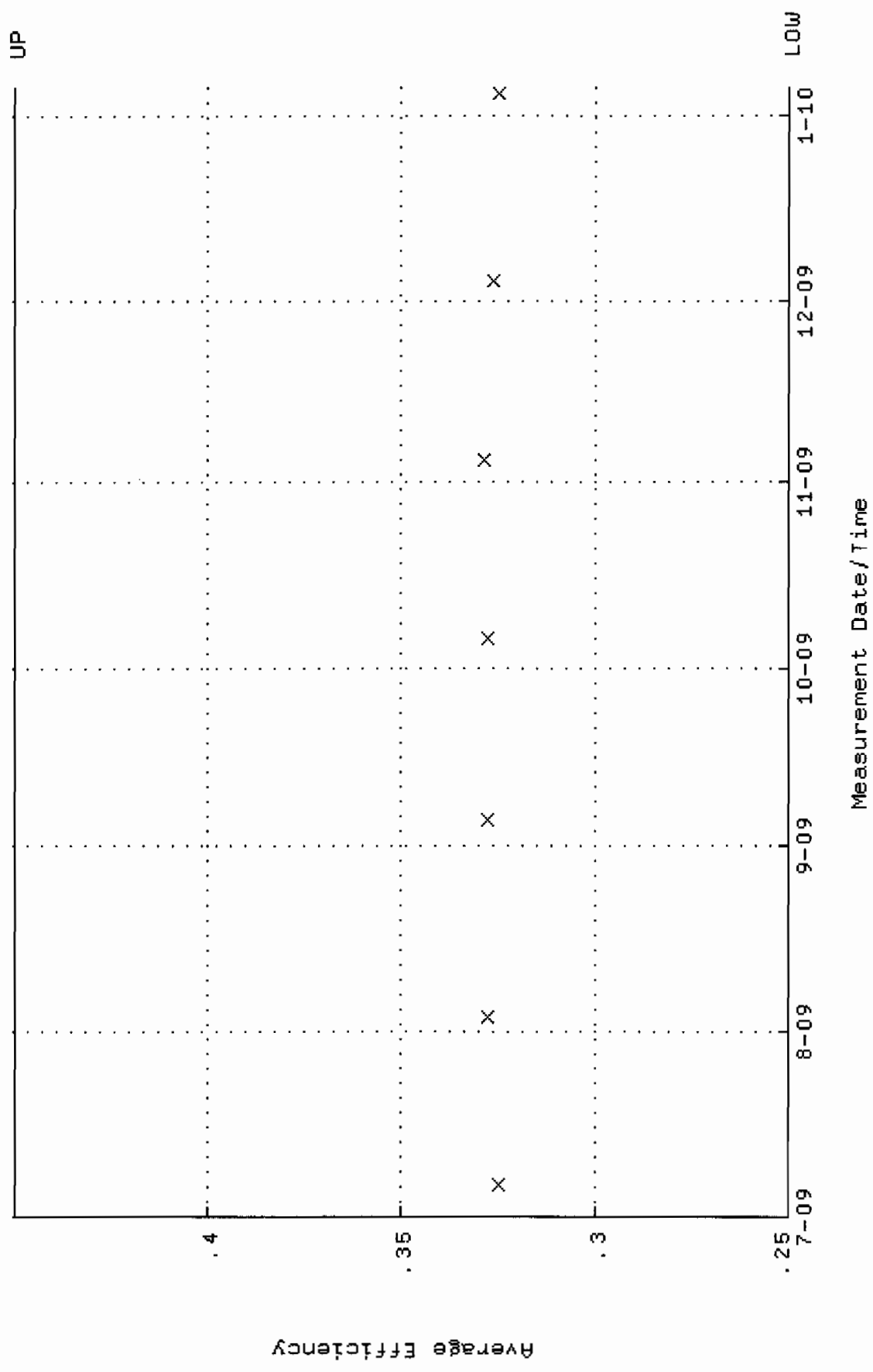
QA filename : DKA100:[ENV\_ALPHA.QA.W]W023.QAF;3  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000



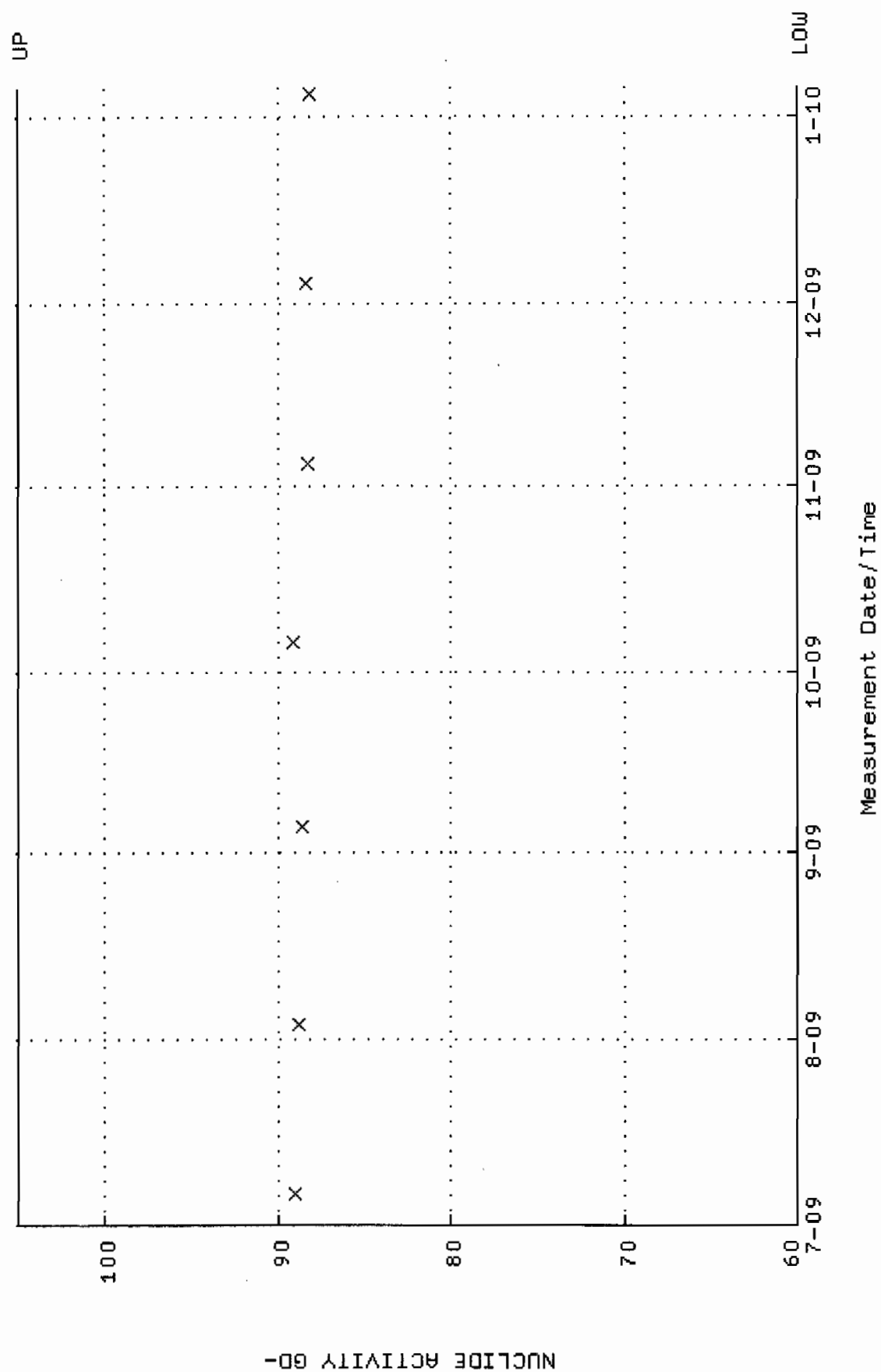
QA filename : DKA100:[ENV\_ALPHA.QA.B]B023.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



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 : OKA100:[ENV\_ALPHA.QA.W]W025.QAF;4  
 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

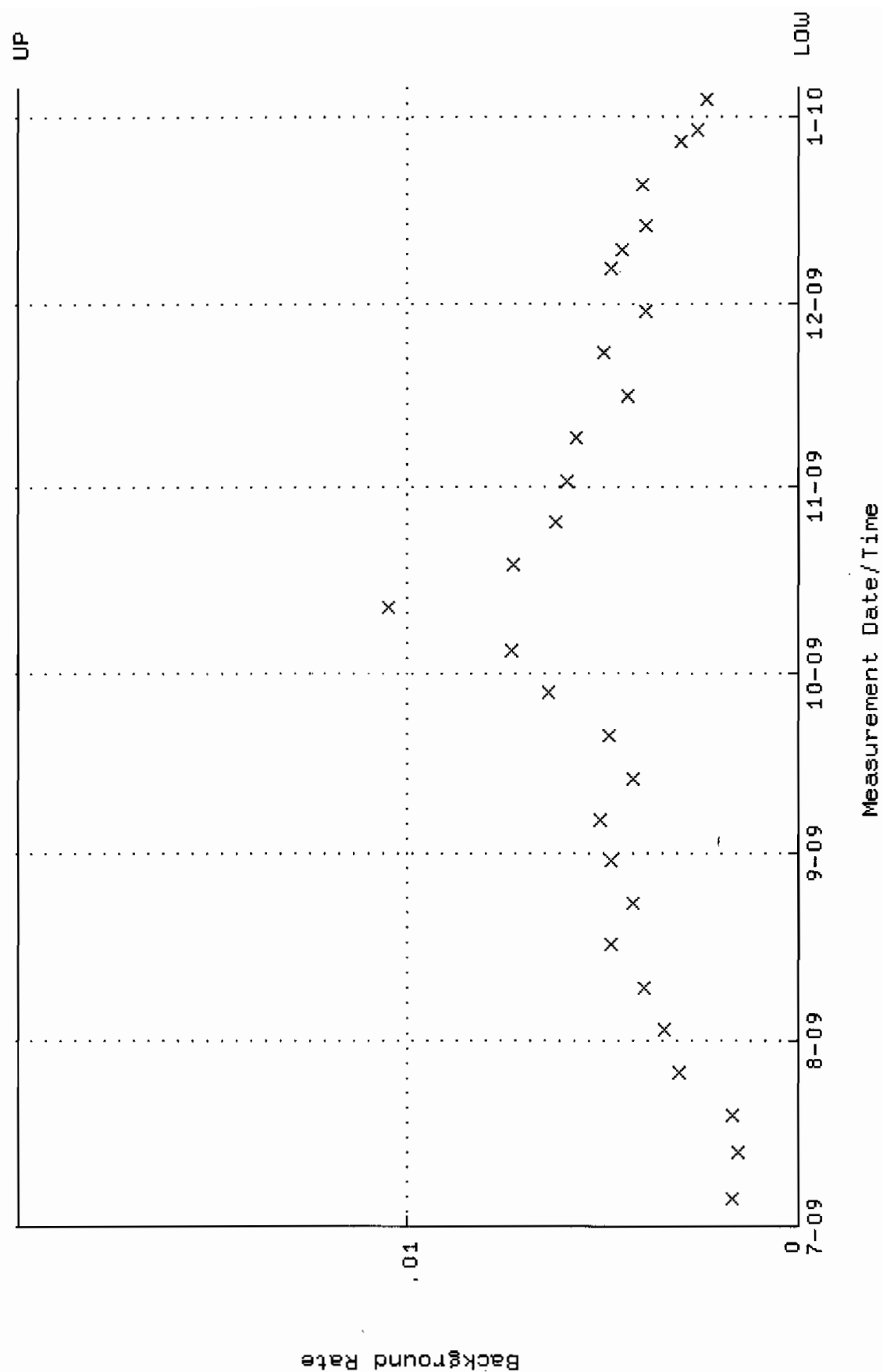




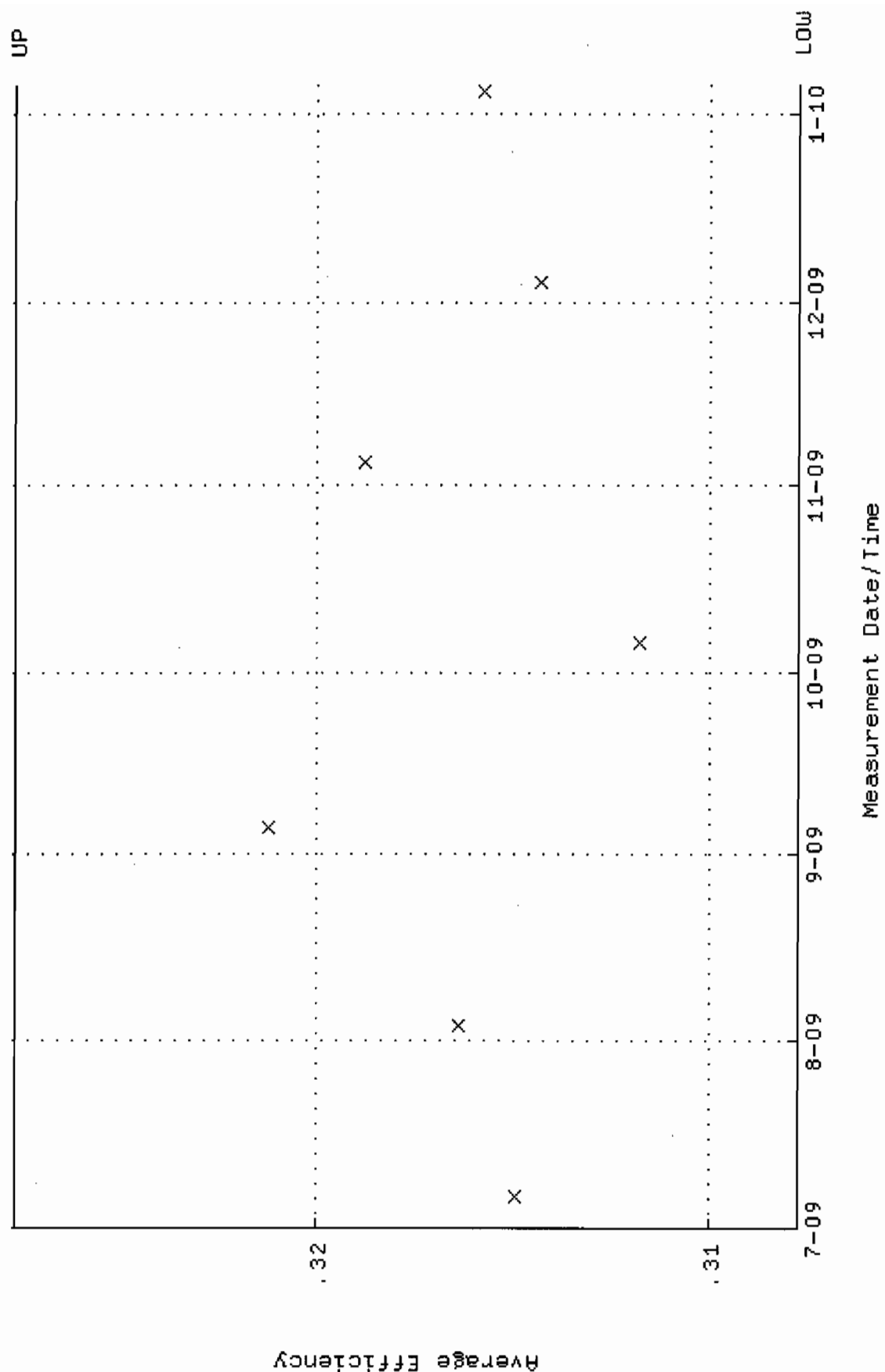
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QA filename      : DKA100:[ENV-ALPHA.QA.B]B025.QAF;2
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

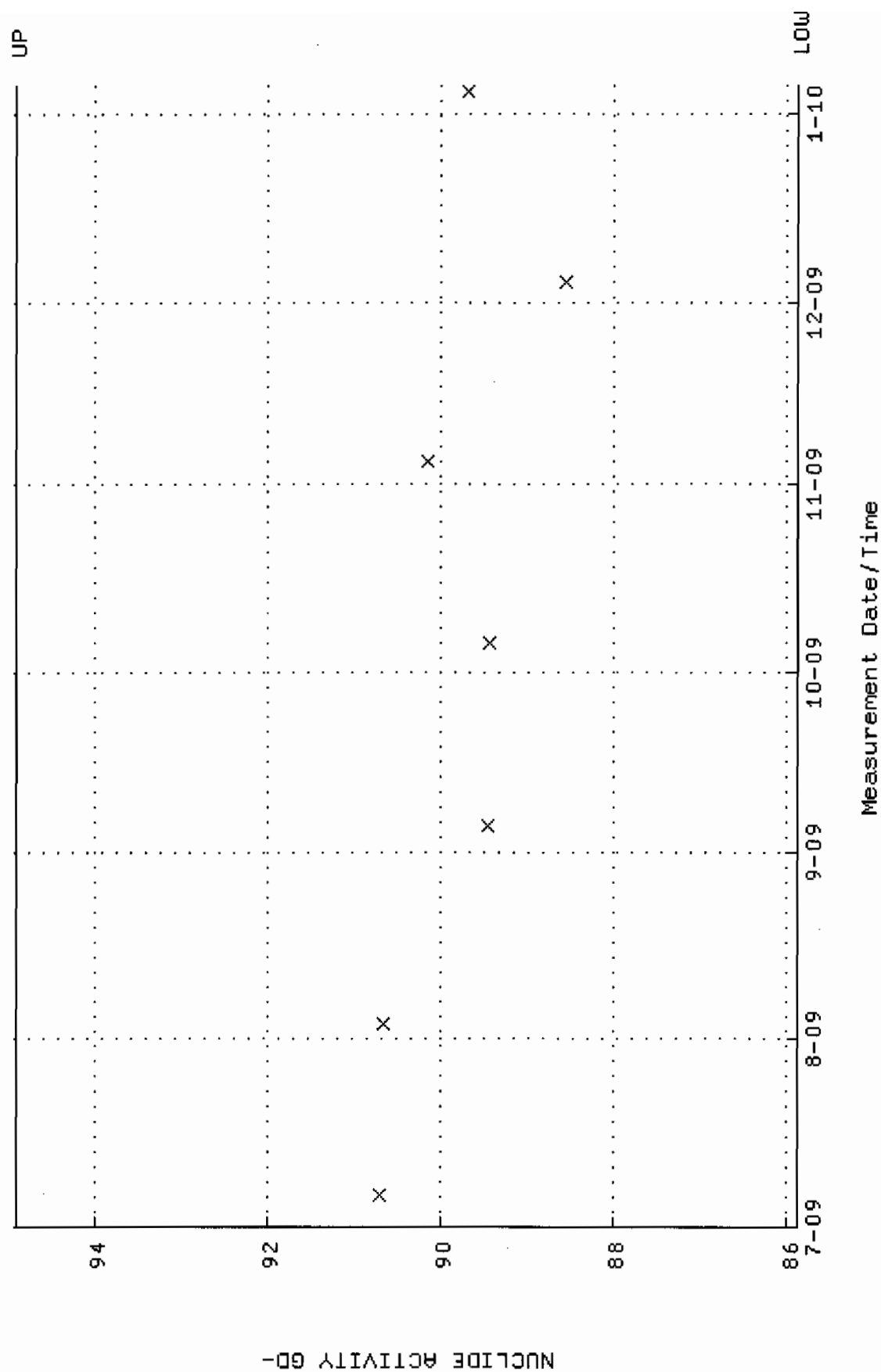
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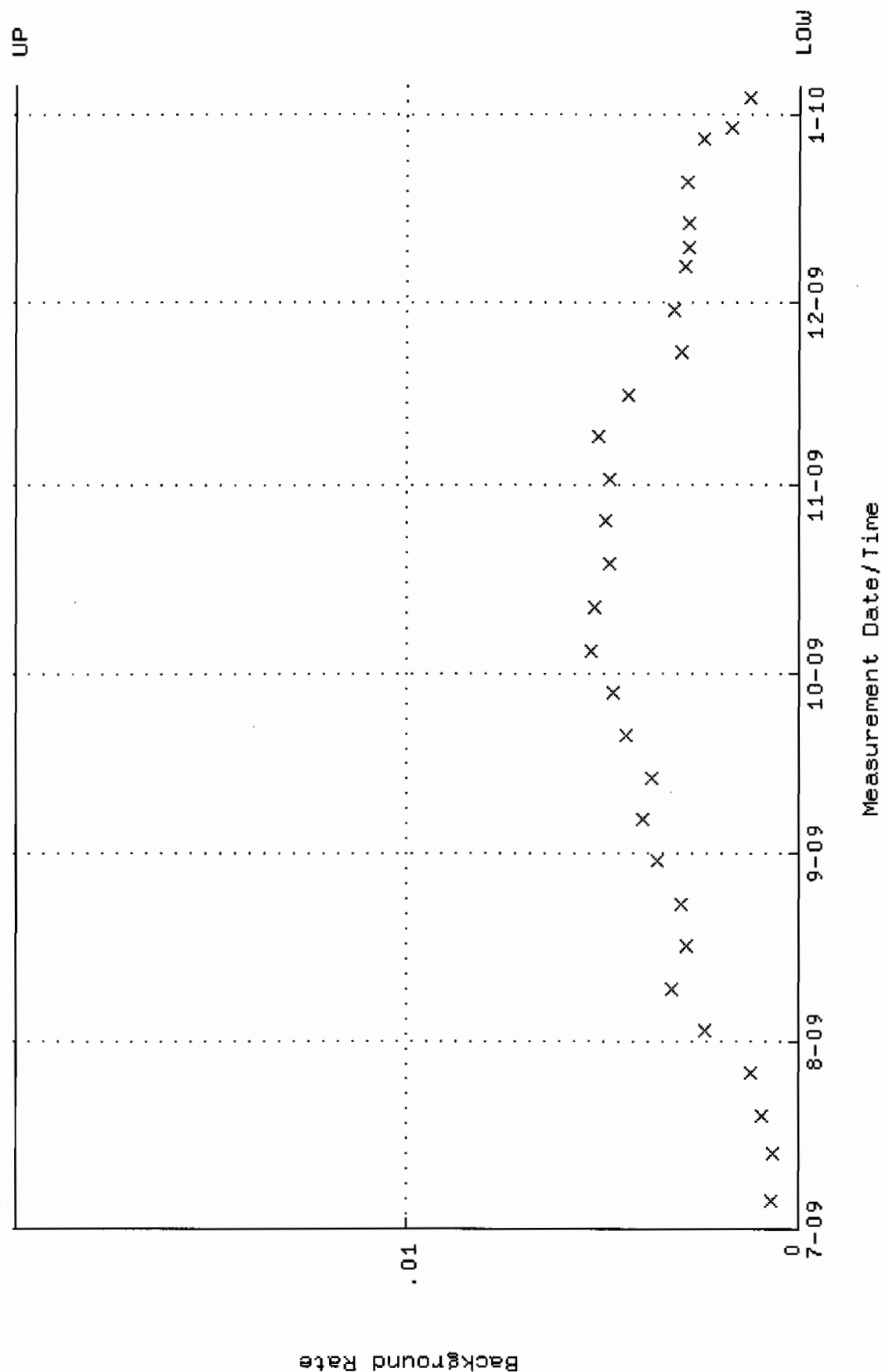
QA filename : DKA100:[ENV\_ALPHA.QA.W]W026.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.307728 through 0.327728



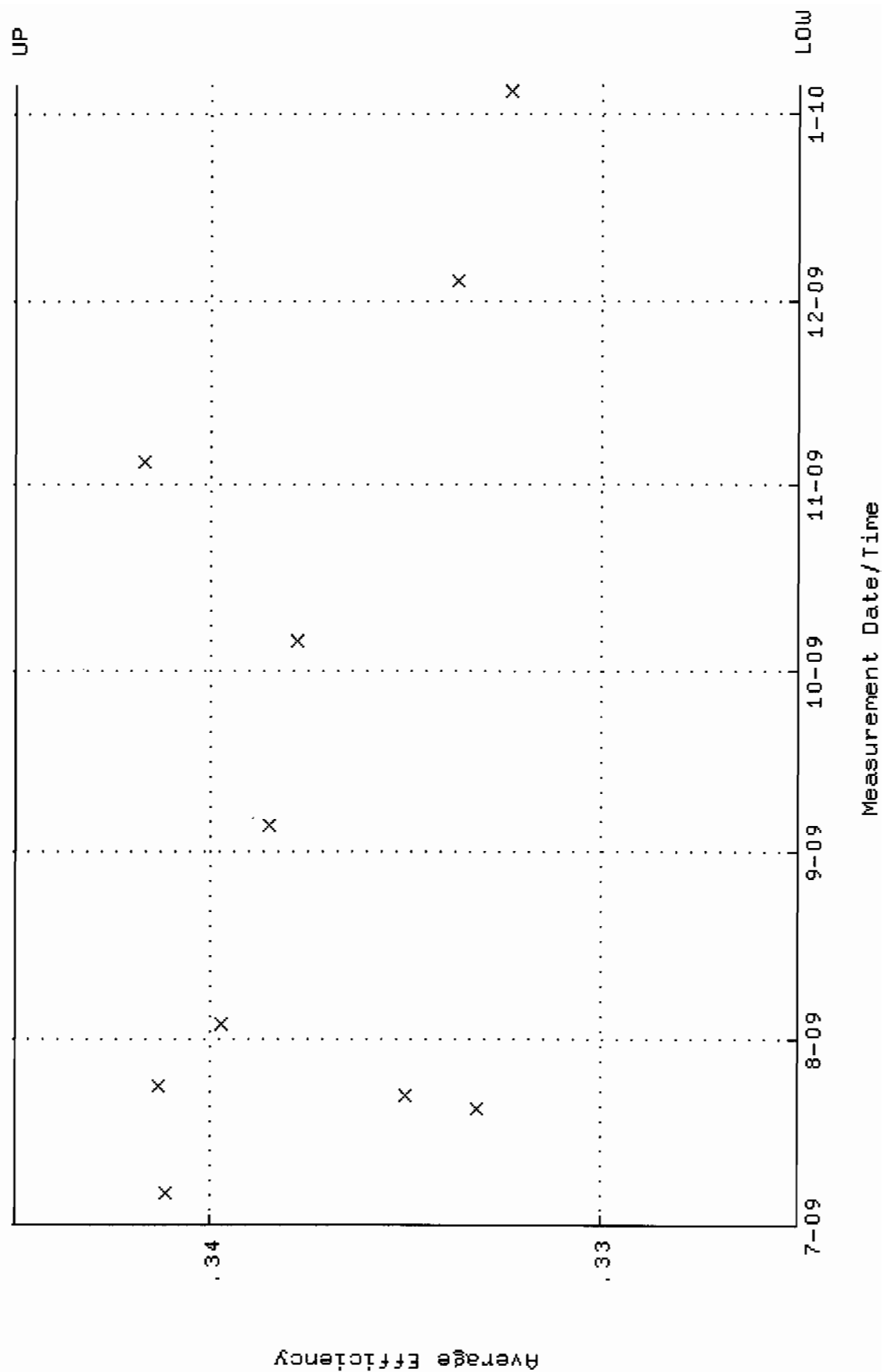
QA filename : DKA100:[ENV-ALPHA.QA.W]W026.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.8763 through 94.9159



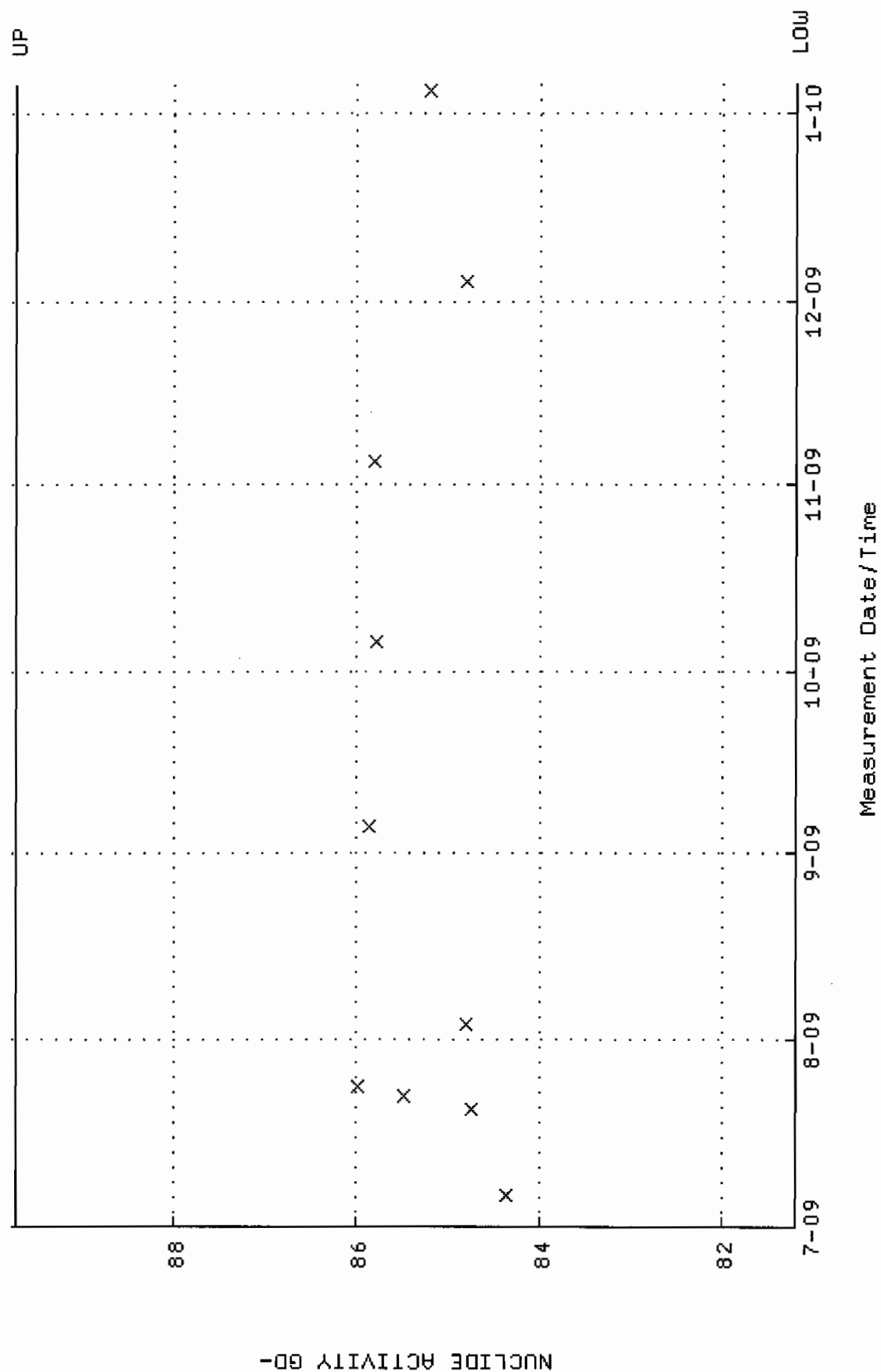
QA filename : DKA100:[ENV\_ALPHA.QA.B]B026.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



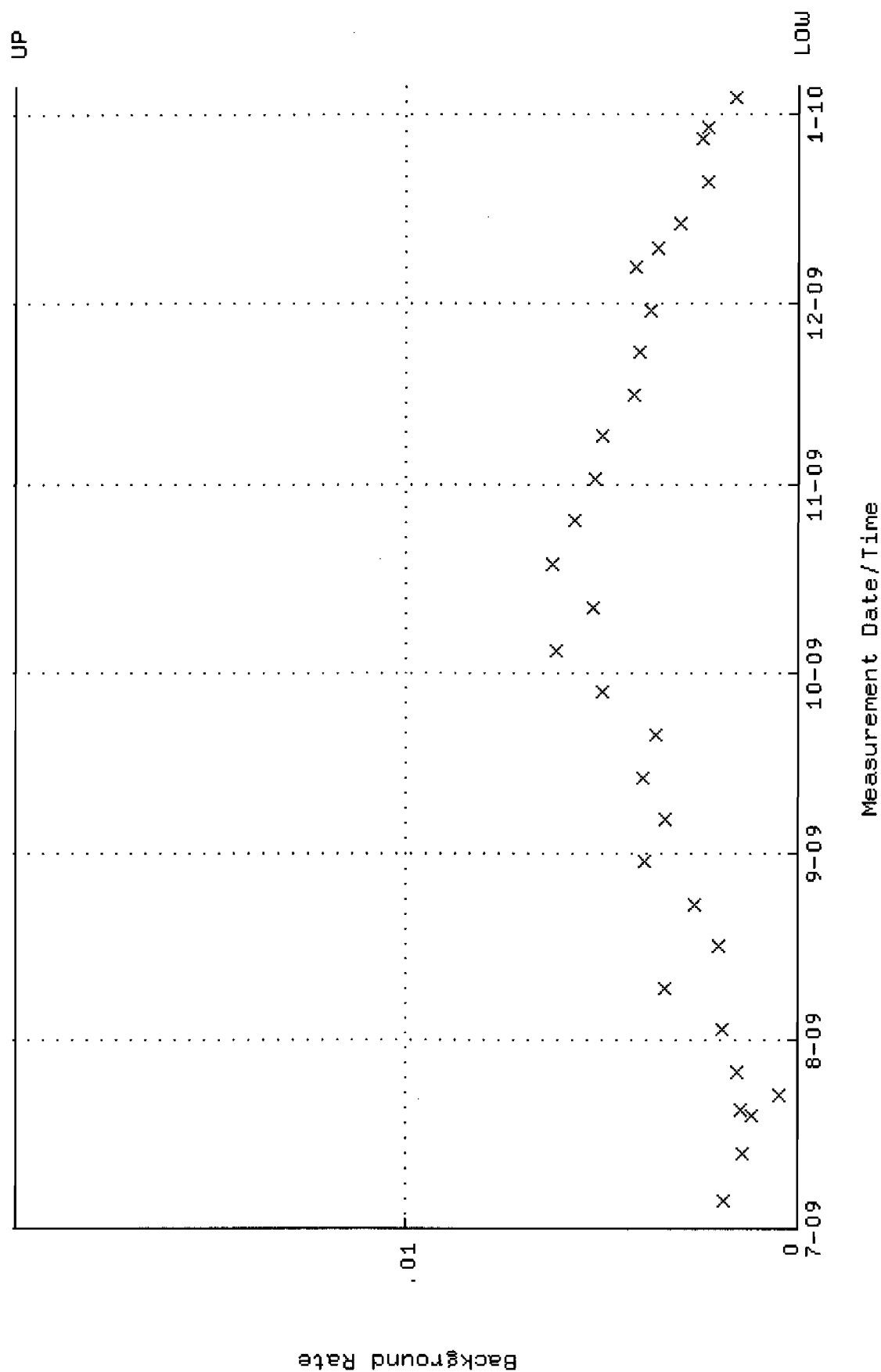
QA filename : DKA100:[ENV\_ALPHA.QA.W]W027.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.324980 through 0.344980



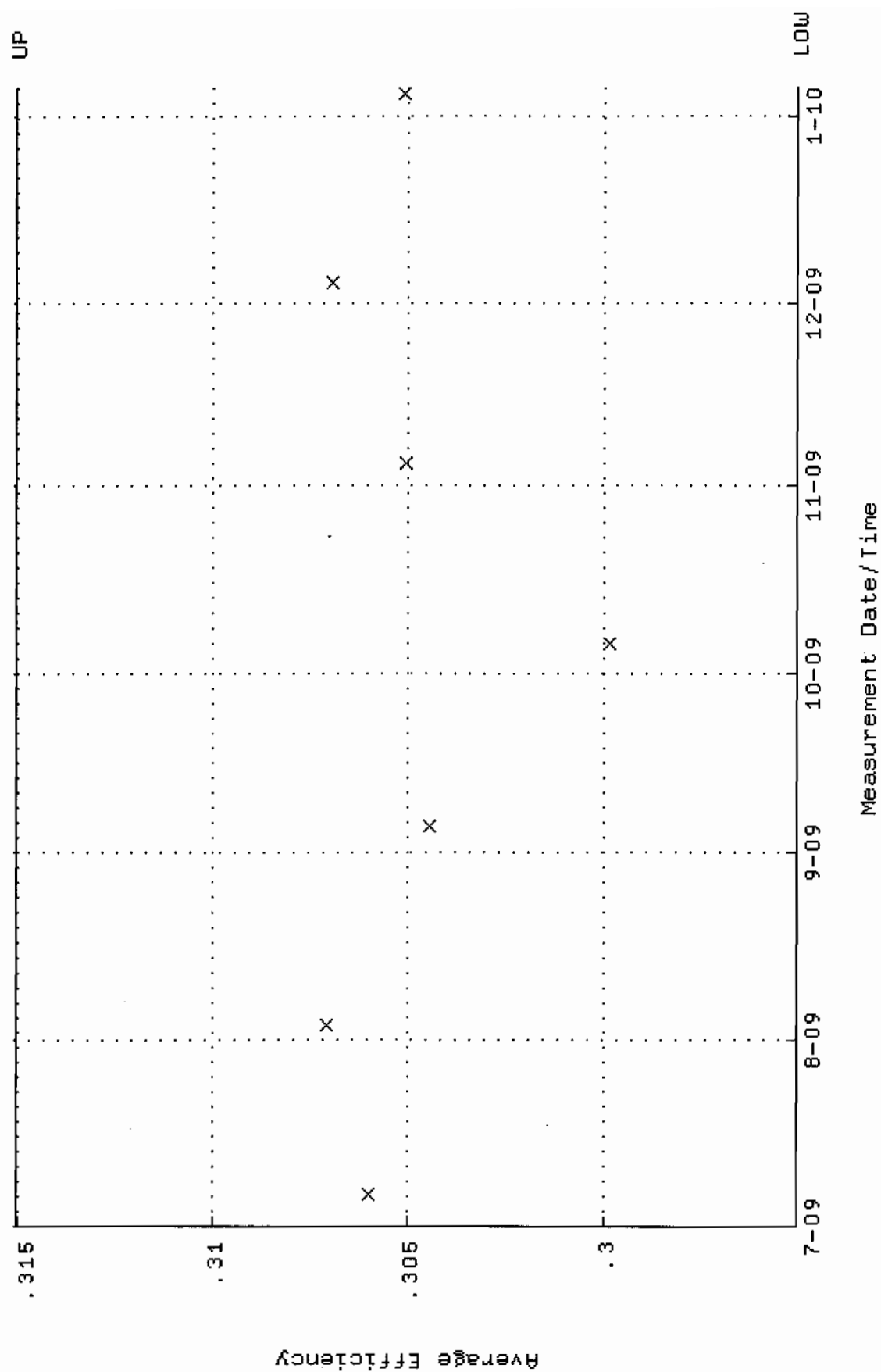
QA filename : DKA100:[ENV\_ALPHA.QA.W]W027.QAF;4  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 81.2030 through 89.7506



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

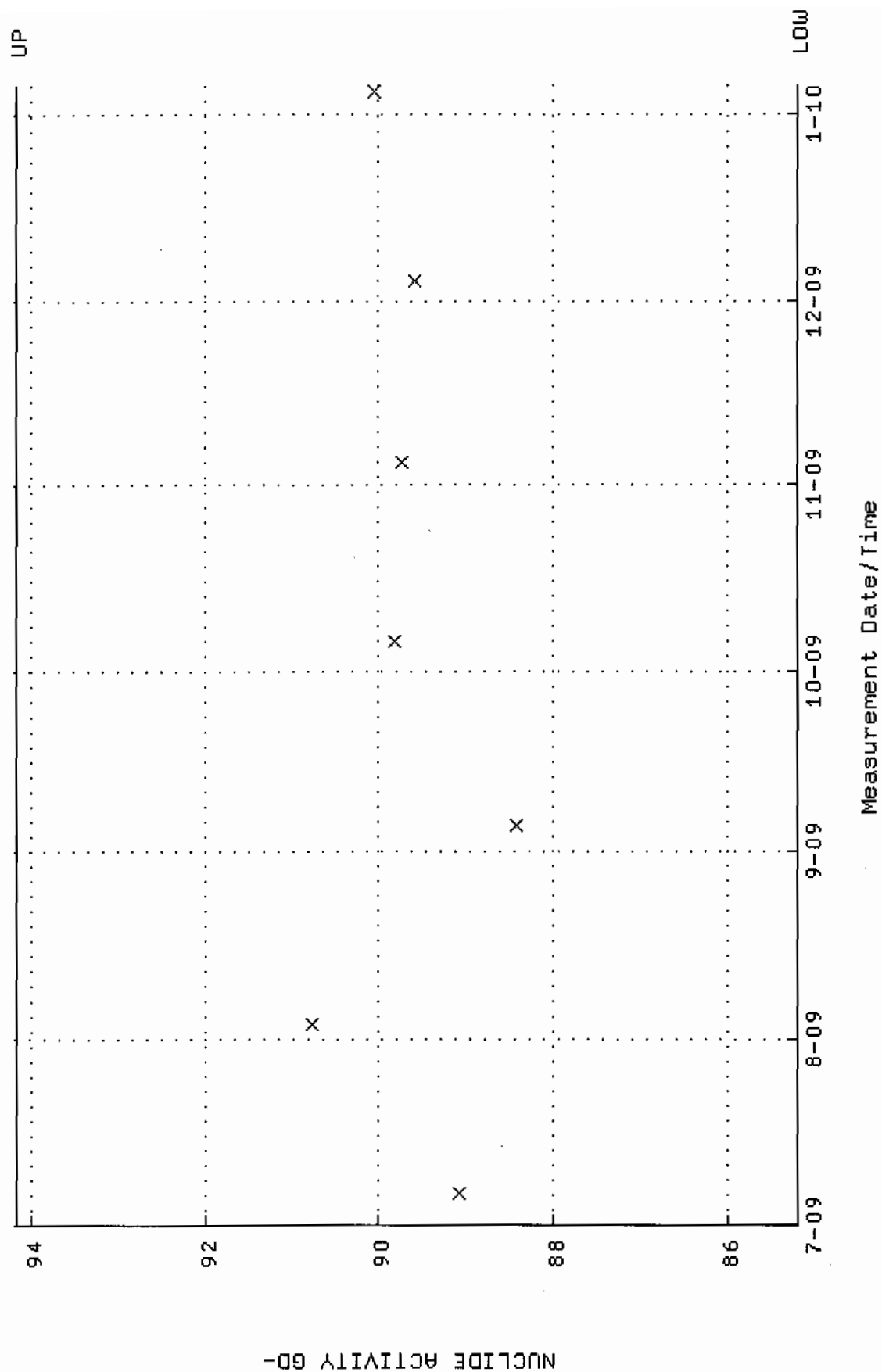


QA filename : DKA100:[ENV\_ALPHA.QA.W]W028.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.295040 through 0.315040

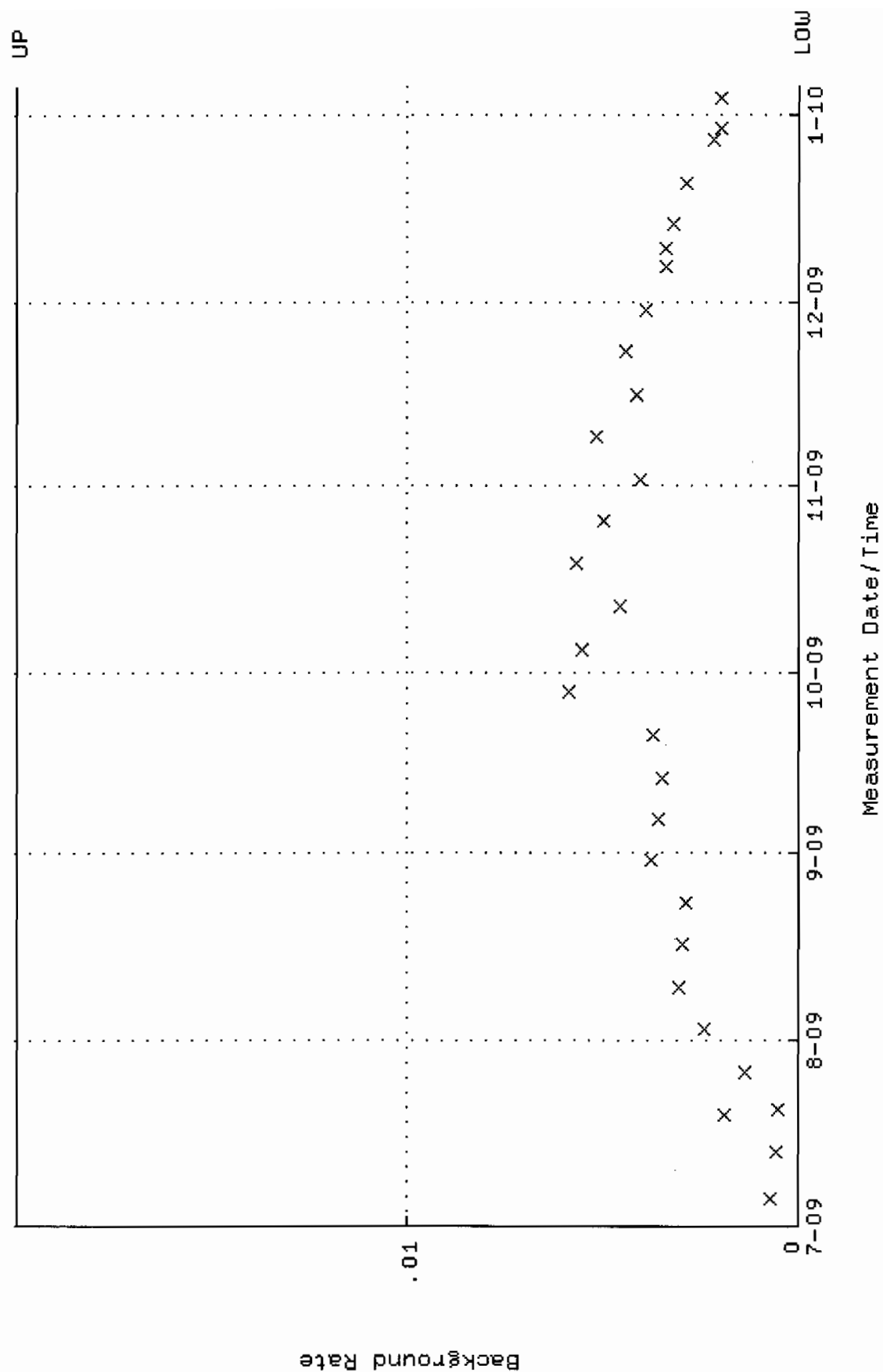




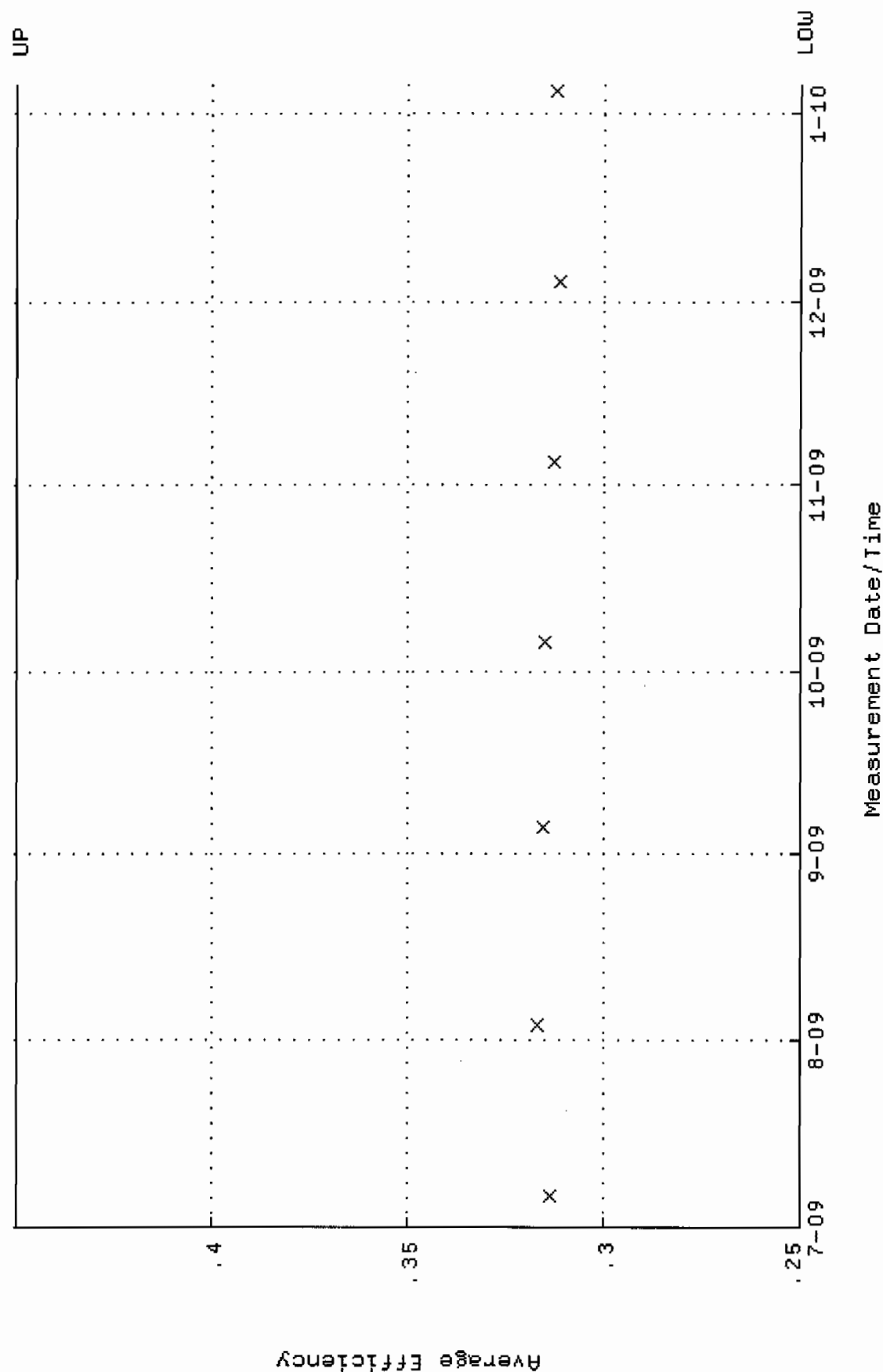
QA filename : DKA100:[ENV\_ALPHA,QA,W]W028.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.1965 through 94.1645



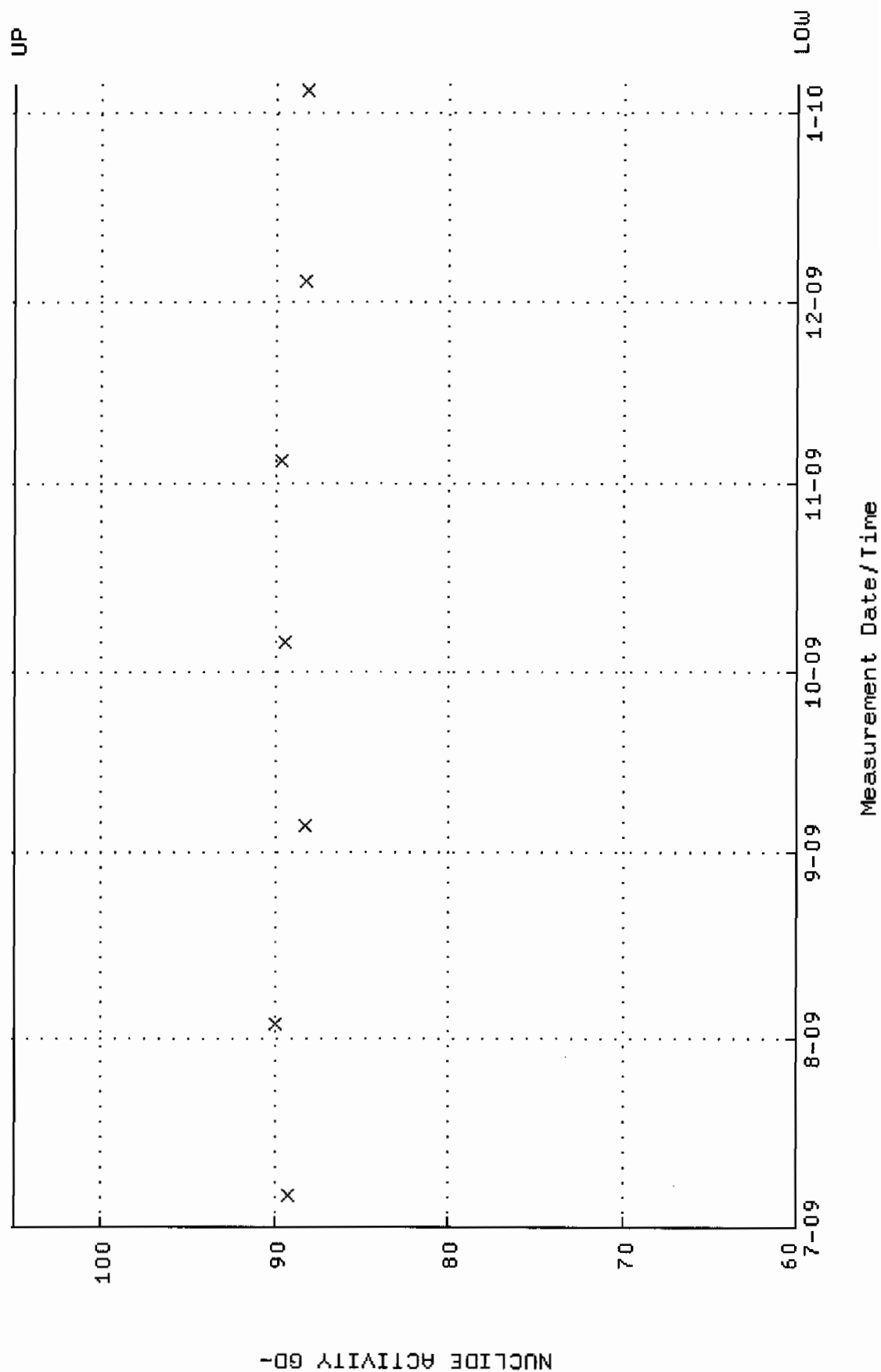
QA filename : DKA100:[ENV\_ALPHA.QA.B]B028.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



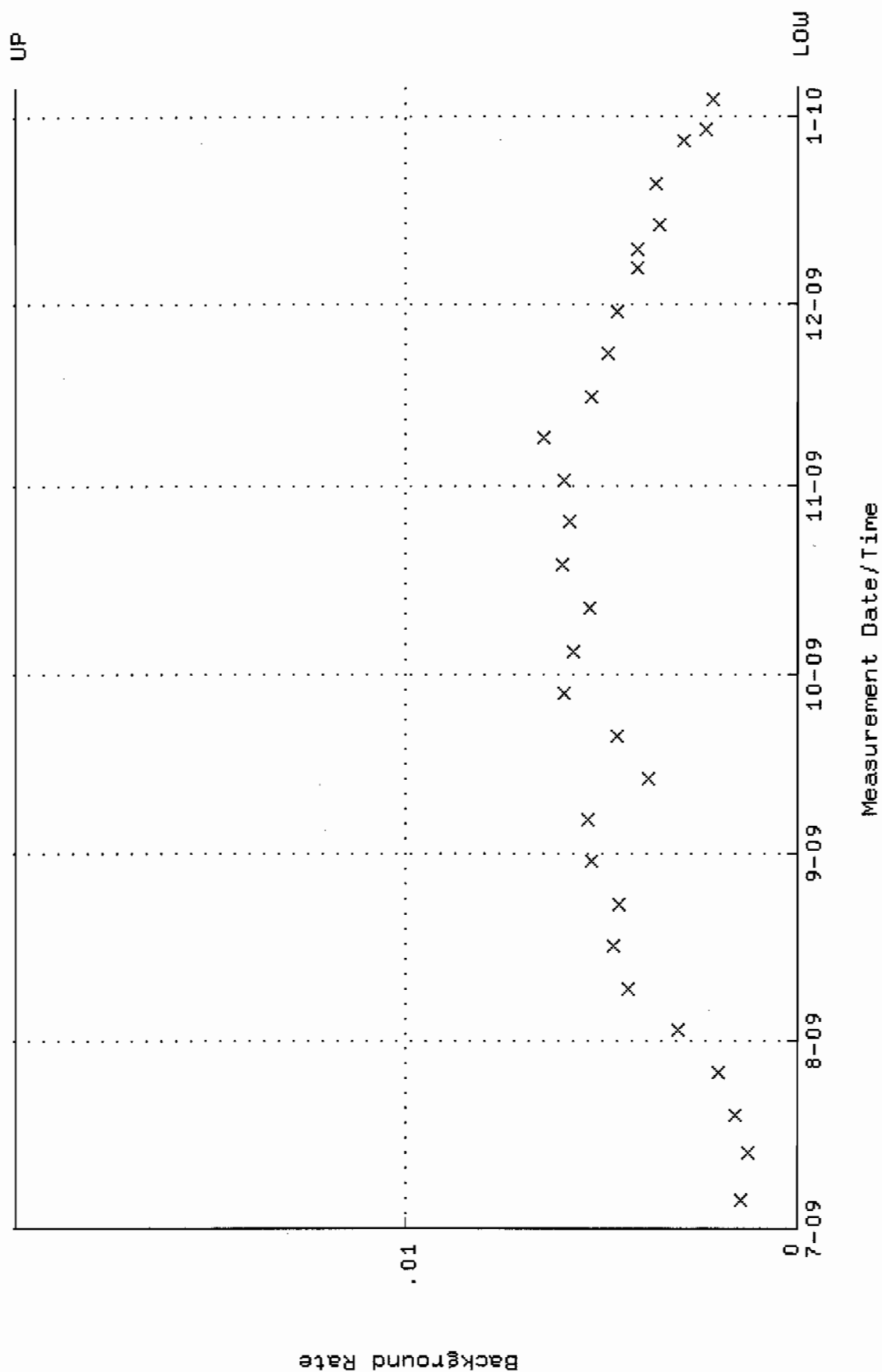
QA filename : DKA100:[ENV\_ALPHA.QA.W]w029.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



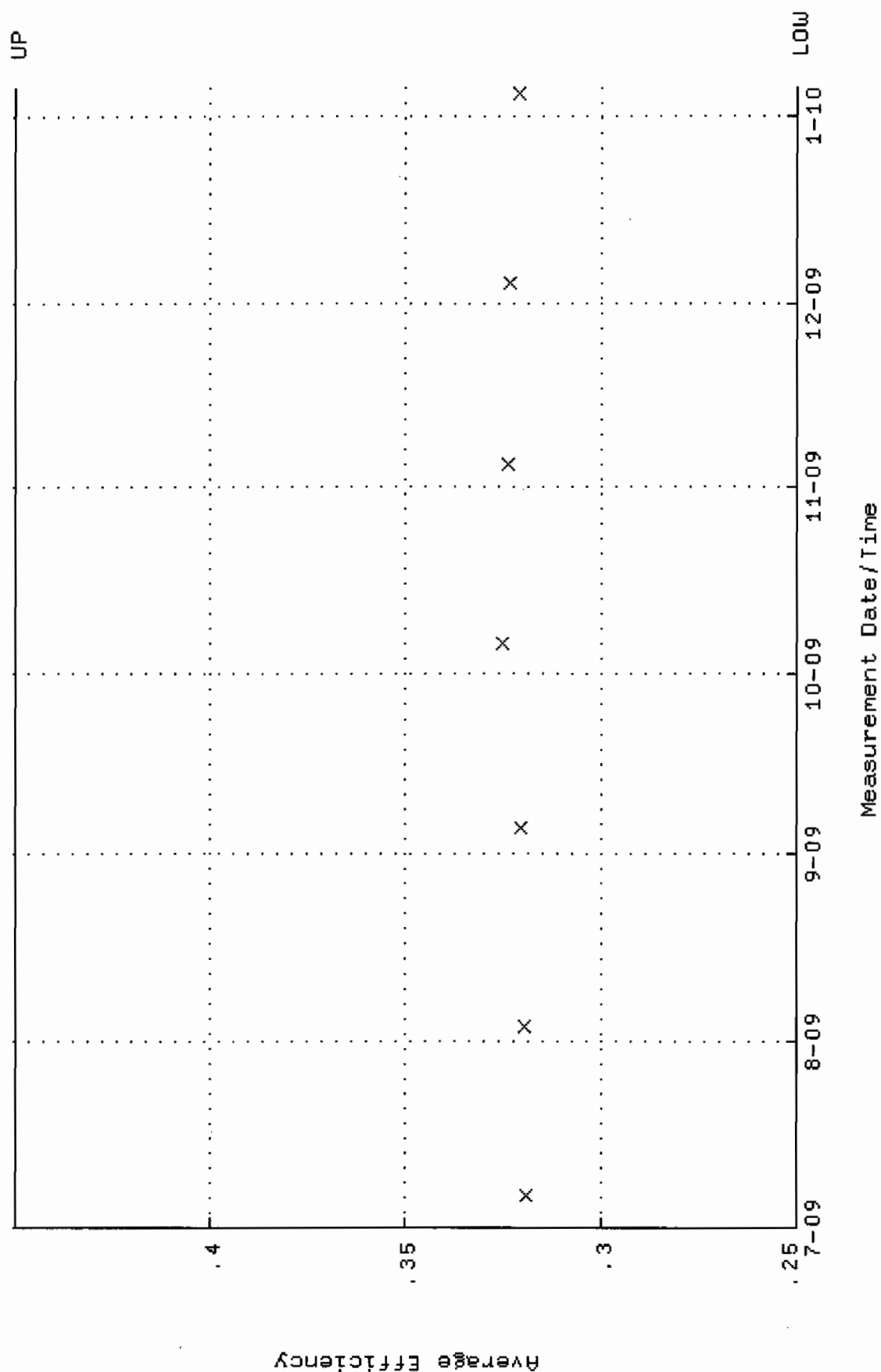
QA filename : DKA100:[ENV\_ALPHA.QA.W]W029.QAF;6  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000



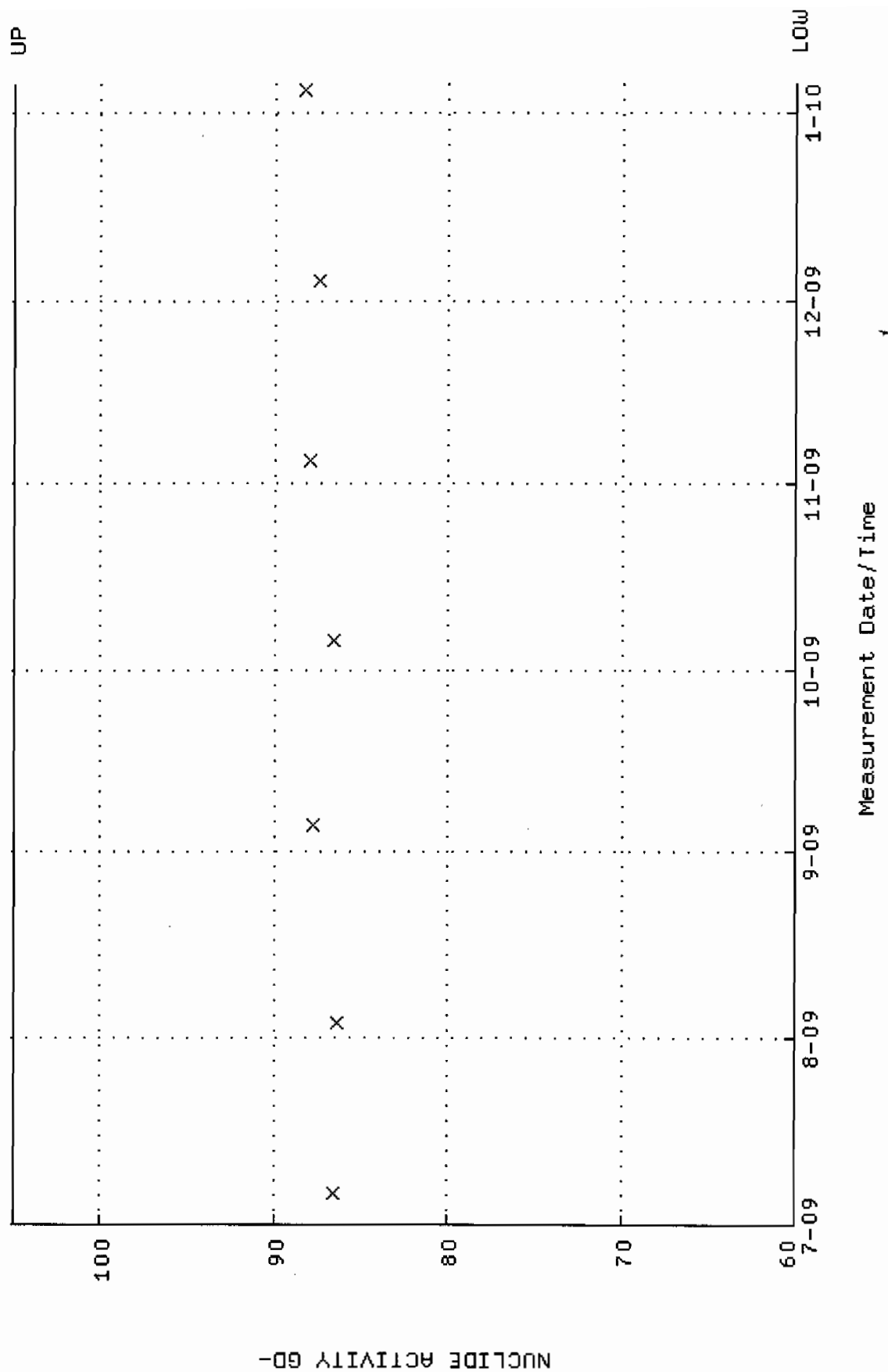
QA filename : DKA100:[ENV\_ALPHA.QA.B]B029.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



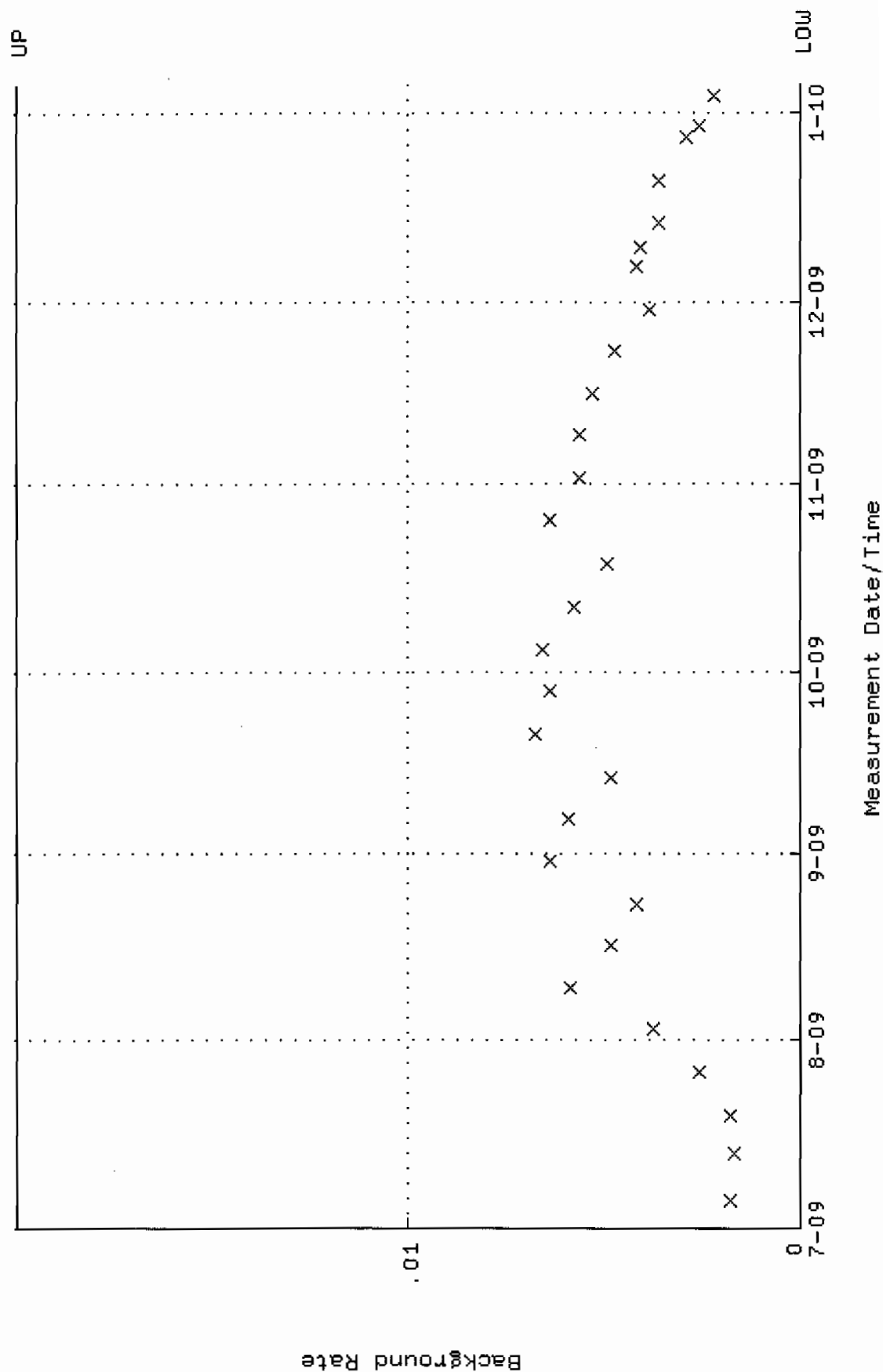
QA filename : DKA100:[ENV\_ALPHA.QA.W]W030.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W030.QAF;3  
 Parameter Name : 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 105.0000

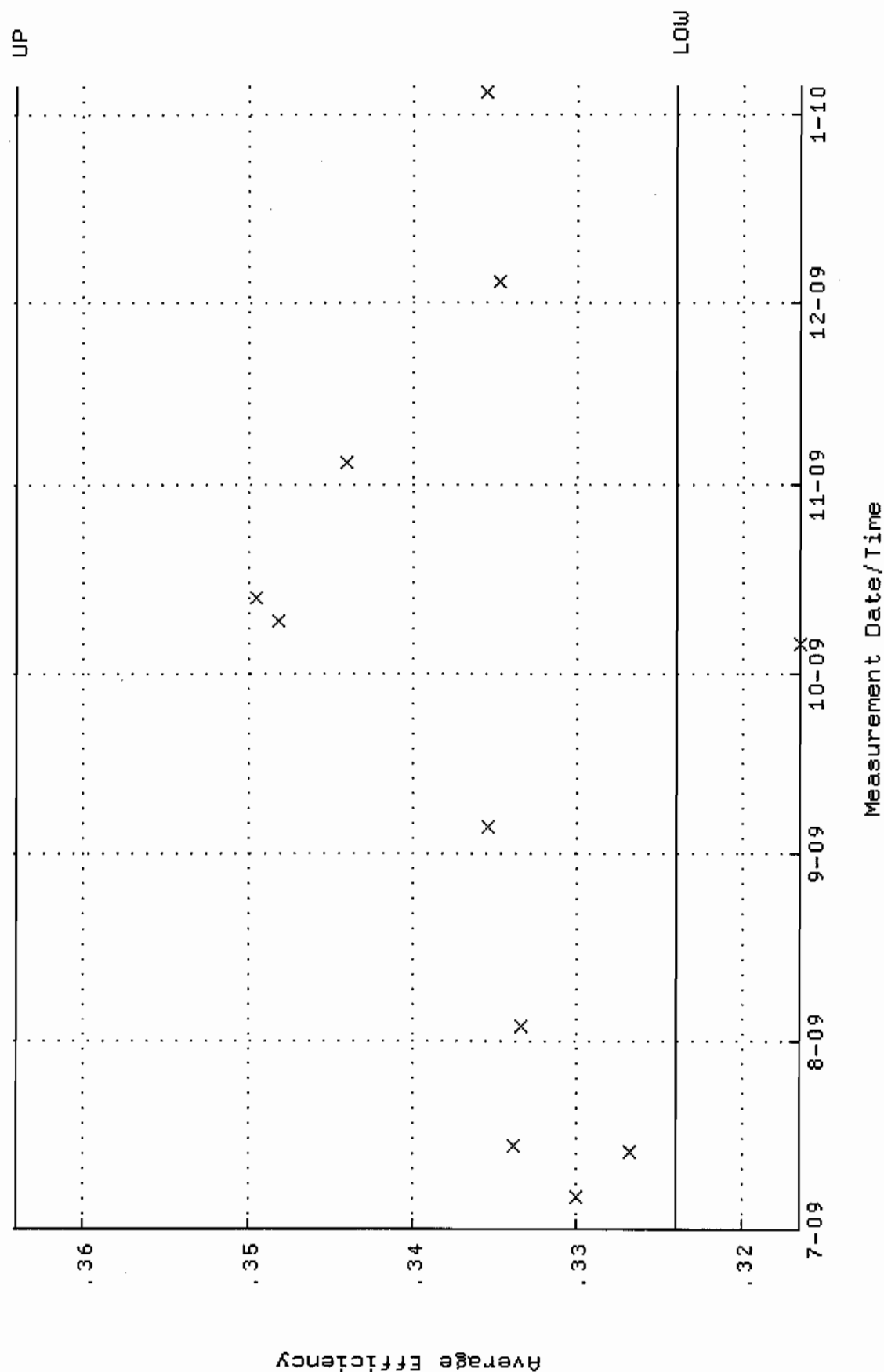


QA filename : OKA100:[ENV\_ALPHA.QA.B]B030.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

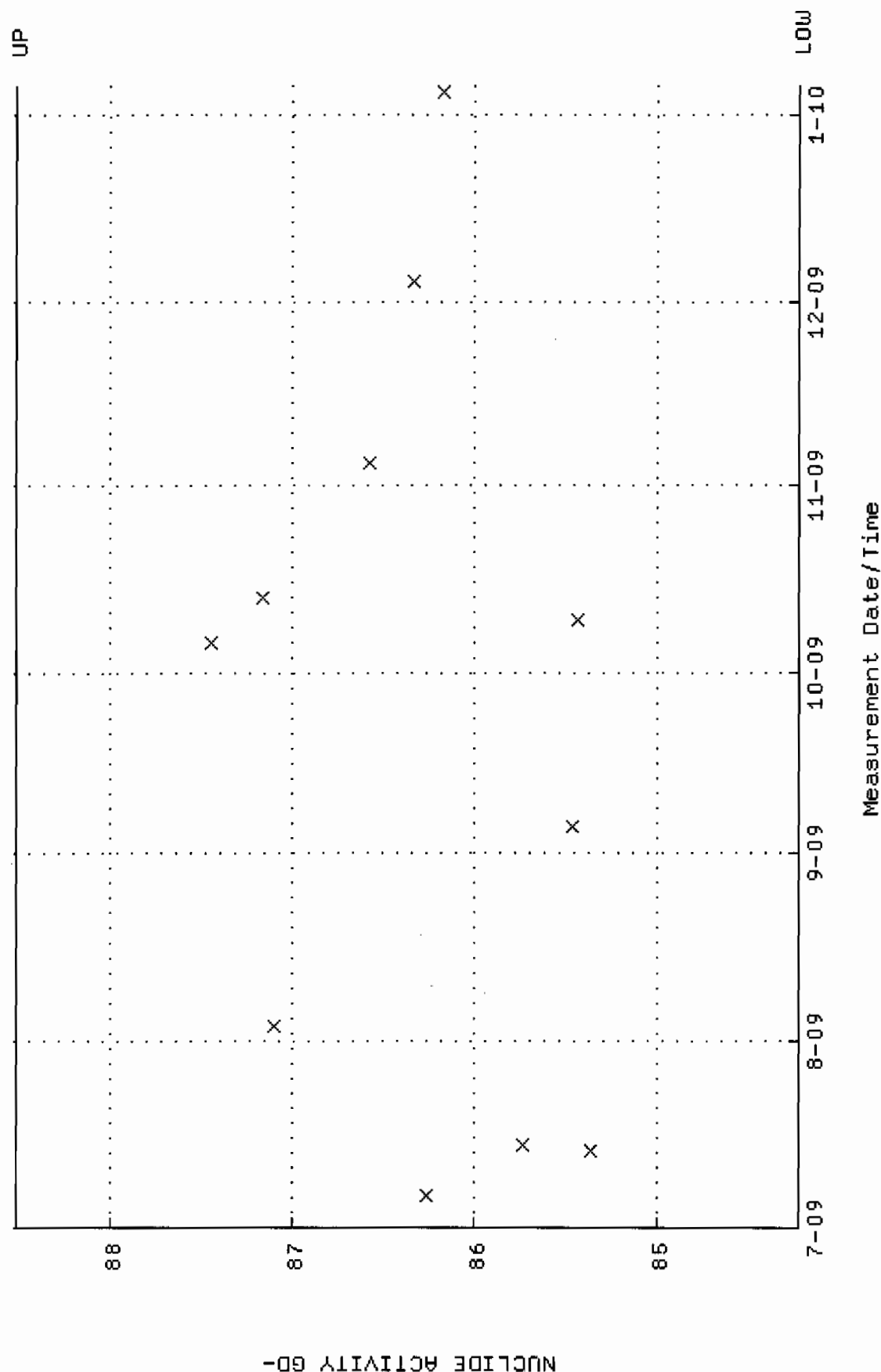




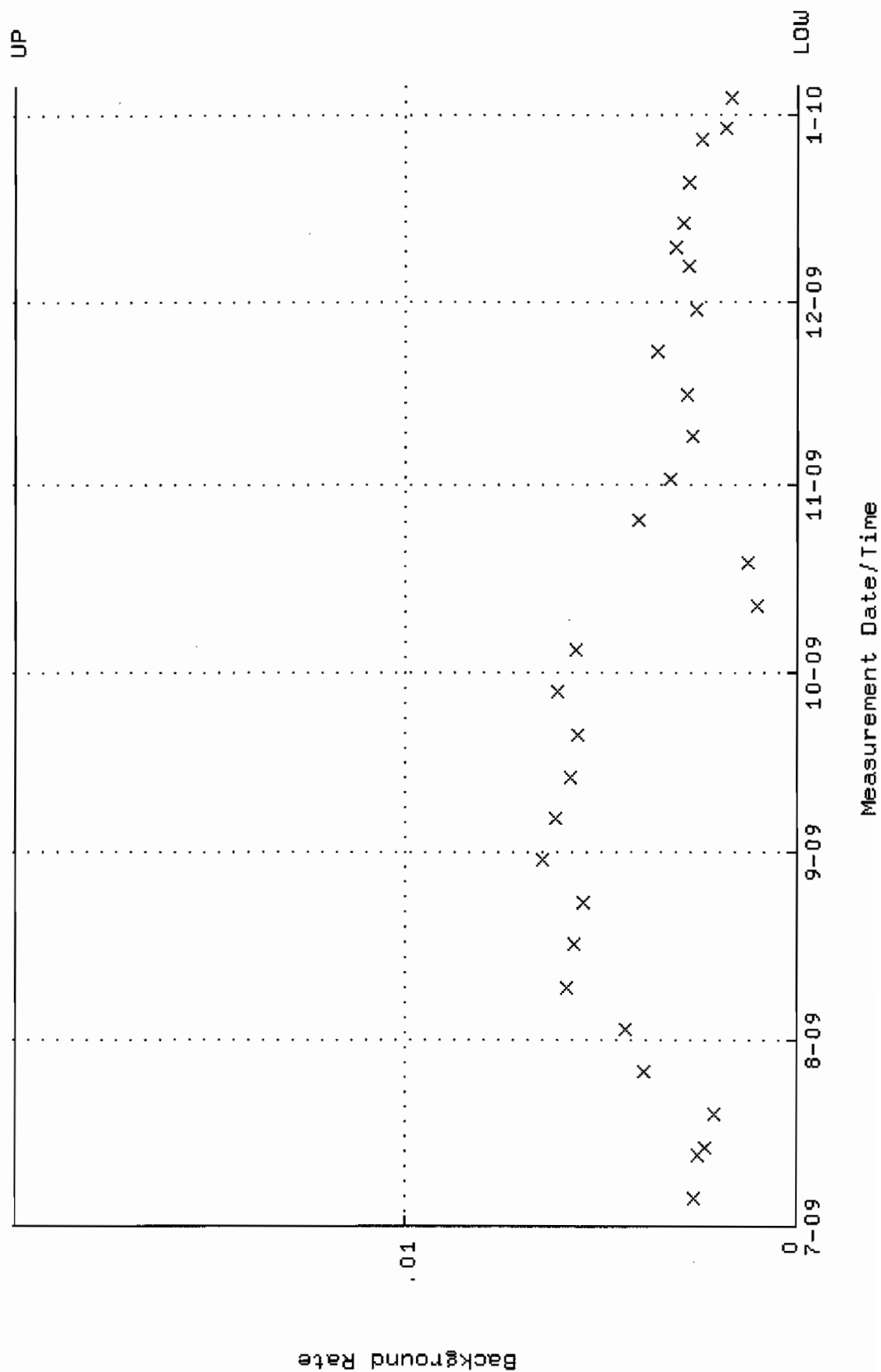
QA filename : DKA100:[ENV\_ALPHA.QA.W]W031.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.324029 through 0.364065



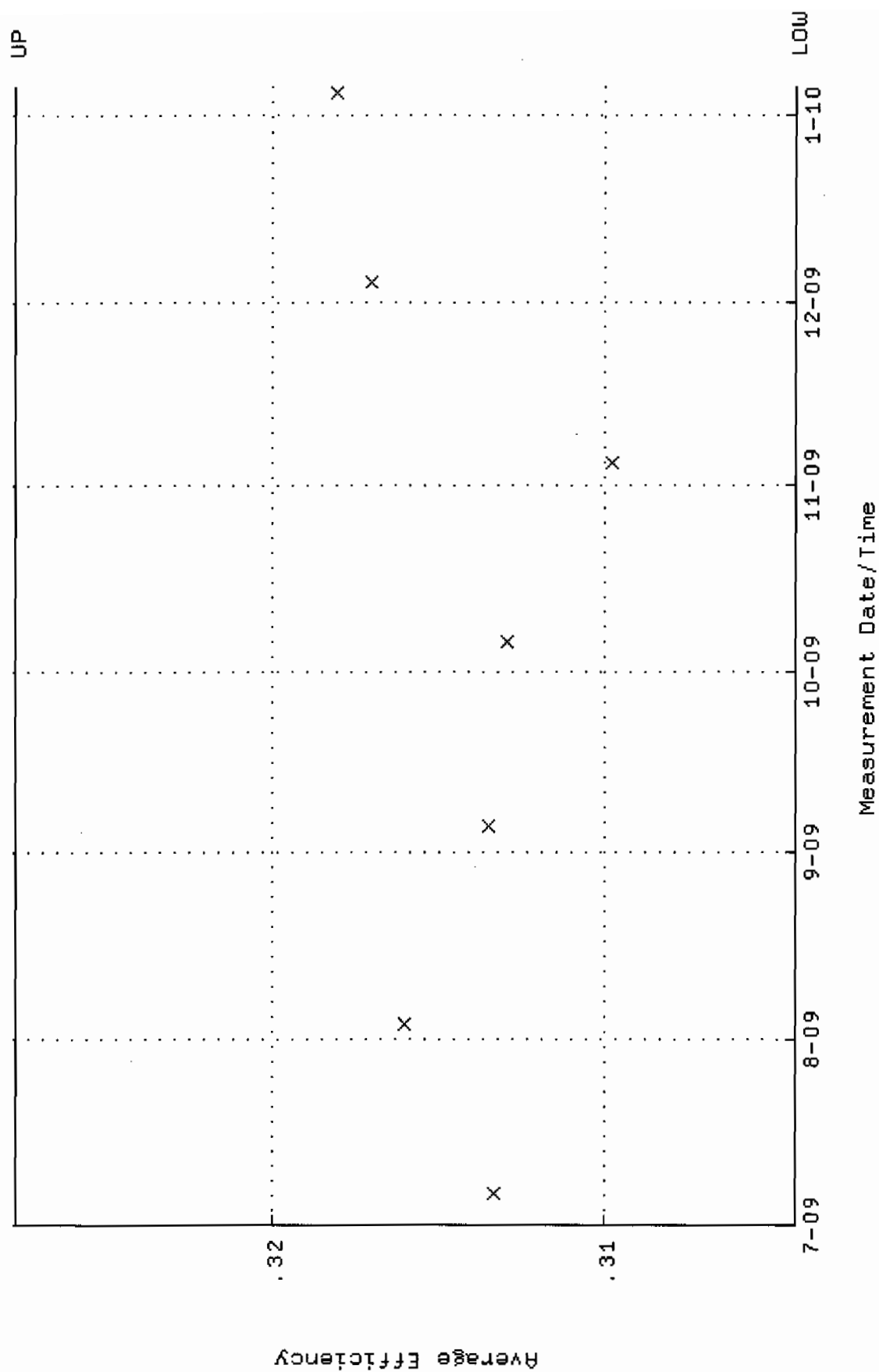
QA filename : DKA100:[ENV\_ALPHA.QA.W]W031.QAF;4  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.2165 through 88.5165



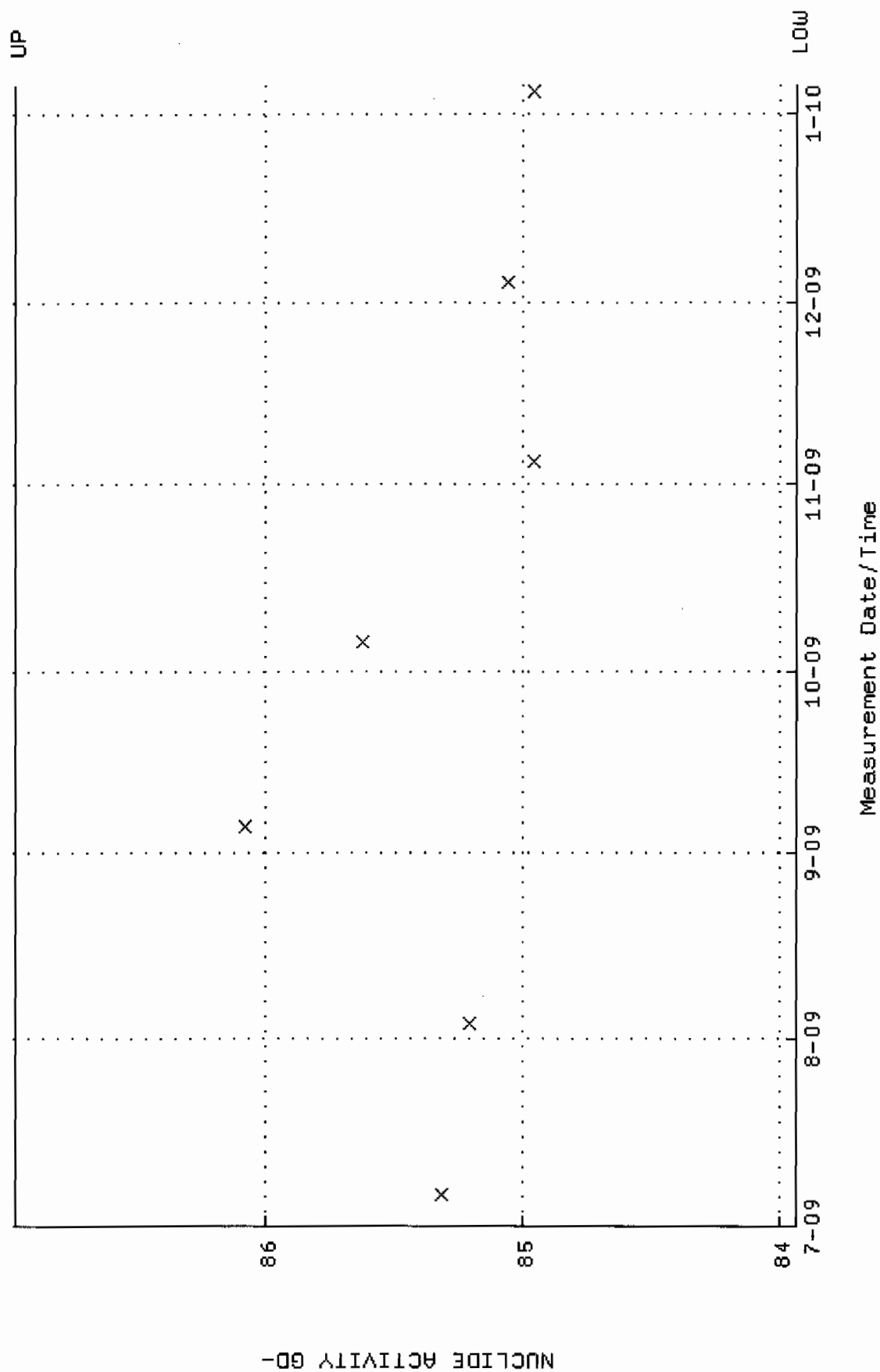
QA filename : DKA100:[ENV\_ALPHA.QA.B]B031.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



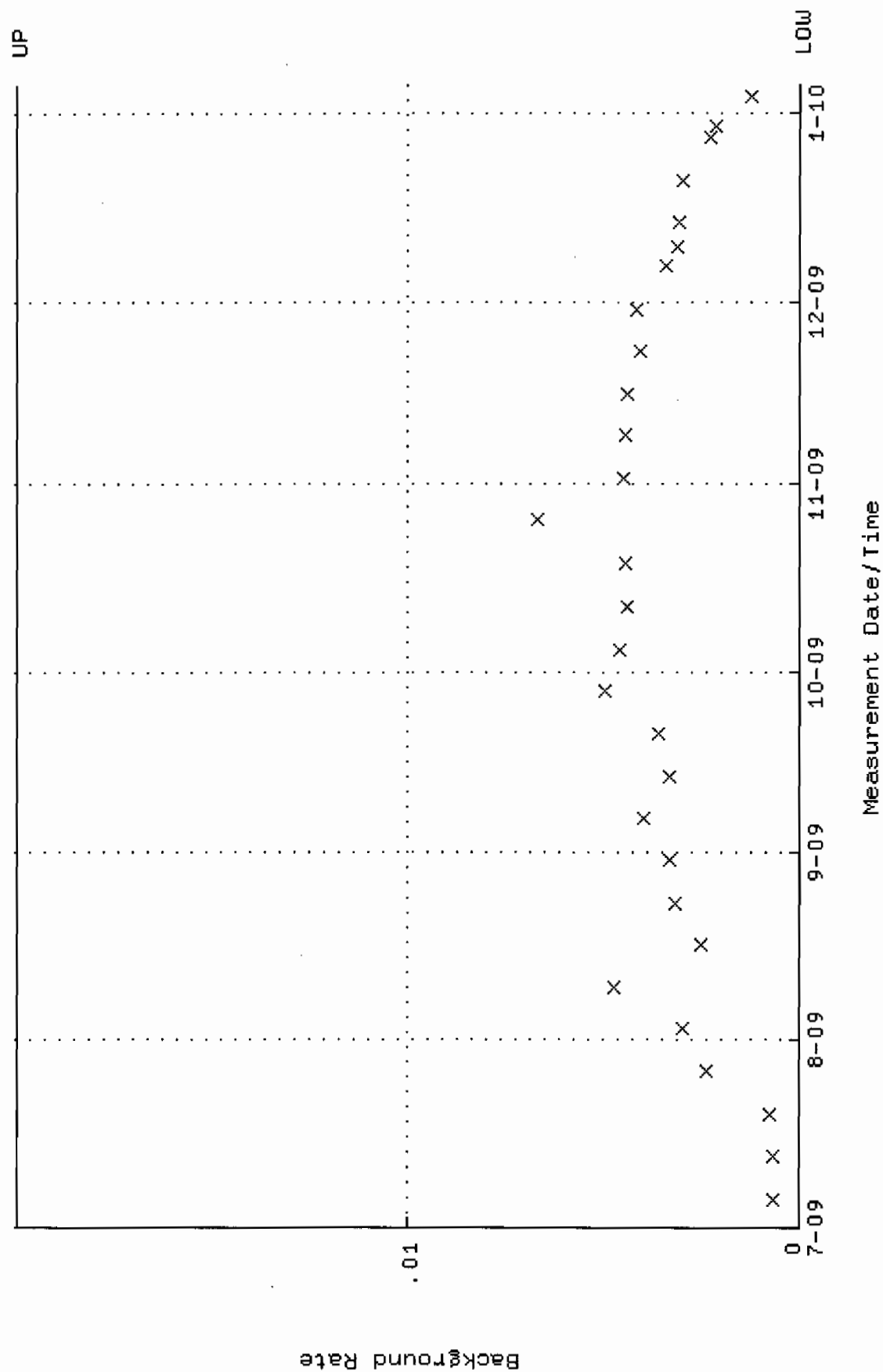
QA filename : DKA100:[ENV\_ALPHA.QA.W]W033.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.304222 through 0.327748



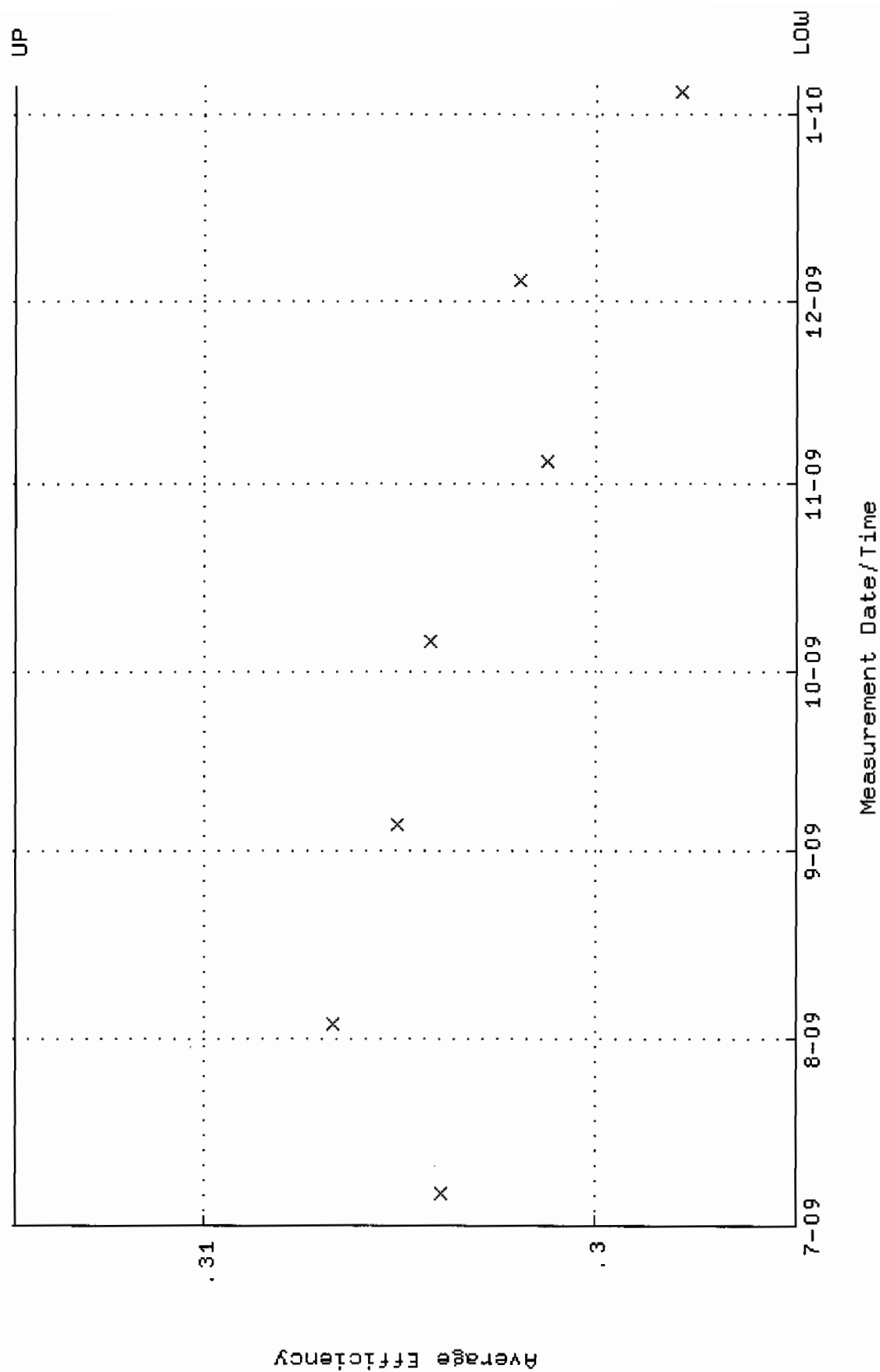
QA filename : DKA100:[ENV\_ALPHA.QA.W]W033.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.9373 through 86.9661



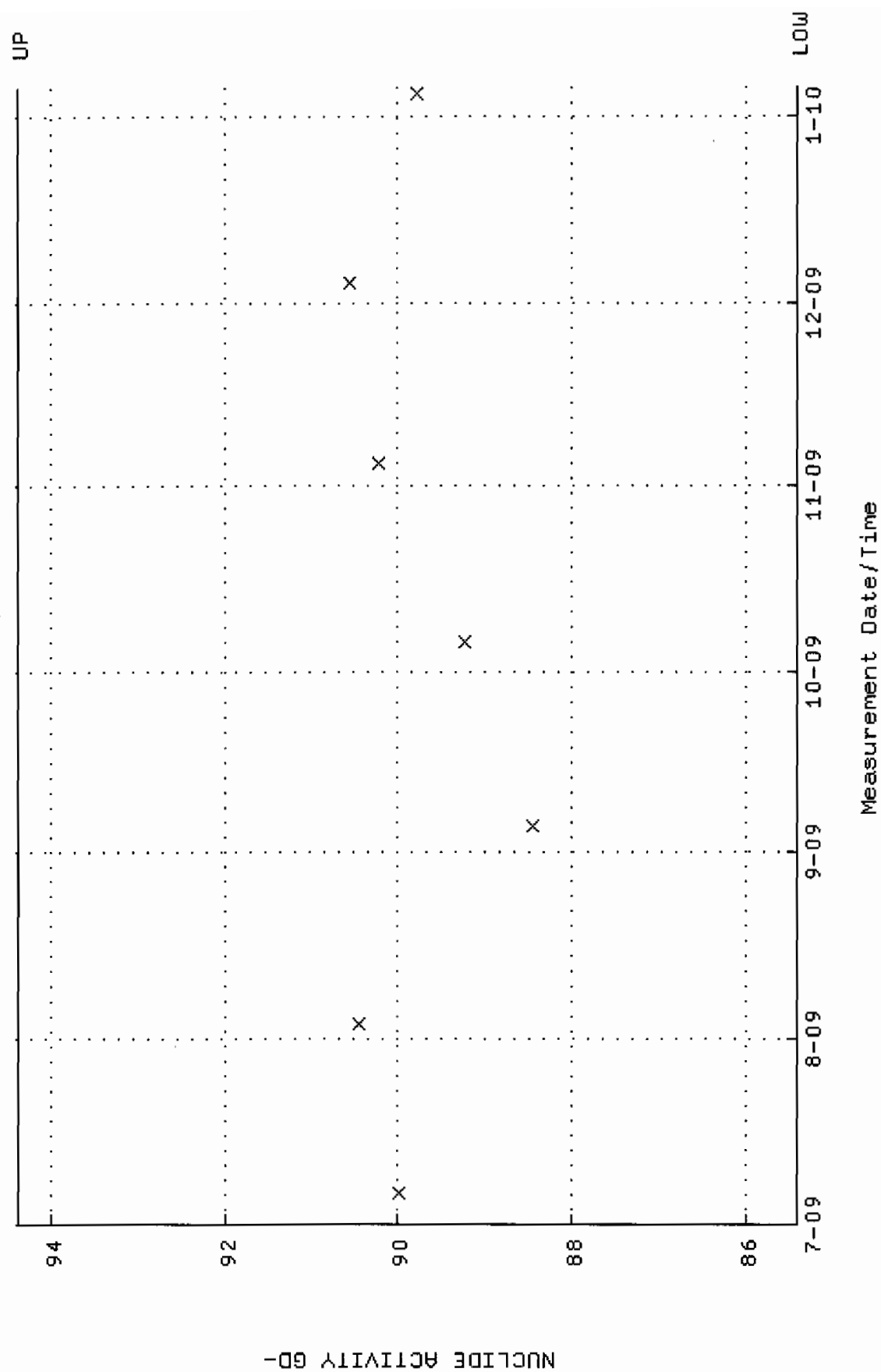
QA filename : DKA100:[ENV\_ALPHA.QA.B]B033.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]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

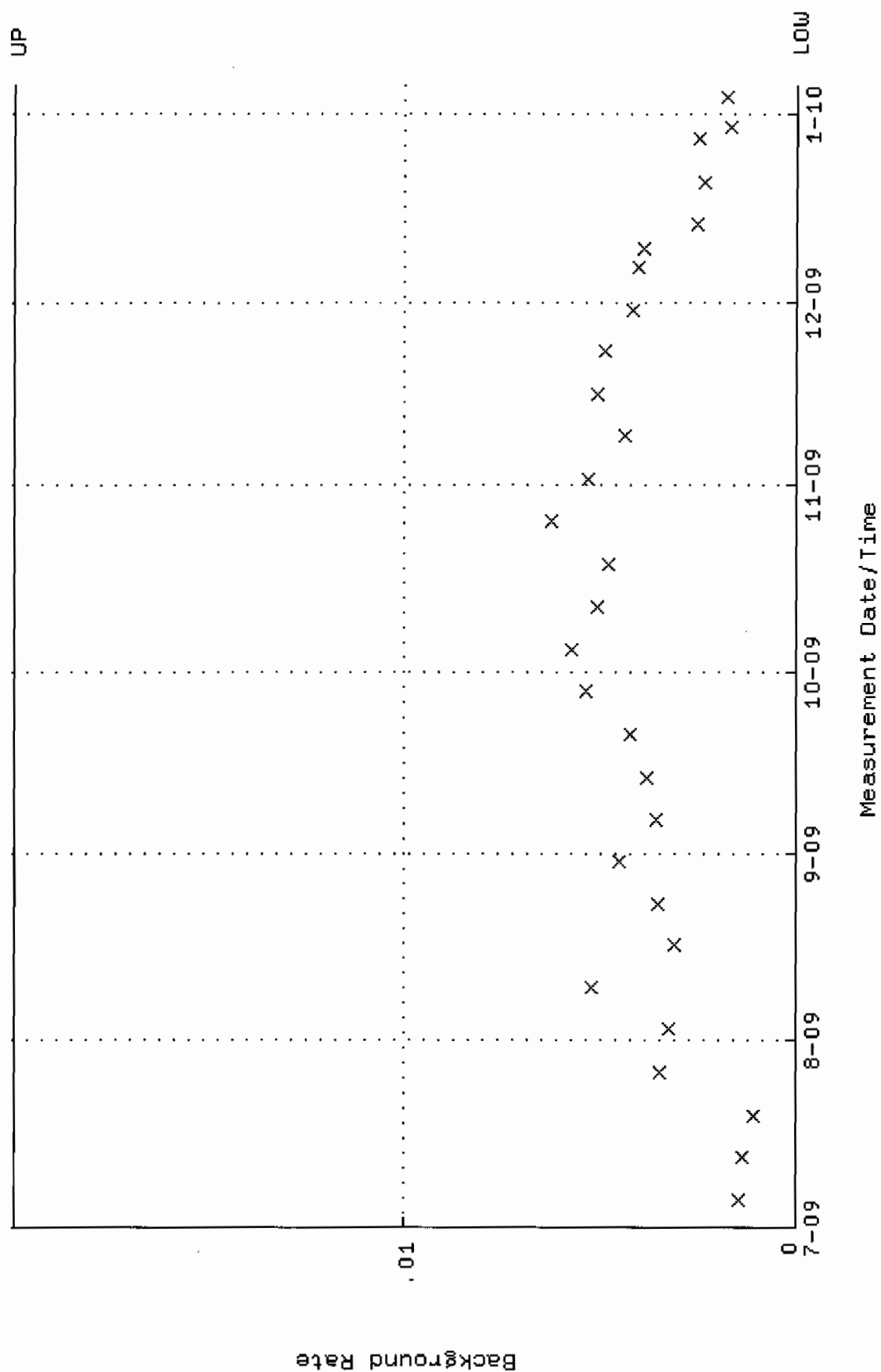


QA filename : DKA100:[ENV\_ALPHA.QA.W]W035.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.3984 through 94.3878

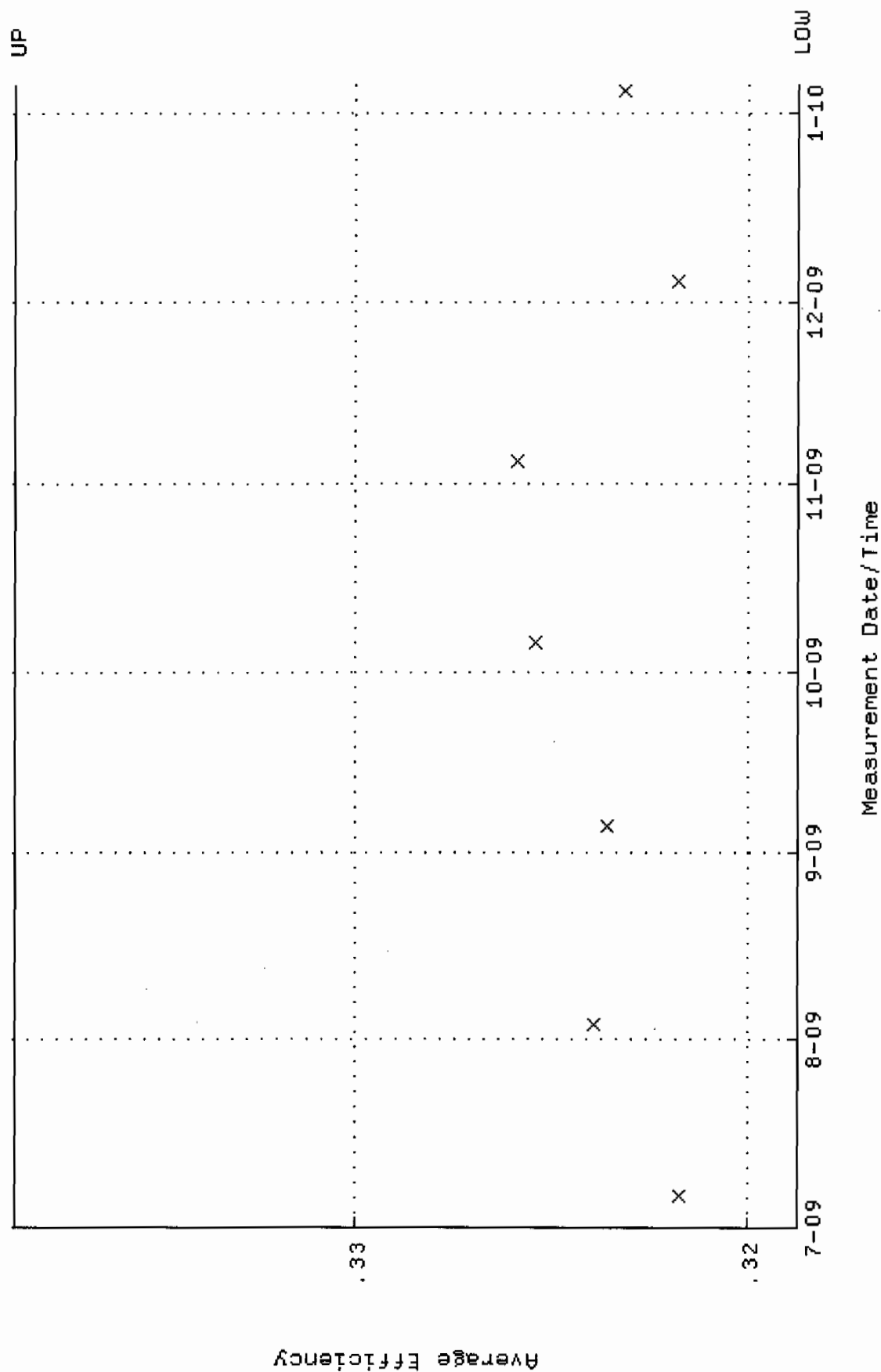




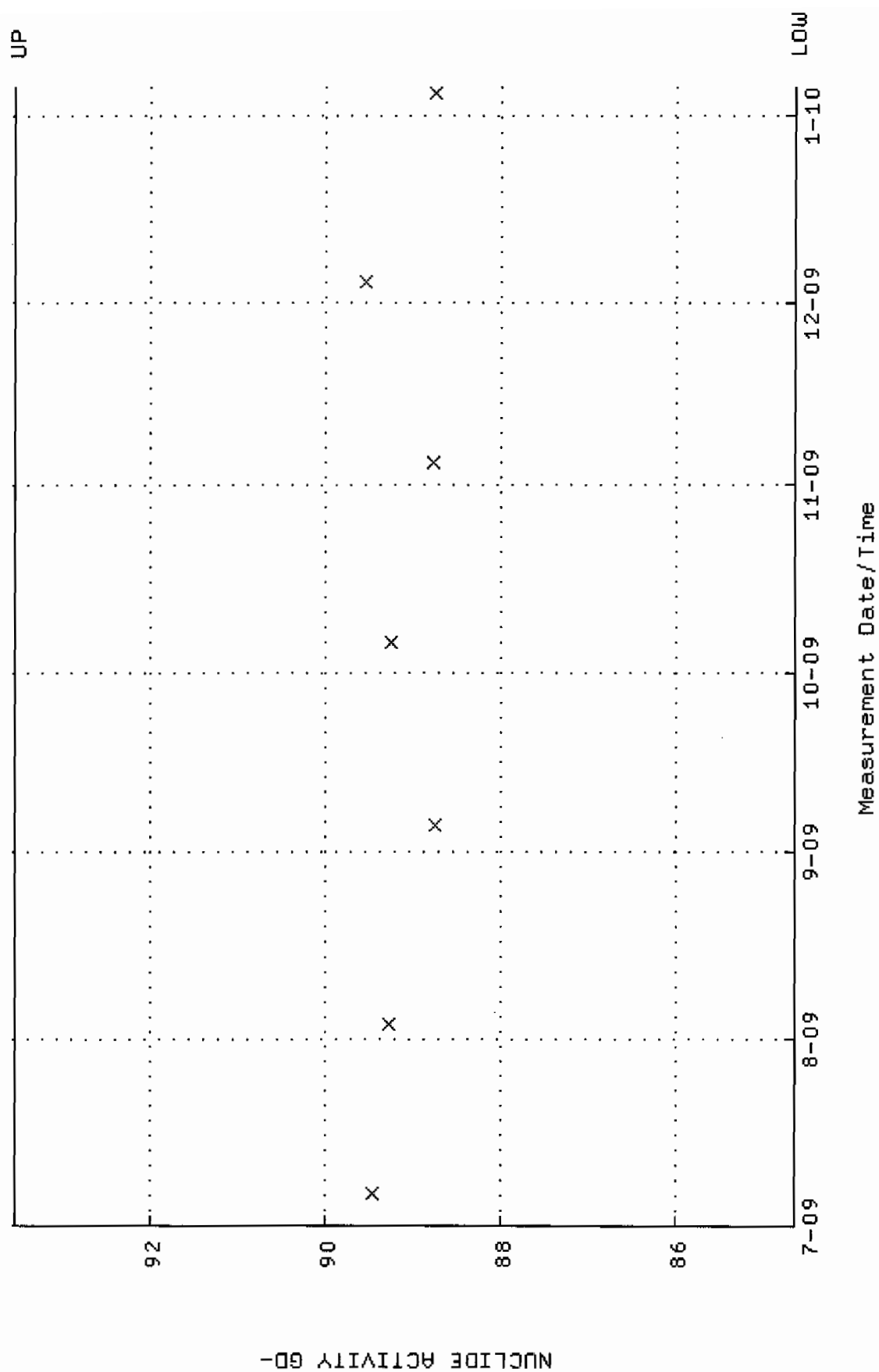
QA filename : DKA100:[ENV\_ALPHA.QA.B]B035.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



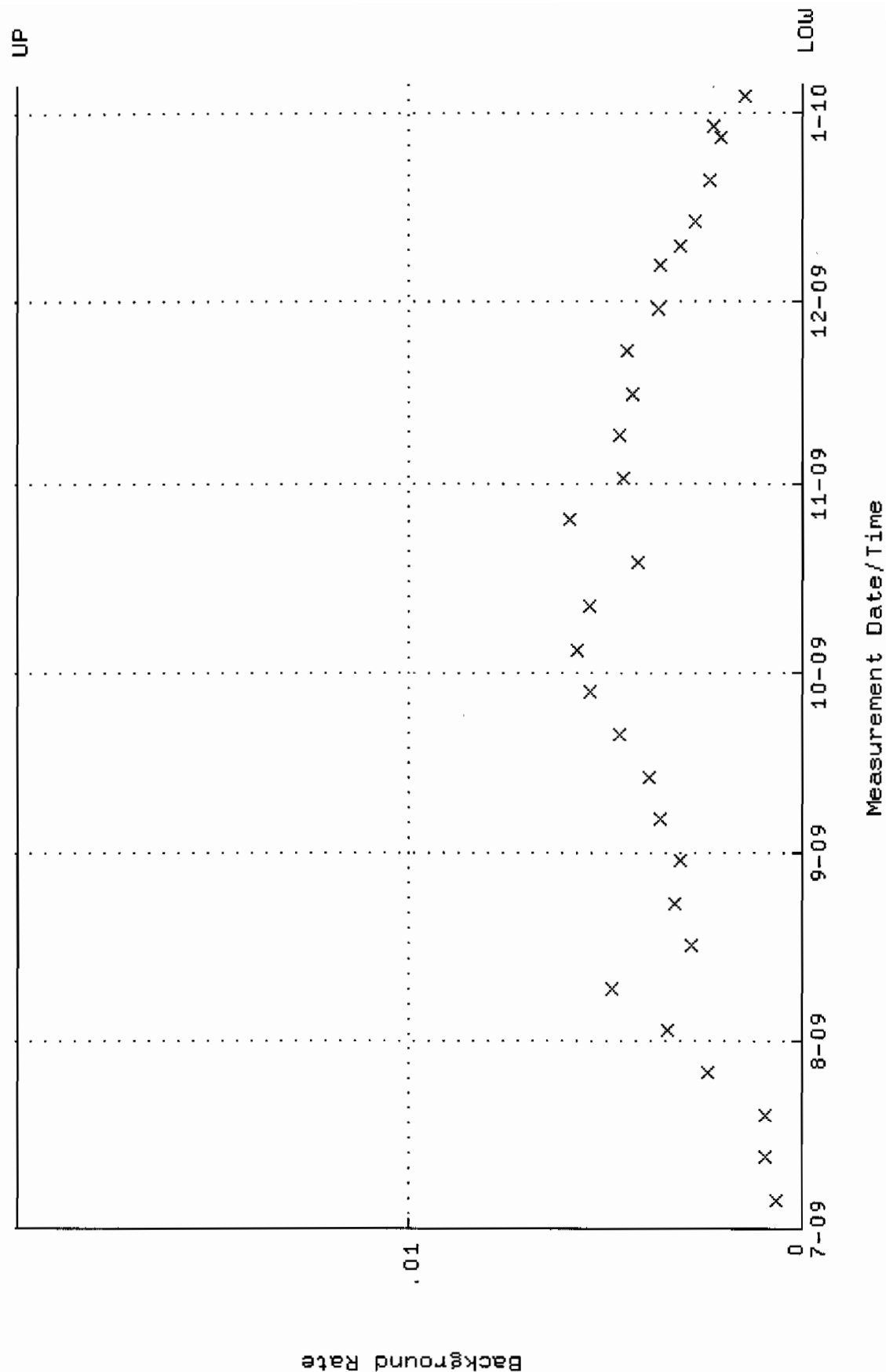
QA filename : DKA100:[ENV\_ALPHA.QA.W]U036.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.318717 through 0.338717



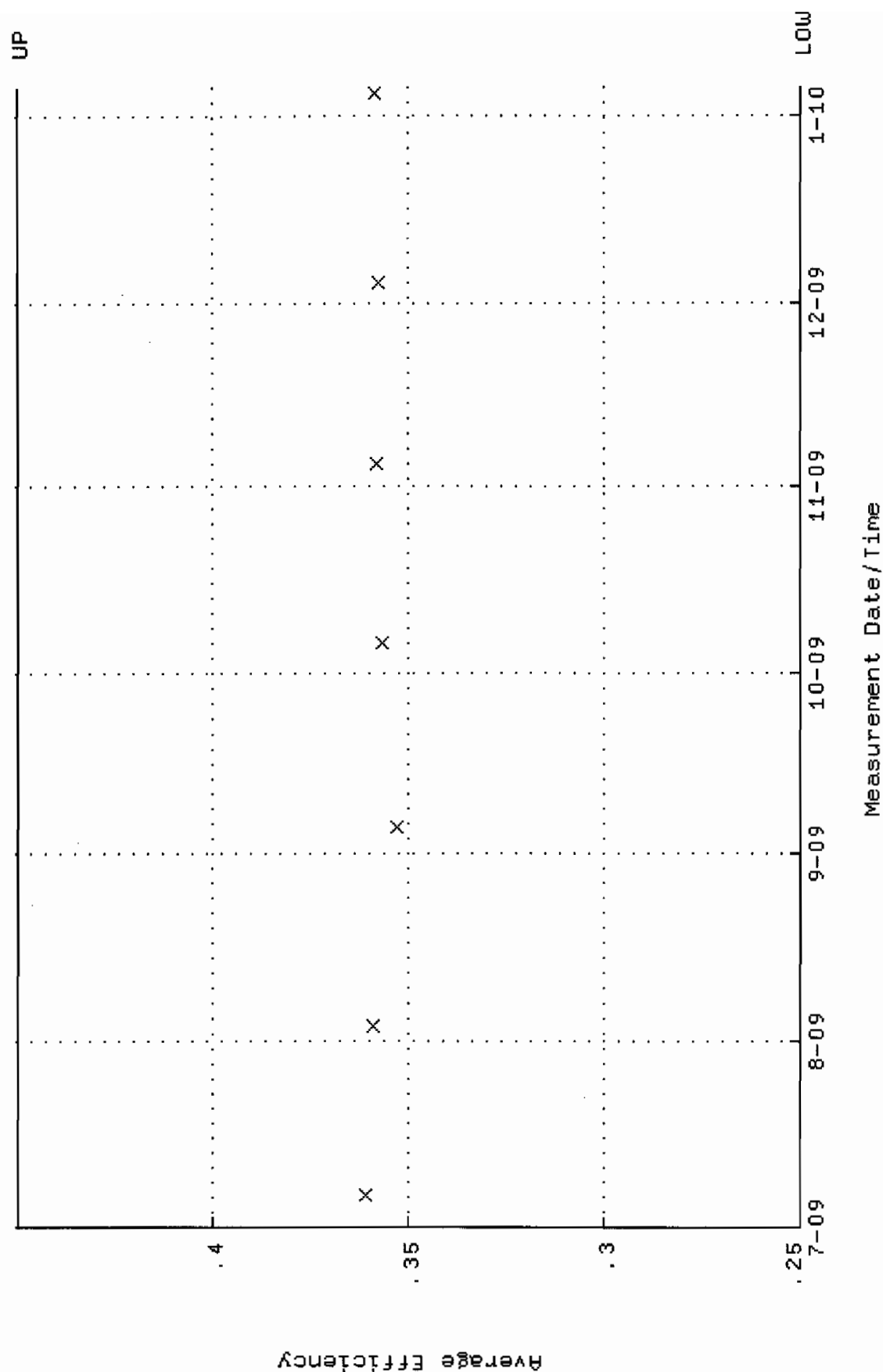
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 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.6422 through 93.5518



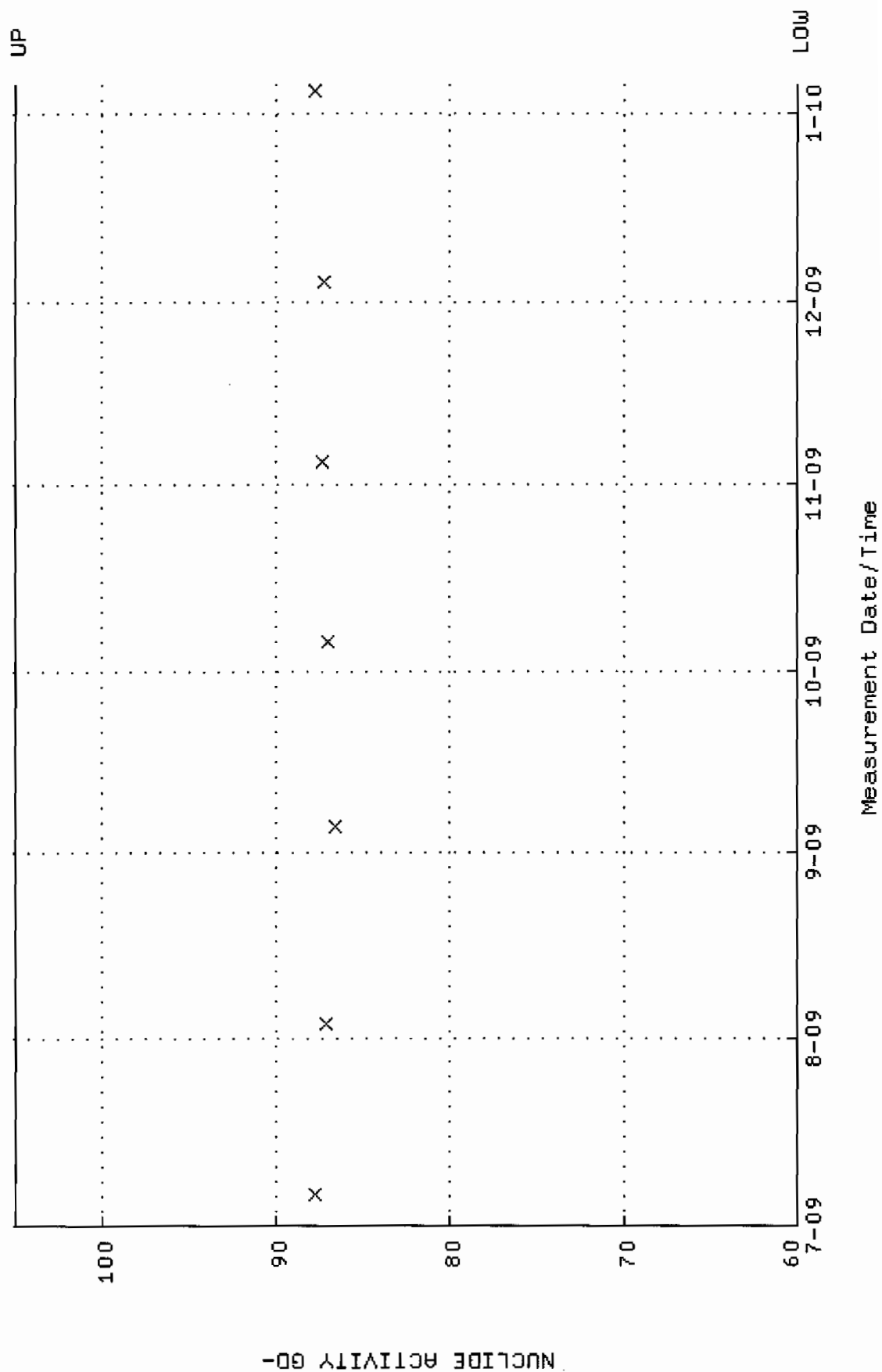
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 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:58 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



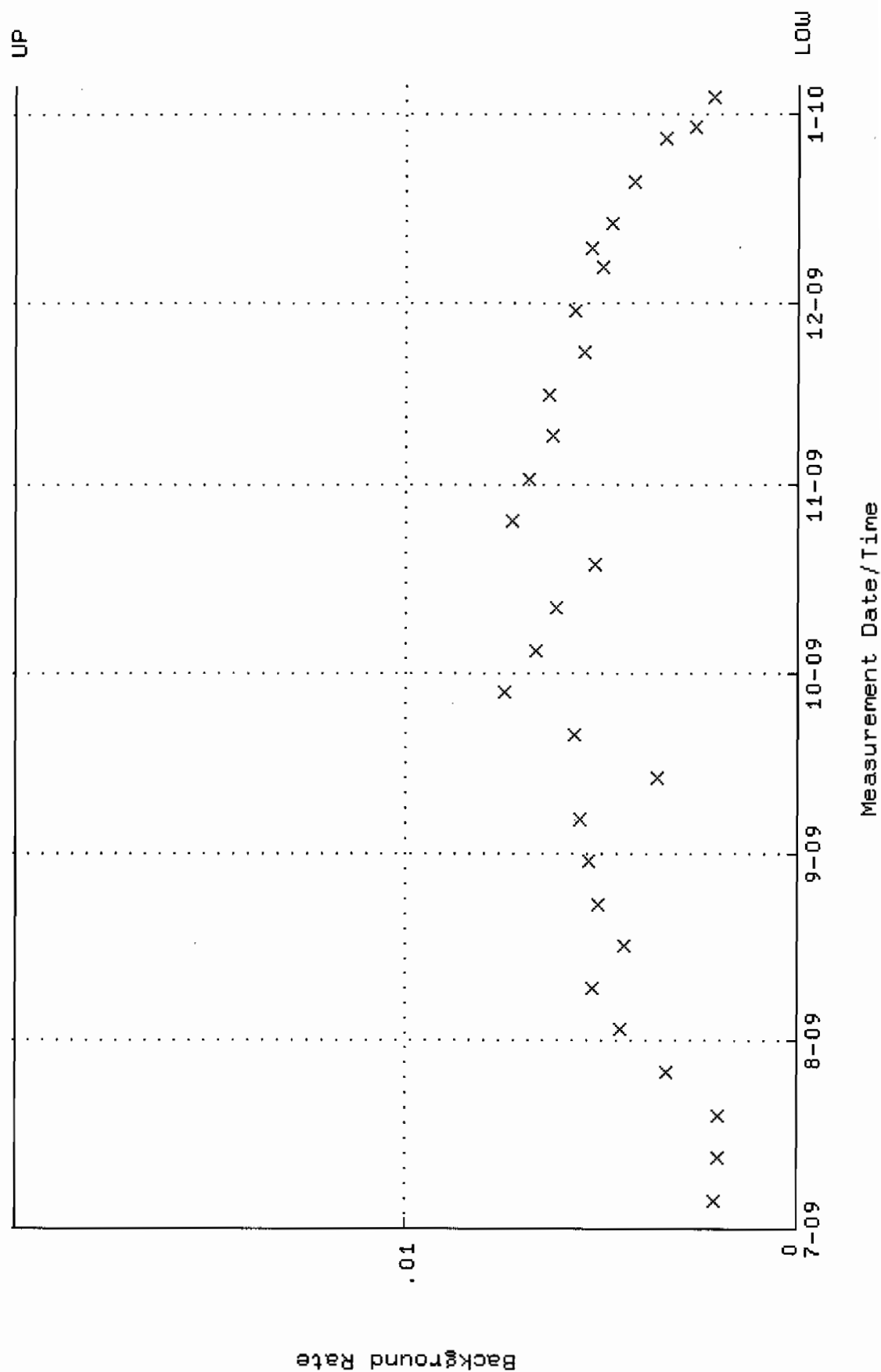
QA filename : DKA100:[ENV\_ALPHA.QA.W]W037.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



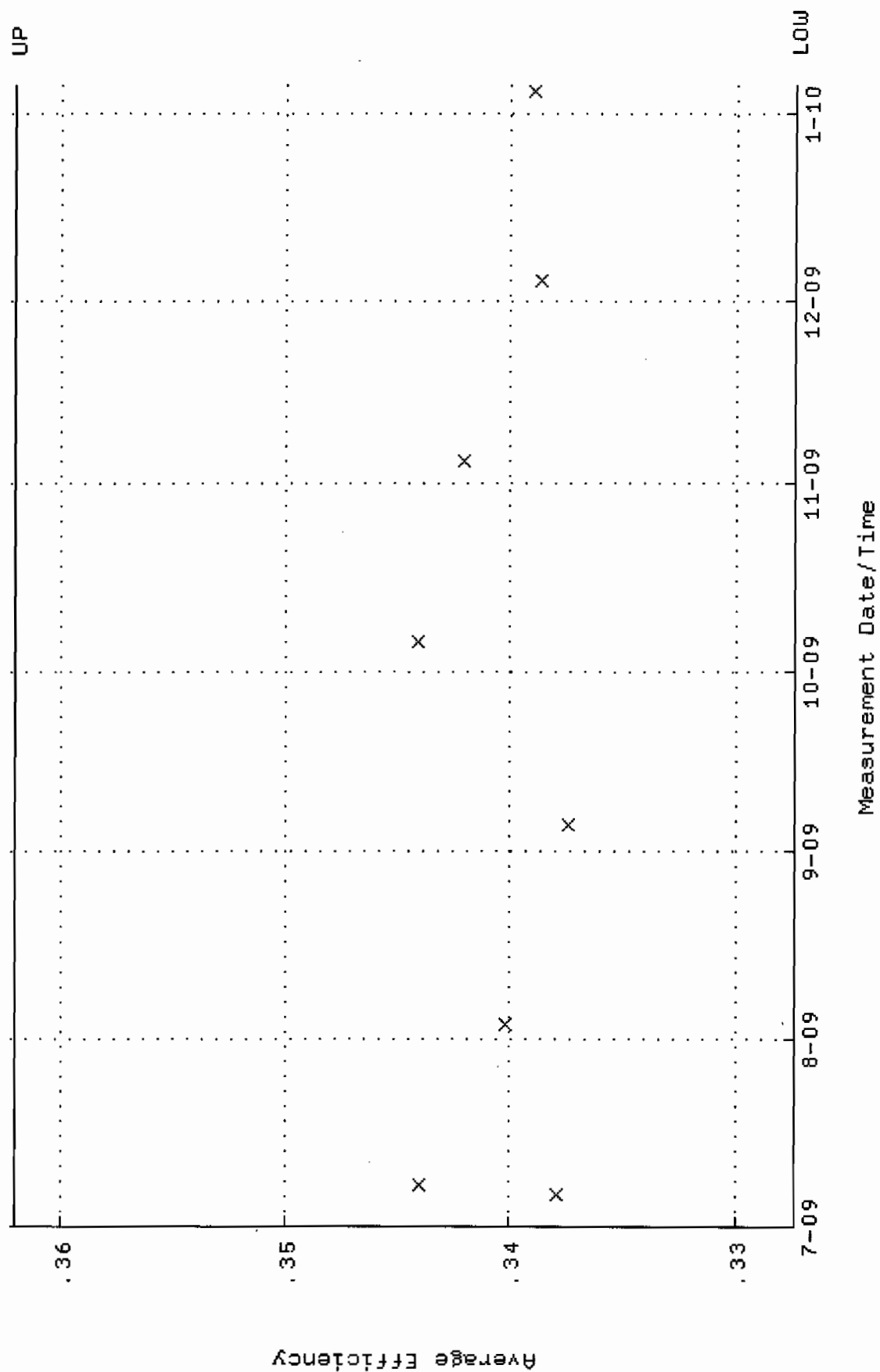
QA filename : DKA100:[ENV\_ALPHA.QA.W]W037.QAF;4  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.000



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-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

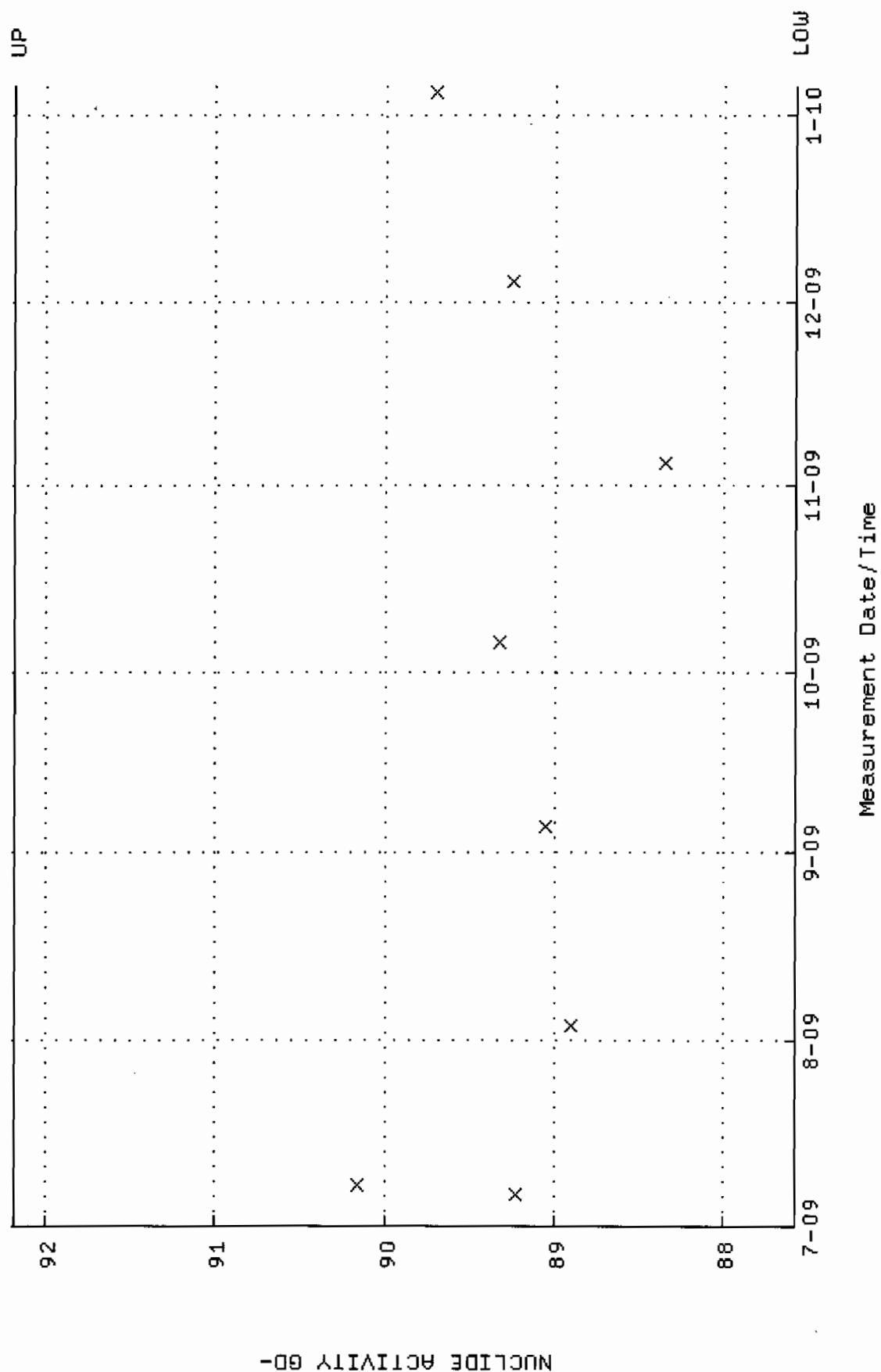


QA filename : DKA100:[ENV\_ALPHA.QA.W]W038.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.327380 through 0.362086



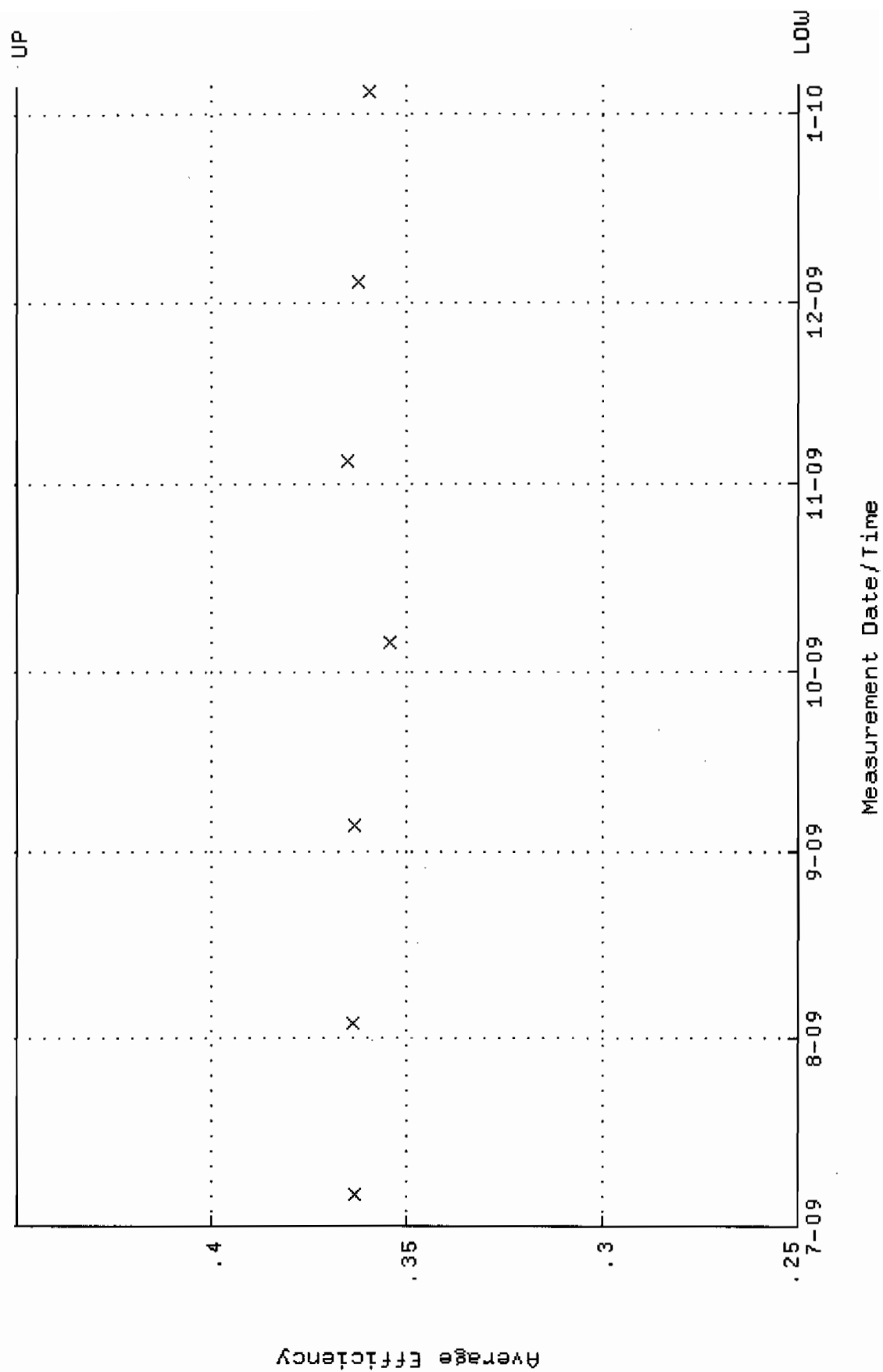


QA filename : DKA100:[ENV\_ALPHA.QA.W]W038.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.5715 through 92.1899

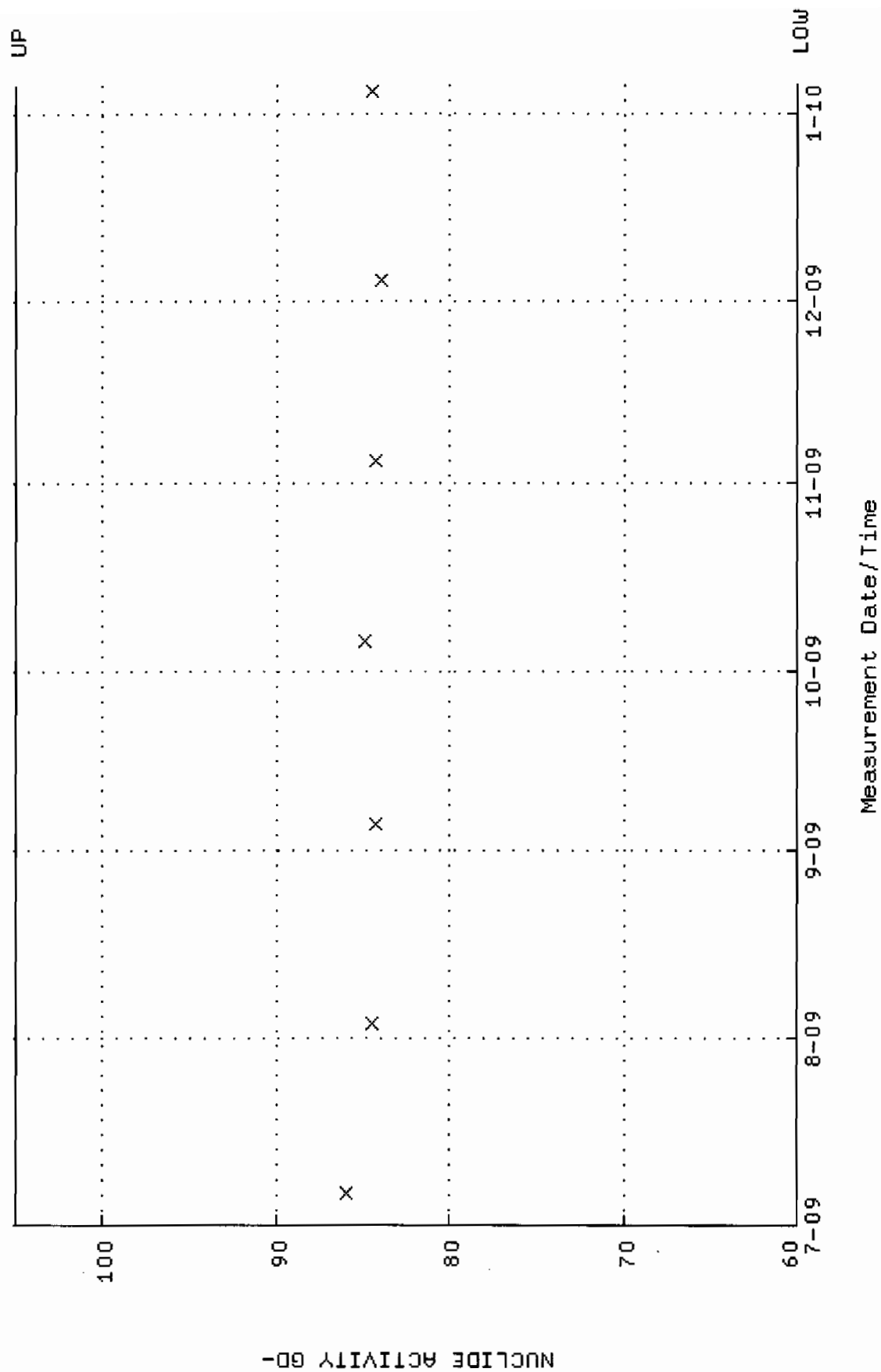




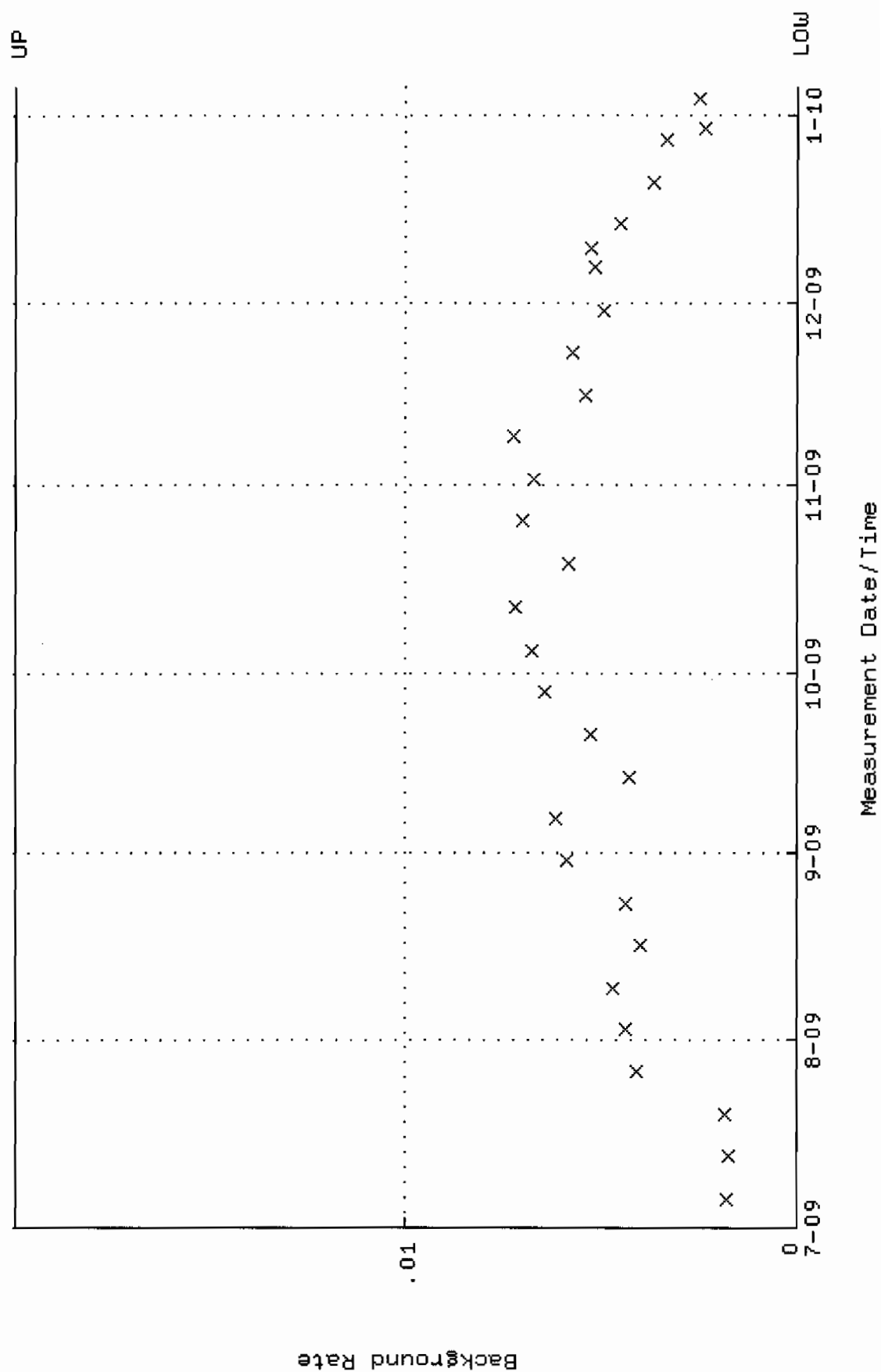
QA filename : DKA100:[ENV\_ALPHA.QA.W]W039.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000



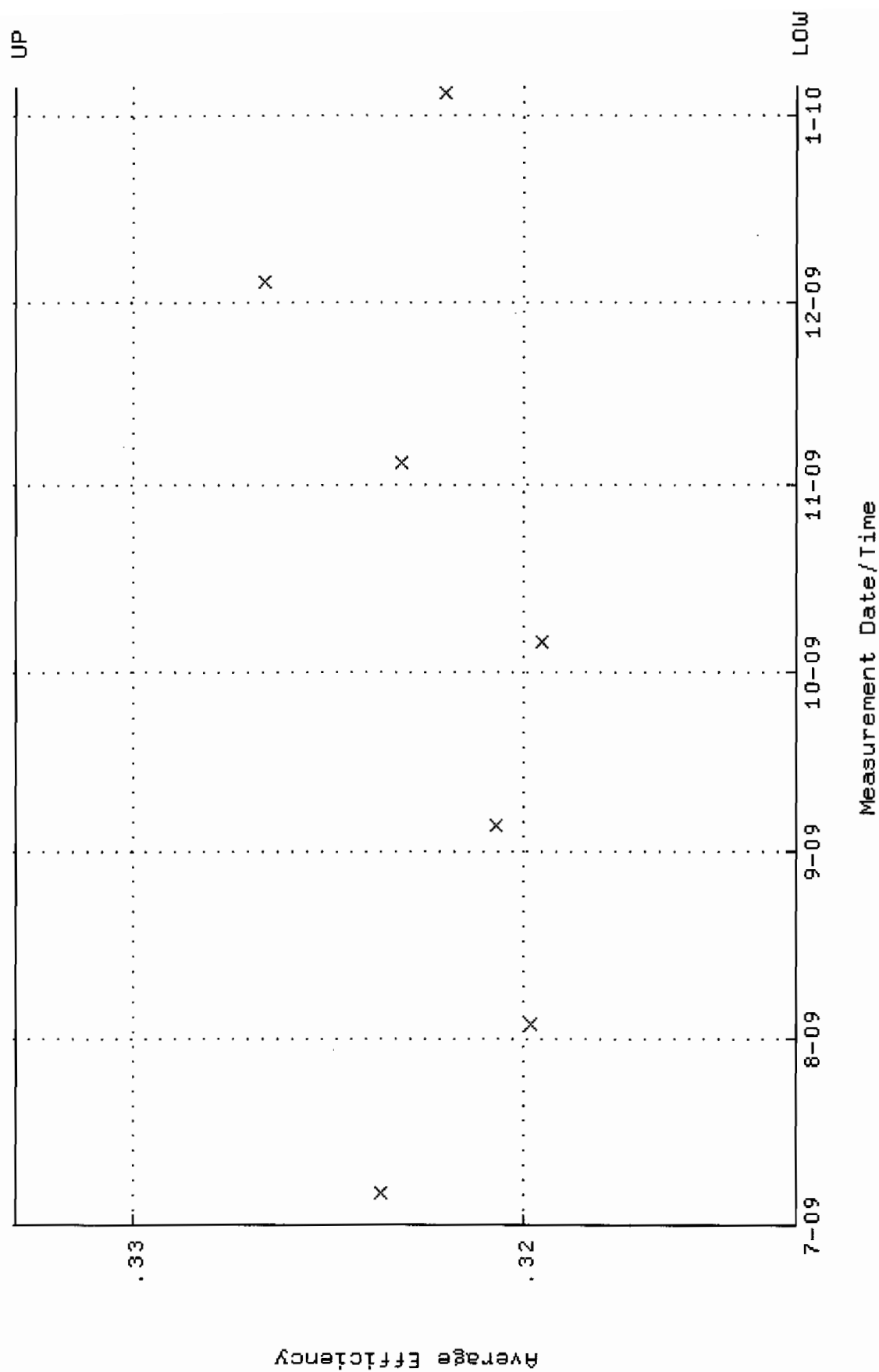
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 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.000



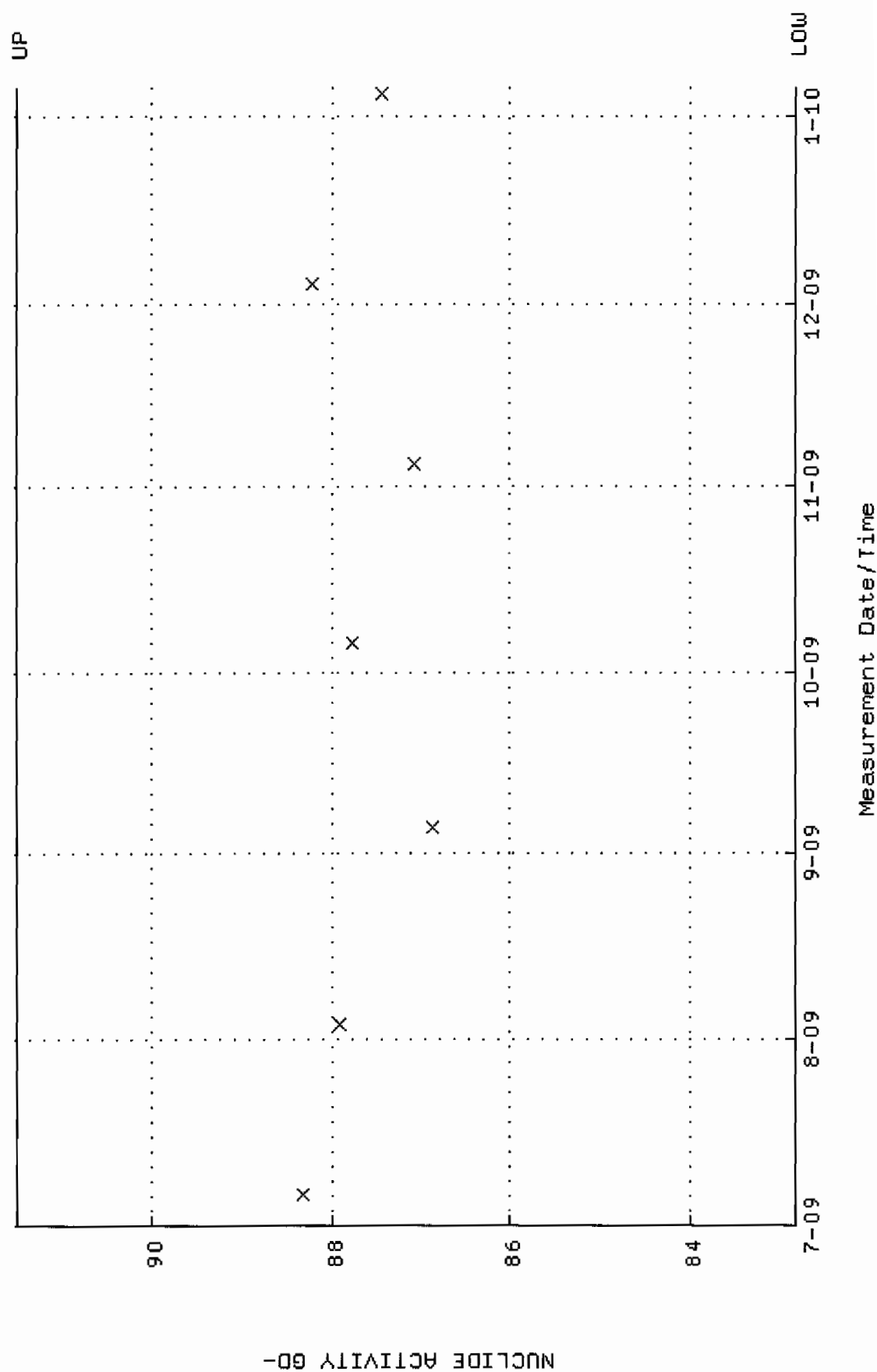
QA filename : DKA100:[ENV\_ALPHA.QA.B]B039.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



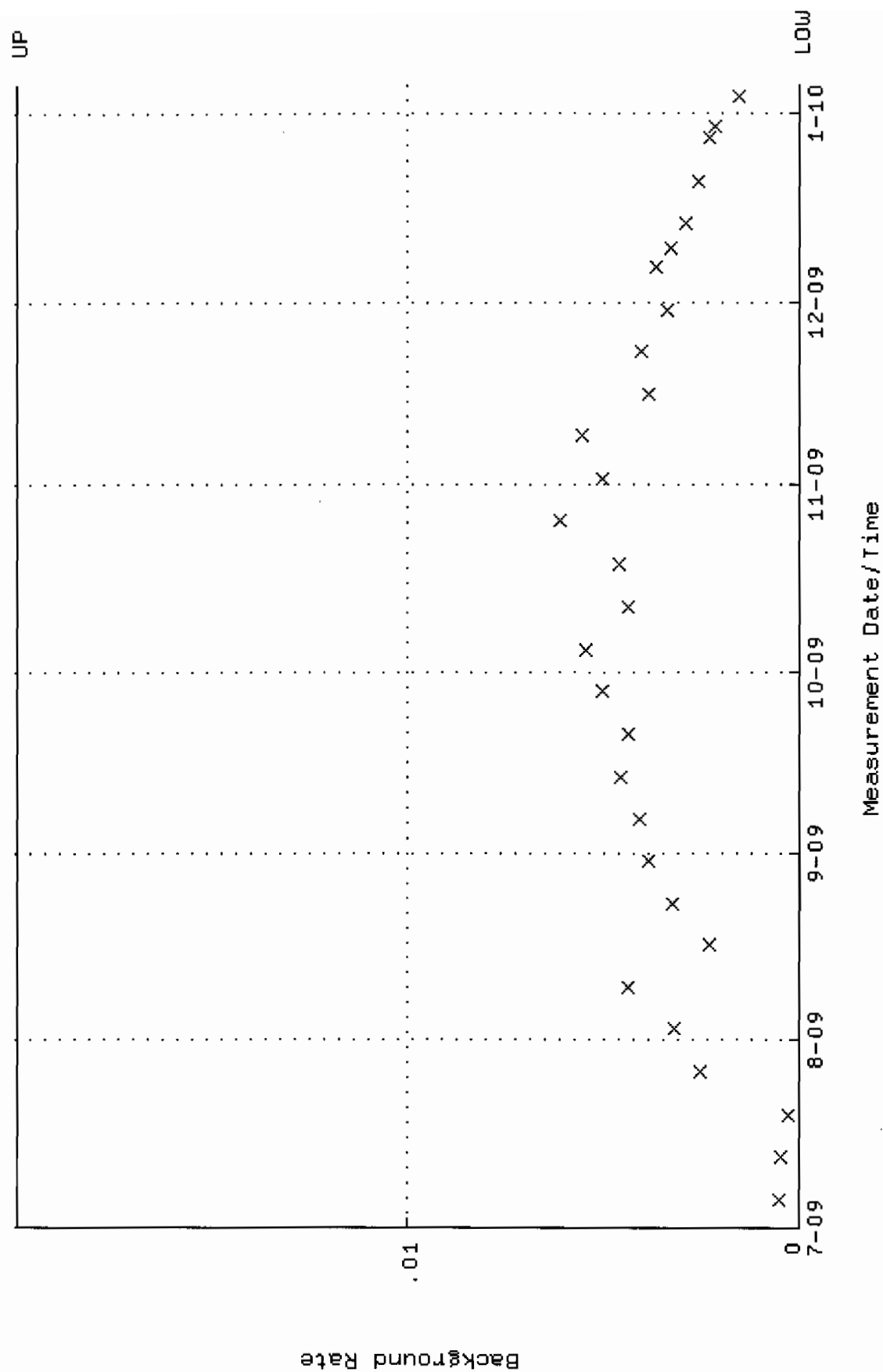
QA filename : DKA100:[ENV\_ALPHA.QA.W]W040.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.313016 through 0.333016



QA filename : DKA100:[ENVY\_ALPHA.QA.W]W040.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: 82.8065 through 91.5229

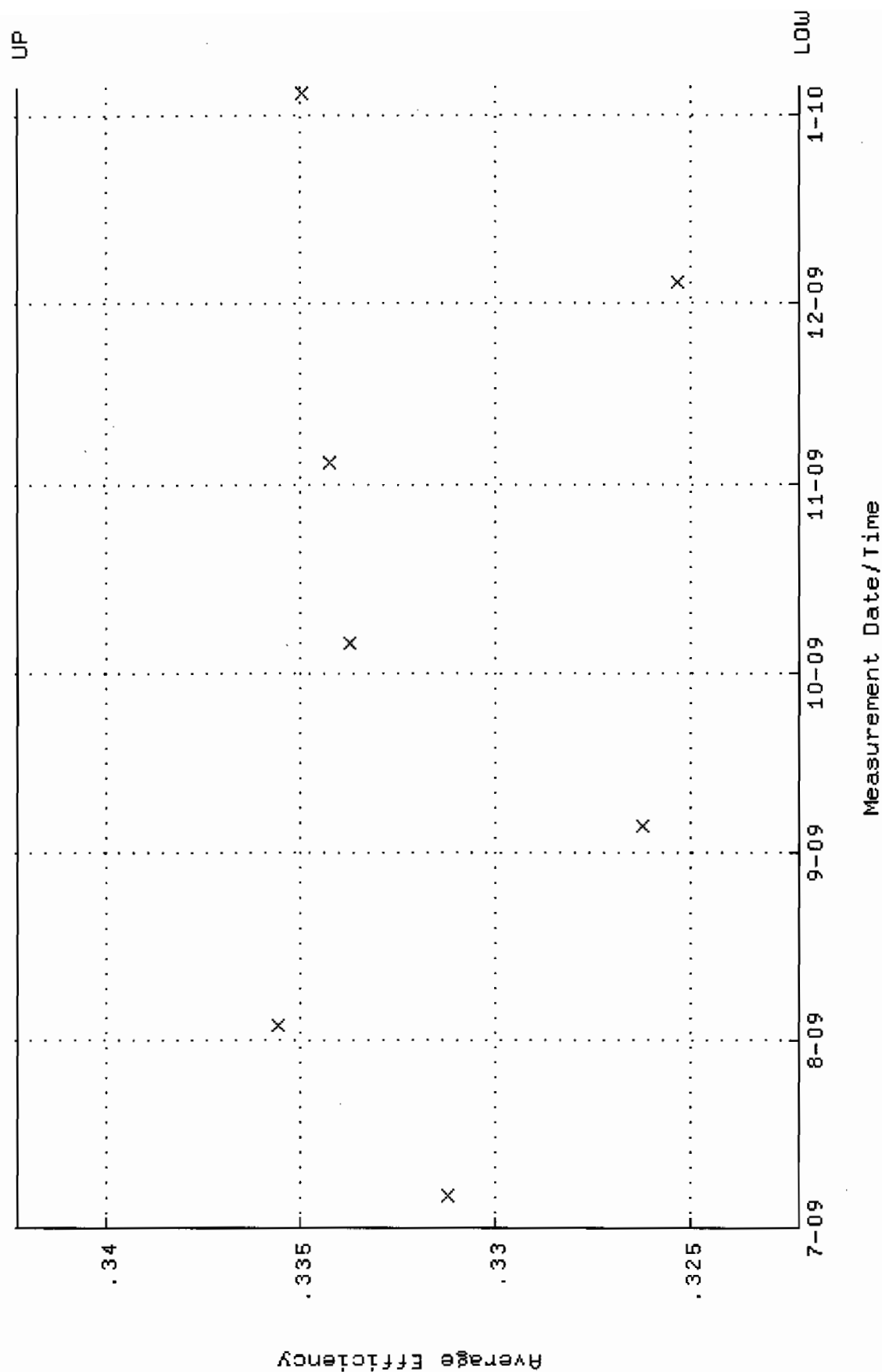


QA filename : DKA100:[ENV\_ALPHA,QA,B]B040.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

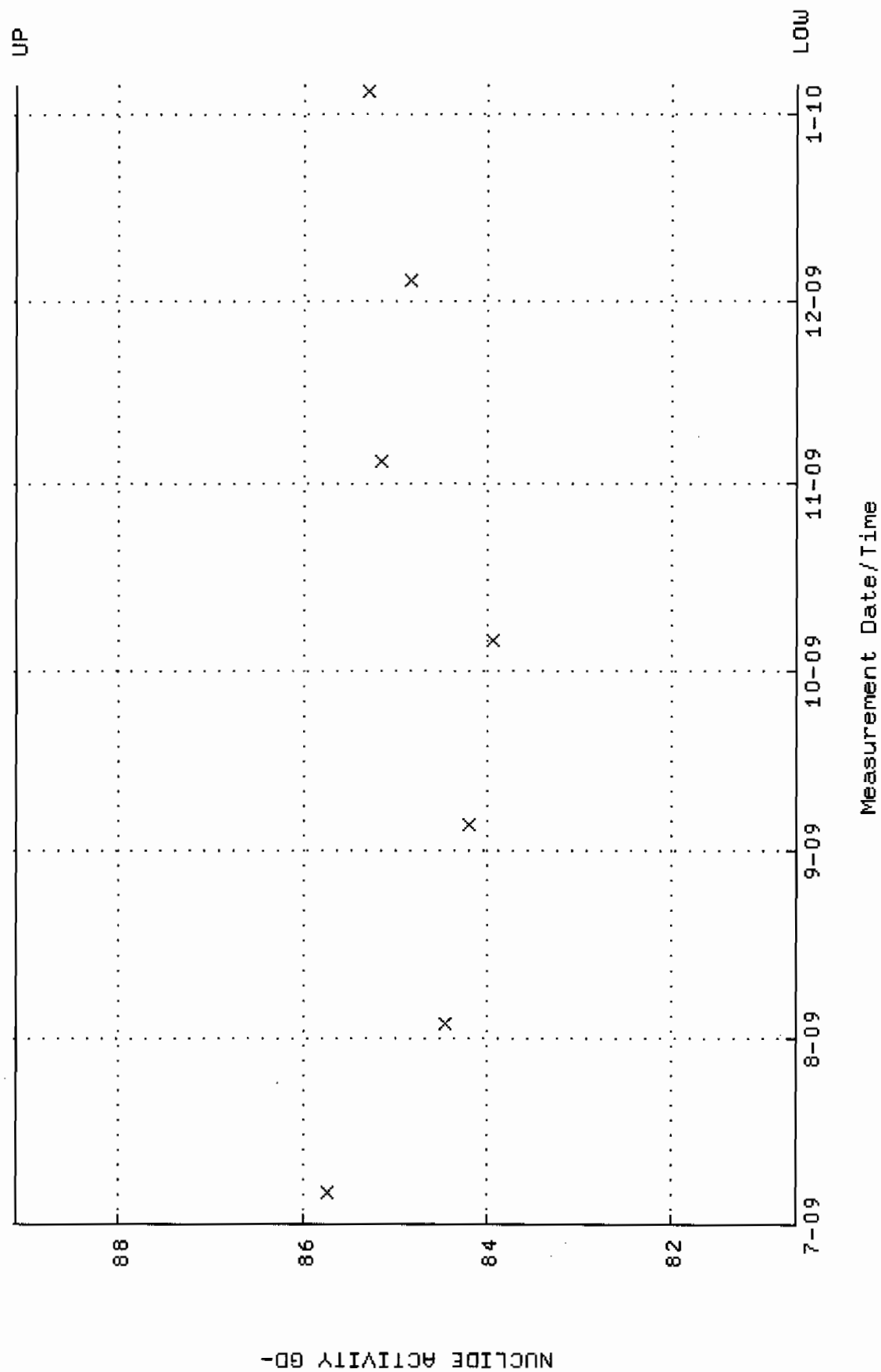




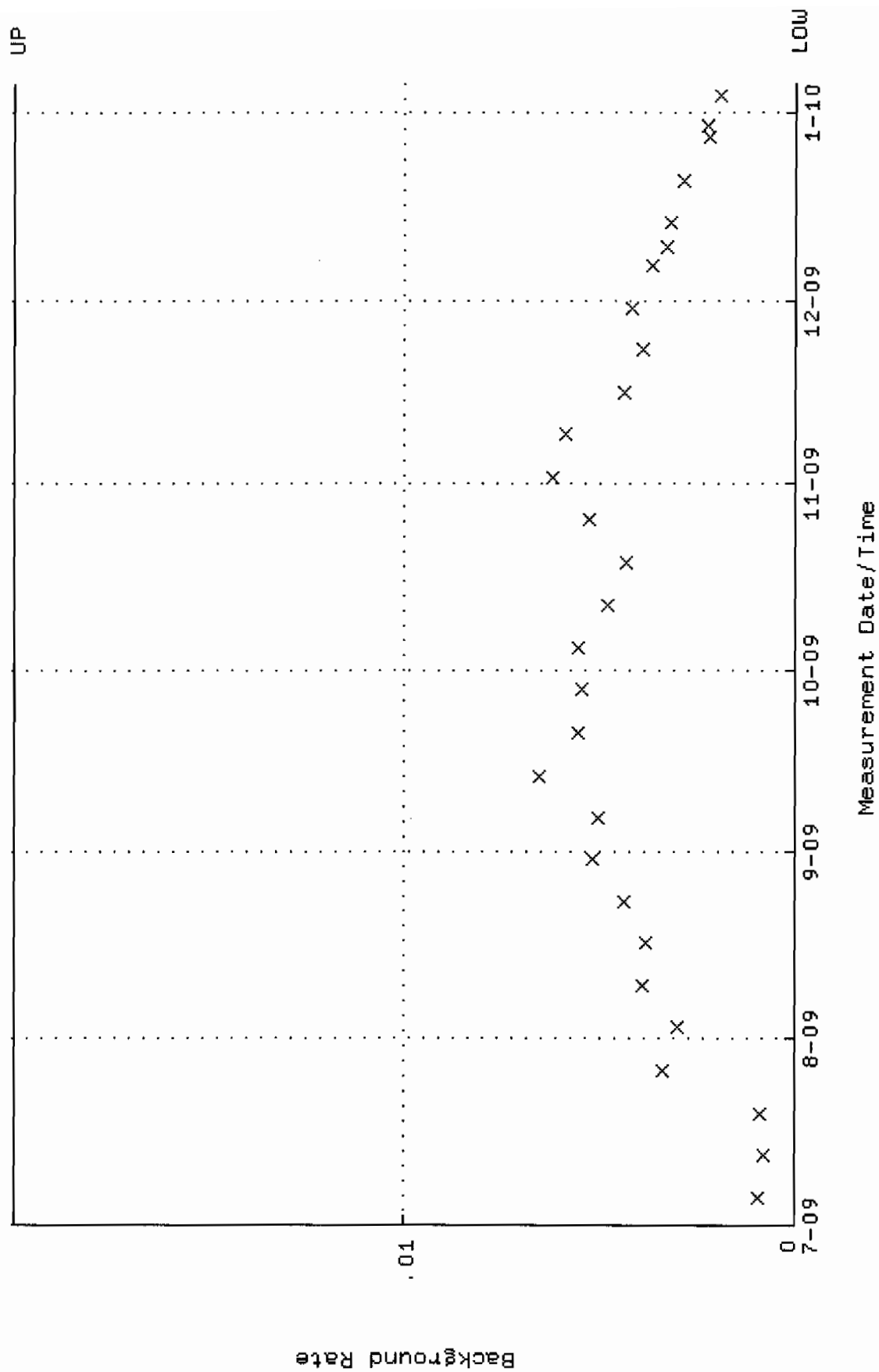
QA filename : DKA100:[ENV\_ALPHA.QA.W]U042.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.322243 through 0.342243



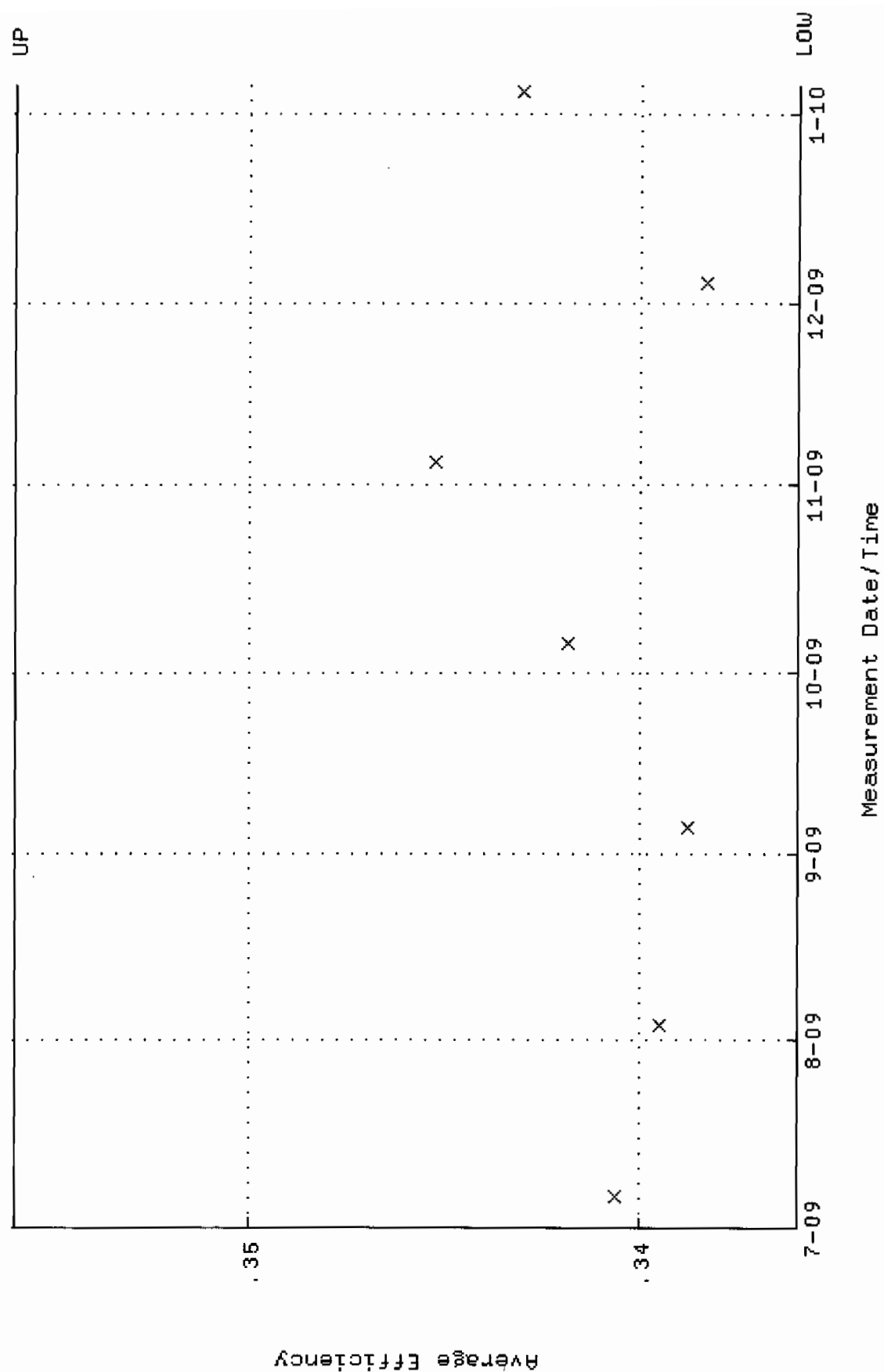
QA filename : DKA100:[ENV\_ALPHA.QA.W]W042.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:16 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 80.6389 through 89.1273



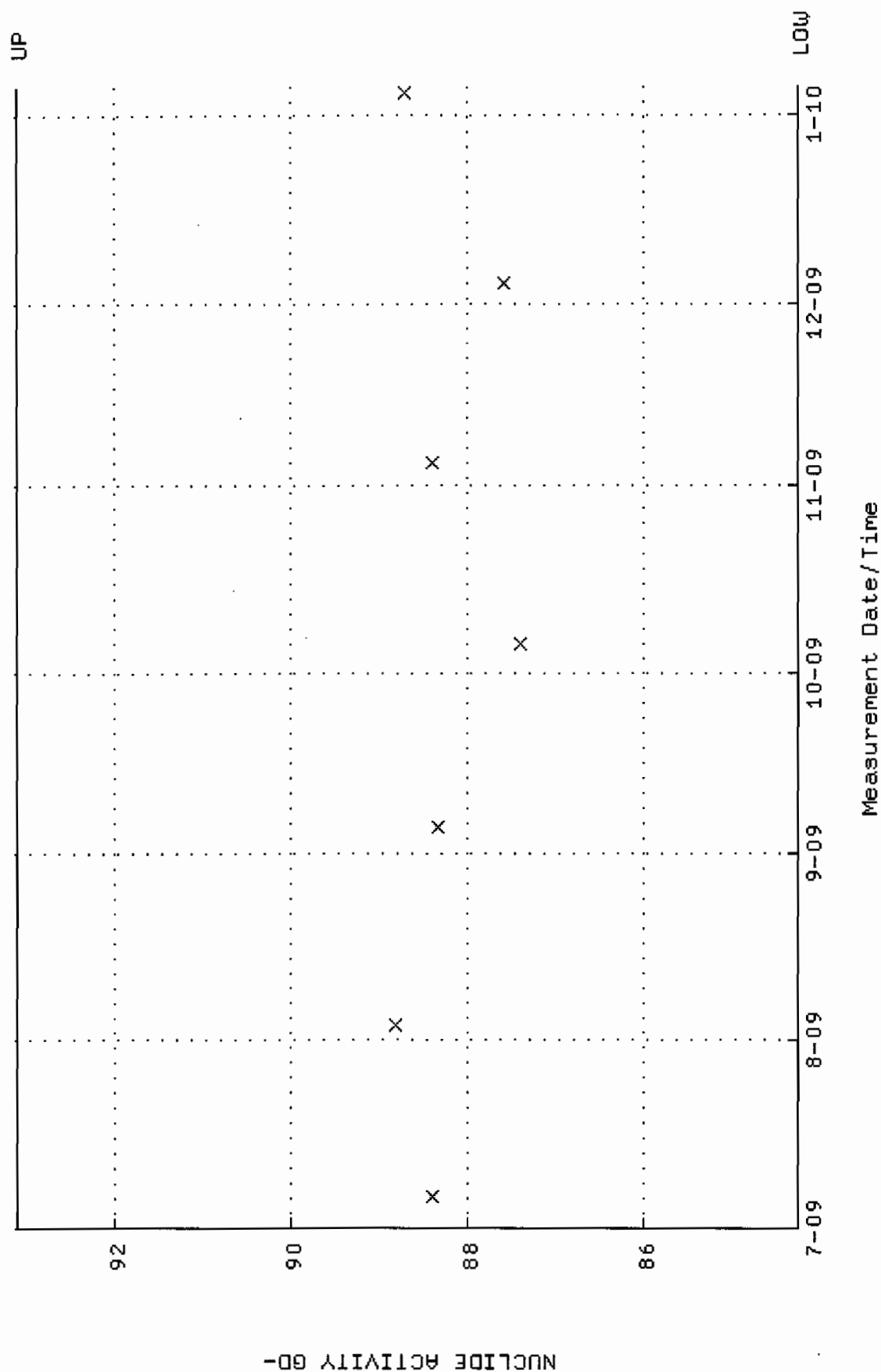
QA filename : DKA100:[ENV\_ALPHA.QA.B]B042.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]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



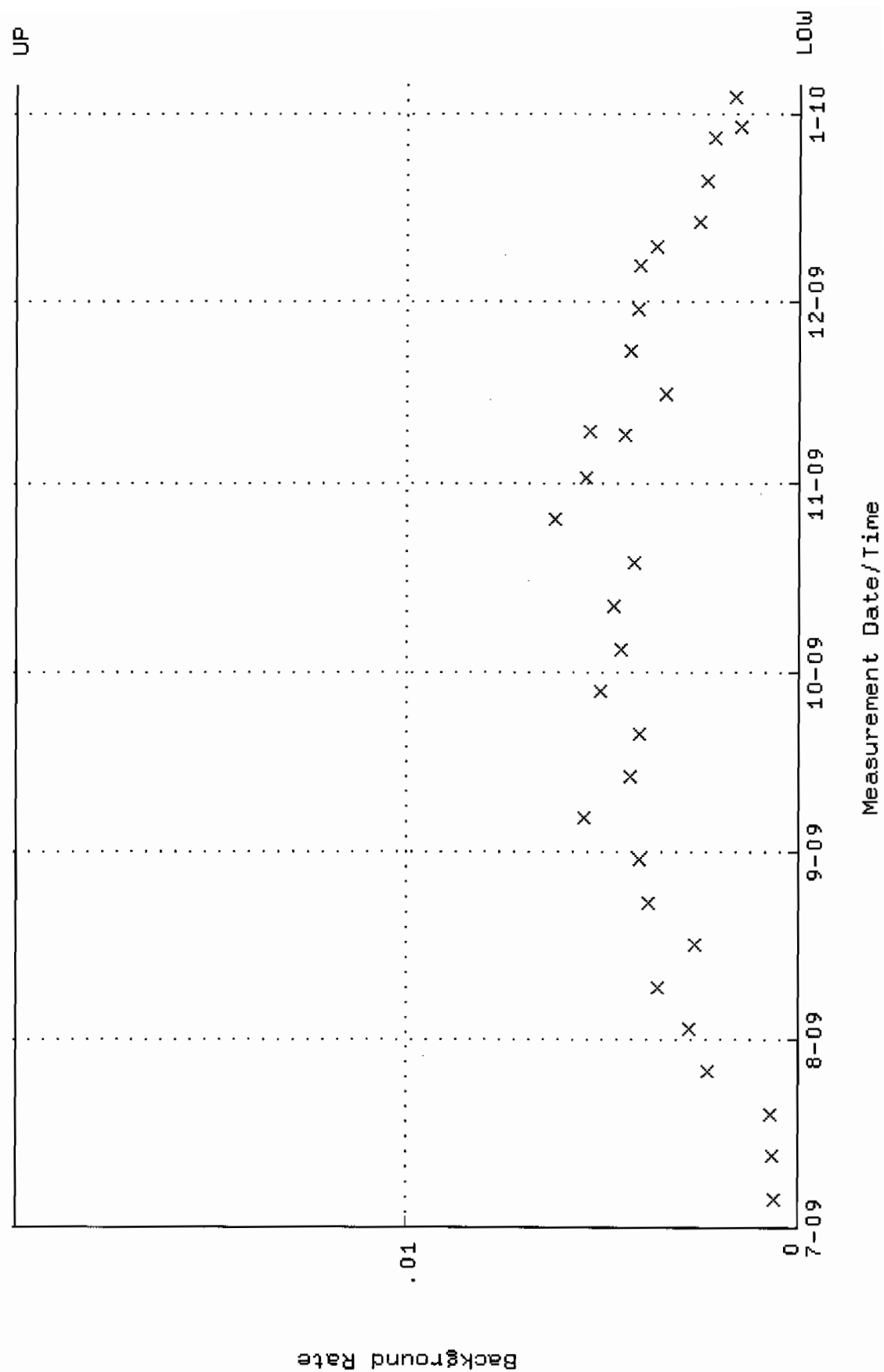
QA filename : DKA100:[ENV\_ALPHA.QA.W]W043.QAF;102  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.2440 through 93.1118



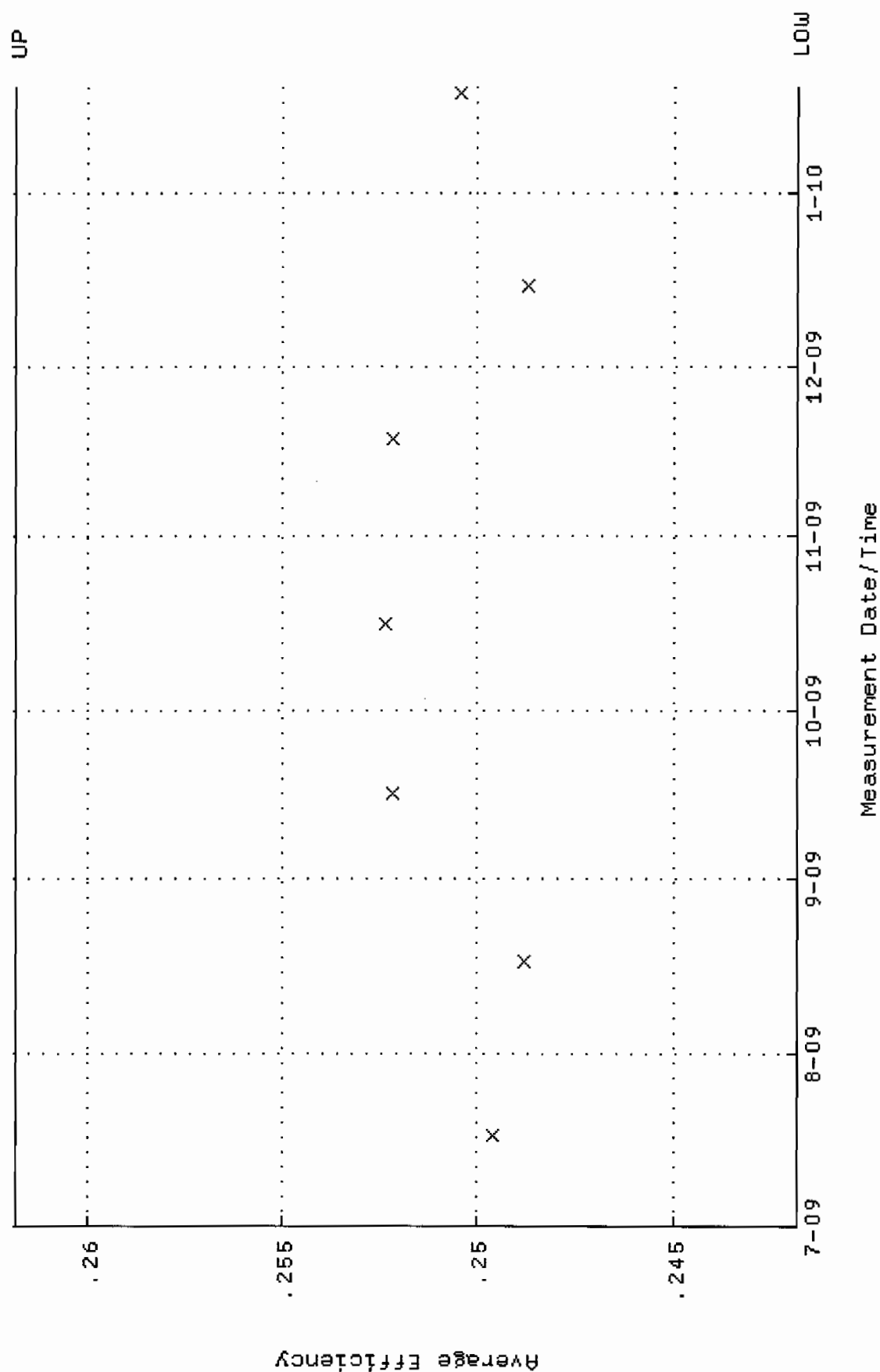
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QA filename      : DKA100:[ENV-ALPHA.QA.B]B043.QAF;1
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

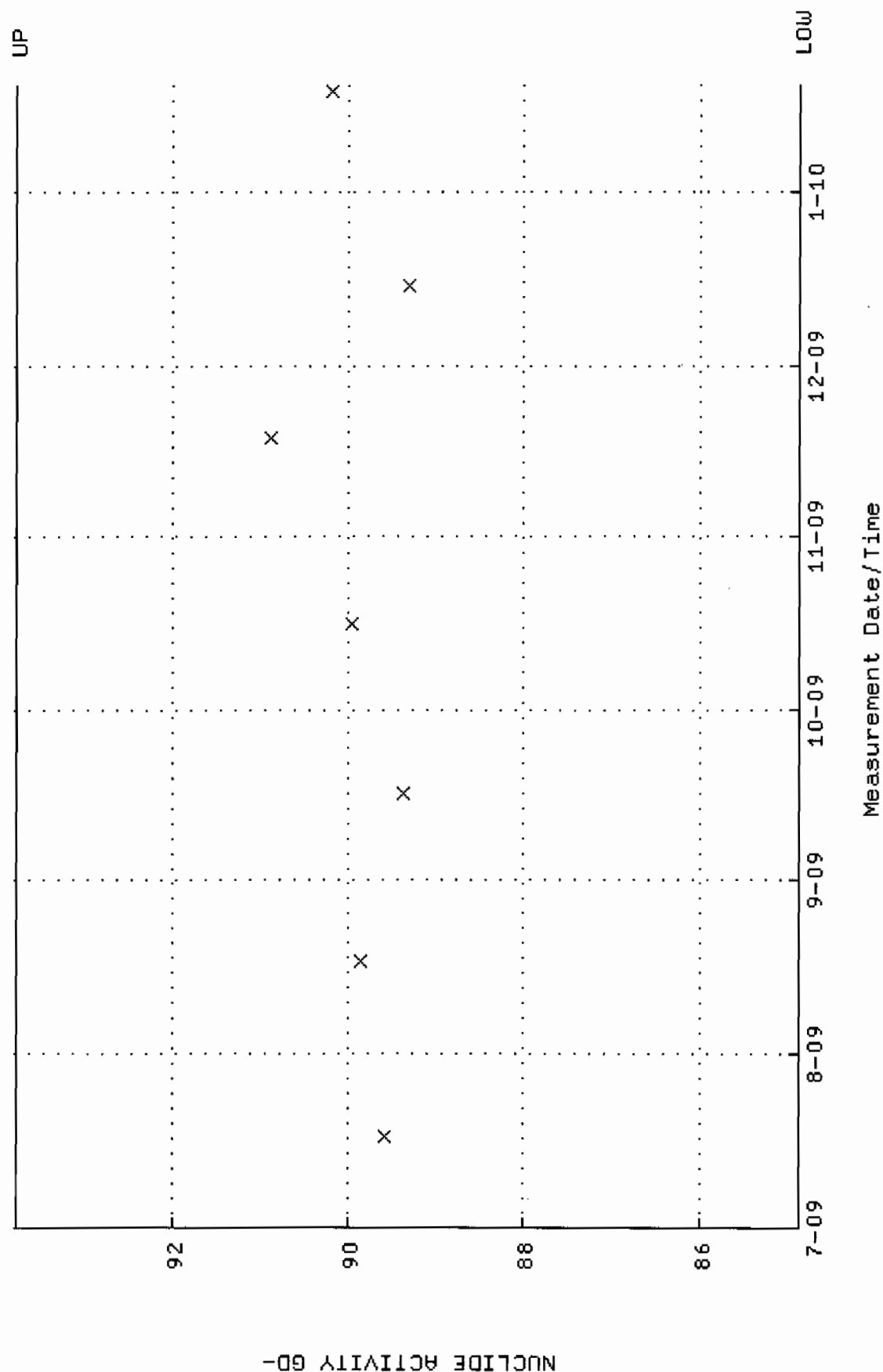
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QA filename : DKA100:[ENV\_ALPHA,QA.W]W146.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:24 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.241831 through 0.261831

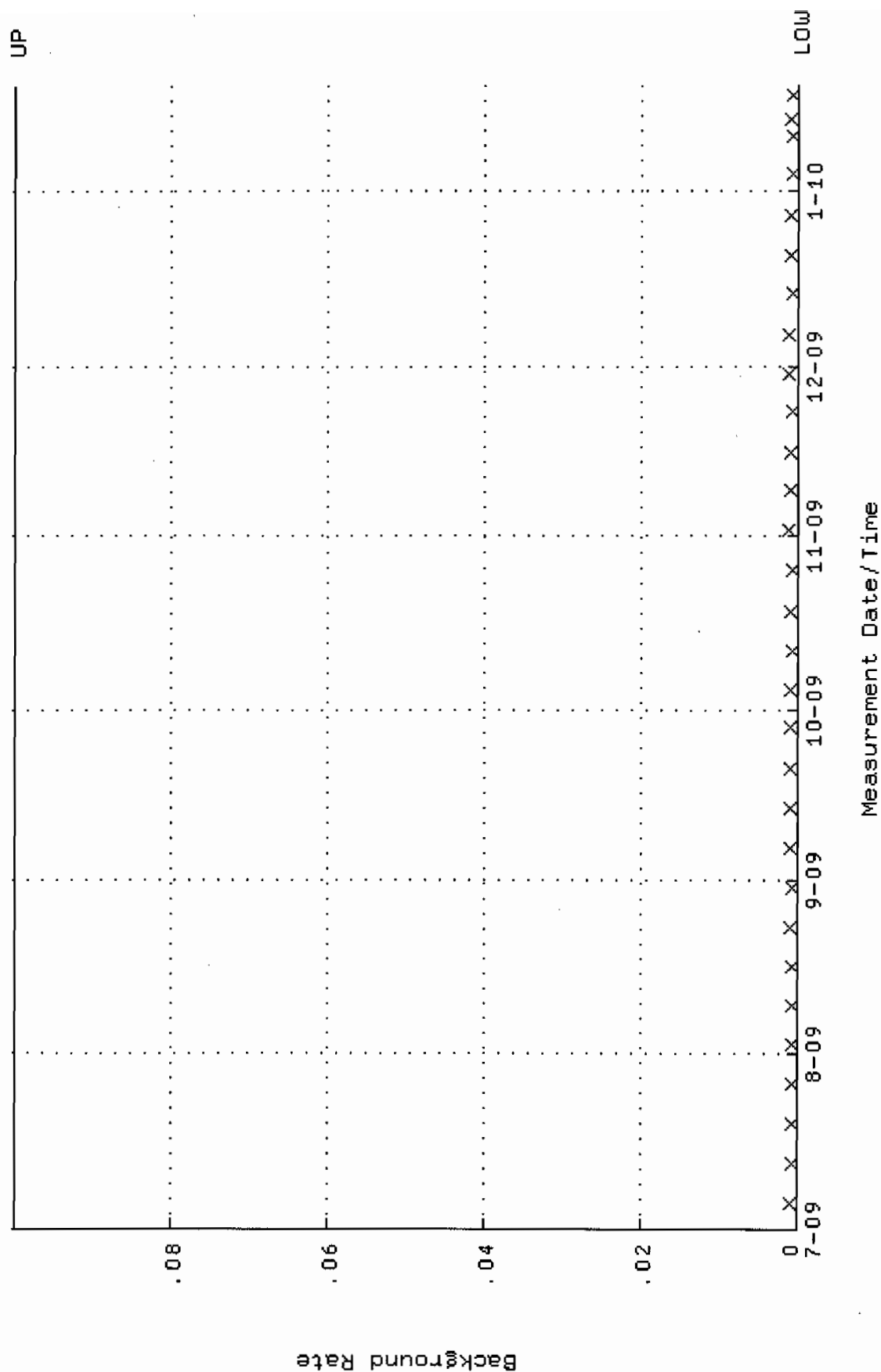


QA filename : DKA100:[ENV\_ALPHA.QA.W]W146.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:24 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.8578 through 93.7902

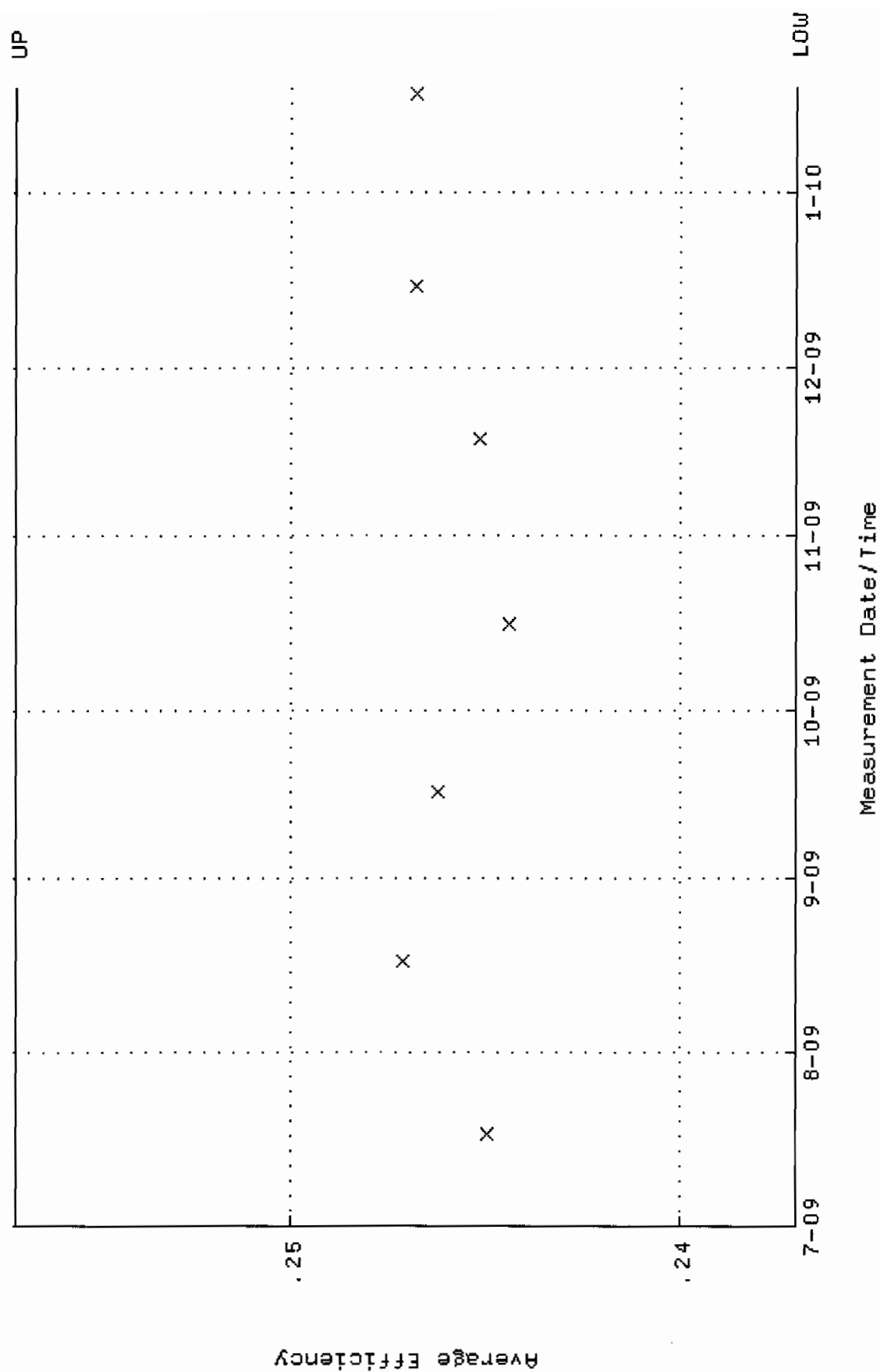




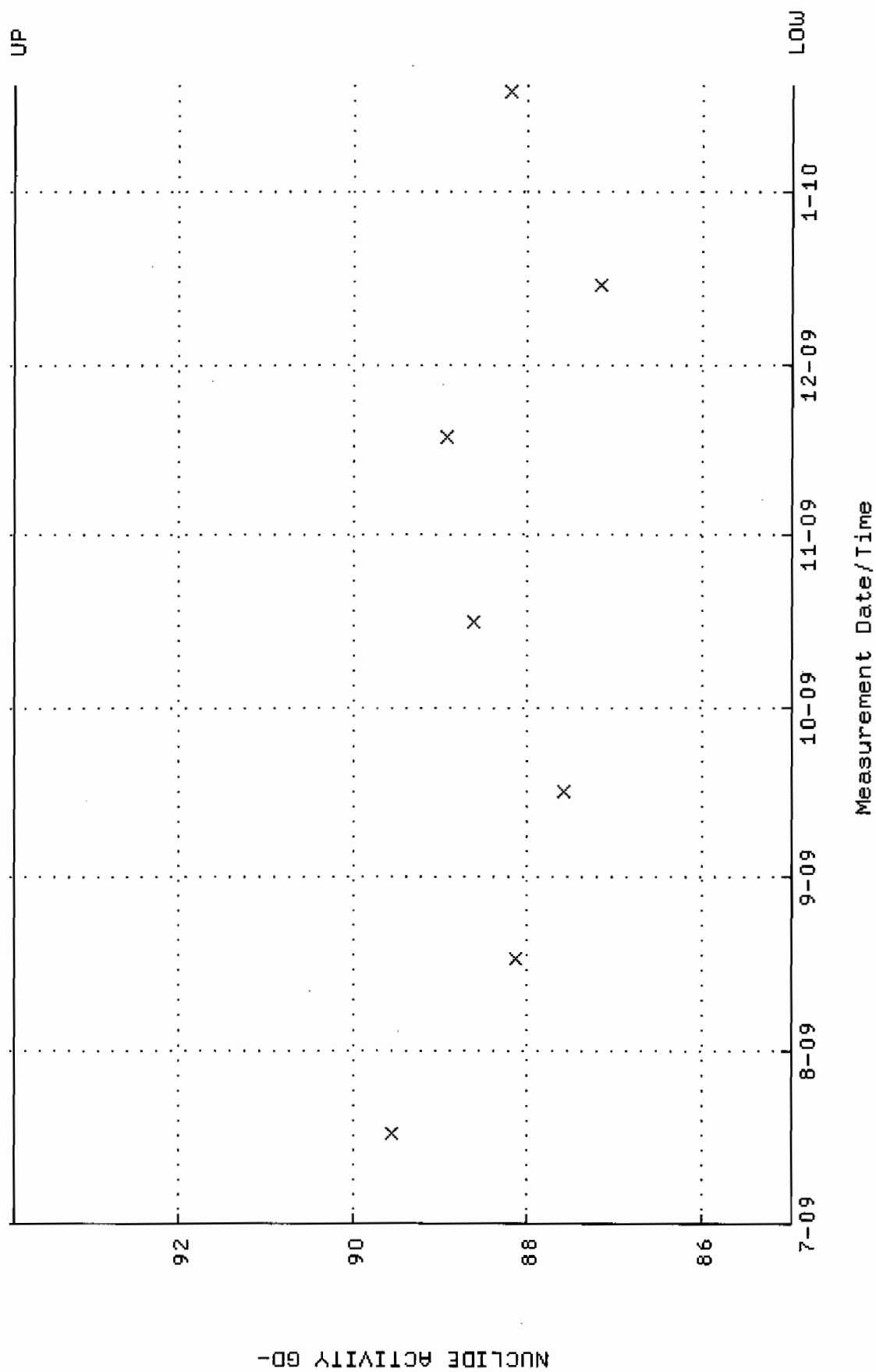
QA filename : DKA100:[ENV\_ALPHA.QA.B]B146.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:29 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



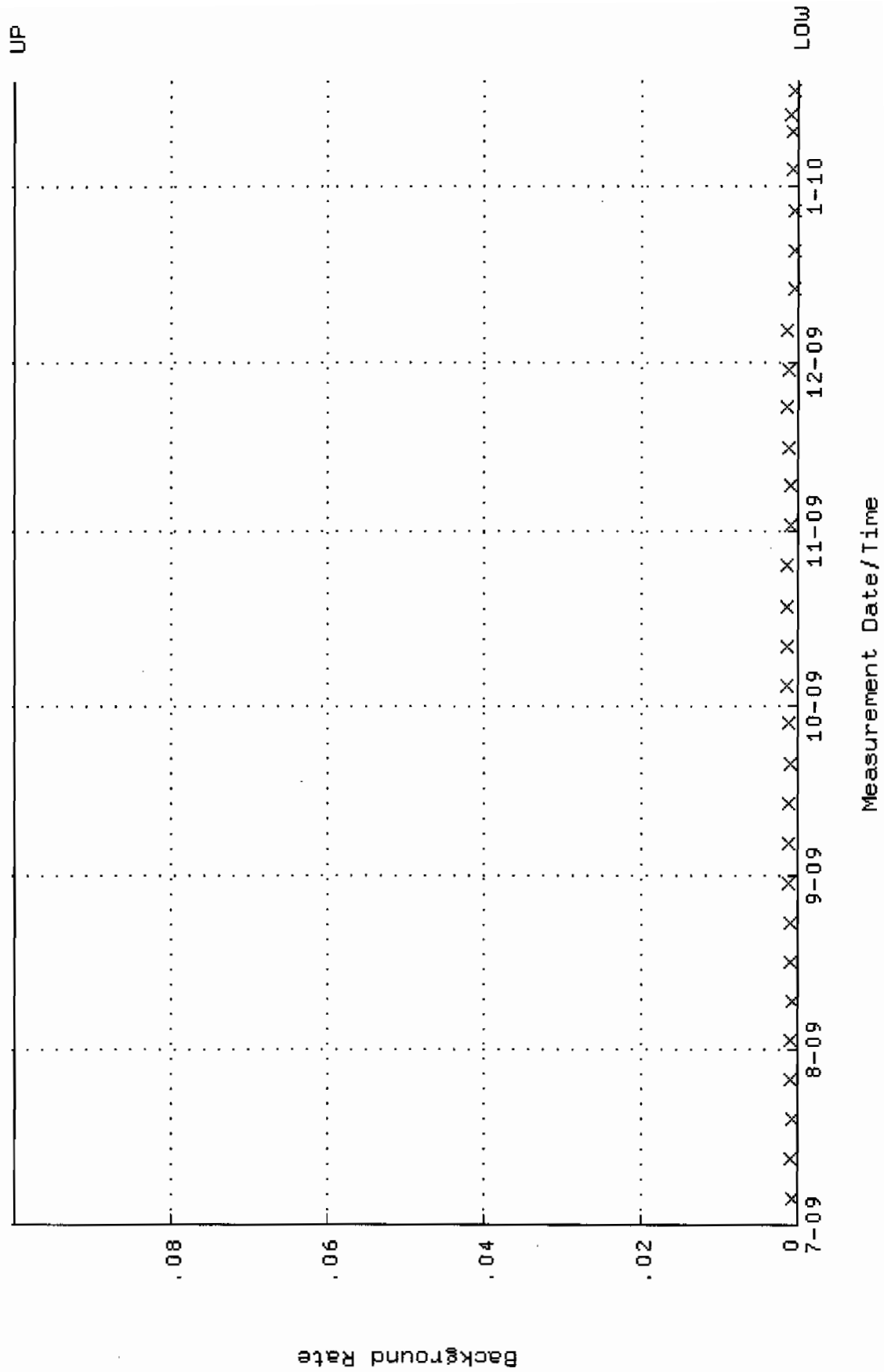
QA filename : DKA100:[ENV\_ALPHA.QA.W]w147.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:29 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.237046 through 0.257046



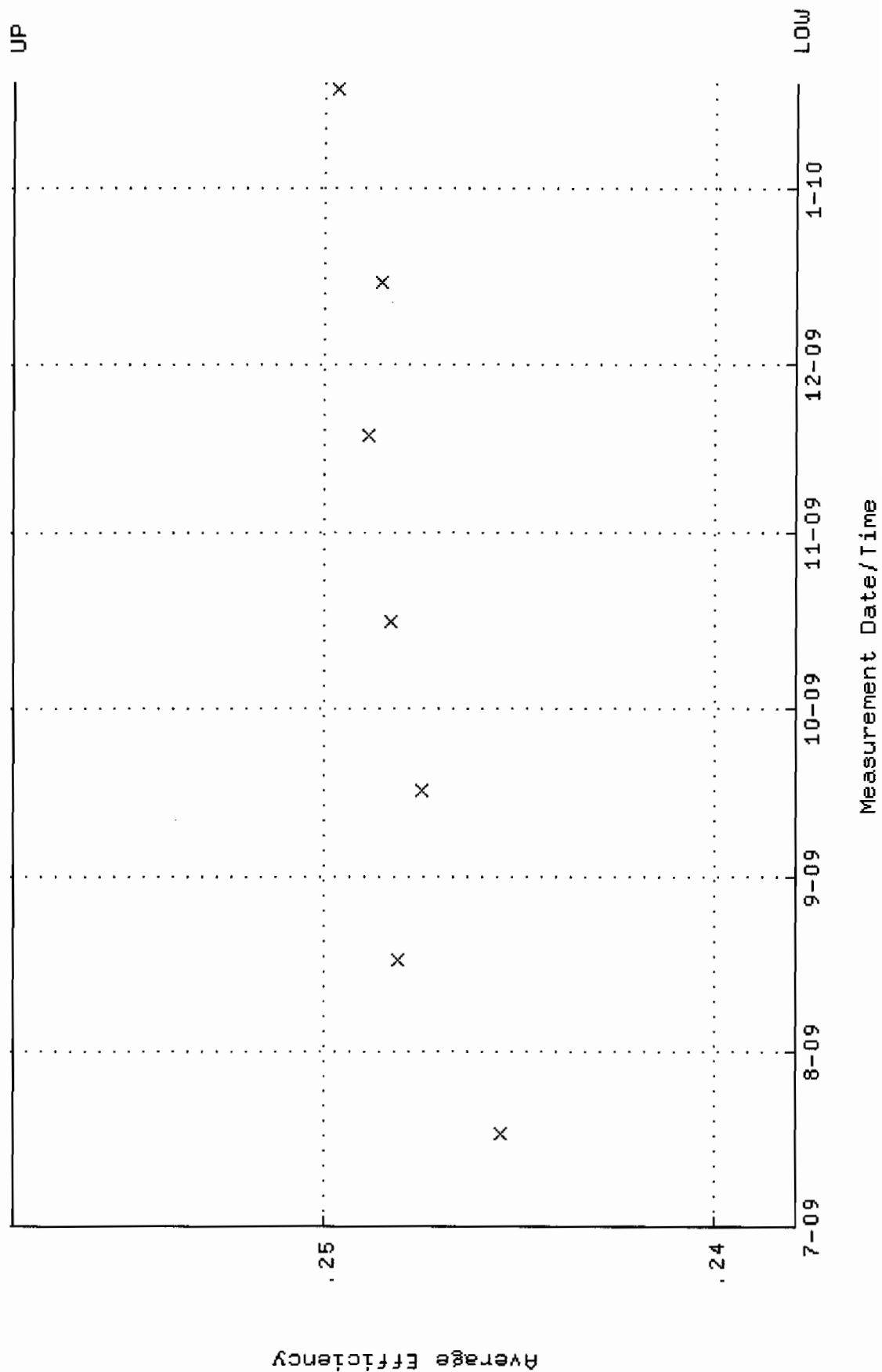
QA filename : DKA100:[ENV\_ALPHA.QA.W]W147.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:29 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.9777 through 93.9227



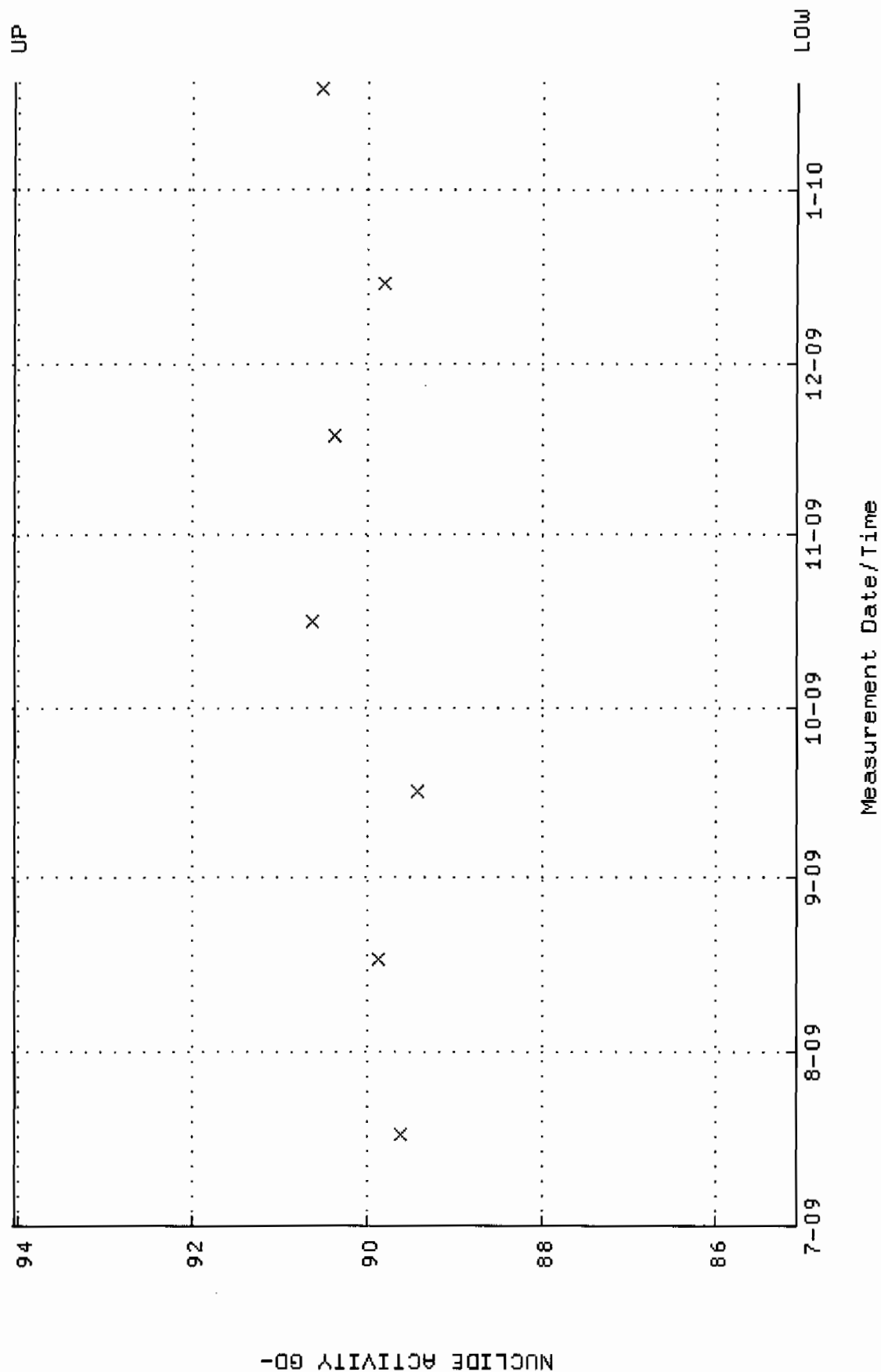
QA filename : DKA100:[ENV\_ALPHA.QA.B]B147.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:33 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



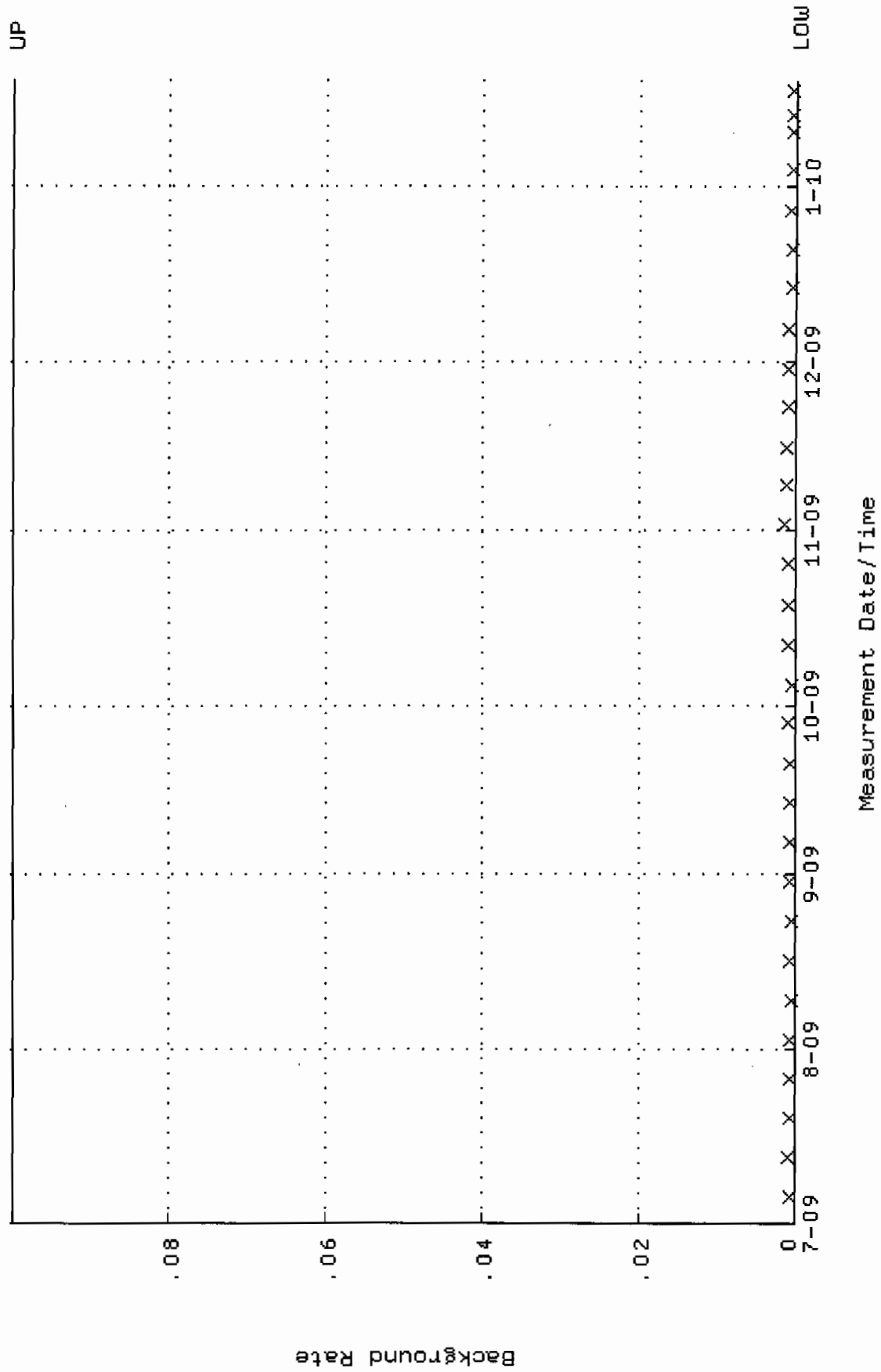
QA filename : DKA100:[ENV\_ALPHA.QA.W]W148.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:34 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.237934 through 0.257934



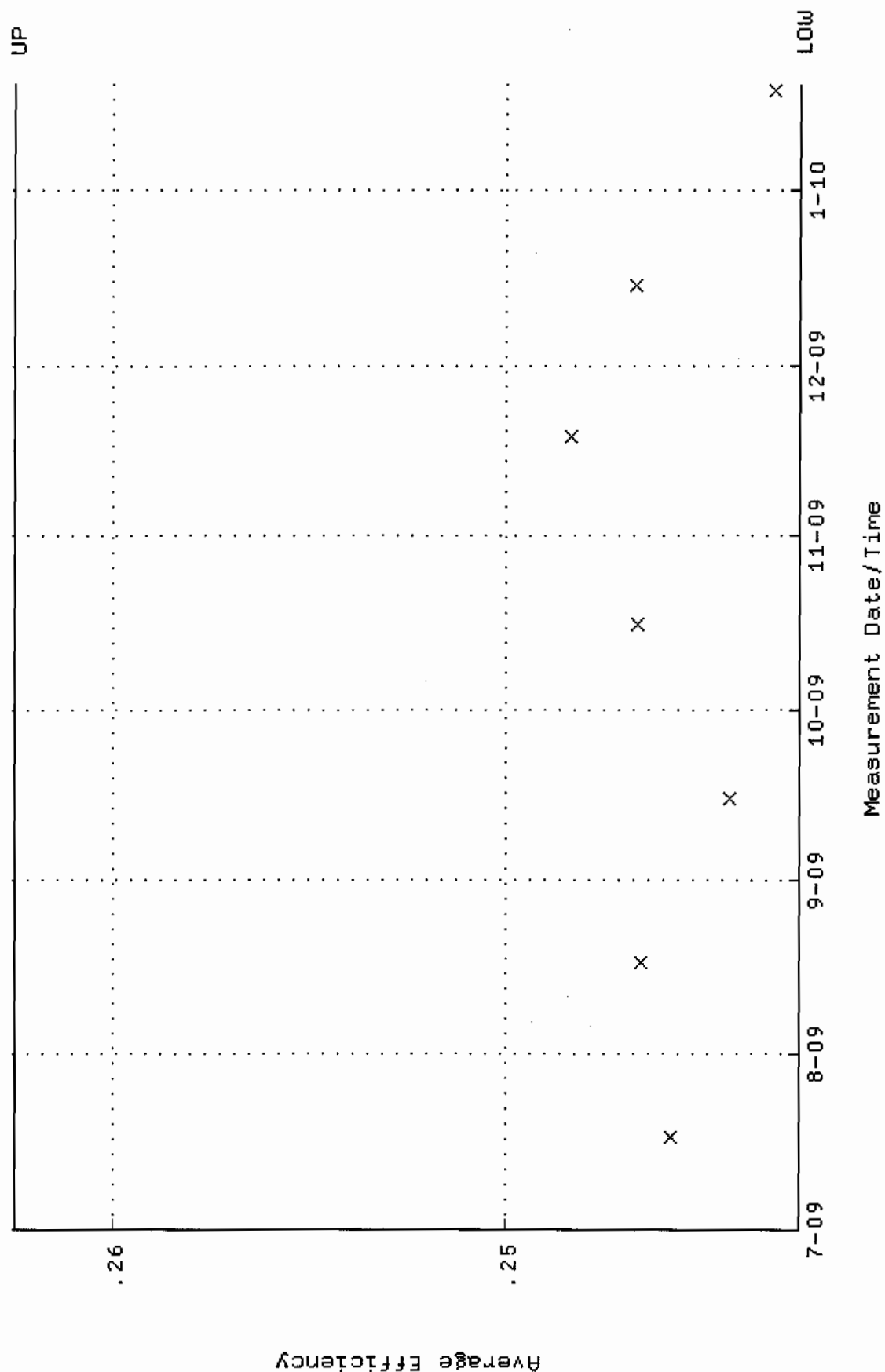
QA filename : DKA100:[ENV\_ALPHA.QA.W]W148.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:34 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 85.0831 through 94.0393



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

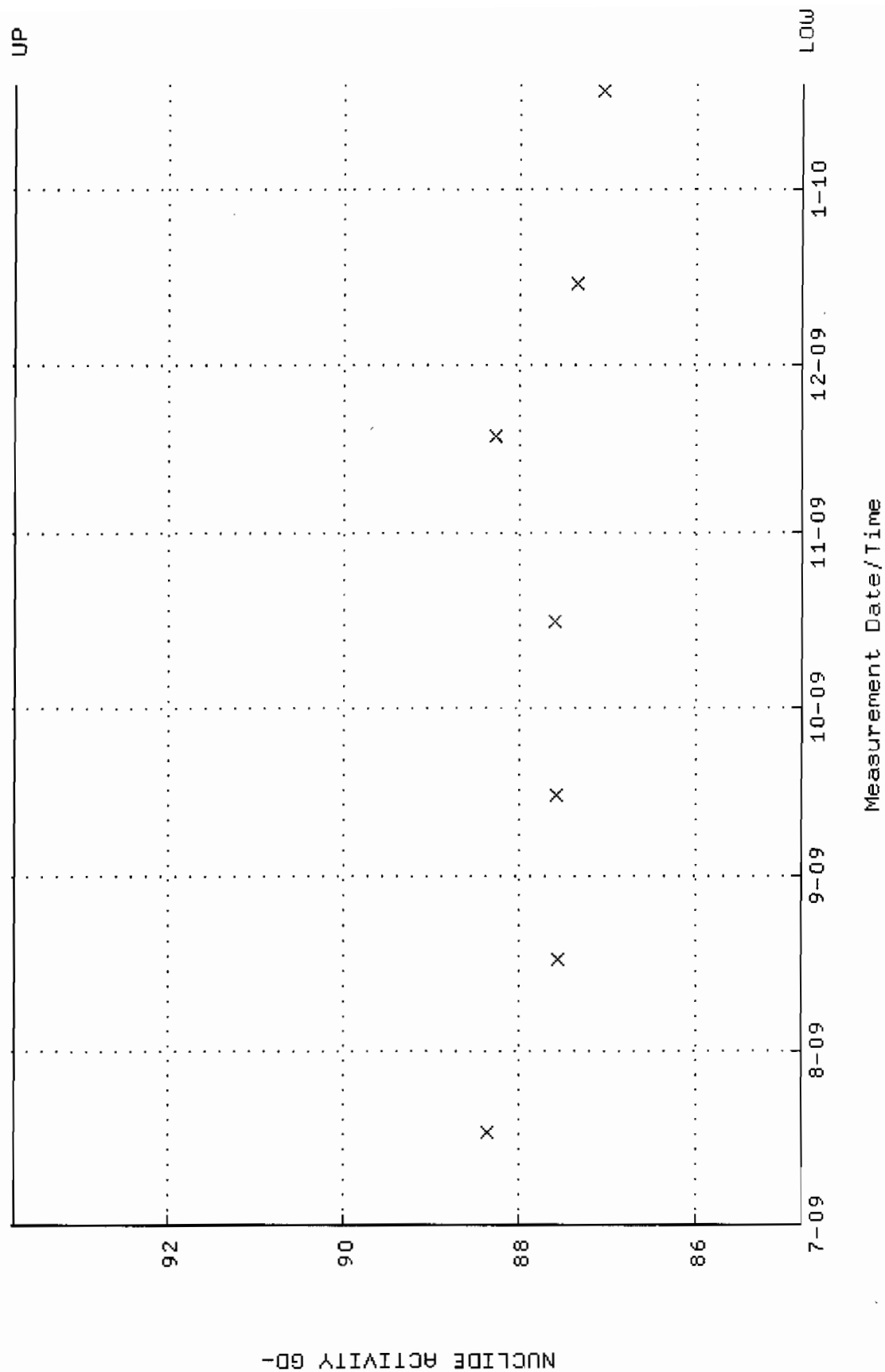


QA filename : DKA100:[ENV\_ALPHA.QA.W]W149.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:39 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.242495 through 0.262495

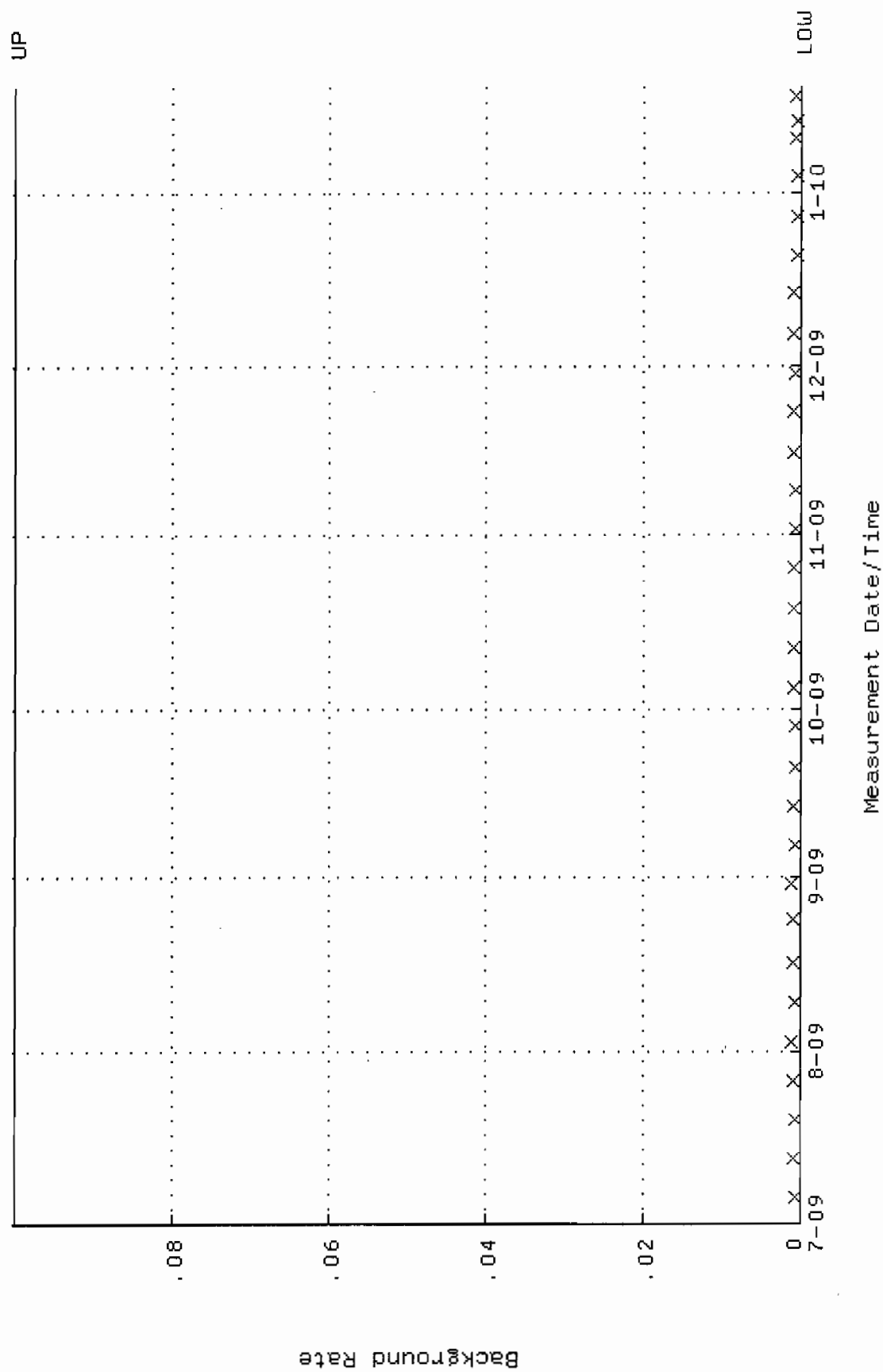




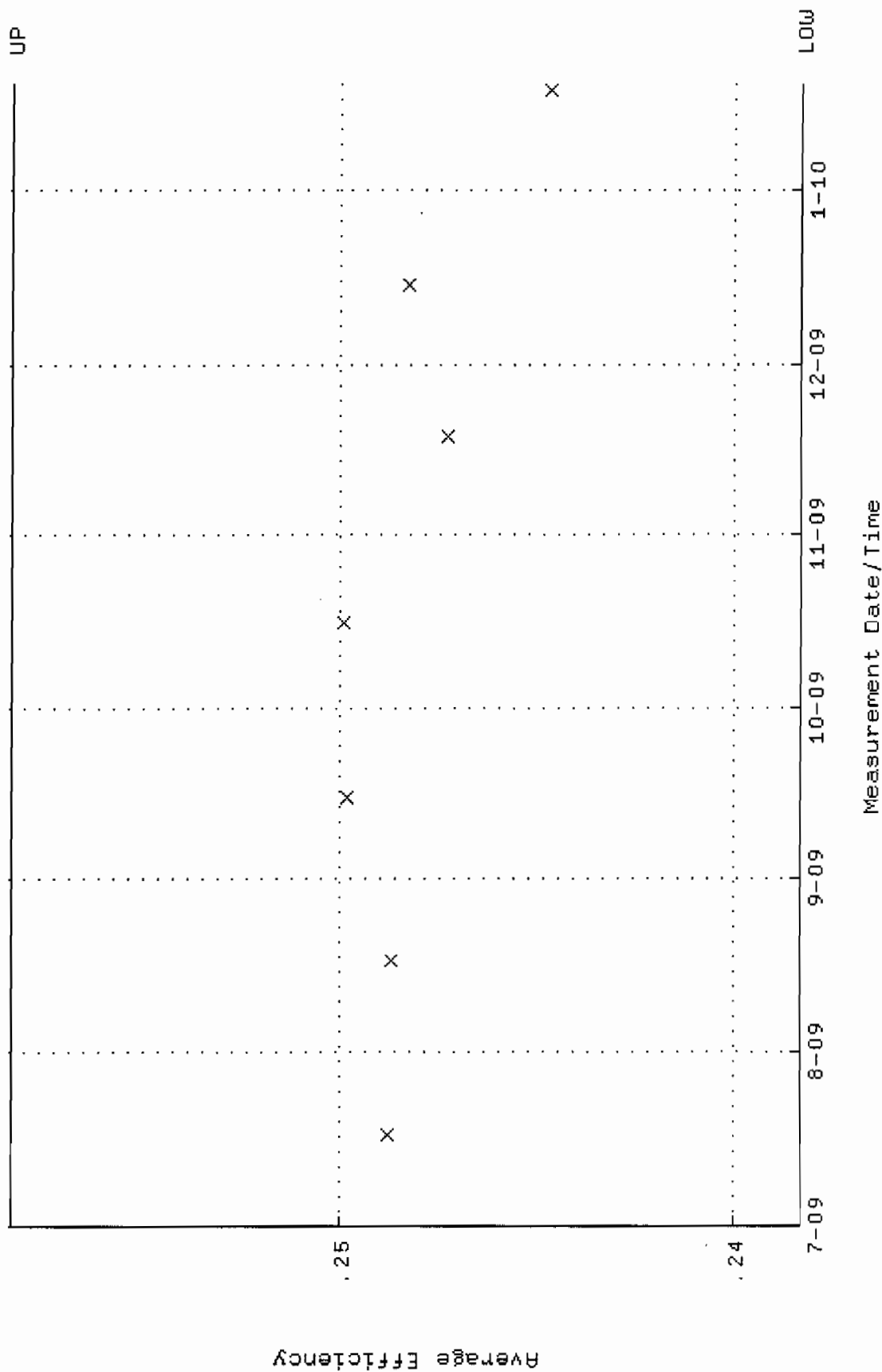
QA filename : DKA100:[ENV\_ALPHA.QA.W]W149.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:39 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.8126 through 93.7402



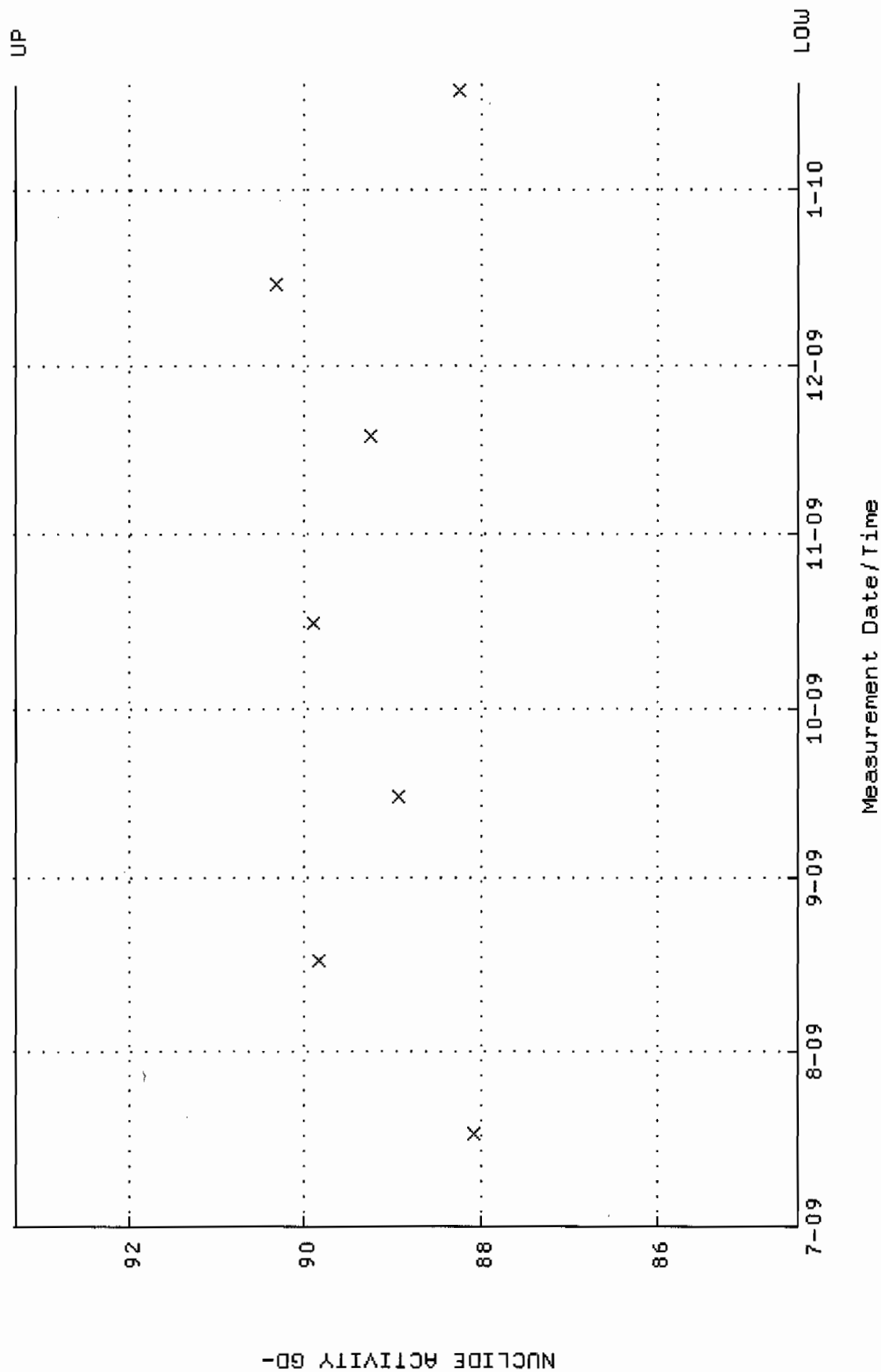
QA filename : DKA100:[ENV\_ALPHA.QA.B]B149.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:43 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



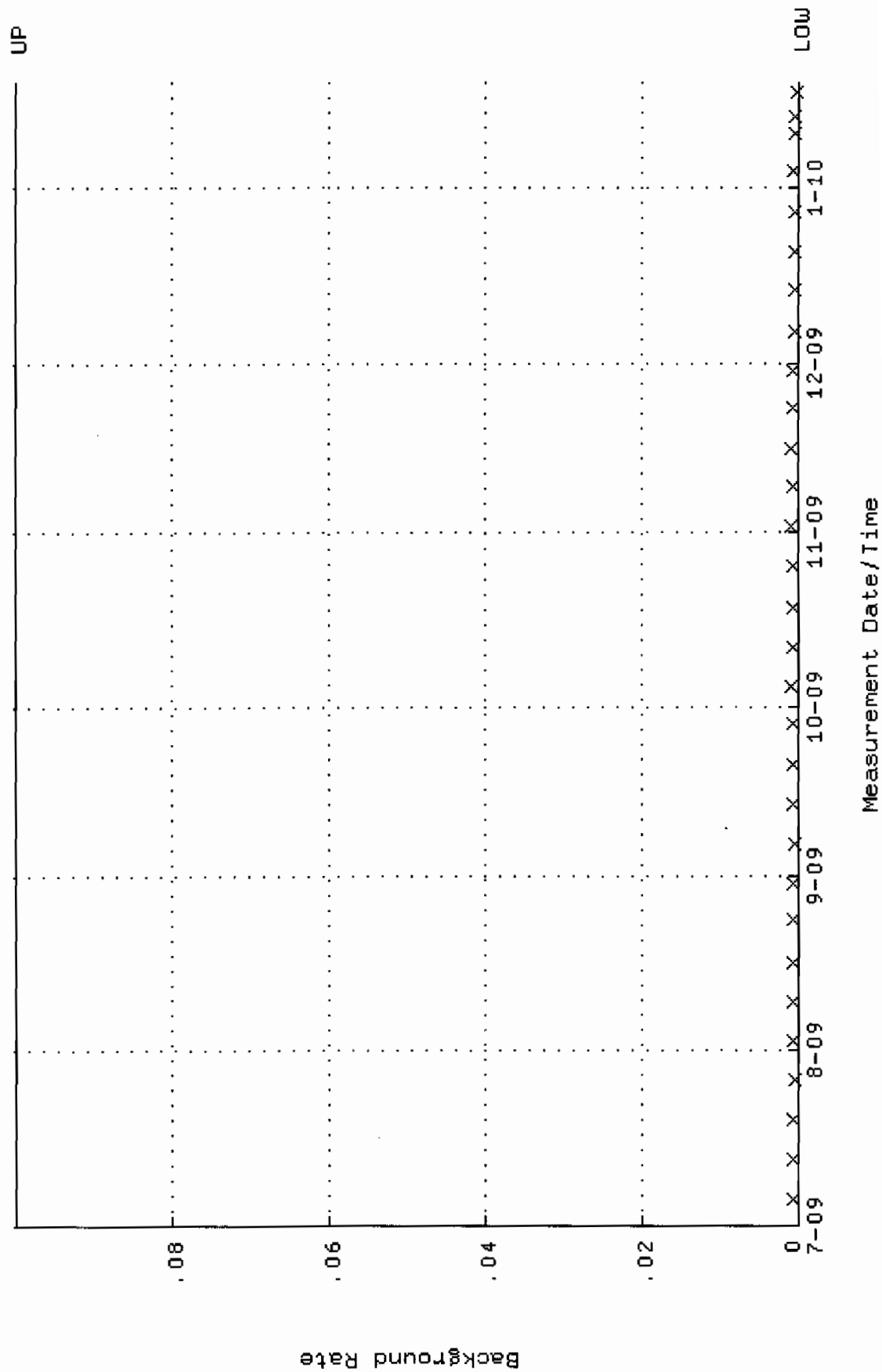
QA filename : DKA100:[ENV\_ALPHA.QA.W]W150.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:44 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.238314 through 0.258314



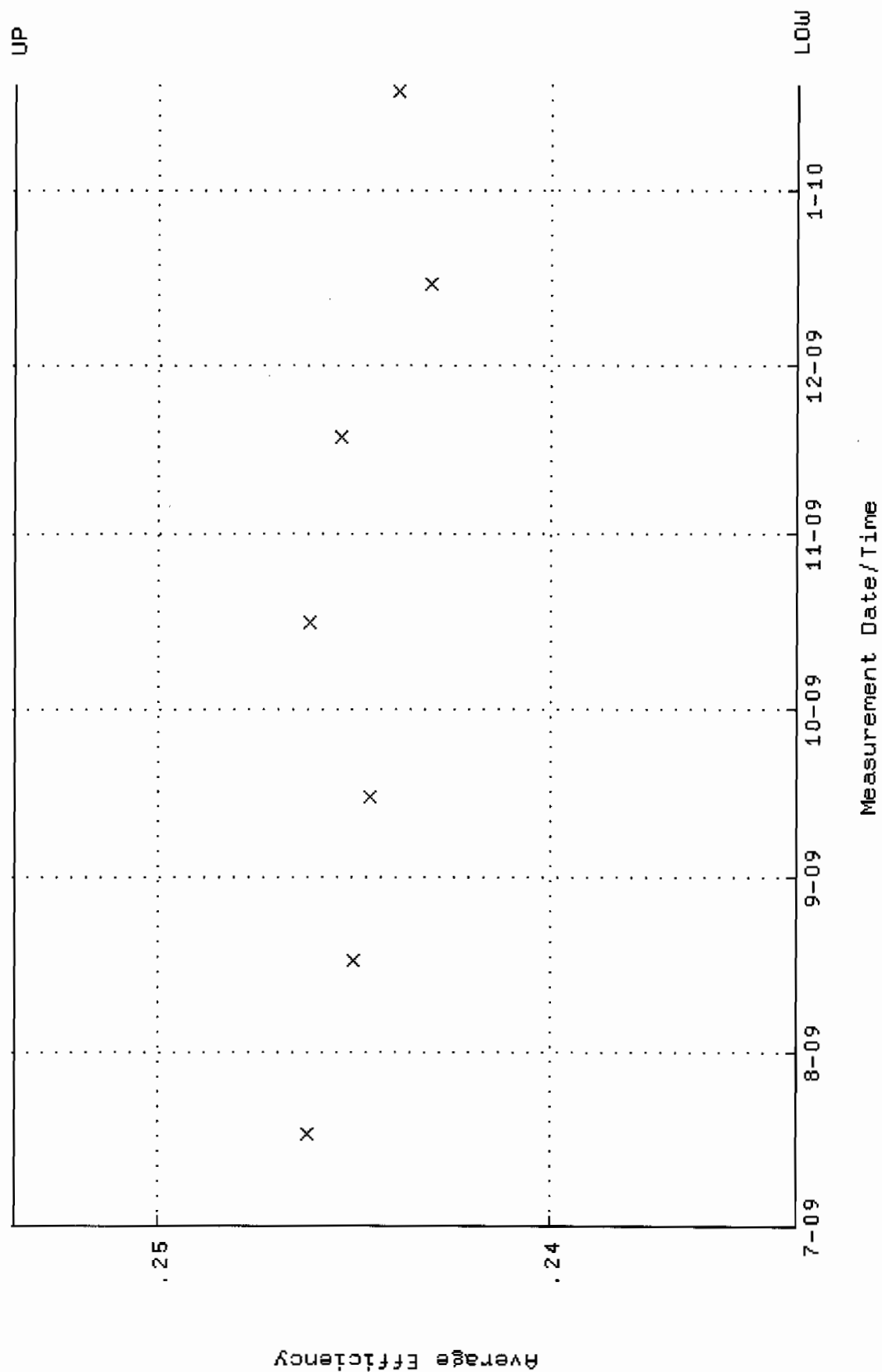
QA filename : DKA100:[ENV\_ALPHA.QA.W]W150.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:44 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.4039 through 93.2885



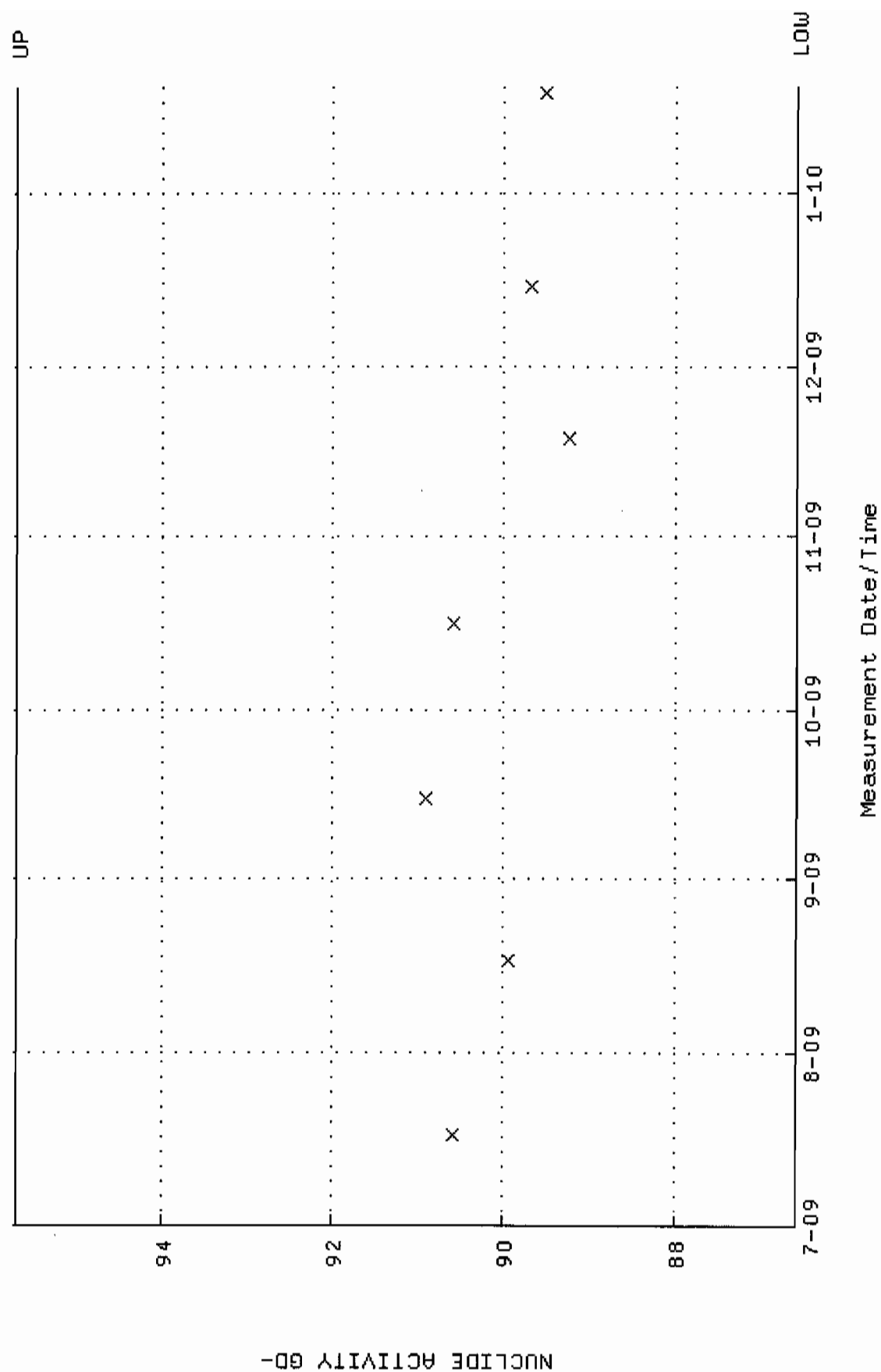
QA filename : DKA100:[ENV\_ALPHA.QA.B]B150.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:48 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



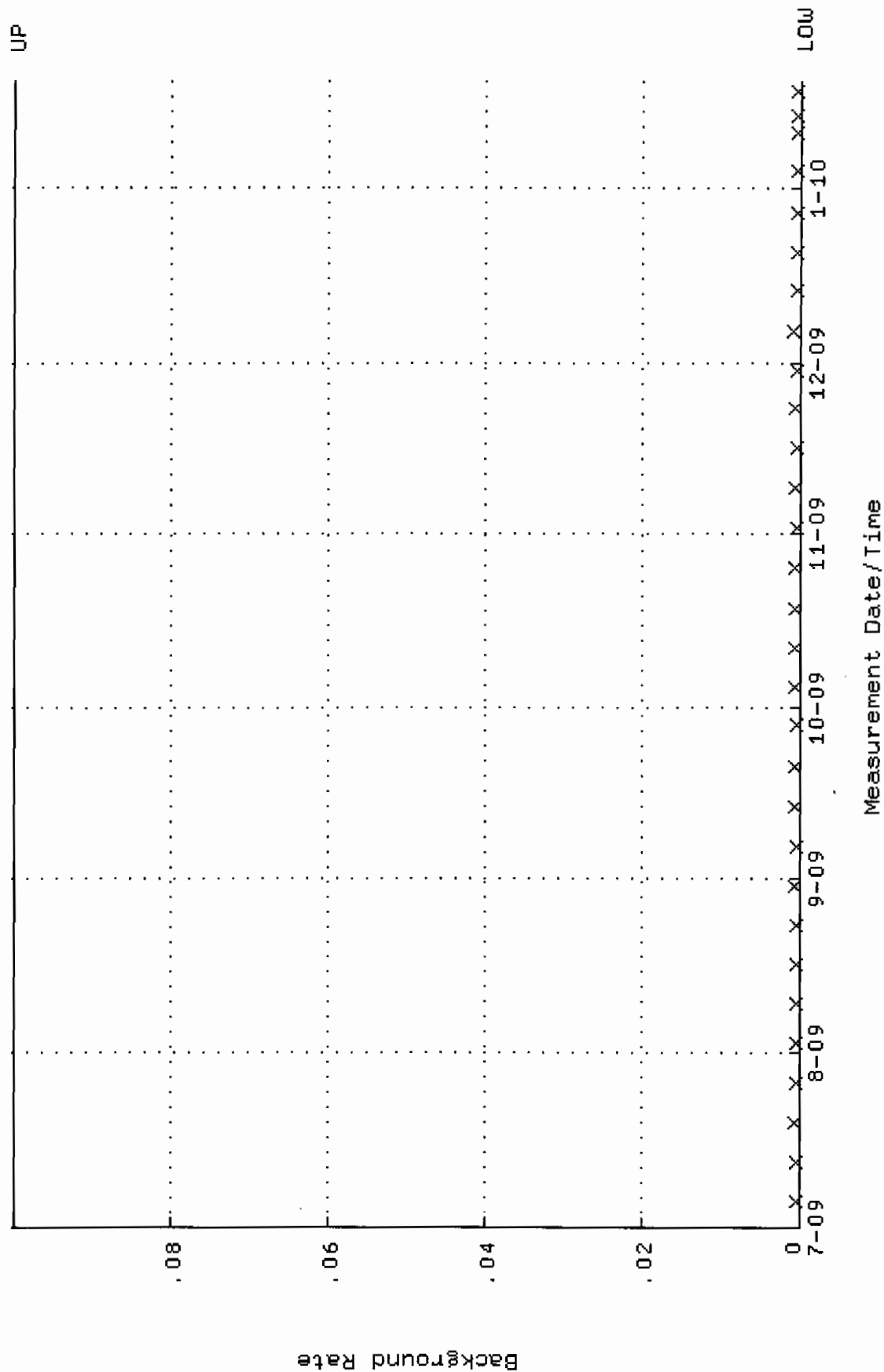
QA filename : DKA100:[ENV\_ALPHA.QA.W]W151.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:48 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.233693 through 0.253693



QA filename : DKA100:[ENV\_ALPHA.QA.W]W151.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:48 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.5749 through 95.6881

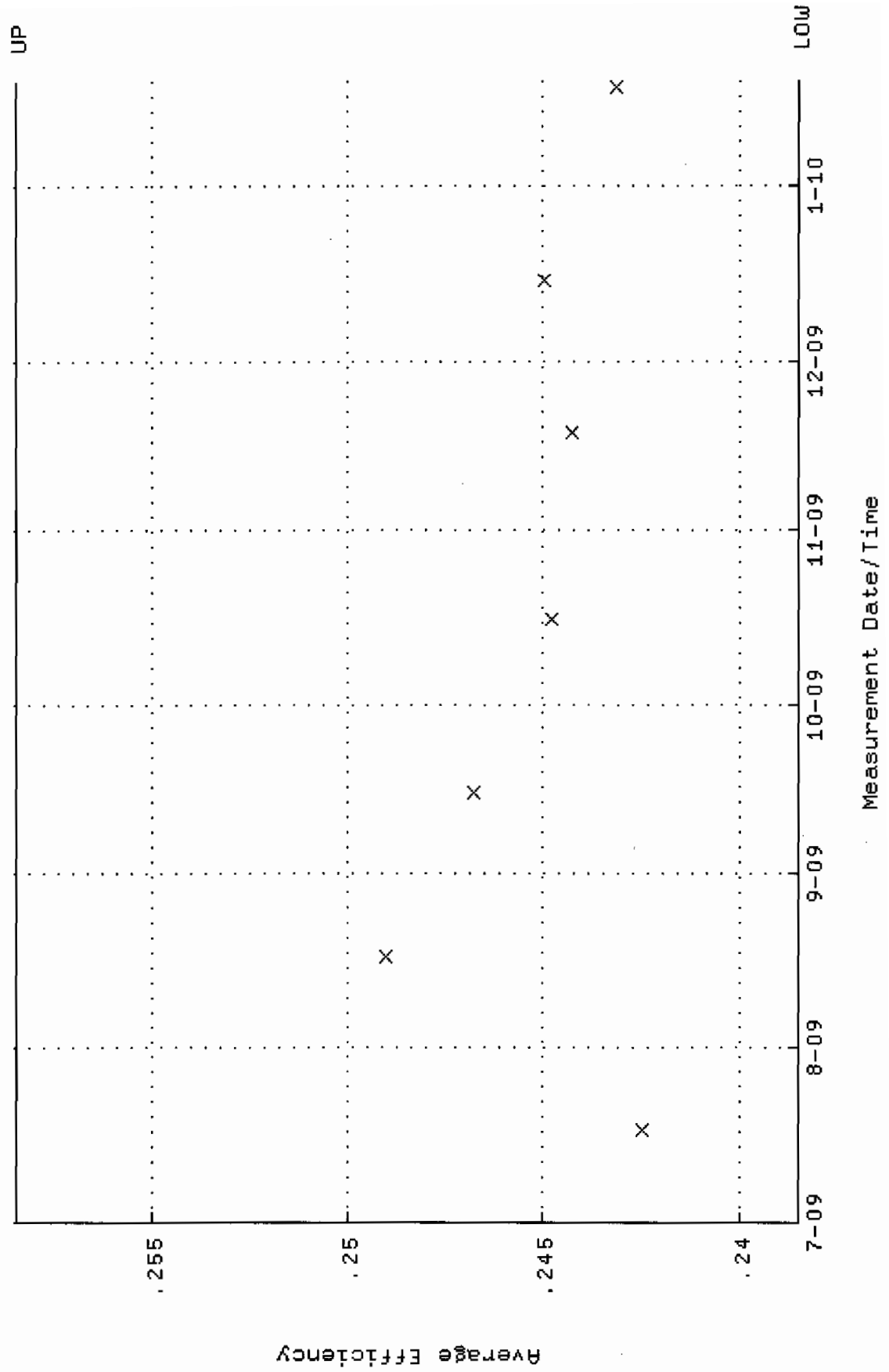


QA filename : DKA100:[ENV\_ALPHA.QA.B]B151.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:53 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

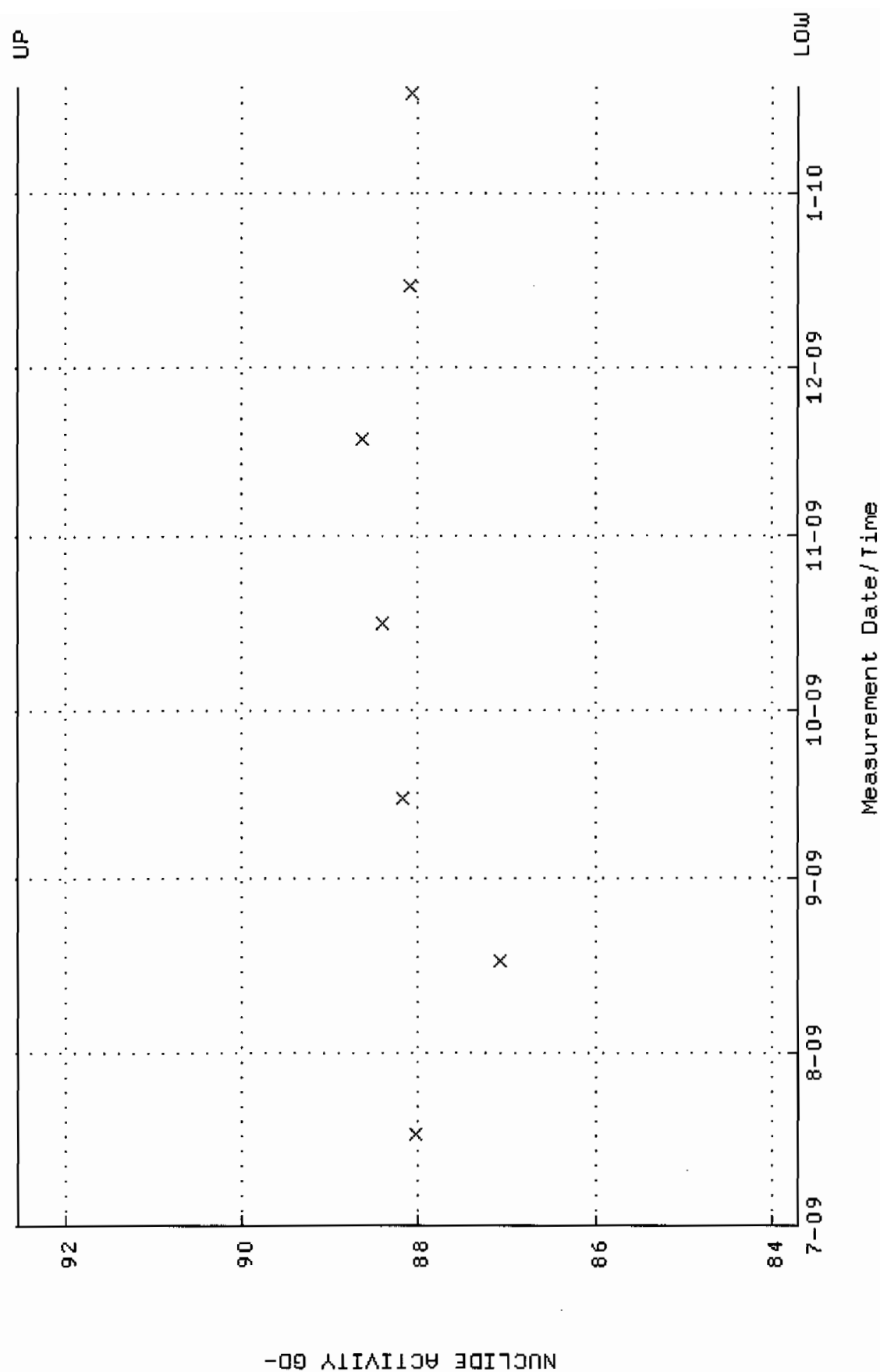




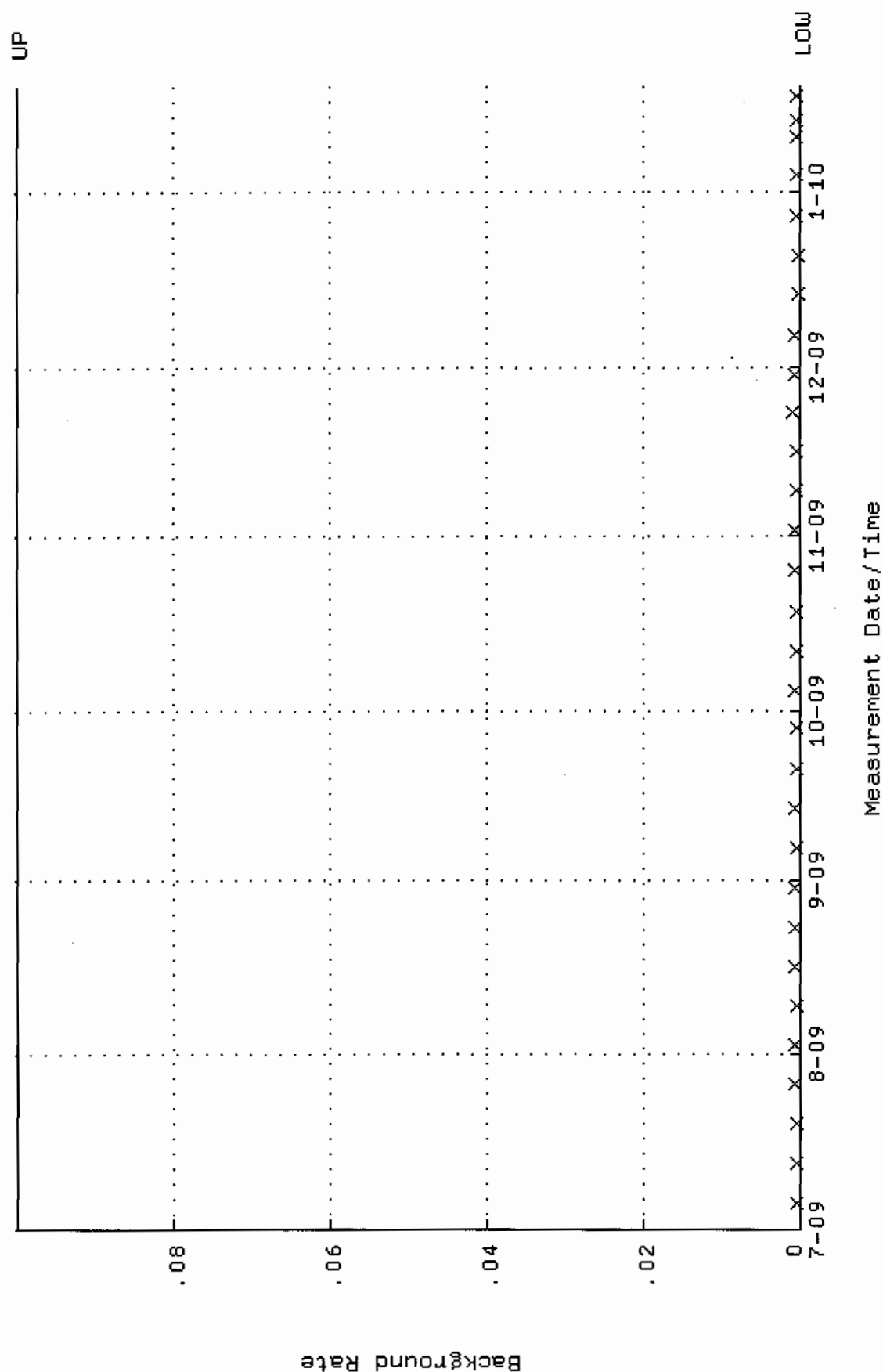
QA filename : DKA100:[ENV\_ALPHA.QA.W]W152.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:54 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.238479 through 0.258479



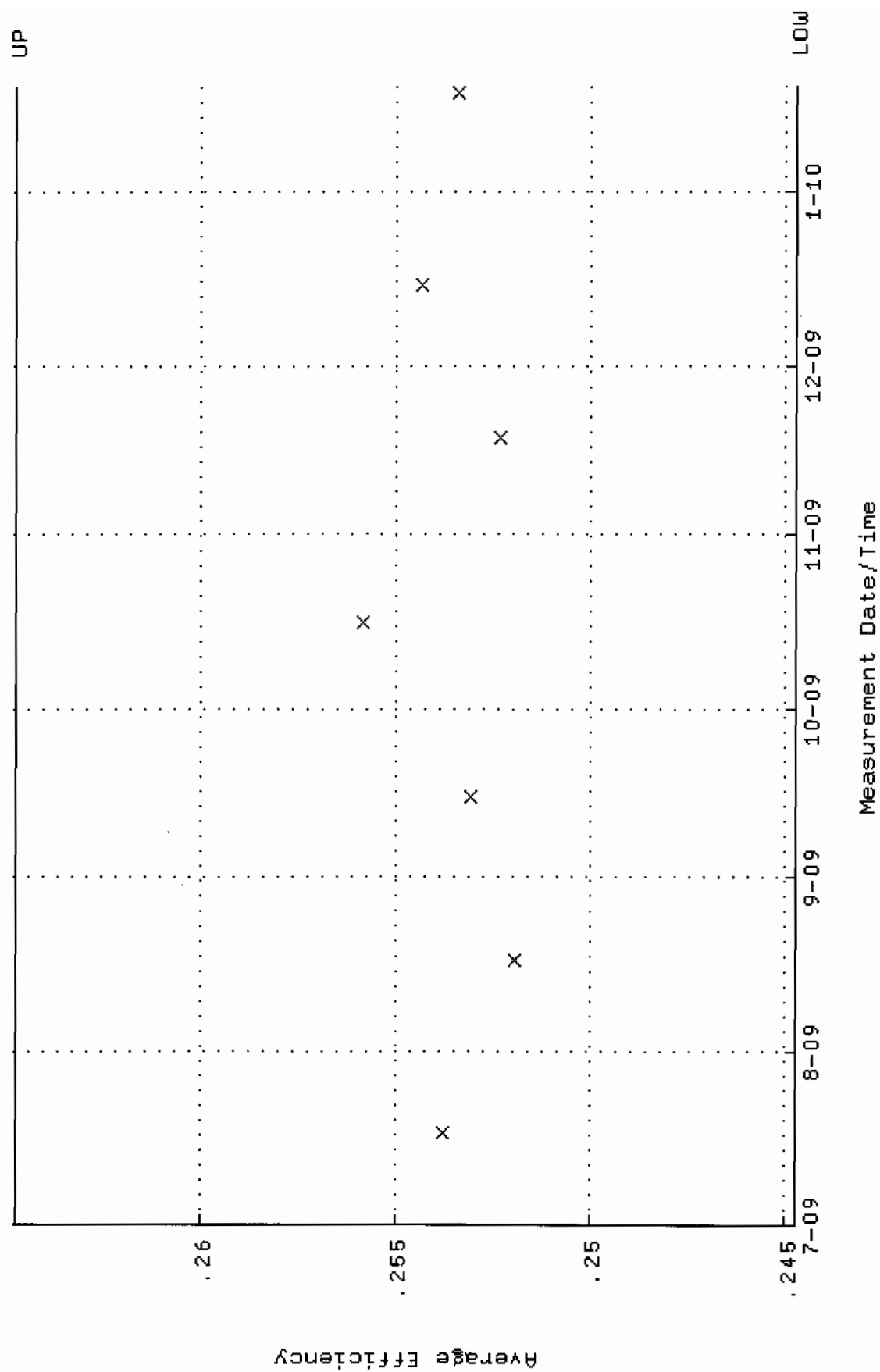
QA filename : DKA100:[ENV\_ALPHA.QA.W]W152.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:54 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.7180 through 92.5304



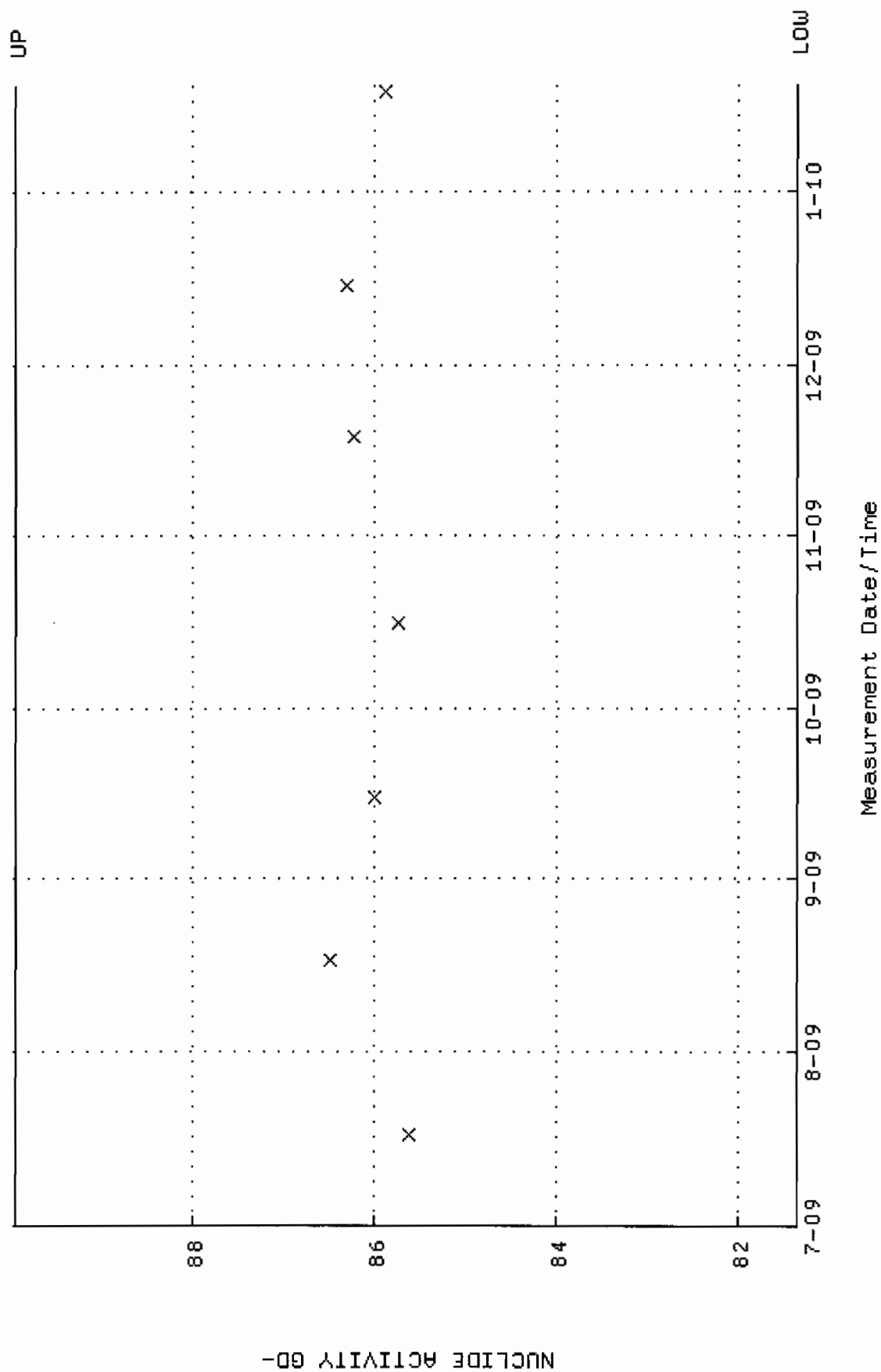
QA filename : OKA100:[ENV\_ALPHA.QA.B]B152.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:57:57 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



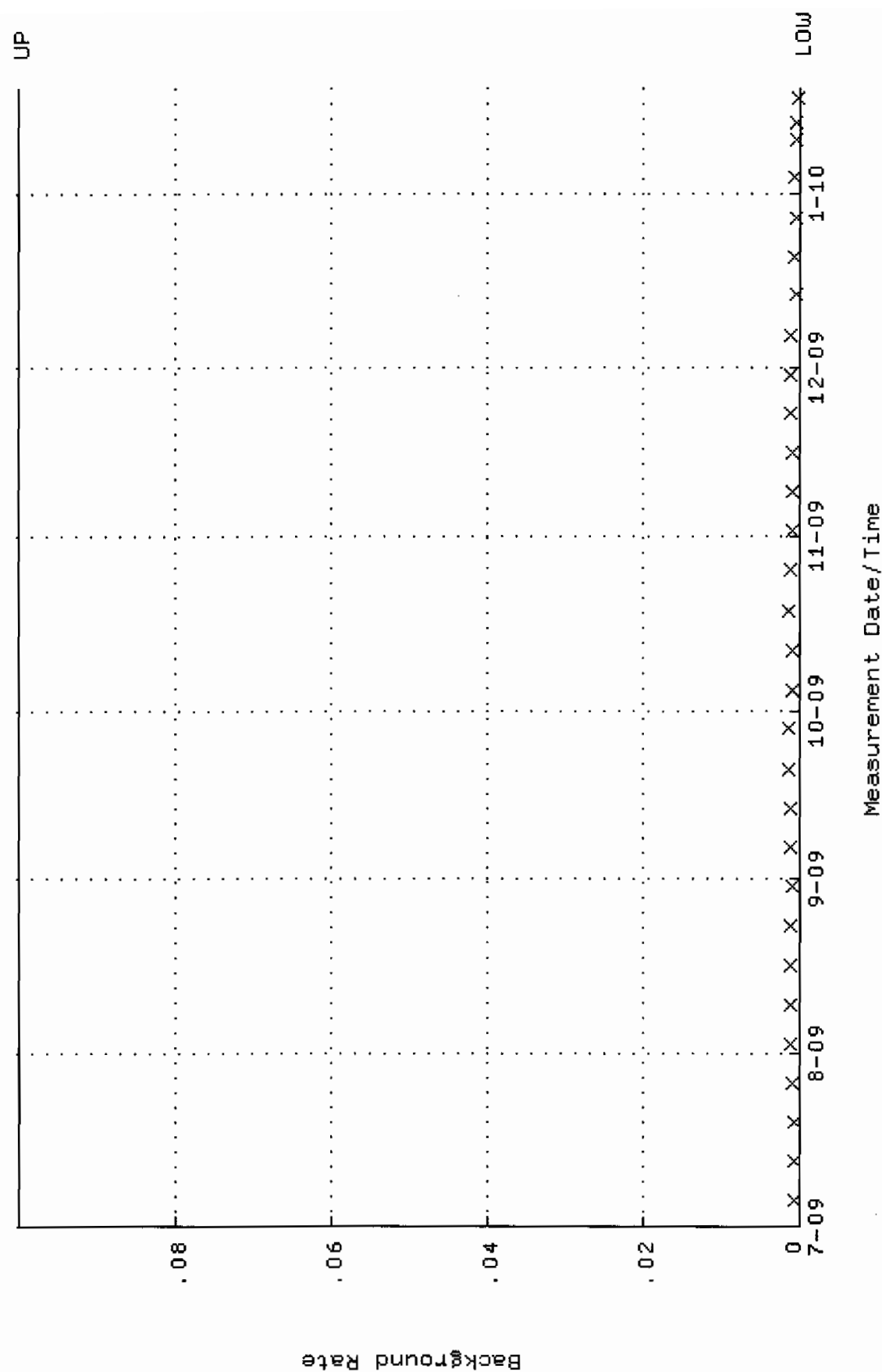
QA filename : DKA100:[ENV\_ALPHA.QA.W]W153.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:13:59 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.244738 through 0.264738



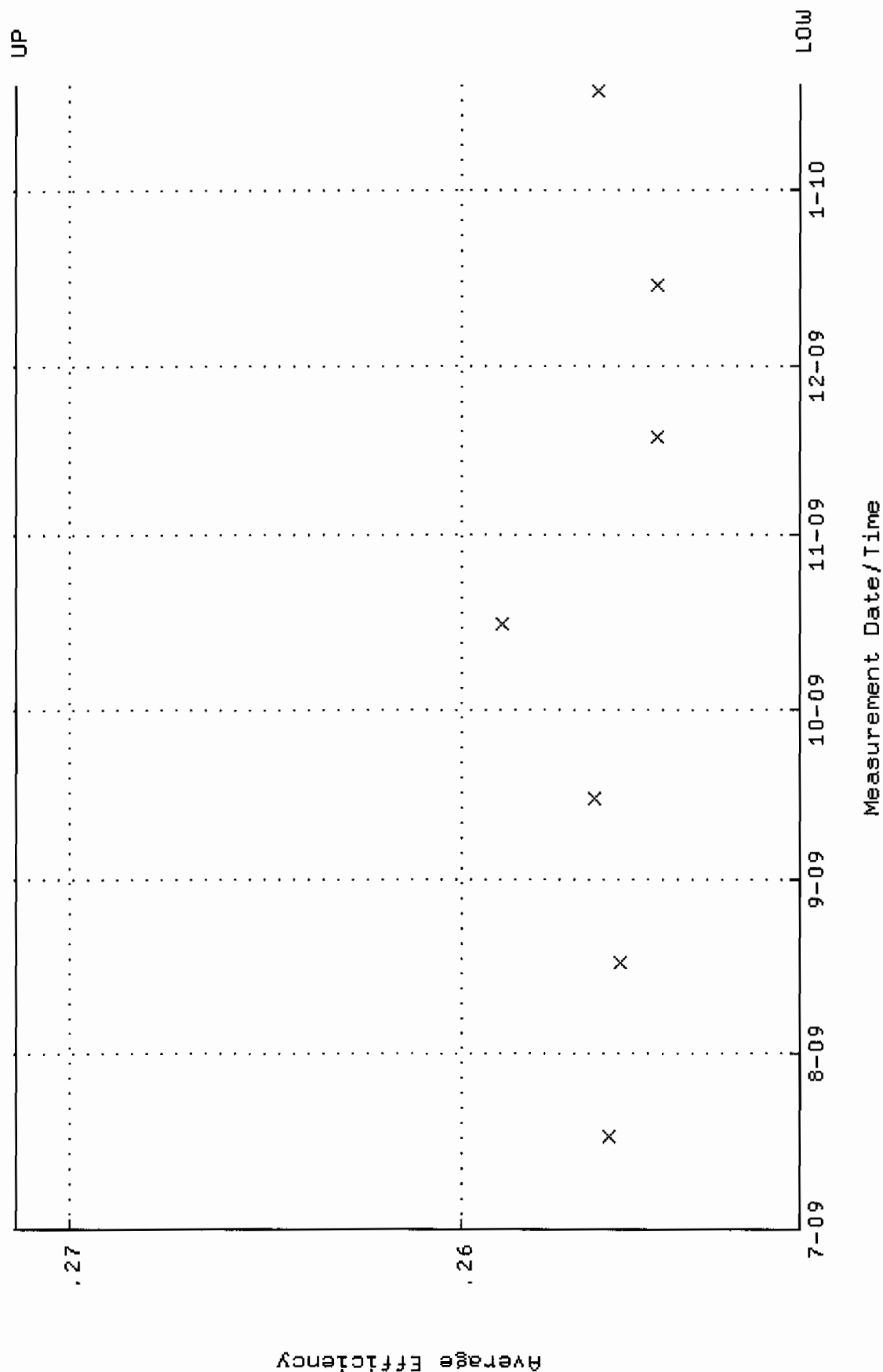
QA filename : DKA100:[ENV\_ALPHA.QA.W]w153.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:13:59 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 81.3634 through 89.9280



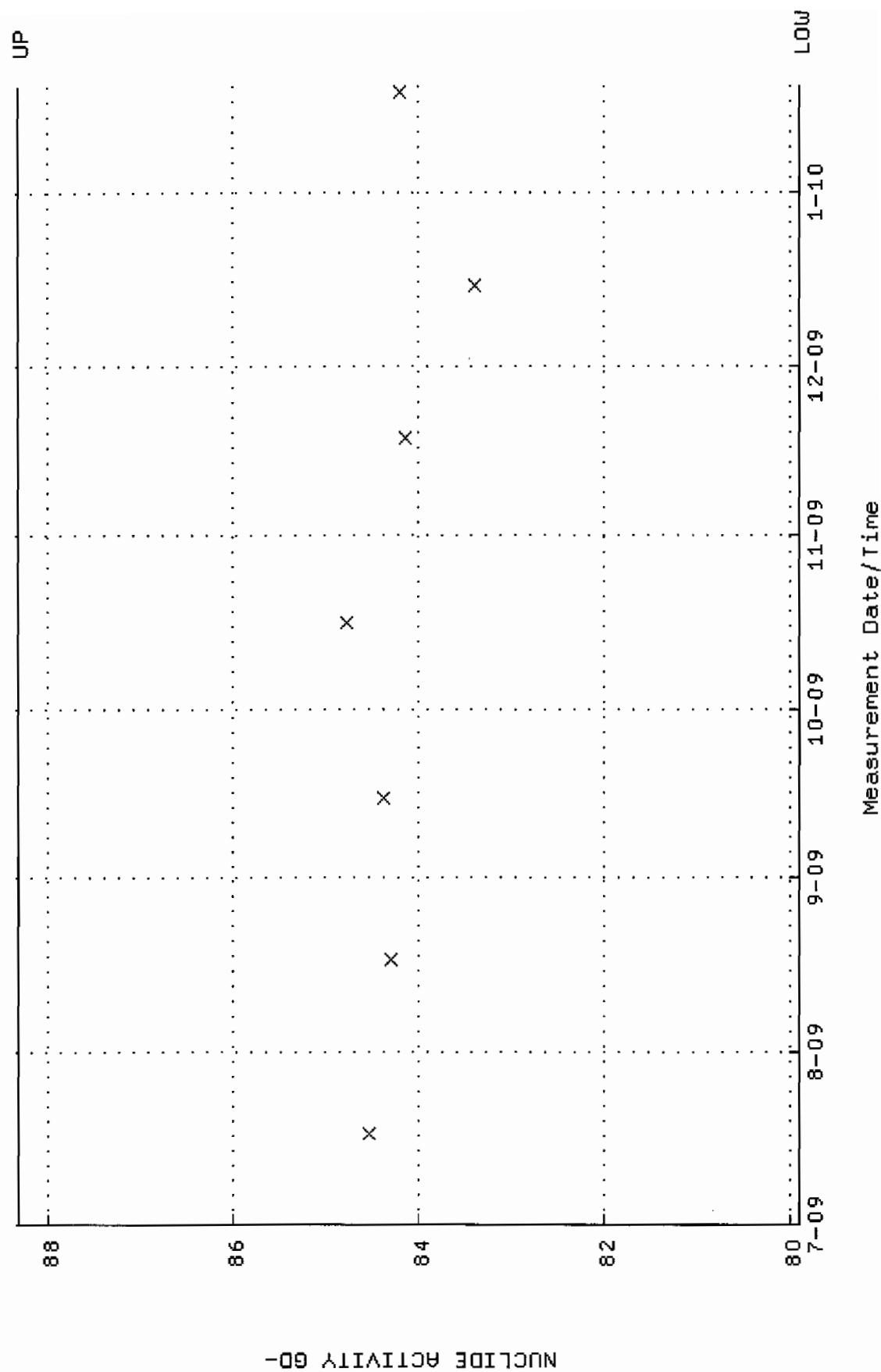
QA filename : DKA100:[ENV\_ALPHA.QA.B]B153.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:02 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



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

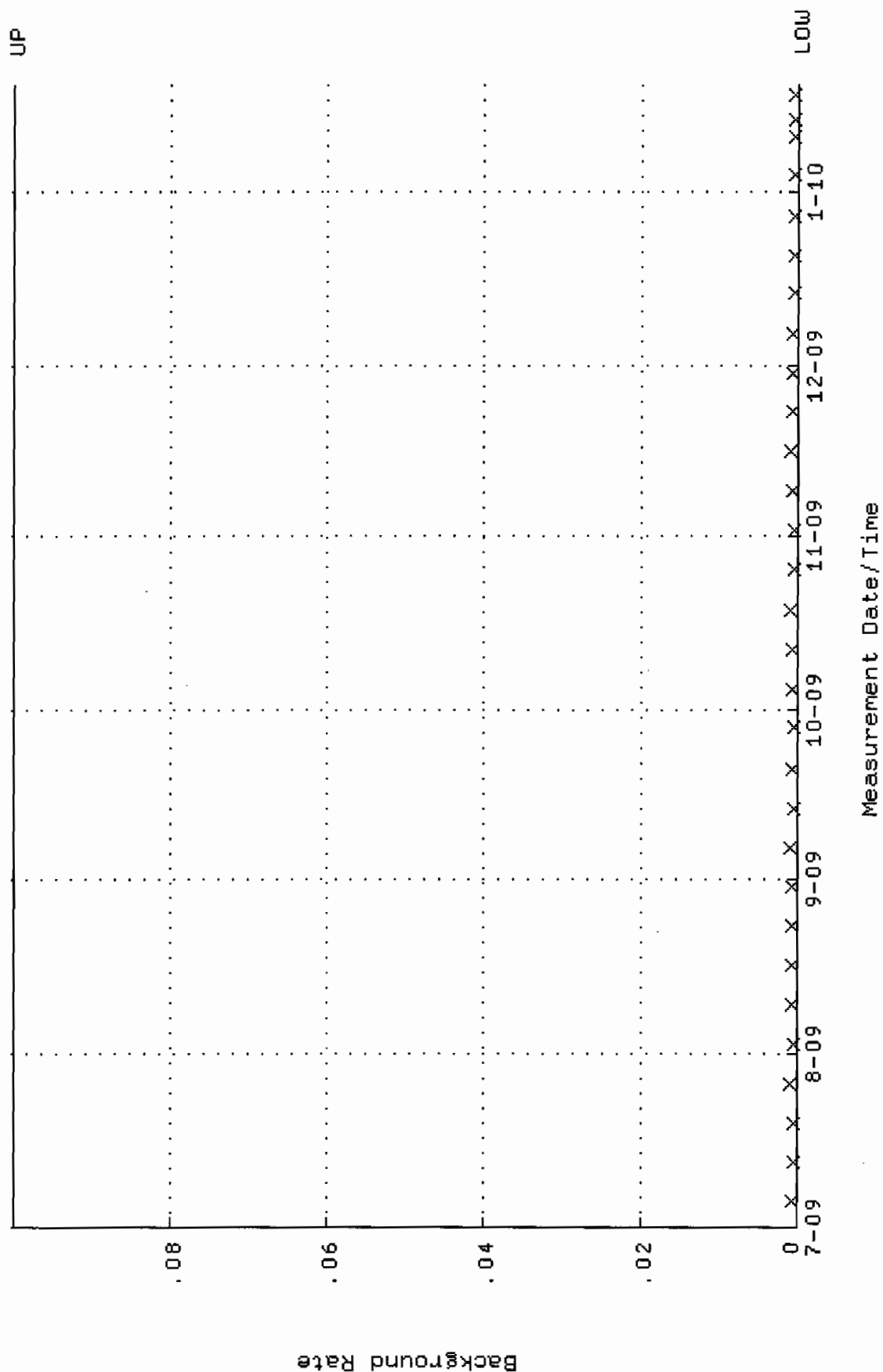


QA filename : DKA100:[ENV\_ALPHA.QA.w]w154.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:04 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 79.9003 through 88.3109

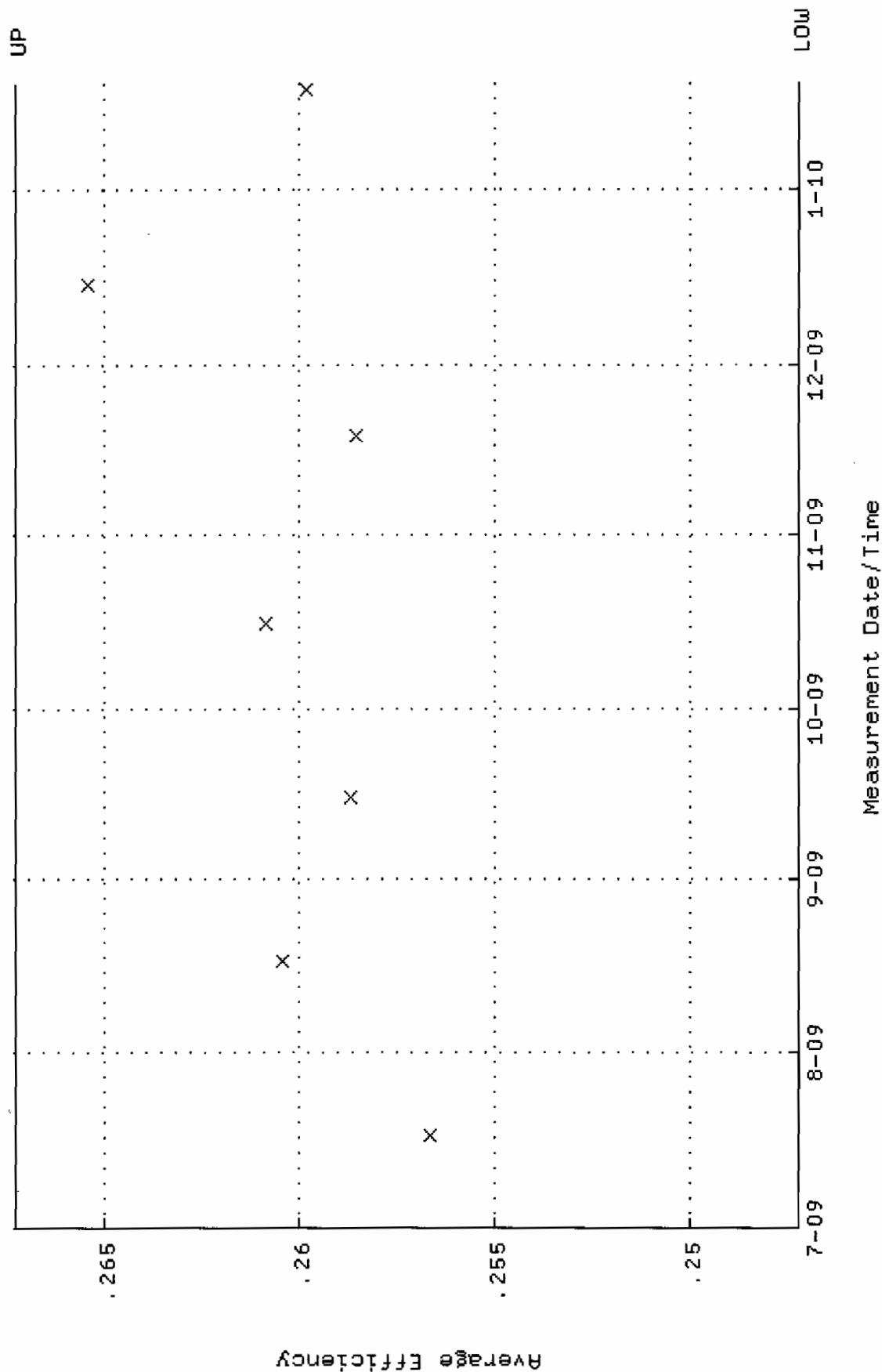




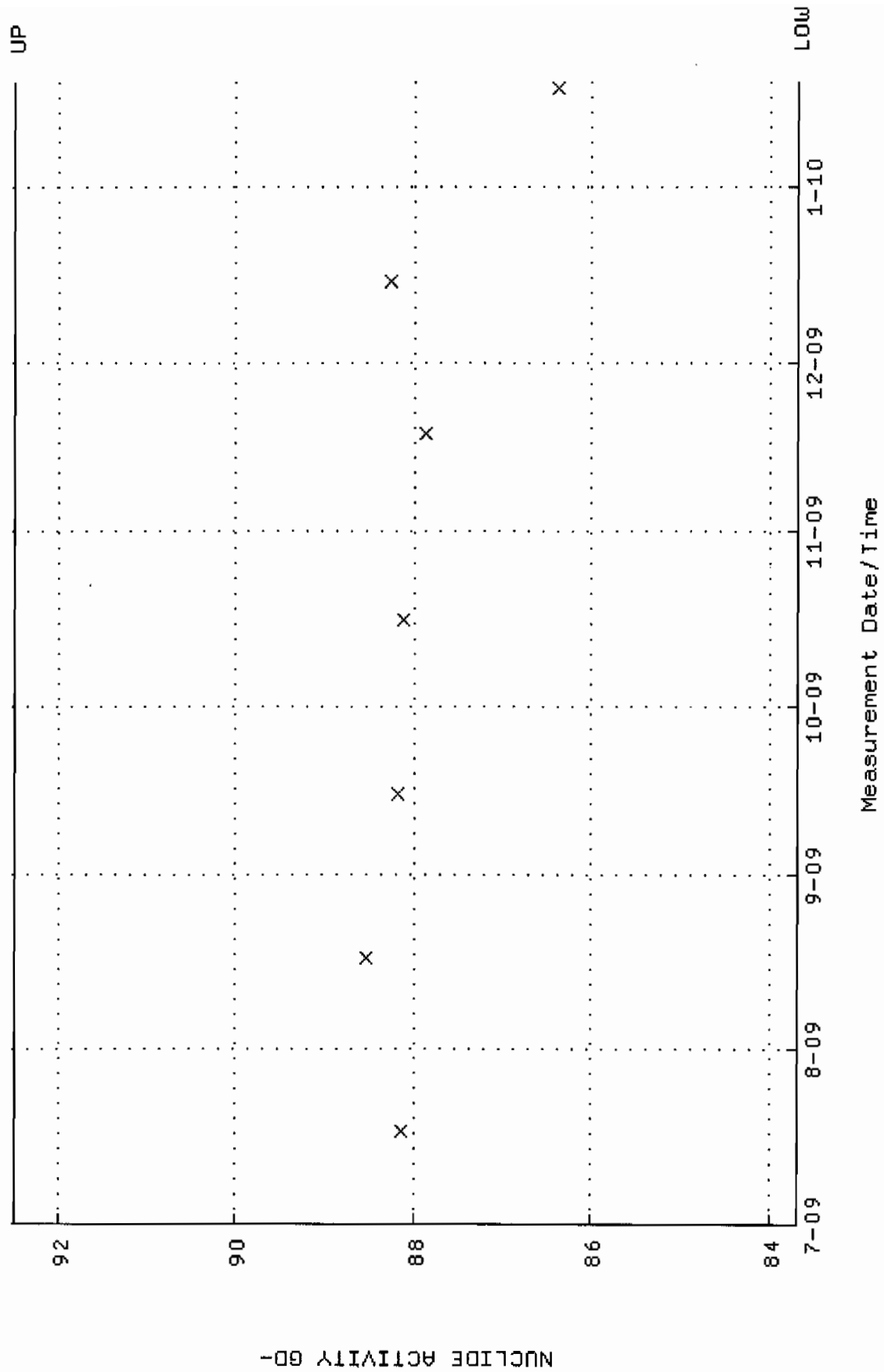
QA filename : DKA100:[ENV\_ALPHA.QA.B]B154.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:07 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



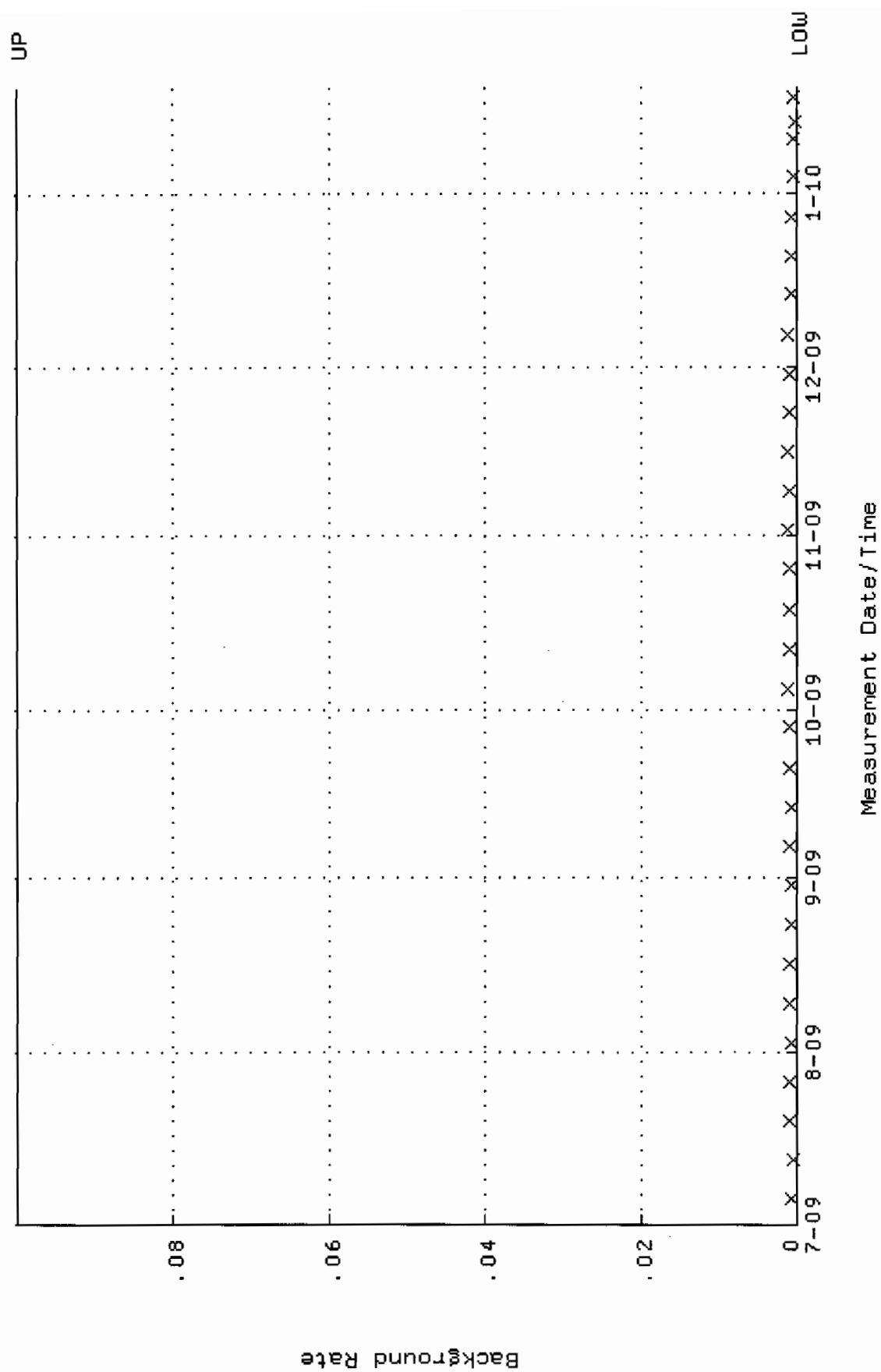
QA filename : DKA100:[ENV\_ALPHA.QA.W]w155.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:09 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.247241 through 0.267241



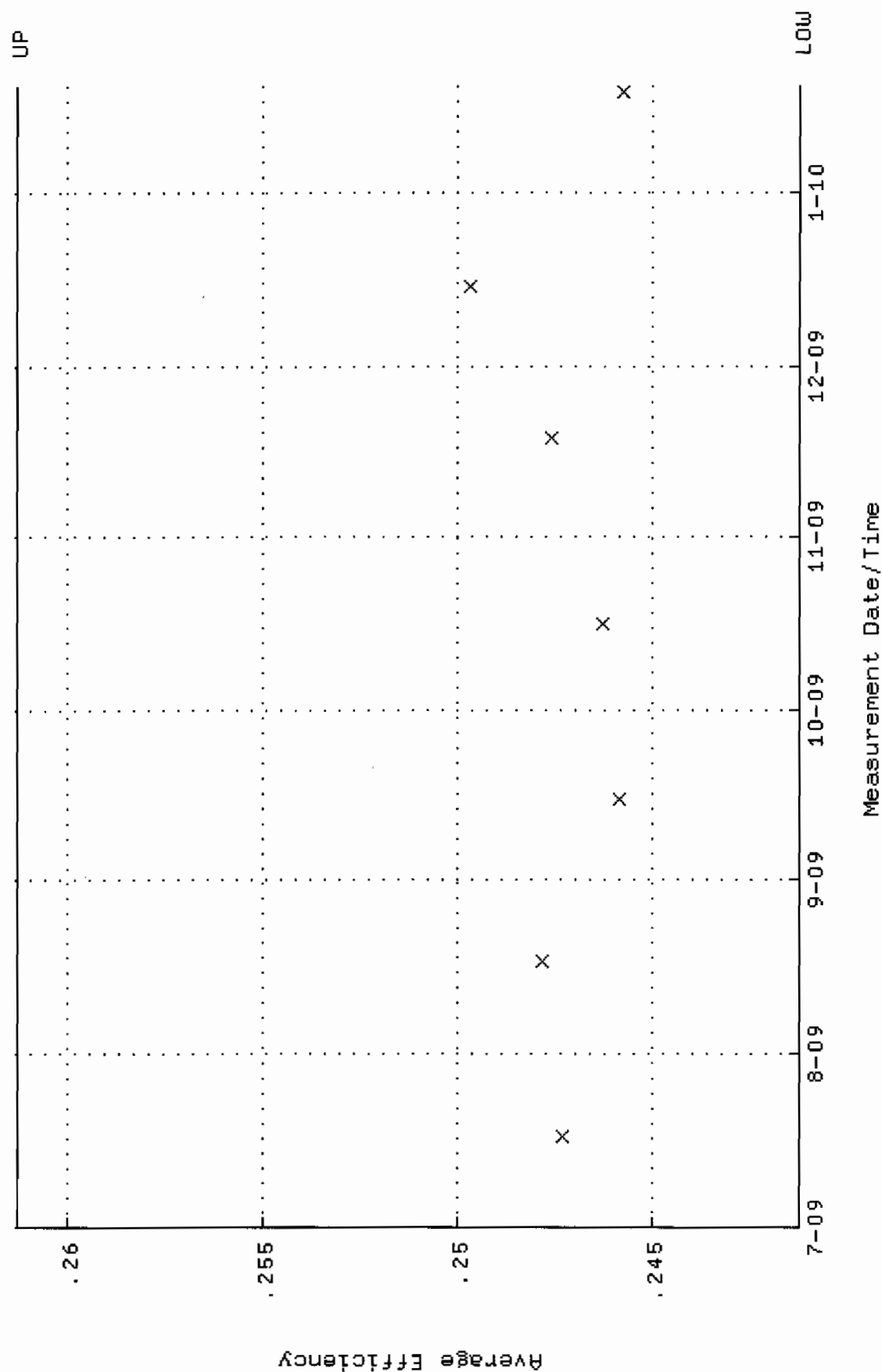
QA filename : DKA100:[ENV\_ALPHA.QA.W]W155.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:09 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 83.6873 through 92.4965



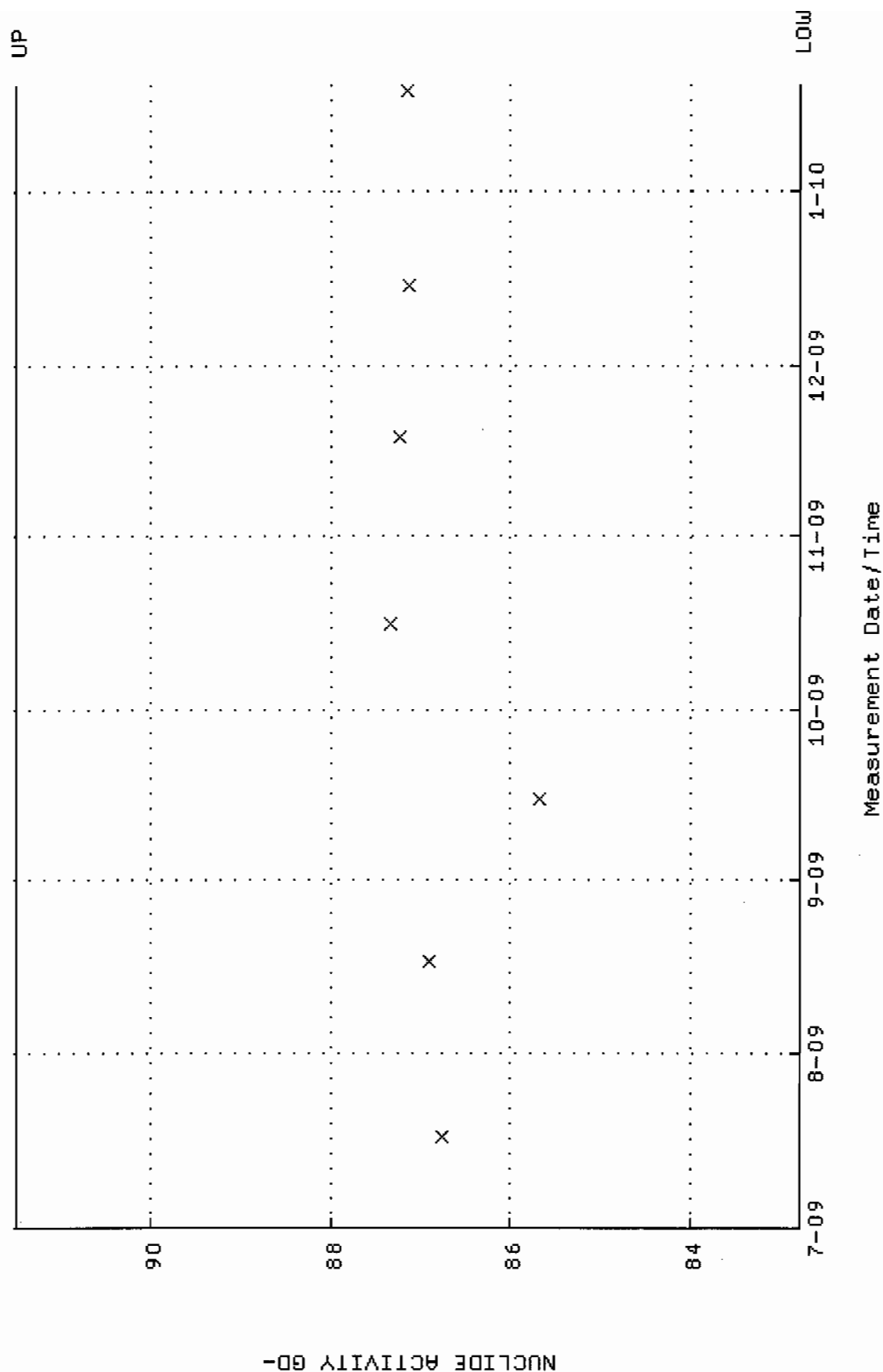
QA filename : DKA100:[ENV\_ALPHA.QA.B]B155.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:11 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



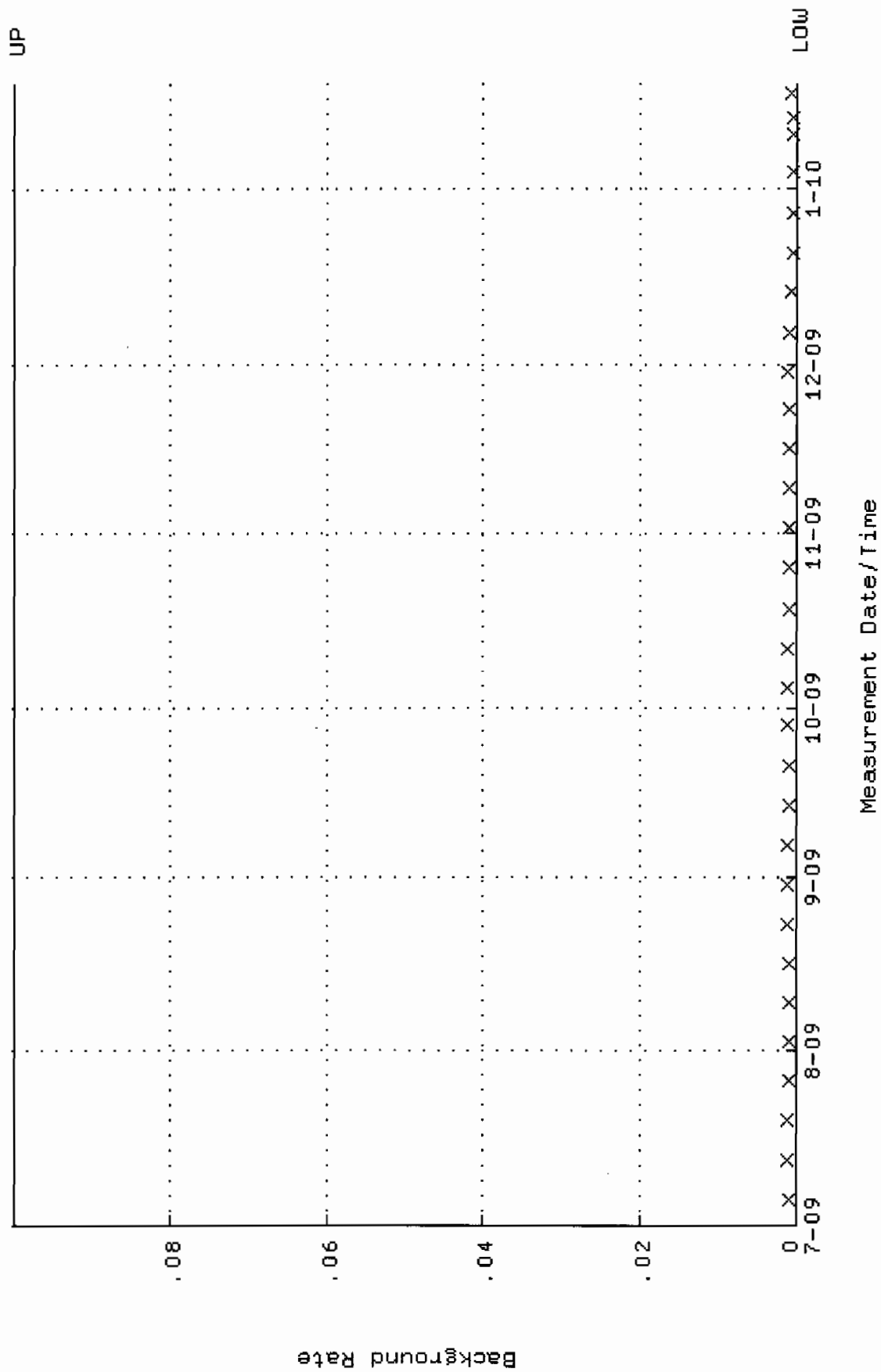
QA filename : DKA100:[ENV\_ALPHA.QA.W]W156.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:14 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.241250 through 0.261250



QA filename : DKA100:[ENV-ALPHA.QA.W]W156.QAF;1  
 Parameter Name : NLAIVITY-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

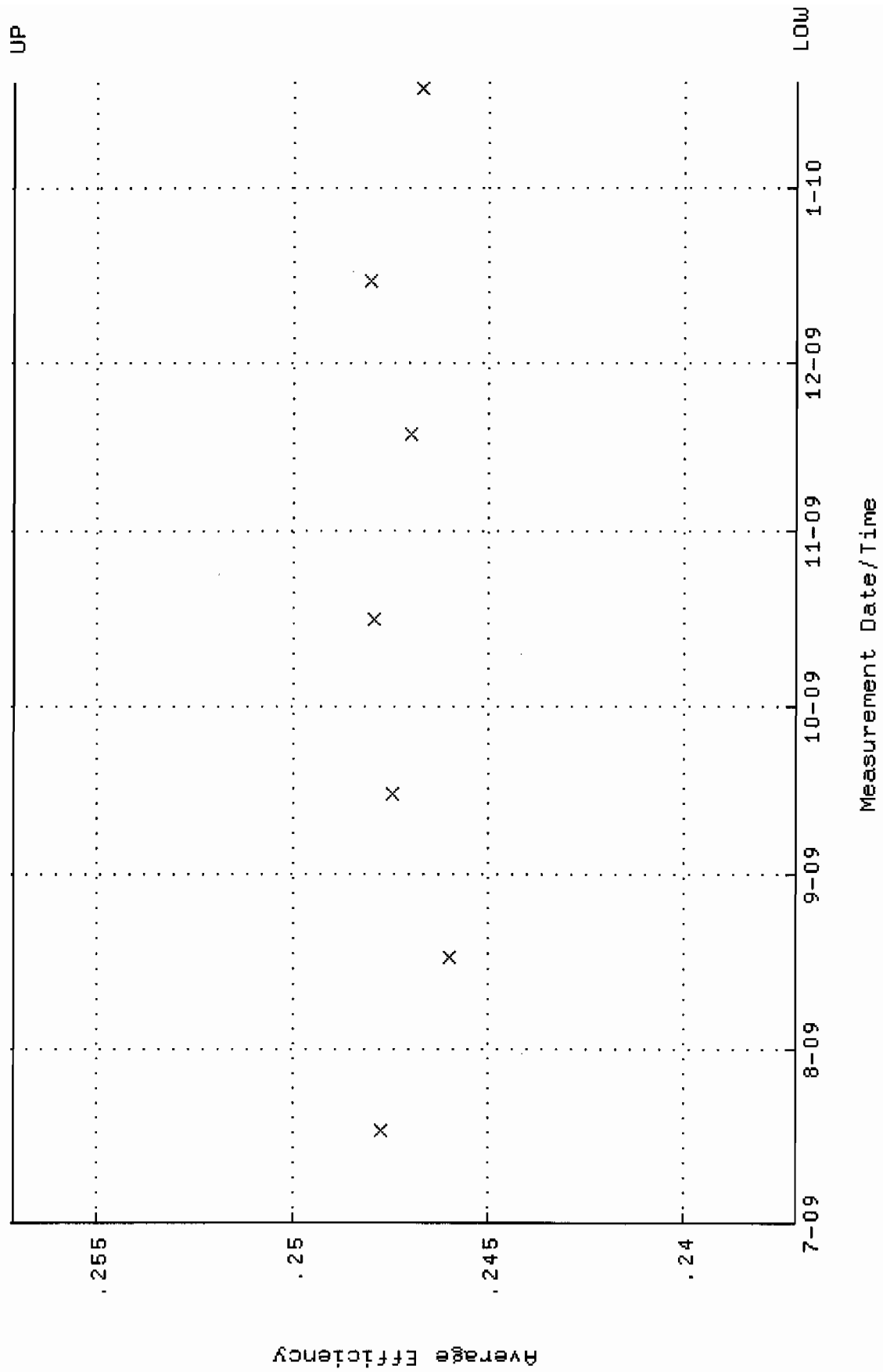


QA filename : DKA100:[ENV\_ALPHA.QA.W]W157.QAF;1

Parameter Name : AVRGEFF (Average Efficiency)

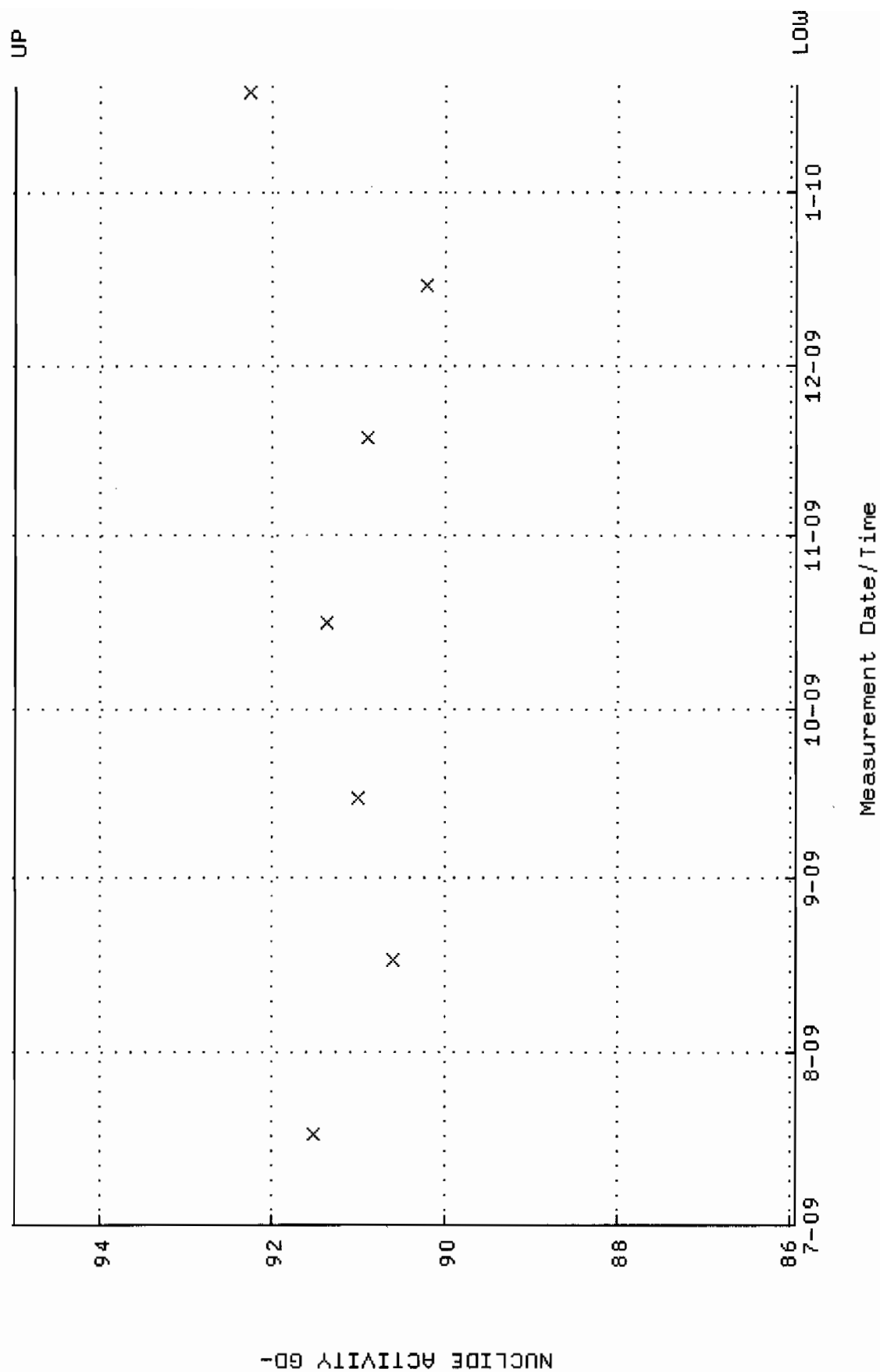
Start/End Dates : 17-JUL-2009 09:14:19 through 19-JAN-2010 12:00:00

Lower/Upper Lmts: 0.237137 through 0.257137

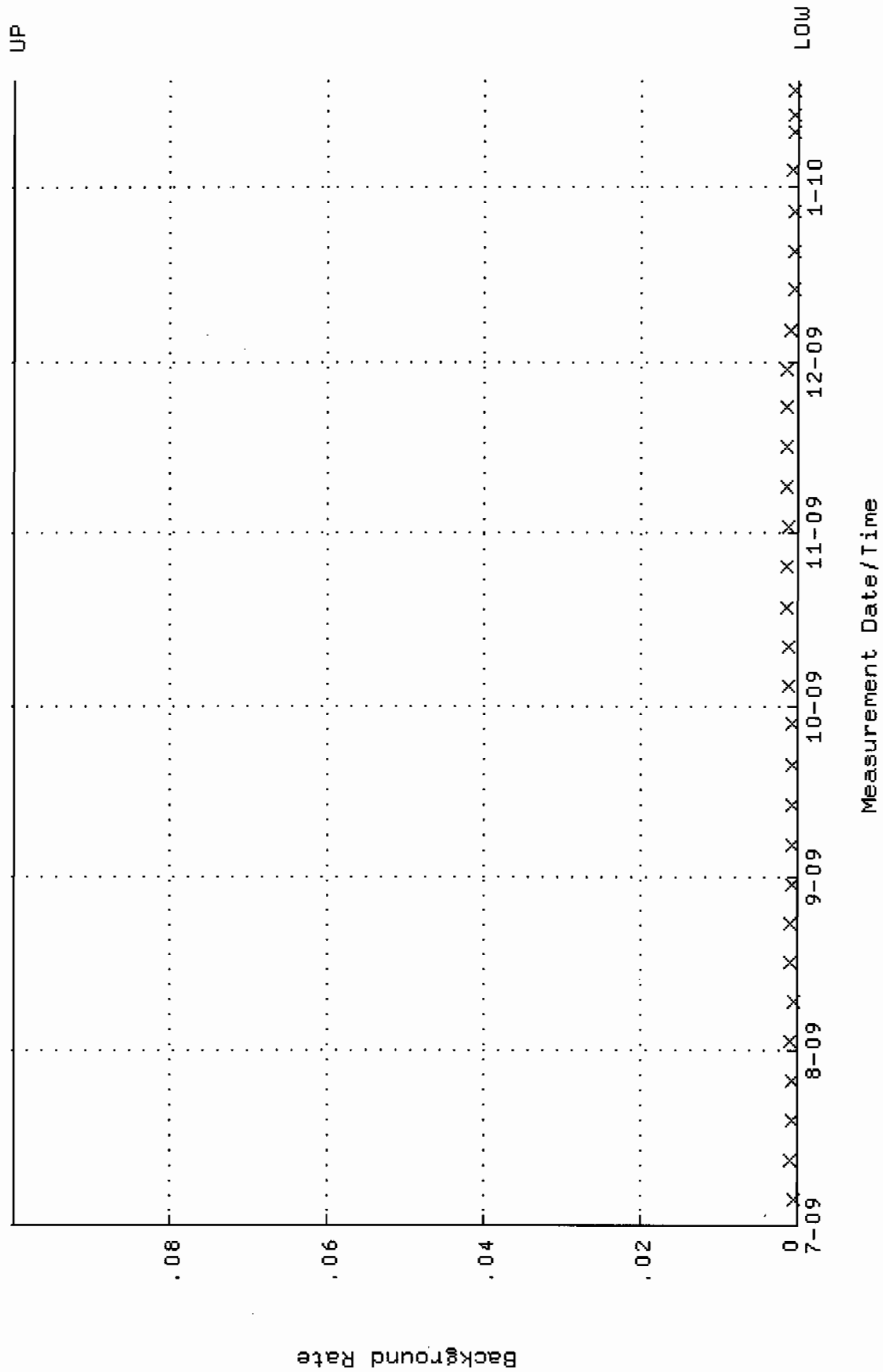




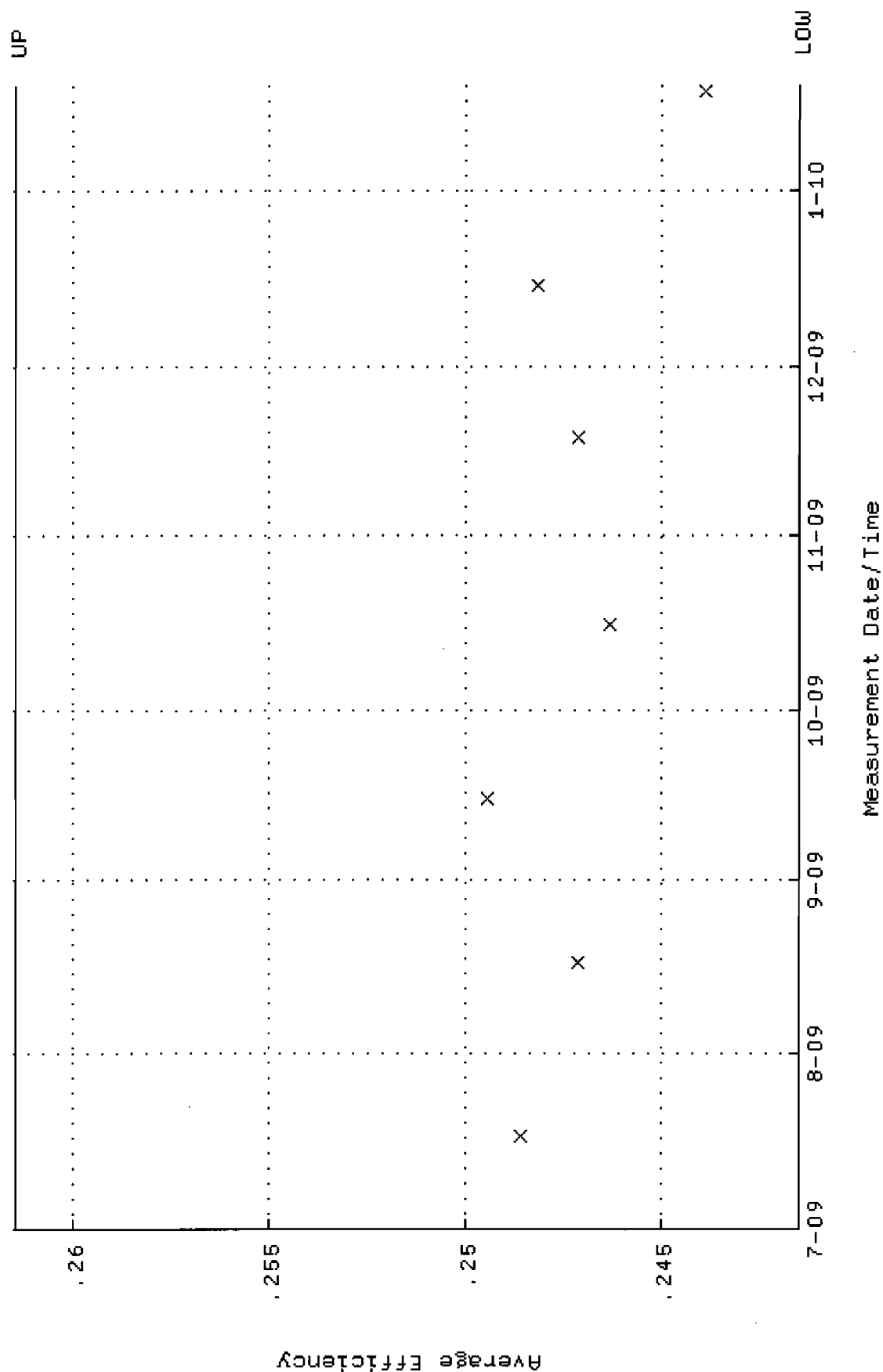
QA filename : DKA100:[ENV\_ALPHA.QA.W]W157.QAF;1  
Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
Start/End Dates : 17-JUL-2009 09:14:19 through 19-JAN-2010 12:00:00  
Lower/Upper Lmts: 85.9292 through 94.9744



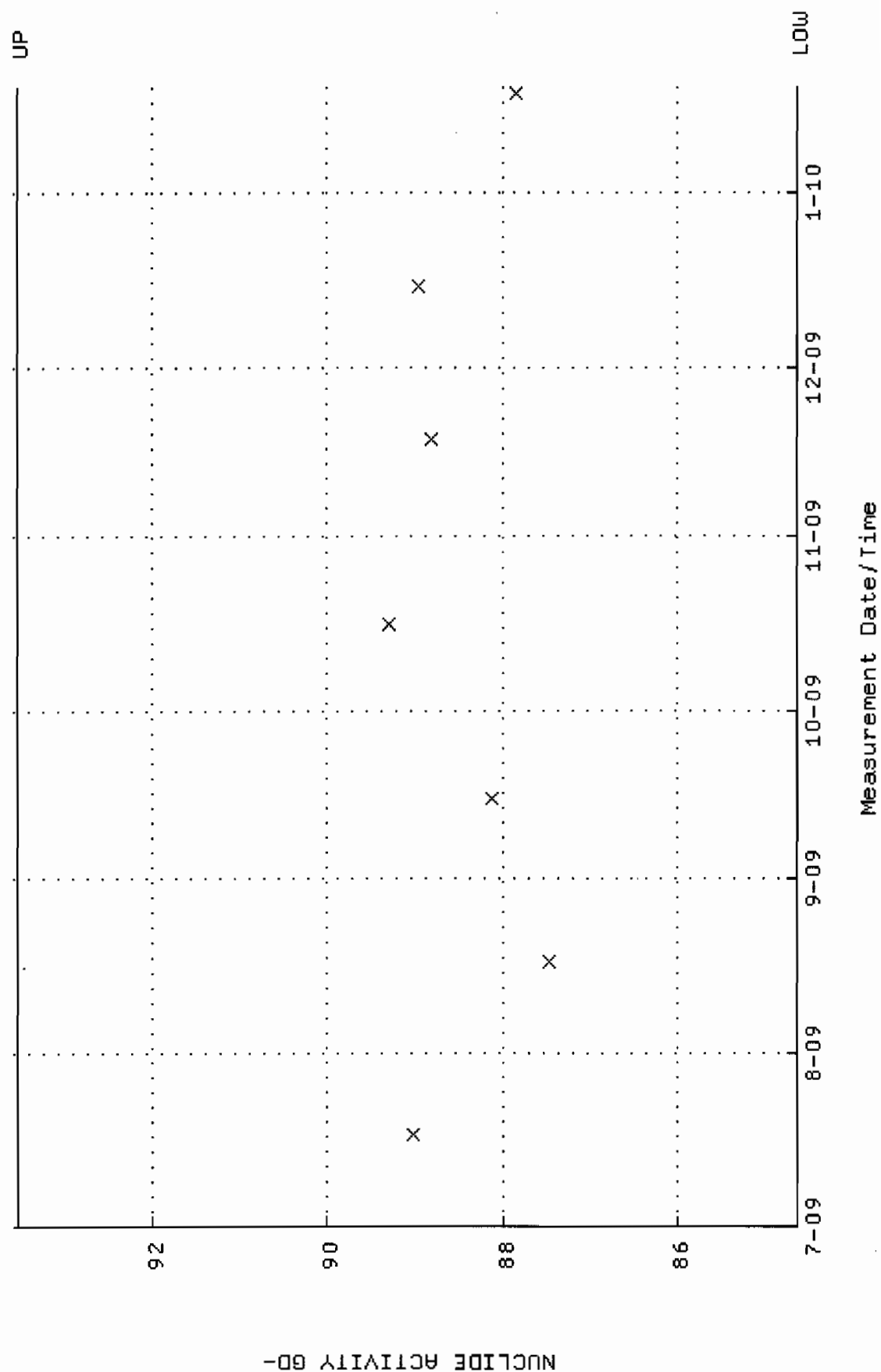
QA filename : DKA100:[ENV\_ALPHA.QA.B]B157.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:21 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



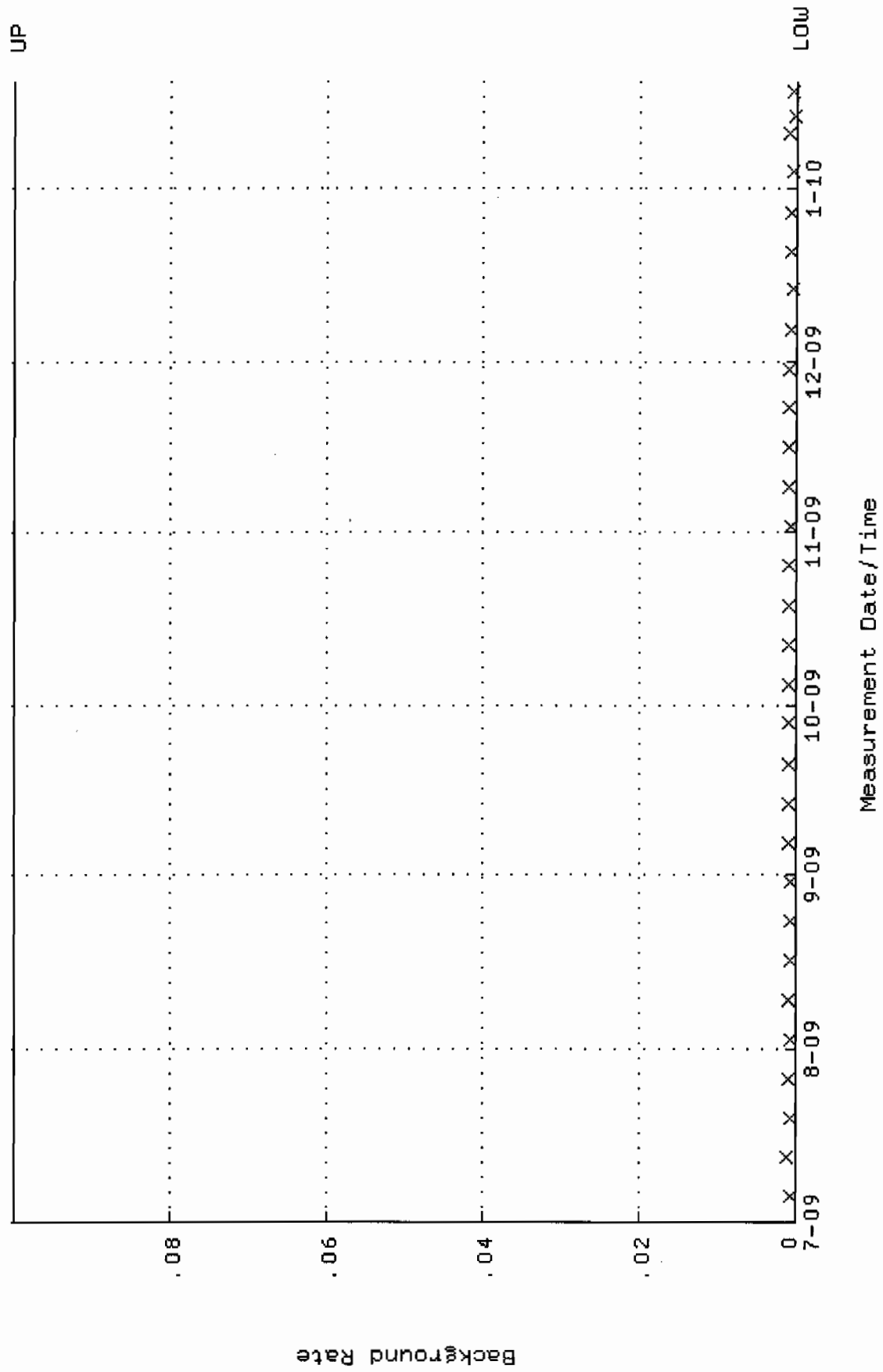
QA filename : DKA100:[ENV\_ALPHA.QA.W]W158.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 17-JUL-2009 09:14:24 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.241466 through 0.261466



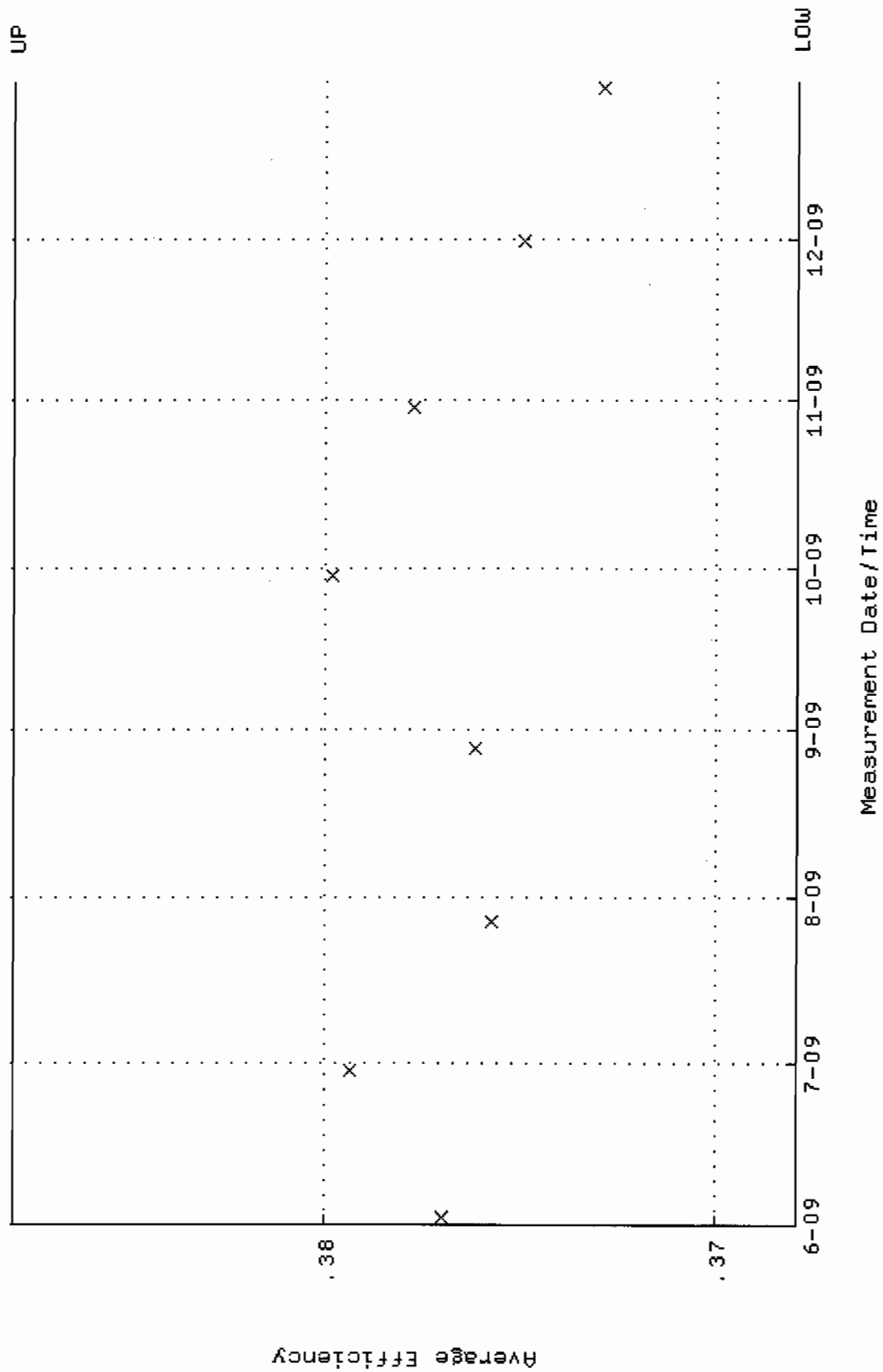
QA filename : DKA100:[ENV\_ALPHA.QA.W]W158.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 17-JUL-2009 09:14:24 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.6414 through 93.5510



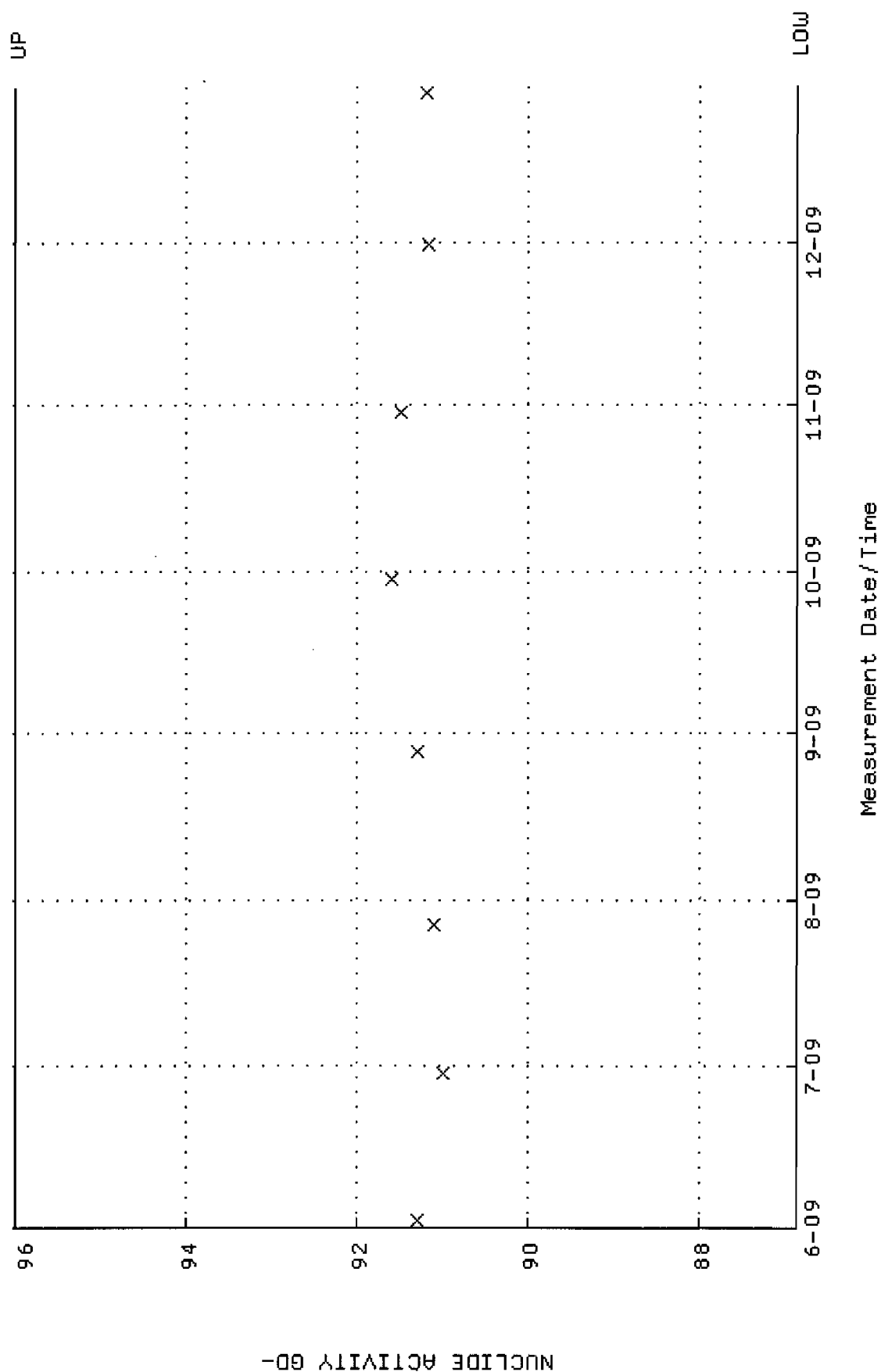
QA filename : DKA100:[ENV\_ALPHA.QA.B]B158.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 14:58:26 through 19-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



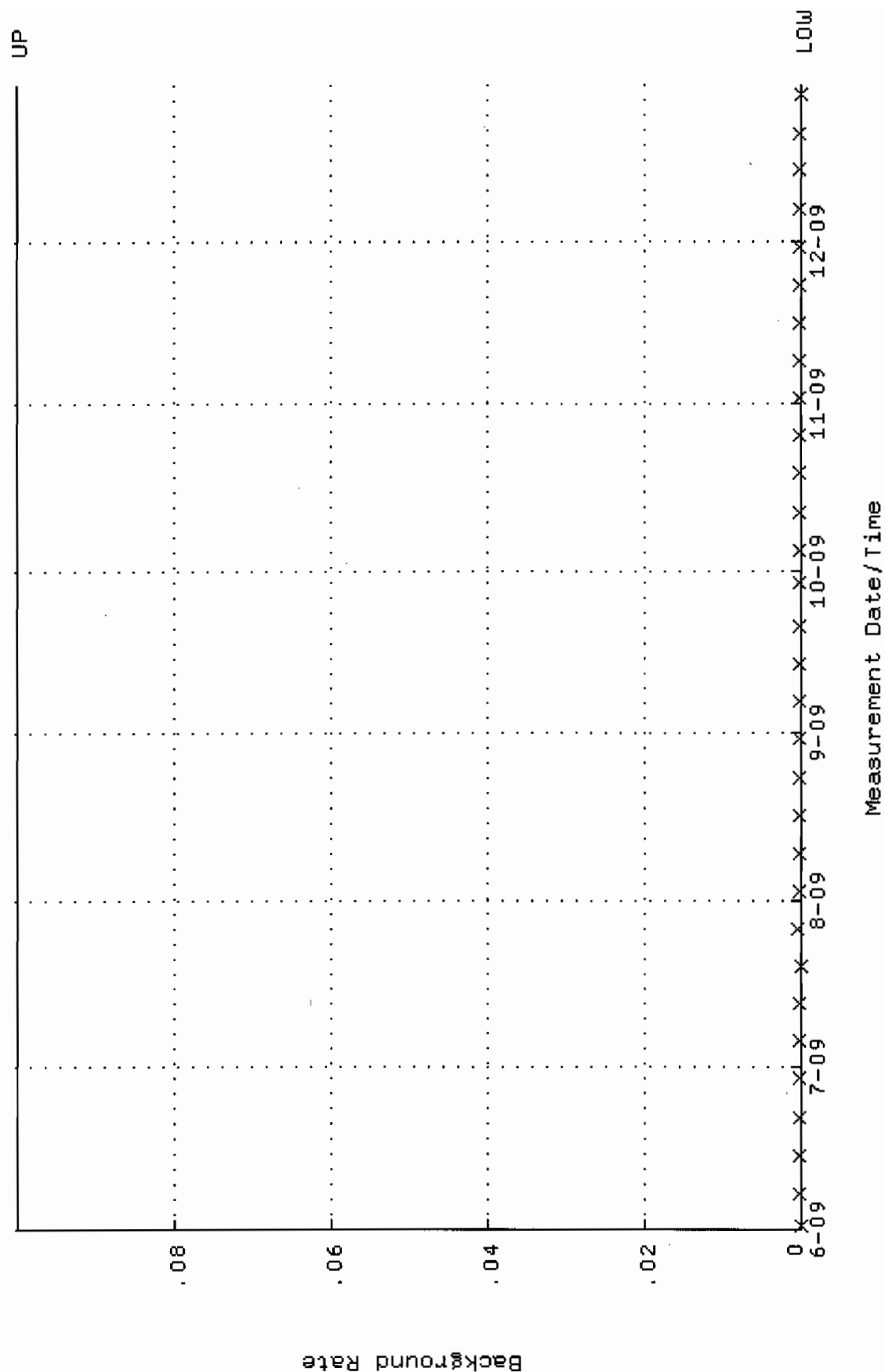
QA filename : DKA100:[ENV\_ALPHA.QA.W]w221.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:10 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.367948 through 0.387948



QA filename : DKA100:[ENV-ALPHA.QA.W]W221.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:10 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 86.8591 through 96.0021

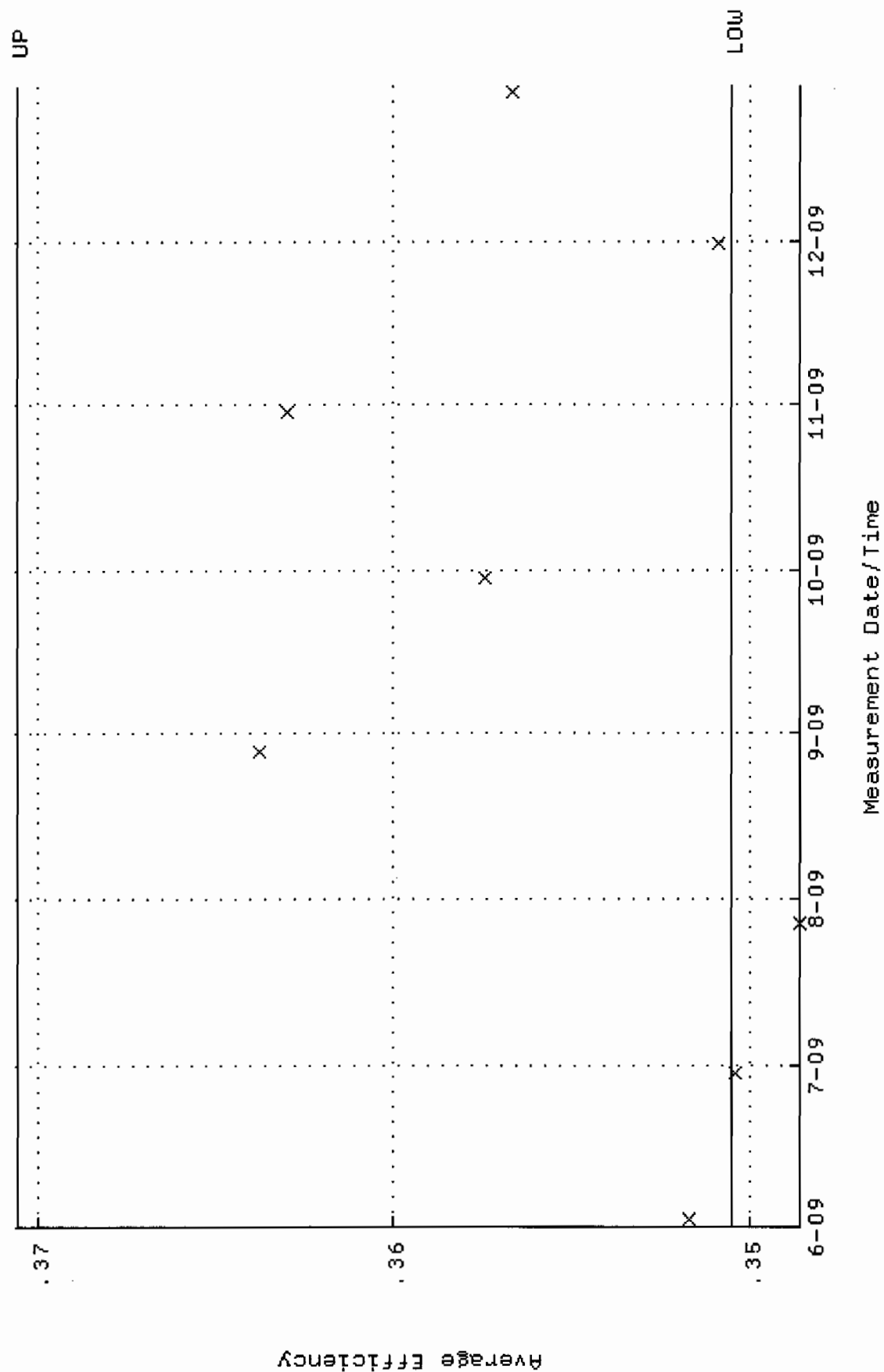


QA filename : DKA100:[ENV\_ALPHA.QA.B]B221.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:44:25 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

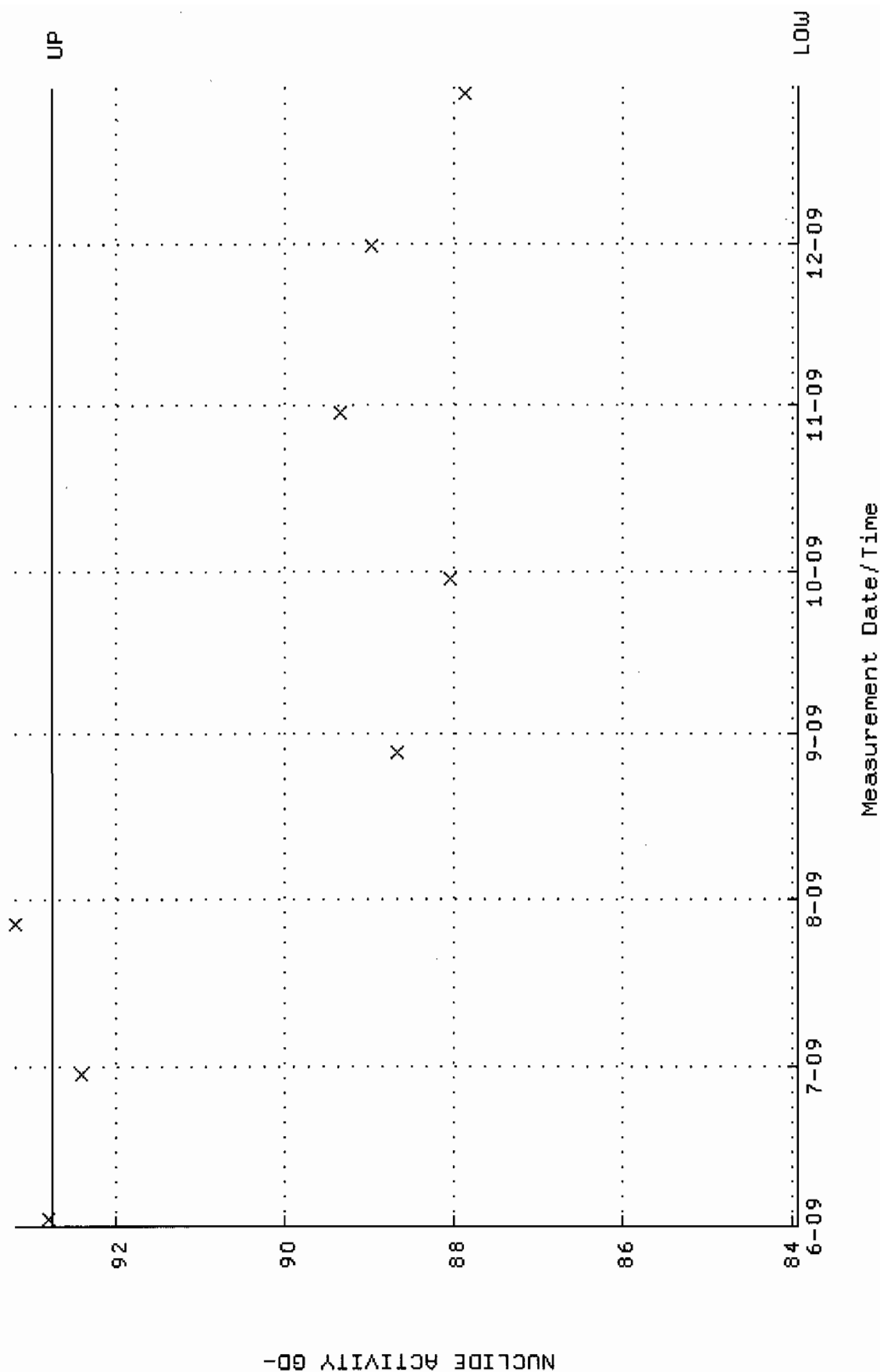




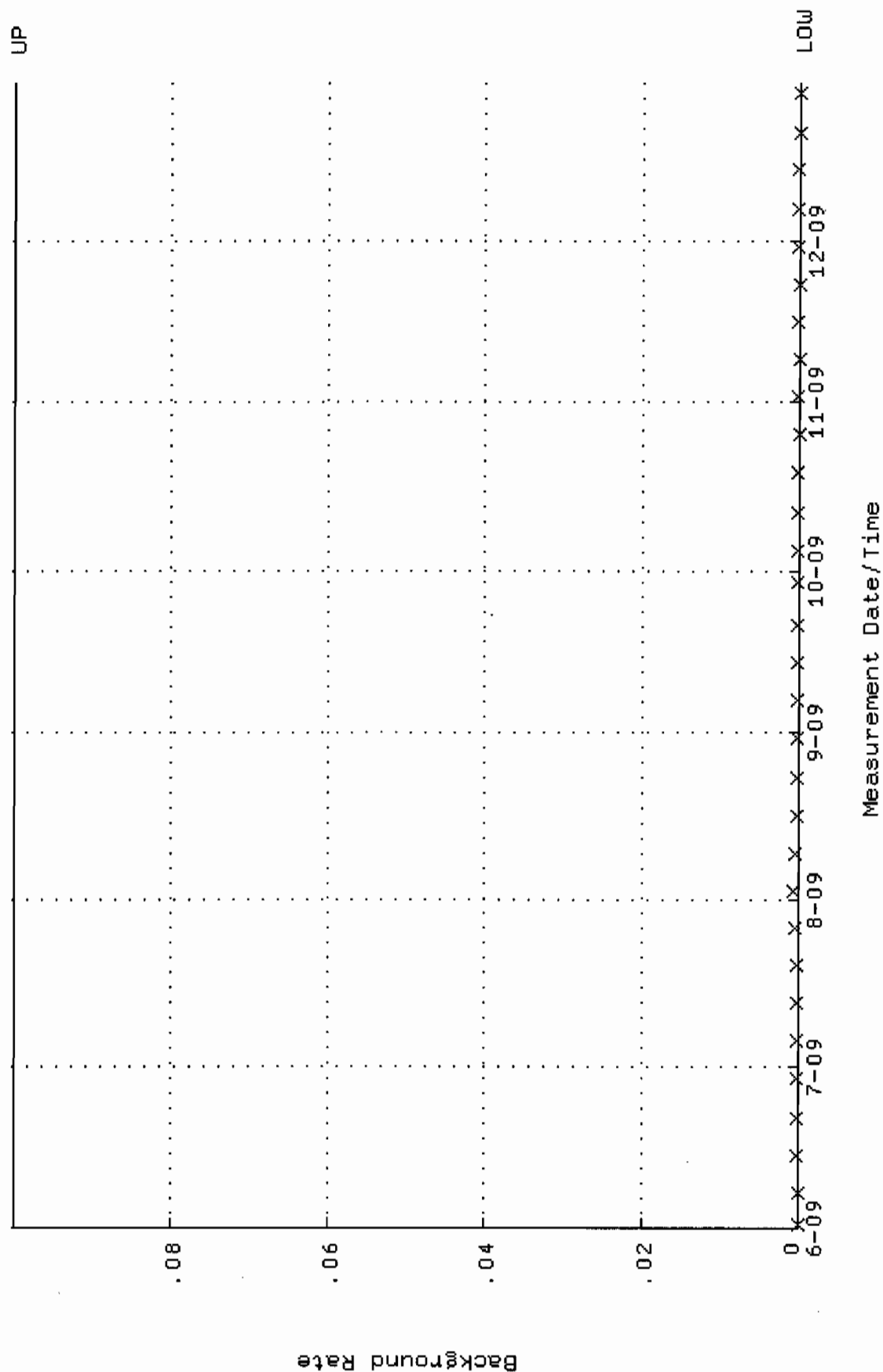
QA filename : DKA100:[ENV\_ALPHA.QA.W]W222.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:15 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.350566 through 0.370566



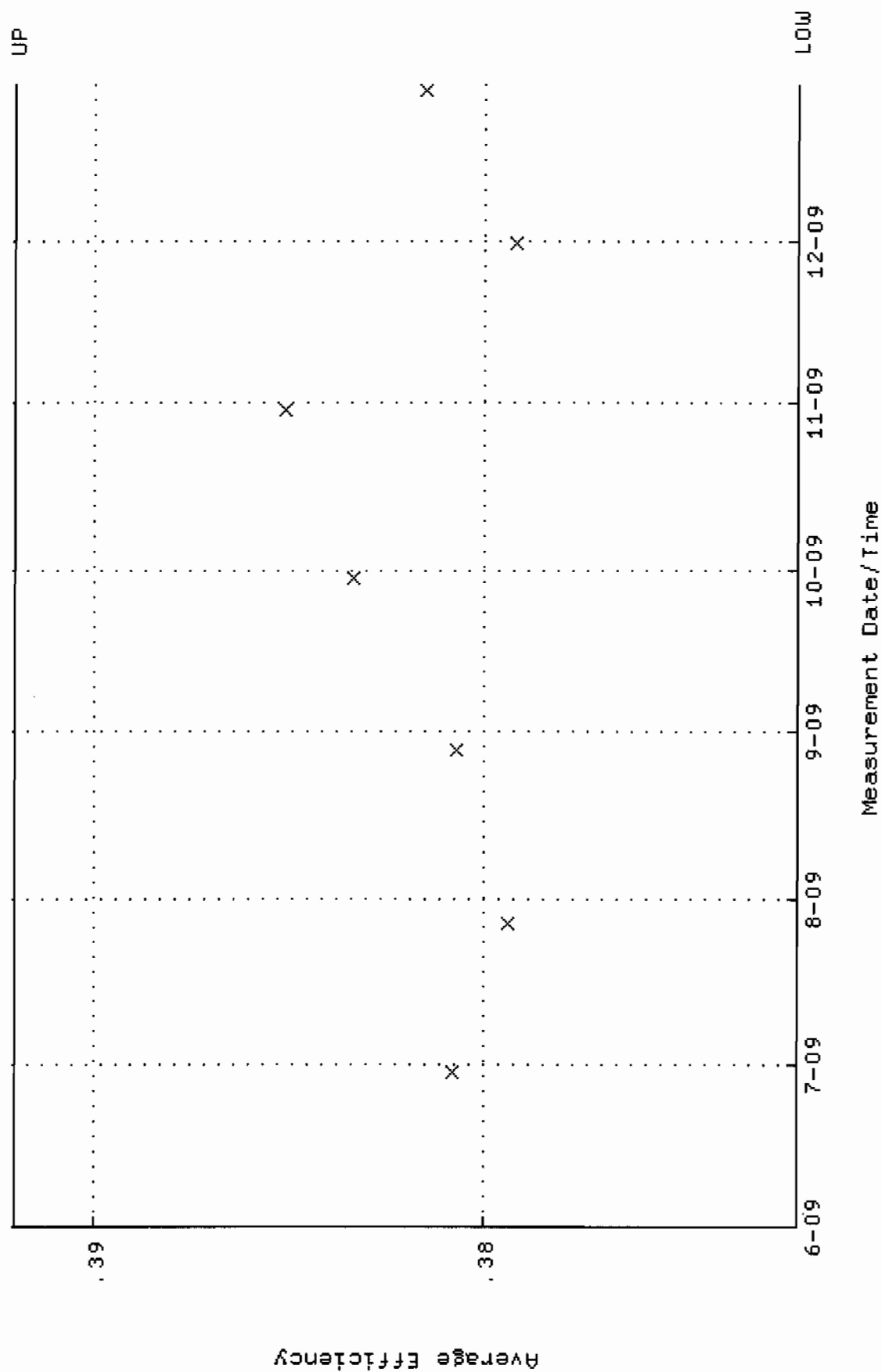
QA filename : DKA100:[ENV\_ALPHA.QA.W]W222.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:15 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 83.9445 through 92.7807



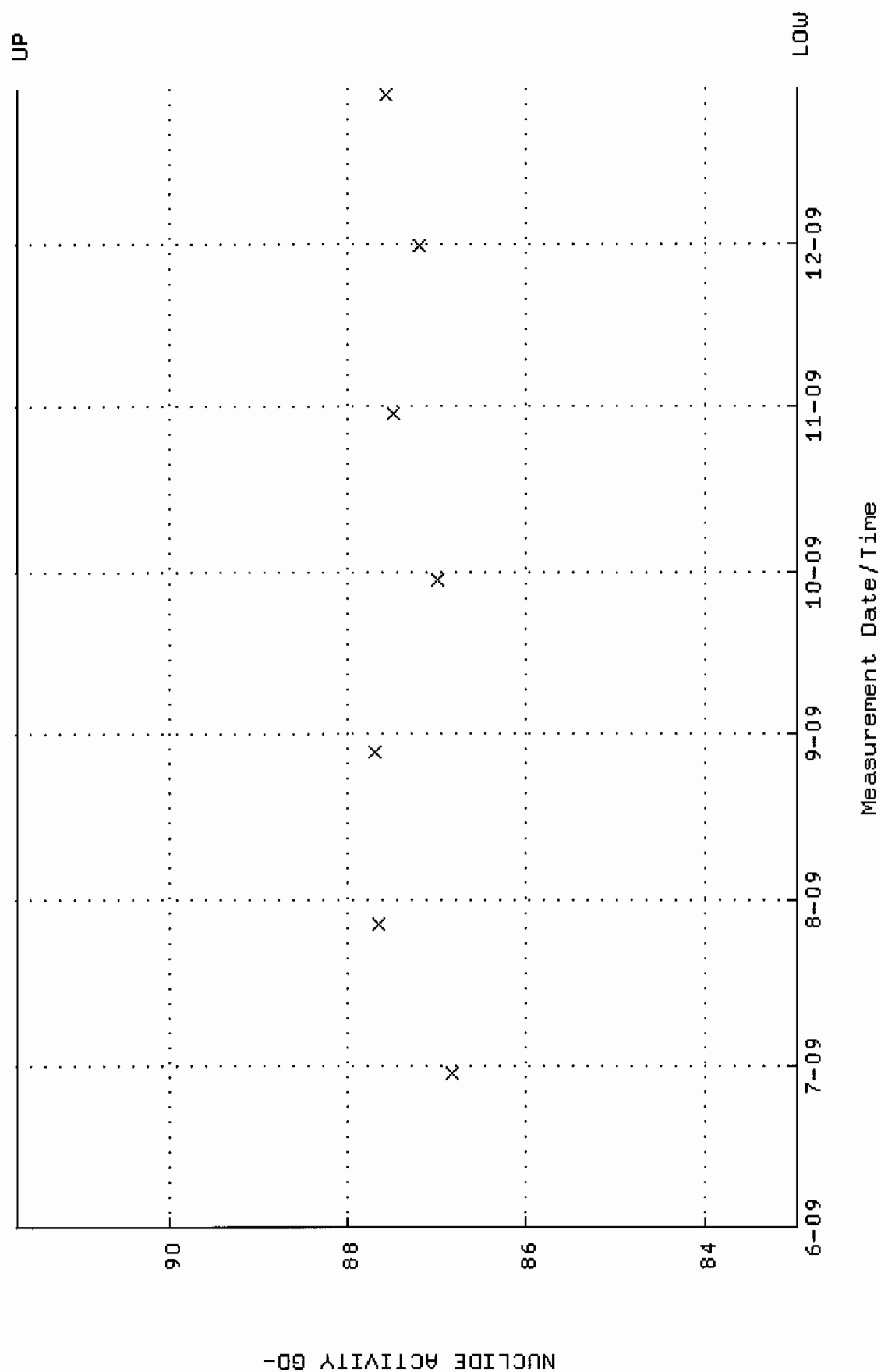
QA filename : DKA100:[ENV\_ALPHA.QA.B]B222.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:44:30 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



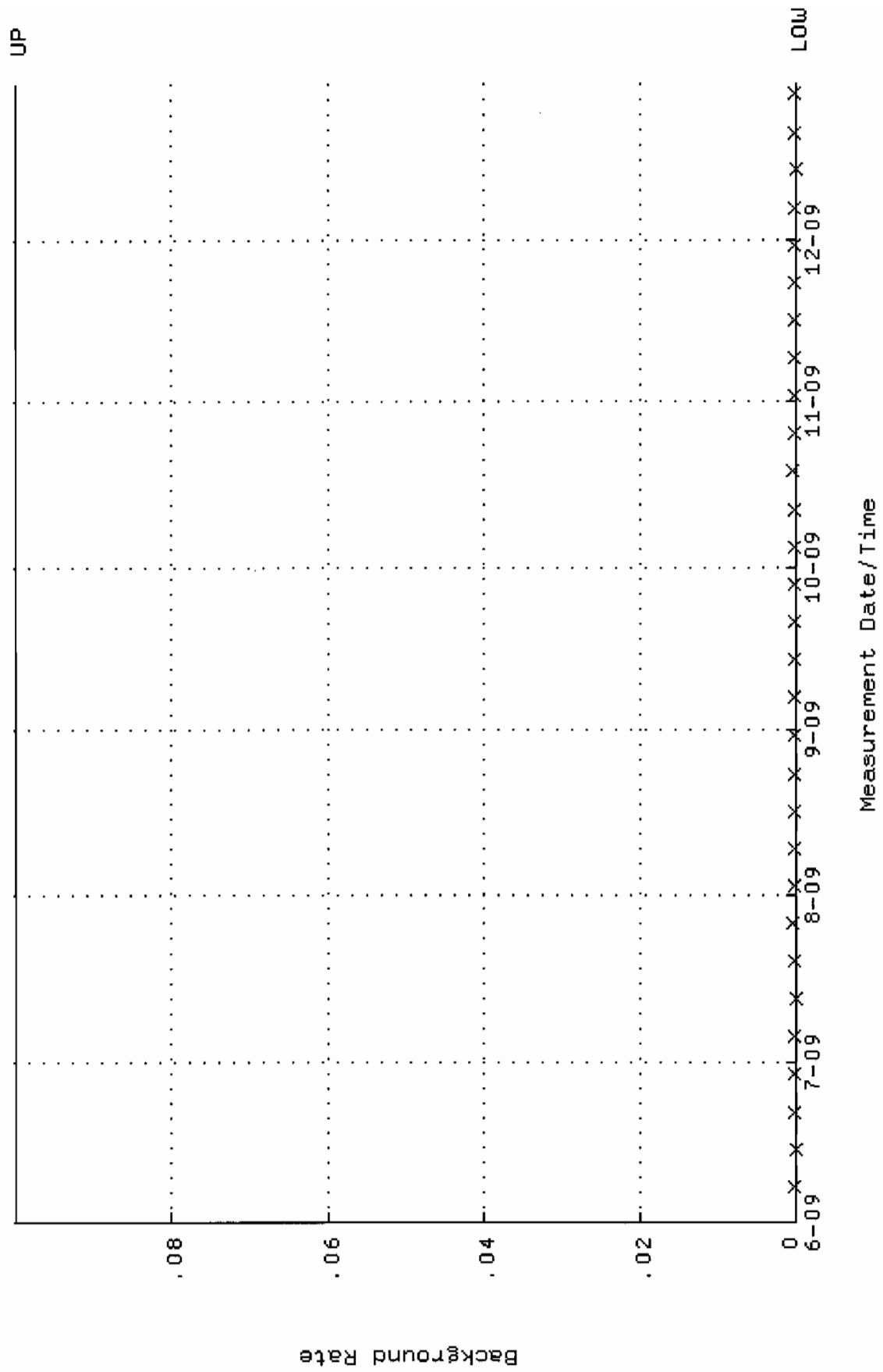
QA filename : DKA100:[ENV\_ALPHA.QA.W]W233.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 29-JUN-2009 11:08:39 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.372001 through 0.392001



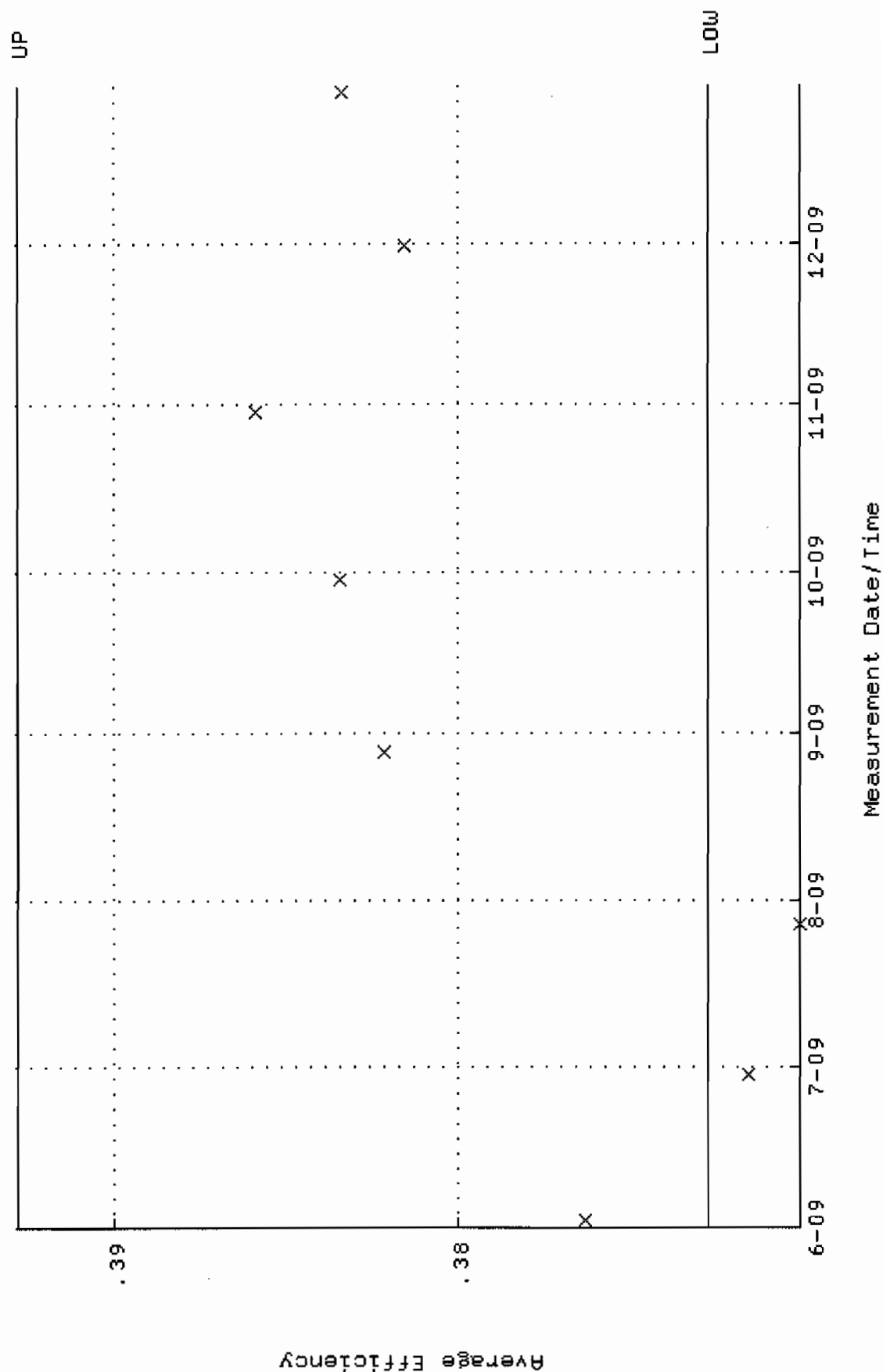
QA filename : DKA100:[ENV\_ALPHA.QA.W]W233.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 29-JUN-2009 11:08:39 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 82.9652 through 91.6984



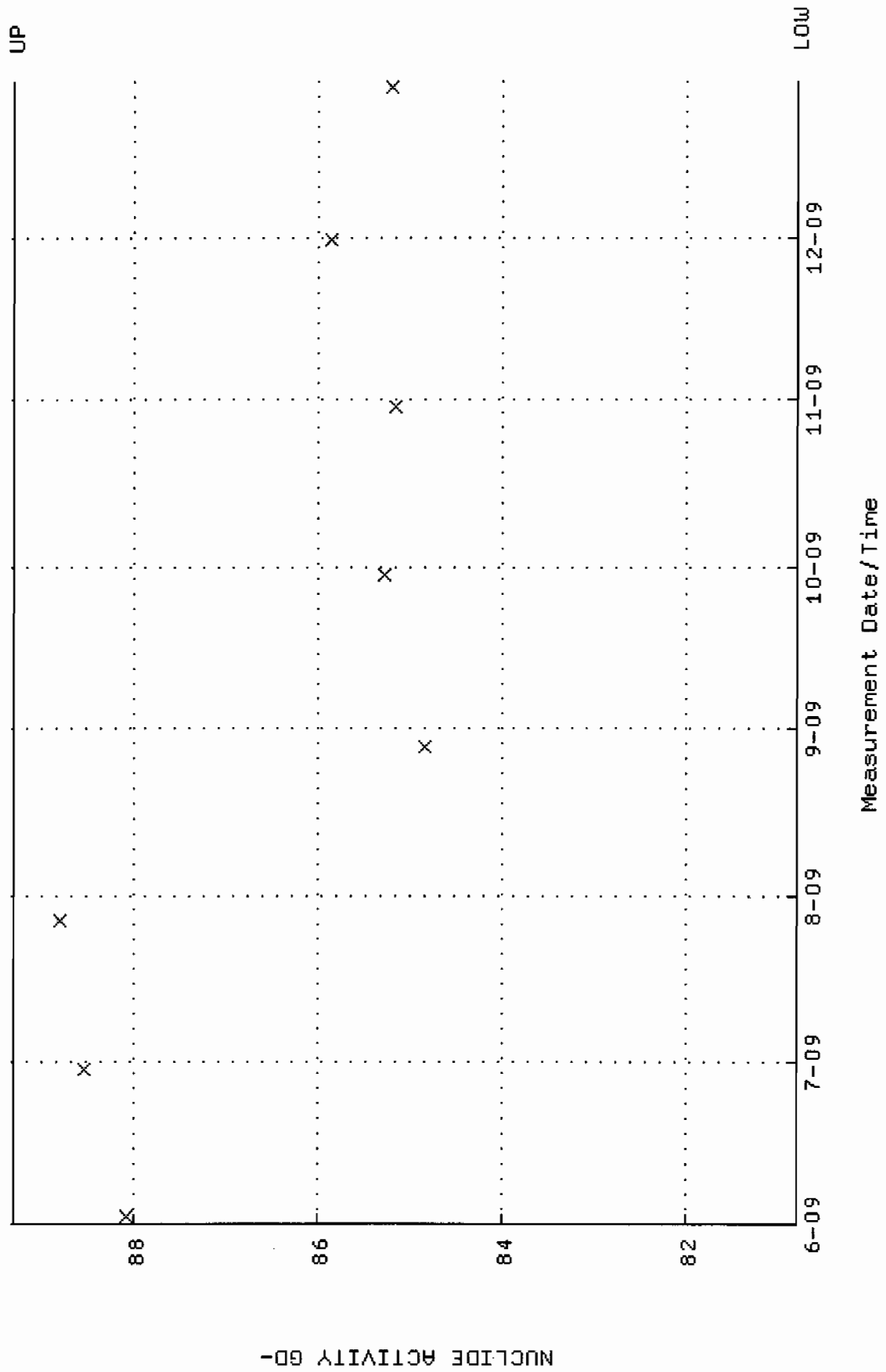
QA filename : DKA100:[ENV\_ALPHA.QA.B]B233.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:16:56 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]W234.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:19:19 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.372763 through 0.392763

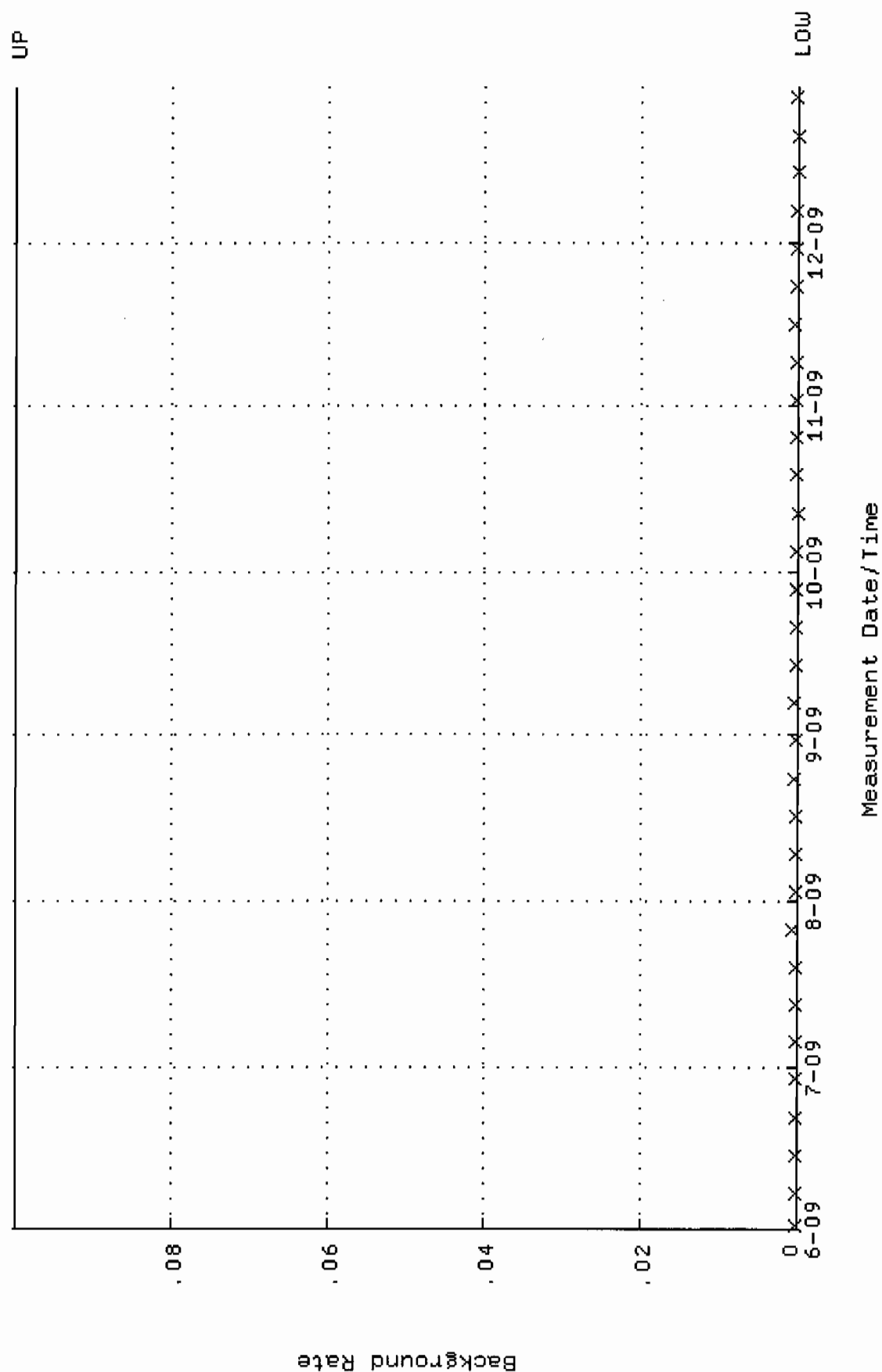


QA filename : DKA100:[ENV\_ALPHA.QA.W]W234.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:19:19 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 80.7996 through 89.3048

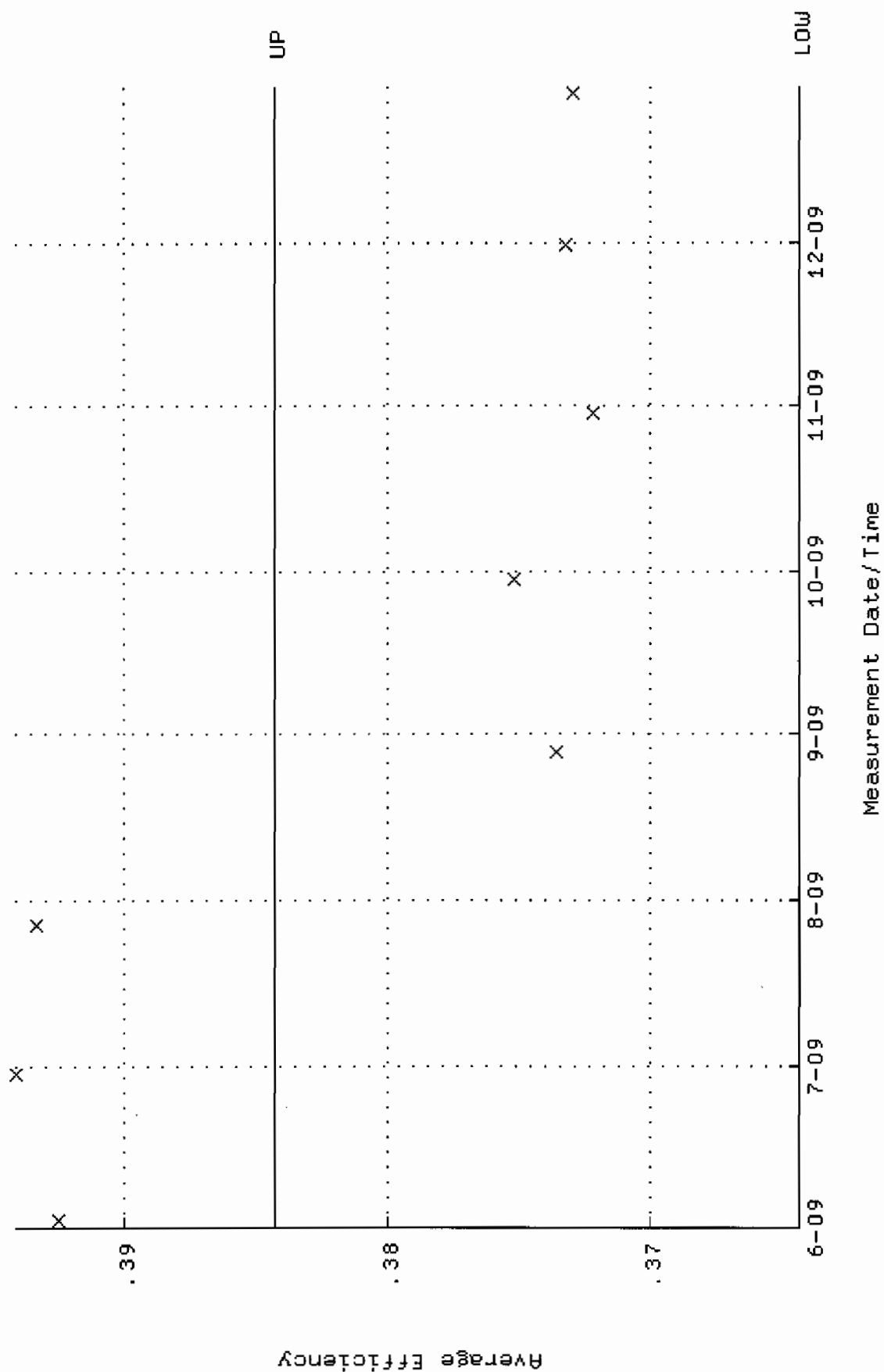




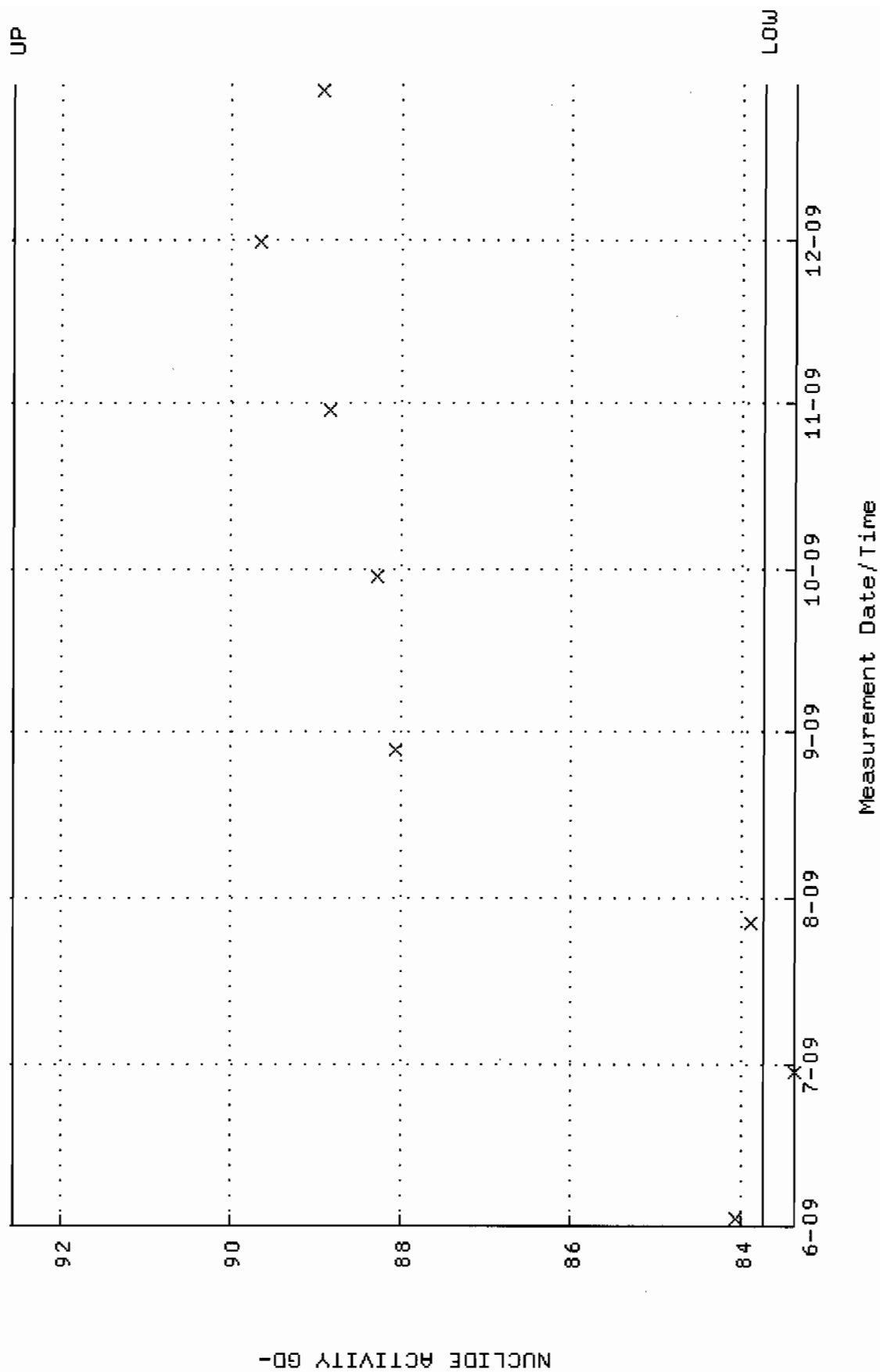
QA filename : DKA100:[ENV\_ALPHA.QA.B]B234.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:45:35 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



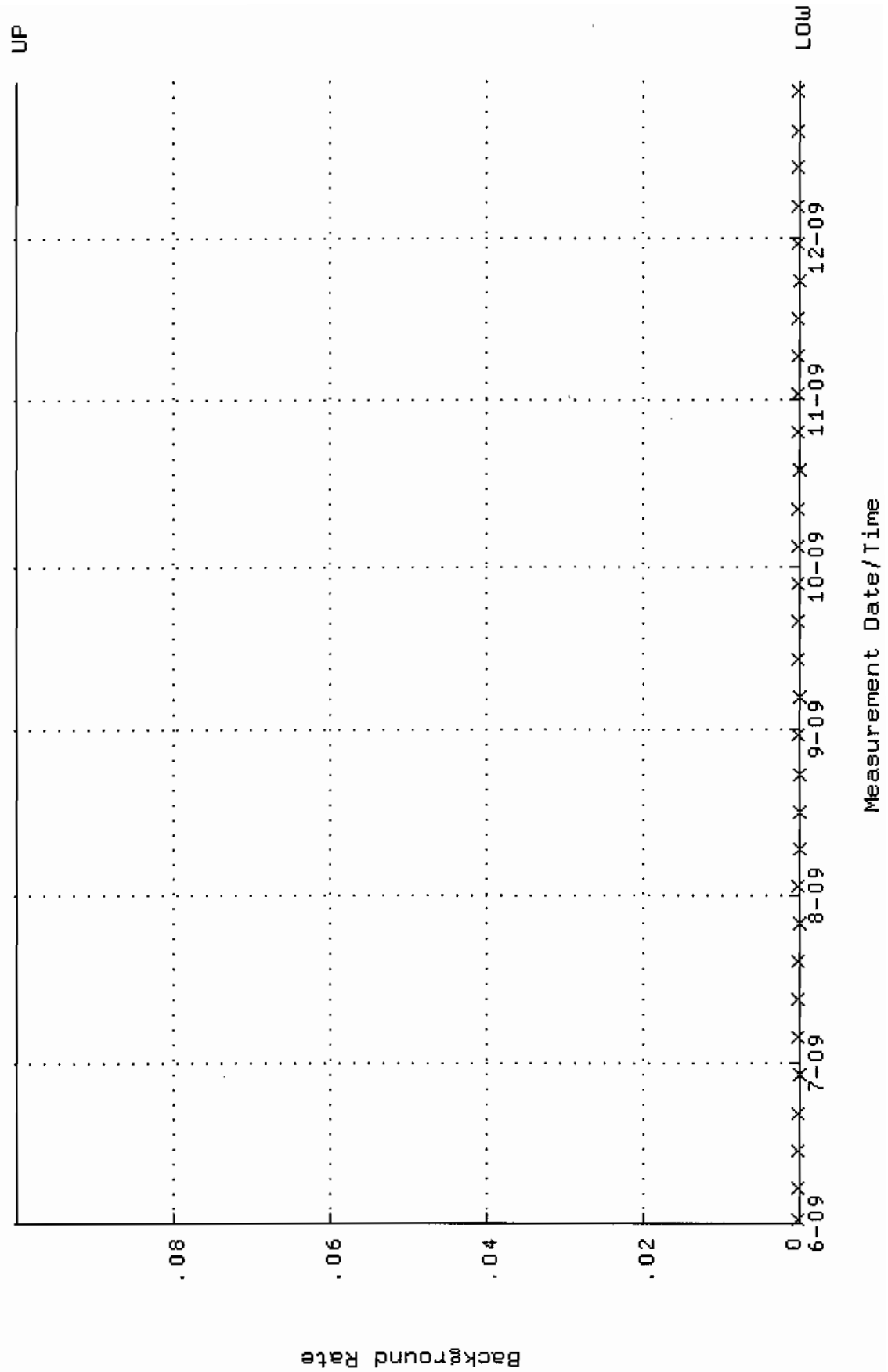
QA filename : DKA100:[ENV\_ALPHA.QA.W]W235.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:19:23 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.364314 through 0.384314



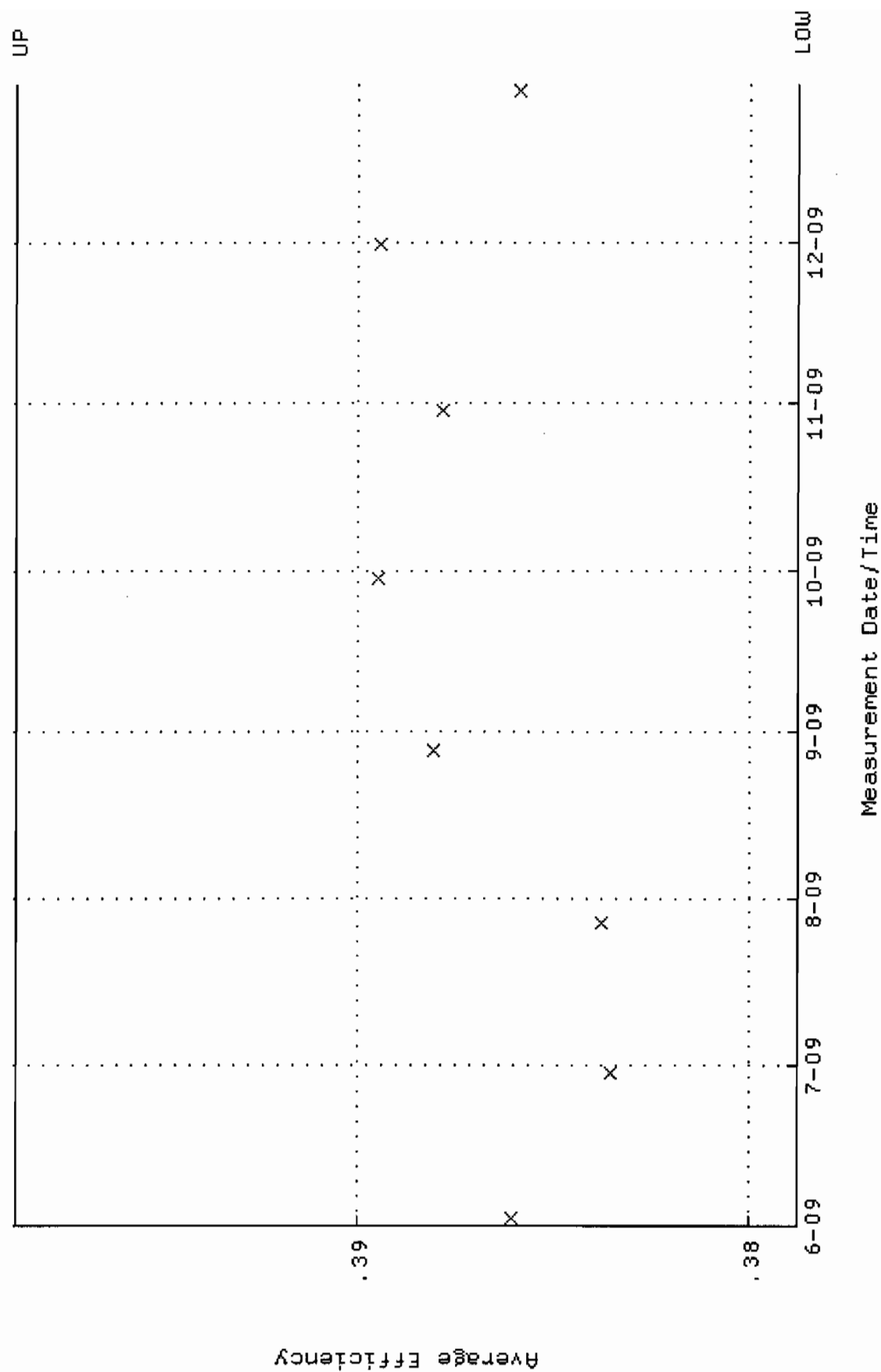
QA filename : DKA100:[ENV\_ALPHA.QA.W]W235.QAF;1  
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:19:23 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 83.7416 through 92.5566



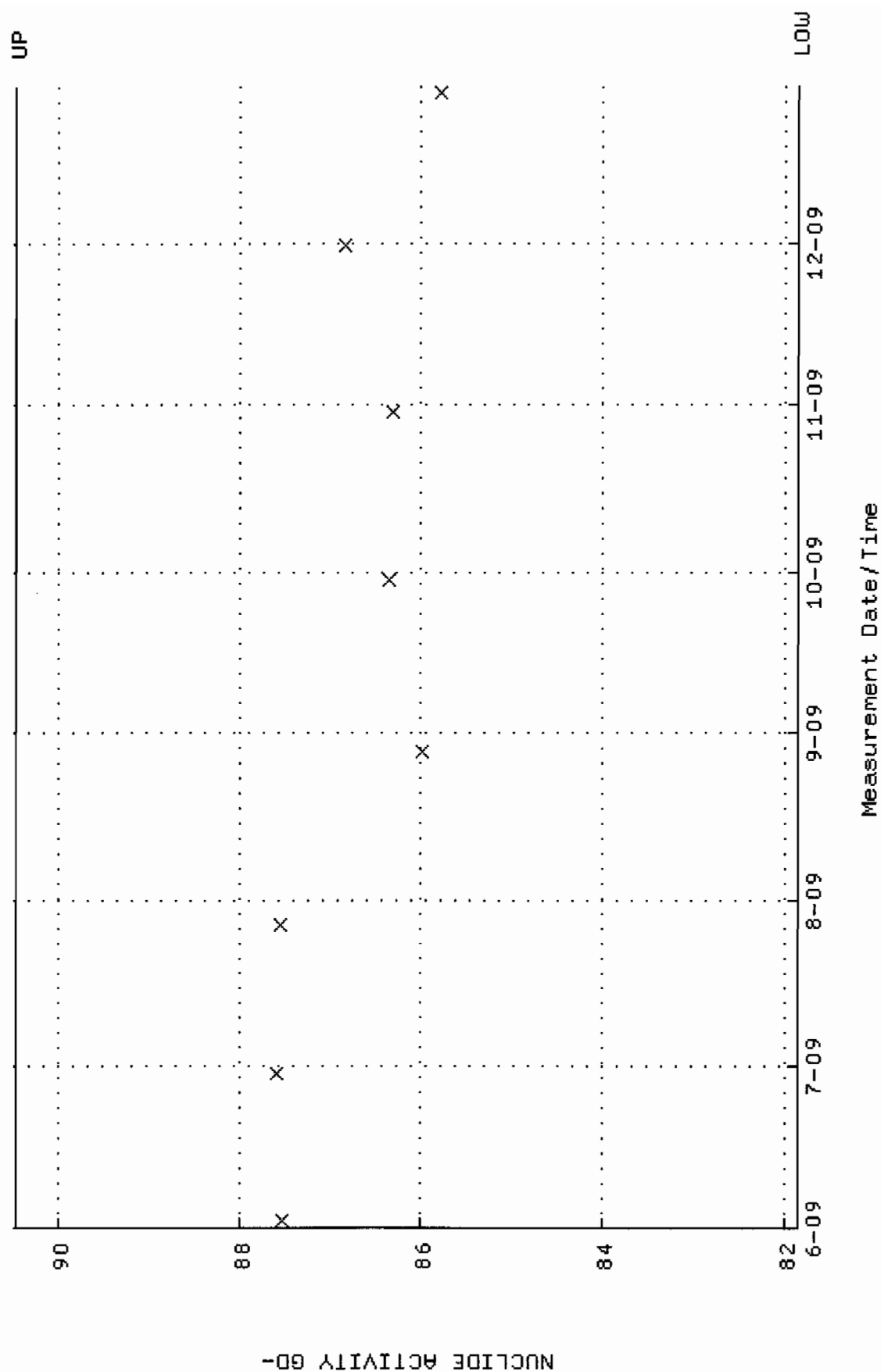
QA filename : DKA100:[ENV\_ALPHA.QA.B]B235.QAF;1  
Parameter Name : BACKRATE (Background Rate)  
Start/End Dates : 1-JUN-2009 17:45:45 through 29-DEC-2009 12:00:00  
Lower/Upper Lmts: 0.000000E+00 through 0.100000



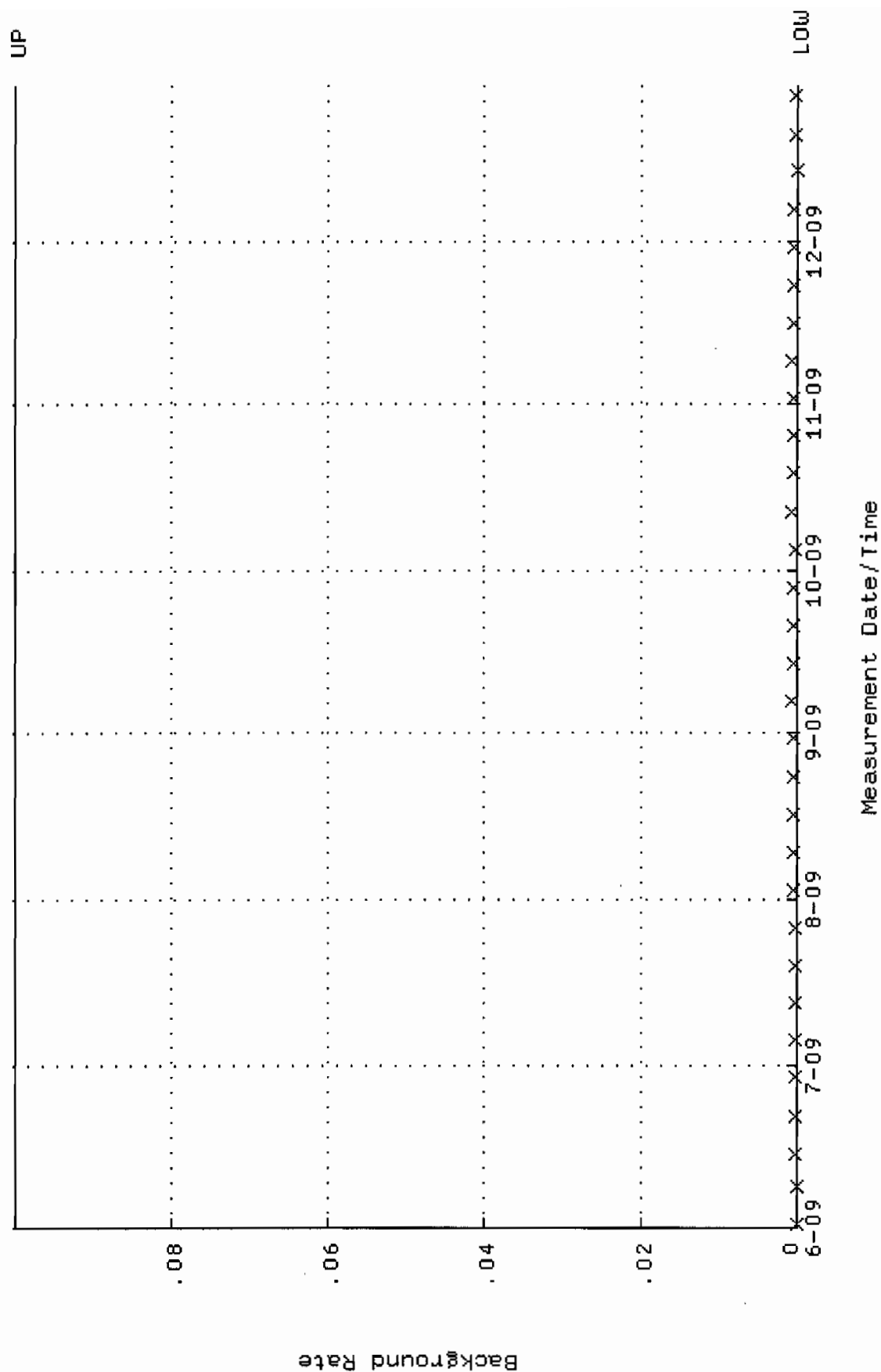
QA filename : DKA100:[ENV\_ALPHA.QA.W]W236.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:19:29 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.378766 through 0.398766



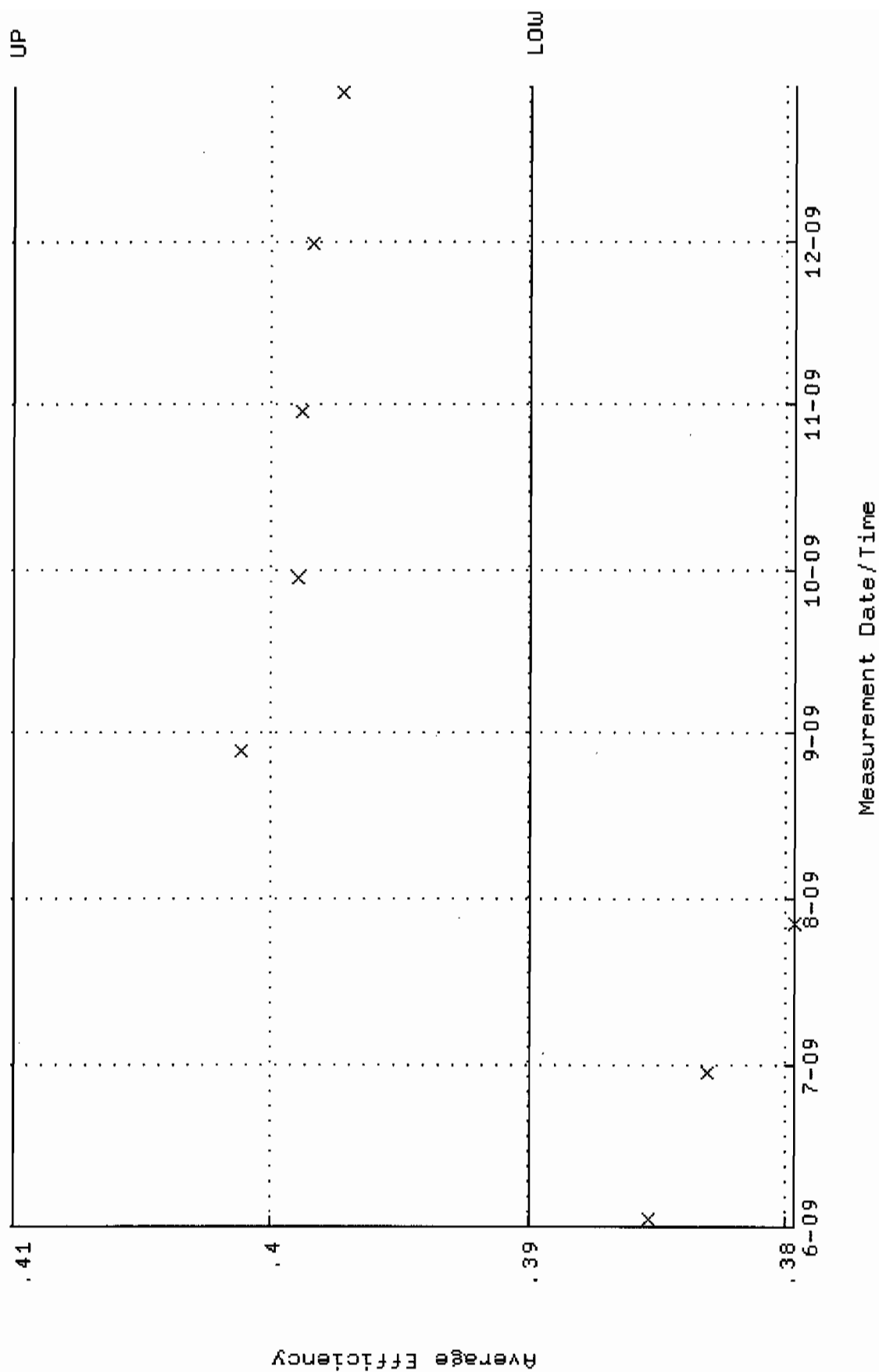
QA filename : DKA100:[ENV\_ALPHA.QA.W]W236.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:19:29 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 81.8490 through 90.4646



QA filename : DKA100:[ENV\_ALPHA.QA.B]B236.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:45:52 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

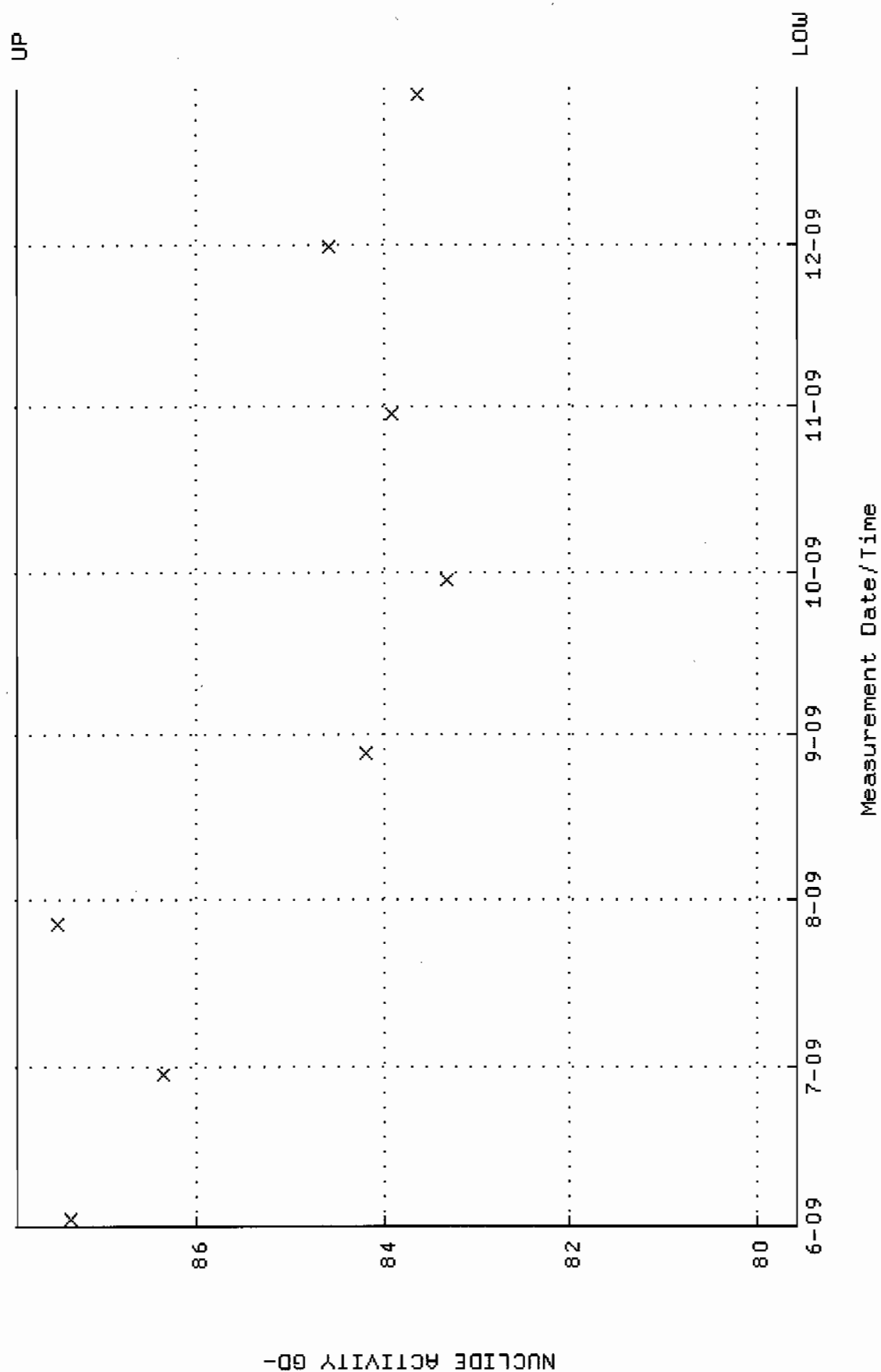


QA filename : DKA100:[ENV\_ALPHA.QA.W]W237.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:19:34 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.390000 through 0.410000

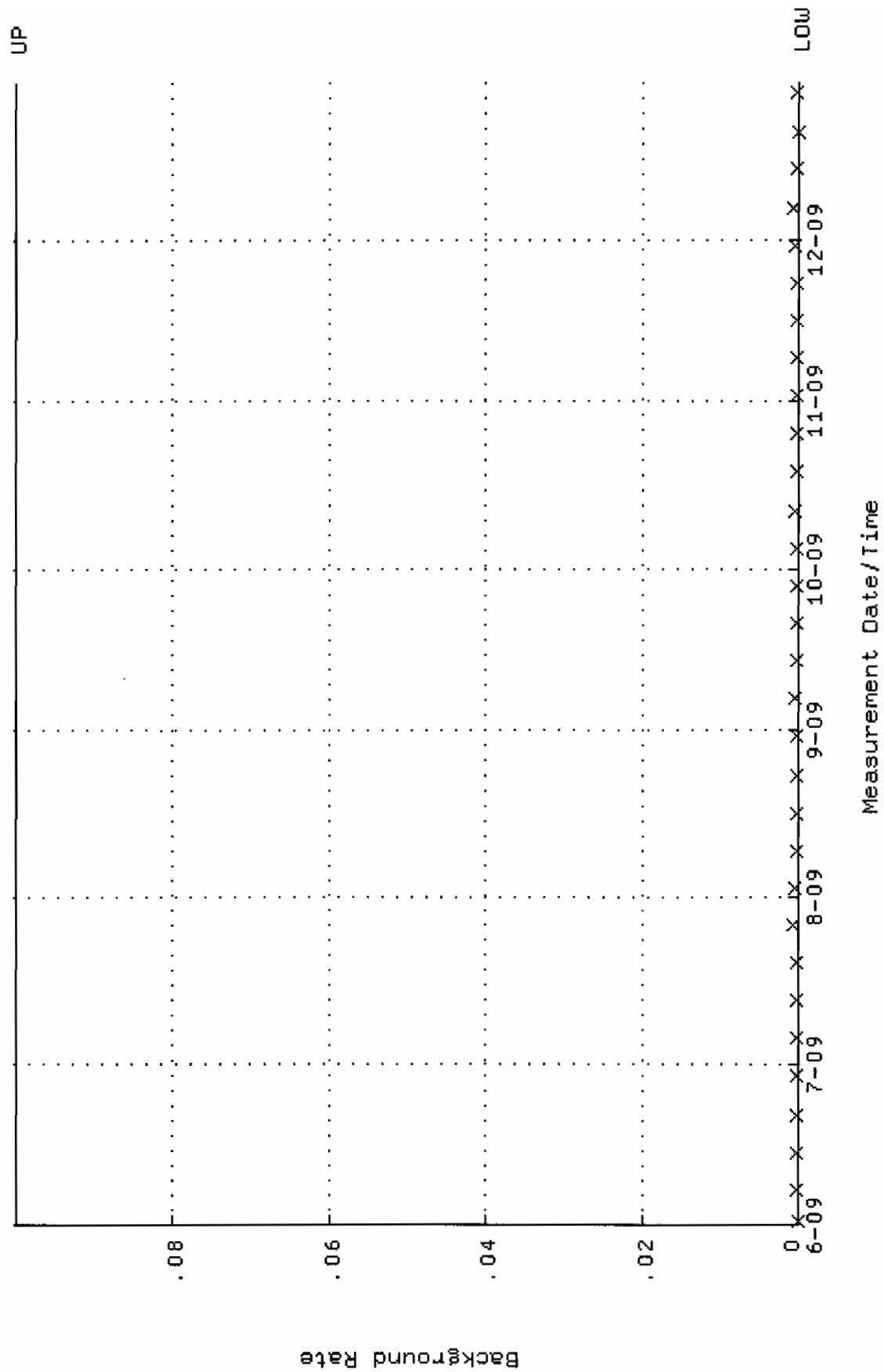




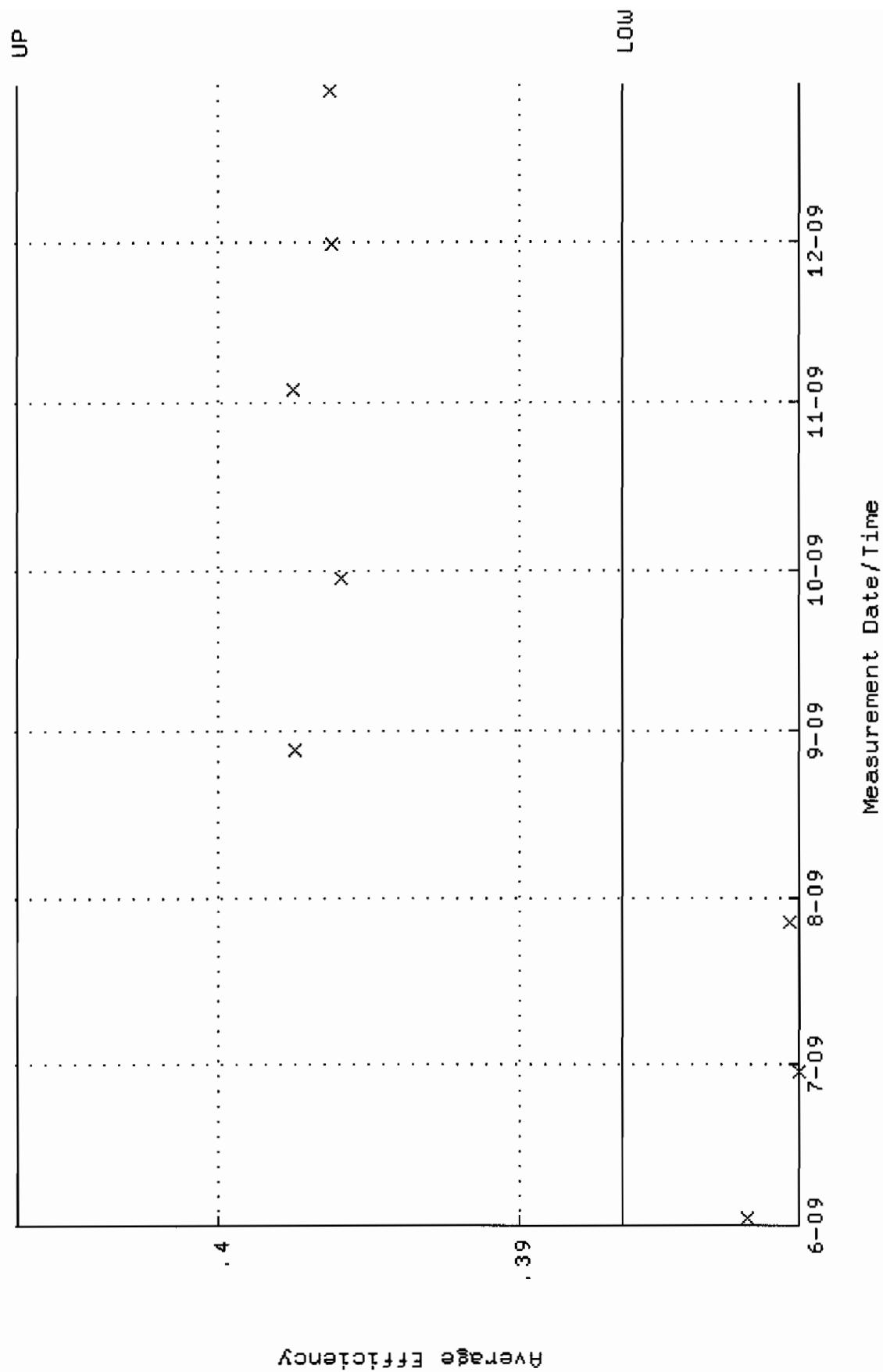
QA filename : DKA100:[ENV\_ALPHA.QA.W]W237.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:19:34 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 79.5642 through 87.9394



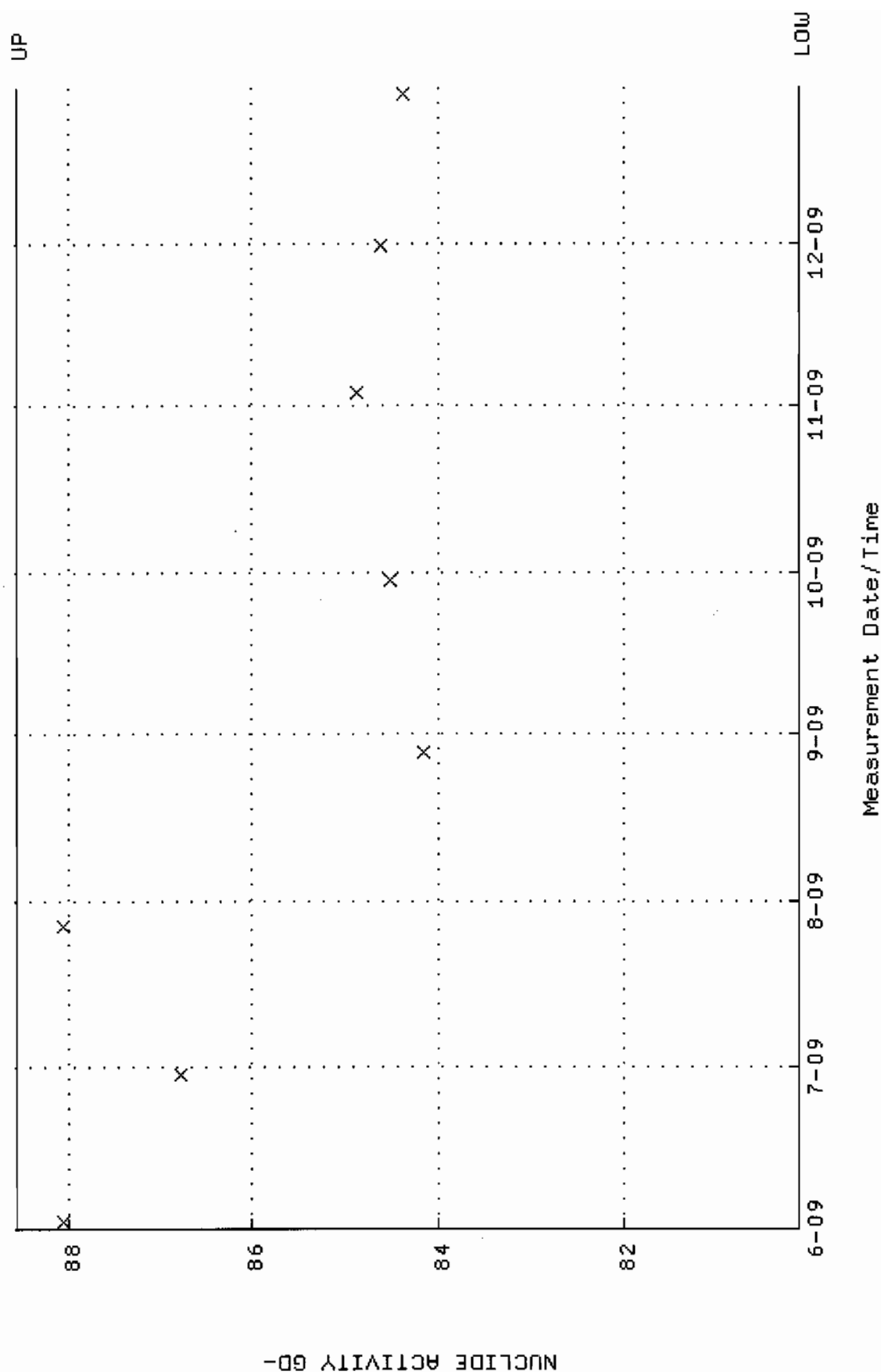
QA filename : DKA100:[ENV\_ALPHA.QA.B]B237.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:46:02 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



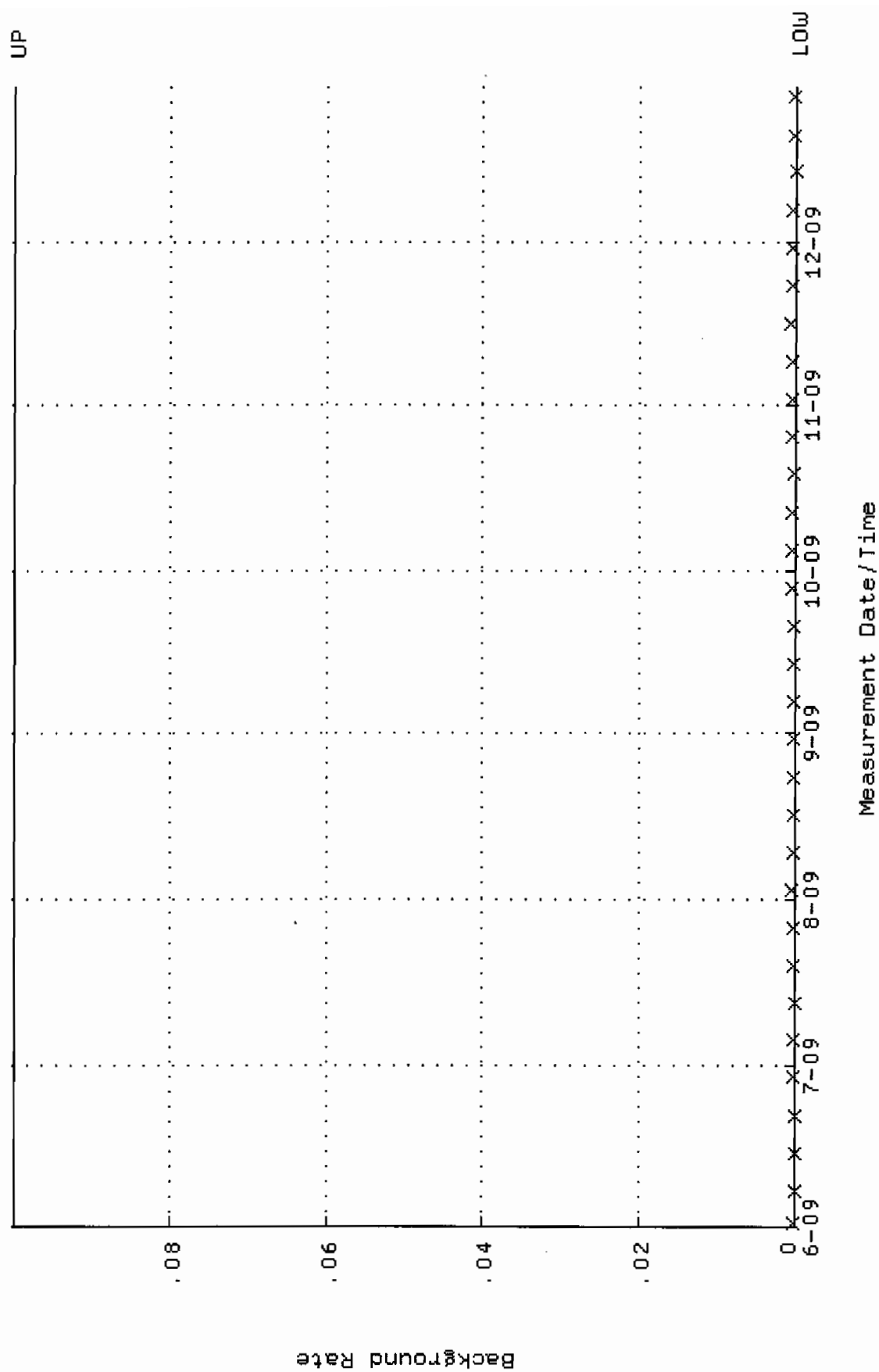
QA filename : DKA100:[ENV\_ALPHA.QA.W]W238.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:19:38 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.386660 through 0.406660



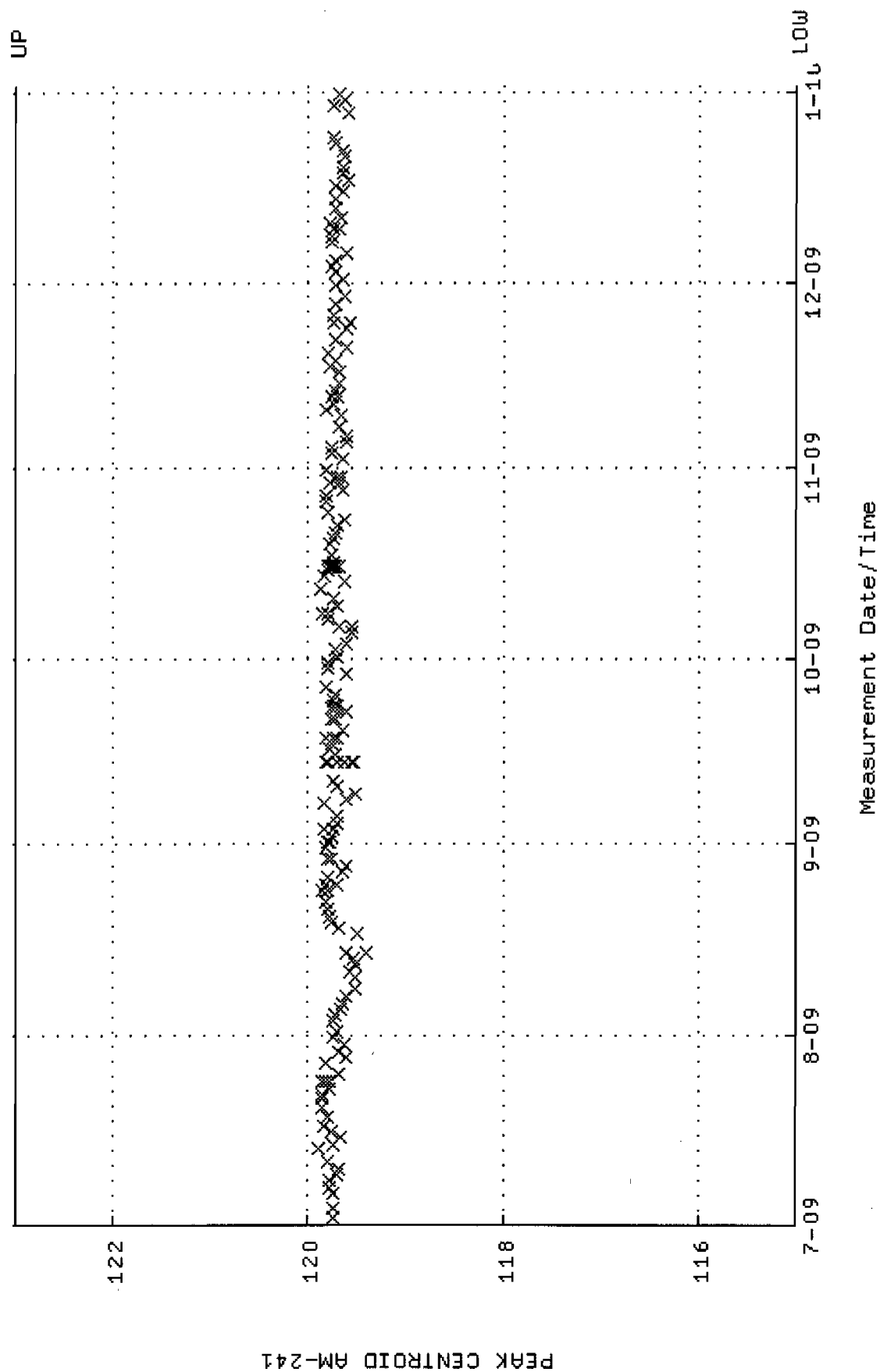
QA filename : DKA100:[ENV\_ALPHA.QA.W]W238.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:19:38 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 80.1146 through 88.5478



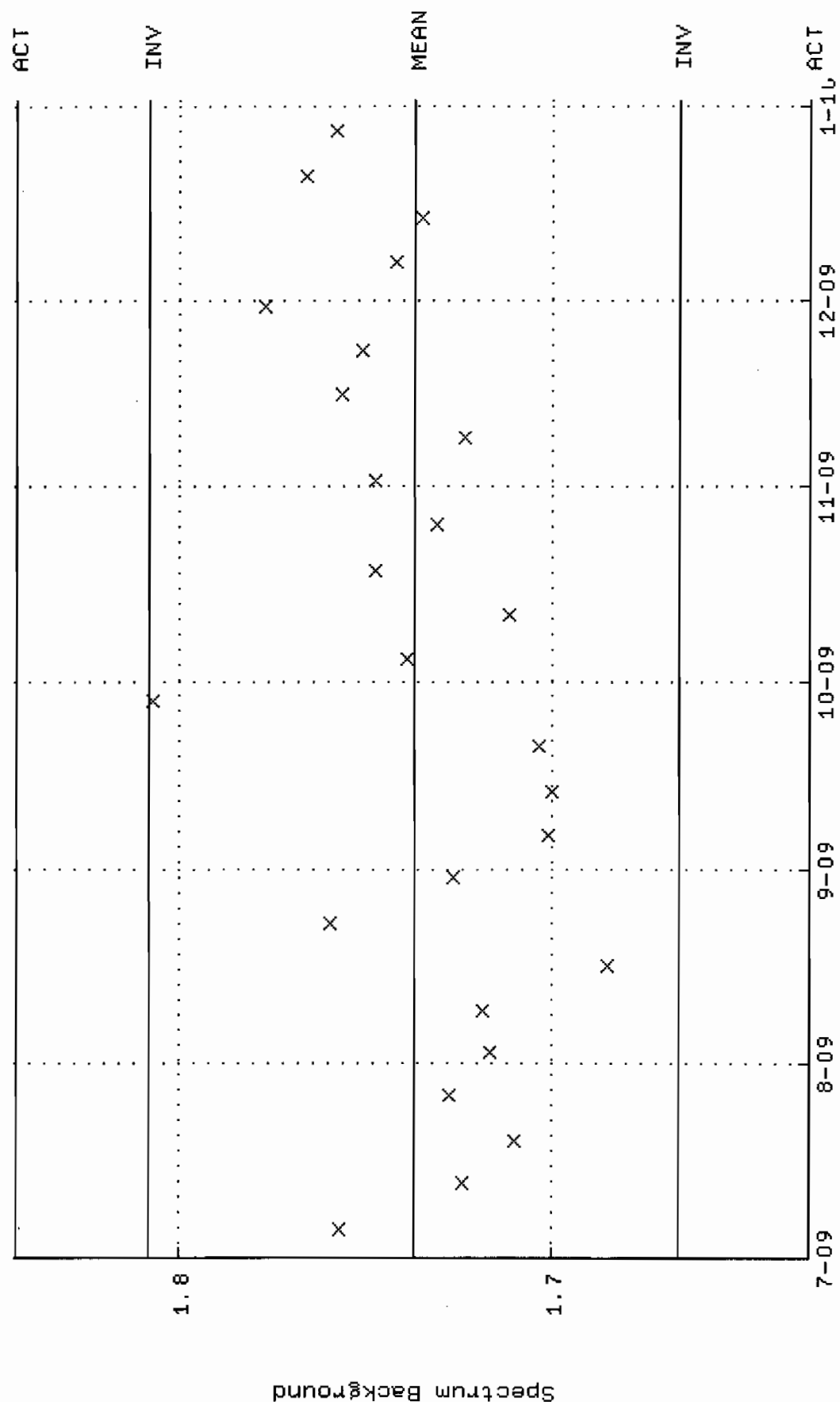
QA filename : DKA100:[ENV\_ALPHA.QA.B]B238.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:46:10 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



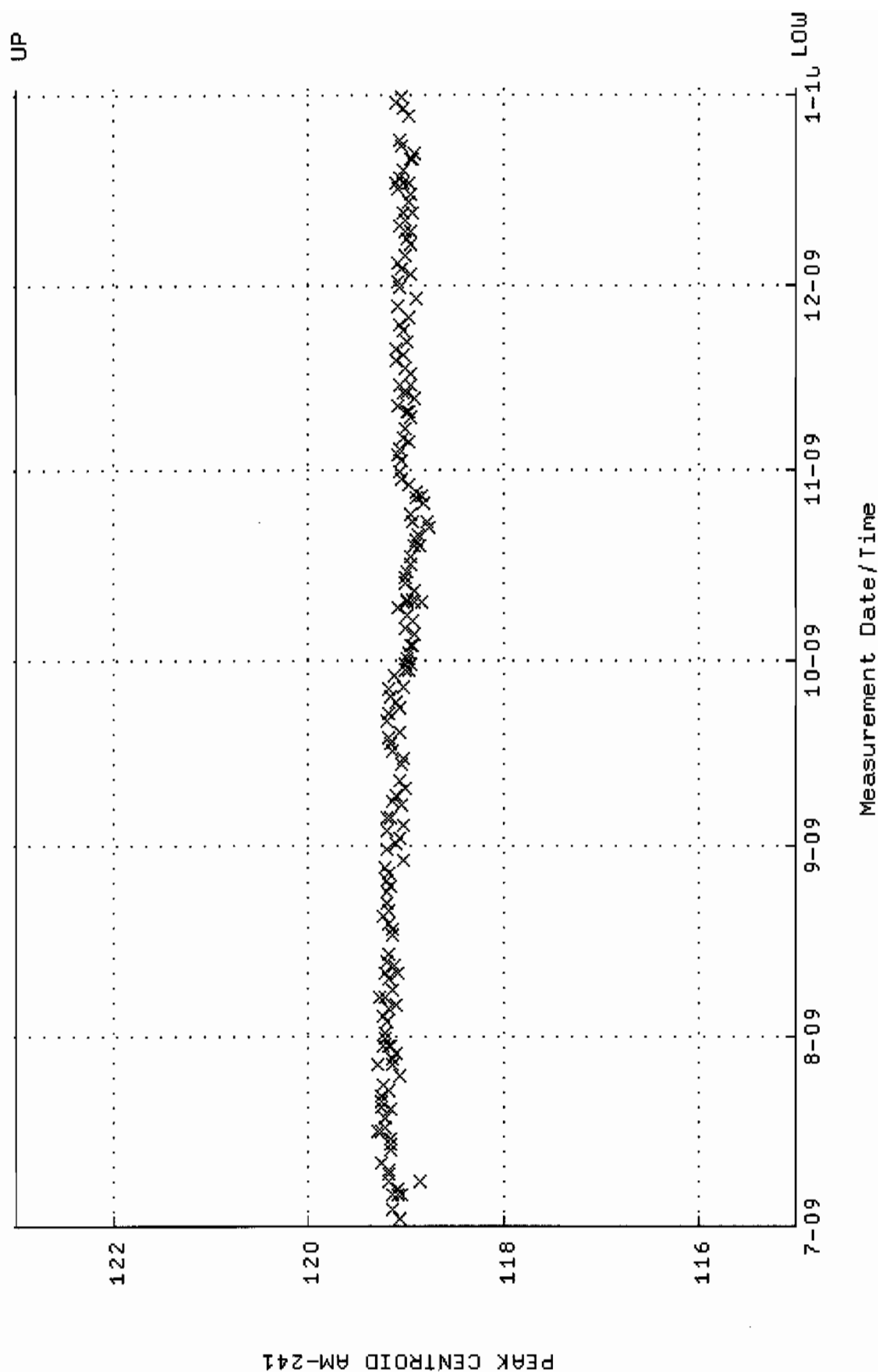
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM01\_500MLMB.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 04:58:53 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



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 %)

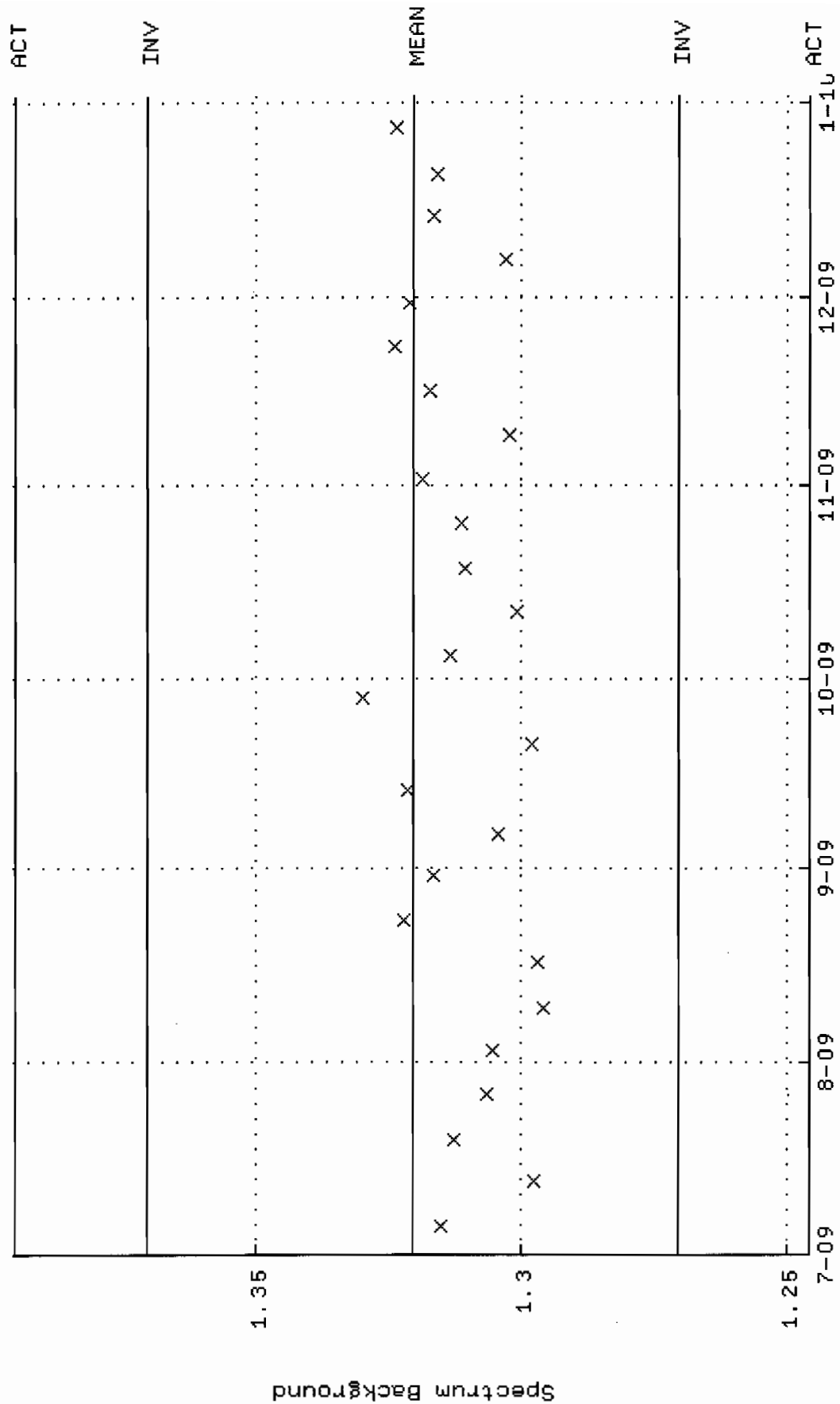


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM04\_CAN.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 04:59:00 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000

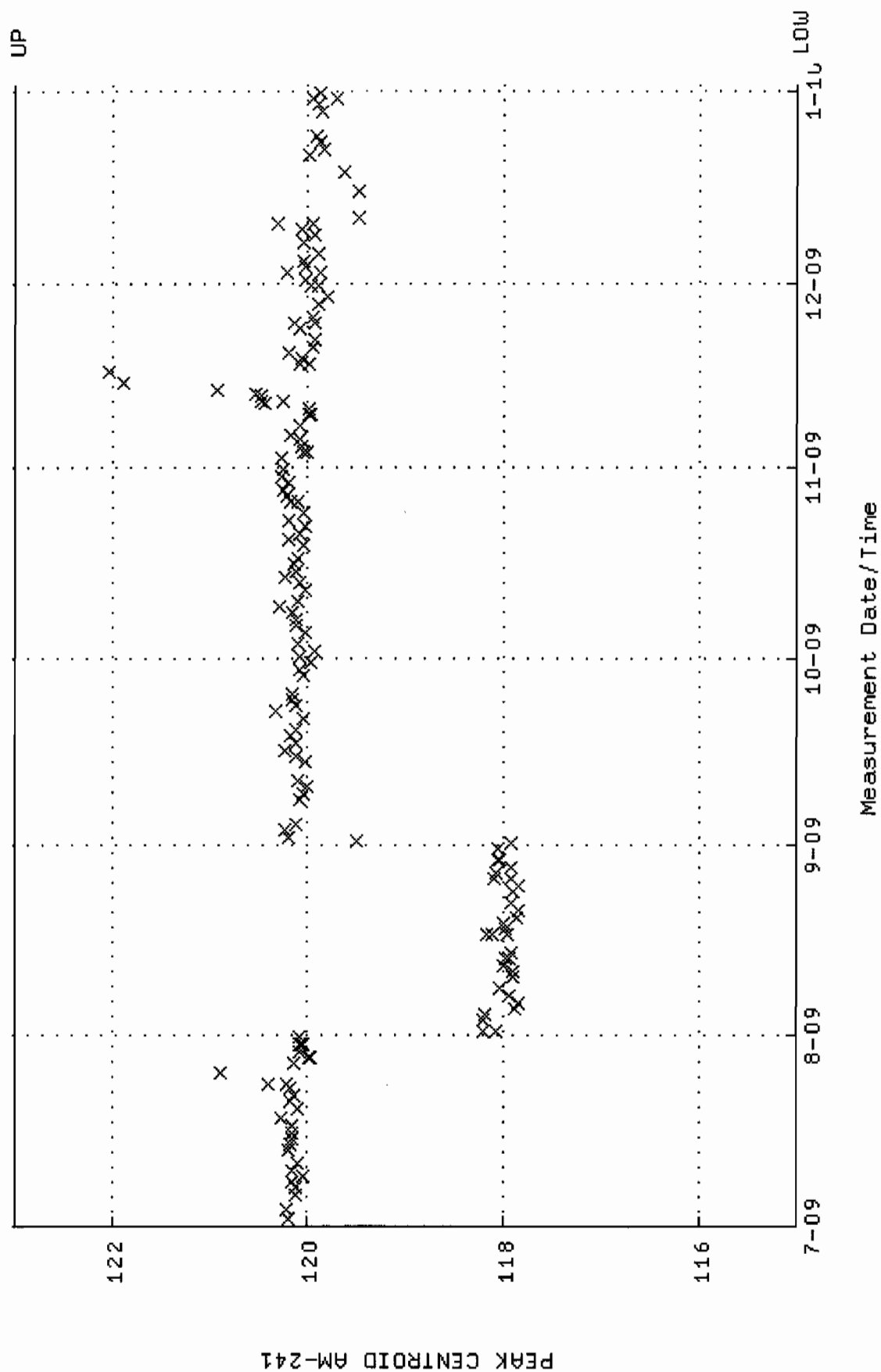




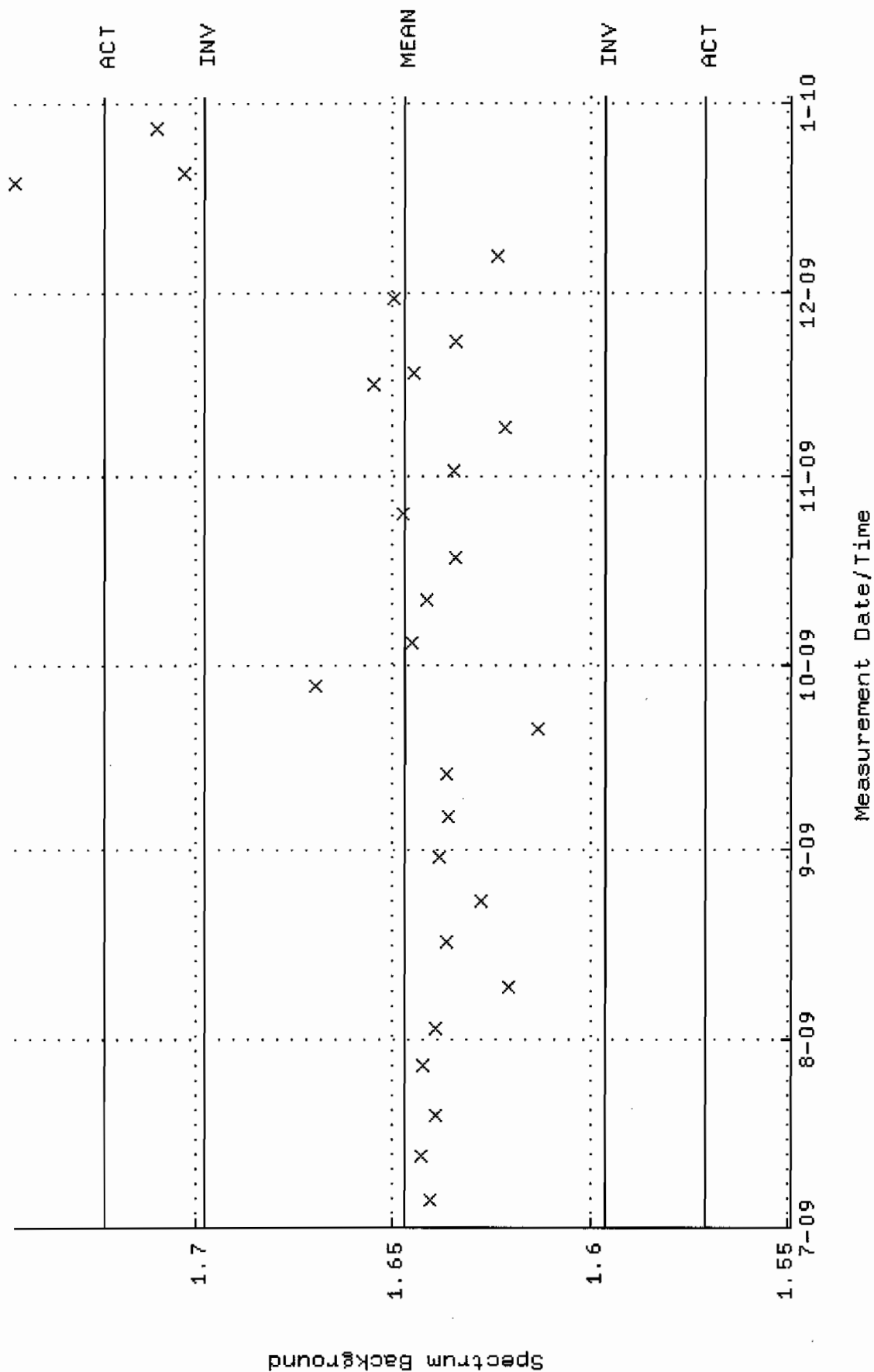
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM04.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:49:51 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



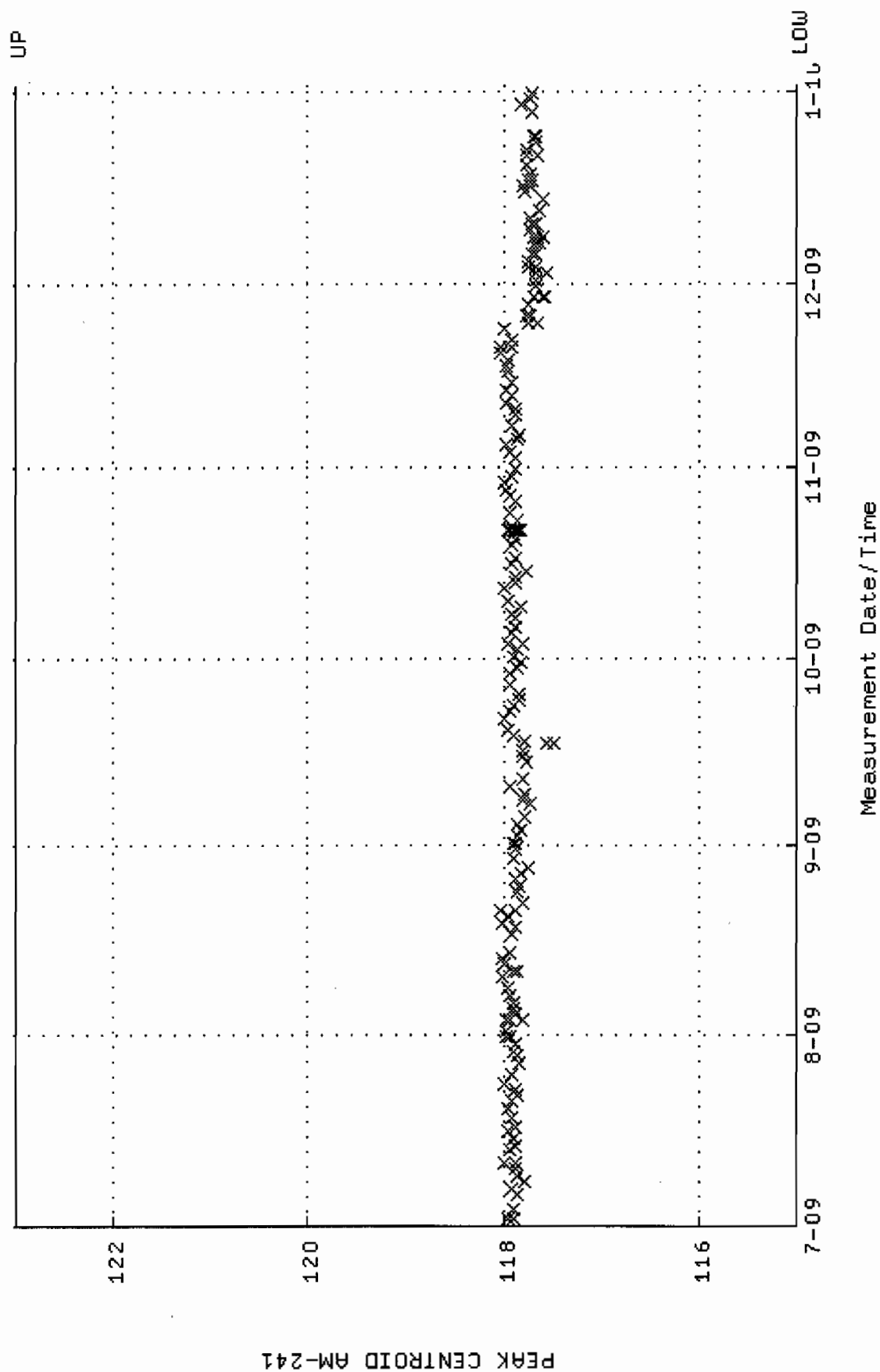
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM05\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 04:59:08 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



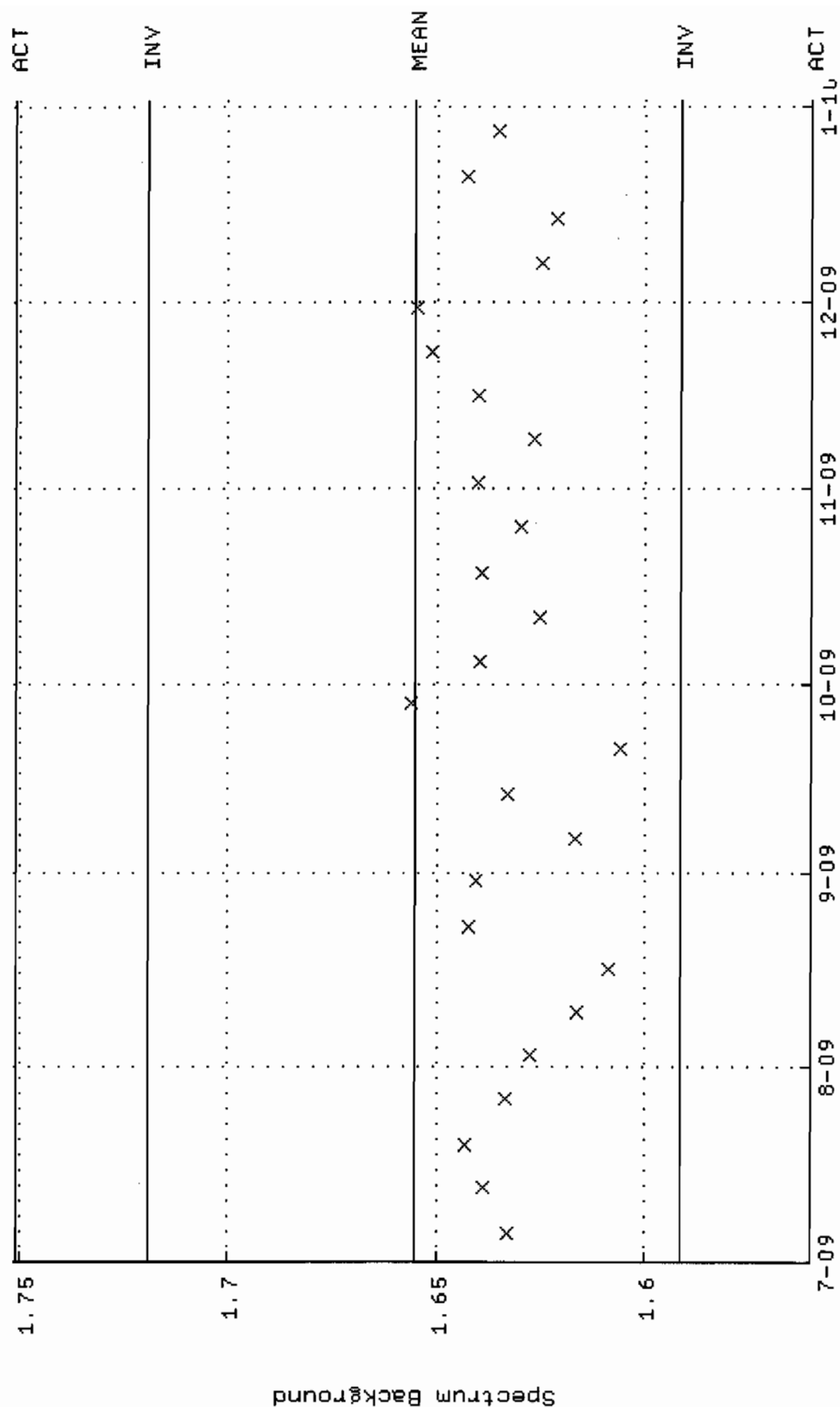
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM05.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:50:04 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



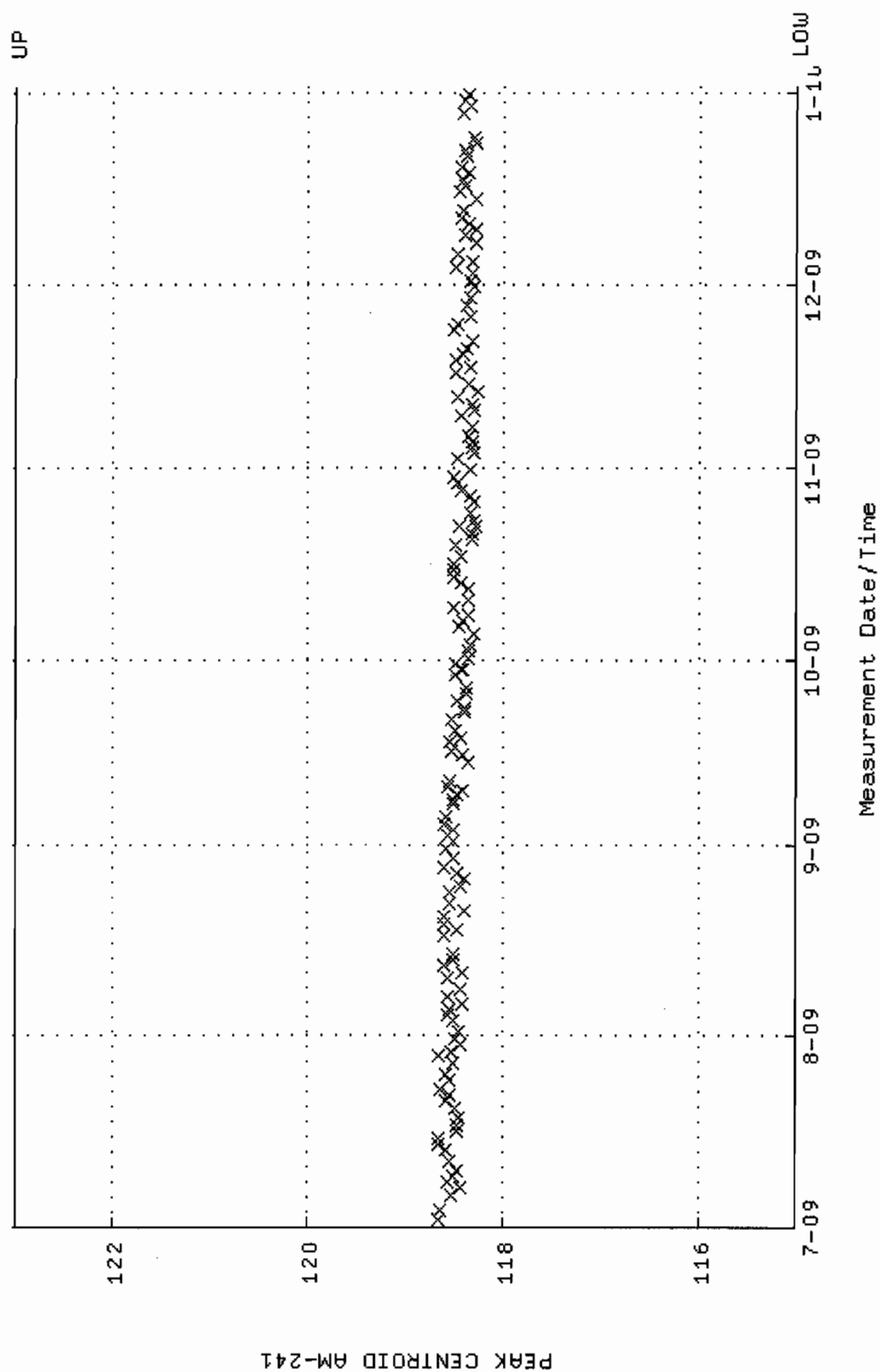
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM11-JAR.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:04 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



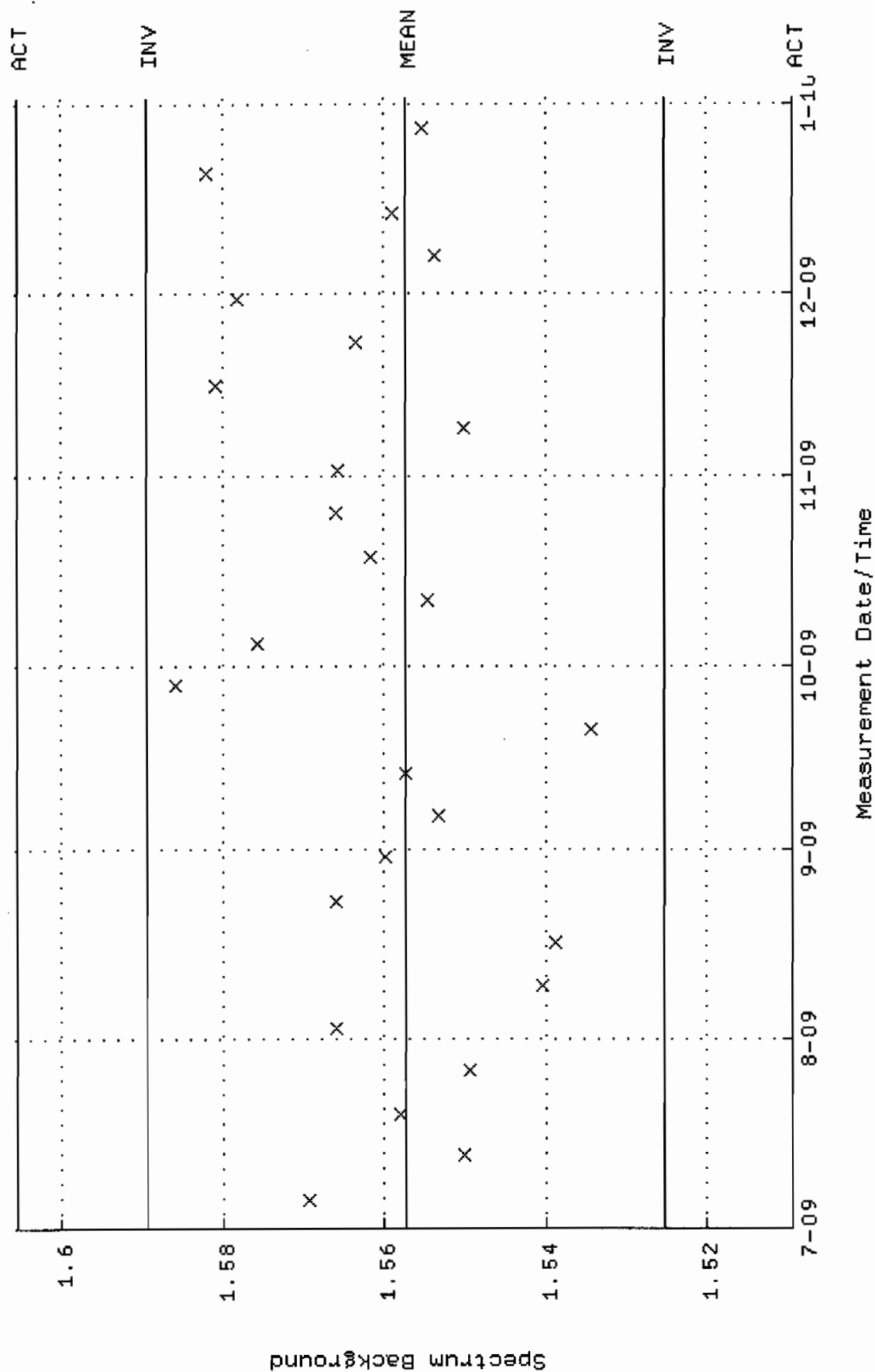
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM11.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:51:39 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



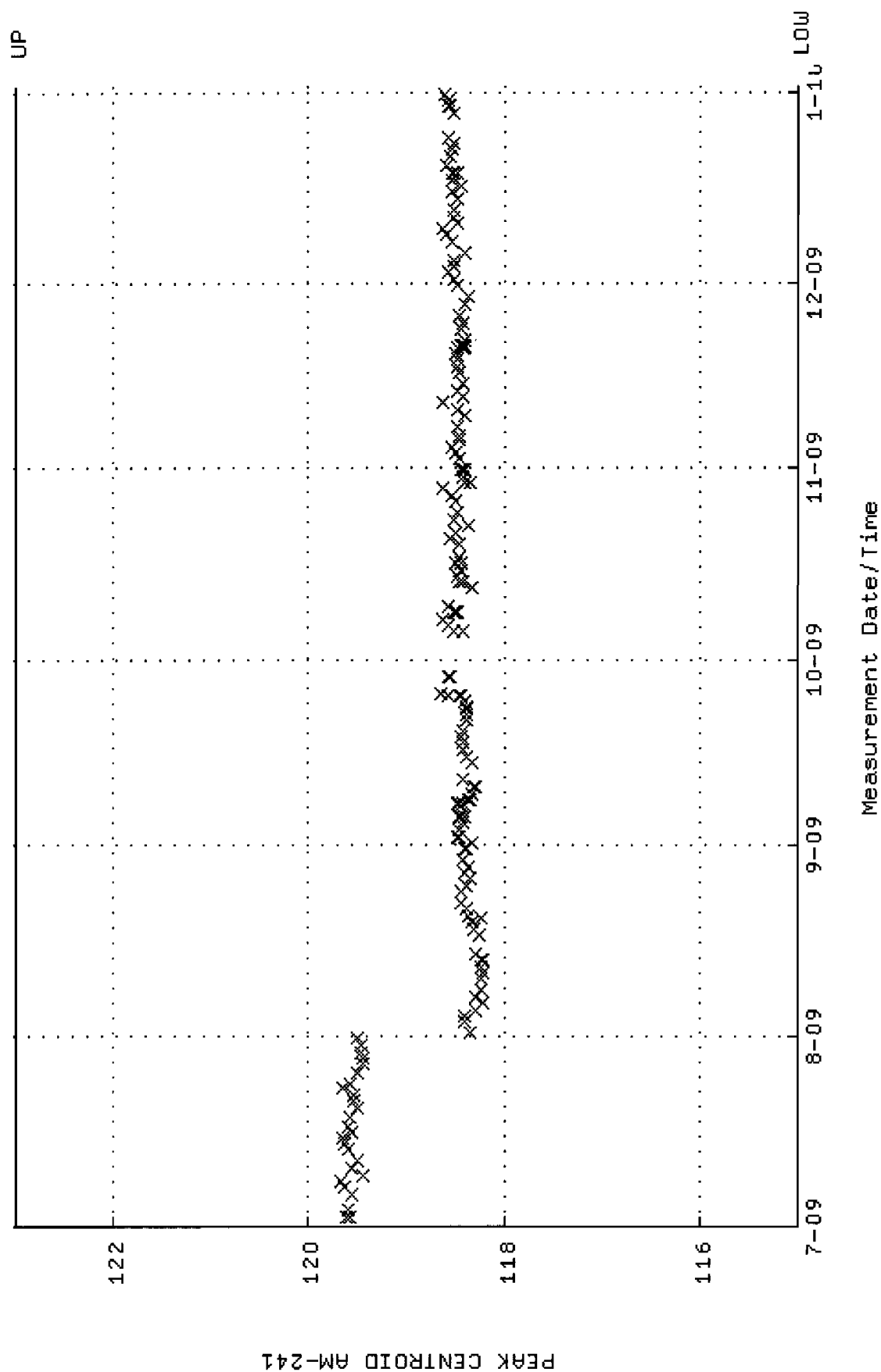
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM12\_CAN.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 05:29:11 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM12.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:04 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)

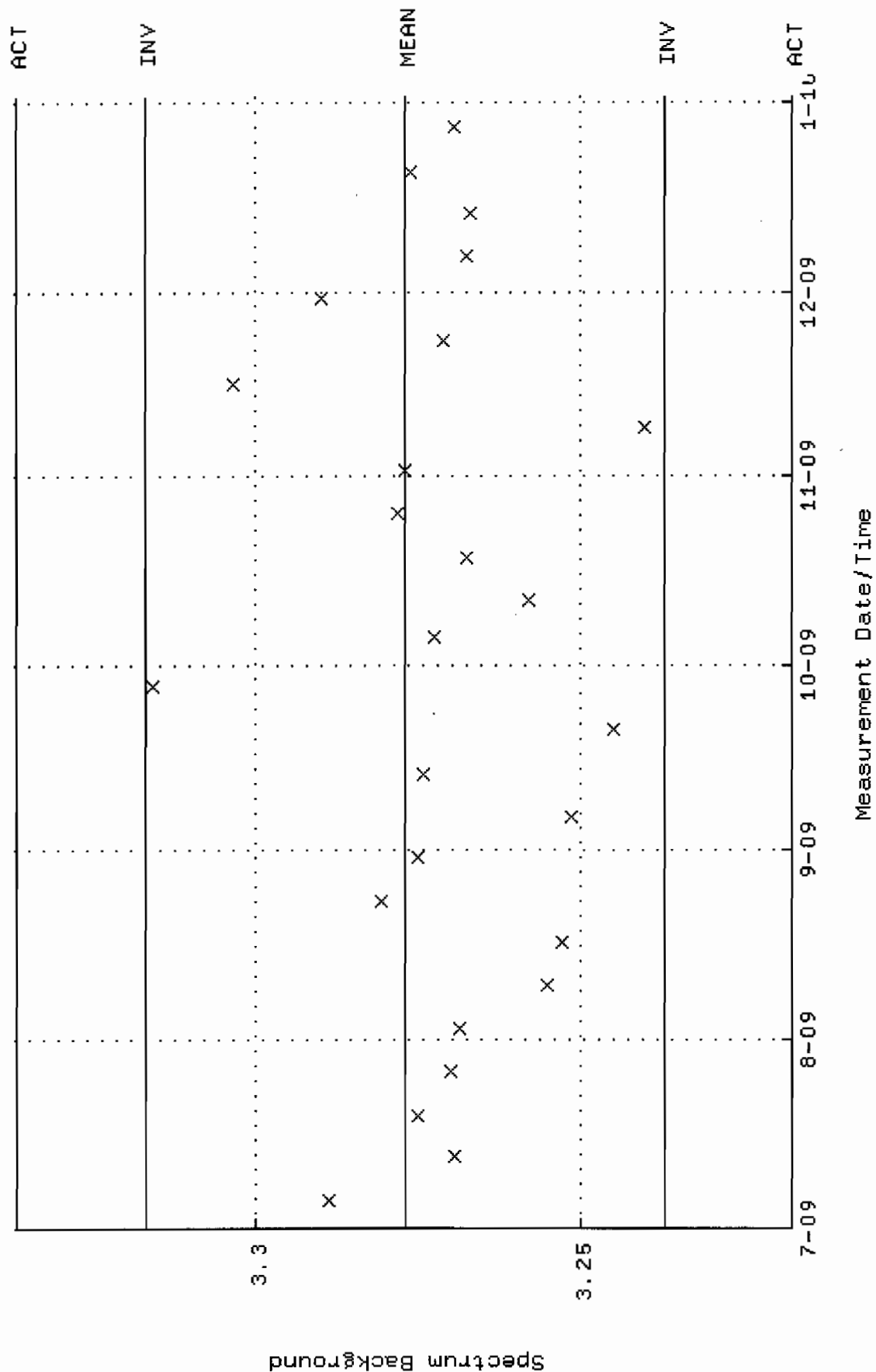


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM13-CAN.QAF;1  
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 10:47:30 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000

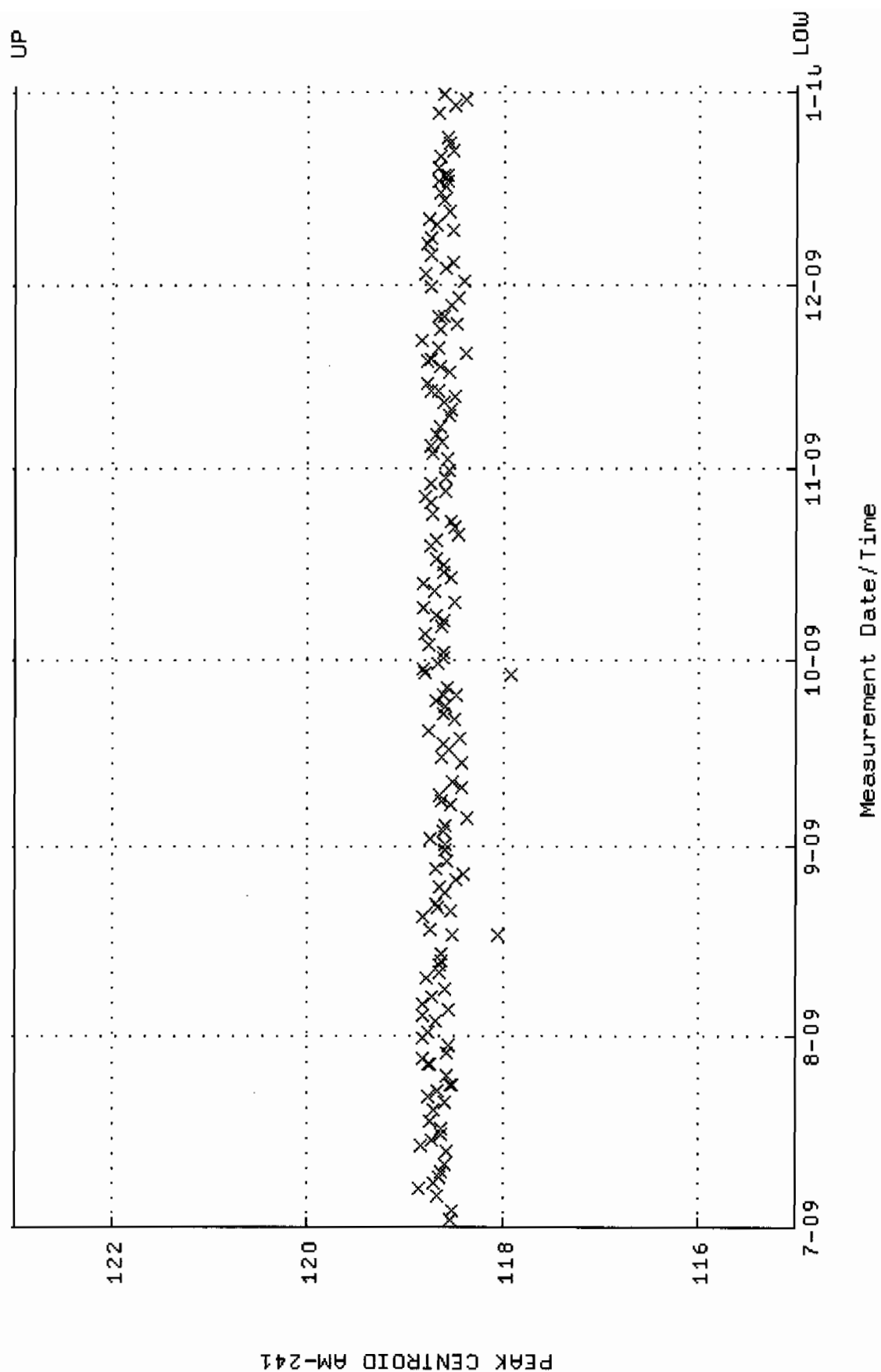




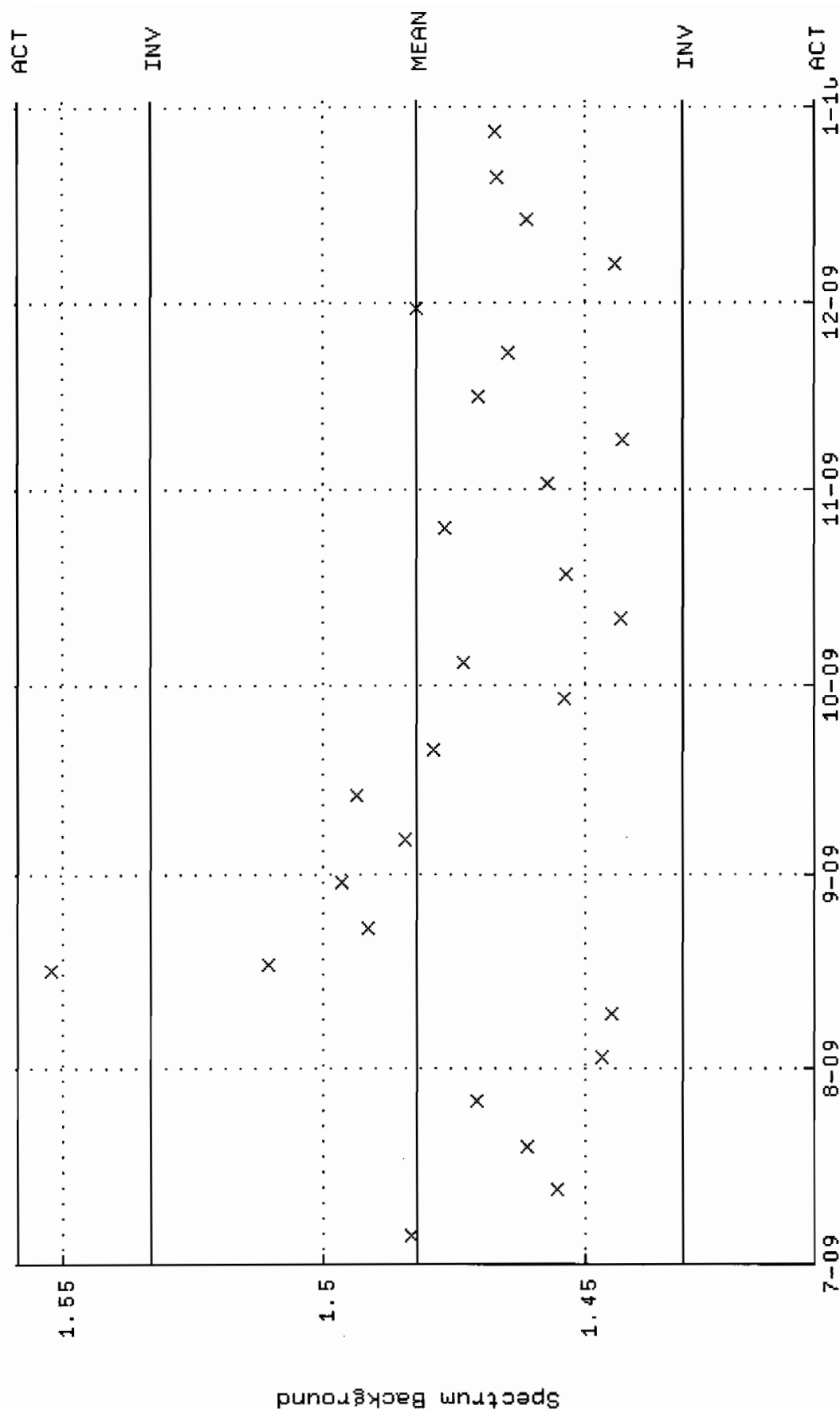
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM13.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:16 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



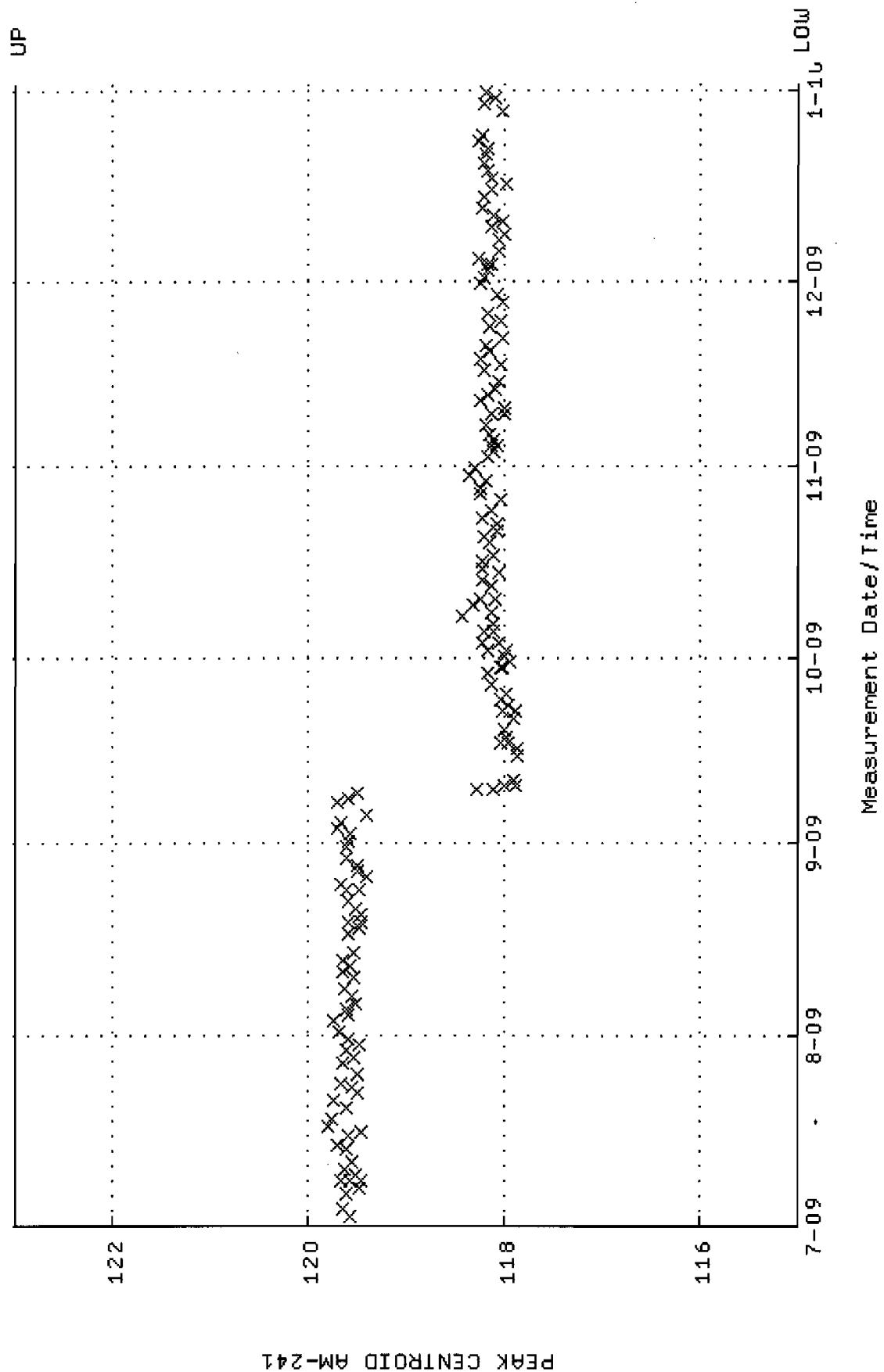
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM14\_2LMB.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 04:59:23 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



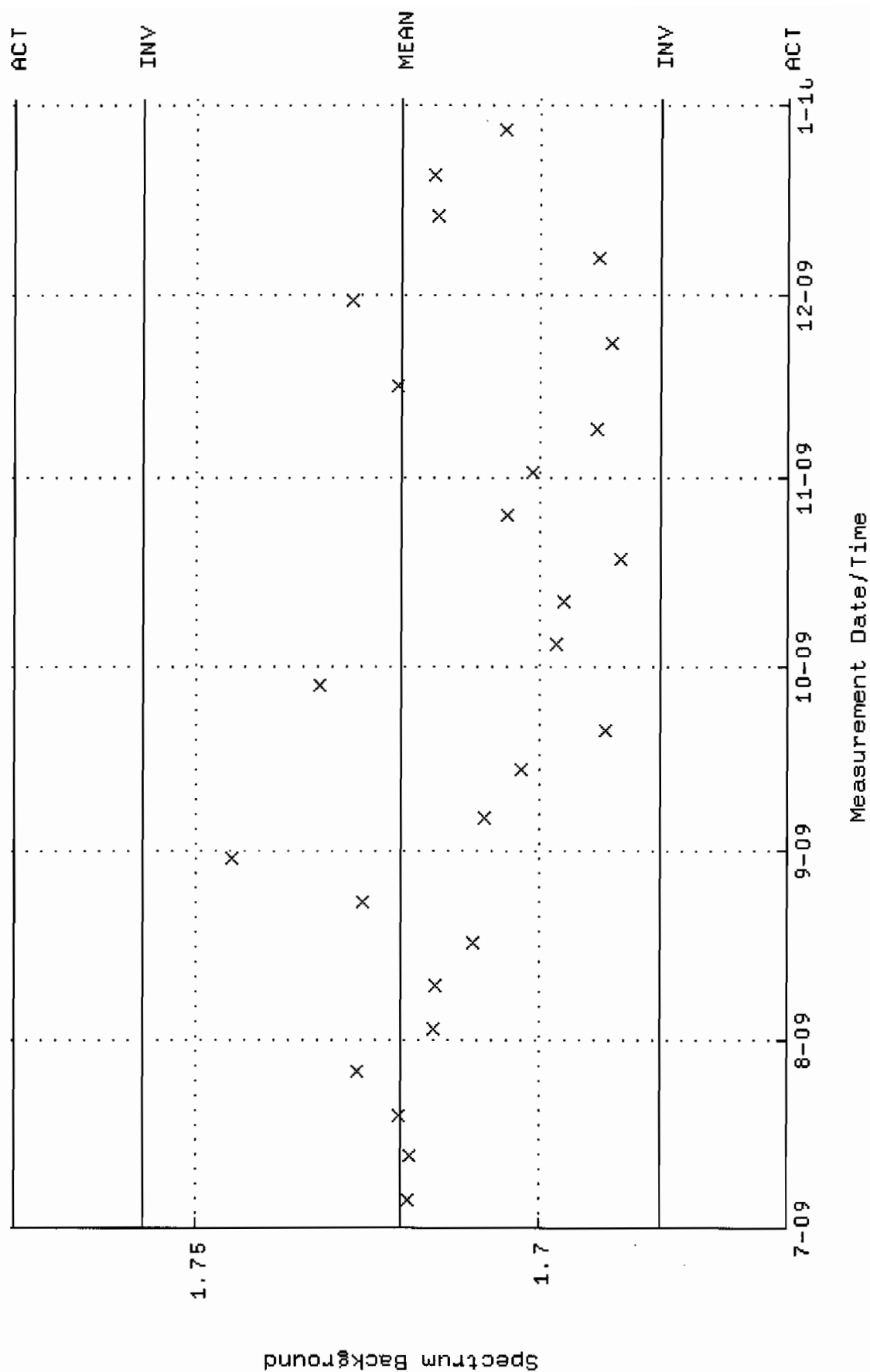
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM14.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:31 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.48240 +- 2.535500E-02 (1.71 %)



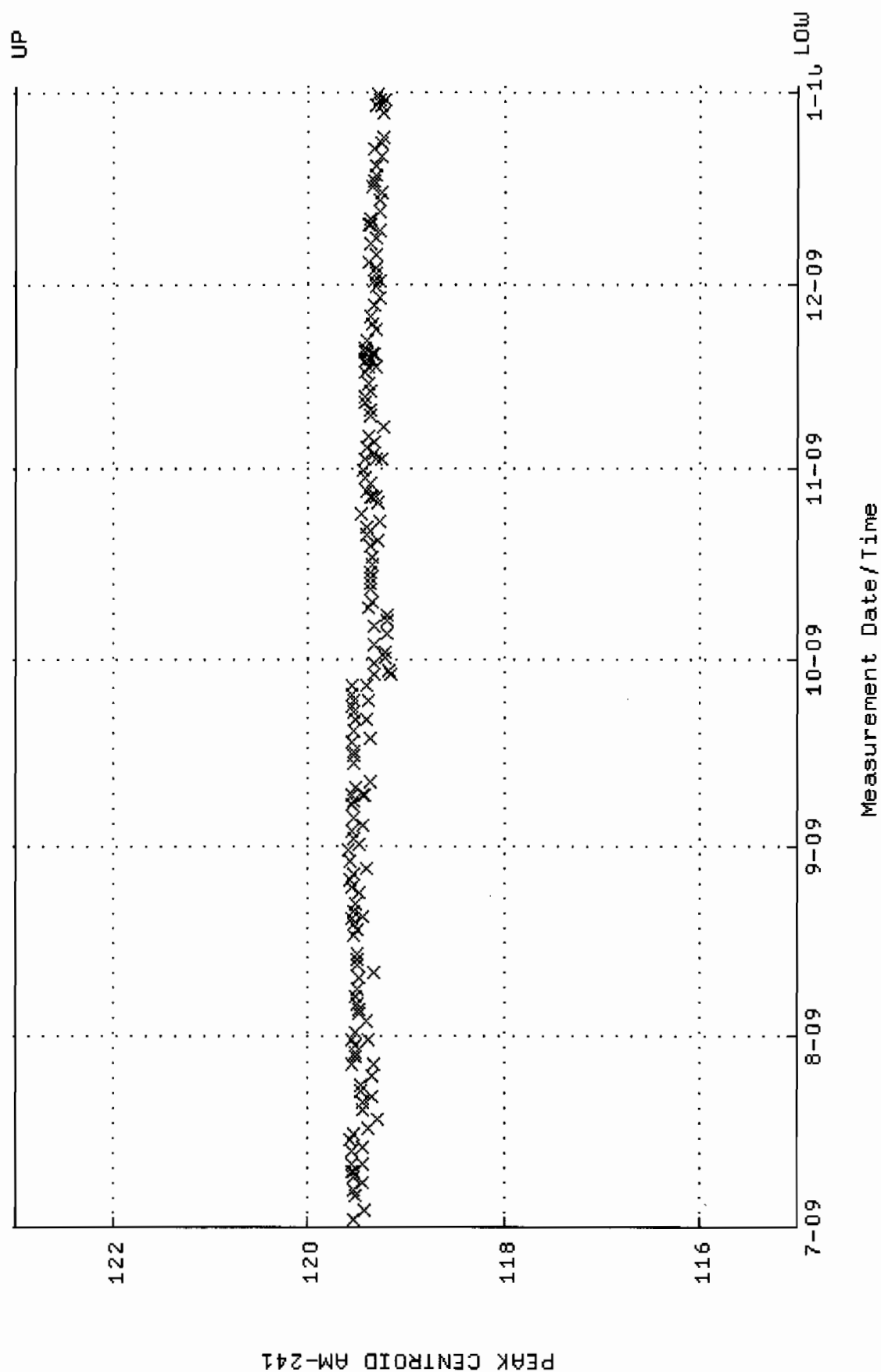
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM15\_CAN.QAF;1  
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 10:47:40 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



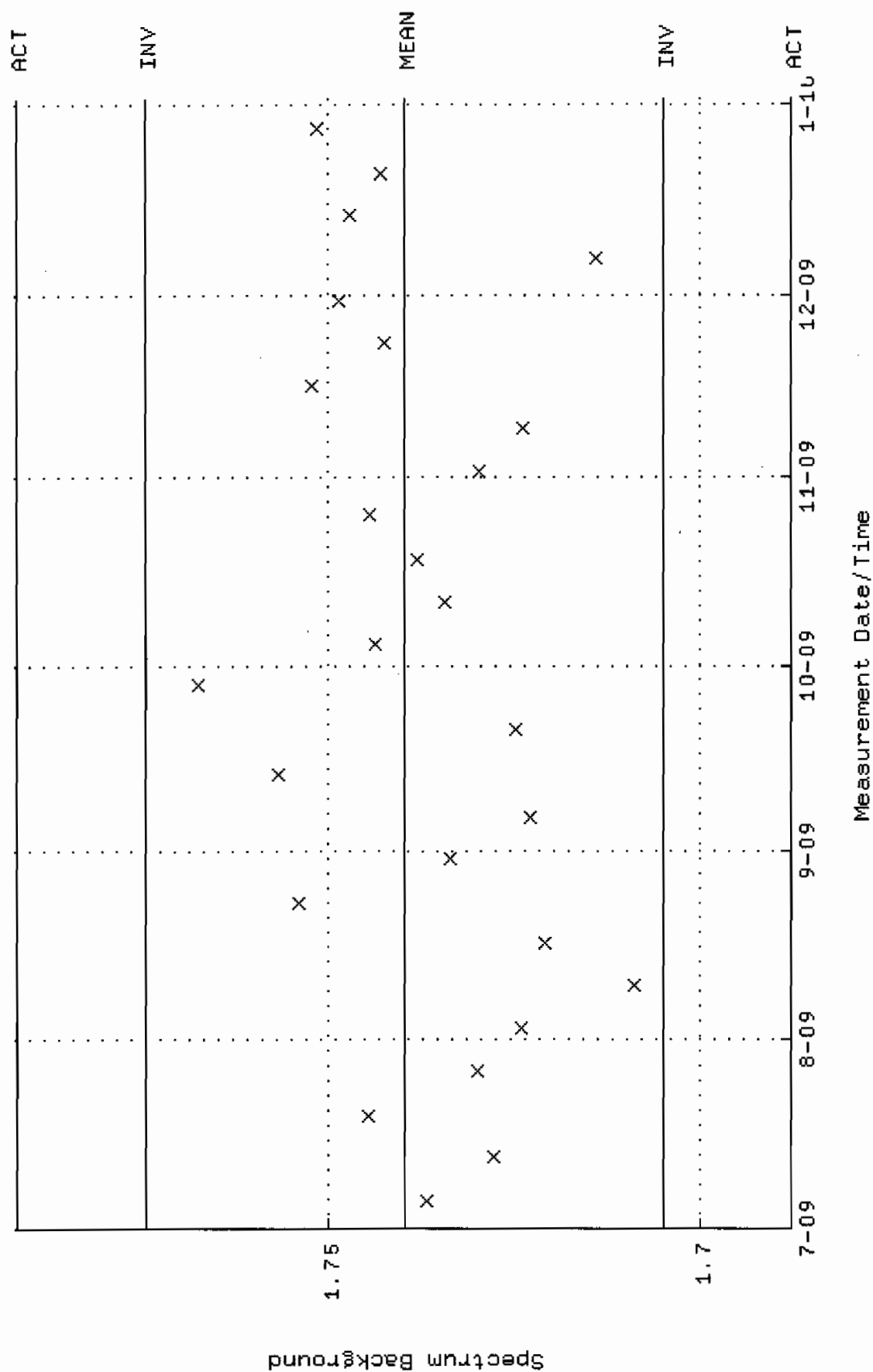
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM15.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:45 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



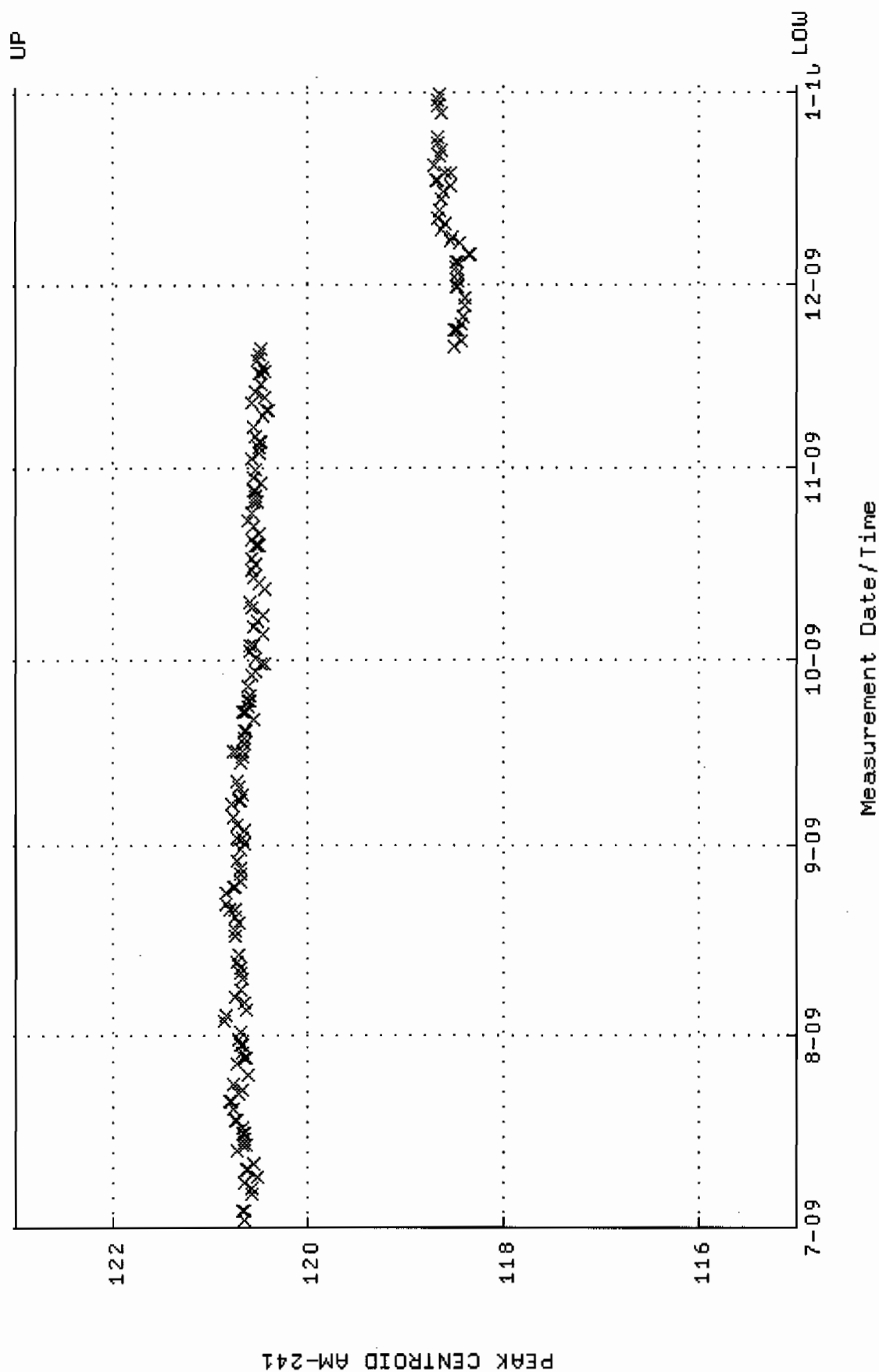
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM16\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:19 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



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 %)

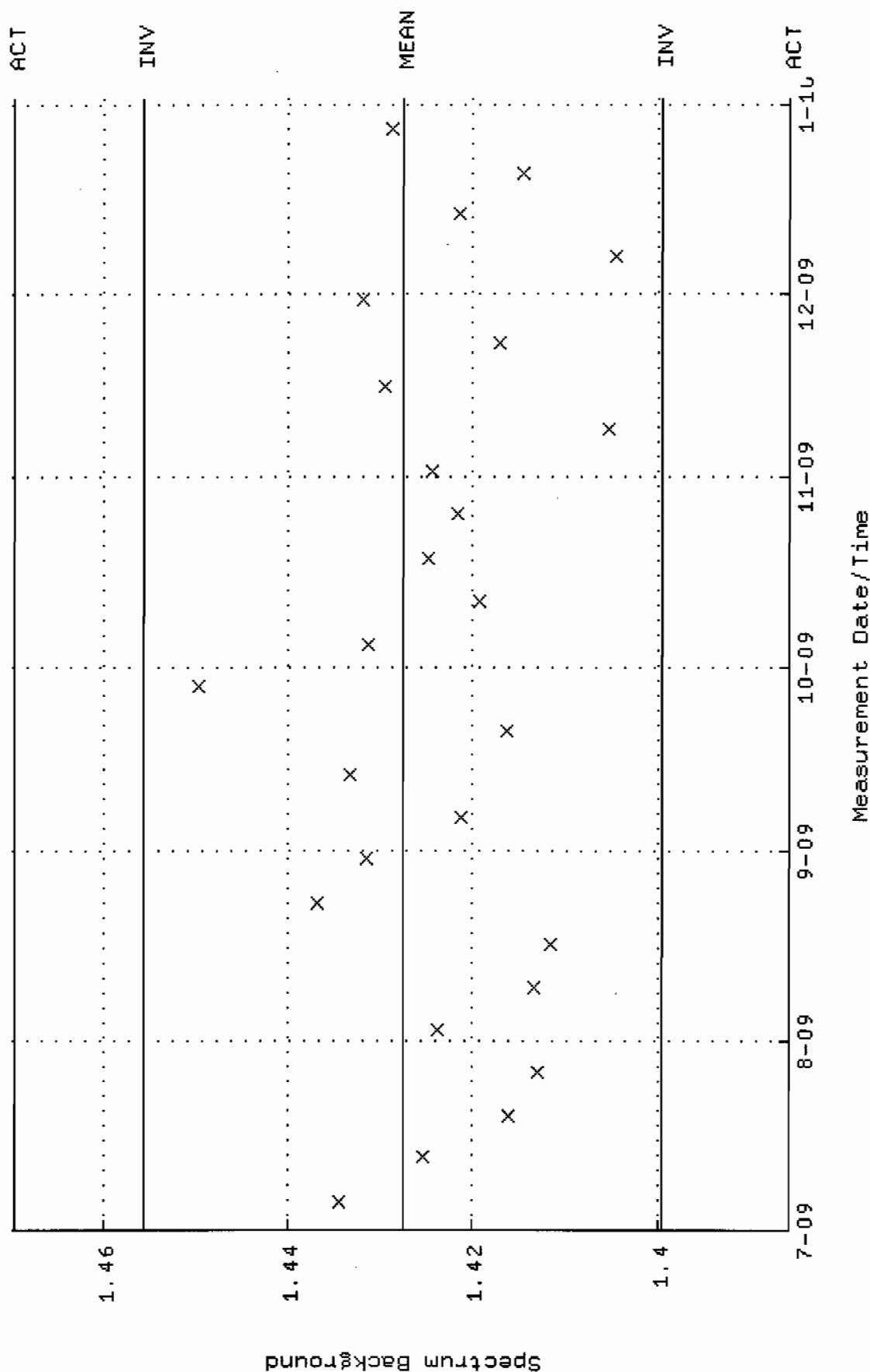


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM17-CAN.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:26 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000

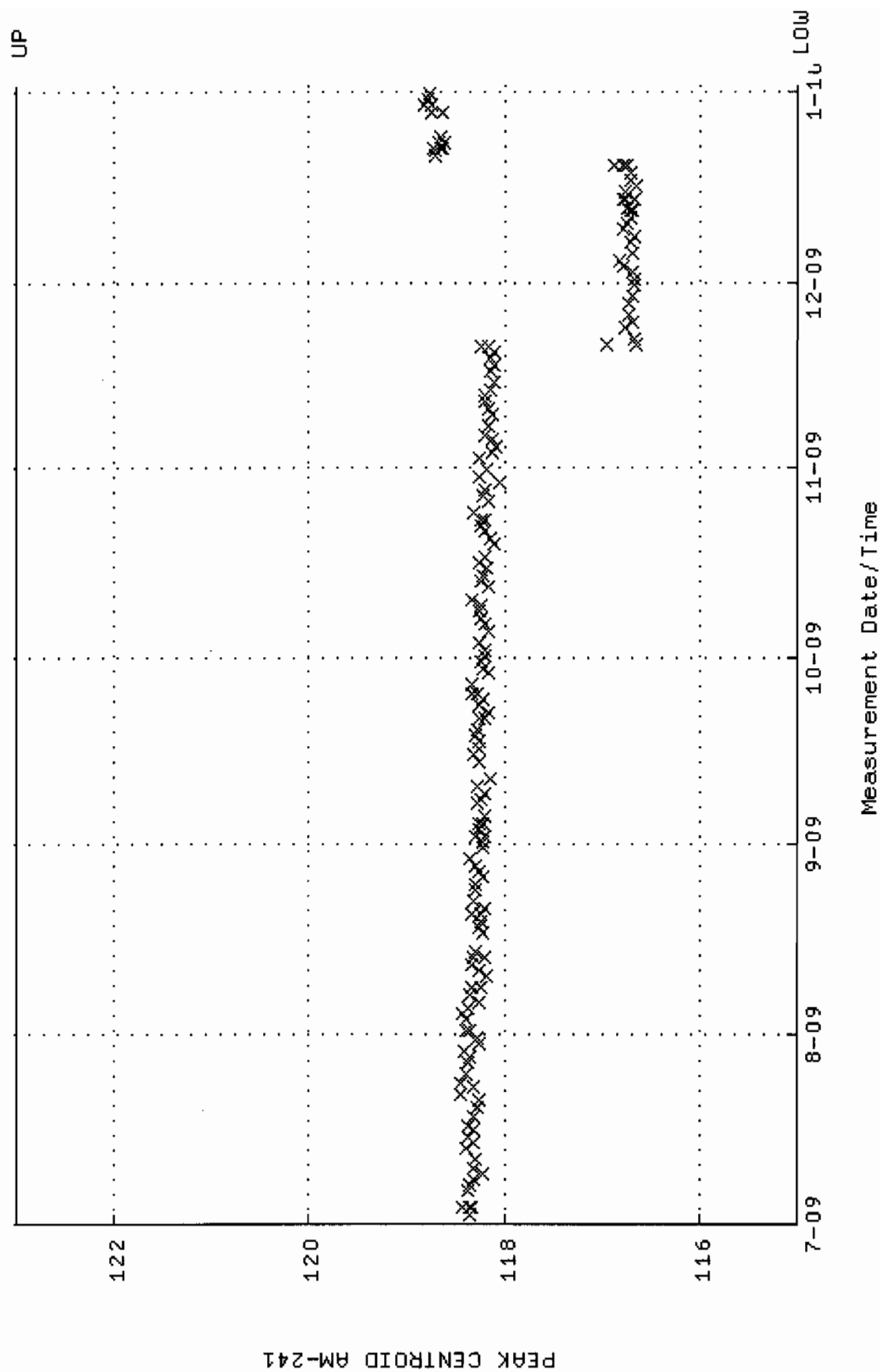




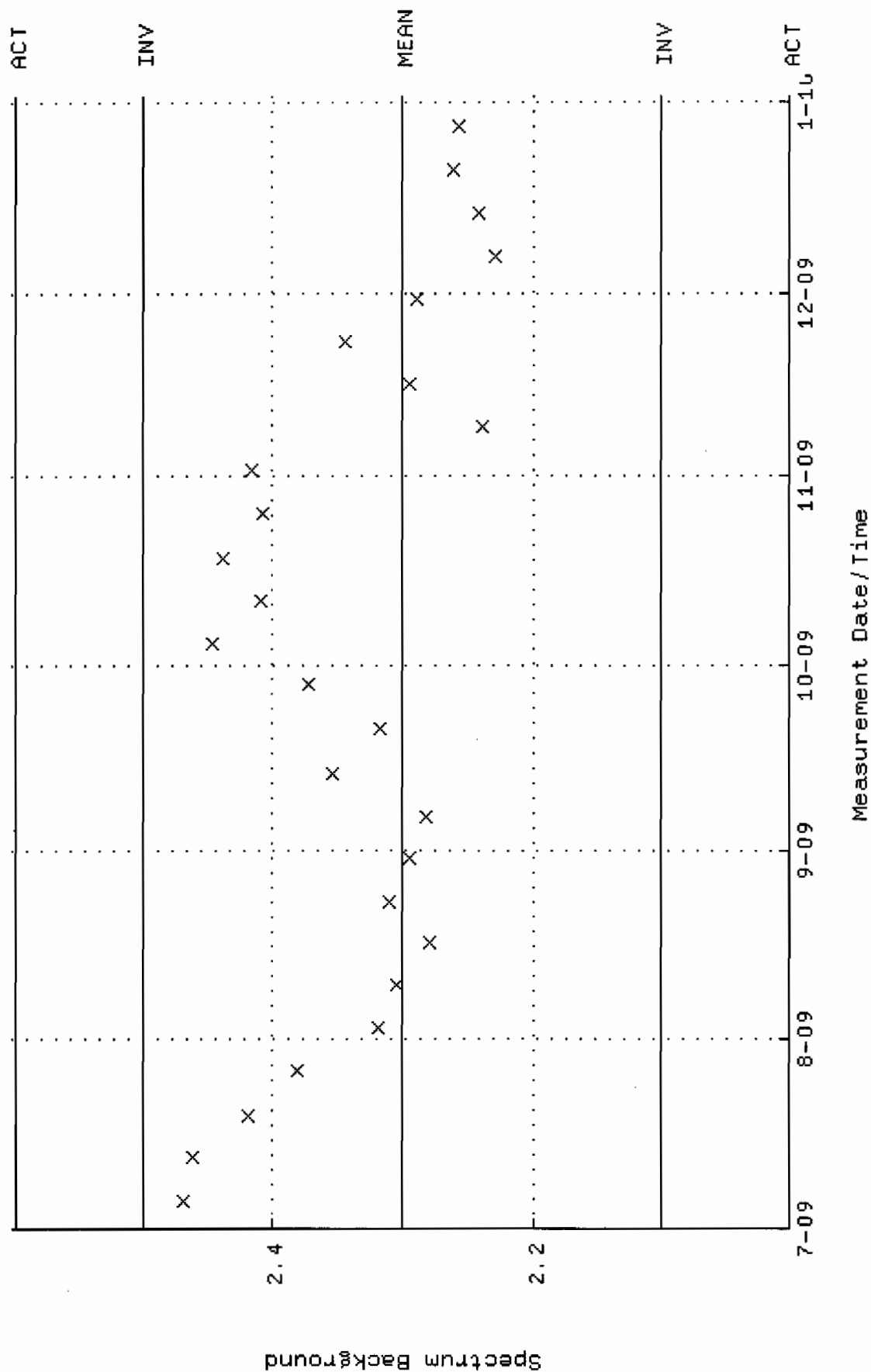
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM17.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:53:11 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



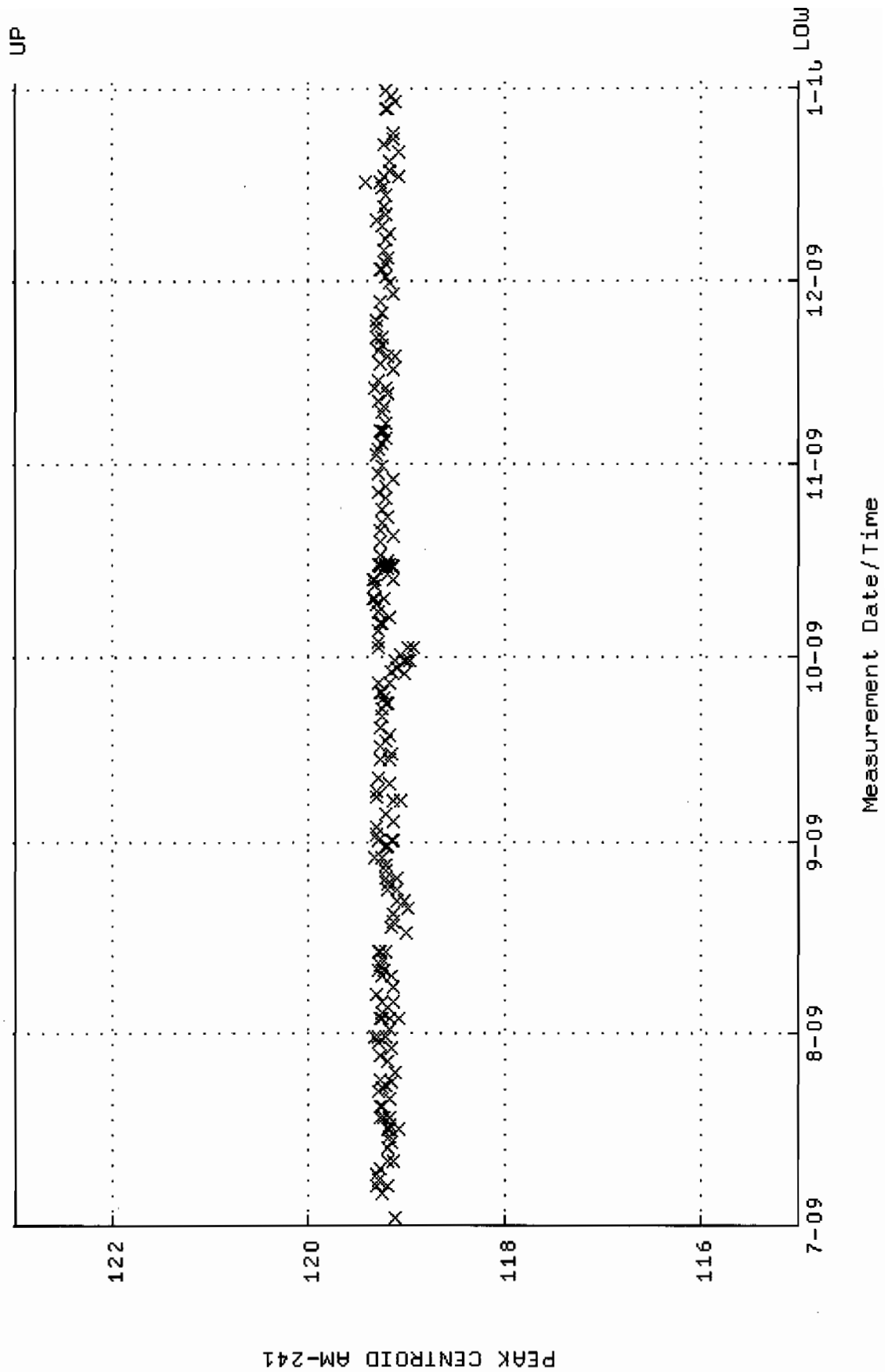
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM18-CAN.QAF;1  
Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)  
Start/End Dates : 2-JUL-2009 11:04:02 through 1-JAN-2010 12:00:00  
Lower/Upper Lmts: 115.000 through 123.000



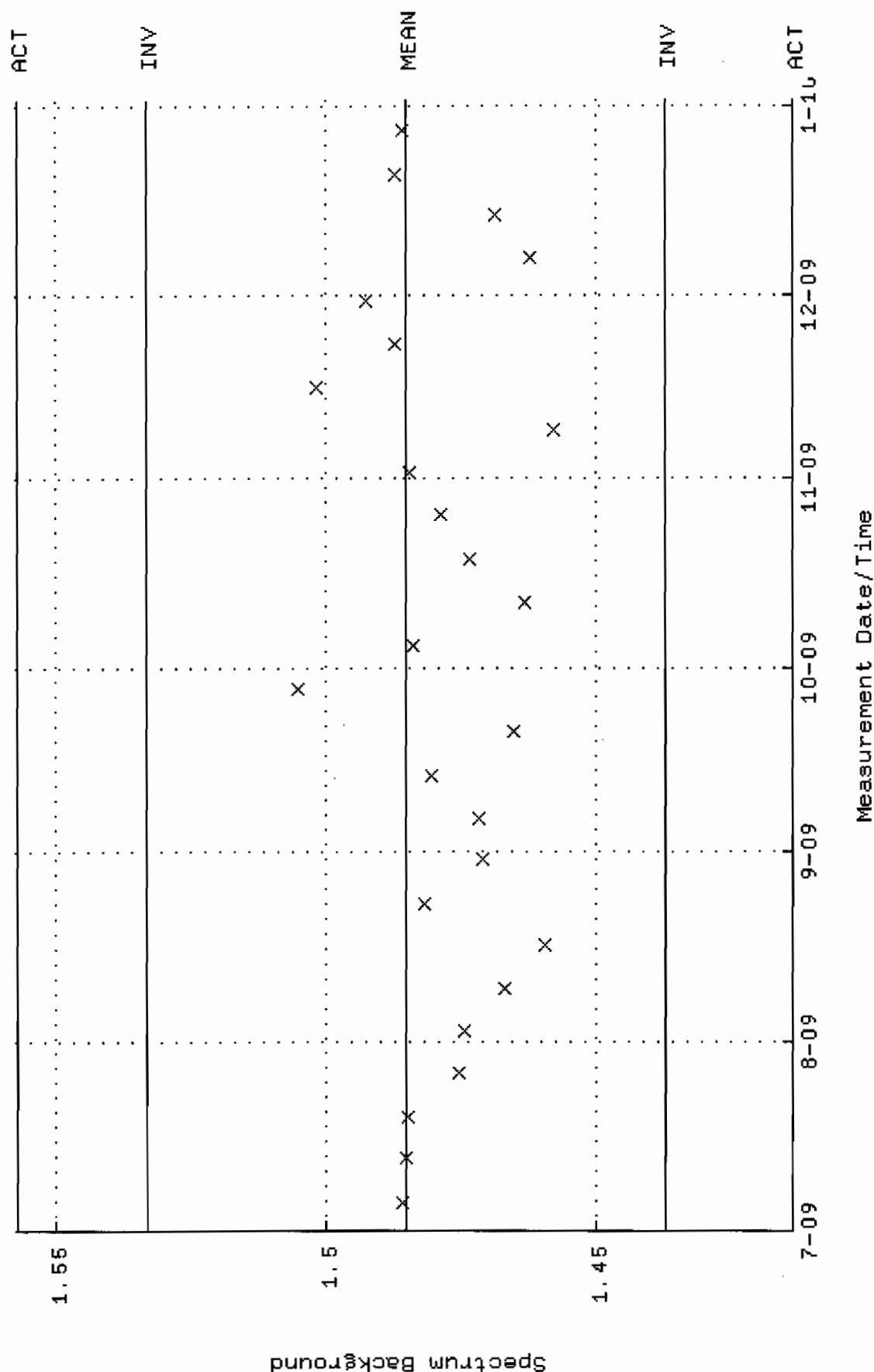
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM18.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:53:23 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



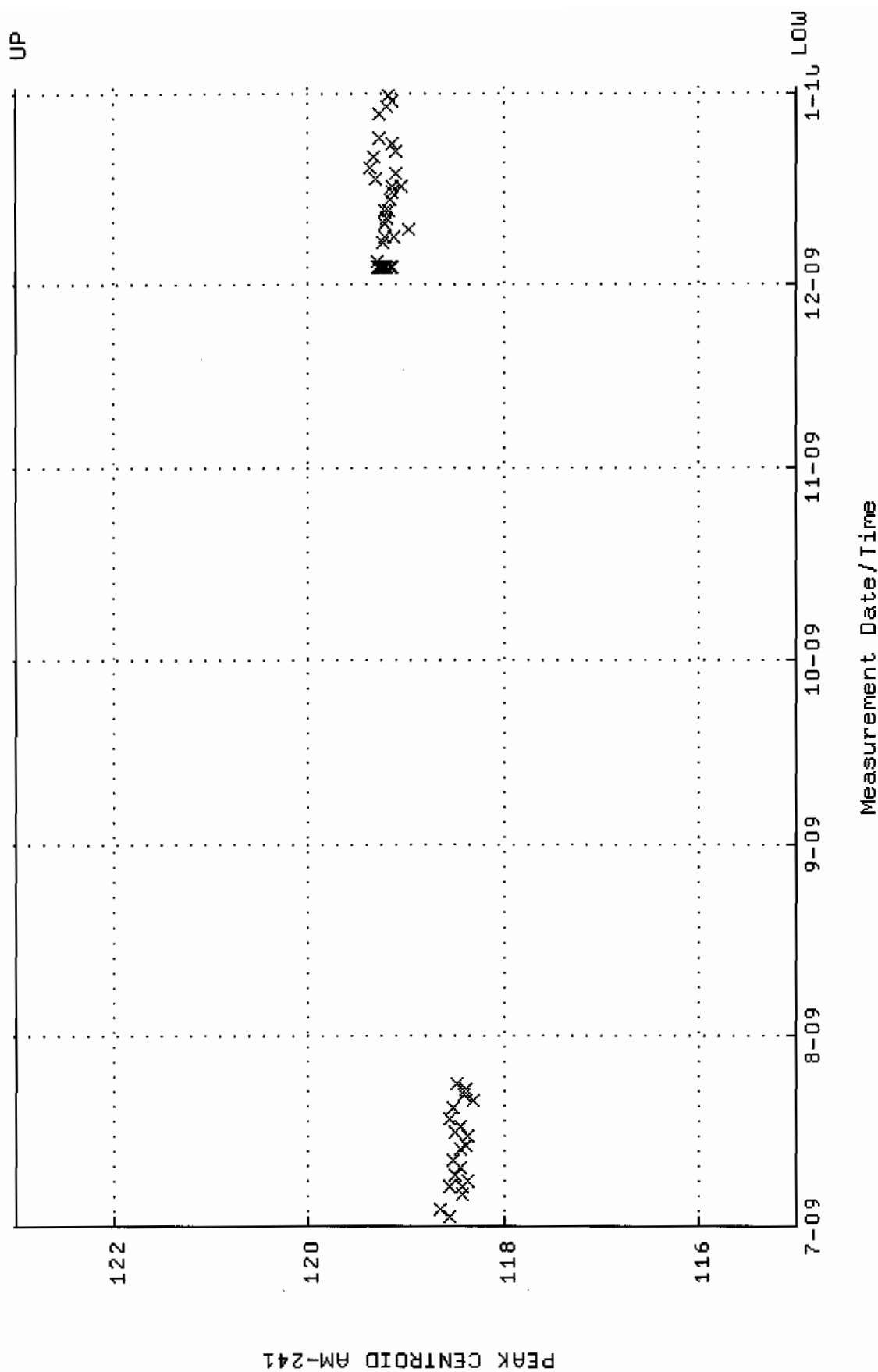
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM20\_500MLMB.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:34 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



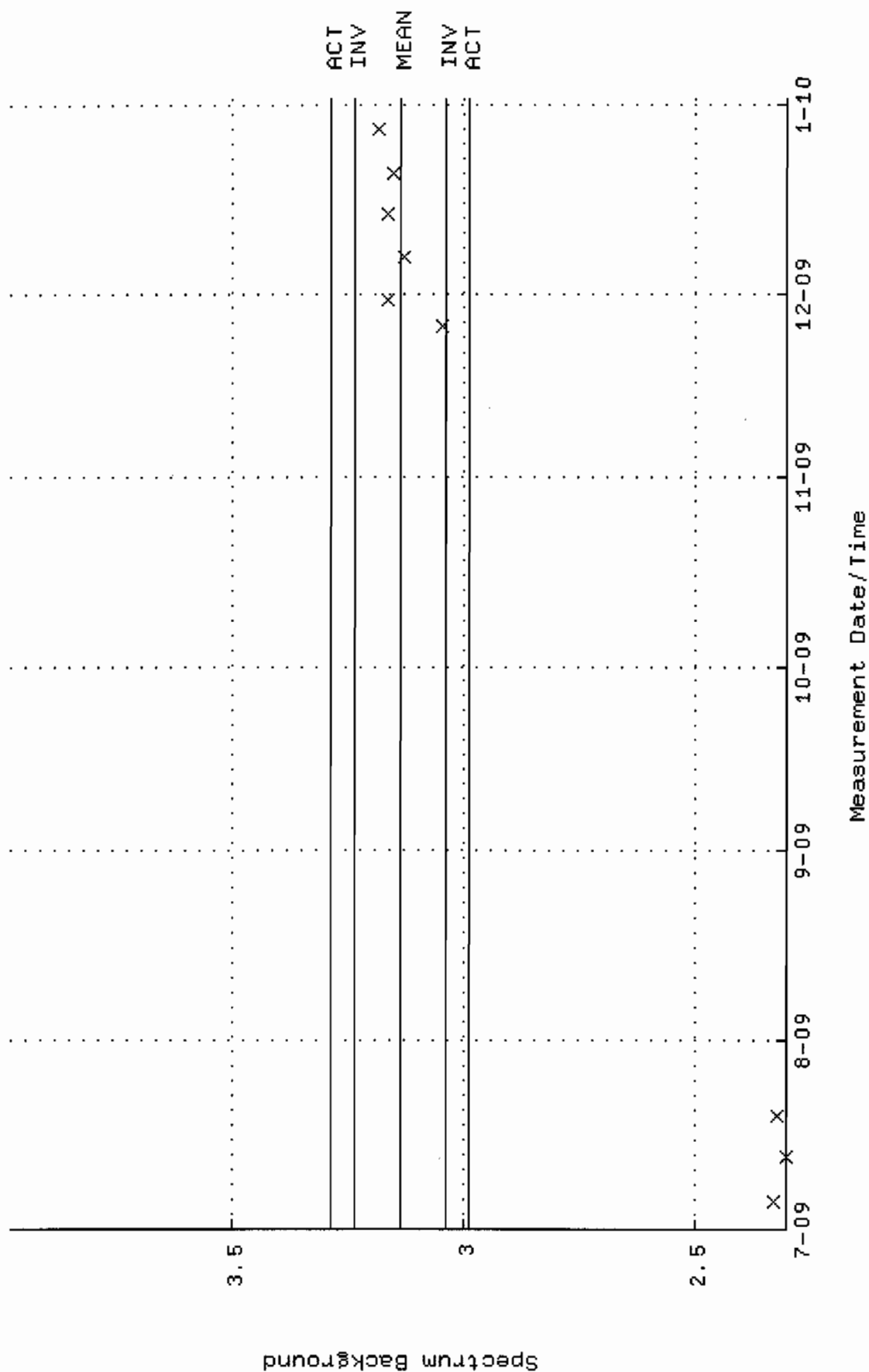
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM20.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:53:49 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



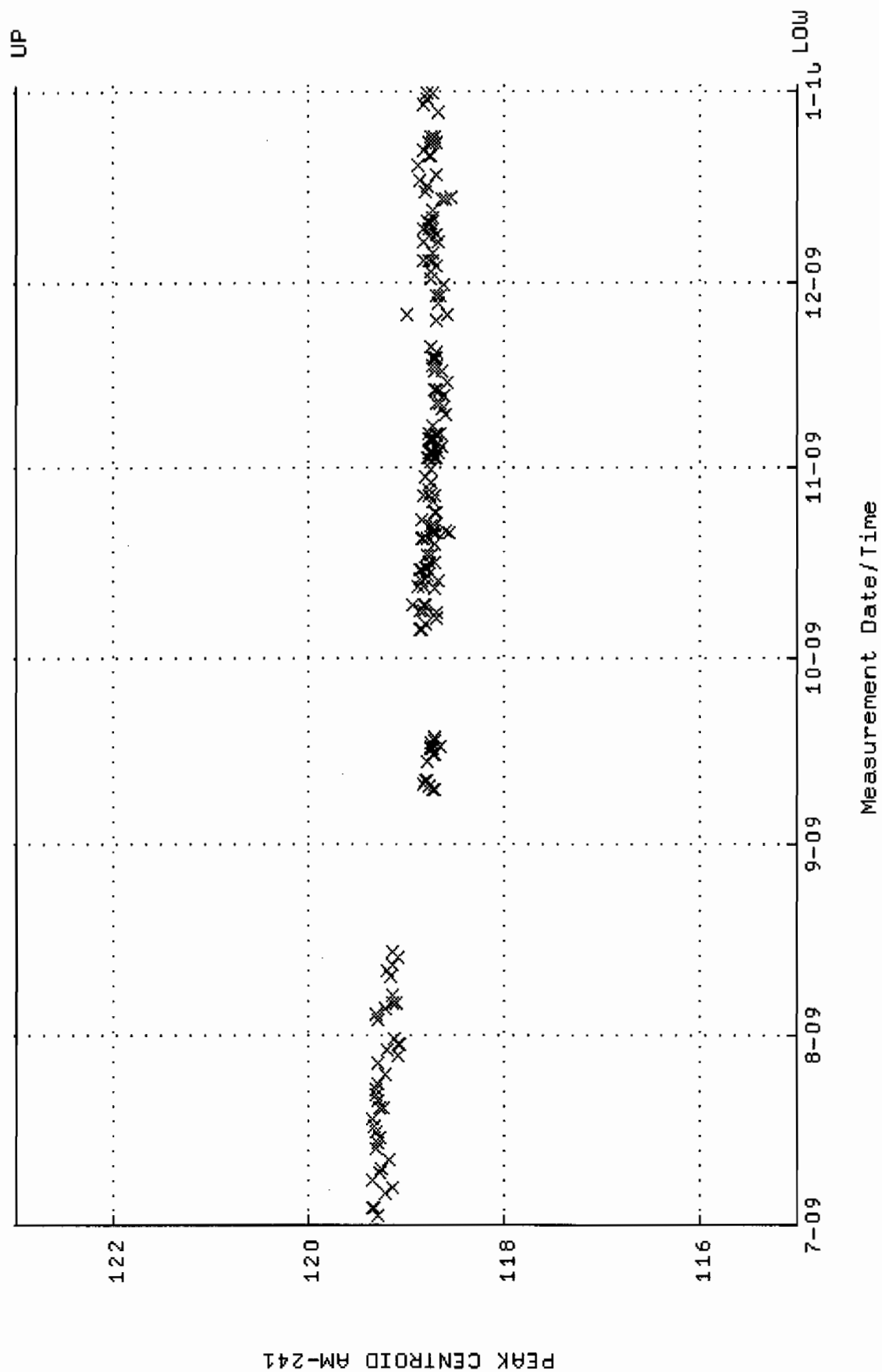
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM22\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 10:47:50 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



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 %)

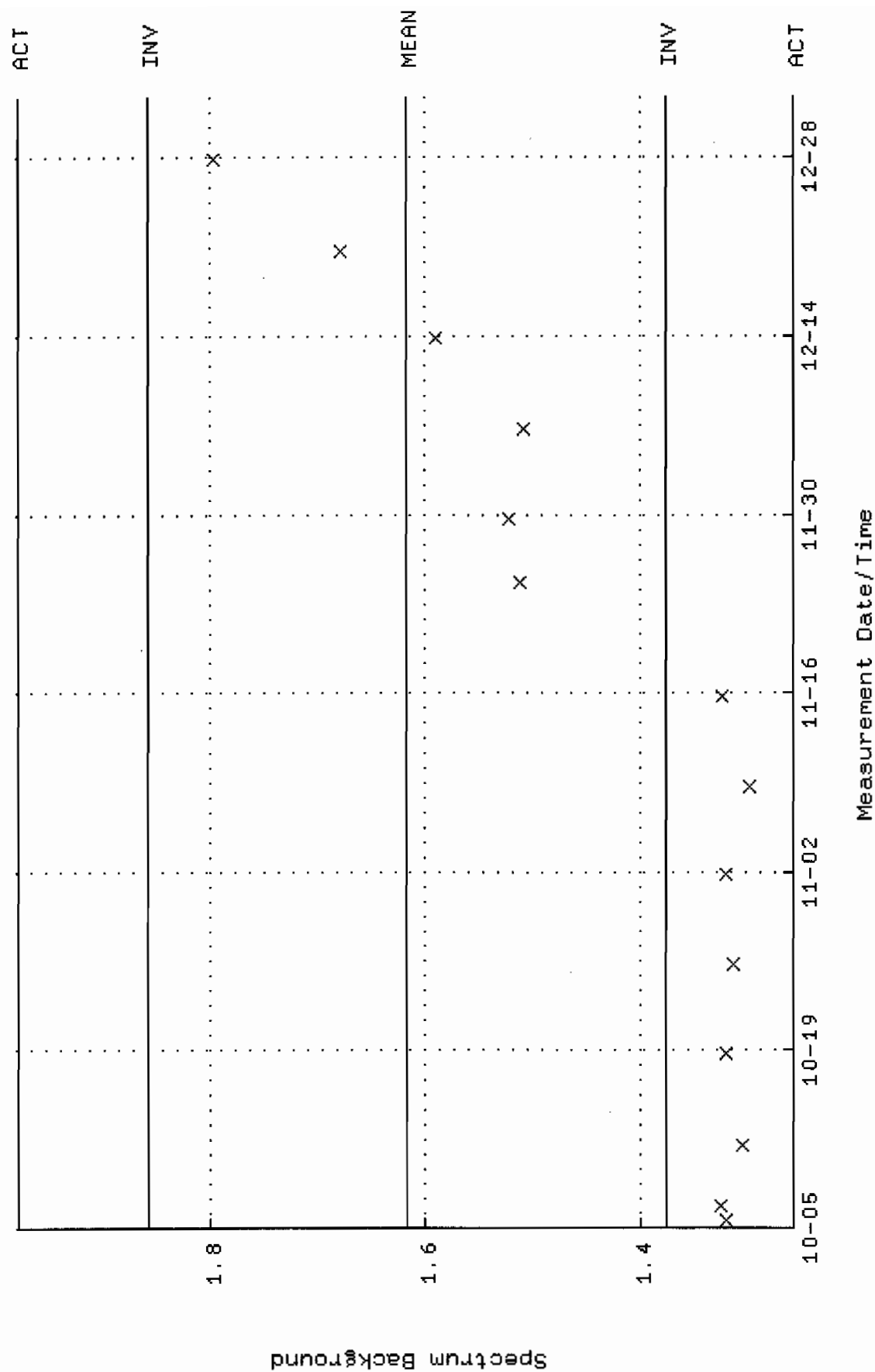


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM23\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 11:00:38 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000

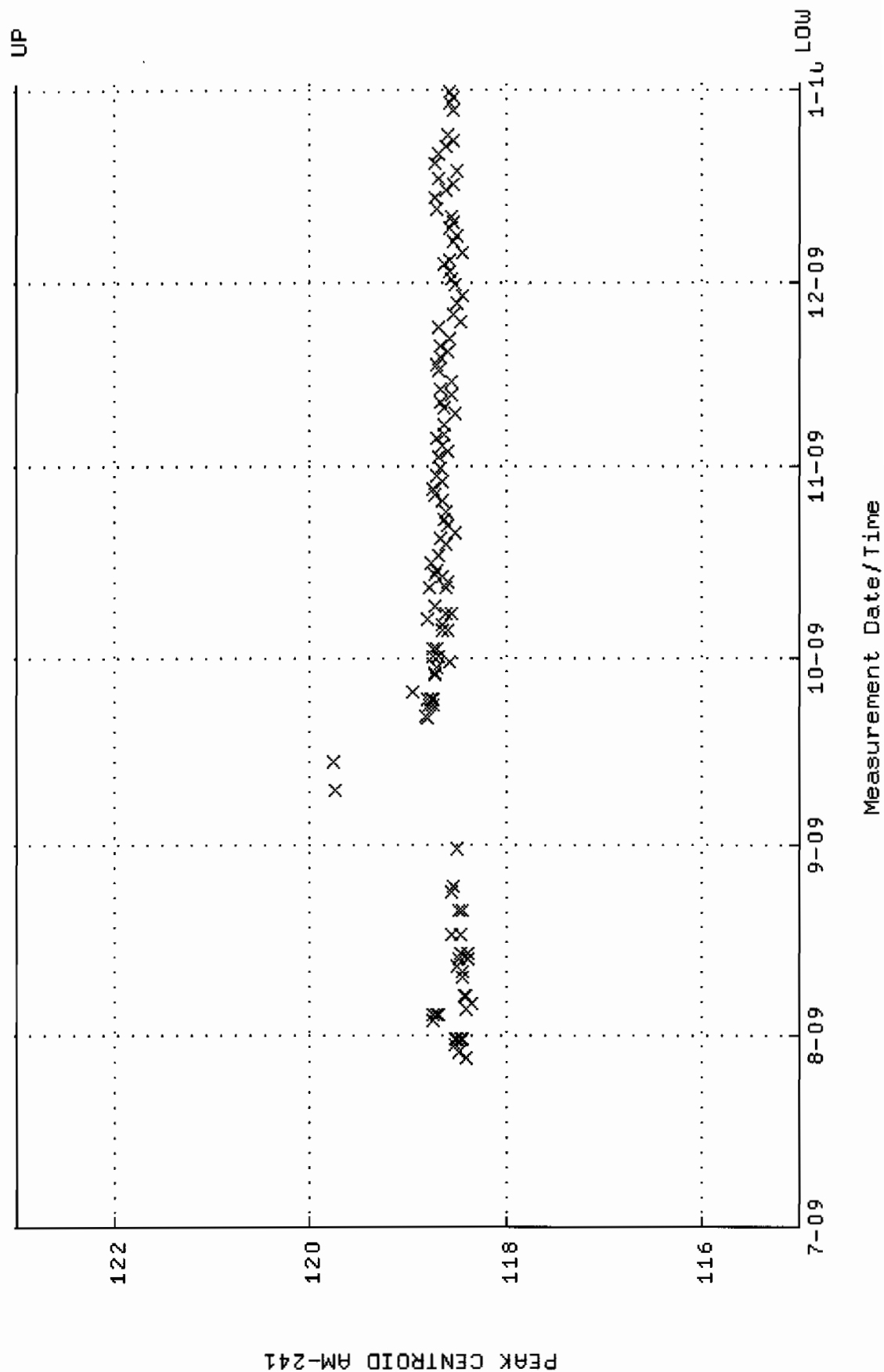




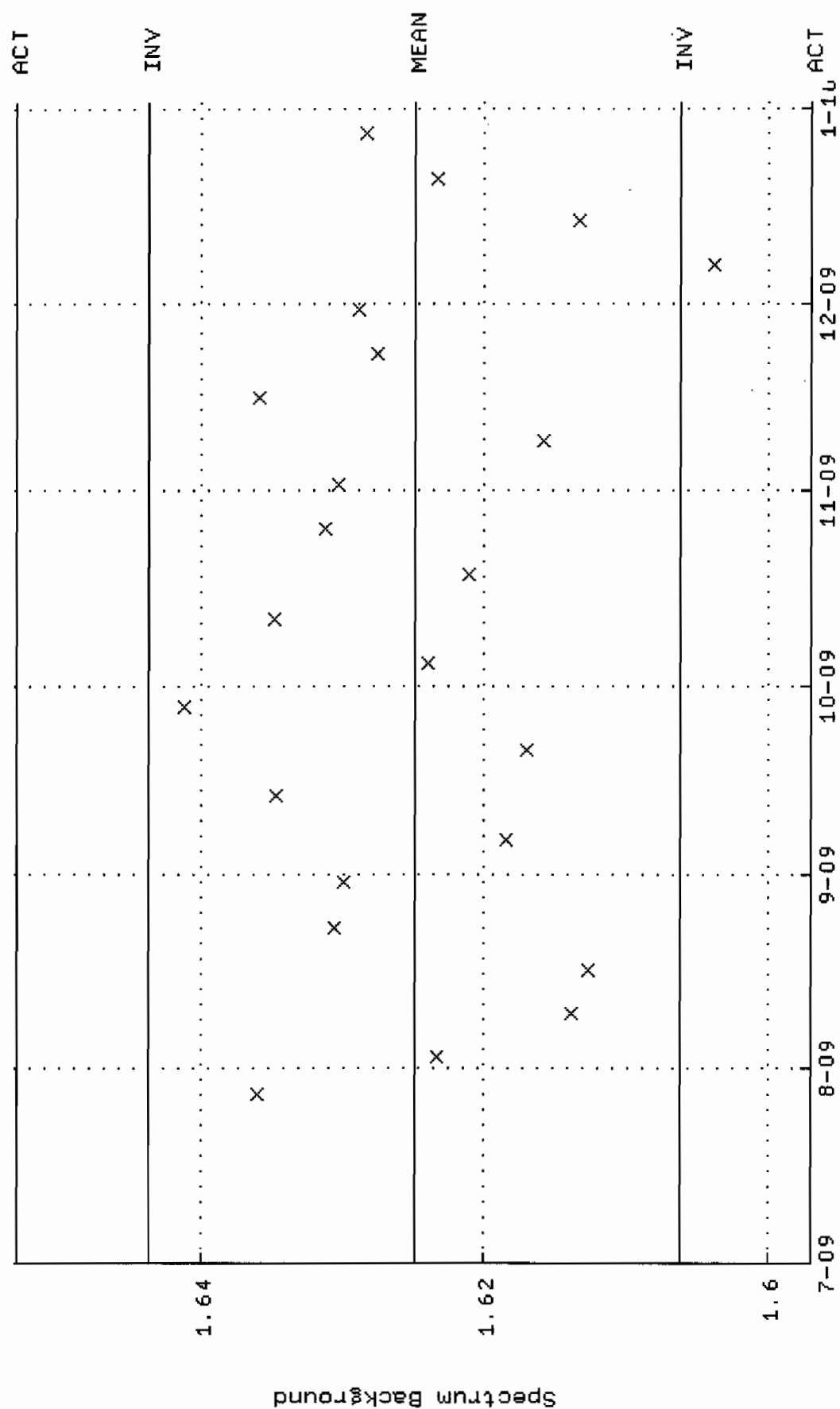
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM23.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-OCT-2009 15:13:53 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM25\_2LMB.QAF;1  
 Parameter Name : PSCENTRO-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. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	3339	3.0
Cd-109	88	462.6	d	4815	3.3
Co-57	122	271.79	d	2409	3.0
Ce-139	166	137.6	d	3408	2.8
Hg-203	279	46.61	d	7522	2.7
Sn-113	392	115.1	d	4728	2.6
Cs-137	662	30.07	y	2973	3.0
Y-88	898	106.6	d	11600	2.6
Co-60	1173	5.2714	y	5780	2.7
Co-60	1332	5.2714	y	5783	2.6
Y-88	1836	106.6	d	12260	2.6

5.31725 grams 4M HCl solution.  
P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova  
M. Dimitrova, Radiochemist

Q A APPROVED:

W.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/23/06  
RC-S-045-073-c

1380 Seaboard Industrial Blvd.  
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

## ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

### CALIBRATION DATE: October 1, 2006 12:00 EST

Isotope	Energy (keV)	Calibration Method <sup>1</sup>	Statistics <sup>2</sup>	Calibration <sup>2</sup>	Peak Fitting <sup>2</sup>	Geometry <sup>2</sup>	Impurities <sup>2</sup>	Weighing	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

#### Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

<sup>1</sup>Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

<sup>2</sup>As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

# Standard Traceability Log Rad

Source Material Info	
Parent Code:	1032
Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL
Reference Date:	10/01/2006
Ampoule Mass (g):	5.31725 g
Uncertainty:	+/- 2.81 %
LogBook No:	RC-S-045-073

A Solution Material Info	
Isotope:	Mixed Gamma
Prepared By:	Daniel Roy
Prep Date:	11/30/2006
Verification Date:	12/02/2009
Expiration Date:	12/02/2010
Primary Code:	1032-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.2579 g
Density(g/mL):	1.0611
Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$

$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$

$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
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GEL Laboratories LLC  
Version 1.0 9/18/2000

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Am-241

Isotope	Result	pCi/L - Ver. 1A2-1
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  
Pass  
Rule 3 (Pass/Fail)

Certificate Value = 2485.68018  
Lower Limit = 2357.536524  
Upper Limit = 2613.796809  
Rule 1 (Pass/Fail) Pass  
Two sigma = 128.1301422  
10 % of Mean = 248.5666667  
Rule 2 (Pass/Fail) Pass

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Stamps  
12/2/09  
independent  
12/2/09



# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Cs-137

Isotope	Result	pCi/L	Ver. Tag
Mixed Gamma N1	854.2	pCi/L	Ver. Tag 1
Mixed Gamma N2	907.6	pCi/L	Ver. Tag 3
Mixed Gamma N3	898.9	pCi/L	Ver. Tag 2

Mean Value (Counting) =  
Stdev =

886.90  
28.651

95.01

Rule 3 (Pass/Fail)

*Handwritten:* 12/4/09  
12/4/09  
12/4/09

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

pCi/L  
pCi/L  
pCi/L

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - VER-1A2-5
Mixed Gamma N1	1572	pCi/L - VER-1A2-2
Mixed Gamma N2	1495	pCi/L - VER-1A2-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67  
Stdev = 42.829

98.50 Pass  
Rule 3 (Pass/Fail)

Certificate Value = 1545.8378  
Lower Limit = 1437.008431  
Upper Limit = 1608.324902  
Rule 1 (Pass/Fail) Pass  
Two sigma = 85.65823564  
10 % of Mean = 152.26666667  
Rule 2 (Pass/Fail) Pass

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 bottles 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	434 ± 25	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 & Shale 5/1/04

## PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

### INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

### SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

Page 1438 of 1462



# CERTIFICATE OF CALIBRATION

## ALPHA STANDARD SOLUTION

Radionuclide Am-243  
Half Life: 7380  $\pm$  40 years  
Catalog No.: 7243  
Source No.: 445-96-2

Customer: GENERAL ENGINEERING LABS  
P.O.No.: 9290-RAD  
Reference Date: January 1 1994 12:00 PST.  
Contained Radioactivity: (Am-243) 101.2  $\mu$ Ci  
Contained Radioactivity: (Am-243) 3750 kBq

### Description of Solution

a. Mass of solution: 5.3739 g (in a 5 ml Flame Sealed Ampoule)  
b. Chemical form: Am(NO<sub>3</sub>)<sub>3</sub> in 2N HNO<sub>3</sub>  
c. Carrier content: None added  
d. Density: 1.0651 g/ml @ 20°C.

### Radioimpurities

None detected

### Radioactive Daughters

Np-239 (beta active) in equilibrium

### Radionuclide Concentration

(Am-243) 18.84  $\mu$ Ci/g

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under: 228, 278 keV.  
Branching ratio(s) used: 0.108, 0.1420 gamma rays per decay.

### Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:  $\pm 3.0\%$   
b. Random uncertainty in assay:  $\pm 0.4\%$   
c. Random uncertainty in weighing(s):  $\pm 0.0\%$   
d. Total uncertainty at the 99% confidence level:  $\pm 3.0\%$

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

*Anna H. Khan*  
QUALITY CONTROL

*Jan 3, 1994*  
Date Signed

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO  
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE

☒ 1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 2. SOAK TEST

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.

☒ 5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.

☐ 6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha at the time of shipment.

# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	05/11/2009
Ampoule Mass (g):	5.3739 g	Expiration Date:	05/11/2010
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Julie Strock	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/30/2008	09/29/2009
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC  
Version 1.0 9/18/2000

## Verification for Am-243 Standard 445-96-2-SS

M. Aders	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.

*M. Aders 5/15/09*  
*Taheri*  
*07509*

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  
R 2/2/05

Lisa R. Karam, Acting Chief  
Ionizing Radiation Division

Gaithersburg, Maryland 20899  
January 2005

Robert L. Watters, Jr., Chief  
Measurement Services Division

DC - 5-057-013



### **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, $u_c(y)/y$ , (%) [n]
Massic alpha-particle emission rate, corrected for background and decay	Standard deviation of the mean for 80 sets of $4\pi\alpha$ liquid- scintillation measurements (A)	0.05	1.0	0.05
Half life of Pu-242	Standard uncertainty of the half life (A)	0.32 [p]	0.00001 [q]	0.000003
Decay-scheme data	Standard uncertainty of the probability of decay by alpha- particle emission (A)	0.001	1.0	0.001
Extrapolation of alpha- particle-count-rate- versus-energy to zero energy	Estimated (B)	0.25	1.0	0.25
Gravimetric measurements	Estimated (B)	0.10	1.0	0.10
Live time [r]	Estimated (B)	0.10	1.0	0.10
Alpha-particle detection efficiency of scintillators	Estimated (B)	0.15	1.0	0.15
Alpha-particle-emitting impurities	Limit of detection (B) [s]	100.	0.001	0.10
Photon-emitting impurities	Limit of detection (B) [s]	100.	0.001	0.10
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$ , (%)				0.36
Coverage Factor, $k$				<u>x 2</u>
Relative Expanded Uncertainty of the Output Quantity, $U/y$ , (%)				0.72

RELATIVE ACTIVITIES OF RADIONUCLIDIC IMPURITIES AT THE REFERENCE TIME [b]

Radionuclide	Half Life (years) [j] [5]	Relative Activity As Determined By	
		LLNL	NIST
Plutonium-242	373 500 ± 1100	1.000 000	1.000 000
Plutonium-241	14.35 ± 0.10	--	0.0035 ± 0.0004 [t]
Plutonium-240	6 564 ± 11	<sup>239</sup> Pu + <sup>240</sup> Pu <0.000 001 [u]	<sup>239</sup> Pu + <sup>240</sup> Pu 0.000 020 ± 0.000 021 [v]
Plutonium-239	24 110 ± 30		
Plutonium-238	87.7 ± 0.1	<sup>238</sup> Pu + <sup>241</sup> Am <0.000 016 [u]	0.000 009 ± 0.000 016 [v]
Americium-241	432.2 ± 0.7		0.000 000 assumed [t]

NOTES

- [a] The Sievert is the SI unit for dose equivalent. See reference [1]. One  $\mu\text{Sv}$  is equal to 0.1 mrem.  
Distance from Ampoule (cm):           1       30       100  
Approximate Dose Rate ( $\mu\text{Sv/h}$ ):   <0.1       -       -
- [b] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994.
- [c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].
- [d] The reported value,  $y$ , of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as  $y = f(x_1, x_2, x_3, \dots, x_n)$ , where  $f$  is a mathematical function derived from the assumed model of the measurement process. The value,  $x_i$ , used for each input quantity  $i$  has a **standard uncertainty**,  $u(x_i)$ , that generates a corresponding uncertainty in  $y$ ,  $u_i(y) = |\partial y / \partial x_i| \cdot u(x_i)$ , called a **component of combined standard uncertainty** of  $y$ . The **combined standard uncertainty** of  $y$ ,  $u_c(y)$ , is the positive square root of the sum of the squares of the components of combined standard uncertainty. The combined standard uncertainty is multiplied by a **coverage factor** of  $k=2$  to obtain  $U$ , the **expanded uncertainty** of  $y$ .

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation  $u_c(y)$ , the unknown value of the massic activity is believed to lie in the interval  $y \pm U$  with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

- [e] The value of each component of combined standard uncertainty, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval  $U/2$  to  $2U$  (i.e., within a factor of 2 of the estimated value).
- [f] The stated uncertainty is two times the standard uncertainty.
- [g] Estimated limits of detection for alpha-particle-emitting impurities, expressed as massic alpha-particle emission rates (numbers of alpha particles per second per gram), are:  
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies less than 3.1 MeV,  
 $0.03 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 3.1 and 4.4 MeV, and  
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies greater than 5.0 MeV.
- [h] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994. Americium-241, the daughter of plutonium-241, was removed but has been growing in since that time.
- [i] Estimated limits of detection for photon-emitting impurities, expressed as massic photon emission rates (numbers of photons per second per gram), are:  
 $5 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 19 and 39 keV,  
 $7 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 49 and 92 keV,  
 $2 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 106 and 507 keV,  
 $1 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 515 and 1456 keV, and  
 $5 \times 10^{-6} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 1465 and 2750 keV,  
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of plutonium-242, plutonium-241, or americium-241.
- [j] The stated uncertainty is the standard uncertainty.
- [k] Relative standard uncertainty of the input quantity  $x_i$ .
- [m] The relative change in the output quantity  $y$  divided by the relative change in the input quantity  $x_i$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 1.0$ , then a 1% change in  $x_i$  results in a 1% change in  $y$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 0.05$ , then a 1% change in  $x_i$  results in a 0.05% change in  $y$ .
- [n] Relative component of combined standard uncertainty of output quantity  $y$ , rounded to two significant figures or less. The relative component of combined standard uncertainty of  $y$  is given by  $u_i(y)/y = |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$ . The numerical values of  $u(x_i)/x_i$ ,  $|\partial y / \partial x_i| \cdot (x_i / y)$ , and  $u_i(y)/y$ , all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

- [p] The relative standard uncertainty of  $\lambda \cdot t$  is determined by the relative standard uncertainty of  $\lambda$  (i.e., of the half life). The relative standard uncertainty of  $t$  is negligible.
- [q]  $|\partial y / \partial x_i| \cdot (x_i / y) = |\lambda \cdot t|$
- [r] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.
- [s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e.  $u(x_i) / x_i = 100\%$ .  $|\partial y / \partial x_i| \cdot (x_i / y) = \{(\text{response per Bq of impurity}) / (\text{response per Bq of Pu-242})\} \cdot \{(\text{Bq of impurity}) / (\text{Bq of Pu-242})\}$ . Thus  $u_i(y) / y$  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.

*Handwritten notes:*  
 Not called  
 12/8/09  
 12/9/09  
 12/9/09





Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.  
Atlanta, Georgia 30318  
Tel 404-352-8677  
Fax 404-352-2837  
www.analyticsinc.com

**CERTIFICATE OF CALIBRATION**  
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC  
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

**Comments:**

Impurities: U-233 <0.3%, Am-241 <0.15%  
5.20453 grams 1M 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

# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)} * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)} * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/ml	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/30/2008	12/30/2009
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/ml	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/09/2009	12/30/2009
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

## Verification for Uranium-232 Standard 1283-H

Analyst: A. Drochter  
Date: 12/10/09

Serial #	Value	Uncertainty
1283-H N1	2.020	pCi/L 0.238
1283-H N2	2.000	pCi/L 0.234
1283-H N3	2.060	pCi/L 0.242

Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)	
Target =	2.033	pCi/L		
Lower Limit =	1.965565657	pCi/L		
Upper Limit =	2.087767676	pCi/L		
Rule 1 Pass/Fail	Pass			
Two sigma =	0.061101009			
10 % of Mean =	0.202666667			
Rule 2 (Pass/Fail)	Pass			

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

*A. Drochter*  
12/14/09

# RUNLOGS

# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 940262**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244132007	SAMPLE	KXM4	1025	18-JAN-10 14:53	DONE		
244132008	SAMPLE	KXM4	1026	18-JAN-10 14:53	DONE		
244132009	SAMPLE	KXM4	1027	18-JAN-10 14:53	DONE		
244132010	SAMPLE	KXM4	1028	18-JAN-10 14:53	DONE		
244132011	SAMPLE	KXM4	1029	18-JAN-10 14:53	DONE		
244132012	SAMPLE	KXM4	1030	18-JAN-10 14:53	DONE		
244132013	SAMPLE	KXM4	1031	18-JAN-10 14:53	DONE		
244132014	SAMPLE	KXM4	1033	18-JAN-10 14:53	DONE		
244132015	SAMPLE	KXM4	1035	18-JAN-10 14:53	DONE		
244132016	SAMPLE	KXM4	1036	18-JAN-10 14:53	DONE		
244132017	SAMPLE	KXM4	1037	18-JAN-10 14:53	DONE		
244132018	SAMPLE	KXM4	1038	18-JAN-10 14:53	DONE		
244132019	SAMPLE	KXM4	1039	18-JAN-10 14:53	DONE		
244132020	SAMPLE	KXM4	1040	18-JAN-10 14:53	DONE		
1202012136	MB	KXM4	1041	18-JAN-10 14:53	DUSE		
1202012137	DUP	KXM4	1042	18-JAN-10 14:53	DONE		
1202012138	LCS	KXM4	1043	18-JAN-10 14:53	DUSE		
244132001	SAMPLE	KXM4	1233	18-JAN-10 20:01	DONE		
244132002	SAMPLE	KXM4	1234	18-JAN-10 20:01	DONE		
244132003	SAMPLE	KXM4	1235	18-JAN-10 20:01	DONE		
244132004	SAMPLE	KXM4	1236	18-JAN-10 20:01	DONE		
244132005	SAMPLE	KXM4	1237	18-JAN-10 20:01	DONE		
244132006	SAMPLE	KXM4	1238	18-JAN-10 20:01	DONE		
1202012136	MB	KXM4	1221	21-JAN-10 10:49	DONE		
1202012138	LCS	KXM4	1222	21-JAN-10 10:49	DONE		

# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 940267**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244132019	SAMPLE	KXM4	1033	15-JAN-10 13:23	DONE		
244132020	SAMPLE	KXM4	1035	15-JAN-10 13:23	DONE		
1202012147	MB	KXM4	1036	15-JAN-10 13:23	DONE		
1202012148	DUP	KXM4	1042	15-JAN-10 13:24	DONE		
1202012149	LCS	KXM4	1043	15-JAN-10 13:24	DONE		
244132001	SAMPLE	KXM4	1001	16-JAN-10 11:22	DONE		
244132002	SAMPLE	KXM4	1002	16-JAN-10 11:22	DONE		
244132003	SAMPLE	KXM4	1003	16-JAN-10 11:22	DONE		
244132004	SAMPLE	KXM4	1004	16-JAN-10 11:22	DONE		
244132005	SAMPLE	KXM4	1005	16-JAN-10 11:22	DONE		
244132006	SAMPLE	KXM4	1006	16-JAN-10 11:22	DONE		
244132007	SAMPLE	KXM4	1011	16-JAN-10 11:22	DONE		
244132008	SAMPLE	KXM4	1012	16-JAN-10 11:22	DONE		
244132009	SAMPLE	KXM4	1013	16-JAN-10 11:22	DONE		
244132010	SAMPLE	KXM4	1014	16-JAN-10 11:22	DONE		
244132011	SAMPLE	KXM4	1016	16-JAN-10 11:22	DONE		
244132012	SAMPLE	KXM4	1017	16-JAN-10 11:22	DONE		
244132013	SAMPLE	KXM4	1018	16-JAN-10 11:22	DONE		
244132014	SAMPLE	KXM4	1019	16-JAN-10 11:22	DONE		
244132015	SAMPLE	KXM4	1020	16-JAN-10 11:22	DONE		
244132016	SAMPLE	KXM4	1021	16-JAN-10 11:22	DONE		
244132017	SAMPLE	KXM4	1022	16-JAN-10 11:22	DONE		
244132018	SAMPLE	KXM4	1023	16-JAN-10 11:22	DONE		

# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 940269**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244132001	SAMPLE	KXM4	1146	19-JAN-10 19:33	DONE		
244132002	SAMPLE	KXM4	1147	19-JAN-10 19:33	DONE		
244132003	SAMPLE	KXM4	1148	19-JAN-10 19:33	DONE		
244132004	SAMPLE	KXM4	1149	19-JAN-10 19:33	DONE		
244132005	SAMPLE	KXM4	1150	19-JAN-10 19:33	DONE		
244132006	SAMPLE	KXM4	1151	19-JAN-10 19:33	DONE		
244132007	SAMPLE	KXM4	1152	19-JAN-10 19:33	DONE		
244132008	SAMPLE	KXM4	1153	19-JAN-10 19:33	DONE		
244132009	SAMPLE	KXM4	1154	19-JAN-10 19:33	DONE		
244132010	SAMPLE	KXM4	1155	19-JAN-10 19:33	DONE		
244132011	SAMPLE	KXM4	1156	19-JAN-10 19:33	DONE		
244132012	SAMPLE	KXM4	1157	19-JAN-10 19:33	DONE		
244132013	SAMPLE	KXM4	1158	19-JAN-10 19:33	DONE		
244132014	SAMPLE	KXM4	1001	19-JAN-10 19:34	DONE		
244132015	SAMPLE	KXM4	1002	19-JAN-10 19:34	DONE		
244132016	SAMPLE	KXM4	1003	19-JAN-10 19:34	DONE		
244132017	SAMPLE	KXM4	1004	19-JAN-10 19:34	DONE		
244132018	SAMPLE	KXM4	1005	19-JAN-10 19:34	DONE		
244132019	SAMPLE	KXM4	1006	19-JAN-10 19:34	DONE		
244132020	SAMPLE	KXM4	1007	19-JAN-10 19:34	DONE		
1202012159	MB	KXM4	1008	19-JAN-10 19:34	DONE		
1202012160	DUP	KXM4	1009	19-JAN-10 19:34	DONE		
1202012161	LCS	KXM4	1010	19-JAN-10 19:34	DONE		

# Instrument Run Log

**Instrument Type: GAMMA SPECTROMETER**

**Batch ID: 940270**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
244132001	SAMPLE	MXR1	GAM13	19-JAN-10 09:11	DONE CAN		02-FEB-09 00:00
244132002	SAMPLE	MXR1	GAM23	19-JAN-10 09:12	DONE CAN		02-JUN-09 00:00
244132003	SAMPLE	MXR1	GAM18	19-JAN-10 09:23	DONE CAN		23-APR-09 00:00
244132004	SAMPLE	MXR1	GAM11	19-JAN-10 09:53	DONE CAN		18-NOV-09 00:00
244132005	SAMPLE	MXR1	GAM15	19-JAN-10 09:53	DONE CAN		16-FEB-09 00:00
244132006	SAMPLE	MXR1	GAM22	19-JAN-10 09:54	DONE CAN		02-DEC-09 00:00
244132007	SAMPLE	MXR1	GAM25	19-JAN-10 09:54	DONE CAN		07-OCT-09 00:00
244132008	SAMPLE	MXR1	GAM05	19-JAN-10 10:02	DONE CAN		11-JUN-09 00:00
244132009	SAMPLE	MXR1	GAM01	19-JAN-10 10:54	DONE CAN		30-JAN-09 00:00
244132010	SAMPLE	MXR1	GAM04	19-JAN-10 10:55	DONE CAN		05-MAY-09 00:00
244132011	SAMPLE	MXR1	GAM16	19-JAN-10 11:04	DONE CAN		16-NOV-09 00:00
244132012	SAMPLE	MXR1	GAM12	19-JAN-10 11:12	DONE CAN		10-FEB-09 00:00
244132013	SAMPLE	MXR1	GAM13	19-JAN-10 11:41	DONE CAN		02-FEB-09 00:00
244132014	SAMPLE	MXR1	GAM14	19-JAN-10 11:41	DONE CAN		06-MAR-09 00:00
244132015	SAMPLE	MXR1	GAM17	19-JAN-10 11:41	DONE CAN		06-JAN-10 00:00
244132016	SAMPLE	MXR1	GAM18	19-JAN-10 11:42	DONE CAN		23-APR-09 00:00
244132017	SAMPLE	MXR1	GAM23	19-JAN-10 11:42	DONE CAN		02-JUN-09 00:00
244132018	SAMPLE	MXR1	GAM15	19-JAN-10 12:04	DONE CAN		16-FEB-09 00:00
244132019	SAMPLE	MXR1	GAM15	19-JAN-10 14:20	DONE CAN		16-FEB-09 00:00
244132020	SAMPLE	MXR1	GAM05	19-JAN-10 17:05	DONE CAN		11-JUN-09 00:00
1202012162	MB	MXR1	GAM16	19-JAN-10 17:38	DONE CAN		16-NOV-09 00:00
1202012163	DUP	MXR1	GAM20	19-JAN-10 17:39	DONE CAN		26-AUG-09 00:00
1202012164	LCS	MXR1	GAM15	19-JAN-10 18:15	DONE CAN		16-FEB-09 00:00